

SB 3116

LATE

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

Personal Testimony Presented before the

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

by
Bruce Liebert

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 Bruce Liebert, and I serve as the Interim Associate Dean for Academic Affairs
of the University of Hawaii at Mānoa College of Engineering. I am pleased to provide
personal testimony on SB3116.

I have served in my current position for the last seven years. During this time, we have
experienced unprecedented interest and growth in undergraduate engineering
programs, largely a result of initiatives in robotics and engineering a sustainable future
for Hawaii. We offer programs in Civil and Environmental Engineering, Electrical
Engineering, Mechanical Engineering, and a newly developed program in Computer
Engineering. Our enrollment has increased from 770 to 1263, an increase of 64%, which
includes the establishment of a very popular “pre-engineering” program designed to
allow students, who may not have been given adequate resources in high school, to
graduate on time along with regularly admitted students.

As a result of this growth, we have not been able to accommodate many of our students
in those classes required for graduation due, in part, to classrooms in Holmes Hall that
were designed in the 1960s to accommodate much smaller class sizes. The proposed
renovation of Holmes Hall will go a long way towards satisfying this need and ensure we
will be able to maintain our ABET accreditation.



Personal Testimony Presented before the

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

By

Gaur Johnson, Ph.D., S.E.
Assistant Professor of Structural Engineering
Dept. of Civil and Environmental Engineering
University of Hawaii at Manoa

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 Gaur Johnson, and I serve as Assistant Professor of Structural Engineering at the University of Hawaii at Mānoa College of Engineering, Civil & Environmental Engineering Department. I am pleased to provide personal testimony on SB3116.

I was born and raised on Hawai'i Island. I graduated from Hilo High School in 1995 and headed to our states only Civil Engineering program. I wanted to be a structural engineer since the 7th grade after winning a toothpick bridge building content at Hilo Intermediate School. My journey to reach my goal began at the University of Hawaii at Manoa.

I completed my BS in Civil Engineering in 4 years. I realized, having gained all that knowledge that to be a structural engineer, a Bachelor's degree is not enough—it just teaches you some of the language of the profession. I continued at the University of Hawaii and received my Master's degree in 2001 after 2 years.

In those 2 years I used the laboratory facilities to test reinforced concrete construction, which is typical of the skyline of Honolulu and Waikiki, for its weakness during earthquakes. I got to build and destroy half scale slab-column connections by subjecting them to seismic loads. I developed a hands on feel for what the math and equations told me to expect—everything then clicked.

Subsequently, in my 2 years working as a design engineer for Martin & Chock, Inc., I realized my passion was not only to design and build structures – it was the process of discovery that happens in a laboratory environment. That is what I enjoyed in my

childhood experimenting with toothpicks. That is what I experienced in the structures lab in Holmes Hall. I decided to work toward my PhD.

So, for the 3rd time I returned to UH Manoa. During my 4 years, I fully utilized the structures lab. No day went by that you could not find me there, weekends & holidays. I have a unique knowledge of the workings of this lab.

Let me tell you what I found. There is a wonderful set of structural engineering professors and researchers who have big ideas to solve engineering problems that will help us to mitigate our immense infrastructure maintenance and recapitolization needs. They have the intellect and the wherewithal to make significant impact on the way we build and fix our infrastructure. Indeed, they are doing so now (see the attached). However, they have been stifled by a severe lack of laboratory space.

The laboratory space we have is so small that during my graduate studies, I spent many hours a day using a pallet truck, or fork lift, to rearrange instructional or research equipment and test specimens just to get to the experiments I needed to work on. There is a constant conflict between instructional laboratory requirements and research laboratory requirements, so neither gets done as efficiently as it could be.

- We know that research funding helps to pay for the education of our aspiring young engineers who will develop the right solutions for Hawai'i's infrastructure.
- We know that hands on laboratories help students to cement the complex textbook concepts into real usable information.
- You will be doing a disservice to the students, and their taxpaying parents, who have been carrying an increased tuition burden if you do not fund the renovation of Holmes Hall to increase the laboratory space.

Fund the renovation of Holmes Hall to increase the capacity to do research to help fund our students' education.

Fund the renovation of Holmes Hall to increase the capacity for the students to learn through hands on experiments.

Fund the renovation of Holmes Hall to increase the capacity of our engineering community to reduce the costs of maintaining and building our future hear in Hawai'i.

Respectfully,



Gaur Johnson
gaur@hawaii.edu



Hands-on Learning & Instruction

CEE 370 Mechanics of Materials

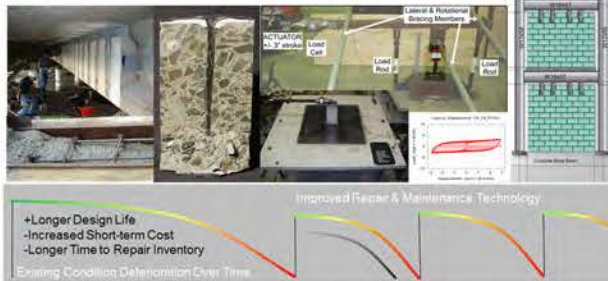
CEE 375 Construction Materials

CEE 485 Reinforced Concrete Design

CEE 486 Structural Steel Design



Construction Innovation Research



Facility & Equipment

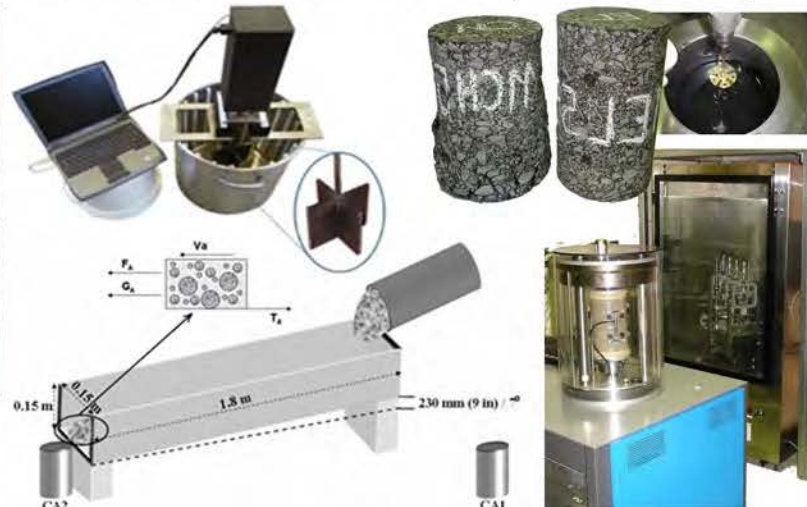
- 60ftx20ft Strong Floor
- MTS Servo-controlled hydraulic test system
- 55,000 lb 2-post Hydraulic test machine
- 300,000 lb 2-post Riehle test machine
- 500,000 lb compression machine
- High-speed data acquisition
- Constant Humidity and Temperature Basement
- Cyclic Corrosion Chamber



