

# SB 3116

## Testimony

- Measure Title:** MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING.
- Report Title:** University of Hawaii College of Engineering; Appropriation (\$)
- Description:** Appropriates general obligation bonds to the University of Hawaii college of engineering for the design and renovation of Holmes Hall.
- Companion:**
- Package:** None
- Current Referral:** HRE, WAM
- Introducer(s):** IHARA, ESPERO, Galuteria, Taniguchi



Feb 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

**Subject: TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering, Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a Mechanical Engineer in the State of Hawaii and alumnus of the College of Engineering, and the Department of Defense in this State depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates, student interns, and returning College alumni from the US mainland. These graduates are essential for the military's continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty has done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

Appropriation of funds for the Holmes Hall Renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore absolutely imperative that the facilities provided by the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle starting in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly

accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. Furthermore, graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Sincerely,



Robert G.F. Lee  
Major General  
US Army (Retired)



# UNIVERSITY OF HAWAII SYSTEM

## Legislative Testimony

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Testimony Presented before the  
Senate Committee on Higher Education  
Thursday, February 06, 2014 at 2:45 PM

On Behalf of  
Tom Apple, Chancellor  
by  
Peter E. Crouch  
Dean, College of Engineering  
University of Hawai'i at Mānoa

SB 3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII  
COLLEGE OF ENGINEERING

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

The University of Hawai'i supports SB 3116. It appears in the list of Board of Regents approved-priority projects submitted as part of the UH budget.



Personal Testimony Presented before the

Senate Committee on Higher Education

Thursday, February 06, 2014 2:45 PM

Conference Room 414, State Capitol

by

Peter E. Crouch

**SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING**

**TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Peter E. Crouch and I serve as Dean of the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116 and am very pleased with your willingness to hear this bill.

The faculty, students and staff in the College of Engineering are excited about the progress the College has made in the last decade in which engineering and pre-engineering enrollment has increased by over 50%, competitive research expenditures within the College of Engineering have doubled and the College has made outstanding contributions to STEM outreach, on programs throughout the state such as Robotics and Research Experiences for Teachers in conjunction with teachers and students throughout the State. We have a thriving Native Hawaiian Program to recruit and retain native Hawaiian and part native Hawaiian students, that is steadily expanding to other STEM units, and is a major force in the College's collaboration with the rest of the UH system campuses in the Engineering Coalition and enabling students to more easily transfer from a 2 year to a 4 year STEM program at UH. It is clear that as the College continues to attract more of Hawai'i's students to its programs it will be increasing unable to accommodate all of the students that wish to pursue engineering as a career and the programs that it is able to offer will be increasingly hampered by laboratory conditions that are simply not on a par with the contemporary facilities of other colleges of engineering throughout the nation.

Holmes Hall supplies 75% of the space the College of Engineering occupies on the Mānoa Campus and has been the iconic home of Engineering on the Manoa campus for 42 years and without any substantial renovation in that time. While the faculty has worked wonders to accommodate their teaching and research, it is becoming very challenging to keep abreast of the rapidly evolving nature of engineering and technology as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall, incorporating over \$18 Million in R&M and a modicum of expansion in the Holmes Hall atria, will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent can be recruited from the mainland.

Holmes Hall was originally designed to be part of a pair of buildings devoted to engineering and so its design is woefully inadequate to accommodate all that is expected of the College's faculty and

accommodate all of its student's aspirations. Its design does not accommodate modern engineering education or research in so many ways. It was not design at all to accommodate student team project work and the scope of hands on laboratory work which plays such an important and formative role training and educating the practicing engineer of today. Many engineering schools now have purpose built facilities to enable these contemporary instructional modes.

We are extremely happy to report that even with the many constraints that the current building imposes we are rapidly expanding the emphasis being placed on student projects and much of this funded by our community supporters and potential employers. This enables the students to participate in many hands on projects of current interest to building and diversifying the state's economy: civil infrastructure (roads, bridges, waste water etc.) aerospace (utilizing PMRF for satellite launch, autonomous water vehicles and now building capacity in autonomous air vehicles), manufacturing including 3D printing, and communications and associated computer and cyber security. These experiences enable the College's graduates to demonstrate immediate expertise upon taking positions in Hawaii. It is this very emphasis that is so hard for the College to facilitate since engineering education 42 years ago did not embrace this contemporary view of engineering education.

Engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and increasingly manufacturing. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy through both its graduates who are the mainstay of engineering talent in Hawai'i or the research that faculty pursue to support industry on Hawai'i. Holmes Hall was built and designed of course to accommodate the particular research and laboratory functions active at that time, much of which is now totally unsuitable for the current focus of its programs. So, in order to support the growth of these dynamic economic sectors, as do other colleges of engineering in major economic centers of the US, it is imperative for this role to be recognized in the form of the facilities provided by the State for the College to operate in successfully at a national level.

Finally, Holmes Hall renovation is also critically one aspect considered by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore imperative that the facilities housing the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, and with the next evaluation cycle starting in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities on the mainland. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. Furthermore, most graduates of the College's programs would not be as desirable, or even eligible to work in the engineering profession in Hawai'i or the mainland since licensed professional engineers in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.



UNIVERSITY  
of HAWAII®  
MĀNOA

College of Engineering

Office of the Assistant Dean  
Song K. Choi, Ph.D.

February 5, 2014

**Personal Testimony Presented before the**

Senate Committee on Higher Education  
Thursday, February 06, 2014 @ 2:45 PM  
Conference Room 414, State Capitol

By

Song K. Choi, Ph.D.

**SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING**

SUBJECT: **TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Song K Choi, and I been a part of the College of Engineering, University of Hawaii at Mānoa as a student, researcher, professor, and now as the assistant dean for the past 23 years. I am pleased and honored to provide personal testimony in **full support** of SB3116.

After 17 years of being away from Hawaii, I returned in 1991 to further my education in engineering and completed my doctorate in mechanical engineering at the College of Engineering, University of Hawaii at Manoa in 1995. Since then, I have been a part of the College in different capacities conducting research in robotics to teaching engineering to students to furthering K-12 STEM education efforts and to bringing the College and University to the fore-front of technology by initiating and creating engineering entrepreneurship efforts.

The education that I received at the College was sufficient to allow me to explore areas of unique research; however, in many instances, there were shortcomings due to a lack of repair and maintenance to the College's main building, Holmes Hall. Many of my colleagues have faced similar problems and have 'coped' with these shortcomings to highlight research and education efforts for the University and the State, but we are now at a crossing point...

Besides robotics research, I have made it a point to 'change the thinking and attitudes' of the people of Hawaii by exposing K-12 students, parents, teachers, administrators, and communities by bringing robotics presentations, robotics competitions, and STEM efforts to explore, investigate, and immerse our youth in the 'unknown'.

Well, we have succeeded!!! With the State's effort in funding ACT 111 and other STEM education related initiatives, the College of Engineering increase full-time student enrollment of approximately 400 in 1999 to over 1400 in 2014!!! Many of these incoming students were 'exposed' to engineering through robotics, science fairs, STEM events, and so forth.

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An Equal Opportunity/Affirmative Action Institution

The dilemma that we face now is not a “bad” thing, as we have been overly successful in our recruitment efforts; however, we have created this vision of the 21<sup>st</sup> century engineering at the College of Engineering, University of Hawaii at Manoa, but we do not have the proper buildings, classrooms, equipment, and faculty and staff to properly educate the continuously and consistently increasing student numbers.

We have created the excitement, the interest, and the enrollment in engineering to assist in fulfilling the ever-increasing demand on the engineering profession in Hawaii through the construction developments, the rail development, the high technology startup industry, and the military; however, we cannot fulfill this effort without the State government’s support.

Please take this testimony as an alumnus, faculty, administrator, and supporter in to consideration when considering your vote for this effort. Thank you very much for your time and patience...

Sincerely,



Song K. Choi, Ph.D.  
schoi@hawaii.edu

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Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Jean Imada

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJECT: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes  
Hall University of Hawai'i at Mānoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Jean Imada, and I serve as Assistant to the Dean of the University of Hawai'i  
at Mānoa College of Engineering. I am pleased to provide personal testimony on  
SB3116.

Built in 1972, Holmes Hall has housed the College of Engineering for the past 42 years  
and is in dire need of repairs and maintenance (elevators, HVAC  
controls/equipment/distribution system, electrical equipment, lighting, plumbing, and  
fire protection), the current estimated cost of which is \$18+ million. The appropriation  
of funds for the design and renovation of Holmes Hall will expand our College's  
capabilities for teaching, research and innovation, and producing graduates that will  
make an impact on some of the critical issues we face in Hawai'i and beyond.

When Dr. Peter Crouch assumed the deanship of the College in 2006, the enrollment  
was 900+ undergraduate and graduate students. Today, our enrollment is over 1,000  
students. To enhance the learning experience of our growing student population, the  
College urgently needs state-of-the art laboratories, space for high-demand research,  
and and refurbished classrooms. We want our College to be an extraordinary  
engineering academy with an inspirational physical facility that can and will be the  
source of pride for current and prospective students.

In 2008, the U.S. National Academy of Engineering announced the "Grand Challenges for  
Engineering in the 21<sup>st</sup> Century," which numbered 14 and can be categorized into the  
following: (1) sustainability, (2) health, (3) reducing vulnerability, and (4) joy of living;  
and, the goal of which was to identify what needs to be done so people and planet Earth  
can survive. In order for our College to embrace and effect these challenges, we need  
your help in acknowledging the changing landscape of engineering education in Hawai'i  
by providing our College's students and faculty with a renovated Holmes Hall that can

be a true testament to an unparalleled opportunity to influence student learning and enrichment.

As you ponder the many challenging and critical legislation that will pass through your hands this session, we ask that you give serious consideration to and work toward the passage of SB 3116 – a major step forward in preserving and building on the achievements of our students – the engineers and leaders of tomorrow!  
Thank you.

Personal Testimony Presented before the

Senate Committee on Higher Education

Thursday, February 06, 2014 2:45 PM

Conference Room 414, State Capitol

by

Cheryl Sato Ishii

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Gilbert S.C. Keith-Agaran, Michelle N. Kidani, Jill N. Tokuda, Sam Slom

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN STRONG SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

Thank you for the opportunity to testify in strong support of SB3116. My name is Cheryl Ishii, and I serve as Assistant Specialist to the Dean of the University of Hawaii at Mānoa College of Engineering. Over the years I have been privileged to support several Deans, and work alongside our internationally recognized faculty, award winning students, prominent alumni and industry stakeholders. Though challenging, there is no more rewarding environment. The academic demands as well as the engineering skill sets driven by exponential advancement in technology are intensive and inspire our students and faculty as change makers for the future. These conditions require a working environment and facilities far different than those needed 40 years ago when Holmes Hall was built.

In 2006, Dean Peter Crouch and the College made a commitment to create seamless onramps into engineering education and at the same time, expand engineering opportunities for Hawaii's diverse student populations. We have successfully increased undergraduate and graduate student enrollment, and launched both a highly successful Pre-engineering program and the nationally recognized Native Hawaiian Science & Engineering Mentorship Program.

We all share the vision for Holmes Hall as a dynamic 21st century facility with expanded, dedicated space for student design projects, and other multi-function modern laboratory space for teaching and research, an enhanced academic support center, and updated graduate student space, as well as a meeting place for the engineering community and interdisciplinary interaction, including STEM outreach and mentorship. We urgently need a modern facility that will secure our place among the nation's leading engineering schools and help us attract and hold the best faculty, researchers and students.

We understand that there are many valid and competing demands for our State's precious resources but I can't think of any more important investment for Hawaii's future than beginning the design phase of Hawaii's engineering education cornerstone.

We hope you will agree that Holmes Hall is more than ready for the next step.  
Thank you for your consideration.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Tep Dobry

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII  
COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of  
Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Tep Dobry, and I serve as Director of Academic Affairs for the  
University of Hawaii at Mānoa College of Engineering and faculty in Electrical  
Engineering. I am pleased to provide personal testimony on SB3116.

I joined the faculty of Electrical Engineering (EE) in 1989, served as Interim  
Assistant Dean in the College of Engineering from 2000 to 2004, and have been  
the Director of Academic Affairs since 2004 overseeing the advising, degree  
verification and student records of all engineering students in the college. I also  
continue to teach Computer Engineering courses in the EE department and  
advise a number of undergraduate student projects.

Over the years, I have seen several generations of engineering students  
graduate with engineering degrees and succeed in engineering careers in  
Hawai`i and on the mainland. From my unique perspective I get to see most  
students when they enter as freshmen, as they progress through their program  
and as they graduate and can appreciate the “value added” as our alumni  
become productive professionals and citizens.

Over those same years, I have seen the facilities in Holmes Hall age,  
deteriorate, and fall behind in effective pedagogy for modern engineering  
education. I am, therefore, grateful for this opportunity to upgrade our facility in  
Holmes Hall, and ask for your continued support in our efforts to educate future  
engineers. Mahalo.



Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Constantinos S. Papacostas

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**RE: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Mānoa, College of Engineering.

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Constantinos S. Papacostas, and I am the Chair of the Civil and  
Environmental Engineering Department of the College of Engineering , University of  
Hawaii at Mānoa. I am pleased to provide personal testimony in support of SB3116 that  
addresses a critical need supporting the social, economic and environmental vitality of  
the State of Hawai`i and its people.

The UH College of Engineering is the only accredited engineering school in Hawai`i that  
has, over the decades, has delivered the engineering education of the State's youth and  
has carried out significant research and service enhancing the health, safety and  
welfare of the people of Hawai`i. To enable continued excellence, it is imperative that  
the college be equipped with up-to-date facilities.

It is important to point out to you that the original physical plans for the College called  
for an "Engineering Complex" rather than a single building. As the then Dean of the  
College, John Shupe, explained in an interview that appeared in the August 25, 1973  
issue of the *Honolulu Advertiser*, "When the new engineering facilities were being  
planned in 1965, Holmes Hall was designed to house the engineering laboratories and  
the administrative offices of the college and its departments. Phase II, adjacent to it,  
was to have been almost as large as Holmes, and it was to house classrooms, an  
auditorium and faculty offices."

Budgetary and other considerations forced the College into a situation of having to  
operate within practically half the planned space and to shoehorn most laboratories and  
offices within a single building.

After more than forty years of “benign neglect,” Holmes Hall is in desperate need of renovation to accommodate increasing enrollments, and developments in high technology that have transformed the nature of engineering education.

Approval of the planning for and the design of the sorely needed renovations of Holmes Hall is the first step toward accomplishing this worthy goal.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Wayne A. Shiroma

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Wayne Shiroma, and I serve as Professor and Chair of the Department of  
Electrical Engineering, College of Engineering, University of Hawaii at Mānoa. Mahalo  
for the opportunity to provide personal testimony on SB3116.

I attended UH Manoa as an engineering undergraduate in the 1980s, when Holmes Hall  
was just a decade old. After ten years on the mainland, completing my MEng and PhD  
degrees and working in the aerospace industry, I returned to UH Manoa as a faculty  
member in 1996, and became the Department of Electrical Engineering (EE) Chair in  
2013.

When talking to EE department chairs at mainland institutions, I am repeatedly and  
pleasantly reminded of how UHM's EE Department achieved international recognition in  
the 1970s, when a group of faculty researchers developed the theories and techniques  
that eventually evolved into the wireless data networks that drives today's consumer  
market (cell phones, iPads, wireless laptops, etc.).

Four of our faculty members are currently recognized as IEEE Fellows, whose annual  
grade elevation is limited to one-tenth of one percent of the general IEEE membership  
(425,000 in 160 countries). Several of our faculty won the highly competitive NSF  
CAREER or Presidential Young Investigator awards, recognizing the top engineering  
educators in the nation. Our faculty has also established a number of start-up  
companies that provide well-paying jobs for our graduates.

Since 2001, four of our undergraduates were recognized as the top electrical or  
computer engineering students in the nation, averaging to about one every three years.  
Our electrical and computer engineering students have recently begun to compete in  
the annual IEEE Xtreme Programming Challenge, and last year ranked 98<sup>th</sup> of 1838

teams worldwide. Our IEEE-HKN student honor society won the Outstanding Chapter Award seven years running. Last November, our students' nanosatellite (UH's first satellite) was launched into space as part of a record-breaking NASA/DoD mission that included 29 satellites.

These faculty and student achievements are just a sample of the many, many great things that we're already doing here in Manoa. But think how much more we can achieve with an engineering facility that is in urgent need of repair and maintenance, and more importantly, renovation that is conducive to today's collaborative, multidisciplinary, vertically integrated learning style that emphasizes open-ended projects and discovery-based learning.

In Fall 2012, every single urinal in the Holmes Hall 4<sup>th</sup> floor restroom was taped over with garbage bags because there were unusable (to his credit, Chancellor Apple had them repaired within a week after receiving a direct student complaint, but these restrooms are still so dingy that it is an embarrassment to our visiting high school students). The HVAC system is in need of upgrading...it is often too hot on warm days and too chilly on cold ones. Our classrooms are a throwback to the traditional lecture-style rooms of the 1970s and 80s, rather than modern classrooms that emphasize teamwork, multimedia, and project-based learning. Our laboratory complex throughout Holmes Hall is a labyrinth of small enclosed rooms, rather than the open, collaborative labs that I see at mainland peer institutions.

Having seen Holmes Hall from the student, faculty, alumni board member, and now department chair position gives me a unique perspective on how the needs of our facility has evolved over the past 30 years, and how our engineering facilities measures up against its peers across the nation. Recruiting great faculty, and convincing our top students to study engineering at home, starts first with improving our facility.

I have told my students that an opportunity like this comes only once every half century or so, and to take full advantage of the fact your committee is taking the time to consider this bill. I am grateful for the support you have shown so far, and respectfully ask for your continued support for our physical infrastructure as I commit to continued excellence in training our students.



**Personal Testimony Presented before the**

**Senate Committee on Higher Education**

**Thursday, February 06, 2014 2:45 PM**

**Conference Room 414, State Capitol**

**by**

**(Mehrdad M. N. Ghasemi Nejjhad)**

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Mehrdad M. N. Ghasemi Nejjhad and am a Faculty of the University of Hawaii at Mānoa, College of Engineering (Mechanical Engineering). I am also a Professor and the Chair of the Department of Mechanical Engineering. I am pleased to provide personal testimony in support of **SB3116**.

I strongly support SB3116 and respectfully request your approval of the requested appropriation to the University of Hawaii, College of Engineering.

Holmes Hall is home to the College of Engineering (COE) on the UH Manoa campus. COE is the flagship program and has been the only accredited engineering school in Hawai'i that has delivered engineering education to the State's youth and has carried out significant research and service contributing to the health, safety, and welfare of the people of Hawai'i. While the College has been successful in continuing to receive accreditation for the engineering program in the State, it has always been difficult to implement new laboratories with new cutting edge technologies or even meaningfully upgrade the existing facilities in a building that was built 42 years ago without any substantial renovation since then. In addition, the renovations are also necessary to positively reflect on our program accreditations in the College, and help in continuing to receive the accreditation of our engineering programs. Building capabilities that were designed and implemented over 40 years ago are not adequate and responsive to the needs of modern technologies, and certainly needs upgrading after over 40 years to serve our students and State well. In addition, with the ever growing needs of our society to engineering and STEM education and ever growing population of our Engineering students, even compared to a few years ago, our students population has grown out of the current space available to them in Holmes Hall with the over 40-year old design of the classroom and laboratories that need redesigning to make efficient use of space while upgrading and modernizing the facilities to provide a contemporary environment for our engineering students accommodating both technological advances in the field as well as make room and space for ever growing population of our students bodies to be housed in the current insufficient space and facilities of Holmes Hall. Furthermore, as the engineering education is vital to our community and the economic development of our State, it is imperative that renovations of Holmes Hall be planned

and subsequently be implemented without delays. Students team projects and hands-on laboratory work play important role in training and educating practicing engineers of today. These projects are funded by our community supporters and potential employers both locally and nationally. The Holmes Hall Renovation will also enable our students to participate in many hands-on projects of current interest, hence diversifying the State's economy. Furthermore, new and modern engineering facilities will help the College recruit and retain the best and the brightest of our local students, help faculty better educate the students, expand course offering using state-of-the-art labs, provide better facilities for carrying out competitive research, and equally important maintain the program accreditation at a highest level. It is difficult to show that we have progressive engineering program with the current condition of our aging building and deteriorating facilities. It is critical for the College to give prospective students the impression that they will be attending a first rate engineering college. Your approval of SB 3116 is not only desirable but also commendable as it will help the College of Engineering strive and reach its full potential as the flagship engineering college in the State of Hawaii.

Mehrdad M. N. Ghasemi Nejhad, Ph.D., Professor and Department Chair  
ASME Fellow & Boeing Welliver Faculty Fellow  
Founding Director: Hawai'i Nanotechnology Lab., Composites Lab. & Smart Structs. Lab.,  
Associate Editor: Journal of Thermoplastic Composite Materials  
ABET Chair, SAE & SAMPE Faculty Advisor  
Department of Mechanical Engineering  
University of Hawai'i at Manoa  
Address: 2540 Dole St. Holmes Hall 302, Honolulu, Hawaii 96822, USA  
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E-mail: [nejhad@hawaii.edu](mailto:nejhad@hawaii.edu)  
URL: <http://www.eng.hawaii.edu/~nejhad>

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
James R. Yee

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is James Yee, and I serve as an associate professor in electrical engineering at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

The UH College of Engineering serves a very important function to the State of Hawaii. For students from Hawaii, the College provides one of the most rigorous programs of study. The training that the students receive in engineering prepares them for a good job and career. Over the decades the facilities (Holmes Hall) has greatly deteriorated. For the sake of our students, I strongly request that you decide in favor of the renovation of Holmes Hall.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Galen Sasaki

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Galen Sasaki, and I serve as an associate professor of the University of Hawaii at Mānoa College of Engineering in the Department of Electrical Engineering. I am pleased to provide personal testimony on SB3116.

The renovation of Holmes Hall will provide new learning spaces not currently in the building. In particular, we are in need of spaces where students can work on projects in an innovative and collaborative environment. The space I use for student projects is a traditional electronic instructional laboratory with benches and lab equipment (power supplies, digital multimeters, oscilloscopes) per bench.

This is sufficient for traditional laboratory instruction which is to follow a set of lab instructions, often reinforcing the content of lectures with experiments and measurements. However, *it is not well suited for student projects that require innovation and collaboration*. It does not have enough space for student groups to brainstorm projects since having 10 student groups of 3 to 5 students each can become quite crowded and noisy. The space does not have extra room to have sufficient whiteboards or room to put easels and flipchart pads for the student groups to brainstorm and basically discuss their ideas and plans. It also needs more room for presentations to larger groups. Since there is no other space available in Holmes Hall, we are stuck in this situation.

I provide this personal testimony since this renovation will lead to better training and experience of our students and to an innovative and highly skilled work force.



Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Yingfei Dong

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Yingfei Dong, and I serve as an associated professor at the Dept. of Electrical  
Engineering, College of Engineering, University of Hawaii (UH) at Mānoa. I am pleased  
to provide personal testimony on SB3116.

I joined UH in Aug, 2003, and taught both undergraduate and graduate students at the  
department for last 10 years. I have the first hand experiences in and out classrooms  
while also advising undergraduate and graduate research projects.

The facility at Holmes Hall is barely working for daily teaching and research. I have  
National Science Foundation awarded projects and purchased several servers for the  
research. But we do not have space to put them. We have to put them into graduate  
research assistants' office. As no sufficient AC and chalk dusts in the room, two servers  
had been crushed, and we lost valuable data and time in fixed minor issues like this. It  
often so frustrated due to such unnecessary setbacks.

The AC at Holmes Hall is very low efficient and very little control. I have to wear jackets  
or sweaters in my office all year long, because it is too cold and I have no way to adjust  
the temperature. Such energy waste can be easily fixed with a simple control system.

When I came to UH in 2003, I was really surprised that UH does not recycle batteries  
and papers. While so much papers are used at the college, it would a big saving to set up  
recycle stations, especially we are education facility.

I am often embarrassed when we have guests who need to use the restrooms. I don't  
mind they are old, but they need to clean and functional. There is often something not  
working. It is really bad for our image, e.g., for industrial visitors or recruiters, research  
collaborators or high school students.

Our teaching and research facility definitely need to be significant improved. While I was at UH in the past decade, the building only got worse. I have seen some brilliant undergraduate students who went to California universities for graduate schools, simply because they do not feel we have sufficient facility for their education.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Matthias Fripp

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII  
COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawai‘i at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Matthias Fripp, and I have the privilege of serving as an Assistant Professor of Electrical Engineering in the University of Hawai‘i at Mānoa College of Engineering. Thank you for the opportunity to provide personal testimony on SB3116.

My teaching and research focus on the opportunities and challenges in using very large shares of renewable energy in the power system. Hawai‘i is an ideal environment for this work because of its abundant sunshine and strong commitment to renewable energy. Clean energy is becoming a strong focus of the College of Engineering, and I believe this can become an area of unique strength for the University, attracting the best students from local and mainland schools. Many of these students will stay in the State and help build and expand our future clean energy economy.

However, it is difficult to recruit the best students into a visibly dilapidated working environment with substandard facilities. It is a source of grim humor when I explain to students in my class on “smart grids and renewable energy” that the reason the classroom is so cold is because the air conditioners were installed at a time when electricity was too cheap to worry about. The air conditioning system blows a constant, unregulated volume of cold air into every room. Worse, in the few rooms where thermostats are still functional, they activate heating coils in the ductwork, burning even more energy (and money) to reheat the air to a comfortable temperature. This may inspire students with ideas for retrofit projects, but it does not make it clear that they are studying in a world-class institution.

The physical layout of Holmes Hall also makes it difficult to adapt to the changing technical and economic world and to capture synergies between the diverse faculty of the College of Engineering. For example, I am seeking funding from the National Science Foundation to work with students to design home appliances that can dynamically adapt to the supply of renewable energy in the power grid. This requires pulling together data and power lines from rooftop solar panels and sensors, as well as electrical and plumbing

connections for the appliances themselves. However, setting this up is difficult or impossible with the building's antiquated overhead access spaces. I have also been unable to find open, collaborative space where this project could share facilities with smart-grid research by other colleagues. The renovations enabled by SB3116 will allow the College to cluster related work together, and also provide stronger access to the data and other connections needed in a modern College of Engineering.

In my years at the UH College of Engineering, I have been inspired by the knowledge and experience of my colleagues and the enthusiasm and aptitude of our students. This is indeed a world-class place for education and research, but that status must be bolstered by adequate facilities. Thank you very much for considering SB3116, to renovate and modernize Holmes Hall.



UNIVERSITY  
of HAWAII®  
MĀNOA

College of Engineering  
Department of Mechanical Engineering

DATE: 5 February 2014

TO: Senate Committee on Higher Education  
Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and  
Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill  
N. Tokuda, Sam Slom.

FROM: Brian Bingham, Associate Professor, Mechanical Engineering

SUBJECT: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the  
University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414

I am a faculty member at the College of Engineering, University of Hawaii at Manoa. As a faculty member I consider the renovation and maintenance of Holmes Hall to be a critical part of our efforts to fulfill our mission to prepare students for a career in engineering. Every day the faculty here in the College are working hard to provide new opportunities for our students. In my experience, many of these students have tremendous potential and are motivated to try to stay in Hawaii after they graduate. An engineering degree offers them a pathway towards a successful career in Hawaii, a career with the potential to improve the state and to provide a living wage in a state with one the highest costs of living in the world.

The past successes of the College in recruiting and the demand for new engineers has prompted a doubling of our enrollments. We cannot sustainably support this level of enrollment with our current resources. It is often the case that we cannot offer the classes that students need because we simply don't have the room---classrooms or instructional laboratories with enough space to meet our student demand. Students are faced with the choice of delaying their degree or transferring to a mainland school. We lose many of our best students to mainland schools simply because we don't have the facilities to support them.

If the State of Hawaii is truly dedicated to providing better opportunities for our young people, diversifying our economy and keeping our best and brightest students here in the State, then I believe it is imperative to invest in providing the facilities to educate students that want to enter engineering and technological fields. Their first step is an engineering degree.

2540 Dole Street, Holmes Hall 302  
Honolulu Hawaii, 96822

Thank you for your consideration.