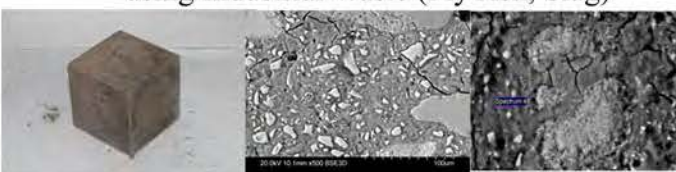
Concrete rheology testing & modeling



Polymer Modified Asphalt



High Performance Cementless Geopolymer Concrete using Industrial Waste (Fly Ash, Slag)

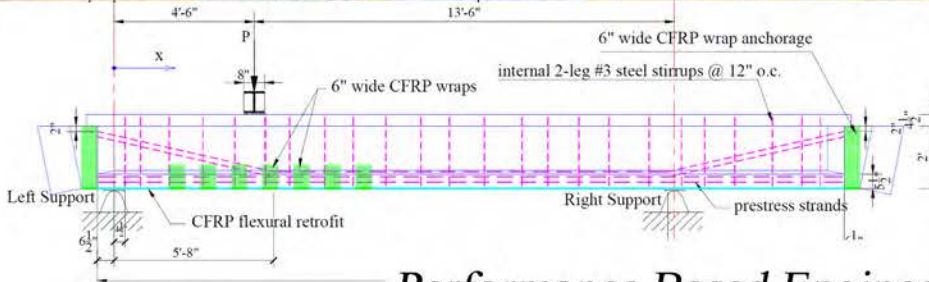


Construction Materials Faculty

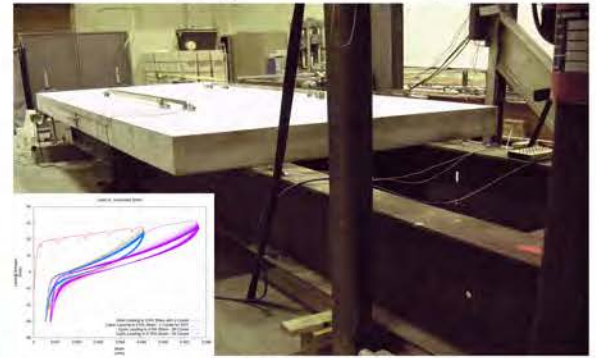
A. Ricardo Archilla
archilla@hawaii.edu

Lin Shen
linshen@hawaii.edu

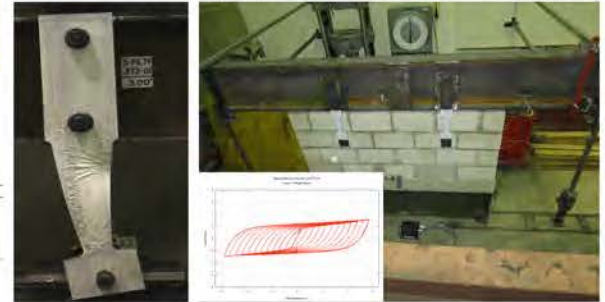
Carbon Fiber Reinforced Polymers



HPFRCC Bridge Deck Joint Replacement

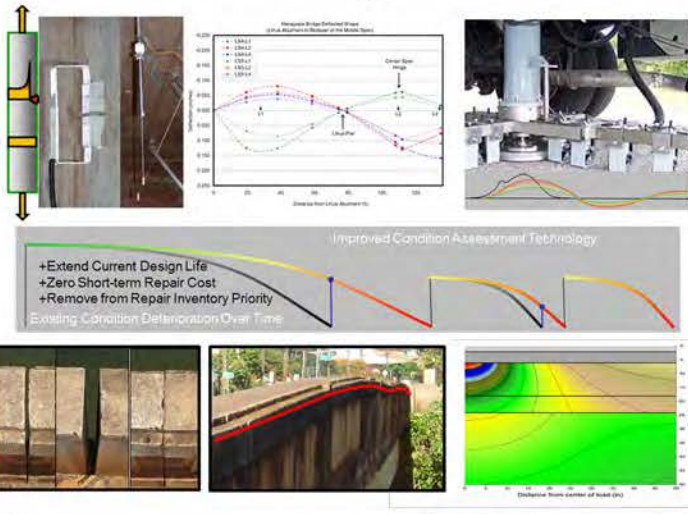


Steel + Masonry Hybrid Seismic Connections

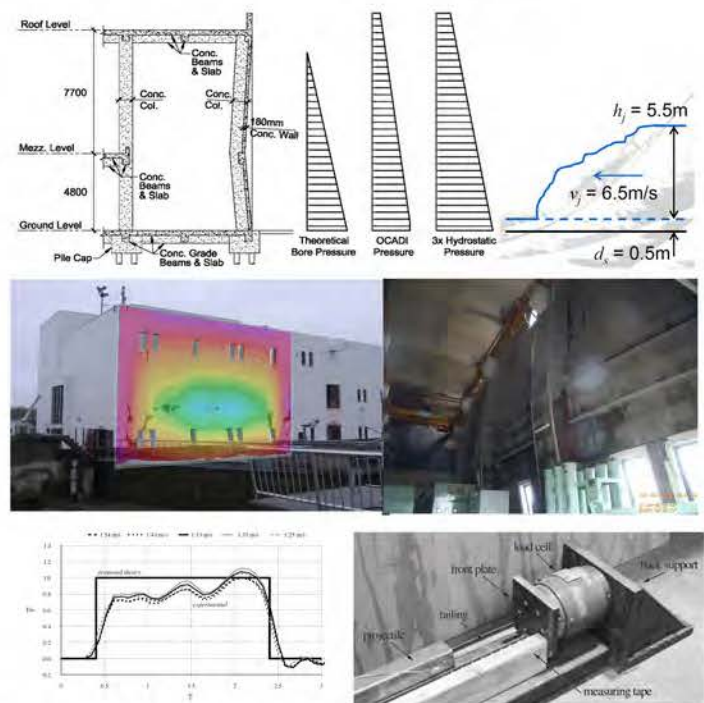


Performance Based Engineering Research

Structural Health Monitoring & Assessment Research



Tsunami Bore & Debris Impact Loading of Structures



Seismic Instrumentation



Structural Modeling, Testing & Assessment Faculty

Gaur P. Johnson
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H. Ronald Riggs
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David T. Ma
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Ian Robertson
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**TESTIMONY BEFORE THE SENATE COMMITTEE ON
HIGHER EDUCATION**

S.B. No. 3116

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

February 6, 2014
2:45 pm
State Capitol, Conference Room 414

Scott Seu
Vice President, Energy Resources and Operations
Hawaiian Electric Company, Inc.

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

My name is Scott Seu and I represent Hawaiian Electric. Hawaiian Electric supports SB 3116 as it is critical to the mission of building our University of Hawaii College of Engineering as a center for engineering and technology excellence.

I view this measure through two different lenses. First, from my perspective at Hawaiian Electric, our ability as a State to solve the technical challenges of modernizing our electric system to be clean, affordable, and reliable to serve the best interests of the residents of Hawaii relies on cutting edge technology and innovation. There is tremendous opportunity for Hawaii to actually originate the technical solutions we need for our electric system with our own homegrown engineering expertise, rather than just purchasing technology and knowledge from offshore. This bill supports the students and faculty at the College of Engineering with the basic infrastructure they need to succeed.

I also view this measure more broadly through my participation on the Dean's Council for the College of Engineering, an all-volunteer advisory group that comes from diverse sectors of the engineering industry and major employers of engineers such as Pearl Harbor Shipyard. Collectively, we believe that the heart of a successful 21st century Hawaii economy will be built on technology and an engineering and construction industry that is second to none. For us to succeed in meeting the needs of Hawaii's people, we in turn need the College of Engineering to do the research that solves the problems we face and creates economic opportunity, and we need the College to train our workforce of future engineers. This measure will assist the College in fulfilling these needs.

We thank the Committee for considering this measure and respectfully ask that it pass SB 3116.



HAWAIIAN DREDGING
CONSTRUCTION COMPANY, INC.

February 6, 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 Bill Wilson and I am the President of Hawaiian Dredging Construction Company, Inc. (Hawaiian Dredging). Hawaiian Dredging is currently the State's oldest and largest construction company. I am also the Chair of the Civil and Engineering Dept. of the University of Hawaii at Manoa's (UHM) Industry Advisory Council. Our company depends for many of its engineering employees upon the College of Engineering in the form of recent graduates, student interns, and returning College alumni from the US mainland. These graduates are essential for Hawaiian Dredging Construction 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.

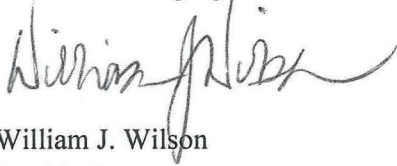
As you are probably aware, the UHM College of Engineering is the flagship program for engineering education in the State, supporting the engineering and construction industry with an economic value estimated at over \$3 billion per year. Holmes Hall is the home of engineering on the Manoa campus, and 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 given its unique capacity to support the growth of these important sectors of Hawaii's economy.

Hawaiian Dredging Construction Company, Inc.



William J. Wilson
President





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
101st Senate

MAKING AN APPROPRIATION TO THE UNIVERSITY OF HAWAII COLLEGE OF ENGINEERING

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). Today, I submit testimony in support of SB 3116, which appropriates general obligation bonds to the University of Hawai'i College of Engineering for the design and renovation of Holmes Hall.

As of Fall 2013, the College of Engineering's total enrollment was 1,082 students, who go into various engineering disciplines such as civil and environmental, mechanical, electrical and computer engineering. The College of Engineering has produced exceptional research, work, and most importantly, students who are ready and prepared for the work force after graduation. As mentioned in the bill, three times in the last decade, the College of Engineering has produced the top electrical engineering student in the United States – an accomplishment that should not be looked over and that should bring pride to the students of the college and university, and to the state of Hawai'i overall.

To ensure an enhanced learning environment for the students who use Holmes Hall, this bill seeks to appropriate funds to the College of Engineering for the design and renovation of Holmes Hall. I support this effort to ensure that the success of the college continues to flourish, and bring pride to our university. I am grateful for the leadership of the introducers of this bill to bring this forward to the Legislature, as this can have tremendous benefits and a greater impact for the field, for the university, and for the students.

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.

Personal Testimony Presented before the

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

by
Ada Garcia

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

**SUBJ: 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 Ada Garcia, and I am currently a Junior in the Mechanical Engineering department at the University of Hawaii at Manoa (UHM). I am also the President of the Society of Women Engineers (SWE) collegiate section at UHM. I am pleased to provide my personal testimony on SB3116.

As president of SWE, I lead the planning and execution of numerous events including professional development and networking events for engineering students, and education outreach in the community. These events are aimed at empowering our current students to succeed and advance in the field of engineering, as well as recruiting, retaining, and diversifying our next generation of engineering leaders. Due to lack of dedicated workspace, the planning of these events must take place in one of the very few rooms available for general College of Engineering (CoE) student access. This room is not even located within the main engineering building, but instead in the Pacific Ocean Science Technology building adjacent to Holmes Hall. While this space is functional, it is also utilized by many other students completing homework assignments, working on projects, writing lab reports, tutoring, and holding interdisciplinary meetings. In the end, the POST workspace often exceeds the maximum room capacity. The lack of room availability diminishes the work productivity that could be accomplished otherwise and sometimes even cannot support the number of students in need of study space.