Brian Bingham  
Associate Professor, Mechanical Engineering  
University of Hawaii at Manoa

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Tao Yan

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Tao Yan, and I serve as an associate professor of Civil and Environmental  
Engineering at the University of Hawaii at Mānoa College of Engineering. I am pleased  
to provide personal testimony on SB3116.

As a 42-year old building, **the Holmes Hall is in urgent need for renovation in order to meet the research mission of College of Engineering.** Since I joined UH as an assistant professor seven years ago, I have obtained more than one million external research funds and have graduated seven graduate students for local engineering firms. However, the lack of laboratory space and the outdated laboratory design are severely limiting my research and education of future engineers. I share the Environmental Laboratory (Holmes 286) with several other faculty members from both Civil and Environmental Engineering and Water Resource Research Center. Each of us gets a small corner of the lab, and we have to really work to find a space for our equipments. My graduate students and postdocs each get a small bench space to do their work, and once I have had to put their office desks in a room next to storage shelves and noisy freezers. The lab was designed 42 years ago, and the engineering research landscape has shifted a lot. Holmes 286 has close to uniform bench design, which is not conducive for modern interdisciplinary research that requires different lab layouts and configuration.



Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
(David Ma)

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is David Ma, and I serve as Associate Professor of the University of Hawaii at  
Mānoa College of Engineering (808-9567377). I am pleased to provide personal  
testimony on SB3116.

I have been chairing the ABET committee since 2010, prior to that I had been involved in  
the ABET accreditation of the Civil Engineering program for many years. As you may  
have known, adequacy of facilities is one of the seven required criteria of the ABET  
accreditation. The Civil Engineering program has been successful in getting accredited,  
however, issues were raised about the adequacy of our facilities being on the borderline  
in the last ABET visit a few years ago. Due to the size of our current enrollment, it is very  
likely this issue will be raised again, which may eventually lead to loss of accreditation.  
The negative impact of losing accreditation certainly is too costly for the State to afford  
and cannot be overestimated. Passing this bill will not only strengthen our accreditation,  
it will also provide a much better learning environment for the students, allowing us to  
produce high-quality future engineers necessary for the State.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Adrian Ricardo Archilla

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Adrian Ricardo Archilla, and I serve as Associate Professor of Civil and  
Environmental Engineering at the University of Hawaii at Mānoa (UHM) College of  
Engineering. I am pleased to provide personal testimony on SB3116.

After coming to UHM in 2002, I created the Pavement Engineering Laboratory with  
funding from both research projects and UHM. The laboratory has advanced testing  
equipment with estimated worth in the order of half a million dollars.

The laboratory is used for teaching and research. For teaching, it is used to conduct  
laboratory sessions on Hot Mix Asphalt mix design in the class CEE 461 - Pavement  
Engineering. In this class, students are introduced to pavement design, Hot Mix Asphalt  
concrete mix design, and the relationship between mix design and pavement design for  
flexible pavements. The laboratory sessions provide a unique opportunity for students  
to connect the theory with the performance of the material and to demonstrate the  
measurement of some of the properties of Hot Mix Asphalt.

In addition to the use in CEE 461, the lab is also used in a graduate class CEE 661 –  
Pavement Design and Rehabilitation and for performing research. In research projects,  
undergraduate student assistants gain additional experience beyond that of a class.

The planned renovation of Holmes Hall will help to deliver a better experience to our  
undergraduate students and provide a safer environment. Currently, the lack of space  
results in significant waste of time and effort. Specifically, it has been common for the  
class size to be in the order of forty students (senior students are required to take a  
senior transportation class and CEE 461 is one of the three choices.) However, the lab  
has enough space to fit only about eight students. Consequently, the lab sessions need  
to be divided into several slots, particularly in those labs where students are expected to

have active participation. Furthermore, depending on the test that needs to be performed, equipment and materials need to be moved around, with the consequent waste of effort and time. In addition, these additional activities and the large number of students increase the probability of accidents.

Thus the renovation of Holmes Hall will ensure that the College is able to provide its graduates a safer environment and a better learning experience on a par with or superior to those they could obtain on the mainland.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Aaron Ohta

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Aaron Ohta, and I serve as an Associate Professor in the Department of  
Electrical Engineering of the University of Hawai'i at Mānoa College of Engineering. I am  
pleased to provide personal testimony on SB3116.

After graduating from Kalani High School in 1999, I became an electrical engineering  
student in the College of Engineering. At that time, Holmes Hall was over 25 years old,  
and was already beginning to show its age. Fortunately, the dedicated faculty were still  
able to provide me with a quality education, enabling me to go on to graduate studies at  
UCLA and UC Berkeley. After graduating from UC Berkeley, I was fortunate enough to  
return to Mānoa as a faculty member. I know other College of Engineering classmates  
are also contributing to the State of Hawai'i, the nation, and the world as practicing  
engineers in government and industry jobs, and I know that former students of mine are  
doing the same.

It is now about 15 years since I first experienced Holmes Hall as a student. Since then,  
we have had tremendous advances in how we communicate (smartphones, video calls,  
increased data rates), how we compute (tablet computers, smaller and faster laptops,  
wearable computers), how we travel (hybrid and electric vehicles), and how we work  
(increased automation, widespread use of robotics). All of these advances were brought  
about by engineers. However, the facilities at Holmes Hall have not kept up with the  
advances made by the engineers learning and working there.

Extramural funds have been brought in by College of Engineering Faculty to purchase  
expensive state-of-the-art equipment for our students, only to have rooms in Holmes  
Hall rendered unusable due to leaks in the roof. Mold in the central air-conditioning  
system has made it impossible to do biomedical research in Holmes Hall, even though  
this is one of the fastest-growing disciplines in engineering. The classrooms reflect the

teaching practices prevalent during the 1970s, where professors would lecture while students dutifully took notes. This makes it challenging to implement modern techniques that emphasize student engagement, team exercises, and project-based learning. Updates to Holmes Hall are needed to maintain the quality of the research and education of our engineering programs.

Holmes Hall does not only affect engineering students. There are many outreach events that are conducted by the College of Engineering. I have personally participated in many events. For example, we have an annual Open House at the College that is well-attended by prospective students, parents, and interested community members. I regularly give tours to these participants, who are impressed with the research and projects being performed in the College. However, it is embarrassing to show some of the labs to the visiting community members. This probably does not help with student recruitment. Hawai'i's students are some of the best in the nation. I have personally hosted Hawai'i students in my lab who have gone away to the mainland for school, but wanted to do some research while home for the summer. They are coming from institutions like Stanford, Columbia, and Johns Hopkins. These are perfect opportunities to try and bring them back to Hawai'i for graduate school or for their career, but it is challenging to attract the best and the brightest with our less-than-sparkling facilities.

The State of Hawai'i plays the most important role in ensuring the continued success of our University. I thank you for your support, and hope that you will continue to support the upgrade of facilities for future generations of students.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Rui Zhang

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Rui Zhang, and I am currently an Assistant Professor of the Department of  
Electrical Engineering (EE), College of Engineering, University of Hawaii at Mānoa  
(UHM). I am pleased to provide my personal testimony on SB3116.

Back in 2000 when I was still an undergrad in China, I came to know UHM when I  
learned that ALOHAnet, the first wireless data network that pioneers the whole wireless  
industry, was invented by a group of EE faculty researchers here in 1971. Twelve years  
later, I joined the Department of EE as a faculty member, sitting in the office next door  
to the inventors of ALOHAnet and hoping that I could be part of the next breakthrough.

It did not take long for me to realize that the Holmes Hall where our department resides  
is in poor shape, to put it mildly. The elevators are slow and outdated, the urinals in the  
restrooms are frequently out-of-order, and the offices are often too chilly in spring and  
too hot in summer. More importantly, the classrooms in Holmes Hall were designed to  
suit traditional lecture-style teaching, which makes it extremely challenging for  
instructor to embrace modern teaching methods that heavily rely on IT technology and  
emphasize teamwork and project-based learning. In addition, the small enclosed lab  
rooms discourage collaboration among our students, which is the key for their academic  
success.

As a junior faculty member, I wholeheartedly support SB3116 and am truly grateful for  
your consideration and support.

Personal Testimony Presented before the

**Senate Committee on Higher Education**

Thursday, February 06, 2014 2:45 PM

Conference Room 414, State Capitol

by

David Garmire

**SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING**

**SUBJECT: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is David Garmire, and I currently serve as an Assistant Professor of Electrical Engineering in the College of Engineering at the University of Hawaii at Manoa. Before coming to UH, I received two BS degrees from Carnegie Mellon University (with University and College Honors) and a PhD from the University of California at Berkeley while doing research at the Berkeley Sensor and Actuator Center on microelectromechanical systems (MEMS). I have had the opportunity to conduct research and teaching at highly regarded laboratory spaces in these institutions, and I firmly believe that Holmes Hall, the heart of the COE, can become a world-renowned engineering facility in addition to housing an exceptional group of faculty, staff, and students in research, teaching, and innovation. Legislation such as SB3116 is critical in making this happen.

As a part of starting my faculty position at UH, I was given to manage a large amount of laboratory space, over 3000 square feet -- a major reason for me to join UH. My colleagues from Berkeley who went on to become faculty at places such as the University of Maryland, California Institute of Technology, and Stanford were impressed as well because, as every hardware researcher knows, laboratory space is incredibly valuable for coming up with the next generation of gizmos, and having students utilize state-of-the-art equipment and interact with each other.

For every potential reward, there is a challenge to overcome and a risk to take. Unfortunately, the space had leaks, broken equipment, decaying walls, damaged floors, non-functioning drains, broken ventilation systems, failing ceiling material, and significant rust to name a few of its many problems. I went to work. I jerry-rigged a syphon in the ceiling so that a major leak was redirected into a drain. I installed dehumidifiers to reduce rusting of precious equipment. Over months, I removed broken furnishings, equipment, and debris. Working with the Dean's Office and the Chancellor's Office over years, we were able to obtain funds to fix a couple of the problems including resurfacing a floor in some of the rooms. The administration and leadership were highly supportive in endeavors to revamp the space, but funds were limited. I collaborated with other departments to obtain shared equipment for rapid prototyping and to have

some essential processing capabilities.

To my surprise, students warmed up to using the space. The space was repaired to a functional level. And the students came. For the first time, students could make the devices that we had previously only talked about in class. Many simultaneous on-going projects emerged to use the laboratory space. Multiple faculty are involved. Collaborative projects with the College of Tropical Agriculture and Human Resources, the School of Architecture, the Institute for Astronomy, and the School of Ocean and Earth Science and Technology are now enabled by the College of Engineering making use of its space to solve some of their pressing engineering challenges.

Derived from a small investment of time, energy, and resources, this surge of interest from both students and faculty across campus leads me to believe a more sizeable investment would have a compounding and profound effect on the status of the College of Engineering. I see it as being an essential focal point of excellence in high technology and engineering bridging the East and the West. I have already seen our students graduate and become innovators abroad and in Hawaii winning numerous entrepreneurial challenges. I also see it as dominating research on novel renewable energy devices and cleantech as it is in an area with one of the highest costs for electricity due to imported oil that must be shipped across the Pacific Ocean. Much of my recent research has been in applying micro and nanotechnology to the clean energy domain. On top of Holmes Hall we have been able to work with facilities management, the Hawaii Natural Energy Institute, and the Pacific International Center for High Technology Research (PICHTR) to install a testbed for solar energy (including photovoltaic panels). Now with HECO we are working to install large capacity batteries and smart inverters in Holmes Hall to help advance smart grid research.

Asked to envision how we might make use of our renovation of Holmes Hall by a small committee last year, I foresee that much of the layout can and probably should be changed. Leveraging my collaboration with the School of Architecture, I was able to determine that many of the interior walls of the three central columns can be removed to allow for reconfigurable collaborative laboratory and research space (which has been successfully tried by a number of other universities) in addition to joining the columns to make several large spaces that can be used as student spaces. I foresee large student spaces are critical for fueling multidisciplinary student projects. Populating those spaces with prototyping, manufacturing, and testing tools would be the next step. I was pleased to find out that a successful demonstration of this concept has already been tried out at the new \$23 million Sullivan Center in the Iolani K-12 School. Students have been quick to make use of the facilities. I believe a similar overwhelmingly positive reception would be given at UH by undergraduate and graduate students alike as well as the faculty.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Garmire", with a horizontal line extending to the right.

Dr. David Garmire  
Assistant Professor of Electrical Engineering  
University of Hawaii At Manoa, College of Electrical Engineering



University of Hawaii  
Department of Civil and Environmental Engineering  
2540 Dole Street  
Holmes Hall 383  
Honolulu, HI 96822

February 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering, Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a professor in the Department of Civil and Environmental Engineering at the College of Engineering at the University of Hawai'i at Manoa (UHM). Our existing facilities in Holmes Hall are becoming increasingly decrepit and small. Our enrolment has grown steadily for the last 15 years since I joined UHM. Space is a real constraint and current facilities are in serious need of repair and maintenance with increased usage and wear and tear. If you approve this bill, you will make the facilities more comfortable for not just the staff and visitors but also the engineers of tomorrow. After all, these students will be the ones who will cater to the state's future infrastructure needs. They deserve to enjoy humane toilets, classrooms and laboratories while in our program.

The funds are also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore imperative that the facilities pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny. The loss of accreditation of the civil engineering program would be a major hardship as civil engineering students must graduate with an ABET-accredited degree in order to be licensed practitioners. Without accreditation, more than likely, many students would be forced to study civil engineering on the mainland.

Sincerely,

A handwritten signature in blue ink, which appears to read "Phillip Oka", is enclosed within a blue oval. The signature is written in a cursive style.

Professor

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
(Lloyd Hihara)

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Lloyd Hihara, and I serve as a professor of the University of Hawaii at Mānoa College of Engineering (Mechanical Engineering Department). I am pleased to provide personal testimony on SB3116.



# University of Hawaii at Manoa

College of Engineering

Department of Mechanical Engineering

Hawaii Corrosion Laboratory

Holmes Hall 302 • 2540 Dole St. • Honolulu, Hawaii 96822

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February 5, 2014

## **Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering, Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a professor in the Department of Mechanical Engineering at the University of Hawaii at Manoa. I received my BS in mechanical engineering from UH in 1983. I also received an MS and PhD from MIT in 1985 and 1989, respectively. In addition to teaching, I am active in research ( $\approx$  \$1M/yr), and am a member of the Department of Defense's corrosion consortium, which includes faculty from other universities such as Ohio State, Univ. of Akron, Univ. of Virginia, Univ. of Southern Mississippi, Air Force Academy, etc. Hence, research reviews are conducted at the various campuses on a rotating basis. I also travel to other universities for collaborative purposes, e.g., Chiba University, Japan.

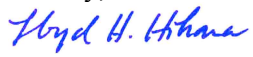
As a result of my research activities, I have been able to see the facilities of other engineering schools on a regular basis. All of the schools that I have mentioned above, even in these tighter economic times, have continued to modernize and expand their engineering facilities. Although engineering at UH received extra space in the POST building for offices and a few laboratories, the majority of the engineering activity is in Holmes Hall, which has been virtually unchanged since I was an undergraduate student over 30 years ago.

The feeling that one gets after visiting other engineering campuses is that the UH College of Engineering (COE) is operating under "bare bones" conditions, and is drastically falling behind national norms. At the UH COE, there is a lack of space for hands-on activities, class rooms, student club activity, and research laboratories. Without expansion and modernization, the engineering program cannot grow and excel, and many opportunities will be lost. It is difficult to impress sponsoring agencies with the current state of facilities in Holmes Hall.

The investment in the UH COE is needed and should not be postponed. Too many major industries in Hawaii depend on the UH COE to produce quality engineers. Without a workforce of highly educated engineers, the State of Hawaii will have a tenuous future.

University of Hawaii

Sincerely,



Lloyd H. Hihara

Professor of Mechanical Engineering

**From:** [mailinglist@capitol.hawaii.gov](mailto:mailinglist@capitol.hawaii.gov)  
**To:** [HRETestimony](#)  
**Cc:** [olgabl@hawaii.edu](mailto:olgabl@hawaii.edu)  
**Subject:** Submitted testimony for SB3116 on Feb 6, 2014 14:45PM  
**Date:** Wednesday, February 05, 2014 2:21:48 PM

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**SB3116**

Submitted on: 2/5/2014

Testimony for HRE on Feb 6, 2014 14:45PM in Conference Room 414

| <b>Submitted By</b> | <b>Organization</b> | <b>Testifier Position</b> | <b>Present at Hearing</b> |
|---------------------|---------------------|---------------------------|---------------------------|
| Olga Boric-Lubecke  | Individual          | Comments Only             | No                        |

Comments: I am Professor of Electrical Engineering at UH Manoa and would like to express my support for SB3116. Holmes Hall is in dire need of repair, as we repeatedly have issues with rain leaks, restrooms, and overall quality and appearance of the environments. Our students deserve to have access to the laboratories and classroom on the same level as provided to their peers at state institutions on the mainland.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email [webmaster@capitol.hawaii.gov](mailto:webmaster@capitol.hawaii.gov)

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Carrie Matsuzaki

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Carrie Matsuzaki and I serve as an assistant specialist at the College of  
Engineering at the University of Hawaii at Mānoa. I am pleased to provide personal  
testimony on SB3116 and apologize that I am unable to present my testimony in person.

I have been an employee of the University since 1988, working at the College of  
Engineering in Holmes Hall for this entire time. As coincidence would have it, when I  
was a student at UH Manoa in the early 1970s, I actually worked as a student assistant  
in Holmes Hall when it was a brand new building. Many things have changed over the  
years but the physical structure of Holmes Hall has not. The way we educate our  
engineering students has changed but Holmes Hall has not. The way we conduct  
engineering research for the benefit of society has changed by Holmes Hall has not.  
Holmes Hall really needs to be changed to better serve our engineering students.

As part of the dean's office team, I have been involved with space surveys and space  
allocations in Holmes Hall for over two decades. The growing need has been space for  
our students, not only for their classroom projects but also for their extramural projects  
like building a concrete canoe, a Formula race car, a micromouse. As the way we  
educate our students has changed from lecture/note taking classes to more hands-on,  
interactive learning, the need for project space for the students has grown. And with  
our enrollment increasing, more project space has to be found. Along with the growth  
in enrollment, we've had an increase in funded research which means that more space  
for research is also needed. Renovating Holmes Hall is the best solution to providing a  
quality education for our students as well as to support our research.

Thank you for your support.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Jill Nakatsu

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Jill Nakatsu and I serve as a Junior Specialist Faculty of the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

I was born and raised in Hawaii and graduated as the valedictorian of Pearl City High School. I received a University of Hawaii Regent's Scholarship in 2002 and attended and graduated with my BS in electrical engineering from the UH College of Engineering in 2006. I worked on in Arizona as an engineer for Medtronic, a medical technology company. After determining that I wanted to move back to Hawaii, I returned to the College of Engineering to work on my MS in electrical engineering. After graduating I applied for and now work as an academic advisor for the pre-engineering and engineering students at the University of Hawaii, College of Engineering.

I choose the University of Hawaii, College of Engineering for my undergraduate studies because of the great faculty and ability to work on and gain experience from hands-on projects. After working in industry and going through graduate school I realize the importance of engineering students being able to work in teams on research projects. Holmes Hall as it is now is not conducive for student work spaces. As an academic advisor, I have travelled to other campuses of all sizes that have these kinds of work spaces for their students. I have also attended conferences that have expressed the importance of providing research and project experiences for student success and an integral part of getting those experiences is having an appropriate place to work on them. Without these facilities, the College of Engineering at the University of Hawaii at Manoa will lose out on attracting our own promising engineering students. We are the only engineering school in the state so if we cannot keep our bright Hawaii students they will move on to schools on the mainland. It is essential that Hawaii supports its only engineering program at the University of Hawaii at Manoa to keep our brightest students in Hawaii as well as help to grow Hawaii's economy through support of Hawaii's technology industry.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

By  
Todd R. Reed

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Todd Reed, and I serve as Professor of Electrical Engineering in the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

I joined the University of Hawaii in 2002. Previously, I held positions at the University of Minnesota (where I was also a student), the Ecole Polytechnic de Lausanne in Switzerland, Linköping University in Sweden, and the University of California, Davis. As a result, I have experienced a range of physical plants and approaches to maintenance. The Electrical Engineering Building at the University of Minnesota was built in 1924. Our building in Lausanne was less than a year old.

Shortly after joining UH, I was appointed Department Chairman for Electrical Engineering. I immediately became aware of the severe maintenance issues in Holmes Hall. For example, I came to work one morning to find the hallway in front of the department offices flooded with over an inch of water. We are in the top floor of the building, and the roof has leaked for years. While various attempts have been made at repairs, roof leaks remain an issue. As one can imagine, this is a major safety concern for laboratories in Electrical Engineering.

On a more personal note, I received laboratory space from a retired faculty member shortly after my arrival. The room was infested with mold, to the extent that I feared for the health of any students working in the space. I spent an entire summer disinfecting and repainting the laboratory (using materials obtained at my own expense). The ductwork louvers were so corroded (and mold infested) that I had to remove them. I was promised that this would be addressed by UH Facilities. After over 10 years, it has not.

I sincerely hope that SB3116 will pass, so that these (and many other) issues can be addressed.



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February 4, 2014



**Senate Committee on Higher Education**

Honorable Senators Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Gilbert S.C. Keith-Agaran, Michelle N. Kidani, Jill N. Tokuda, and Sam Slom

**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering**  
**Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a licensed civil engineer in the State of Hawaii and alumnus of the College of Engineering, and our firm employs several graduates of the College of Engineering at the University of Hawai'i at Manoa (UHM). These UHM graduates are essential for our firm's continued success, and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM continue to receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practices.

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, and supports the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given their limited resources while the College's enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovations, it has been even more difficult to keep up with this rapidly evolving pace of engineering as it is taught and practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

Appropriation of funds for the Holmes Hall renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore absolutely imperative that the facilities provided by the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle starting in 2015. The current deteriorated condition of Holmes Hall that has been without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, mechanical, and electrical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. Furthermore, graduates of the College's programs would not be as desirable to the professional engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many local students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields, and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000, which is two times greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

I appreciate the continuing efforts of your committee and the members of the Senate to improve the quality of education in Hawaii. Thank you for the opportunity to express my views in SUPPORT of this bill.

Respectfully submitted,  
Brown and Caldwell

A handwritten signature in black ink, appearing to read 'Douglas B. Lee', written in a cursive style.

Douglas B. Lee, P.E.  
Vice President

P.O. Box 17127  
Honolulu, HI 96817  
E gnohara@GenbaHawaii.com



P 808.356.8755  
C 808.479.7468  
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**Genba Hawaii, Inc.**  
Civil Construction Consulting

February 4, 2014

**Senate Committee on Higher Education**

Subject: **TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering (UHCOE),  
Hearing: Thursday February 6, 2014, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Glenn Nohara, president of Genba Hawaii, Inc. I am a 1973 graduate of the UHCOE. I am also the current president of the Engineering Alumni Association of the University of Hawaii (EAAUH), recently served on the college's Civil & Environmental Engineering's Industry Advisory Committee and am one of the industry mentors in the college's senior design class (CEE490), where I will be at the time of this hearing. I have personally interacted with many of the UHCOE staff and faculty, and can personally attest to the excellent quality of people we have. I have seen the desire and willingness of our students to learn and to be able to hit the ground running when they enter the workforce.

As you are probably aware, the UHCOE is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

I am also a national director of the Associated General Contractors of America (AGC) and have attended numerous conferences where engineering students from colleges all over the country showcase their design projects in team competitions. These projects incorporate basic engineering design principles in high tech graphical and multi-media presentations using building information modeling technology (BIM). Holmes Hall was built in a period when we were still using slide rules. I am afraid that if we do not upgrade our infrastructure, we will lose the ability to effectively educate our students so that they can compete for engineering jobs anywhere in the country or the world.

I **strongly support SB3116** and respectfully ask this committee to pass it.

Yours truly,

Glenn M. Nohara  
Genba Hawaii, Inc.

February 4, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Gilbert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

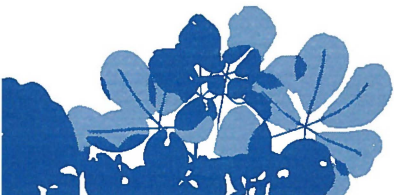
**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a registered professional Civil Engineer and owner of a Civil Environmental Engineering firm here in the State of Hawaii. I am also a proud graduate of the University of Hawaii at Manoa (UHM), College of Engineering. Our firm and the State of Hawaii depend upon the College of Engineering to provide high quality engineering graduates who are essential for our firm's continued success and more importantly, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice and face future challenges of our State – infrastructure needs, sustainable development, energy and resource management and climate change.

As you are aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given the limited resources while their enrollment has doubled, and their faculty and program funding has dwindled. Holmes Hall was built 42 years ago (when I was starting as a freshman at UH in 1971 – using a slide rule). The facility has served the State well without any substantial renovation; however, it is long overdue for renovation and upgrade to accommodate the demands of new technology and methods. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary learning environment in which they are able to develop their knowledge of the fundamentals of the engineering profession, and keep Hawaii's best and brightest young people from being lured away to "sparkling" state-of-the-art facilities on the mainland.

Appropriation of funds for the Holmes Hall Renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's



only engineering accreditation organization. It is therefore absolutely imperative that the facilities provided by the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle starting in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

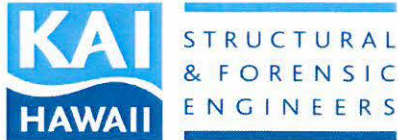
Very truly yours,

FUKUNAGA & ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Jon K. Nishimura", written over a horizontal line.

Jon K. Nishimura, P.E.  
President





Ken Hayashida, P.E. | *President*  
Michael Hunnemann, P.E. | *Vice President*

February 3, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering**  
**Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a practicing engineer in the State of Hawaii/and an alumnus of the College of Engineering, and KAI Hawaii, Inc. depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates, student interns, and returning College alumni from the US mainland. These graduates are essential for KAI Hawaii's continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty has done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

Appropriation of funds for the Holmes Hall Renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore absolutely imperative that the facilities provided by the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle starting in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. Furthermore, graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i

salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Sincerely,

KAI Hawaii, Inc.

A handwritten signature in black ink, appearing to read 'Ken Hayashida', with a long horizontal flourish extending to the right.

Ken Hayashida  
President



501 Sumner Street  
Suite 620  
Honolulu, Hawaii 96817  
Phone: (808) 531-1308  
Fax: (808) 521-7348  
[www.ssfm.com](http://www.ssfm.com)

February 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair  
Gilbert Kahele, Vice Chair  
David Y. Ige, Member  
Gilbert S.C. Keith-Agarian, Member

Michelle N. Kidani, Member  
Jill N. Tokuda, Member  
Sam Slom, Member

**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

As a practicing engineer in the State of Hawaii, an alumnus of the College of Engineering, and the President/CEO of SSFM International, I support SB3116.

Our company depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates. These graduates are essential not only for our company's continued success but especially for the continued health of the engineering and construction industry in Hawaii.

The UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Built 42 years ago, and without any substantial renovation since then, the planned renovation of Holmes Hall will ensure that the College will be able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of engineering while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

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Respectfully submitted,

SSFM INTERNATIONAL, INC.

Michael P. Matsumoto, P.E., FACEC  
President/CEO





February 4, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige,  
Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

**Subject: TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the  
University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

We are practicing engineers in the State of Hawaii and alumna of the College of Engineering. Our locally owned company, Engineering Concepts, Inc. depends on recruiting employees from recent graduates of the College of Engineering at the University of Hawai'i at Manoa (UHM). These UHM graduates and returning alumna from the mainland are essential for Engineering Concepts, Inc.'s continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

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graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

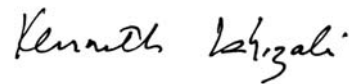
Engineering Concepts, Inc.



Myron Nomura  
President



Craig Arakaki  
Executive Vice-President



Kenneth Ishizaki  
Vice-President



SSDA, INC.