Inadequacy of room availability has also influenced my experiences both in working on hands-on large size projects and doing research for the Renewable Energy and Island Sustainability (REIS) program. There have been occasional safety concerns concerning the necessity of several groups in the same lab simultaneously conducting construction and testing of engineering projects within a limited space. Just last summer, my project

group received different complaints three days in a row due to us having to operate equipment outside of the lab as a result of limited indoor workspace. As a result, project groups would have to take turns utilizing the available lab space, and thus became delayed to the point that most were unsuccessful in completing their projects and ultimately experiencing the complete engineering design process.

The growing student body should be seen by most to be highly beneficial, however for students in our college it has instead become an increasing concern. The seat availability in classes is small in comparison to the number of students attempting to register for these courses. The primary factor being held responsible for this is the room capacity. During the first week of the current spring semester, I had to sit on the floor on various occasions until some of my fellow students were eventually denied registration also due to room capacity. It is not surprising that many engineering students are delayed far beyond their graduation date expectancy merely due to limited classroom capacity. I currently walk to the Architecture building, on the other end of campus, where the class sessions for 'System Dynamic Analysis and Design' (a Mechanical Engineering course) take place. In fact, only one out of six engineering courses that I'm currently undertaking is being taught in the Holmes Hall building. I am bothered not so much by the distance I must travel, but more by the inability of our own engineering building to support such a passionate and prosperous community of students.

Thank you for taking the time to read my testimony and considering SB3116, which is crucial to the progress and growth of the College of Engineering, and the academic success of its students.

Ada Garcia

Mechanical Engineering student and President of SWE at UHM

Personal Testimony Presented before the

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

by
Bronson Edralin

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 Bronson Edralin, and I am a Senior Electrical Engineering student at the University of Hawaii at Manoa, College of Engineering. I am actively involved in extracurricular activities here by being part of the EE Student Advisory Board (EE-SAB) and the IEEE Hawaii Student Branch. I am pleased to provide my own personal testimony on SB3116.

First of all, I am very proud to be a part of the Undergraduate Electrical Engineering Program at UH Manoa. Serving as the Chair of the EE Student Advisory Board this year, I began to see how much work that the EE faculty put into this program. Along with other students, I had the opportunity to participate in some of the EE Department Faculty Meetings and voice student concerns. I was pleased to see how much they really care about our opinions and actively worked on meeting our needs. For example, many students had issues with Matlab (A useful tool, which involves programming) so a new Matlab course (EE110) was opened this semester. A new project lab room for all EE students is also in progress of being opened. In this project lab room, there will be the necessary tools needed to complete an electrical engineering project.

As a student, I spend a lot of time studying in groups and alone in Holmes Hall from morning to night. Through my undergraduate career, I met many hard-working individuals inside and outside of the classroom. Many students and faculty stay late working on their tasks. Sometimes, I bump into other students or faculty at the 4th floor Holmes Hall restrooms.

Holmes Hall is a really old building. Our network infrastructure is outdated, which leads to very slow Internet access. The elevators definitely need some renovating as well. It's so old that the buttons, for the floor levels, don't even light up. The elevator doors close unexpectedly and it doesn't even have infrared sensors. It uses some kind of old mechanical technology. We are definitely behind times on Distance Learning. Top colleges such as MIT and Berkeley have various online courses documented on their

school website. Publishing online courses require special rooms where the professors can be recorded. I know only one room like this in Holmes Hall Room 389. Rooms like this can also be used for special conferences with other people not on the premises. Currently, the technology in this room is outdated. The Holmes Hall air conditioning system could also use some renovations. Last year, it required much repairs.

I strongly feel that improving our facilities will bring our college up to the next level. This will not only improve our learning environment, but it will also attract more prospect-engineering students to attend our school. This will help generate more revenue for the school. I am grateful for the support you have given us so far. Even though I will be graduating soon, I really hope the renovations of Holmes Hall will happen. This will definitely benefit the future Engineering Students of UH Manoa, 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
(Amanda) Chung Yin So

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 (Amanda) Chung Yin So, and I am currently a student at the University of Hawaii at Mānoa College of Engineering. I am in my third year, with class standing of a senior studying civil and environmental engineering. I graduated from President William McKinley High School, here on the Island of Oahu. I am pleased to provide personal testimony on SB3116.

I personally have a passion for engineering and realize that I wanted to study engineering since I was in high school! I aspire to be an effective and hardworking civil and environmental engineer to help design and further our society and their needs! I realized that the College of Engineering at the University of Hawaii at Mānoa is a great place and can provide me the tools to reach my goals. During my three years here, I have enjoyed my academic journey, but I believe a renovated Holmes Hall would greatly enhance the learning of students, who like me, have a passion and desire to be an engineer!

Although I personally believe that education and learning is what each individual makes of it, I also believe that the environment in which we learn and grow has a direct relationship to our learning. I humbly and honestly testify my personal experiences and my opinion of the current conditions experience by students like myself towards our learning environment namely – Holmes Hall.

As a civil and environmental engineering student, we are required to attend one mandatory advising with a College of Engineering faculty each semester, in order to register for classes. We are also encouraged to seek our professors during office hours whenever we may need. In the past three years, as I enter into my advisor, my professors, and other faculties offices, I realize how cramped the space is, how there are paint tears on the walls, and some cracks along the walls and windows! The cramped space makes it difficult and uncomfortable when my professor tries to explain, say, an engineering homework problem with me.

Within the civil and environmental engineering curriculum, we have five laboratory courses to take, related to engineering topics: fluid, mechanics of materials, wastewater, construction materials, and geo-technical. Having taken and currently taking these lab, I realize once again how cramped the space are, making it rather hazardous. As the lab assistant or the professor explains the procedures for the laboratory experiment, students would be try to stand and fit within the tight space between the varieties of lab equipment. We typically won't have any space to leave our backpacks/laptops safely, without blocking walking space and such.

My hopes is that future students, who has a passion for learning, would not have their learning and education impeded because of issues such as cramped laboratory space and faculty offices, which slows down their education. Our laboratory courses are restricted to only twenty students per class section because of the limited space in the laboratories. This actually, for me and many of my friends, has hindered us from entering into the class in the past. I had friends who may have to postpone graduation by an entire semester simply because they were not able to make it into a laboratory course.

These are just some of the daily struggles I feel that students, professors, and other faculties experiences! Personally, I find the two ancient elevators in Holmes Hall to be very ineffective. Although I believe in living a healthy life style and walking the stairs, but sometimes with heavy textbooks, laptop, and a large backpack, it can be difficult to walk up/down stairs. However, the two antique elevators runs at a slow rate, causing students who want to use it to have to wait several minutes! I can understand it taking a long time to wait, if the building was say ten floors or higher, but the elevator runs along four floors! This makes no sense to me, a student who is currently learning about the mechanics of machines like elevators! Furthermore, the elevator doesn't meet the demand of the traffic we would have during peak school hours.

I sincerely hope that my testimony has revealed some of the many unspoken pains felt by students, faculties, and professors here at the College of Engineering. My hope is that future students who has a passion for engineering will not have to deal with cramped space, fear of not graduating on time because of limited space available, being late to a class because the wait for the elevator was ridiculously long. My hope is that we can promote and open engineering to many more young aspiring people who have the heart, the passion, and desire to be an engineer! That they won't see engineering like an old building filled with cracks, but as an innovative place where our dreams and our imagination can become a reality!

I humbly thank you for listening to my concerns and my heart. I hope that you will please support the passing of this bill for the future of the State of Hawaii, for the engineers, the economy, and the people!

Mahalo!

Personal Testimony Presented before the

Senate Committee on Higher Education

Thursday, February 06, 2014 2:45 PM

Conference Room 414, State Capitol

by

David Horton

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 David Horton, and I serve as an Officer in the Ignition Club at UH Manoa and The Society of Automotive Engineers at UH Manoa. As a senior in the Mechanical Engineering program, I am nearing the end of my time at UH as a student, but would like to see our college continue to grow and improve. The renovation of our Holmes Hall facilities is in my opinion one of our greatest current necessities, and would be the most beneficial improvement that could be made for our college and our students to this day.

I represent both the Ignition Club and the SAE at UH Manoa, both of these organizations operate out of the Holmes Hall Engineering facilities, and are oriented towards enhancing and enriching the experience of our students in the Engineering programs. The primary way we do this is through our projects that allow us to showcase our skills and work ethic in ways the curriculum cannot. Through these projects, we develop and propagate skills in design, leadership, team building, planning, resource management, and most prominently, manufacturing, fabrication, testing and even marketing of full scale engineered products. The one limitation that has continued to hinder our growth is that almost all of these projects and all the students involved in them must operate out of a single, limited space. Our lab space was slowly converted into a workshop space over the years, but has never been updated in many ways, and has become more and more crowded.

In my time with these organizations, I have found many ways to produce the best results with the least amount of resources; and I appreciate this ability. However I also see the potential of our students, and what they could do if provided the right resources. We have found ways to fund our projects, we have developed the skills to execute them, but the one resource that we have no control over is the amount of space we have to work in. In the 4 years I have participated in design projects in Holmes, I have seen the number of projects operating in our Lab space increase by a factor of 4. What used to be an efficient and comfortable work space has become an ongoing struggle to manage and allocate. With crowded workspaces, safety becomes harder to enforce, students become less motivated, and the scale of our work is confined. It does not help either that my workspace must also function as my space for conducting research for the lab, and thus it becomes difficult to truly stay organized and efficient as an individual and as a group.

In my mind, the ideal learning environment for an engineering student is one on organization and purpose. One where the hands-on work and building does not need to be so segregated from the studying and academics. When a student design group is given their own space to work in and make their own, it does wonders for their work ethic and motivation. This is what I feel students should be able to find in our Engineering program, and what prospective students would look forward to experiencing.

Our student body continues to grow, and the number of organizations operating in our space also increases, it would seem that our space should also grow accordingly. With an expanded Holmes hall, there lies the potential for our most ambitious students to truly diversify their projects and be allowed to create truly efficient workspaces. Now with our newly formed Ignition Club, we are pursuing a new endeavor in building enterprising, innovative, entrepreneurial engineering students. We have the will, we have the workforce, we can raise the money, but we have no space within which to work. If we are forced to continue to share space with the other projects and organizations, we cannot expect to reach the level of interest and ambition that we are capable of.

When these workspaces are created, our students gain skills that make them much more valuable as engineers and potential employees, and we form communities that make us better students. I have seen many of my peers recruited by very well-known and successful companies specifically because of the talents and skills they developed and showcased in working on our projects. Considering that this had been achieved with our limited space, I can only imagine what we could do if provided our ideal learning environment.

Ignition Club at Uh Manoa,

Society of Automotive Engineers at UH Manoa

David Horton

Officer, Ignition Club

Vice President, SAE at UH Manoa

Personal Testimony Presented before the

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

by
(name)

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 Edwin J. Colon, and I am an environmental engineer trained in the
University of Puerto Rico At Mayaguez working for the Water Resources and Research
Center (WRRC) at the University of Hawaii at Mānoa. I am pleased to provide personal
testimony on SB3116.

During my three years working as a Research Support Engineer for the WRRC I was able
to experience first hand some of the problems addressed by SB3116. One of the biggest
problems with the structure is the lack of working space, either for research or
educational. The lack of space and outdated electrical installations in the laboratories is
evidently preventing the technological growth for the College of Engineering. The ability
to keep up with cutting edge procedures and equipment ensure the excellence in
education for our future workforce. Also, the increase in engineering enrolled students
and the lack of space in the laboratories is creating safety problems. The restriction of
space creates a problem to bring founded research to the institution. SB3116 can solve
these problems.