**S. S. DANNAWAY ASSOCIATES, INC.**

FIRE PROTECTION ENGINEERS/BUILDING CODE CONSULTANTS

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Web: [www.ssdafire.com](http://www.ssdafire.com)

5 February 2014

Senate Committee on Higher Education

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a practicing engineer in the State of Hawaii. Also many of our engineering employees are alumna of the College of Engineering, and our firm depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates and student interns. We currently have 6 UH engineering graduates on our staff and two engineering student interns. These graduates and interns are essential for our continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

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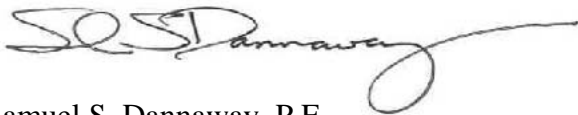
5 February 2014  
Senate Committee on Higher Education  
Subject: TESTIMONY IN SUPPORT of SB3116  
Page 2

It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is twice the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Sincerely,

S. S. DANNAWAY ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "S.S. Dannaway", with a long, sweeping horizontal line extending to the right.

Samuel S. Dannaway, P.E.  
President and Chief Fire Protection Engineer



**Gray • Hong • Nojima & Associates, Inc.**  
CONSULTING ENGINEERS

*Daniel S. C. Hong, PE  
Sheryl E. Nojima, PhD, PE  
Michael H. Nojima, PE, LEED AP  
Audrey Y.T. Yokota, PE  
Toby T. Hanzawa, PE, LEED AP  
Gavin Y. Masaki, PE, LEED AP  
Winston M. Taniguchi, PE*

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**201 Merchant Street, Suite 1900  
Honolulu, Hawaii 96813  
Telephone: (808) 521-0306  
Fax: (808) 531-8018  
email@grayhongnojima.com**

February 4, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii  
College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a principal and one of the owners of a local small business consulting engineering firm, Gray, Hong, Nojima & Associates, Inc. I am also a proud graduate of the University of Hawaii (UH), College of Engineering. Our firm is a small business and depends on the University for engineering employees in the form of graduates and returning College alumni from the US mainland. These graduates are essential for our continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UH Manoa receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

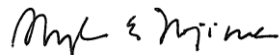
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graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2 time greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Sincerely,

GRAY, HONG, NOJIMA & ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Sheryl E. Nojima". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Sheryl E. Nojima, PhD, PE  
President





1132 Bishop Street  
Suite 1100  
Honolulu, HI  
96813  
Tel 808.943.1133  
Fax 808.954.4400

February 4, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a practicing engineer in the State of Hawaii and our Honolulu office depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates, student interns, and returning College alumni from the US mainland. These graduates are essential for our continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

Appropriation of funds for the Holmes Hall Renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore absolutely imperative that the facilities provided by the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle starting in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. Furthermore, graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted that to become a licensed professional

engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

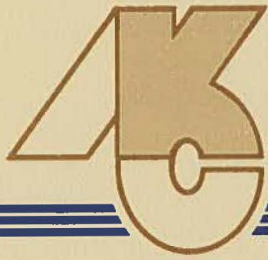
Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

CH2M HILL



Kathleen Chu, P.E.  
Vice President/Area Manager





**ALBERT C.  
KOBAYASHI, INC.  
GENERAL CONTRACTORS**

Gentry Business Park • 94-535 Uke'e Street  
Waipahu, Hawaii 96797 • Phone (808) 671-6460 • FAX 676-5832 • Lic. #ABC-07819

February 4, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a General Contractor in the State of Hawaii, and our company depend on many of its engineering employees coming from the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates, student interns, and returning College alumni from the US mainland. These graduates are essential for our company's continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

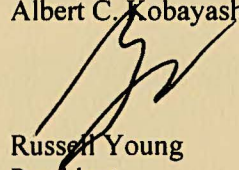
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Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Albert C. Kobayashi, Inc.

A handwritten signature in black ink, appearing to read 'Russell Young', is written over the printed name.

Russell Young  
President



**AKINAKA & ASSOCIATES, LTD.**  
Consulting Civil Engineers

February 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I submit this testimony in support of SB3116.

I am a licensed professional engineer in the State of Hawaii and an alumnus of the University of Hawaii at Manoa, College of Engineering, and our engineering company depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates, student interns, and returning College alumni from the US mainland. These graduates are essential for our firm's continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice. Many of our employees started as student interns from UHM, College of Engineering. In fact, our most recent hire, a student intern, starts with us tomorrow (February 6, 2014).

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

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**AKINAKA & ASSOCIATES, LTD.**  
Consulting Civil Engineers

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Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Akinaka & Associates, Ltd.



Ken C. Kawahara  
President



February 4, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

As a licensed Civil engineer in the State of Hawaii and an alumnus of the College of Engineering, our organization, Community Planning and Engineering, Inc (CPE), is dependent upon its recent graduates, and student interns as current and/or employees. These graduates/student interns are essential for CPE's continued growth and success in advancement of the engineering and construction industry in Hawaii. We personally feel that the University of Hawaii at Manoa (UHM) engineering graduates need to receive the most up-to-date education in order to help promote the advancement of engineering field.

Holmes Hall is the hub of engineering on the UHM campus. Holmes Hall was constructed in 1972, and no substantial renovation has been done. The planned renovation of Holmes Hall will ensure that the College of Engineering will be able to provide a modern environment for the student engineers.

Appropriation of funds for the Holmes Hall Renovation is also critical for the continued accreditation by the Accreditation Board for Engineering and Technology (ABET). Therefore it would be highly recommended of the UHM to provide facilities, which ensures accreditation. The current condition of Holmes Hall without adequate renovation may expose the College's programs to a greater degree of assessment since many of the ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the Civil, Electrical and Mechanical engineering programs would undoubtedly create a major hardship on the engineering students as well as the Hawaii engineering community. Furthermore without the accreditation, graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii or nation-wide, students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland. It is to the community's advantage that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Community Planning and Engineering, Inc.



Richard Y. Santo, P.E.  
Project Manager

February 04, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a Civil Engineer in the State of Hawaii/and alumnus of the College of Engineering, and our organization – Community Planning and Engineering Inc.'s depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates, student interns, and returning College alumni from the US mainland. These graduates are essential for our organization's continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

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the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Community Planning and Engineering, Inc.

Om Swarup Das  
Civil Engineer

Roy K. Abe  
46-291 Kupale Street  
Kaneohe, Hawaii 96744  
Ph. 808-247-3297

February 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering, Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Roy Abe and I am a licensed civil engineer in Hawaii with approximately 33 years of consulting experience in the sanitary engineering field. I am a vice president with the Honolulu office of HDR Engineering, Inc. My educational background includes a B.S. degree in civil engineering from the University of Hawaii, and a M.S. degree in civil and environmental engineering from the University of California at Berkeley.

The College of Engineering at the University of Hawai'i at Manoa (UHM) is a critical source of engineers in our state. It is extremely important to maintain the high quality of engineering education in Hawaii. Our aging infrastructure throughout the state is in dire need of upgrade and rehabilitation work, and the scope and projected costs of this work are very significant.

Quality engineering performed by well-educated engineers has significant benefits to the public. It results in the planning and design of optimally designed projects that cost-effectively meet the needs of the public. Capital expenditures are reduced by competitive bidding promoted by quality contract documents. In addition, good reliability and functionality is achieved, and operation and maintenance costs are minimized. Solid engineering results in delivery of projects with minimal change orders, cost overruns and construction delays.

Quality engineering education requires talented and well-qualified engineering faculty. To attract and retain quality faculty and secure research funding, adequate if not superior research facilities must be provided. Providing the necessary laboratory space and equipment for both faculty and students is critical. As a former member of the College of Civil Engineering Industry Advisory Committee (IAC), I have toured the current facilities at the college and know first hand that a significant amount of additional funding and support is required to maintain and upgrade the laboratory and classroom facilities at Holmes Hall.

I urge you to support SB SB3116 to provide the college with the necessary supplemental funding to allow UHM to continue to produce quality engineering graduates that will needed in the ongoing effort to improve the economy, lifestyle and environment for our residents.

Sincerely,

  
Roy K. Abe





# ASUH

Associated Students of the University of Hawai'i

YOUR STUDENT GOVERNMENT

Testimony Submitted Before the  
Senate Committee on Higher Education  
February 6, 2014 at 2:45 p.m.

by

Richard Mizusawa, President  
Associated Students of the University of Hawai'i at Mānoa  
101<sup>st</sup> Senate

RELATING TO THE UNIVERSITY OF HAWAII

Chair Taniguchi, Vice-Chair Kahele, and Members of the Senate Committee on Higher Education:

My name is Richard Mizusawa and I serve as President of the Associated Students of the University of Hawai'i at Mānoa (ASUH), the undergraduate student government representing over 14,000+ full-time, classified undergraduates at the University of Hawai'i at Mānoa (UHM). I have served my fellow constituency for the past two years as Senate President, but have served now for four years ever since the start of my undergraduate years within the ASUH. It has been a true honor and privilege to serve in this capacity to learn, grow, and represent the undergraduates to enhance student life on campus until this day. Today, I submit testimony in support of SB 2906, which appropriates funds to the University of Hawai'i to pay student employees at new or expanded worksites on each campus.

Appropriating funds to the university to pay student employees is beneficial for our institution as well as the students. By having more opportunities for students to have part-time employment on campus, this retains students to stay on campus rather than finding part-time work off campus, taking time away from student life in their college years.

It is also convenient for students who live both on and off campus to work at their home institutions. Students who live in the residence halls can have the convenience of working where they get their education, and students who commute or live off campus can work in between classes during breaks, before, or after classes without worrying about traveling elsewhere to work a job.

Additionally, having these funds would allow for students to pay for their tuition fees, living expenses, and other finances that college students go through. As an advocate for the betterment of student life at UH, having this being introduced shows me the commitment that our state elected leaders have to higher education in Hawai'i, and the commitment in ensuring our students are given the opportunity to learn, grow, and gain experience at their campus through campus student employment.

I also am in support of the clause that states: “Funding priority may be given to students employed for university programs supporting access, retention, and diversity over other student employees.” This clause does not mandate priority to these types of university programs, but emphasizes a focus on these issues that affect students in higher education today. Employing students who will help to focus on access, retention, and diversity of students is crucial to student success in the long term of our university.

Thank you so much for your consideration of my testimony and for your support and leadership in ensuring you each play a role in enhancing higher education right here in the state of Hawai‘i.

Christopher Ian C. Escalante

Chairperson of the 101<sup>st</sup> ASUH Senate Committee on Undergraduate Academic Affairs

College of Engineering – Student Ambassador

Holmes Hall 203, 2540 Dole Street

Honolulu, HI 96822

Testimony of the 101<sup>st</sup> ASUH Committee on Undergraduate Academic Affairs

IN SUPPORT OF S.B. NO. 3116, MAKING AN APPROPRIATION TO THE UNIVERSITY OF  
HAWAII COLLEGE OF ENGINEERING

Before the Senate Committee on Higher Education

February 06, 2014

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Honorable Chairperson Taniguchi, Vice-Chairperson Kahele, and respected members of the Senate Committee on Higher Education:

My name is Christopher Escalante, and I submit to you my testimony in strong support of S.B. NO. 3116. I testify in my capacity as the Chairperson of the Associated Students of the University of Hawaii 101<sup>st</sup> Senate Committee on Undergraduate Academic Affairs, College of Engineering Student Ambassador, and most importantly as a mechanical engineering student at the University of Hawaii at Manoa.

As a mechanical engineering student, I spend most of my time in Holmes Hall attending classes, conducting research in the Field Robotics Laboratory, and doing outreach work as an Engineering Student Ambassador. Holmes Hall is almost a second home to me. In fact, I occasionally refer to this building as “Holmes sweet Holmes”. It dismays me, however, to see Holmes Hall in it’s current state of disrepair and ineffective classroom design. To my knowledge, Holmes Hall has not seen a major renovation since it’s construction forty-two years ago back in 1972. A major renovation is crucial for the College of Engineering to attract and retain Hawaii students as well as provide effective classroom and laboratory environments designed to engage today’s generation of students.

After graduating from McKinley High School with a 3.94 grade point average, 2010 SAT score, and several extracurricular activities including Robotics, I was fortunate to be accepted to several engineering schools on the mainland. After much deliberation with my mother, I reluctantly chose to attend UH Manoa College of Engineering primarily for it’s relatively low price and interesting research activities. The main reason why I seriously considered spending tens of thousands more on a mainland engineering school is because I was unimpressed with the physical appearance of Holmes Hall. What I am trying to say is that the physical infrastructure plays a huge role in a students college decision.

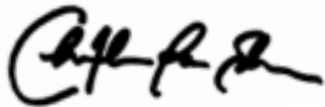
My best friend who graduated with a 4.0+ GPA, 2000+ SAT score, and several extracurricular activities in STEM chose to go away for college and sadly, it does not look like she will be coming back anytime soon to contribute to Hawaii’s economy. When I provide lab tours to high school students, it pains me to hear that some of these students have already decided that they

absolutely do not want to attend UH Manoa College of Engineering because it is “ghetto-looking” and must be “second-rate.” The College of Engineering is far from second-rate and I’m sure that you will receive several testimony that support the high-quality education offered within the walls of Holmes Hall.

Imagine how much greater the quality of education would be if we renovated our classrooms and research laboratories to fit the needs of 21st century students. UH Manoa College of Engineering would be able to produce top-notch well-trained engineers that will be able to contribute their skills to improve Hawaii’s infrastructure and economy. The College of Engineering would no longer be considered “second-rate” but be the school of choice. The College of Engineering would be a source of pride to engineering students, the University of Hawaii, and the State of Hawaii.

Thank you so much for considering my testimony and for your the Hawaii Senate Committee on Higher Education’s efforts to increase higher education in the State of Hawaii.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Escalante", written in a cursive style.

Christopher Escalante

Chairperson of the 101<sup>st</sup> ASUH Senate Committee on Undergraduate Academic Affairs  
College of Engineering – Student Ambassador

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Lori Hashimoto

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Lori Hashimoto, and I serve as the Program Manager for the STEM Pre-Academy Program of the University of Hawaii at Mānoa, Office of Research and Innovation. I am pleased to provide personal testimony on SB3116.

Born and raised in Pauoa Valley, I attended Pauoa Elementary School, Kawananakoa Middle School, and graduated from Roosevelt High School in 2004. I enrolled in the University of Hawaii Mechanical Engineering program and graduated with my Bachelor's degree in 2008. With tremendous support from my UH professors and advisor, I proceeded to attend Stanford University and received my Master's degree in Mechanical Engineering the next year. Following that, I was hired as an Engineer with The Boeing Company in Seattle, Washington and worked there for 3.5 years.

I returned to Hawaii with my husband, also a Mechanical Engineering graduate from the University of Hawaii, at the end of 2013, because we both felt that it was important to start a family in a place that has a strong set of family and community values.

During my experiences at Stanford University and The Boeing Company, I have been exposed to the new expectations of future engineers in the 21<sup>st</sup> century. More and more in industry, engineers are required not only to have strong analysis and technical skills to design high performance and high quality products, but also practical, hands-on knowledge. *How* are your designs going to be built? With what materials, tools and machines? What is the ease of manufacturability and repair? Can it be built within this time frame? At what cost? Engineers who are given the opportunity and resources to learn the lifecycle impact of engineering designs through hands-on projects are the engineers who excel and produce amazing products that will impact the future.

The concept of putting together teams with expertise in different fields, with different perspectives on a problem is a growing trend. Engineers are now required to work collaboratively with others from various disciplines in open discussion formats, whiteboard settings, innovative collaboration rooms with spaces to prototype ideas, not just sit at a desk and crunch numbers. Enabling Holmes Hall to provide a setting to prepare tomorrow's engineers to work at this new level of industry expectations will yield high praise for the University of Hawaii, and the State of Hawaii.

Thank you for allowing me to provide my personal testimony today in support of plans and design for the renovation of Holmes Hall.

Sincerely,  
Lori Hashimoto

Personal Testimony Presented before the  
Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Brennan Eugene Yamamoto

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

SUBJ: TESTIMONY IN SUPPORT of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Brennan Yamamoto, and I am currently a first year Master's Candidate in Mechanical Engineering at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116, towards the renovation and improvements to Holmes Hall, the primary building for students and Faculty in the College of Engineering.

In my capacity as both an undergraduate and graduate student in the College of Engineering at the University of Hawaii, I have been fortunate to be a part of many different student organizations, student project groups, and a highly diverse educational repertoire. Currently, I serve as the President of the Engineer's Council at the University of Hawaii (ECUH), the governing student organization in the College of Engineering, the Graduate Advisor of the American Society of Mechanical Engineers (ASME), a member, and past financial officer of the Society of Automotive Engineers (SAE), a member of the Society of Women Engineers (SWE), and past member of the American Society of Civil Engineers (ASCE). I have partaken in academic engineering projects involving the finance, design, procurement, and fabrication of a ultra-high-performance, formula-style, single-seating, autocross competition vehicle; the design and fabrication of a cutting-edge ultrasonic (HIFU) bioreactor for micro-scale sonoporation-type gene transfer; the design of autonomous control algorithms for mobile robotics; and various side projects ranging from fabrication techniques of commercial-level electric vehicles (EVs), all the way down to the theory of engineering design. I find it necessary to emphasize my personal background and experience in the College of Engineering, as I believe it begins to impress how varied and diverse the opportunities available in the College of Engineering can be. Putting into perspective that I am only a single student of less than five years, it is clear that, while smaller, and less financially privileged than similar mainland counterparts, the College of Engineering at the University of Hawaii continues to prove that it is an excellent institution of engineering education, and a highly attractive choice for students around the world.

All of this said, with a rapidly increasing student body, and highly limiting space and resource constraints within the College of Engineering, faculty and students can only do so much before the quality of our engineering education truly begins to degrade. As the President of the engineering student council (ECUH) in the College of Engineering, one of our primary functions is the voice student concerns. Amongst the most common of student concerns, are the lack of capable laboratory, experimentation, and/or fabrication spaces, as well as aging facilities and equipment necessary to meet academic demands. As a student myself, I can certainly attest to the validity of these claims. Unfortunately, the solution to these issues requires a significant sum of money, a sum which is unaffordable without financial assistance external to the College of Engineering. Should the State of Hawaii choose to invest in SB3116, the long-term payoff will be a continuous, highly capable generation of young engineers, trained specifically in the unique industry environment Hawaii offers.

In conclusion, I believe that the decision to invest in SB3116 is a wise one. Many training engineers will be afforded valuable, hands-on opportunities, that would otherwise have been impossible for the College of

Engineering to offer. This will ultimately lead to a better, more efficient, more advanced society, and will benefit all citizens of Hawaii. Thank you very much for your time, and have a great day. Aloha,

Brennan E. Yamamoto



Personal Testimony Presented before the Senate Committee on Higher Education

Thursday, February 06, 2014 2:45 PM

Conference Room 414, State Capitol

by Evan Kawamura

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

SUBJ: TESTIMONY IN SUPPORT of plans and design for the renovation of Holmes Hall

University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Evan Kawamura, and I am a sophomore majoring in mechanical engineering and I graduated from Hanalani School in 2012. I am currently a student at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

As an engineering student I believe that is vital that Holmes Hall be fully renovated to provide its students with the optimum facilities and learning equipment. I work in the Engineering Department as an ESA (Engineering Student Ambassador) and one of our goals is to promote the engineering to keep Hawaii students here for their college education. With this in mind, I also see the value in renovating Holmes Hall to attract prospective students.

I mention these reasons for renovations because of what I've heard from my high school friends who are attending mainland universities such as the University of Washington, University of California: Irvine, and the University of Miami. Majority of these friends have bragged to me about how much better their schools are in terms of aesthetics, newer facilities, and better equipment compared to UH and that I should have gone away for school. I became envious when they told me their various stories of how "awesome" their labs are and how they have these high tech equipment that most schools cannot afford. They told me, "you get what you pay for" - implying that UH is cheaper, therefore it will not be able to compete with mainland colleges. I strongly feel that UH can provide an education equivalent to mainland standards with the necessary materials and that a part of this requires renovating Holmes Hall.

Some of our lab equipment is from the 70's and works but lacks the "newer and cooler" features. I feel like our school is Motorola's "cell phone" from 1973, while my friends' schools are Apple's iPhone 5's and Samsung's Galaxy S4's. Yeah, all the phones can make calls, but theirs has lots of other features we simply do not have.

As the primary engineering school in the state, I believe renovation is crucial and necessary. As mentioned before, we are behind in technology, and this world's technology is moving forward everyday while we are unfortunately still trapped in the past. Hawaii's high school graduates striving to become engineers will choose to stay here to become engineers not just for the upgrades but also for the cost especially due to the nation's crumbling economy. Going to college is expensive and having an awesome renewed Holmes Hall will definitely attract engineering students to stay in Hawaii!

Renovating and improving Holmes Hall will give all engineering students a once-in-a-lifetime college opportunity to learn the most we can about engineering and to make tomorrow better for you and me.

Thank you very much,

Evan

From: [mailinglist@capitol.hawaii.gov](mailto:mailinglist@capitol.hawaii.gov)  
To: [HRETestimony](#)  
Cc: [magdy.iskander@gmail.com](mailto:magdy.iskander@gmail.com)  
Subject: Submitted testimony for SB3116 on Feb 6, 2014 14:45PM  
Date: Tuesday, February 04, 2014 5:06:13 PM

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**SB3116**

Submitted on: 2/4/2014

Testimony for HRE on Feb 6, 2014 14:45PM in Conference Room 414

| Submitted By     | Organization | Testifier Position | Present at Hearing |
|------------------|--------------|--------------------|--------------------|
| Magdy F Iskander | Individual   | Support            | No                 |

Comments: Personal Testimony Presented before the Senate Committee on Higher Education Thursday, February 06, 2014 2:45 PM Conference Room 414, State Capitol by (Magdy F Iskander) SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING SUBJ: TESTIMONY IN SUPPORT of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee: My name is Magdy F Iskander, and I serve as Faculty of the University of Hawaii at Manoa College of Engineering (Hawaii Center for Advanced Communications). I am pleased to provide personal testimony on SB3116. I strongly support SB3116 and respectfully request your approval of the requested appropriation to the University of Hawaii, College of Engineering. Holmes Hall is the home of engineering on the Manoa campus, and the College of Engineering is the flagship program for engineering education in the State of Hawaii. While the College has done an outstanding job in continuing the accreditation of the engineering program in the State, it has always been difficult to implement new laboratories, endorse the use of new technology and even upgrade the existing service and classroom facilities in a building that was built 42 years ago and which has gone without any substantial renovation throughout these years. Needless to say how important engineering is to our community and the economic development of the State, and it is imperative that renovations of Holmes Hall be planned and further implemented now and without delays. New and modern engineering facilities will help the College recruit and retain the best and the brightest of our local students, help faculty better educate the students, expand course offering using state-of-the-art labs, provide better facilities for carrying out competitive research, and equally important maintain the program accreditation at a highest level. It is difficult to show that we have progressive engineering program with the current condition of our aging building and deteriorating facilities. It is critical for the college to give prospective students the impression that they will be attending a first rate engineering college. Your approval of SB 3116 is not only desirable but also commendable as it will help the College of Engineering strive and reach its full potential as the flagship engineering college in the State of Hawaii.

Please note that testimony submitted less than 24 hours prior to the hearing,

improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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Personal Testimony presented before the  
Senate Committee on Higher Education  
Thursday, February 6, 2014 @ 2:45 PM  
Conference Room 414, State Capitol

By  
Jeremy B. Young

SB3166—MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJECT: TESTIMONY IN SUPPORT** of the plans and design for the renovation of the Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Jeremy Young, and I am a PhD student in electrical engineering at the University of Hawaii at Mānoa. I urge you to support this measure to improve the engineering building here.

Holmes Hall is in quite a sorry state. I recall sitting in class and having 3 different desks break. When it rains, the ceiling in my office leaks. And more often than not, urinals overflow and flood the men's restrooms. What sort of message does this send our faculty, staff, students, and visitors? We don't care? It's okay to not strive for excellence?

I received my undergraduate degree on the mainland, and had the opportunity to stay there for graduate school. However, I decided to come to UH instead because I wanted to be part of the engineering community and culture here. Personally, I think engineering has a great potential to diversify our State's economy creating new opportunities/companies/jobs, making us more sustainable, and less dependent on tourism. To do this though, we need better facilities. While learning and research can, and currently, goes on in any sort of situation, how can we attract high quality professors and inspire students with broken restrooms and outdated classrooms in disrepair? I would consider \$2,000,000 a small investment for the future of the state.

Personal Testimony Presented before the

Senate Committee on Higher Education

Thursday, February 06, 2014 2:45 PM

Conference Room 414, State Capitol

by

Ryan Sugamoto

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Ryan Sugamoto, and I serve as a researcher and mechanical engineer at the University of Hawaii at Mānoa College of Engineering (Dept. of Mechanical Engineering). I respectfully submit this personal testimony on SB3116.

I graduated from the University of Hawaii at Mānoa College of Engineering in 2000 with a bachelor's degree in Mechanical Engineering. I have since worked in the local engineering consulting industry as well as the aerospace industry in California, and later returned to the university as a full time staff doing research in the department that I received my degree from. I've spent roughly 16 years (nearly half of my life) either studying (as a student) or doing research (as staff) in Holmes Hall. I have huge gratitude and pride in my alma mater, however, my feelings are that the building itself (Holmes Hall) and the facilities within it have become out of date, and are in desperate need of repair and modernization. Very little has changed physically within the building since the time I entered the Mechanical Engineering program in 1995. It is now 2014, and the College, whose focus is engineering and technology, has been using the same facilities for 20 years (or more), and I believe its ability to stay competitive is at risk.

Through the course of my research duties, I have been able to visit other universities on the mainland as well as in other countries, and have come to realize that our students are at a disadvantage due to the amount of space and types of facilities made available to them. The growth of research conducted in Holmes Hall is also heavily restricted to the space available.

Recently, there has been a large influx of students in the College of Engineering. There has also been increasing growth in the construction and technology industries in Hawaii, and the need for local engineers to support this growth is already here. Thinking about this, my concern as an alumni, staff, and supporter of the engineering programs at UH is

that we've reached a critical point and it is time to take action to move forward. If change does not happen now, our commitment to provide top-level education to our students and enable our faculty to conduct truly "world-class" research will be increasingly difficult to fulfill as time goes on.

The College has been able to graduate a few students in the past that have been recognized nationally, however, the potential exists, especially now with the larger student body, for the College and the University of Hawaii to step forward and graduate even more engineers that have the experience and confidence to contribute to Hawaii's future and the world. Newer facilities and more space to study and conduct research is something physical, however, the benefits of having more options, state of the art facilities, and an overall positive boost in the morale and confidence in our students, staff and faculty is immeasurable.

With all these things in mind, I humbly ask that consideration be made to provide the College with funds to repair and modernize Holmes Hall. The time is now and the potential is great.

Thank you for your time.



Ryan Sugamoto

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Jonathan Dang

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Jonathan Dang, and I am a first year graduate student in electrical  
engineering at the University of Hawaii at Mānoa College of Engineering. I am pleased  
to provide personal testimony on SB3116.

I was born and raised in Honolulu, Hawaii and throughout my childhood and as a kid I  
always thought that the University of Hawaii was such a large and vast school. I was  
excited to be able to study for my undergraduate degree at UH, but after just a year, I  
learned it wasn't such a big place after all.

Throughout my undergraduate degree and currently in my master's degree, I find myself  
in small overcrowded lecture rooms and having difficulty finding space to work on  
projects. I have worked on projects such as micromouse, a maze solving robotics  
competition recognized by the Institute of Electrical and Electronics Engineer, and  
nanosat, a miniature satellite the size of a loaf of bread, which had the mission of  
calibrating radar stations around that world. For micromouse, I remember working as a  
team of 3 with sometimes 10 other teams all in one room.

Similarly for the nanosat project, our team had upwards of 25 team members all  
working in one room. Obviously space was an issue again. A larger issue that we did  
not have control over and actually put our satellite's mission at risk, was that we needed  
to put antennas on the roof of Holmes Hall so that we could communicate with our  
satellite. However, because of safety issues and litigation we were not able to and had  
to put our antennas at another school.

After my four years here at the University of Hawaii and having had the opportunity to  
visit schools on the mainland and attend international conferences such as the  
International Microwave Symposium, one of the most recognized conferences in the

microwave community, I've learned to appreciate that Hawaii uniquely offers a valuable degree in electrical engineering at an affordable price. At UH, I've been able to learn the same things that would have been taught at ivy schools. However, after visiting a campus such as UCLA, that has multiple engineering buildings, it saddens me to see that UH has just Holmes Hall.