The bottom line is that the building is outdated and most of the architectural, electrical
and mechanical features are obsolete. Holmes Hall as the College of Engineering
building should be made an example of what a good engineering design needs to be.

Mahalo for listening

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 civil engineer in the State of Hawaii and an alumnus of the College of Engineering, and our company Community Planning and Engineering, 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 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.

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.

Frank Camacho, P. E.
Project Engineer

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.

From: mailinglist@capitol.hawaii.gov
To: [HRETestimony](#)
Cc: liangjon@hawaii.edu
Subject: Submitted testimony for SB3116 on Feb 6, 2014 14:45PM
Date: Wednesday, February 05, 2014 10:56:45 PM

SB3116

Submitted on: 2/5/2014

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

Submitted By	Organization	Testifier Position	Present at Hearing
Jon Liang	Individual	Support	No

Comments: The College of Engineering at UH Manoa is like a second home to me. I attend classes and labs in Holmes Hall, and work for one of the professors in his lab. I walk the corridors and hallways day and night, and I see the improvements that are direly needed. The college is a great environment for learning through projects and classes, and I see that many incoming freshmen love everything about what engineering is (even some people love classes!). I hope to see that incoming freshmen will be more attracted to engineering, because the first thing they should say when they see Holmes Hall is "dang, I'm lucky to be an engineer here" or "hey, this building is pretty nice yeah?" or even "this beautiful building makes me rethink why I didn't choose to be an engineer". I hope to see more students being enthusiastic in the math and sciences by participating in engineering, not only because it is interesting, but because it can provide stable futures for those interested and willing to put in the work. Thank you and aloha.

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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Testimony Presented Before the Senate Committee on
Higher Education
Thursday, February 6, 2014
2:45 pm
State Capitol, Conference Room 414
By
Joshua Kaakua

IN SUPPORT OF SB 3116

Aloha e Char Taniguchi, Vice Chair Kahele, and members of the Committee on Higher Education. My name is Joshua Kaakua and I am testifying in SUPPORT of SB 3116 relating to the University of Hawaii College of Engineering.

I believe strongly that the future challenges of our community will be met by supporting our local students to pursue and complete Science, Technology, Engineering, and Mathematics (STEM) degrees in general, and Engineering in particular. There is growing success of pre-engineering tracks at the University of Hawaii community colleges that allow students to begin their engineering curriculum at foundational levels before they complete their upper-level courses at the UH Manoa. As the only ABET-accredited engineering college in the State of Hawaii, *all* engineering graduates complete training at Holmes Hall, the UH Manoa engineering building built 42 years ago. One of the most frequent comments I hear from UH Alumni visiting our beloved engineering building is, “Wow, this place hasn’t changed one bit... Still the same as when I was here.” I encourage the members of the legislature to prioritize the design and renovation of the aging Holmes Hall facility.

I teach Introduction to Engineering at UH Manoa, earned my Master’s from UH Manoa and am currently a doctoral student studying how we can improve the graduation of STEM students at the University of Hawaii, especially Native Hawaiian students. We have learned a lot about how we can improve engineering education; how we learn; how we teach; how to design learning environments; how to teach innovation, etc. A redesigned facility could greatly improve our learning environment and benefit our future students, engineers, and community.

Mahalo for the opportunity to present testimony in SUPPORT of SB 3116.

Joshua Kaakua

Personal Testimony Presented before the

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

by
June Akers

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 June Akers, and I am an electrical engineer serving as an Information Technology Specialist for the University of Hawaii at Mānoa College of Engineering in the Electrical Engineering department. I am pleased to provide personal testimony on SB3116.

Every day in the College of Engineering I am honored to work with faculty and staff dedicated to their students and to top-tier education and research. Since 2000, I've had the pleasure to observe the successes of our students as they achieve national rankings and other high honors. I've watched undergraduates participating in various faculty-led programs enabling them to grow and become the engineers industry needs, progress to cutting-edge research with our faculty and elsewhere, and even become faculty themselves.

They all have done so despite the inconveniences and distractions of a building that is growing older every day in ways that can truly adversely impact their work/learning environment. These are students who are drawn to the advancement of technology in the world, yet who with their choice of UH as their school have to settle for surroundings that keep them tethered to the best laid plans of 1972.

The aging building is in need of a refresh to address the following deficits:

- Poorly function and health-hazardous HVAC systems
 - o Wasteful of energy resources
 - o Hazardous to student and staff health
 - o Distracting from learning and research
- Repeatedly leaking roof
 - o Damaging to electronics and potentially highly-specialized systems
 - o Promoting mold and other hazards to health

- Distraction from learning and research
- Substandard telecom infrastructure
 - “data” cables of lower than category 3, inadequate to modern multi-user internet communications

Over the more than ten years I have worked in Holmes Hall since 2000, I have observed the aftermath of more than twenty roof leaks in seven different areas of the 3rd and 4th floors. The facilities department has been responsive and addressed these leaks, only to have others sprout. Most years I have kept my department’s server computers draped in plastic sheeting as protection, but it is impossible to predict where the next intrusion will occur. Earlier this month I found pieces of ceiling tile on a student electronics classroom work bench which had fallen from the damp ceiling above. Luckily, no electronics were damaged this time, but classroom equipment has been damaged on previous occasions.

Also throughout the course of my work in this building, I have observed the regular pattern of materials ejected from the building’s HVAC system onto work surfaces below the vents. The material consists of dirt, grit, and more ominously, black clumps resembling mold.

Looking toward to the future of **continued excellence in engineering education** in Hawaii, I am hopeful to see these potential building improvements:

- More and improved student collaborative flexible work areas
- More support for the newer educational patterns utilizing high-tech media and knowledge capture and sharing tools, and flexible teaching areas

Many of our student successes have come through their participation in our student groups that give them space to gather and collaborate. One such success was the CubeSat/NanoSat group that produced a satellite launched into space by NASA this past November. Other group collaborations have resulted in numerous wins in the Shidler College of Business entrepreneurial competitions. Our current student collaborative spaces are saturated and more of our students need to be accommodated with this kind of experience so they too can reach this level of success and preparation for productive careers.

Addressing the building’s deficits and and potential improvements providing increased opportunities for success can most efficiently be achieved in a whole building renovation as proposed. Please approve this bill that will move the planning for these achievements forward. Mahalo.

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 Civil Engineer in the State of Hawaii and an alumna of the College of Engineering, and 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, 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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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.

Lisa Y. Takushi, P.E.
Project Engineer

Personal Testimony Presented before the

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

by
Matthew K. Inouye

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 Matthew Inouye, Secretary for the Institute of Electrical and Electronics Engineers (IEEE) Student Branch, Secretary for the IEEE Microwave Theory and Techniques Society (MTTS), and a graduating senior at the University of Hawaii at Mānoa College of Engineering. I am proud to provide personal testimony on SB3116 on behalf of my fellow students, peers, and organization.

In the fall of 2012, I transferred to UH Mānoa from the Hawaii Community College System. I was thoroughly impressed by the knowledge and dedication put forth to the students from the faculty. Under my professors' tutelage and through their motivation, I will be able to graduate this May with strong fundamentals in engineering that I am confident will allow me to find an exceptional career path in this competitive job market.

Our IEEE Student Branch at UHM is a student-run organization that falls under the National IEEE Professional Society. The faculty and college are fully behind our motivation to better our fellow peers in their studies and produce competitive prospects to the companies in the vanguard of technological innovation. At Holmes Hall, we hold the majority of our meetings, workshops, and technical skills tutorials.

The IEEE MTTS Student branch at Manoa is another student-run organization that operates in Holmes Hall. This technical society provides students with a unique opportunity to engage in some of the most advanced wireless communication technologies. The field of wireless communications is growing exponentially, and I feel that the State of Hawaii has much potential for growth in that respect. This society is essential to providing our future graduates and engineers with the interest and knowledge to help forge that path into our state's economic growth.

Despite our excellent faculty, I feel that our learning experience is impeded by the lack of modern classrooms and facilities. Holmes Hall is an old building which was not built with the large influx of engineering students in mind. The technology industry has had explosive growth in the past half-century and the industry itself is closely intertwined with education. We have reached a point where computers are required to process and organize the dense amount of information we must learn. Only so much can be conveyed by a blackboard and projector. Homes Hall is in dire need of up-to-date classrooms that will ensure our education is just as advanced.

Although I will graduate at the end of this semester, I feel that it would be irresponsible to deny future students the opportunity to experience a fulfilling, modern, and respected education. Their successes will in turn, lead to greater recognition for our state, technological growth, and ultimately the future of our society.

Personal Testimony Presented before the

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

by
Myhraliza Aala

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 Dr. Myhraliza Aala and I am the STEM Marketing Public Relations Officer for the College of Engineering at the University of Hawaii at Mānoa. I am pleased to provide personal testimony on SB3116.

In one of my roles, I serve to recruit and promote the College to our local students throughout the State, as the school of choice and not simply as the “back up” plan for students. As many students have shared, deciding to enroll at UH Mānoa’s College of Engineering, was not their first choice but due to financial reasons, they decided to stay home instead of going away to a mainland school.

This perception of the College of Engineering as the “backup plan” is slowly changing as more of our local students engage in our outreach events and programs, such as school visits and the high school internship program, just to name a few. With the approved funding to renovate Holmes Hall, which focuses on creating student centered areas and elevating the visual of appeal of the building, enables the College to become more competitive as we continue to grow not only our undergraduate programs, but our graduate programs as well. The Holmes Hall Renovation supports the re-branding of our College as the school of choice for our local students, in particular with the focus of creating areas that increases space for student design projects, student centered programs, enhanced student services and modern laboratory space for teaching and research – all for the benefit of our students. It is for these reasons that I am providing this testimony of support for the appropriation of funds to the Holmes Hall Renovation.

Personal Testimony Presented before the

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

by
Raquel Kamalu

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 Raquel Kamalu. I am a graduate of Kamehameha Schools - Kapālama, and I am currently a sophomore studying Mechanical Engineering at the University of Hawaii at Mānoa College of Engineering. I am pleased to provide personal testimony on SB3116.

As an engineering student, I understand the importance of having access to the best possible resources that the university can offer. It is imperative that students be able to participate in hands-on projects and research that will allow them to gain experience in their future profession and help them understand the impact that they can have on society. It is also critical for students to build networks with one another, and collaborate through interdisciplinary projects that will foster lasting professional relationships. Therefore, I am in support of SB3116, a bill that will appropriate more funds to the University of Hawaii at Mānoa and allow for the renovation of Holmes Hall, home to the College of Engineering.

Built in 1972, Holmes Hall is a lasting testament to the engineering excellence that is expected of the College of Engineering at the University of Hawaii at Mānoa. However, Holmes Hall is a very dated structure that needs renovation and updating that will bring it up to 21st century standards. It is clear that with an \$18,000,000 repair and maintenance bill, Holmes Hall requires renovations that will allow it to operate optimally for many years to come, and will reduce the annual cost for repairs and maintenance.

With improved resources and infrastructure, Holmes Hall and the College of Engineering will continue to produce high-achieving students who will dedicate their work towards improving Hawaii's economy, and with an increase of at least fifty percent of students in engineering and pre-engineering programs, the College of Engineering

clearly requires funding that will allow it to optimize use of space and resources in order to sustain such a student body.

Although I may no longer be a student at the University of Hawaii at Mānoa once renovations are completed, I fully support an investment in the education and careers of future engineering students and researchers, and urge the senate to approve the appropriation of \$2,000,000 towards the Holmes Hall Renovation project.

Me ka mahalo,
Raquel Kamalu

Personal Testimony Presented before the

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

by
Victor Lubecke

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 Victor Lubecke, and I serve as a professor of electrical engineering at the University of Hawaii at Mānoa (UHM). I am pleased to have this opportunity to provide personal testimony on SB3116.

I have worked as an electrical engineer since 1987, and have participated in industrial research and development in the US and abroad. I joined the University of Hawaii faculty 11 years ago, where I teach and mentor a new generation of engineers.