I've experienced the growth and development of UH's engineering program and each year more and more students want to attain a valuable degree in engineering at the reasonable price that UH offers. However, for the engineering degree to remain valuable I believe it needs to continue to evolve and develop just as other schools on the mainland are. To do that the professors and students here need the infrastructure to do so.

I appreciate having the opportunity to voice my testimony and am grateful for all of the support and efforts made to make the University of Hawaii a leading research university. I now humbly ask for your continued support to further develop and grow the college of engineering.

Sincerely,  
Jonathan Dang



Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Ryan C. Gough

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Ryan Gough, and I am a graduate student enrolled in the University of  
Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on  
SB3116.

I was born and raised on the mainland, and earned both my Bachelor and Master of  
Science degrees in my home state of Texas (at Texas Tech University and Southern  
Methodist University, respectively). I have now been a student at the University of  
Hawaii for a little over a year, and in that time I can say without hesitation that this  
school has some of the most energetic students and committed, knowledgeable faculty  
that I've had the privilege of interacting with.

However, there is one area in which this university lags woefully behind its peers on the  
mainland, and that is the engineering facilities available to its students. Engineering is a  
hands-on discipline, and when it comes to training the engineers of tomorrow there is  
simply no substitute for time spent working in a modern laboratory setting. Unlike other  
fields, the facilities an engineering student has available to him or her are not tangential  
to the education he/she is receiving, but are vital to the quality of his/her education. An  
engineering student can have the most dedicated, expert faculty in the world, but  
without experience in a modern lab he or she will not be prepared to tackle present-day  
engineering challenges.

It takes only a cursory glance around Holmes Hall to see the state of disrepair the  
building is in. But even if all the basic repairs (e.g. bathrooms flooding, roofs leaking,  
etc.) are excluded, the building was clearly designed to prepare engineering students for  
a world that has little relation to the one we live in today. If we want to develop world-  
class engineers here in this beautiful state, we need more than the Aloha spirit. We

need facilities that will provide them with the skills and experience necessary to engineer solutions to the challenges facing the modern world.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Cedric Joaquin

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University  
of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Cedric Joaquin, and I am a student at the University of Hawaii at Mānoa College of Engineering, currently pursuing a Bachelor's Degree in Civil & Environmental Engineering. I am also employed under the College of Engineering as an Engineering Student Ambassador. I am pleased to provide personal testimony on SB3116.

Since the construction of Holmes Hall in 1972, there has not been any renovations of the building. Many students, faculty, and staff of the College of Engineering call this their second home. Some of the engineering courses offered at the University of Hawaii at Manoa to this day are being held in classrooms not in Holmes Hall, but in the English department buildings, or the Physics department buildings. In this case, I believe it to be very hard to feel a part of the College of Engineering, when my classes are not even held in classrooms where the college is.

As an Engineering Student Ambassador, our team strives to promote the ever-growing profession of Engineering and to keep Hawaii students here at home. With a team of 11 students and 1 supervisor, we are only given one office room that is meant to hold a maximum of three people. As such, we are forced to work within the halls of the building. Our team works diligently with what we are given, but as also stated prior, it is very disheartening to see that the building meant for students of the College of Engineering is not able to accommodate the students of the college.

In closing, I believe that the renovation of Holmes Hall is imperative to keeping the attraction of the University of Hawaii at Manoa ahead of other schools in the mainland. Holmes Hall is being shadowed by other university facilities in the mainland, deterring students from applying to UH Manoa. That money students are spending to go to mainland colleges, could instead be put to good use by the University of Hawaii and the State of Hawaii. Therefore I urge the committees to support SB3116.

Sincerely,  
Cedric Joaquin

Personal Testimony Presented before the  
Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Kainalu MH Matthews

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University  
of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Kainalu MH Matthews and am originally from the Big Island. I came to Oahu and graduated from Kamehameha School Kapalama in 2010 and then I chose to come to UH Manoa to study electrical engineering because of the wonderful things I heard of this program. I am currently a senior at the University of Hawaii at Mānoa College of Engineering and honored to provide a personal testimony on SB3116.

Holmes Hall is a building in which many engineering students spend most of their lives throughout their college years whether they are studying, socializing, or even eating. As an electrical engineering student I can attest to the fact that I find myself spending more hours in this building than I do at home, or anywhere else for that matter. This is why I believe that Holmes Hall is in dire need for repair and maintenance. For electrical engineering majors we are given the task to do student projects for three semesters. A project room for electrical engineers will mean greater collaboration, and even greater products that this amazing college will produce (even though we've already had some great feats thus far). It is for these reasons that I sincerely hope you support the plans and design for the renovation of Holmes Hall. Mahalo.

Personal Testimony Presented before the

**Senate Committee on Higher Education**

Thursday, February 06, 2014 2:45 PM

Conference Room 414, State Capitol

By Richard Christopher Ordonez

**SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING**

**SUBJECT: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Richard Christopher Ordonez, and I am a graduate student at the University of Hawaii at Manoa, College of Engineering. I am currently in my first year pursuing a doctorate degree in Electrical Engineering with an emphasis in Electrophysics. I have lived on Oahu since 1999 and graduated from Mililani High School in 2004. As a student pretty much raised in Hawaii, I give much of my success to the University of Hawaii At Manoa, College of Engineering and I am pleased to provide testimony on SB3116.

As a student accessing Holmes Hall on a daily basis to conduct research, I believe that I am an ideal person to provide feedback in support of SB3116. Every university, at least many of the successful universities maintain state-of-the-art research facilities to support its students and researchers. The amount of technologies and academic journals that come out of these universities are quite substantial. However, Holmes Hall, our main engineering facility/building is in much need of repair to compete against modernized universities such as Stanford or Berkeley. It is actually quite difficult conducting research in the outdated Holmes Hall. For example in our Physical Electronics Lab, the ventilation system has broken down. My professors and colleagues have acquired and purchased many fabrication devices over the past 1-2 years from donations and small research funds to do some incredible engineering, however, these devices depend on a clean room and ventilation system to protect the safety of our students and the environment. The ventilation system needs to be repaired, walls need to be knocked down to expand space for the increase in the amount of equipment, and the electrical wiring needs to be in place to support the fabrication equipment.

However, research must still go on, and other students and I continue to persevere in such outdated facilities. With outstanding advising from our professors, we continue to conduct state-of-art research, produce papers, win national competitions, and create patents that compete with industry standards. My fellow classmates are smart and have a lot of ideas we want to test out. However, outstanding students need outstanding facilities to harbor their success. I envision the funds going to a modernized lab space in which students can learn and get hands on experience with engineering equipment, lab space that can support high tech equipment such as chemical vapor deposition chambers, circuit board milling machines,

and a robotics lab with soldering stations and computers. In order for a university to be a success it must cater to its students, it must make the students want to spend all their waking hours in to conduct research, and it must have the support of its own community. If the state wants the University of Hawaii to excel in the academic community, support such as SB3116 is critical.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard Ordonez", written in a cursive style.

Richard Christopher Ordonez  
Graduate Student Researcher  
University of Hawaii At Manoa  
College of Electrical Engineering  
Email: [Ordonez@hawaii.edu](mailto:Ordonez@hawaii.edu)  
Cell: 808-349-1459

Aloha,

My name is Christopher Brough, I am currently a Junior in the Electrical Engineering program at the University of Hawaii at Manoa. I am writing to express my support for SB3116, requesting funding for the renovation of the engineering building, Holmes Hall. Thank you for the opportunity to submit testimony!

First impressions matter, and my first impression of Holmes Hall was that it was ugly and uninviting. That has since evolved as over the course of my few years here I have come to love it for the supportive faculty and challenging curriculum it represents. I have also seen firsthand that it could benefit from two changes, a more welcoming appearance and increased room for student collaboration and studying.

With some work Holmes Hall could present a polished appearance that represents the pride we take in our university and the students, faculty, and staff who work to better our island communities. For example, the first floor has no central reception area and as such is confusing to first time visitors. When I first arrived on campus I wandered around the building until I finally found the department office on the fourth floor, tucked away in the back corner. Making a few cosmetic and functional changes would pay dividends in the pride, reputation, and value of an engineering education at the University of Hawaii.

In addition to its outward appearance, adding space available for student collaboration would be invaluable to us. One of the primary reasons I have been successful in my studies is that I study and work together with my classmates. When I am struggling with a problem or concept one of my classmates can usually help explain it, and I often get to return the favor. Engineers in research and industry frequently work in teams and having space for us to work together would facilitate developing the "soft skills" that will serve us well after graduation.

In conclusion, I urge you to fund the renovation of Holmes Hall to help future generations of UH Manoa engineering students succeed, and as a manifestation of the pride we take in what Hawaii can do. A proudly presented Holmes Hall with room for student collaboration and studying would create a strong first impression and leave a lasting legacy of support for years to come. Thank you again for your time and consideration.

Mahalo nui loa,

Christopher Brough

Kevin Shin  
4372 Halupa Street  
Honolulu, HI 96818

February 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Kevin Shin and I'm currently a mechanical engineering student in senior standing at the College of Engineering (CoE) at the University of Hawai'i at Manoa (UHM). I have served as the President of the Engineer's Council at the University of Hawaii (ECUH) which is the student council for CoE during the 2012-2013 school year. Currently, I am working as the team lead for the mechanical portion of our autonomous surface vehicle project for the Association of Unmanned Vehicle Systems International (AUVSI) and the Office of Naval Research's (ONR) 7<sup>th</sup> Annual International RoboBoat Competition.

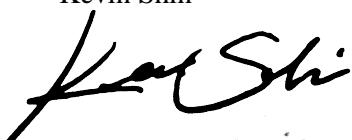
During my time as President of the Engineer's Council at the University of Hawai'i (ECUH), I've had the chance to listen to many student concerns. Among the top of the concerns were not enough facilities to accommodate students working projects/research and not enough course availability. A lot of the course scarcity stemmed from the fact that there were not enough facilities available such as lab space to accommodate more than a handful of students. Enrollment at the College of Engineering (CoE) is growing and we are experiencing growing pains.

The professors are excellent, the research is groundbreaking, and the learning that takes place there is something that we carry all throughout our lives. The only area that I see that needs improvement is with the facilities. More facilities would mean more successful student projects. Anyone in engineering could tell you about the value of hands-on project experiences in addition to the theoretical coursework. That is where the most learning takes place as students build, design, and solve major problems. This

With my current project, we share a space with a major research laboratory and three other major student engineering projects. It is cramped in there and it does hinder our ability to do well on our project at times. Equipment is not available and storage space is scarce but we make the best of what we have. Previously, during my role as President of ECUH, my board and I discussed many different programs to improve the student life but again were hindered by the fact that we did not have central gathering space for engineering students. Even though we'll all be gone before the renovations start, I would love to see that future students of the College of Engineering (CoE) get a better education because of our efforts today.

The UHM CoE is the flagship program for engineering in the state. We need these funds to fund improvements to help the college grow and keep more smart and talented students here in Hawai'i.

Sincerely,  
Kevin Shin





Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Tylynn Ai

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Tylynn Ai, and I am 2010 Kapolei High School graduate and a senior  
Mechanical Engineering student at the University of Hawaii at Mānoa College of  
Engineering. I am pleased to provide personal testimony on SB3116.

Holmes Hall has been an integral part of my learning experience as an engineering  
student. As a senior engineering student, I spend most of my time in Holmes Hall,  
whether it be in class, studying, or working on projects. Since 2012, I have had the  
opportunity to work as an undergraduate research assistant in the Renewable Energy  
and Nanotechnology Lab on hands-on projects. On any given day, the lab is crowded  
with multiple graduate and undergraduate projects, making it difficult to work in a safe  
environment. Sometimes, we even have to wait until night to weld outside due to lack  
of space and proper ventilation inside. Additional lab space for students to gain hands-  
on experience would enhance the education of engineering students, which means  
more experienced engineers for the workforce in Hawaii.

In its current state, Holmes Hall cannot accommodate the increasing enrollment of  
engineering students. This is not only obvious in my classes this semester (most of which  
were moved to entirely different buildings due to the number of enrolled students), but  
also in the availability of lab space and study space. The University of Hawaii at Mānoa  
College of Engineering has high quality professors that will be able to provide more  
learning opportunities to students if they can accommodate them.

Sincerely,  
Tylynn Ai  
Mechanical Engineering Student  
University of Hawaii at Mānoa College of Engineering

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Kathryn Hu

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII  
COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Kathryn Hu; I am a senior in the Department of Mechanical Engineering at the University of Hawaii at Manoa (UHM) College of Engineering (CoE) and also a 2010 graduate from Moanalua High School. I am pleased to provide personal testimony on SB3116.

The UHM CoE faces the unique challenge of providing a quality, well-rounded engineering education to its students without the appropriate space or convenient nearby facilities that mainland universities enjoy. Students hold the College responsible for preparing them as best as possible for the world outside of school—to provide the necessary knowledge and tools to help them be competitive with other students from ivy-league universities, and to earn jobs at prestigious engineering companies. The engineering field has unlimited potential for innovative and technological contributions to the global society. However, without the proper preparation, UHM engineering graduates may find it difficult to earn jobs doing engaging, technical work outside of the state.

Throughout my several years in the mechanical engineering program, I have noted the disparities between the courses and labs we have and what is offered at other universities. This in part, is due to the lack of available space for equipment. Other soon to be graduating seniors are realizing that they will be leaving without adequate experience in machining processes, composites, material science, robotics, automotive, aerospace, renewable energy, and marine engineering—all of which are currently important, potential career fields.

In addition, project experience is essential for engineering students to apply the technical knowledge they have learned outside of the classroom. Currently, mechanical engineering does not have enough space to accommodate over three student design projects. These are paramount capstone projects which teach students the design, manufacturing, and testing processes used in industry. Applying classroom learning to

these real, large-scale projects solidifies concepts and understanding. Employers look for project experience to supplement a high grade-point average and work experience. Granting more shop and work space will allow a higher volume of students to gain the project and hands-on experience necessary to be better prepared to enter the engineering workforce. Though the UHM CoE is currently providing adequate teachings to prepare students, updating facilities and having more space for equipment and projects will substantially supplement and improve the engineering program for the next generations of engineers.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Kenny Luong

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Kenny Luong -- I am a senior Computer Engineering student and one of the Co-Chairs of the Institute of Electrical and Electronics Engineers (IEEE) student branch at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

I am a local student who graduated from Pearl City High School and decided to attend college at the University of Hawaii at Manoa. To me, the University of Hawaii at Manoa was an affordable option, and a chance to contribute to Hawaii's local community.

During my past three and a half years here at the UH Manoa College of Engineering, I have grown to realize that our faculty are exceptionally skilled. The faculty are dedicated to the betterment of the College, and Hawaii's local community. It was never a question that we had a lack of skilled faculty members.

It is however, a case of facility that I find disturbing. Holmes Hall suffers numerous problems that is detrimental to the environment for students, faculty and staff combined. There are numerous rooms which are under maintained – the roofs are leaky, the breakers do not work, and the whiteboards need replacement. There are even examples of the bathroom facilities being in a state of disrepair.

One of the largest issues is the internet speeds in Holmes Hall. Students have often measured real speeds of less than 10 Megabits per second, even during off times. This is in sharp contrast to the Pacific Ocean Science and Technology building, where students often saturate their connections during off times.

If the State of Hawaii is to be a state which supports local innovation and community, we must provide the proper facility for students to continue investing locally. If the

College of Engineering does not provide proper facility for students and for prospective students, the State of Hawaii loses that much more talent. I, as a student, and as a resident of the State of Hawaii ask you to consider allocating funding for the College of Engineering.

Sincerely,  
Kenny Luong

Senior, Computer Engineering  
University of Hawaii at Manoa

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Larry K. Martin

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Larry Martin, and I am a Kailua High School graduate and graduate research assistant at the University of Hawaii at Mānoa College of Engineering (CoE). Thank you for the opportunity to provide personal testimony on SB3116.

I have been a student at UH Manoa since 2007, earning my BS in electrical engineering (EE) and now working towards my MSEE. By now I am very familiar with all of the classrooms, offices, and labs of Holmes Hall and can testify to their subpar conditions.

The truth is, we really do have gifted and talented folks at the UH CoE. The sheer number and quality of achievements that continue to come out of the UH CoE mirrors those from top-ranked engineering schools across the nation, and even world. But our ability to do what we do best, whether it be transfer knowledge to the next generation of engineers or develop cutting-edge research that has the potential to ultimately benefit our society, has been and will continue to be hampered until we rectify the current work environment. I thank you for your support thus far and respectfully request your continued support by way of the proposed support of our infrastructure.

**From:** [mailinglist@capitol.hawaii.gov](mailto:mailinglist@capitol.hawaii.gov)  
**To:** [HRETestimony](#)  
**Cc:** [shimomit@hawaii.edu](mailto:shimomit@hawaii.edu)  
**Subject:** Submitted testimony for SB3116 on Feb 6, 2014 14:45PM  
**Date:** Wednesday, February 05, 2014 2:37:54 PM

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**SB3116**

Submitted on: 2/5/2014

Testimony for HRE on Feb 6, 2014 14:45PM in Conference Room 414

| <b>Submitted By</b> | <b>Organization</b> | <b>Testifier Position</b> | <b>Present at Hearing</b> |
|---------------------|---------------------|---------------------------|---------------------------|
| Traci Shimomi       | Individual          | Support                   | No                        |

Comments: As a student at UH Manoa in Electrical Engineering I believe that we deserve an updated building.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email [webmaster@capitol.hawaii.gov](mailto:webmaster@capitol.hawaii.gov)

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Jonathan Kutsunai

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Jonathan Kutsunai, and I am currently a sophomore majoring in MEchanical Engineering with a focus on aerospace, and aeronautical sciences. I was born and raised on the Big Island of Hawaii where I graduated from Kealakehe High School Cum Laude. And I am a student at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

I am involved with many clubs and labs on campus, clubs that work to increase the amount of minorities into engineering. I am a member of The Native Hawaiian Science and Engineering Mentorship Program, American Society of Indian Science and Engineering Society, Society for the Advancement of Chicanos and Native American, and the American Society of Mechanical Engineers. These clubs all utilize Holmes Hall for meetings, to conduct experiments and research, to work on hands-on projects, attend presentations from industry partners, and to enrich the overall student experience.

These groups are starting to become larger and larger, and sometimes it's hard to have ample room for presentations, group meetings, and for lots of group collaboration since it's hard to fit enough people in the room at that same time. Also the building is showing signs of age, which doesn't look very good for possible investors locally, nationally, and internationally to help fund to the college for years to come, and I believe that as a student if our building is renewed, other students will take pride, and preserve it for generations to come.

I am also an Engineering Student Ambassador with the College of Engineering, and I work to do outreach with students all over Hawaii to promote Engineering and our prestigious College. We host engineering events where students can participate in engineering themed tasks, and we answer questions and become a resource so they are fully prepared to go into engineering at UH Manoa. We have also started our E'o



Engineering Ohana Residential Learning Program where we try to have an all engineering floor where they can build relationships and friendships so that they can succeed as a group, and makes for a higher retention rate. Unfortunately there are 10 Engineering Student Ambassadors and one small office in Holmes, and I think we would benefit from having more room, so that we could make our outreach more effective and efficient.

I recently joined onto Dr. Wayne Shiroma's Small Satellite Laboratory where his students made UH Manoa College of Engineering the first university to design, build, and launch its own satellite into low orbit. His lab could use more space to utilize building materials, to showcase previous work, and to take UH Manoa into the future.

In conclusion, I believe that students and professors will benefit from a renovation that is long overdue. Holmes Hall is a part of history, and a vital part of Hawaii, and it deserves to be a major player in technology advancement in the future. Please pass this bill to enrich our education and to support the generations to come.

Sincerely,  
Jonathan Kutsunai

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Cathy Wong

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Cathy Wong, and I graduated from Kaimuki High School. Currently I am a Senior in Electrical Engineering at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

I believe the College of Engineering needs money for renovating Holmes Hall because the current building is unable to support the increasing student body and their needs. Most of the engineering courses offered are usually taught in other buildings because the large class size exceeds the small room capacity of Holmes Halls' classrooms. Also, many of the classrooms in the building don't really encourage better learning because it lacks the proper technology (i.e. smart boards, projectors, etc.) to make learning more effective. Lastly, repainting the building would also be nice because even though Holmes Hall is one of the newer buildings on campus, it looks much older and the older looking classroom enforces that opinion even more.

In conclusion, I urge you to support SB3116

Sincerely,  
Cathy

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Nicholas G. Fisher

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Nicholas Fisher (from the Big Island of Hawaii, graduated from Kealahou High School), and I am a Research Assistant and a graduate electrical engineering student at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

I first got familiar with College of Engineering and the Holmes Hall building when I transfer from UH Hilo, as an undergraduate, in Fall 2008. Don't get me wrong, it is a great place, full with very knowledgeable faculty and students, however Holmes hall is due for repair and/or renovation. The most noticeable things that need repair are the stain floors, or the watermarked, faded ceiling tiles. The ceiling tiles' wear-and-tear is probably mostly due to the old HVAC system. I would bet that every room you go into, every air duct or vent, has some kind of rust and/or dust from the old HVAC system. In general, Holmes Hall really needs to be brightened up a bit.

Holmes Hall is really the future of Hawaii's engineers. I myself studying through undergrad and now graduate studies have seen how the people of Holmes Hall are connected to Hawaii's tech and even the world's tech. I myself, joined a small satellite program, in Spring 2009, which has lead to many opportunities and finally lead to UH's first student-built satellite sent to space (November 2013). (UH's first satellite in space too). Our project trained over 50 undergraduates and a handful of graduate students in the four and half years of its lifetime. Sponsored by AFOSR, AFRL, AIAA, through the University NanoSatellite Program and an Educational Partnership with NASA, our project would have never taught so many future engineers and students of Hawaii. But it all wouldn't have happened without a building some of us engineers like to call home, Holmes Hall.

Without Holmes Hall I wouldn't have had the opportunities thus far. I'm thankful that this building in the University of Hawaii exist, but I think it would be a good idea to take care of the it and give Holmes Hall a rebirth to grow even more. I support the renovation of Holmes Hall and would hope to see the College of Engineering to grow into something even better than it is today.

Personal Testimony Presented before the  
Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

By

Maximilien Bender

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF  
HAWAII COLLEGE OF ENGINEERING

SUBJ: TESTIMONY IN SUPPORT of plans and design for the renovation  
of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Maximilien Bender, and I serve as student and member of the  
Ignition club of the University of Hawaii at Mānoa College of Mechanical  
Engineering.

I, Maximilien Bender, am 100% for the renovation of Holmes Hall. This  
building has played a major part of creating my interest in Mechanical  
engineering as well as the dream for a sustainable community of Hawaii.  
This is my 6<sup>th</sup> semester here at UH and from my point of view, Holmes Hall  
is in very much need of renovation. One major example is the fact that the  
ventilation and space available in the lab space is lacking; in need of much  
improvement.

Mahalos,

Maximilien Bender

02/05/2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a graduate student in the University of Hawaii Manoa College of Engineering, and a member of the Ignition Club; an engineering entrepreneurial club aiming to nurture the growth of innovative ideas, entrepreneurship, STEM education and workforce development in the State of Hawaii. Our success and service depend for many of its engineering student members upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of workspace, funding, tools and equipment, and faculty advising and mentorship. These trainings and opportunities are essential for our club's continued success and more generally, the continued health of the engineering, entrepreneurship and STEM education in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the competitors from the mainland.

Appropriation of funds for the Holmes Hall Renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore absolutely imperative that the facilities provided by the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle starting in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. Furthermore, graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted

that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Ignition Club

Mahmood (Hamed) Dehnavi  
PhD Student

February 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

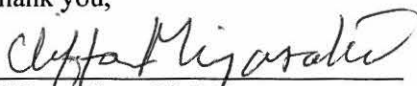
I am a practicing engineer in the State of Hawaii and an alumnus of the College of engineering. My education and experiences throughout my time at the University of Hawaii, College of Engineering have been very important to my development as an engineer.

Holmes Hall has not been substantially renovated in 42 years, and SB3116 will provide for needed improvements to facilities. The improvements will be help in increasing educational opportunities for students by providing new facilities, more up to date with constantly changing technology.

The College of Engineering will be evaluated by the Accreditation Board for Engineering and Technology (ABET) for accreditation starting in 2015 and improvements to Holmes Hall would be a positive for the College. A licensed professional engineer in the State of Hawaii is required to have an ABET accredited degree. Loss of ABET accreditation would force students to study engineering on the mainland.

I also ask for your support for the University of Hawaii, College of Engineering and SB3116.

Thank you,

  
Clifton Miyasaki, P.E.



# SB 3116

## Testimony

- Measure Title:** MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING.
- Report Title:** University of Hawaii College of Engineering; Appropriation (\$)
- Description:** Appropriates general obligation bonds to the University of Hawaii college of engineering for the design and renovation of Holmes Hall.
- Companion:**
- Package:** None
- Current Referral:** HRE, WAM
- Introducer(s):** IHARA, ESPERO, Galuteria, Taniguchi

STATE OF HAWAII  
DEPARTMENT OF DEFENSE

TESTIMONY ON SENATE BILL 3092  
A BILL RELATING TO HIGHER EDUCATION

PRESENTATION TO  
THE SENATE COMMITTEE ON HIGHER EDUCATION

BY

MAJOR GENERAL DARRYLL D. M. WONG  
ADJUTANT GENERAL  
February 6, 2014

Chair Taniguchi, Vice Chair Kahele and Members of the Senate Committee on Higher Education.

I am Major General Darryll D. M. Wong, State Adjutant General. I am testifying in **SUPPORT** of Senate Bill 3092.

The development of a state-of-art college level aviation training program at the University of Hawaii at Hilo continues. This aviation training program will include aircraft maintenance, pilot training, simulation and air space integration. It will provide a workforce trained for high priority science and technology careers and will assist the diversification of Hawaii's economy. The aviation program provides for a long overdue avenue for our Hawaii youth in the Science, Technology, Engineering and Mathematics (STEM) areas.

The requested funding will allow the program coordinator and the technical support member to continue their work to allow this aviation training program to begin in the fall of 2016.

I strongly urge you to pass SB 3092.

Thank you for the opportunity to provide this testimony.



Feb 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

**Subject: TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering, Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a Mechanical Engineer in the State of Hawaii and alumnus of the College of Engineering, and the Department of Defense in this State depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates, student interns, and returning College alumni from the US mainland. These graduates are essential for the military's continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty has done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

Appropriation of funds for the Holmes Hall Renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore absolutely imperative that the facilities provided by the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle starting in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly

accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. Furthermore, graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Sincerely,



Robert G.F. Lee  
Major General  
US Army (Retired)



# UNIVERSITY OF HAWAII SYSTEM

## Legislative Testimony

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Testimony Presented before the  
Senate Committee on Higher Education  
Thursday, February 06, 2014 at 2:45 PM

On Behalf of  
Tom Apple, Chancellor  
by  
Peter E. Crouch  
Dean, College of Engineering  
University of Hawai'i at Mānoa

SB 3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII  
COLLEGE OF ENGINEERING

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

The University of Hawai'i supports SB 3116. It appears in the list of Board of Regents approved-priority projects submitted as part of the UH budget.

Personal Testimony Presented before the

Senate Committee on Higher Education

Thursday, February 06, 2014 2:45 PM

Conference Room 414, State Capitol

by

Peter E. Crouch

**SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING**

**TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Peter E. Crouch and I serve as Dean of the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116 and am very pleased with your willingness to hear this bill.

The faculty, students and staff in the College of Engineering are excited about the progress the College has made in the last decade in which engineering and pre-engineering enrollment has increased by over 50%, competitive research expenditures within the College of Engineering have doubled and the College has made outstanding contributions to STEM outreach, on programs throughout the state such as Robotics and Research Experiences for Teachers in conjunction with teachers and students throughout the State. We have a thriving Native Hawaiian Program to recruit and retain native Hawaiian and part native Hawaiian students, that is steadily expanding to other STEM units, and is a major force in the College's collaboration with the rest of the UH system campuses in the Engineering Coalition and enabling students to more easily transfer from a 2 year to a 4 year STEM program at UH. It is clear that as the College continues to attract more of Hawai'i's students to its programs it will be increasing unable to accommodate all of the students that wish to pursue engineering as a career and the programs that it is able to offer will be increasingly hampered by laboratory conditions that are simply not on a par with the contemporary facilities of other colleges of engineering throughout the nation.

Holmes Hall supplies 75% of the space the College of Engineering occupies on the Mānoa Campus and has been the iconic home of Engineering on the Manoa campus for 42 years and without any substantial renovation in that time. While the faculty has worked wonders to accommodate their teaching and research, it is becoming very challenging to keep abreast of the rapidly evolving nature of engineering and technology as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall, incorporating over \$18 Million in R&M and a modicum of expansion in the Holmes Hall atria, will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent can be recruited from the mainland.

Holmes Hall was originally designed to be part of a pair of buildings devoted to engineering and so its design is woefully inadequate to accommodate all that is expected of the College's faculty and



accommodate all of its student's aspirations. Its design does not accommodate modern engineering education or research in so many ways. It was not design at all to accommodate student team project work and the scope of hands on laboratory work which plays such an important and formative role training and educating the practicing engineer of today. Many engineering schools now have purpose built facilities to enable these contemporary instructional modes.

We are extremely happy to report that even with the many constraints that the current building imposes we are rapidly expanding the emphasis being placed on student projects and much of this funded by our community supporters and potential employers. This enables the students to participate in many hands on projects of current interest to building and diversifying the state's economy: civil infrastructure (roads, bridges, waste water etc.) aerospace (utilizing PMRF for satellite launch, autonomous water vehicles and now building capacity in autonomous air vehicles), manufacturing including 3D printing, and communications and associated computer and cyber security. These experiences enable the College's graduates to demonstrate immediate expertise upon taking positions in Hawaii. It is this very emphasis that is so hard for the College to facilitate since engineering education 42 years ago did not embrace this contemporary view of engineering education.

Engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and increasingly manufacturing. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy through both its graduates who are the mainstay of engineering talent in Hawai'i or the research that faculty pursue to support industry on Hawai'i. Holmes Hall was built and designed of course to accommodate the particular research and laboratory functions active at that time, much of which is now totally unsuitable for the current focus of its programs. So, in order to support the growth of these dynamic economic sectors, as do other colleges of engineering in major economic centers of the US, it is imperative for this role to be recognized in the form of the facilities provided by the State for the College to operate in successfully at a national level.

Finally, Holmes Hall renovation is also critically one aspect considered by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore imperative that the facilities housing the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, and with the next evaluation cycle starting in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities on the mainland. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. Furthermore, most graduates of the College's programs would not be as desirable, or even eligible to work in the engineering profession in Hawai'i or the mainland since licensed professional engineers in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.



UNIVERSITY  
of HAWAII®  
MĀNOA

College of Engineering

Office of the Assistant Dean  
Song K. Choi, Ph.D.

February 5, 2014

**Personal Testimony Presented before the**

Senate Committee on Higher Education  
Thursday, February 06, 2014 @ 2:45 PM  
Conference Room 414, State Capitol

By

Song K. Choi, Ph.D.

**SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING**

SUBJECT: **TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Song K Choi, and I been a part of the College of Engineering, University of Hawaii at Mānoa as a student, researcher, professor, and now as the assistant dean for the past 23 years. I am pleased and honored to provide personal testimony in **full support** of SB3116.

After 17 years of being away from Hawaii, I returned in 1991 to further my education in engineering and completed my doctorate in mechanical engineering at the College of Engineering, University of Hawaii at Manoa in 1995. Since then, I have been a part of the College in different capacities conducting research in robotics to teaching engineering to students to furthering K-12 STEM education efforts and to bringing the College and University to the fore-front of technology by initiating and creating engineering entrepreneurship efforts.

The education that I received at the College was sufficient to allow me to explore areas of unique research; however, in many instances, there were shortcomings due to a lack of repair and maintenance to the College's main building, Holmes Hall. Many of my colleagues have faced similar problems and have 'coped' with these shortcomings to highlight research and education efforts for the University and the State, but we are now at a crossing point...

Besides robotics research, I have made it a point to 'change the thinking and attitudes' of the people of Hawaii by exposing K-12 students, parents, teachers, administrators, and communities by bringing robotics presentations, robotics competitions, and STEM efforts to explore, investigate, and immerse our youth in the 'unknown'.

Well, we have succeeded!!! With the State's effort in funding ACT 111 and other STEM education related initiatives, the College of Engineering increase full-time student enrollment of approximately 400 in 1999 to over 1400 in 2014!!! Many of these incoming students were 'exposed' to engineering through robotics, science fairs, STEM events, and so forth.

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The dilemma that we face now is not a “bad” thing, as we have been overly successful in our recruitment efforts; however, we have created this vision of the 21<sup>st</sup> century engineering at the College of Engineering, University of Hawaii at Manoa, but we do not have the proper buildings, classrooms, equipment, and faculty and staff to properly educate the continuously and consistently increasing student numbers.

We have created the excitement, the interest, and the enrollment in engineering to assist in fulfilling the ever-increasing demand on the engineering profession in Hawaii through the construction developments, the rail development, the high technology startup industry, and the military; however, we cannot fulfill this effort without the State government’s support.

Please take this testimony as an alumnus, faculty, administrator, and supporter in to consideration when considering your vote for this effort. Thank you very much for your time and patience...

Sincerely,



Song K. Choi, Ph.D.  
schoi@hawaii.edu

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Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Jean Imada

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJECT: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes  
Hall University of Hawai'i at Mānoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Jean Imada, and I serve as Assistant to the Dean of the University of Hawai'i  
at Mānoa College of Engineering. I am pleased to provide personal testimony on  
SB3116.

Built in 1972, Holmes Hall has housed the College of Engineering for the past 42 years  
and is in dire need of repairs and maintenance (elevators, HVAC  
controls/equipment/distribution system, electrical equipment, lighting, plumbing, and  
fire protection), the current estimated cost of which is \$18+ million. The appropriation  
of funds for the design and renovation of Holmes Hall will expand our College's  
capabilities for teaching, research and innovation, and producing graduates that will  
make an impact on some of the critical issues we face in Hawai'i and beyond.

When Dr. Peter Crouch assumed the deanship of the College in 2006, the enrollment  
was 900+ undergraduate and graduate students. Today, our enrollment is over 1,000  
students. To enhance the learning experience of our growing student population, the  
College urgently needs state-of-the art laboratories, space for high-demand research,  
and and refurbished classrooms. We want our College to be an extraordinary  
engineering academy with an inspirational physical facility that can and will be the  
source of pride for current and prospective students.

In 2008, the U.S. National Academy of Engineering announced the "Grand Challenges for  
Engineering in the 21<sup>st</sup> Century," which numbered 14 and can be categorized into the  
following: (1) sustainability, (2) health, (3) reducing vulnerability, and (4) joy of living;  
and, the goal of which was to identify what needs to be done so people and planet Earth  
can survive. In order for our College to embrace and effect these challenges, we need  
your help in acknowledging the changing landscape of engineering education in Hawai'i  
by providing our College's students and faculty with a renovated Holmes Hall that can

be a true testament to an unparalleled opportunity to influence student learning and enrichment.

As you ponder the many challenging and critical legislation that will pass through your hands this session, we ask that you give serious consideration to and work toward the passage of SB 3116 – a major step forward in preserving and building on the achievements of our students – the engineers and leaders of tomorrow!  
Thank you.

Personal Testimony Presented before the

Senate Committee on Higher Education

Thursday, February 06, 2014 2:45 PM

Conference Room 414, State Capitol

by

Cheryl Sato Ishii

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Gilbert S.C. Keith-Agaran, Michelle N. Kidani, Jill N. Tokuda, Sam Slom

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN STRONG SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

Thank you for the opportunity to testify in strong support of SB3116. My name is Cheryl Ishii, and I serve as Assistant Specialist to the Dean of the University of Hawaii at Mānoa College of Engineering. Over the years I have been privileged to support several Deans, and work alongside our internationally recognized faculty, award winning students, prominent alumni and industry stakeholders. Though challenging, there is no more rewarding environment. The academic demands as well as the engineering skill sets driven by exponential advancement in technology are intensive and inspire our students and faculty as change makers for the future. These conditions require a working environment and facilities far different than those needed 40 years ago when Holmes Hall was built.

In 2006, Dean Peter Crouch and the College made a commitment to create seamless onramps into engineering education and at the same time, expand engineering opportunities for Hawaii's diverse student populations. We have successfully increased undergraduate and graduate student enrollment, and launched both a highly successful Pre-engineering program and the nationally recognized Native Hawaiian Science & Engineering Mentorship Program.

We all share the vision for Holmes Hall as a dynamic 21st century facility with expanded, dedicated space for student design projects, and other multi-function modern laboratory space for teaching and research, an enhanced academic support center, and updated graduate student space, as well as a meeting place for the engineering community and interdisciplinary interaction, including STEM outreach and mentorship. We urgently need a modern facility that will secure our place among the nation's leading engineering schools and help us attract and hold the best faculty, researchers and students.

We understand that there are many valid and competing demands for our State's precious resources but I can't think of any more important investment for Hawaii's future than beginning the design phase of Hawaii's engineering education cornerstone.

We hope you will agree that Holmes Hall is more than ready for the next step.  
Thank you for your consideration.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Tep Dobry

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII  
COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of  
Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Tep Dobry, and I serve as Director of Academic Affairs for the University of Hawaii at Mānoa College of Engineering and faculty in Electrical Engineering. I am pleased to provide personal testimony on SB3116.

I joined the faculty of Electrical Engineering (EE) in 1989, served as Interim Assistant Dean in the College of Engineering from 2000 to 2004, and have been the Director of Academic Affairs since 2004 overseeing the advising, degree verification and student records of all engineering students in the college. I also continue to teach Computer Engineering courses in the EE department and advise a number of undergraduate student projects.

Over the years, I have seen several generations of engineering students graduate with engineering degrees and succeed in engineering careers in Hawai'i and on the mainland. From my unique perspective I get to see most students when they enter as freshmen, as they progress through their program and as they graduate and can appreciate the "value added" as our alumni become productive professionals and citizens.

Over those same years, I have seen the facilities in Holmes Hall age, deteriorate, and fall behind in effective pedagogy for modern engineering education. I am, therefore, grateful for this opportunity to upgrade our facility in Holmes Hall, and ask for your continued support in our efforts to educate future engineers. Mahalo.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Constantinos S. Papacostas

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**RE: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Mānoa, College of Engineering.

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Constantinos S. Papacostas, and I am the Chair of the Civil and  
Environmental Engineering Department of the College of Engineering , University of  
Hawaii at Mānoa. I am pleased to provide personal testimony in support of SB3116 that  
addresses a critical need supporting the social, economic and environmental vitality of  
the State of Hawai`i and its people.

The UH College of Engineering is the only accredited engineering school in Hawai`i that  
has, over the decades, has delivered the engineering education of the State's youth and  
has carried out significant research and service enhancing the health, safety and  
welfare of the people of Hawai`i. To enable continued excellence, it is imperative that  
the college be equipped with up-to-date facilities.

It is important to point out to you that the original physical plans for the College called  
for an "Engineering Complex" rather than a single building. As the then Dean of the  
College, John Shupe, explained in an interview that appeared in the August 25, 1973  
issue of the *Honolulu Advertiser*, "When the new engineering facilities were being  
planned in 1965, Holmes Hall was designed to house the engineering laboratories and  
the administrative offices of the college and its departments. Phase II, adjacent to it,  
was to have been almost as large as Holmes, and it was to house classrooms, an  
auditorium and faculty offices."

Budgetary and other considerations forced the College into a situation of having to  
operate within practically half the planned space and to shoehorn most laboratories and  
offices within a single building.

After more than forty years of “benign neglect,” Holmes Hall is in desperate need of renovation to accommodate increasing enrollments, and developments in high technology that have transformed the nature of engineering education.

Approval of the planning for and the design of the sorely needed renovations of Holmes Hall is the first step toward accomplishing this worthy goal.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Wayne A. Shiroma

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Wayne Shiroma, and I serve as Professor and Chair of the Department of Electrical Engineering, College of Engineering, University of Hawaii at Mānoa. Mahalo for the opportunity to provide personal testimony on SB3116.

I attended UH Manoa as an engineering undergraduate in the 1980s, when Holmes Hall was just a decade old. After ten years on the mainland, completing my MEng and PhD degrees and working in the aerospace industry, I returned to UH Manoa as a faculty member in 1996, and became the Department of Electrical Engineering (EE) Chair in 2013.

When talking to EE department chairs at mainland institutions, I am repeatedly and pleasantly reminded of how UHM's EE Department achieved international recognition in the 1970s, when a group of faculty researchers developed the theories and techniques that eventually evolved into the wireless data networks that drives today's consumer market (cell phones, iPads, wireless laptops, etc.).

Four of our faculty members are currently recognized as IEEE Fellows, whose annual grade elevation is limited to one-tenth of one percent of the general IEEE membership (425,000 in 160 countries). Several of our faculty won the highly competitive NSF CAREER or Presidential Young Investigator awards, recognizing the top engineering educators in the nation. Our faculty has also established a number of start-up companies that provide well-paying jobs for our graduates.

Since 2001, four of our undergraduates were recognized as the top electrical or computer engineering students in the nation, averaging to about one every three years. Our electrical and computer engineering students have recently begun to compete in the annual IEEE Xtreme Programming Challenge, and last year ranked 98<sup>th</sup> of 1838



teams worldwide. Our IEEE-HKN student honor society won the Outstanding Chapter Award seven years running. Last November, our students' nanosatellite (UH's first satellite) was launched into space as part of a record-breaking NASA/DoD mission that included 29 satellites.

These faculty and student achievements are just a sample of the many, many great things that we're already doing here in Manoa. But think how much more we can achieve with an engineering facility that is in urgent need of repair and maintenance, and more importantly, renovation that is conducive to today's collaborative, multidisciplinary, vertically integrated learning style that emphasizes open-ended projects and discovery-based learning.

In Fall 2012, every single urinal in the Holmes Hall 4<sup>th</sup> floor restroom was taped over with garbage bags because there were unusable (to his credit, Chancellor Apple had them repaired within a week after receiving a direct student complaint, but these restrooms are still so dingy that it is an embarrassment to our visiting high school students). The HVAC system is in need of upgrading...it is often too hot on warm days and too chilly on cold ones. Our classrooms are a throwback to the traditional lecture-style rooms of the 1970s and 80s, rather than modern classrooms that emphasize teamwork, multimedia, and project-based learning. Our laboratory complex throughout Holmes Hall is a labyrinth of small enclosed rooms, rather than the open, collaborative labs that I see at mainland peer institutions.

Having seen Holmes Hall from the student, faculty, alumni board member, and now department chair position gives me a unique perspective on how the needs of our facility has evolved over the past 30 years, and how our engineering facilities measures up against its peers across the nation. Recruiting great faculty, and convincing our top students to study engineering at home, starts first with improving our facility.

I have told my students that an opportunity like this comes only once every half century or so, and to take full advantage of the fact your committee is taking the time to consider this bill. I am grateful for the support you have shown so far, and respectfully ask for your continued support for our physical infrastructure as I commit to continued excellence in training our students.

**Personal Testimony Presented before the**

**Senate Committee on Higher Education**

**Thursday, February 06, 2014 2:45 PM**

**Conference Room 414, State Capitol**

**by**

**(Mehrdad M. N. Ghasemi Nejjhad)**

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Mehrdad M. N. Ghasemi Nejjhad and am a Faculty of the University of Hawaii at Mānoa, College of Engineering (Mechanical Engineering). I am also a Professor and the Chair of the Department of Mechanical Engineering. I am pleased to provide personal testimony in support of **SB3116**.

I strongly support SB3116 and respectfully request your approval of the requested appropriation to the University of Hawaii, College of Engineering.

Holmes Hall is home to the College of Engineering (COE) on the UH Manoa campus. COE is the flagship program and has been the only accredited engineering school in Hawai'i that has delivered engineering education to the State's youth and has carried out significant research and service contributing to the health, safety, and welfare of the people of Hawai'i. While the College has been successful in continuing to receive accreditation for the engineering program in the State, it has always been difficult to implement new laboratories with new cutting edge technologies or even meaningfully upgrade the existing facilities in a building that was built 42 years ago without any substantial renovation since then. In addition, the renovations are also necessary to positively reflect on our program accreditations in the College, and help in continuing to receive the accreditation of our engineering programs. Building capabilities that were designed and implemented over 40 years ago are not adequate and responsive to the needs of modern technologies, and certainly needs upgrading after over 40 years to serve our students and State well. In addition, with the ever growing needs of our society to engineering and STEM education and ever growing population of our Engineering students, even compared to a few years ago, our students population has grown out of the current space available to them in Holmes Hall with the over 40-year old design of the classroom and laboratories that need redesigning to make efficient use of space while upgrading and modernizing the facilities to provide a contemporary environment for our engineering students accommodating both technological advances in the field as well as make room and space for ever growing population of our students bodies to be housed in the current insufficient space and facilities of Holmes Hall. Furthermore, as the engineering education is vital to our community and the economic development of our State, it is imperative that renovations of Holmes Hall be planned

and subsequently be implemented without delays. Students team projects and hands-on laboratory work play important role in training and educating practicing engineers of today. These projects are funded by our community supporters and potential employers both locally and nationally. The Holmes Hall Renovation will also enable our students to participate in many hands-on projects of current interest, hence diversifying the State's economy. Furthermore, new and modern engineering facilities will help the College recruit and retain the best and the brightest of our local students, help faculty better educate the students, expand course offering using state-of-the-art labs, provide better facilities for carrying out competitive research, and equally important maintain the program accreditation at a highest level. It is difficult to show that we have progressive engineering program with the current condition of our aging building and deteriorating facilities. It is critical for the College to give prospective students the impression that they will be attending a first rate engineering college. Your approval of SB 3116 is not only desirable but also commendable as it will help the College of Engineering strive and reach its full potential as the flagship engineering college in the State of Hawaii.

Mehrdad M. N. Ghasemi Nejjhad, Ph.D., Professor and Department Chair  
ASME Fellow & Boeing Welliver Faculty Fellow  
Founding Director: Hawai'i Nanotechnology Lab., Composites Lab. & Smart Structs. Lab.,  
Associate Editor: Journal of Thermoplastic Composite Materials  
ABET Chair, SAE & SAMPE Faculty Advisor  
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Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
James R. Yee

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is James Yee, and I serve as an associate professor in electrical engineering at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

The UH College of Engineering serves a very important function to the State of Hawaii. For students from Hawaii, the College provides one of the most rigorous programs of study. The training that the students receive in engineering prepares them for a good job and career. Over the decades the facilities (Holmes Hall) has greatly deteriorated. For the sake of our students, I strongly request that you decide in favor of the renovation of Holmes Hall.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Galen Sasaki

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Galen Sasaki, and I serve as an associate professor of the University of Hawaii at Mānoa College of Engineering in the Department of Electrical Engineering. I am pleased to provide personal testimony on SB3116.

The renovation of Holmes Hall will provide new learning spaces not currently in the building. In particular, we are in need of spaces where students can work on projects in an innovative and collaborative environment. The space I use for student projects is a traditional electronic instructional laboratory with benches and lab equipment (power supplies, digital multimeters, oscilloscopes) per bench.

This is sufficient for traditional laboratory instruction which is to follow a set of lab instructions, often reinforcing the content of lectures with experiments and measurements. However, *it is not well suited for student projects that require innovation and collaboration*. It does not have enough space for student groups to brainstorm projects since having 10 student groups of 3 to 5 students each can become quite crowded and noisy. The space does not have extra room to have sufficient whiteboards or room to put easels and flipchart pads for the student groups to brainstorm and basically discuss their ideas and plans. It also needs more room for presentations to larger groups. Since there is no other space available in Holmes Hall, we are stuck in this situation.

I provide this personal testimony since this renovation will lead to better training and experience of our students and to an innovative and highly skilled work force.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Yingfei Dong

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Yingfei Dong, and I serve as an associated professor at the Dept. of Electrical  
Engineering, College of Engineering, University of Hawaii (UH) at Mānoa. I am pleased  
to provide personal testimony on SB3116.

I joined UH in Aug, 2003, and taught both undergraduate and graduate students at the  
department for last 10 years. I have the first hand experiences in and out classrooms  
while also advising undergraduate and graduate research projects.

The facility at Holmes Hall is barely working for daily teaching and research. I have  
National Science Foundation awarded projects and purchased several servers for the  
research. But we do not have space to put them. We have to put them into graduate  
research assistants' office. As no sufficient AC and chalk dusts in the room, two servers  
had been crushed, and we lost valuable data and time in fixed minor issues like this. It  
often so frustrated due to such unnecessary setbacks.

The AC at Holmes Hall is very low efficient and very little control. I have to wear jackets  
or sweaters in my office all year long, because it is too cold and I have no way to adjust  
the temperature. Such energy waste can be easily fixed with a simple control system.

When I came to UH in 2003, I was really surprised that UH does not recycle batteries  
and papers. While so much papers are used at the college, it would a big saving to set up  
recycle stations, especially we are education facility.

I am often embarrassed when we have guests who need to use the restrooms. I don't  
mind they are old, but they need to clean and functional. There is often something not  
working. It is really bad for our image, e.g., for industrial visitors or recruiters, research  
collaborators or high school students.

Our teaching and research facility definitely need to be significant improved. While I was at UH in the past decade, the building only got worse. I have seen some brilliant undergraduate students who went to California universities for graduate schools, simply because they do not feel we have sufficient facility for their education.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Matthias Fripp

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII  
COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawai‘i at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Matthias Fripp, and I have the privilege of serving as an Assistant Professor of Electrical Engineering in the University of Hawai‘i at Mānoa College of Engineering. Thank you for the opportunity to provide personal testimony on SB3116.

My teaching and research focus on the opportunities and challenges in using very large shares of renewable energy in the power system. Hawai‘i is an ideal environment for this work because of its abundant sunshine and strong commitment to renewable energy. Clean energy is becoming a strong focus of the College of Engineering, and I believe this can become an area of unique strength for the University, attracting the best students from local and mainland schools. Many of these students will stay in the State and help build and expand our future clean energy economy.

However, it is difficult to recruit the best students into a visibly dilapidated working environment with substandard facilities. It is a source of grim humor when I explain to students in my class on “smart grids and renewable energy” that the reason the classroom is so cold is because the air conditioners were installed at a time when electricity was too cheap to worry about. The air conditioning system blows a constant, unregulated volume of cold air into every room. Worse, in the few rooms where thermostats are still functional, they activate heating coils in the ductwork, burning even more energy (and money) to reheat the air to a comfortable temperature. This may inspire students with ideas for retrofit projects, but it does not make it clear that they are studying in a world-class institution.

The physical layout of Holmes Hall also makes it difficult to adapt to the changing technical and economic world and to capture synergies between the diverse faculty of the College of Engineering. For example, I am seeking funding from the National Science Foundation to work with students to design home appliances that can dynamically adapt to the supply of renewable energy in the power grid. This requires pulling together data and power lines from rooftop solar panels and sensors, as well as electrical and plumbing



connections for the appliances themselves. However, setting this up is difficult or impossible with the building's antiquated overhead access spaces. I have also been unable to find open, collaborative space where this project could share facilities with smart-grid research by other colleagues. The renovations enabled by SB3116 will allow the College to cluster related work together, and also provide stronger access to the data and other connections needed in a modern College of Engineering.

In my years at the UH College of Engineering, I have been inspired by the knowledge and experience of my colleagues and the enthusiasm and aptitude of our students. This is indeed a world-class place for education and research, but that status must be bolstered by adequate facilities. Thank you very much for considering SB3116, to renovate and modernize Holmes Hall.



UNIVERSITY  
of HAWAII®  
MĀNOA

College of Engineering  
Department of Mechanical Engineering

DATE: 5 February 2014

TO: Senate Committee on Higher Education  
Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and  
Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill  
N. Tokuda, Sam Slom.

FROM: Brian Bingham, Associate Professor, Mechanical Engineering

SUBJECT: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the  
University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414

I am a faculty member at the College of Engineering, University of Hawaii at Manoa. As a faculty member I consider the renovation and maintenance of Holmes Hall to be a critical part of our efforts to fulfill our mission to prepare students for a career in engineering. Every day the faculty here in the College are working hard to provide new opportunities for our students. In my experience, many of these students have tremendous potential and are motivated to try to stay in Hawaii after they graduate. An engineering degree offers them a pathway towards a successful career in Hawaii, a career with the potential to improve the state and to provide a living wage in a state with one the highest costs of living in the world.

The past successes of the College in recruiting and the demand for new engineers has prompted a doubling of our enrollments. We cannot sustainably support this level of enrollment with our current resources. It is often the case that we cannot offer the classes that students need because we simply don't have the room---classrooms or instructional laboratories with enough space to meet our student demand. Students are faced with the choice of delaying their degree or transferring to a mainland school. We lose many of our best students to mainland schools simply because we don't have the facilities to support them.

If the State of Hawaii is truly dedicated to providing better opportunities for our young people, diversifying our economy and keeping our best and brightest students here in the State, then I believe it is imperative to invest in providing the facilities to educate students that want to enter engineering and technological fields. Their first step is an engineering degree.

2540 Dole Street, Holmes Hall 302  
Honolulu Hawaii, 96822

Thank you for your consideration.

Brian Bingham  
Associate Professor, Mechanical Engineering  
University of Hawaii at Manoa

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
(David Ma)

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is David Ma, and I serve as Associate Professor of the University of Hawaii at  
Mānoa College of Engineering (808-9567377). I am pleased to provide personal  
testimony on SB3116.

I have been chairing the ABET committee since 2010, prior to that I had been involved in  
the ABET accreditation of the Civil Engineering program for many years. As you may  
have known, adequacy of facilities is one of the seven required criteria of the ABET  
accreditation. The Civil Engineering program has been successful in getting accredited,  
however, issues were raised about the adequacy of our facilities being on the borderline  
in the last ABET visit a few years ago. Due to the size of our current enrollment, it is very  
likely this issue will be raised again, which may eventually lead to loss of accreditation.  
The negative impact of losing accreditation certainly is too costly for the State to afford  
and cannot be overestimated. Passing this bill will not only strengthen our accreditation,  
it will also provide a much better learning environment for the students, allowing us to  
produce high-quality future engineers necessary for the State.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Adrian Ricardo Archilla

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Adrian Ricardo Archilla, and I serve as Associate Professor of Civil and  
Environmental Engineering at the University of Hawaii at Mānoa (UHM) College of  
Engineering. I am pleased to provide personal testimony on SB3116.

After coming to UHM in 2002, I created the Pavement Engineering Laboratory with  
funding from both research projects and UHM. The laboratory has advanced testing  
equipment with estimated worth in the order of half a million dollars.

The laboratory is used for teaching and research. For teaching, it is used to conduct  
laboratory sessions on Hot Mix Asphalt mix design in the class CEE 461 - Pavement  
Engineering. In this class, students are introduced to pavement design, Hot Mix Asphalt  
concrete mix design, and the relationship between mix design and pavement design for  
flexible pavements. The laboratory sessions provide a unique opportunity for students  
to connect the theory with the performance of the material and to demonstrate the  
measurement of some of the properties of Hot Mix Asphalt.

In addition to the use in CEE 461, the lab is also used in a graduate class CEE 661 –  
Pavement Design and Rehabilitation and for performing research. In research projects,  
undergraduate student assistants gain additional experience beyond that of a class.

The planned renovation of Holmes Hall will help to deliver a better experience to our  
undergraduate students and provide a safer environment. Currently, the lack of space  
results in significant waste of time and effort. Specifically, it has been common for the  
class size to be in the order of forty students (senior students are required to take a  
senior transportation class and CEE 461 is one of the three choices.) However, the lab  
has enough space to fit only about eight students. Consequently, the lab sessions need  
to be divided into several slots, particularly in those labs where students are expected to

have active participation. Furthermore, depending on the test that needs to be performed, equipment and materials need to be moved around, with the consequent waste of effort and time. In addition, these additional activities and the large number of students increase the probability of accidents.

Thus the renovation of Holmes Hall will ensure that the College is able to provide its graduates a safer environment and a better learning experience on a par with or superior to those they could obtain on the mainland.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Aaron Ohta

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Aaron Ohta, and I serve as an Associate Professor in the Department of Electrical Engineering of the University of Hawai'i at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

After graduating from Kalani High School in 1999, I became an electrical engineering student in the College of Engineering. At that time, Holmes Hall was over 25 years old, and was already beginning to show its age. Fortunately, the dedicated faculty were still able to provide me with a quality education, enabling me to go on to graduate studies at UCLA and UC Berkeley. After graduating from UC Berkeley, I was fortunate enough to return to Mānoa as a faculty member. I know other College of Engineering classmates are also contributing to the State of Hawai'i, the nation, and the world as practicing engineers in government and industry jobs, and I know that former students of mine are doing the same.