It has been aptly said that educators are “preparing students for jobs that don’t yet exist... using technologies that haven’t been invented... in order to solve problems we don’t even know are problems yet.” I remember that as a student, I put no small effort into trying to predict the future as I chose my classes and area of specialization. At that time, I took an interest in microwave radio technology, though it was perceived by most students as mature, if not stagnant, compared to more glamorous and quickly evolving digital and computer technologies. We had no idea of the coming “wireless” revolution that would soon pervade our lives through ubiquitous cell phones and computer networks. Fortunately, the 1980’s curriculum I experienced gave me a foundation for the many new technology developments with which I would come to be involved, or have to learn. Today, these rapid changes in technology are compounding rapidly, and the challenge for educators is to evolve our methods and curriculum to give our students the foundation they need to stay competitive in the world of tomorrow.

Much of our UHM engineering curriculum is delivered in Holmes Hall, which was built 42 years ago. It has been a strain to maintain a contemporary quality program in these facilities as the resources have aged and the student population has grown. Many UHM engineering faculty have nonetheless been pushing forward to implement modern teaching practices which rely heavily on collaborative projects and hands-on interactive

classrooms. I strongly believe that with sufficient repairs, maintenance, and renovation, Holmes Hall can continue to serve as the backbone of the College of Engineering, supporting educational and research programs for our students that are nationally and internationally competitive.

The importance of engineering will continue to for Hawaii as it will for the whole world. Our UHM engineering faculty and students greatly appreciate the benefits that have come from the support of your committee, and ask for your continued support through this bill.

Victor Lubecke
Professor of Electrical 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
Windell Jones

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 Windell Jones, and I serve as a graduate student of the University of Hawaii
at Mānoa College of Engineering. I am pleased to provide personal testimony on
SB3116.

I am what you call a professional student, at least that is what the FAFSA calls me every
year when I apply. I've been attending the college of engineering since 2003 when I
graduated from Waipahu High School and I'm proud to say that this semester I will be
graduating with my masters of science in mechanical engineering. To say the least I've
been within the college long enough to know that a teaching paradigm shift is
approaching if not already here: collaborative, project-based learning. And if something
is not done soon, Holmes Hall, will become one of the less desired colleges in the nation
to attend because its infrastructure is frankly behind the times.

Recently, I was attending a seminar that was being presented by a visiting faculty
member in our multimedia room, perhaps the most technologically advanced room in
the building. While the host professor was setting up, in slight frustration, he said
something that gives you only but a glimpse of what I'm trying to allude to : "How many
man-hours have been spent just setting up to lecture in this building!". He was fumbling
through the controls for the TV that will display the visiting professors presentation. To
add fuel to the fire, having been in this room dozens of times for other presentations, I
also realize that there are no outlets readily available for anyone to use. As a resort,
students or faculty bring their own extension cords and power strips so that they can
take notes on their laptops. Lastly, the presentation is shown on a large flatscreen TV in
which doesn't reflect the lecturer's laser pointer so that the audience can see what he is
refereeing too. It is clear that this room was put together for the purposes of
presentations and teleconferences, however at least this particular room was never
meant to serve such purpose. As a matter of fact, none of the Holmes hall rooms are

built for presentations. This is just a small drop in the bucket of many other things with Holmes hall that are just not technologically up with the times. This is an embarrassment.

Six years ago I sat in my thermodynamics class, pulled out my text and notebook for class. Midway through lecture, I felt my desk surface give way as my pen slide across the page. I then turned to my right and slide the pin, holding the surface upright, back into place. It is clear that I had done this before. Last year, I attended my last class for my degree and I sat in the same chair. This time I knew to not let that pin slide out. This is just one example. Imagine what else within Holmes Hall has been held in such low regard because the college just didn't have the funding to fix.

Although I mention these two examples of how Holmes Hall is in shambles and is in dire need of a makeover, I hope that you can extrapolate my stories to relate to the other testimonies that you year. Our college needs to remain attractive to not only mainland students, but probably more importantly our local students. I hope that my testimony gives you vivid images of how Holmes Hall needs your help. Thank you for your time.

Windell Jones



February 7, 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

I am a licensed engineer in the State of Hawaii and proud alumnus of the University of Hawaii, College of Engineering. Community Planning and Engineering, Inc. was founded in 1957, and has predominantly hired civil engineering graduates from the University of Hawaii at Manoa (UHM). These graduates are essential to our success and to the continued health of the engineering and construction industry in Hawaii.

It is no secret that there are maintenance and repair issues plaguing the University of Hawaii and Holmes Hall is right at the top of this list with an \$18,000,000 bill. The building is over 42 years old and I have seen it deteriorate for the last 30 years that I have been associated with the school. So, instead of band-aid fixes, I humbly ask that you please give it the facelift it needs, and modernize it, so we can compete with the mainland universities, and keep our kids home.

But we need to do something soon! I recently Chaired an event we call "Holmescoming", where we have over 800 alumni from all over the world return for a night of celebration and fellowship. The past two years we have held this event on the lawn fronting Holmes Hall. It's a great place to host an event; the only problem is the restrooms on the ground floor are never opened, and the next closest restroom is three flights up. We inquired about the locked restroom, and were told the toilets were broken. Well, next year we are considering spending a couple of thousands of dollars for a portable toilets. It's a huge embarrassment for a school that we all love and support.

I mentioned earlier that we needed to modernize Holmes Hall to keep our kids home. Well, our local high schools are doing their part in preparing students for a career in engineering with programs to support engineering development, like the Academy of Engineering. These academies teach students the principles of engineering, communication skills, computer design, and sets up a four year curriculum for incoming freshmen. With mainland tuitions being almost unaffordable for the majority of the local kids, the only option these students have is the University of Hawaii. So I urge all of you to make the right decision, and pass SB3116, so we as alums can continue to gather and celebrate at the school we love, and give the next generation of engineers an opportunity to live their dreams.

Very truly yours,

Derek K. Mukai, P. E.
Principal Engineer