It is now about 15 years since I first experienced Holmes Hall as a student. Since then, we have had tremendous advances in how we communicate (smartphones, video calls, increased data rates), how we compute (tablet computers, smaller and faster laptops, wearable computers), how we travel (hybrid and electric vehicles), and how we work (increased automation, widespread use of robotics). All of these advances were brought about by engineers. However, the facilities at Holmes Hall have not kept up with the advances made by the engineers learning and working there.

Extramural funds have been brought in by College of Engineering Faculty to purchase expensive state-of-the-art equipment for our students, only to have rooms in Holmes Hall rendered unusable due to leaks in the roof. Mold in the central air-conditioning system has made it impossible to do biomedical research in Holmes Hall, even though this is one of the fastest-growing disciplines in engineering. The classrooms reflect the

teaching practices prevalent during the 1970s, where professors would lecture while students dutifully took notes. This makes it challenging to implement modern techniques that emphasize student engagement, team exercises, and project-based learning. Updates to Holmes Hall are needed to maintain the quality of the research and education of our engineering programs.

Holmes Hall does not only affect engineering students. There are many outreach events that are conducted by the College of Engineering. I have personally participated in many events. For example, we have an annual Open House at the College that is well-attended by prospective students, parents, and interested community members. I regularly give tours to these participants, who are impressed with the research and projects being performed in the College. However, it is embarrassing to show some of the labs to the visiting community members. This probably does not help with student recruitment. Hawai'i's students are some of the best in the nation. I have personally hosted Hawai'i students in my lab who have gone away to the mainland for school, but wanted to do some research while home for the summer. They are coming from institutions like Stanford, Columbia, and Johns Hopkins. These are perfect opportunities to try and bring them back to Hawai'i for graduate school or for their career, but it is challenging to attract the best and the brightest with our less-than-sparkling facilities.

The State of Hawai'i plays the most important role in ensuring the continued success of our University. I thank you for your support, and hope that you will continue to support the upgrade of facilities for future generations of students.



Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Rui Zhang

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Rui Zhang, and I am currently an Assistant Professor of the Department of  
Electrical Engineering (EE), College of Engineering, University of Hawaii at Mānoa  
(UHM). I am pleased to provide my personal testimony on SB3116.

Back in 2000 when I was still an undergrad in China, I came to know UHM when I  
learned that ALOHAnet, the first wireless data network that pioneers the whole wireless  
industry, was invented by a group of EE faculty researchers here in 1971. Twelve years  
later, I joined the Department of EE as a faculty member, sitting in the office next door  
to the inventors of ALOHAnet and hoping that I could be part of the next breakthrough.

It did not take long for me to realize that the Holmes Hall where our department resides  
is in poor shape, to put it mildly. The elevators are slow and outdated, the urinals in the  
restrooms are frequently out-of-order, and the offices are often too chilly in spring and  
too hot in summer. More importantly, the classrooms in Holmes Hall were designed to  
suit traditional lecture-style teaching, which makes it extremely challenging for  
instructor to embrace modern teaching methods that heavily rely on IT technology and  
emphasize teamwork and project-based learning. In addition, the small enclosed lab  
rooms discourage collaboration among our students, which is the key for their academic  
success.

As a junior faculty member, I wholeheartedly support SB3116 and am truly grateful for  
your consideration and support.

Personal Testimony Presented before the

**Senate Committee on Higher Education**

Thursday, February 06, 2014 2:45 PM

Conference Room 414, State Capitol

by

David Garmire

**SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING**

**SUBJECT: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is David Garmire, and I currently serve as an Assistant Professor of Electrical Engineering in the College of Engineering at the University of Hawaii at Manoa. Before coming to UH, I received two BS degrees from Carnegie Mellon University (with University and College Honors) and a PhD from the University of California at Berkeley while doing research at the Berkeley Sensor and Actuator Center on microelectromechanical systems (MEMS). I have had the opportunity to conduct research and teaching at highly regarded laboratory spaces in these institutions, and I firmly believe that Holmes Hall, the heart of the COE, can become a world-renowned engineering facility in addition to housing an exceptional group of faculty, staff, and students in research, teaching, and innovation. Legislation such as SB3116 is critical in making this happen.

As a part of starting my faculty position at UH, I was given to manage a large amount of laboratory space, over 3000 square feet -- a major reason for me to join UH. My colleagues from Berkeley who went on to become faculty at places such as the University of Maryland, California Institute of Technology, and Stanford were impressed as well because, as every hardware researcher knows, laboratory space is incredibly valuable for coming up with the next generation of gizmos, and having students utilize state-of-the-art equipment and interact with each other.

For every potential reward, there is a challenge to overcome and a risk to take. Unfortunately, the space had leaks, broken equipment, decaying walls, damaged floors, non-functioning drains, broken ventilation systems, failing ceiling material, and significant rust to name a few of its many problems. I went to work. I jerry-rigged a syphon in the ceiling so that a major leak was redirected into a drain. I installed dehumidifiers to reduce rusting of precious equipment. Over months, I removed broken furnishings, equipment, and debris. Working with the Dean's Office and the Chancellor's Office over years, we were able to obtain funds to fix a couple of the problems including resurfacing a floor in some of the rooms. The administration and leadership were highly supportive in endeavors to revamp the space, but funds were limited. I collaborated with other departments to obtain shared equipment for rapid prototyping and to have

some essential processing capabilities.

To my surprise, students warmed up to using the space. The space was repaired to a functional level. And the students came. For the first time, students could make the devices that we had previously only talked about in class. Many simultaneous on-going projects emerged to use the laboratory space. Multiple faculty are involved. Collaborative projects with the College of Tropical Agriculture and Human Resources, the School of Architecture, the Institute for Astronomy, and the School of Ocean and Earth Science and Technology are now enabled by the College of Engineering making use of its space to solve some of their pressing engineering challenges.

Derived from a small investment of time, energy, and resources, this surge of interest from both students and faculty across campus leads me to believe a more sizeable investment would have a compounding and profound effect on the status of the College of Engineering. I see it as being an essential focal point of excellence in high technology and engineering bridging the East and the West. I have already seen our students graduate and become innovators abroad and in Hawaii winning numerous entrepreneurial challenges. I also see it as dominating research on novel renewable energy devices and cleantech as it is in an area with one of the highest costs for electricity due to imported oil that must be shipped across the Pacific Ocean. Much of my recent research has been in applying micro and nanotechnology to the clean energy domain. On top of Holmes Hall we have been able to work with facilities management, the Hawaii Natural Energy Institute, and the Pacific International Center for High Technology Research (PICHTR) to install a testbed for solar energy (including photovoltaic panels). Now with HECO we are working to install large capacity batteries and smart inverters in Holmes Hall to help advance smart grid research.

Asked to envision how we might make use of our renovation of Holmes Hall by a small committee last year, I foresee that much of the layout can and probably should be changed. Leveraging my collaboration with the School of Architecture, I was able to determine that many of the interior walls of the three central columns can be removed to allow for reconfigurable collaborative laboratory and research space (which has been successfully tried by a number of other universities) in addition to joining the columns to make several large spaces that can be used as student spaces. I foresee large student spaces are critical for fueling multidisciplinary student projects. Populating those spaces with prototyping, manufacturing, and testing tools would be the next step. I was pleased to find out that a successful demonstration of this concept has already been tried out at the new \$23 million Sullivan Center in the Iolani K-12 School. Students have been quick to make use of the facilities. I believe a similar overwhelmingly positive reception would be given at UH by undergraduate and graduate students alike as well as the faculty.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Garmire", with a horizontal line extending to the right.

Dr. David Garmire  
Assistant Professor of Electrical Engineering  
University of Hawaii At Manoa, College of Electrical Engineering

University of Hawaii  
Department of Civil and Environmental Engineering  
2540 Dole Street  
Holmes Hall 383  
Honolulu, HI 96822

February 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering, Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a professor in the Department of Civil and Environmental Engineering at the College of Engineering at the University of Hawai'i at Manoa (UHM). Our existing facilities in Holmes Hall are becoming increasingly decrepit and small. Our enrolment has grown steadily for the last 15 years since I joined UHM. Space is a real constraint and current facilities are in serious need of repair and maintenance with increased usage and wear and tear. If you approve this bill, you will make the facilities more comfortable for not just the staff and visitors but also the engineers of tomorrow. After all, these students will be the ones who will cater to the state's future infrastructure needs. They deserve to enjoy humane toilets, classrooms and laboratories while in our program.

The funds are also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore imperative that the facilities pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny. The loss of accreditation of the civil engineering program would be a major hardship as civil engineering students must graduate with an ABET-accredited degree in order to be licensed practitioners. Without accreditation, more than likely, many students would be forced to study civil engineering on the mainland.

Sincerely,

A handwritten signature in blue ink that reads "Phillip Oka". The signature is enclosed within a blue oval scribble.

Professor

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
(Lloyd Hihara)

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Lloyd Hihara, and I serve as a professor of the University of Hawaii at Mānoa College of Engineering (Mechanical Engineering Department). I am pleased to provide personal testimony on SB3116.



# University of Hawaii at Manoa

College of Engineering

Department of Mechanical Engineering

Hawaii Corrosion Laboratory

Holmes Hall 302 • 2540 Dole St. • Honolulu, Hawaii 96822

Telephone: (808) 956-2365, Fax: (808) 956-2373

e-mail: hihara@hawaii.edu

February 5, 2014

## **Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering, Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a professor in the Department of Mechanical Engineering at the University of Hawaii at Manoa. I received my BS in mechanical engineering from UH in 1983. I also received an MS and PhD from MIT in 1985 and 1989, respectively. In addition to teaching, I am active in research ( $\approx$  \$1M/yr), and am a member of the Department of Defense's corrosion consortium, which includes faculty from other universities such as Ohio State, Univ. of Akron, Univ. of Virginia, Univ. of Southern Mississippi, Air Force Academy, etc. Hence, research reviews are conducted at the various campuses on a rotating basis. I also travel to other universities for collaborative purposes, e.g., Chiba University, Japan.

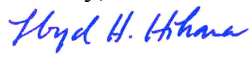
As a result of my research activities, I have been able to see the facilities of other engineering schools on a regular basis. All of the schools that I have mentioned above, even in these tighter economic times, have continued to modernize and expand their engineering facilities. Although engineering at UH received extra space in the POST building for offices and a few laboratories, the majority of the engineering activity is in Holmes Hall, which has been virtually unchanged since I was an undergraduate student over 30 years ago.

The feeling that one gets after visiting other engineering campuses is that the UH College of Engineering (COE) is operating under "bare bones" conditions, and is drastically falling behind national norms. At the UH COE, there is a lack of space for hands-on activities, class rooms, student club activity, and research laboratories. Without expansion and modernization, the engineering program cannot grow and excel, and many opportunities will be lost. It is difficult to impress sponsoring agencies with the current state of facilities in Holmes Hall.

The investment in the UH COE is needed and should not be postponed. Too many major industries in Hawaii depend on the UH COE to produce quality engineers. Without a workforce of highly educated engineers, the State of Hawaii will have a tenuous future.

University of Hawaii

Sincerely,



Lloyd H. Hihara

Professor of Mechanical Engineering

**From:** [mailinglist@capitol.hawaii.gov](mailto:mailinglist@capitol.hawaii.gov)  
**To:** [HRETestimony](#)  
**Cc:** [olgabl@hawaii.edu](mailto:olgabl@hawaii.edu)  
**Subject:** Submitted testimony for SB3116 on Feb 6, 2014 14:45PM  
**Date:** Wednesday, February 05, 2014 2:21:48 PM

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**SB3116**

Submitted on: 2/5/2014

Testimony for HRE on Feb 6, 2014 14:45PM in Conference Room 414

| <b>Submitted By</b> | <b>Organization</b> | <b>Testifier Position</b> | <b>Present at Hearing</b> |
|---------------------|---------------------|---------------------------|---------------------------|
| Olga Boric-Lubecke  | Individual          | Comments Only             | No                        |

Comments: I am Professor of Electrical Engineering at UH Manoa and would like to express my support for SB3116. Holmes Hall is in dire need of repair, as we repeatedly have issues with rain leaks, restrooms, and overall quality and appearance of the environments. Our students deserve to have access to the laboratories and classroom on the same level as provided to their peers at state institutions on the mainland.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email [webmaster@capitol.hawaii.gov](mailto:webmaster@capitol.hawaii.gov)



Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Carrie Matsuzaki

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Carrie Matsuzaki and I serve as an assistant specialist at the College of  
Engineering at the University of Hawaii at Mānoa. I am pleased to provide personal  
testimony on SB3116 and apologize that I am unable to present my testimony in person.

I have been an employee of the University since 1988, working at the College of  
Engineering in Holmes Hall for this entire time. As coincidence would have it, when I  
was a student at UH Manoa in the early 1970s, I actually worked as a student assistant  
in Holmes Hall when it was a brand new building. Many things have changed over the  
years but the physical structure of Holmes Hall has not. The way we educate our  
engineering students has changed but Holmes Hall has not. The way we conduct  
engineering research for the benefit of society has changed by Holmes Hall has not.  
Holmes Hall really needs to be changed to better serve our engineering students.

As part of the dean's office team, I have been involved with space surveys and space  
allocations in Holmes Hall for over two decades. The growing need has been space for  
our students, not only for their classroom projects but also for their extramural projects  
like building a concrete canoe, a Formula race car, a micromouse. As the way we  
educate our students has changed from lecture/note taking classes to more hands-on,  
interactive learning, the need for project space for the students has grown. And with  
our enrollment increasing, more project space has to be found. Along with the growth  
in enrollment, we've had an increase in funded research which means that more space  
for research is also needed. Renovating Holmes Hall is the best solution to providing a  
quality education for our students as well as to support our research.

Thank you for your support.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Jill Nakatsu

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Jill Nakatsu and I serve as a Junior Specialist Faculty of the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

I was born and raised in Hawaii and graduated as the valedictorian of Pearl City High School. I received a University of Hawaii Regent's Scholarship in 2002 and attended and graduated with my BS in electrical engineering from the UH College of Engineering in 2006. I worked on in Arizona as an engineer for Medtronic, a medical technology company. After determining that I wanted to move back to Hawaii, I returned to the College of Engineering to work on my MS in electrical engineering. After graduating I applied for and now work as an academic advisor for the pre-engineering and engineering students at the University of Hawaii, College of Engineering.

I choose the University of Hawaii, College of Engineering for my undergraduate studies because of the great faculty and ability to work on and gain experience from hands-on projects. After working in industry and going through graduate school I realize the importance of engineering students being able to work in teams on research projects. Holmes Hall as it is now is not conducive for student work spaces. As an academic advisor, I have travelled to other campuses of all sizes that have these kinds of work spaces for their students. I have also attended conferences that have expressed the importance of providing research and project experiences for student success and an integral part of getting those experiences is having an appropriate place to work on them. Without these facilities, the College of Engineering at the University of Hawaii at Manoa will lose out on attracting our own promising engineering students. We are the only engineering school in the state so if we cannot keep our bright Hawaii students they will move on to schools on the mainland. It is essential that Hawaii supports its only engineering program at the University of Hawaii at Manoa to keep our brightest students in Hawaii as well as help to grow Hawaii's economy through support of Hawaii's technology industry.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Tao Yan

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Tao Yan, and I serve as an associate professor of Civil and Environmental  
Engineering at the University of Hawaii at Mānoa College of Engineering. I am pleased  
to provide personal testimony on SB3116.

As a 42-year old building, **the Holmes Hall is in urgent need for renovation in order to meet the research mission of College of Engineering.** Since I joined UH as an assistant professor seven years ago, I have obtained more than one million external research funds and have graduated seven graduate students for local engineering firms. However, the lack of laboratory space and the outdated laboratory design are severely limiting my research and education of future engineers. I share the Environmental Laboratory (Holmes 286) with several other faculty members from both Civil and Environmental Engineering and Water Resource Research Center. Each of us gets a small corner of the lab, and we have to really work to find a space for our equipments. My graduate students and postdocs each get a small bench space to do their work, and once I have had to put their office desks in a room next to storage shelves and noisy freezers. The lab was designed 42 years ago, and the engineering research landscape has shifted a lot. Holmes 286 has close to uniform bench design, which is not conducive for modern interdisciplinary research that requires different lab layouts and configuration.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

By  
Todd R. Reed

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Todd Reed, and I serve as Professor of Electrical Engineering in the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

I joined the University of Hawaii in 2002. Previously, I held positions at the University of Minnesota (where I was also a student), the Ecole Polytechnic de Lausanne in Switzerland, Linköping University in Sweden, and the University of California, Davis. As a result, I have experienced a range of physical plants and approaches to maintenance. The Electrical Engineering Building at the University of Minnesota was built in 1924. Our building in Lausanne was less than a year old.

Shortly after joining UH, I was appointed Department Chairman for Electrical Engineering. I immediately became aware of the severe maintenance issues in Holmes Hall. For example, I came to work one morning to find the hallway in front of the department offices flooded with over an inch of water. We are in the top floor of the building, and the roof has leaked for years. While various attempts have been made at repairs, roof leaks remain an issue. As one can imagine, this is a major safety concern for laboratories in Electrical Engineering.

On a more personal note, I received laboratory space from a retired faculty member shortly after my arrival. The room was infested with mold, to the extent that I feared for the health of any students working in the space. I spent an entire summer disinfecting and repainting the laboratory (using materials obtained at my own expense). The ductwork louvers were so corroded (and mold infested) that I had to remove them. I was promised that this would be addressed by UH Facilities. After over 10 years, it has not.

I sincerely hope that SB3116 will pass, so that these (and many other) issues can be addressed.

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Honolulu, Hawaii 96813  
Tel: 808-523-8499  
Fax: 808-533-0226  
www.browncaldwell.com

February 4, 2014



**Senate Committee on Higher Education**

Honorable Senators Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Gilbert S.C. Keith-Agaran, Michelle N. Kidani, Jill N. Tokuda, and Sam Slom

**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering**  
**Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a licensed civil engineer in the State of Hawaii and alumnus of the College of Engineering, and our firm employs several graduates of the College of Engineering at the University of Hawai'i at Manoa (UHM). These UHM graduates are essential for our firm's continued success, and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM continue to receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practices.

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, and supports the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given their limited resources while the College's enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovations, it has been even more difficult to keep up with this rapidly evolving pace of engineering as it is taught and practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

Appropriation of funds for the Holmes Hall renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore absolutely imperative that the facilities provided by the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle starting in 2015. The current deteriorated condition of Holmes Hall that has been without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, mechanical, and electrical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. Furthermore, graduates of the College's programs would not be as desirable to the professional engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many local students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields, and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000, which is two times greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

I appreciate the continuing efforts of your committee and the members of the Senate to improve the quality of education in Hawaii. Thank you for the opportunity to express my views in SUPPORT of this bill.

Respectfully submitted,  
Brown and Caldwell

A handwritten signature in black ink, appearing to read 'Douglas B. Lee', written in a cursive style.

Douglas B. Lee, P.E.  
Vice President

P.O. Box 17127  
Honolulu, HI 96817  
E gnohara@GenbaHawaii.com



P 808.356.8755  
C 808.479.7468  
F 808.356.8657

**Genba Hawaii, Inc.**  
Civil Construction Consulting

February 4, 2014

**Senate Committee on Higher Education**

Subject: **TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering (UHCOE),  
Hearing: Thursday February 6, 2014, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Glenn Nohara, president of Genba Hawaii, Inc. I am a 1973 graduate of the UHCOE. I am also the current president of the Engineering Alumni Association of the University of Hawaii (EAAUH), recently served on the college's Civil & Environmental Engineering's Industry Advisory Committee and am one of the industry mentors in the college's senior design class (CEE490), where I will be at the time of this hearing. I have personally interacted with many of the UHCOE staff and faculty, and can personally attest to the excellent quality of people we have. I have seen the desire and willingness of our students to learn and to be able to hit the ground running when they enter the workforce.

As you are probably aware, the UHCOE is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

I am also a national director of the Associated General Contractors of America (AGC) and have attended numerous conferences where engineering students from colleges all over the country showcase their design projects in team competitions. These projects incorporate basic engineering design principles in high tech graphical and multi-media presentations using building information modeling technology (BIM). Holmes Hall was built in a period when we were still using slide rules. I am afraid that if we do not upgrade our infrastructure, we will lose the ability to effectively educate our students so that they can compete for engineering jobs anywhere in the country or the world.

I **strongly support SB3116** and respectfully ask this committee to pass it.

Yours truly,

Glenn M. Nohara  
Genba Hawaii, Inc.

February 4, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Gilbert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a registered professional Civil Engineer and owner of a Civil Environmental Engineering firm here in the State of Hawaii. I am also a proud graduate of the University of Hawaii at Manoa (UHM), College of Engineering. Our firm and the State of Hawaii depend upon the College of Engineering to provide high quality engineering graduates who are essential for our firm's continued success and more importantly, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice and face future challenges of our State – infrastructure needs, sustainable development, energy and resource management and climate change.

As you are aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given the limited resources while their enrollment has doubled, and their faculty and program funding has dwindled. Holmes Hall was built 42 years ago (when I was starting as a freshman at UH in 1971 – using a slide rule). The facility has served the State well without any substantial renovation; however, it is long overdue for renovation and upgrade to accommodate the demands of new technology and methods. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary learning environment in which they are able to develop their knowledge of the fundamentals of the engineering profession, and keep Hawaii's best and brightest young people from being lured away to "sparkling" state-of-the-art facilities on the mainland.

Appropriation of funds for the Holmes Hall Renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's





only engineering accreditation organization. It is therefore absolutely imperative that the facilities provided by the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle starting in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry.

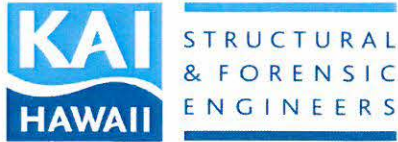
Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Very truly yours,

FUKUNAGA & ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Jon K. Nishimura", written over a horizontal line.

Jon K. Nishimura, P.E.  
President



Ken Hayashida, P.E. | *President*  
Michael Hunnemann, P.E. | *Vice President*

February 3, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering**  
**Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a practicing engineer in the State of Hawaii/and an alumnus of the College of Engineering, and KAI Hawaii, Inc. depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates, student interns, and returning College alumni from the US mainland. These graduates are essential for KAI Hawaii's continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty has done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

Appropriation of funds for the Holmes Hall Renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore absolutely imperative that the facilities provided by the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle starting in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. Furthermore, graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i

salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Sincerely,

KAI Hawaii, Inc.

A handwritten signature in black ink, appearing to read 'Ken Hayashida', with a long horizontal flourish extending to the right.

Ken Hayashida  
President



501 Sumner Street  
Suite 620  
Honolulu, Hawaii 96817  
Phone: (808) 531-1308  
Fax: (808) 521-7348  
[www.ssfm.com](http://www.ssfm.com)

February 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair  
Gilbert Kahele, Vice Chair  
David Y. Ige, Member  
Gilbert S.C. Keith-Agarian, Member

Michelle N. Kidani, Member  
Jill N. Tokuda, Member  
Sam Slom, Member

**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

As a practicing engineer in the State of Hawaii, an alumnus of the College of Engineering, and the President/CEO of SSFM International, I support SB3116.

Our company depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates. These graduates are essential not only for our company's continued success but especially for the continued health of the engineering and construction industry in Hawaii.

The UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Built 42 years ago, and without any substantial renovation since then, the planned renovation of Holmes Hall will ensure that the College will be able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of engineering while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

Appropriation of funds for the Holmes Hall Renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), they must graduate with an ABET-accredited degree.

Respectfully submitted,

SSFM INTERNATIONAL, INC.

A handwritten signature in black ink, appearing to read 'Michael P. Matsumoto', written in a cursive style.

Michael P. Matsumoto, P.E., FACEC  
President/CEO





**ENGINEERING CONCEPTS, INC.**  
Consulting Engineers

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February 4, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige,  
Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

**Subject: TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the  
University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

We are practicing engineers in the State of Hawaii and alumna of the College of Engineering. Our locally owned company, Engineering Concepts, Inc. depends on recruiting employees from recent graduates of the College of Engineering at the University of Hawai'i at Manoa (UHM). These UHM graduates and returning alumna from the mainland are essential for Engineering Concepts, Inc.'s continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty has done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

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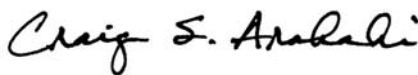
graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

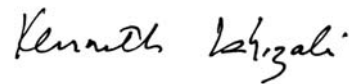
Engineering Concepts, Inc.



Myron Nomura  
President



Craig Arakaki  
Executive Vice-President



Kenneth Ishizaki  
Vice-President



SSDA, INC.

**S. S. DANNAWAY ASSOCIATES, INC.**

FIRE PROTECTION ENGINEERS/BUILDING CODE CONSULTANTS

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Facsimile: (808) 537-5385

E-mail: [ssda@ssdafire.com](mailto:ssda@ssdafire.com)

Web: [www.ssdafire.com](http://www.ssdafire.com)

5 February 2014

Senate Committee on Higher Education

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a practicing engineer in the State of Hawaii. Also many of our engineering employees are alumna of the College of Engineering, and our firm depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates and student interns. We currently have 6 UH engineering graduates on our staff and two engineering student interns. These graduates and interns are essential for our continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

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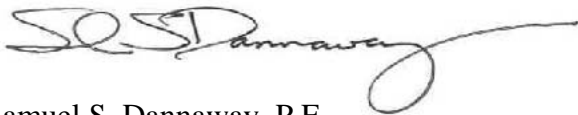
5 February 2014  
Senate Committee on Higher Education  
Subject: TESTIMONY IN SUPPORT of SB3116  
Page 2

It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is twice the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Sincerely,

S. S. DANNAWAY ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "S.S. Dannaway", with a long, sweeping horizontal line extending to the right.

Samuel S. Dannaway, P.E.  
President and Chief Fire Protection Engineer





1132 Bishop Street  
Suite 1100  
Honolulu, HI  
96813  
Tel 808.943.1133  
Fax 808.954.4400

February 4, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a practicing engineer in the State of Hawaii and our Honolulu office depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates, student interns, and returning College alumni from the US mainland. These graduates are essential for our continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

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engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

CH2M HILL



Kathleen Chu, P.E.  
Vice President/Area Manager



**Gray • Hong • Nojima & Associates, Inc.**  
CONSULTING ENGINEERS

*Daniel S. C. Hong, PE  
Sheryl E. Nojima, PhD, PE  
Michael H. Nojima, PE, LEED AP  
Audrey Y.T. Yokota, PE  
Toby T. Hanzawa, PE, LEED AP  
Gavin Y. Masaki, PE, LEED AP  
Winston M. Taniguchi, PE*

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**201 Merchant Street, Suite 1900  
Honolulu, Hawaii 96813  
Telephone: (808) 521-0306  
Fax: (808) 531-8018  
email@grayhongnojima.com**

February 4, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a principal and one of the owners of a local small business consulting engineering firm, Gray, Hong, Nojima & Associates, Inc. I am also a proud graduate of the University of Hawaii (UH), College of Engineering. Our firm is a small business and depends on the University for engineering employees in the form of graduates and returning College alumni from the US mainland. These graduates are essential for our continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UH Manoa receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

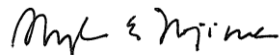
Appropriation of funds for the Holmes Hall Renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore absolutely imperative that the facilities provided by the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle starting in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. Furthermore,

graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2 time greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

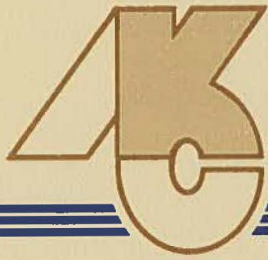
Sincerely,

GRAY, HONG, NOJIMA & ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Sheryl E. Nojima". The signature is fluid and cursive.

Sheryl E. Nojima, PhD, PE  
President





**ALBERT C.  
KOBAYASHI, INC.  
GENERAL CONTRACTORS**

Gentry Business Park • 94-535 Uke'e Street  
Waipahu, Hawaii 96797 • Phone (808) 671-6460 • FAX 676-5832 • Lic. #ABC-07819

February 4, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a General Contractor in the State of Hawaii, and our company depend on many of its engineering employees coming from the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates, student interns, and returning College alumni from the US mainland. These graduates are essential for our company's continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

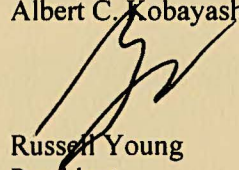
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Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Albert C. Kobayashi, Inc.

A handwritten signature in black ink, appearing to read 'Russell Young', is written over the printed name.

Russell Young  
President



**AKINAKA & ASSOCIATES, LTD.**  
Consulting Civil Engineers

February 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

**Subject: TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I submit this testimony in support of SB3116.

I am a licensed professional engineer in the State of Hawaii and an alumnus of the University of Hawaii at Manoa, College of Engineering, and our engineering company depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates, student interns, and returning College alumni from the US mainland. These graduates are essential for our firm's continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice. Many of our employees started as student interns from UHM, College of Engineering. In fact, our most recent hire, a student intern, starts with us tomorrow (February 6, 2014).

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

Appropriation of funds for the Holmes Hall Renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore absolutely imperative that the facilities provided by the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle starting in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. Furthermore, graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must



**AKINAKA & ASSOCIATES, LTD.**  
Consulting Civil Engineers

graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Akinaka & Associates, Ltd.



Ken C. Kawahara  
President



February 4, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

As a licensed Civil engineer in the State of Hawaii and an alumnus of the College of Engineering, our organization, Community Planning and Engineering, Inc (CPE), is dependent upon its recent graduates, and student interns as current and/or employees. These graduates/student interns are essential for CPE's continued growth and success in advancement of the engineering and construction industry in Hawaii. We personally feel that the University of Hawaii at Manoa (UHM) engineering graduates need to receive the most up-to-date education in order to help promote the advancement of engineering field.

Holmes Hall is the hub of engineering on the UHM campus. Holmes Hall was constructed in 1972, and no substantial renovation has been done. The planned renovation of Holmes Hall will ensure that the College of Engineering will be able to provide a modern environment for the student engineers.

Appropriation of funds for the Holmes Hall Renovation is also critical for the continued accreditation by the Accreditation Board for Engineering and Technology (ABET). Therefore it would be highly recommended of the UHM to provide facilities, which ensures accreditation. The current condition of Holmes Hall without adequate renovation may expose the College's programs to a greater degree of assessment since many of the ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the Civil, Electrical and Mechanical engineering programs would undoubtedly create a major hardship on the engineering students as well as the Hawaii engineering community. Furthermore without the accreditation, graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted that to become a licensed professional engineer in Hawaii or nation-wide, students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland. It is to the community's advantage that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Community Planning and Engineering, Inc.



Richard Y. Santo, P.E.  
Project Manager

February 04, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a Civil Engineer in the State of Hawaii/and alumnus of the College of Engineering, and our organization – Community Planning and Engineering Inc.'s depends for many of its engineering employees upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of recent graduates, student interns, and returning College alumni from the US mainland. These graduates are essential for our organization's continued success and more generally, the continued health of the engineering and construction industry in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the talent that we may be able to recruit from the mainland.

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Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than

the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Community Planning and Engineering, Inc.

Om Swarup Das  
Civil Engineer

Roy K. Abe  
46-291 Kupale Street  
Kaneohe, Hawaii 96744  
Ph. 808-247-3297

February 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering, Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Roy Abe and I am a licensed civil engineer in Hawaii with approximately 33 years of consulting experience in the sanitary engineering field. I am a vice president with the Honolulu office of HDR Engineering, Inc. My educational background includes a B.S. degree in civil engineering from the University of Hawaii, and a M.S. degree in civil and environmental engineering from the University of California at Berkeley.

The College of Engineering at the University of Hawai'i at Manoa (UHM) is a critical source of engineers in our state. It is extremely important to maintain the high quality of engineering education in Hawaii. Our aging infrastructure throughout the state is in dire need of upgrade and rehabilitation work, and the scope and projected costs of this work are very significant.

Quality engineering performed by well-educated engineers has significant benefits to the public. It results in the planning and design of optimally designed projects that cost-effectively meet the needs of the public. Capital expenditures are reduced by competitive bidding promoted by quality contract documents. In addition, good reliability and functionality is achieved, and operation and maintenance costs are minimized. Solid engineering results in delivery of projects with minimal change orders, cost overruns and construction delays.

Quality engineering education requires talented and well-qualified engineering faculty. To attract and retain quality faculty and secure research funding, adequate if not superior research facilities must be provided. Providing the necessary laboratory space and equipment for both faculty and students is critical. As a former member of the College of Civil Engineering Industry Advisory Committee (IAC), I have toured the current facilities at the college and know first hand that a significant amount of additional funding and support is required to maintain and upgrade the laboratory and classroom facilities at Holmes Hall.

I urge you to support SB SB3116 to provide the college with the necessary supplemental funding to allow UHM to continue to produce quality engineering graduates that will needed in the ongoing effort to improve the economy, lifestyle and environment for our residents.

Sincerely,

  
Roy K. Abe



# ASUH

Associated Students of the University of Hawai'i

YOUR STUDENT GOVERNMENT

Testimony Submitted Before the  
Senate Committee on Higher Education  
February 6, 2014 at 2:45 p.m.

by

Richard Mizusawa, President  
Associated Students of the University of Hawai'i at Mānoa  
101<sup>st</sup> Senate

RELATING TO THE UNIVERSITY OF HAWAII

Chair Taniguchi, Vice-Chair Kahele, and Members of the Senate Committee on Higher Education:

My name is Richard Mizusawa and I serve as President of the Associated Students of the University of Hawai'i at Mānoa (ASUH), the undergraduate student government representing over 14,000+ full-time, classified undergraduates at the University of Hawai'i at Mānoa (UHM). I have served my fellow constituency for the past two years as Senate President, but have served now for four years ever since the start of my undergraduate years within the ASUH. It has been a true honor and privilege to serve in this capacity to learn, grow, and represent the undergraduates to enhance student life on campus until this day. Today, I submit testimony in support of SB 2906, which appropriates funds to the University of Hawai'i to pay student employees at new or expanded worksites on each campus.

Appropriating funds to the university to pay student employees is beneficial for our institution as well as the students. By having more opportunities for students to have part-time employment on campus, this retains students to stay on campus rather than finding part-time work off campus, taking time away from student life in their college years.

It is also convenient for students who live both on and off campus to work at their home institutions. Students who live in the residence halls can have the convenience of working where they get their education, and students who commute or live off campus can work in between classes during breaks, before, or after classes without worrying about traveling elsewhere to work a job.

Additionally, having these funds would allow for students to pay for their tuition fees, living expenses, and other finances that college students go through. As an advocate for the betterment of student life at UH, having this being introduced shows me the commitment that our state elected leaders have to higher education in Hawai'i, and the commitment in ensuring our students are given the opportunity to learn, grow, and gain experience at their campus through campus student employment.

I also am in support of the clause that states: “Funding priority may be given to students employed for university programs supporting access, retention, and diversity over other student employees.” This clause does not mandate priority to these types of university programs, but emphasizes a focus on these issues that affect students in higher education today. Employing students who will help to focus on access, retention, and diversity of students is crucial to student success in the long term of our university.

Thank you so much for your consideration of my testimony and for your support and leadership in ensuring you each play a role in enhancing higher education right here in the state of Hawai‘i.

Christopher Ian C. Escalante

Chairperson of the 101<sup>st</sup> ASUH Senate Committee on Undergraduate Academic Affairs

College of Engineering – Student Ambassador

Holmes Hall 203, 2540 Dole Street

Honolulu, HI 96822

Testimony of the 101<sup>st</sup> ASUH Committee on Undergraduate Academic Affairs

IN SUPPORT OF S.B. NO. 3116, MAKING AN APPROPRIATION TO THE UNIVERSITY OF  
HAWAII COLLEGE OF ENGINEERING

Before the Senate Committee on Higher Education

February 06, 2014

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Honorable Chairperson Taniguchi, Vice-Chairperson Kahele, and respected members of the Senate Committee on Higher Education:

My name is Christopher Escalante, and I submit to you my testimony in strong support of S.B. NO. 3116. I testify in my capacity as the Chairperson of the Associated Students of the University of Hawaii 101<sup>st</sup> Senate Committee on Undergraduate Academic Affairs, College of Engineering Student Ambassador, and most importantly as a mechanical engineering student at the University of Hawaii at Manoa.

As a mechanical engineering student, I spend most of my time in Holmes Hall attending classes, conducting research in the Field Robotics Laboratory, and doing outreach work as an Engineering Student Ambassador. Holmes Hall is almost a second home to me. In fact, I occasionally refer to this building as “Holmes sweet Holmes”. It dismays me, however, to see Holmes Hall in it’s current state of disrepair and ineffective classroom design. To my knowledge, Holmes Hall has not seen a major renovation since it’s construction forty-two years ago back in 1972. A major renovation is crucial for the College of Engineering to attract and retain Hawaii students as well as provide effective classroom and laboratory environments designed to engage today’s generation of students.

After graduating from McKinley High School with a 3.94 grade point average, 2010 SAT score, and several extracurricular activities including Robotics, I was fortunate to be accepted to several engineering schools on the mainland. After much deliberation with my mother, I reluctantly chose to attend UH Manoa College of Engineering primarily for it’s relatively low price and interesting research activities. The main reason why I seriously considered spending tens of thousands more on a mainland engineering school is because I was unimpressed with the physical appearance of Holmes Hall. What I am trying to say is that the physical infrastructure plays a huge role in a students college decision.

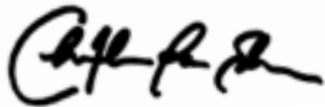
My best friend who graduated with a 4.0+ GPA, 2000+ SAT score, and several extracurricular activities in STEM chose to go away for college and sadly, it does not look like she will be coming back anytime soon to contribute to Hawaii’s economy. When I provide lab tours to high school students, it pains me to hear that some of these students have already decided that they

absolutely do not want to attend UH Manoa College of Engineering because it is “ghetto-looking” and must be “second-rate.” The College of Engineering is far from second-rate and I’m sure that you will receive several testimony that support the high-quality education offered within the walls of Holmes Hall.

Imagine how much greater the quality of education would be if we renovated our classrooms and research laboratories to fit the needs of 21st century students. UH Manoa College of Engineering would be able to produce top-notch well-trained engineers that will be able to contribute their skills to improve Hawaii’s infrastructure and economy. The College of Engineering would no longer be considered “second-rate” but be the school of choice. The College of Engineering would be a source of pride to engineering students, the University of Hawaii, and the State of Hawaii.

Thank you so much for considering my testimony and for your the Hawaii Senate Committee on Higher Education’s efforts to increase higher education in the State of Hawaii.

Sincerely,

A handwritten signature in black ink, appearing to read "Chris Escalante", written in a cursive style.

Christopher Escalante

Chairperson of the 101<sup>st</sup> ASUH Senate Committee on Undergraduate Academic Affairs  
College of Engineering – Student Ambassador



Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Lori Hashimoto

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Lori Hashimoto, and I serve as the Program Manager for the STEM Pre-Academy Program of the University of Hawaii at Mānoa, Office of Research and Innovation. I am pleased to provide personal testimony on SB3116.

Born and raised in Pauoa Valley, I attended Pauoa Elementary School, Kawananakoa Middle School, and graduated from Roosevelt High School in 2004. I enrolled in the University of Hawaii Mechanical Engineering program and graduated with my Bachelor's degree in 2008. With tremendous support from my UH professors and advisor, I proceeded to attend Stanford University and received my Master's degree in Mechanical Engineering the next year. Following that, I was hired as an Engineer with The Boeing Company in Seattle, Washington and worked there for 3.5 years.

I returned to Hawaii with my husband, also a Mechanical Engineering graduate from the University of Hawaii, at the end of 2013, because we both felt that it was important to start a family in a place that has a strong set of family and community values.

During my experiences at Stanford University and The Boeing Company, I have been exposed to the new expectations of future engineers in the 21<sup>st</sup> century. More and more in industry, engineers are required not only to have strong analysis and technical skills to design high performance and high quality products, but also practical, hands-on knowledge. *How* are your designs going to be built? With what materials, tools and machines? What is the ease of manufacturability and repair? Can it be built within this time frame? At what cost? Engineers who are given the opportunity and resources to learn the lifecycle impact of engineering designs through hands-on projects are the engineers who excel and produce amazing products that will impact the future.

The concept of putting together teams with expertise in different fields, with different perspectives on a problem is a growing trend. Engineers are now required to work collaboratively with others from various disciplines in open discussion formats, whiteboard settings, innovative collaboration rooms with spaces to prototype ideas, not just sit at a desk and crunch numbers. Enabling Holmes Hall to provide a setting to prepare tomorrow's engineers to work at this new level of industry expectations will yield high praise for the University of Hawaii, and the State of Hawaii.

Thank you for allowing me to provide my personal testimony today in support of plans and design for the renovation of Holmes Hall.

Sincerely,  
Lori Hashimoto

Personal Testimony Presented before the  
Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Brennan Eugene Yamamoto

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

SUBJ: TESTIMONY IN SUPPORT of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Brennan Yamamoto, and I am currently a first year Master's Candidate in Mechanical Engineering at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116, towards the renovation and improvements to Holmes Hall, the primary building for students and Faculty in the College of Engineering.

In my capacity as both an undergraduate and graduate student in the College of Engineering at the University of Hawaii, I have been fortunate to be a part of many different student organizations, student project groups, and a highly diverse educational repertoire. Currently, I serve as the President of the Engineer's Council at the University of Hawaii (ECUH), the governing student organization in the College of Engineering, the Graduate Advisor of the American Society of Mechanical Engineers (ASME), a member, and past financial officer of the Society of Automotive Engineers (SAE), a member of the Society of Women Engineers (SWE), and past member of the American Society of Civil Engineers (ASCE). I have partaken in academic engineering projects involving the finance, design, procurement, and fabrication of a ultra-high-performance, formula-style, single-seating, autocross competition vehicle; the design and fabrication of a cutting-edge ultrasonic (HIFU) bioreactor for micro-scale sonoporation-type gene transfer; the design of autonomous control algorithms for mobile robotics; and various side projects ranging from fabrication techniques of commercial-level electric vehicles (EVs), all the way down to the theory of engineering design. I find it necessary to emphasize my personal background and experience in the College of Engineering, as I believe it begins to impress how varied and diverse the opportunities available in the College of Engineering can be. Putting into perspective that I am only a single student of less than five years, it is clear that, while smaller, and less financially privileged than similar mainland counterparts, the College of Engineering at the University of Hawaii continues to prove that it is an excellent institution of engineering education, and a highly attractive choice for students around the world.

All of this said, with a rapidly increasing student body, and highly limiting space and resource constraints within the College of Engineering, faculty and students can only do so much before the quality of our engineering education truly begins to degrade. As the President of the engineering student council (ECUH) in the College of Engineering, one of our primary functions is the voice student concerns. Amongst the most common of student concerns, are the lack of capable laboratory, experimentation, and/or fabrication spaces, as well as aging facilities and equipment necessary to meet academic demands. As a student myself, I can certainly attest to the validity of these claims. Unfortunately, the solution to these issues requires a significant sum of money, a sum which is unaffordable without financial assistance external to the College of Engineering. Should the State of Hawaii choose to invest in SB3116, the long-term payoff will be a continuous, highly capable generation of young engineers, trained specifically in the unique industry environment Hawaii offers.

In conclusion, I believe that the decision to invest in SB3116 is a wise one. Many training engineers will be afforded valuable, hands-on opportunities, that would otherwise have been impossible for the College of

Engineering to offer. This will ultimately lead to a better, more efficient, more advanced society, and will benefit all citizens of Hawaii. Thank you very much for your time, and have a great day. Aloha,

Brennan E. Yamamoto

Personal Testimony Presented before the Senate Committee on Higher Education

Thursday, February 06, 2014 2:45 PM

Conference Room 414, State Capitol

by Evan Kawamura

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

SUBJ: TESTIMONY IN SUPPORT of plans and design for the renovation of Holmes Hall

University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Evan Kawamura, and I am a sophomore majoring in mechanical engineering and I graduated from Hanalani School in 2012. I am currently a student at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

As an engineering student I believe that is vital that Holmes Hall be fully renovated to provide its students with the optimum facilities and learning equipment. I work in the Engineering Department as an ESA (Engineering Student Ambassador) and one of our goals is to promote the engineering to keep Hawaii students here for their college education. With this in mind, I also see the value in renovating Holmes Hall to attract prospective students.

I mention these reasons for renovations because of what I've heard from my high school friends who are attending mainland universities such as the University of Washington, University of California: Irvine, and the University of Miami. Majority of these friends have bragged to me about how much better their schools are in terms of aesthetics, newer facilities, and better equipment compared to UH and that I should have gone away for school. I became envious when they told me their various stories of how "awesome" their labs are and how they have these high tech equipment that most schools cannot afford. They told me, "you get what you pay for" - implying that UH is cheaper, therefore it will not be able to compete with mainland colleges. I strongly feel that UH can provide an education equivalent to mainland standards with the necessary materials and that a part of this requires renovating Holmes Hall.

Some of our lab equipment is from the 70's and works but lacks the "newer and cooler" features. I feel like our school is Motorola's "cell phone" from 1973, while my friends' schools are Apple's iPhone 5's and Samsung's Galaxy S4's. Yeah, all the phones can make calls, but theirs has lots of other features we simply do not have.

As the primary engineering school in the state, I believe renovation is crucial and necessary. As mentioned before, we are behind in technology, and this world's technology is moving forward everyday while we are unfortunately still trapped in the past. Hawaii's high school graduates striving to become engineers will choose to stay here to become engineers not just for the upgrades but also for the cost especially due to the nation's crumbling economy. Going to college is expensive and having an awesome renewed Holmes Hall will definitely attract engineering students to stay in Hawaii!

Renovating and improving Holmes Hall will give all engineering students a once-in-a-lifetime college opportunity to learn the most we can about engineering and to make tomorrow better for you and me.

Thank you very much,

Evan

From: [mailinglist@capitol.hawaii.gov](mailto:mailinglist@capitol.hawaii.gov)  
To: [HRETestimony](#)  
Cc: [magdy.iskander@gmail.com](mailto:magdy.iskander@gmail.com)  
Subject: Submitted testimony for SB3116 on Feb 6, 2014 14:45PM  
Date: Tuesday, February 04, 2014 5:06:13 PM

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**SB3116**

Submitted on: 2/4/2014

Testimony for HRE on Feb 6, 2014 14:45PM in Conference Room 414

| Submitted By     | Organization | Testifier Position | Present at Hearing |
|------------------|--------------|--------------------|--------------------|
| Magdy F Iskander | Individual   | Support            | No                 |

Comments: Personal Testimony Presented before the Senate Committee on Higher Education Thursday, February 06, 2014 2:45 PM Conference Room 414, State Capitol by (Magdy F Iskander) SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING SUBJ: TESTIMONY IN SUPPORT of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee: My name is Magdy F Iskander, and I serve as Faculty of the University of Hawaii at Manoa College of Engineering (Hawaii Center for Advanced Communications). I am pleased to provide personal testimony on SB3116. I strongly support SB3116 and respectfully request your approval of the requested appropriation to the University of Hawaii, College of Engineering. Holmes Hall is the home of engineering on the Manoa campus, and the College of Engineering is the flagship program for engineering education in the State of Hawaii. While the College has done an outstanding job in continuing the accreditation of the engineering program in the State, it has always been difficult to implement new laboratories, endorse the use of new technology and even upgrade the existing service and classroom facilities in a building that was built 42 years ago and which has gone without any substantial renovation throughout these years. Needless to say how important engineering is to our community and the economic development of the State, and it is imperative that renovations of Holmes Hall be planned and further implemented now and without delays. New and modern engineering facilities will help the College recruit and retain the best and the brightest of our local students, help faculty better educate the students, expand course offering using state-of-the-art labs, provide better facilities for carrying out competitive research, and equally important maintain the program accreditation at a highest level. It is difficult to show that we have progressive engineering program with the current condition of our aging building and deteriorating facilities. It is critical for the college to give prospective students the impression that they will be attending a first rate engineering college. Your approval of SB 3116 is not only desirable but also commendable as it will help the College of Engineering strive and reach its full potential as the flagship engineering college in the State of Hawaii.

Please note that testimony submitted less than 24 hours prior to the hearing,

improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

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Personal Testimony presented before the  
Senate Committee on Higher Education  
Thursday, February 6, 2014 @ 2:45 PM  
Conference Room 414, State Capitol

By  
Jeremy B. Young

SB3166—MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJECT: TESTIMONY IN SUPPORT** of the plans and design for the renovation of the Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Jeremy Young, and I am a PhD student in electrical engineering at the University of Hawaii at Mānoa. I urge you to support this measure to improve the engineering building here.

Holmes Hall is in quite a sorry state. I recall sitting in class and having 3 different desks break. When it rains, the ceiling in my office leaks. And more often than not, urinals overflow and flood the men's restrooms. What sort of message does this send our faculty, staff, students, and visitors? We don't care? It's okay to not strive for excellence?

I received my undergraduate degree on the mainland, and had the opportunity to stay there for graduate school. However, I decided to come to UH instead because I wanted to be part of the engineering community and culture here. Personally, I think engineering has a great potential to diversify our State's economy creating new opportunities/companies/jobs, making us more sustainable, and less dependent on tourism. To do this though, we need better facilities. While learning and research can, and currently, goes on in any sort of situation, how can we attract high quality professors and inspire students with broken restrooms and outdated classrooms in disrepair? I would consider \$2,000,000 a small investment for the future of the state.



Personal Testimony Presented before the

Senate Committee on Higher Education

Thursday, February 06, 2014 2:45 PM

Conference Room 414, State Capitol

by

Ryan Sugamoto

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Ryan Sugamoto, and I serve as a researcher and mechanical engineer at the University of Hawaii at Mānoa College of Engineering (Dept. of Mechanical Engineering). I respectfully submit this personal testimony on SB3116.

I graduated from the University of Hawaii at Mānoa College of Engineering in 2000 with a bachelor's degree in Mechanical Engineering. I have since worked in the local engineering consulting industry as well as the aerospace industry in California, and later returned to the university as a full time staff doing research in the department that I received my degree from. I've spent roughly 16 years (nearly half of my life) either studying (as a student) or doing research (as staff) in Holmes Hall. I have huge gratitude and pride in my alma mater, however, my feelings are that the building itself (Holmes Hall) and the facilities within it have become out of date, and are in desperate need of repair and modernization. Very little has changed physically within the building since the time I entered the Mechanical Engineering program in 1995. It is now 2014, and the College, whose focus is engineering and technology, has been using the same facilities for 20 years (or more), and I believe its ability to stay competitive is at risk.

Through the course of my research duties, I have been able to visit other universities on the mainland as well as in other countries, and have come to realize that our students are at a disadvantage due to the amount of space and types of facilities made available to them. The growth of research conducted in Holmes Hall is also heavily restricted to the space available.

Recently, there has been a large influx of students in the College of Engineering. There has also been increasing growth in the construction and technology industries in Hawaii, and the need for local engineers to support this growth is already here. Thinking about this, my concern as an alumni, staff, and supporter of the engineering programs at UH is

that we've reached a critical point and it is time to take action to move forward. If change does not happen now, our commitment to provide top-level education to our students and enable our faculty to conduct truly "world-class" research will be increasingly difficult to fulfill as time goes on.

The College has been able to graduate a few students in the past that have been recognized nationally, however, the potential exists, especially now with the larger student body, for the College and the University of Hawaii to step forward and graduate even more engineers that have the experience and confidence to contribute to Hawaii's future and the world. Newer facilities and more space to study and conduct research is something physical, however, the benefits of having more options, state of the art facilities, and an overall positive boost in the morale and confidence in our students, staff and faculty is immeasurable.

With all these things in mind, I humbly ask that consideration be made to provide the College with funds to repair and modernize Holmes Hall. The time is now and the potential is great.

Thank you for your time.



Ryan Sugamoto

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Jonathan Dang

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Jonathan Dang, and I am a first year graduate student in electrical engineering at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

I was born and raised in Honolulu, Hawaii and throughout my childhood and as a kid I always thought that the University of Hawaii was such a large and vast school. I was excited to be able to study for my undergraduate degree at UH, but after just a year, I learned it wasn't such a big place after all.

Throughout my undergraduate degree and currently in my master's degree, I find myself in small overcrowded lecture rooms and having difficulty finding space to work on projects. I have worked on projects such as micromouse, a maze solving robotics competition recognized by the Institute of Electrical and Electronics Engineer, and nanosat, a miniature satellite the size of a loaf of bread, which had the mission of calibrating radar stations around that world. For micromouse, I remember working as a team of 3 with sometimes 10 other teams all in one room.

Similarly for the nanosat project, our team had upwards of 25 team members all working in one room. Obviously space was an issue again. A larger issue that we did not have control over and actually put our satellite's mission at risk, was that we needed to put antennas on the roof of Holmes Hall so that we could communicate with our satellite. However, because of safety issues and litigation we were not able to and had to put our antennas at another school.

After my four years here at the University of Hawaii and having had the opportunity to visit schools on the mainland and attend international conferences such as the International Microwave Symposium, one of the most recognized conferences in the

microwave community, I've learned to appreciate that Hawaii uniquely offers a valuable degree in electrical engineering at an affordable price. At UH, I've been able to learn the same things that would have been taught at ivy schools. However, after visiting a campus such as UCLA, that has multiple engineering buildings, it saddens me to see that UH has just Holmes Hall.

I've experienced the growth and development of UH's engineering program and each year more and more students want to attain a valuable degree in engineering at the reasonable price that UH offers. However, for the engineering degree to remain valuable I believe it needs to continue to evolve and develop just as other schools on the mainland are. To do that the professors and students here need the infrastructure to do so.

I appreciate having the opportunity to voice my testimony and am grateful for all of the support and efforts made to make the University of Hawaii a leading research university. I now humbly ask for your continued support to further develop and grow the college of engineering.

Sincerely,  
Jonathan Dang

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Ryan C. Gough

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Ryan Gough, and I am a graduate student enrolled in the University of  
Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on  
SB3116.

I was born and raised on the mainland, and earned both my Bachelor and Master of  
Science degrees in my home state of Texas (at Texas Tech University and Southern  
Methodist University, respectively). I have now been a student at the University of  
Hawaii for a little over a year, and in that time I can say without hesitation that this  
school has some of the most energetic students and committed, knowledgeable faculty  
that I've had the privilege of interacting with.

However, there is one area in which this university lags woefully behind its peers on the  
mainland, and that is the engineering facilities available to its students. Engineering is a  
hands-on discipline, and when it comes to training the engineers of tomorrow there is  
simply no substitute for time spent working in a modern laboratory setting. Unlike other  
fields, the facilities an engineering student has available to him or her are not tangential  
to the education he/she is receiving, but are vital to the quality of his/her education. An  
engineering student can have the most dedicated, expert faculty in the world, but  
without experience in a modern lab he or she will not be prepared to tackle present-day  
engineering challenges.

It takes only a cursory glance around Holmes Hall to see the state of disrepair the  
building is in. But even if all the basic repairs (e.g. bathrooms flooding, roofs leaking,  
etc.) are excluded, the building was clearly designed to prepare engineering students for  
a world that has little relation to the one we live in today. If we want to develop world-  
class engineers here in this beautiful state, we need more than the Aloha spirit. We

need facilities that will provide them with the skills and experience necessary to engineer solutions to the challenges facing the modern world.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Cedric Joaquin

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University  
of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Cedric Joaquin, and I am a student at the University of Hawaii at Mānoa  
College of Engineering, currently pursuing a Bachelor's Degree in Civil & Environmental  
Engineering. I am also employed under the College of Engineering as an Engineering Student  
Ambassador. I am pleased to provide personal testimony on SB3116.

Since the construction of Holmes Hall in 1972, there has not been any renovations of  
the building. Many students, faculty, and staff of the College of Engineering call this their second  
home. Some of the engineering courses offered at the University of Hawaii at Manoa to this day  
are being held in classrooms not in Holmes Hall, but in the English department buildings, or the  
Physics department buildings. In this case, I believe it to be very hard to feel a part of the  
College of Engineering, when my classes are not even held in classrooms where the college is.

As an Engineering Student Ambassador, our team strives to promote the ever-growing  
profession of Engineering and to keep Hawaii students here at home. With a team of 11  
students and 1 supervisor, we are only given one office room that is meant to hold a maximum  
of three people. As such, we are forced to work within the halls of the building. Our team works  
diligently with what we are given, but as also stated prior, it is very disheartening to see that the  
building meant for students of the College of Engineering is not able to accommodate the  
students of the college.

In closing, I believe that the renovation of Holmes Hall is imperative to keeping the  
attraction of the University of Hawaii at Manoa ahead of other schools in the mainland. Holmes  
Hall is being shadowed by other university facilities in the mainland, deterring students from  
applying to UH Manoa. That money students are spending to go to mainland colleges, could  
instead be put to good use by the University of Hawaii and the State of Hawaii. Therefore I urge  
the committees to support SB3116.

Sincerely,  
Cedric Joaquin

Personal Testimony Presented before the  
Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Kainalu MH Matthews

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University  
of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Kainalu MH Matthews and am originally from the Big Island. I came to Oahu and graduated from Kamehameha School Kapalama in 2010 and then I chose to come to UH Manoa to study electrical engineering because of the wonderful things I heard of this program. I am currently a senior at the University of Hawaii at Mānoa College of Engineering and honored to provide a personal testimony on SB3116.

Holmes Hall is a building in which many engineering students spend most of their lives throughout their college years whether they are studying, socializing, or even eating. As an electrical engineering student I can attest to the fact that I find myself spending more hours in this building than I do at home, or anywhere else for that matter. This is why I believe that Holmes Hall is in dire need for repair and maintenance. For electrical engineering majors we are given the task to do student projects for three semesters. A project room for electrical engineers will mean greater collaboration, and even greater products that this amazing college will produce (even though we've already had some great feats thus far). It is for these reasons that I sincerely hope you support the plans and design for the renovation of Holmes Hall. Mahalo.



Personal Testimony Presented before the

**Senate Committee on Higher Education**

Thursday, February 06, 2014 2:45 PM

Conference Room 414, State Capitol

By Richard Christopher Ordonez

**SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING**

**SUBJECT: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Richard Christopher Ordonez, and I am a graduate student at the University of Hawaii at Manoa, College of Engineering. I am currently in my first year pursuing a doctorate degree in Electrical Engineering with an emphasis in Electrophysics. I have lived on Oahu since 1999 and graduated from Mililani High School in 2004. As a student pretty much raised in Hawaii, I give much of my success to the University of Hawaii At Manoa, College of Engineering and I am pleased to provide testimony on SB3116.

As a student accessing Holmes Hall on a daily basis to conduct research, I believe that I am an ideal person to provide feedback in support of SB3116. Every university, at least many of the successful universities maintain state-of-the-art research facilities to support its students and researchers. The amount of technologies and academic journals that come out of these universities are quite substantial. However, Holmes Hall, our main engineering facility/building is in much need of repair to compete against modernized universities such as Stanford or Berkeley. It is actually quite difficult conducting research in the outdated Holmes Hall. For example in our Physical Electronics Lab, the ventilation system has broken down. My professors and colleagues have acquired and purchased many fabrication devices over the past 1-2 years from donations and small research funds to do some incredible engineering, however, these devices depend on a clean room and ventilation system to protect the safety of our students and the environment. The ventilation system needs to be repaired, walls need to be knocked down to expand space for the increase in the amount of equipment, and the electrical wiring needs to be in place to support the fabrication equipment.

However, research must still go on, and other students and I continue to persevere in such outdated facilities. With outstanding advising from our professors, we continue to conduct state-of-art research, produce papers, win national competitions, and create patents that compete with industry standards. My fellow classmates are smart and have a lot of ideas we want to test out. However, outstanding students need outstanding facilities to harbor their success. I envision the funds going to a modernized lab space in which students can learn and get hands on experience with engineering equipment, lab space that can support high tech equipment such as chemical vapor deposition chambers, circuit board milling machines,

and a robotics lab with soldering stations and computers. In order for a university to be a success it must cater to its students, it must make the students want to spend all their waking hours in to conduct research, and it must have the support of its own community. If the state wants the University of Hawaii to excel in the academic community, support such as SB3116 is critical.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard Ordonez". The signature is fluid and cursive, with a prominent initial "R" and a long, sweeping underline.

Richard Christopher Ordonez  
Graduate Student Researcher  
University of Hawaii At Manoa  
College of Electrical Engineering  
Email: [Ordonez@hawaii.edu](mailto:Ordonez@hawaii.edu)  
Cell: 808-349-1459

Aloha,

My name is Christopher Brough, I am currently a Junior in the Electrical Engineering program at the University of Hawaii at Manoa. I am writing to express my support for SB3116, requesting funding for the renovation of the engineering building, Holmes Hall. Thank you for the opportunity to submit testimony!

First impressions matter, and my first impression of Holmes Hall was that it was ugly and uninviting. That has since evolved as over the course of my few years here I have come to love it for the supportive faculty and challenging curriculum it represents. I have also seen firsthand that it could benefit from two changes, a more welcoming appearance and increased room for student collaboration and studying.

With some work Holmes Hall could present a polished appearance that represents the pride we take in our university and the students, faculty, and staff who work to better our island communities. For example, the first floor has no central reception area and as such is confusing to first time visitors. When I first arrived on campus I wandered around the building until I finally found the department office on the fourth floor, tucked away in the back corner. Making a few cosmetic and functional changes would pay dividends in the pride, reputation, and value of an engineering education at the University of Hawaii.

In addition to its outward appearance, adding space available for student collaboration would be invaluable to us. One of the primary reasons I have been successful in my studies is that I study and work together with my classmates. When I am struggling with a problem or concept one of my classmates can usually help explain it, and I often get to return the favor. Engineers in research and industry frequently work in teams and having space for us to work together would facilitate developing the "soft skills" that will serve us well after graduation.

In conclusion, I urge you to fund the renovation of Holmes Hall to help future generations of UH Manoa engineering students succeed, and as a manifestation of the pride we take in what Hawaii can do. A proudly presented Holmes Hall with room for student collaboration and studying would create a strong first impression and leave a lasting legacy of support for years to come. Thank you again for your time and consideration.

Mahalo nui loa,

Christopher Brough

Kevin Shin  
4372 Halupa Street  
Honolulu, HI 96818

February 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering, Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Kevin Shin and I'm currently a mechanical engineering student in senior standing at the College of Engineering (CoE) at the University of Hawai'i at Manoa (UHM). I have served as the President of the Engineer's Council at the University of Hawaii (ECUH) which is the student council for CoE during the 2012-2013 school year. Currently, I am working as the team lead for the mechanical portion of our autonomous surface vehicle project for the Association of Unmanned Vehicle Systems International (AUVSI) and the Office of Naval Research's (ONR) 7<sup>th</sup> Annual International RoboBoat Competition.

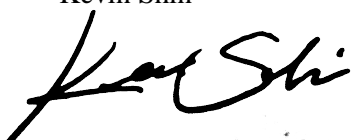
During my time as President of the Engineer's Council at the University of Hawai'i (ECUH), I've had the chance to listen to many student concerns. Among the top of the concerns were not enough facilities to accommodate students working projects/research and not enough course availability. A lot of the course scarcity stemmed from the fact that there were not enough facilities available such as lab space to accommodate more than a handful of students. Enrollment at the College of Engineering (CoE) is growing and we are experiencing growing pains.

The professors are excellent, the research is groundbreaking, and the learning that takes place there is something that we carry all throughout our lives. The only area that I see that needs improvement is with the facilities. More facilities would mean more successful student projects. Anyone in engineering could tell you about the value of hands-on project experiences in addition to the theoretical coursework. That is where the most learning takes place as students build, design, and solve major problems. This

With my current project, we share a space with a major research laboratory and three other major student engineering projects. It is cramped in there and it does hinder our ability to do well on our project at times. Equipment is not available and storage space is scarce but we make the best of what we have. Previously, during my role as President of ECUH, my board and I discussed many different programs to improve the student life but again were hindered by the fact that we did not have central gathering space for engineering students. Even though we'll all be gone before the renovations start, I would love to see that future students of the College of Engineering (CoE) get a better education because of our efforts today.

The UHM CoE is the flagship program for engineering in the state. We need these funds to fund improvements to help the college grow and keep more smart and talented students here in Hawai'i.

Sincerely,  
Kevin Shin



Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Tylynn Ai

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Tylynn Ai, and I am 2010 Kapolei High School graduate and a senior  
Mechanical Engineering student at the University of Hawaii at Mānoa College of  
Engineering. I am pleased to provide personal testimony on SB3116.

Holmes Hall has been an integral part of my learning experience as an engineering  
student. As a senior engineering student, I spend most of my time in Holmes Hall,  
whether it be in class, studying, or working on projects. Since 2012, I have had the  
opportunity to work as an undergraduate research assistant in the Renewable Energy  
and Nanotechnology Lab on hands-on projects. On any given day, the lab is crowded  
with multiple graduate and undergraduate projects, making it difficult to work in a safe  
environment. Sometimes, we even have to wait until night to weld outside due to lack  
of space and proper ventilation inside. Additional lab space for students to gain hands-  
on experience would enhance the education of engineering students, which means  
more experienced engineers for the workforce in Hawaii.

In its current state, Holmes Hall cannot accommodate the increasing enrollment of  
engineering students. This is not only obvious in my classes this semester (most of which  
were moved to entirely different buildings due to the number of enrolled students), but  
also in the availability of lab space and study space. The University of Hawaii at Mānoa  
College of Engineering has high quality professors that will be able to provide more  
learning opportunities to students if they can accommodate them.

Sincerely,  
Tylynn Ai  
Mechanical Engineering Student  
University of Hawaii at Mānoa College of Engineering

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Kathryn Hu

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII  
COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Kathryn Hu; I am a senior in the Department of Mechanical Engineering at the University of Hawaii at Manoa (UHM) College of Engineering (CoE) and also a 2010 graduate from Moanalua High School. I am pleased to provide personal testimony on SB3116.

The UHM CoE faces the unique challenge of providing a quality, well-rounded engineering education to its students without the appropriate space or convenient nearby facilities that mainland universities enjoy. Students hold the College responsible for preparing them as best as possible for the world outside of school—to provide the necessary knowledge and tools to help them be competitive with other students from ivy-league universities, and to earn jobs at prestigious engineering companies. The engineering field has unlimited potential for innovative and technological contributions to the global society. However, without the proper preparation, UHM engineering graduates may find it difficult to earn jobs doing engaging, technical work outside of the state.

Throughout my several years in the mechanical engineering program, I have noted the disparities between the courses and labs we have and what is offered at other universities. This in part, is due to the lack of available space for equipment. Other soon to be graduating seniors are realizing that they will be leaving without adequate experience in machining processes, composites, material science, robotics, automotive, aerospace, renewable energy, and marine engineering—all of which are currently important, potential career fields.

In addition, project experience is essential for engineering students to apply the technical knowledge they have learned outside of the classroom. Currently, mechanical engineering does not have enough space to accommodate over three student design projects. These are paramount capstone projects which teach students the design, manufacturing, and testing processes used in industry. Applying classroom learning to

these real, large-scale projects solidifies concepts and understanding. Employers look for project experience to supplement a high grade-point average and work experience. Granting more shop and work space will allow a higher volume of students to gain the project and hands-on experience necessary to be better prepared to enter the engineering workforce. Though the UHM CoE is currently providing adequate teachings to prepare students, updating facilities and having more space for equipment and projects will substantially supplement and improve the engineering program for the next generations of engineers.

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Kenny Luong

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Kenny Luong -- I am a senior Computer Engineering student and one of the Co-Chairs of the Institute of Electrical and Electronics Engineers (IEEE) student branch at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

I am a local student who graduated from Pearl City High School and decided to attend college at the University of Hawaii at Manoa. To me, the University of Hawaii at Manoa was an affordable option, and a chance to contribute to Hawaii's local community.

During my past three and a half years here at the UH Manoa College of Engineering, I have grown to realize that our faculty are exceptionally skilled. The faculty are dedicated to the betterment of the College, and Hawaii's local community. It was never a question that we had a lack of skilled faculty members.

It is however, a case of facility that I find disturbing. Holmes Hall suffers numerous problems that is detrimental to the environment for students, faculty and staff combined. There are numerous rooms which are under maintained – the roofs are leaky, the breakers do not work, and the whiteboards need replacement. There are even examples of the bathroom facilities being in a state of disrepair.

One of the largest issues is the internet speeds in Holmes Hall. Students have often measured real speeds of less than 10 Megabits per second, even during off times. This is in sharp contrast to the Pacific Ocean Science and Technology building, where students often saturate their connections during off times.

If the State of Hawaii is to be a state which supports local innovation and community, we must provide the proper facility for students to continue investing locally. If the



College of Engineering does not provide proper facility for students and for prospective students, the State of Hawaii loses that much more talent. I, as a student, and as a resident of the State of Hawaii ask you to consider allocating funding for the College of Engineering.

Sincerely,  
Kenny Luong

Senior, Computer Engineering  
University of Hawaii at Manoa

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Larry K. Martin

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Larry Martin, and I am a Kailua High School graduate and graduate research assistant at the University of Hawaii at Mānoa College of Engineering (CoE). Thank you for the opportunity to provide personal testimony on SB3116.

I have been a student at UH Manoa since 2007, earning my BS in electrical engineering (EE) and now working towards my MSEE. By now I am very familiar with all of the classrooms, offices, and labs of Holmes Hall and can testify to their subpar conditions.

The truth is, we really do have gifted and talented folks at the UH CoE. The sheer number and quality of achievements that continue to come out of the UH CoE mirrors those from top-ranked engineering schools across the nation, and even world. But our ability to do what we do best, whether it be transfer knowledge to the next generation of engineers or develop cutting-edge research that has the potential to ultimately benefit our society, has been and will continue to be hampered until we rectify the current work environment. I thank you for your support thus far and respectfully request your continued support by way of the proposed support of our infrastructure.

**From:** [mailinglist@capitol.hawaii.gov](mailto:mailinglist@capitol.hawaii.gov)  
**To:** [HRETestimony](#)  
**Cc:** [shimomit@hawaii.edu](mailto:shimomit@hawaii.edu)  
**Subject:** Submitted testimony for SB3116 on Feb 6, 2014 14:45PM  
**Date:** Wednesday, February 05, 2014 2:37:54 PM

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**SB3116**

Submitted on: 2/5/2014

Testimony for HRE on Feb 6, 2014 14:45PM in Conference Room 414

| <b>Submitted By</b> | <b>Organization</b> | <b>Testifier Position</b> | <b>Present at Hearing</b> |
|---------------------|---------------------|---------------------------|---------------------------|
| Traci Shimomi       | Individual          | Support                   | No                        |

Comments: As a student at UH Manoa in Electrical Engineering I believe that we deserve an updated building.

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Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Jonathan Kutsunai

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Jonathan Kutsunai, and I am currently a sophomore majoring in MEchanical Engineering with a focus on aerospace, and aeronautical sciences. I was born and raised on the Big Island of Hawaii where I graduated from Kealakehe High School Cum Laude. And I am a student at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

I am involved with many clubs and labs on campus, clubs that work to increase the amount of minorities into engineering. I am a member of The Native Hawaiian Science and Engineering Mentorship Program, American Society of Indian Science and Engineering Society, Society for the Advancement of Chicanos and Native American, and the American Society of Mechanical Engineers. These clubs all utilize Holmes Hall for meetings, to conduct experiments and research, to work on hands-on projects, attend presentations from industry partners, and to enrich the overall student experience.

These groups are starting to become larger and larger, and sometimes it's hard to have ample room for presentations, group meetings, and for lots of group collaboration since it's hard to fit enough people in the room at that same time. Also the building is showing signs of age, which doesn't look very good for possible investors locally, nationally, and internationally to help fund to the college for years to come, and I believe that as a student if our building is renewed, other students will take pride, and preserve it for generations to come.

I am also an Engineering Student Ambassador with the College of Engineering, and I work to do outreach with students all over Hawaii to promote Engineering and our prestigious College. We host engineering events where students can participate in engineering themed tasks, and we answer questions and become a resource so they are fully prepared to go into engineering at UH Manoa. We have also started our E'o

Engineering Ohana Residential Learning Program where we try to have an all engineering floor where they can build relationships and friendships so that they can succeed as a group, and makes for a higher retention rate. Unfortunately there are 10 Engineering Student Ambassadors and one small office in Holmes, and I think we would benefit from having more room, so that we could make our outreach more effective and efficient.

I recently joined onto Dr. Wayne Shiroma's Small Satellite Laboratory where his students made UH Manoa College of Engineering the first university to design, build, and launch its own satellite into low orbit. His lab could use more space to utilize building materials, to showcase previous work, and to take UH Manoa into the future.

In conclusion, I believe that students and professors will benefit from a renovation that is long overdue. Holmes Hall is a part of history, and a vital part of Hawaii, and it deserves to be a major player in technology advancement in the future. Please pass this bill to enrich our education and to support the generations to come.

Sincerely,  
Jonathan Kutsunai

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Cathy Wong

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF  
ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall  
University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Cathy Wong, and I graduated from Kaimuki High School. Currently I am a Senior in Electrical Engineering at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

I believe the College of Engineering needs money for renovating Holmes Hall because the current building is unable to support the increasing student body and their needs. Most of the engineering courses offered are usually taught in other buildings because the large class size exceeds the small room capacity of Holmes Halls' classrooms. Also, many of the classrooms in the building don't really encourage better learning because it lacks the proper technology (i.e. smart boards, projectors, etc.) to make learning more effective. Lastly, repainting the building would also be nice because even though Holmes Hall is one of the newer buildings on campus, it looks much older and the older looking classroom enforces that opinion even more.

In conclusion, I urge you to support SB3116

Sincerely,  
Cathy

Personal Testimony Presented before the

Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

by  
Nicholas G. Fisher

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

**SUBJ: TESTIMONY IN SUPPORT** of plans and design for the renovation of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Nicholas Fisher (from the Big Island of Hawaii, graduated from Kealahou High School), and I am a Research Assistant and a graduate electrical engineering student at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

I first got familiar with College of Engineering and the Holmes Hall building when I transfer from UH Hilo, as an undergraduate, in Fall 2008. Don't get me wrong, it is a great place, full with very knowledgeable faculty and students, however Holmes hall is due for repair and/or renovation. The most noticeable things that need repair are the stain floors, or the watermarked, faded ceiling tiles. The ceiling tiles' wear-and-tear is probably mostly due to the old HVAC system. I would bet that every room you go into, every air duct or vent, has some kind of rust and/or dust from the old HVAC system. In general, Holmes Hall really needs to be brightened up a bit.

Holmes Hall is really the future of Hawaii's engineers. I myself studying through undergrad and now graduate studies have seen how the people of Holmes Hall are connected to Hawaii's tech and even the world's tech. I myself, joined a small satellite program, in Spring 2009, which has lead to many opportunities and finally lead to UH's first student-built satellite sent to space (November 2013). (UH's first satellite in space too). Our project trained over 50 undergraduates and a handful of graduate students in the four and half years of its lifetime. Sponsored by AFOSR, AFRL, AIAA, through the University NanoSatellite Program and an Educational Partnership with NASA, our project would have never taught so many future engineers and students of Hawaii. But it all wouldn't have happened without a building some of us engineers like to call home, Holmes Hall.

Without Holmes Hall I wouldn't have had the opportunities thus far. I'm thankful that this building in the University of Hawaii exist, but I think it would be a good idea to take care of the it and give Holmes Hall a rebirth to grow even more. I support the renovation of Holmes Hall and would hope to see the College of Engineering to grow into something even better than it is today.



Personal Testimony Presented before the  
Senate Committee on Higher Education  
Thursday, February 06, 2014 2:45 PM  
Conference Room 414, State Capitol

By

Maximilien Bender

SB3116 – MAKING AN APPROPRIATION TO THE UNIVERSITY OF  
HAWAII COLLEGE OF ENGINEERING

SUBJ: TESTIMONY IN SUPPORT of plans and design for the renovation  
of Holmes Hall University of Hawaii at Manoa, College of Engineering

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

My name is Maximilien Bender, and I serve as student and member of the  
Ignition club of the University of Hawaii at Mānoa College of Mechanical  
Engineering.

I, Maximilien Bender, am 100% for the renovation of Holmes Hall. This  
building has played a major part of creating my interest in Mechanical  
engineering as well as the dream for a sustainable community of Hawaii.  
This is my 6<sup>th</sup> semester here at UH and from my point of view, Holmes Hall  
is in very much need of renovation. One major example is the fact that the  
ventilation and space available in the lab space is lacking; in need of much  
improvement.

Mahalos,

Maximilien Bender

02/05/2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

I am a graduate student in the University of Hawaii Manoa College of Engineering, and a member of the Ignition Club; an engineering entrepreneurial club aiming to nurture the growth of innovative ideas, entrepreneurship, STEM education and workforce development in the State of Hawaii. Our success and service depend for many of its engineering student members upon the College of Engineering at the University of Hawai'i at Manoa (UHM) in the form of workspace, funding, tools and equipment, and faculty advising and mentorship. These trainings and opportunities are essential for our club's continued success and more generally, the continued health of the engineering, entrepreneurship and STEM education in Hawaii. It is absolutely essential that engineering graduates from UHM receive the education and training they will need to implement and keep abreast of continually and rapidly evolving engineering and technology practice.

As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and the engineering faculty have done an admirable job in the past decade given the limited resources while their enrollment has doubled. Holmes Hall was built 42 years ago, and without any substantial renovation, it has been even more difficult to keep up with this rapidly evolving pace of engineering, as it is taught, as it is practiced, and as associated research is conducted. The planned renovation of Holmes Hall will ensure that the College is able to provide its graduates a contemporary environment in which they are able to learn the fundamentals of the engineering profession while ensuring that they are on a par with or superior to any of the competitors from the mainland.

Appropriation of funds for the Holmes Hall Renovation is also critical for continued accreditation by the Accreditation Board for Engineering and Technology (ABET), the nation's only engineering accreditation organization. It is therefore absolutely imperative that the facilities provided by the College of Engineering are able to pass the accreditation standards as assessed at least every 6 years, with the next evaluation cycle starting in 2015. The current condition of Holmes Hall, without substantial renovation for 42 years, exposes the College's programs to heightened scrutiny, especially since many of ABET's evaluators are clearly accustomed to evaluating programs housed in contemporary facilities. The loss of accreditation of the basic civil, electrical and mechanical engineering programs would undoubtedly be a major hardship on Hawaii families/students and the Hawaii engineering industry. Furthermore, graduates of the College's programs would not be as desirable to the engineering industry. It should also be noted

that to become a licensed professional engineer in Hawaii (or anywhere on the mainland), students must graduate with an ABET-accredited degree. More than likely, many students would be forced to study engineering on the mainland.

Finally, engineering is at the core of dynamic economic sectors in Hawaii such as renewable energy, civil infrastructure, transportation, communications, cyber security, military support, and manufacturing. Nationally, 7 out of the 10 top paying jobs for graduates are in engineering fields and the average starting salary of UH Manoa College of Engineering graduates is approximately \$56,000 which is 2x greater than the median Hawai'i salary of \$24,600. It is imperative that Hawaii supports its only Engineering Program at the University of Hawaii at Manoa given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Ignition Club

Mahmood (Hamed) Dehnavi  
PhD Student

February 5, 2014

**Senate Committee on Higher Education**

Senate Brian T. Taniguchi, Chair; Gilbert Kahele, Vice Chair; and Members David Y. Ige, Glibert S.C. Keith-Agarian, Michelle N. Kidani, Jill N. Tokuda, Sam Slom.

Subject: **TESTIMONY IN SUPPORT of [SB3116, Making an Appropriation to the University of Hawaii College of Engineering,  
Hearing: Thursday February 6th, 2:45 p.m., Conference Room 414**

Dear Chair Taniguchi, Vice Chair Kahele, and Members of the Committee:

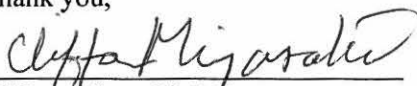
I am a practicing engineer in the State of Hawaii and an alumnus of the College of engineering. My education and experiences throughout my time at the University of Hawaii, College of Engineering have been very important to my development as an engineer.

Holmes Hall has not been substantially renovated in 42 years, and SB3116 will provide for needed improvements to facilities. The improvements will be help in increasing educational opportunities for students by providing new facilities, more up to date with constantly changing technology.

The College of Engineering will be evaluated by the Accreditation Board for Engineering and Technology (ABET) for accreditation starting in 2015 and improvements to Holmes Hall would be a positive for the College. A licensed professional engineer in the State of Hawaii is required to have an ABET accredited degree. Loss of ABET accreditation would force students to study engineering on the mainland.

I also ask for your support for the University of Hawaii, College of Engineering and SB3116.

Thank you,

  
Clifton Miyasaki, P.E.

**From:** [mailinglist@capitol.hawaii.gov](mailto:mailinglist@capitol.hawaii.gov)  
**To:** [HRETestimony](#)  
**Cc:** [inlew@hawaii.edu](mailto:inlew@hawaii.edu)  
**Subject:** Submitted testimony for SB2906 on Feb 6, 2014 14:45PM  
**Date:** Wednesday, February 05, 2014 12:51:58 PM

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**SB2906**

Submitted on: 2/5/2014

Testimony for HRE on Feb 6, 2014 14:45PM in Conference Room 414

| <b>Submitted By</b> | <b>Organization</b> | <b>Testifier Position</b> | <b>Present at Hearing</b> |
|---------------------|---------------------|---------------------------|---------------------------|
| Lauren              | Individual          | Support                   | No                        |

Comments: I am a student at the university of hawaii at manoa and I support this bill not only to help support myself but my peers who are also students that are working independently to support themselves.

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**To:** [HRETestimony](#)  
**Cc:** [cl-nguyen@hotmail.com](mailto:cl-nguyen@hotmail.com)  
**Subject:** Submitted testimony for SB2906 on Feb 6, 2014 14:45PM  
**Date:** Wednesday, February 05, 2014 12:52:31 PM

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**SB2906**

Submitted on: 2/5/2014

Testimony for HRE on Feb 6, 2014 14:45PM in Conference Room 414

| <b>Submitted By</b> | <b>Organization</b> | <b>Testifier Position</b> | <b>Present at Hearing</b> |
|---------------------|---------------------|---------------------------|---------------------------|
| Christina Nguyen    | Individual          | Support                   | No                        |

Comments: As a student, I understand how difficult it is to juggle school and a job. It is really helpful that schools have jobs that we can apply for. It helps us financially, as well as to become more involved in the school. if you take away jobs, you take both of these away from the students.

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**Subject:** Submitted testimony for SB2906 on Feb 6, 2014 14:45PM  
**Date:** Wednesday, February 05, 2014 12:51:58 PM

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**SB2906**

Submitted on: 2/5/2014

Testimony for HRE on Feb 6, 2014 14:45PM in Conference Room 414

| <b>Submitted By</b> | <b>Organization</b> | <b>Testifier Position</b> | <b>Present at Hearing</b> |
|---------------------|---------------------|---------------------------|---------------------------|
| Lauren              | Individual          | Support                   | No                        |

Comments: I am a student at the university of hawaii at manoa and I support this bill not only to help support myself but my peers who are also students that are working independently to support themselves.

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**To:** [HRETestimony](#)  
**Cc:** [cl-nguyen@hotmail.com](mailto:cl-nguyen@hotmail.com)  
**Subject:** Submitted testimony for SB2906 on Feb 6, 2014 14:45PM  
**Date:** Wednesday, February 05, 2014 12:52:31 PM

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**SB2906**

Submitted on: 2/5/2014

Testimony for HRE on Feb 6, 2014 14:45PM in Conference Room 414

| <b>Submitted By</b> | <b>Organization</b> | <b>Testifier Position</b> | <b>Present at Hearing</b> |
|---------------------|---------------------|---------------------------|---------------------------|
| Christina Nguyen    | Individual          | Support                   | No                        |

Comments: As a student, I understand how difficult it is to juggle school and a job. It is really helpful that schools have jobs that we can apply for. It helps us financially, as well as to become more involved in the school. if you take away jobs, you take both of these away from the students.

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