



UNIVERSITY OF HAWAII SYSTEM

‘ŌNAEHANA KULANUI O HAWAII

Legislative Testimony

Hō'ike Mana'o I Mua O Ka 'Aha'ōlelo

Testimony Presented Before the
Senate Committee on Ways and Means
Wednesday, April 2, 2025 at 10:01 a.m.

By

Doug Simons, Director
Institute for Astronomy

And

Brennon T. Morioka, Dean
College of Engineering

And

Michael Bruno, Provost
University of Hawai'i at Mānoa

HB 563 HD1 SD1 – RELATING TO THE UNIVERSITY OF HAWAII'S SPACE SCIENCE AND ENGINEERING INITIATIVE

Chair Dela Cruz, Vice Chair Moriwaki, and Members of the Committee:

It is a pleasure to provide testimony in **strong support** of HB 563 HD1 SD1 which is intended to enable a workforce development program under the new University of Hawai'i Space Sciences and Engineering Initiative (SSEI) as a long-term investment in STEM education for our keiki and workforce development for our communities.

In 2023, in support of SSEI, the Legislature approved funding for 10 engineering faculty positions within the College of Engineering and \$2M to conduct an architectural study for a new engineering support facility building next to Institute for Astronomy at Hilo (IfA-Hilo) to house SSEI and increase capacity for designing/fabricating instruments, enable new technology development, and provide internships for students. While functioning as one team, half of the new engineering faculty will be located at the College of Engineering in Mānoa and half at IfA-Hilo on the University of Hawai'i at Hilo (UH Hilo) campus. The latter will teach pre-engineering classes for UH Hilo students as a pathway to acquiring degrees in several engineering fields via the College of Engineering. To date 5 of these faculty positions have been filled while we are finalizing the recruitments for three others to start in the Fall of 2025. For the first time, pre-engineering classes are being offered at UH Hilo for students as part of this exciting new program. Excellent progress has been made designing the new SSEI building. Joint administrative support for SSEI via UH Hilo, College of Engineering and the Institute for Astronomy has been established, startup funds provided by the legislature have been used to acquire equipment for SSEI, and the first Federal grant proposals from SSEI faculty have been submitted.

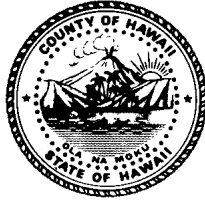
Even with this flurry of activity, there remains an essential SSEI component that needs to be strengthened and launched – a dedicated workforce development program designed to engage local schools, engineering/STEM firms, teachers, community organizations, etc. and establish a bridge between students and STEM jobs via SSEI. That is the core intent of HB 563. It is essential that we take an integrated K-career approach on Hawai'i Island like we are with O'ahu

school complexes, partnering with schools while providing unique engineering internships and learning opportunities, all leading to rewarding higher paying STEM careers that diversify the State's economy and helps keep our students in Hawai'i after they graduate. SSEI is designed to leverage off of existing investments including astronomy, aerospace, advanced manufacturing, and other existing STEM outreach programs, while augmenting and "rewiring" programs and resources within the University of Hawai'i (UH) to serve as the platform for all of this activity.

UH is thankful for the investments already made by the State Legislature in SSEI and is committed to ensuring all of the effort and resources at work lead to long-term benefits for our local students and communities. We need to advance SSEI on all fronts in parallel, including and in particular our means to reach into elementary, middle, and high schools to connect and inspire local students to participate in SSEI. Without a dedicated workforce program that links K-12 students with SSEI and ultimately higher paying jobs here in Hawai'i, the vision of SSEI will not be fully realized.

We appreciate the opportunity to provide our testimony in strong support and respectfully ask for your favorable consideration, provided its adoption does not impact priorities as indicated in our Board of Regents Approved Budget. Thank you for the opportunity to testify on this measure.

C. Kimo Alameda, Ph.D.
Mayor



Benson Medina
Director

Dennis Lin
Deputy Director

County of Hawai'i

DEPARTMENT OF RESEARCH AND DEVELOPMENT

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March 31, 2025

HEARING BEFORE THE
SENATE COMMITTEE ON WAYS AND MEANS

WEDNESDAY, APRIL 2, 2025
10:00 AM
CONFERENCE ROOM 211 & VIA VIDEO CONFERENCE

TESTIMONY ON HB 563, HD1, SD1 RELATING TO THE UNIVERSITY OF HAWAII'S SPACE SCIENCE AND ENGINEERING INITIATIVE – IN SUPPORT

Aloha Chair Donovan M. Dela Cruz, Vice Chair Moriwaki, and members of the committee:

My name is Benson Medina, Director of Research and Development at the County of Hawai'i. My testimony is in **STRONG support** of HB 563, HD1, SD1 relating to the University of Hawai'i's Space Science and Engineering Initiative (SSEI). Providing funding to strengthen astronomy's local workforce pipeline is a sound investment that will allow local people to benefit from astronomy's presence on Hawai'i Island. The County of Hawaii continues to support workforce development programs on the island and sees this as a great investment in our community.

With Maunakea being the most scientifically productive ground-based astronomy location in the world; the Maunakea Stewardship and Oversight Authority being set as an example of mutual stewardship in the scientific community; and astronomy contributing over \$200M in economic output annually statewide, Hawai'i is an international leader in the field that already has national and international interest and momentum to expand Hawai'i's influence in the field.

Providing kama'āina with the technical expertise to design and fabricate instrumentation; operate and maintain facilities; and do scientific research will not only benefit local communities, but strengthen astronomy by bringing diverse and place-based perspectives to the field. Mauankea Scholars, one of the programs that will receive funding through this bill, gives students the opportunity to engage in world-class science as high schoolers. SSEI will provide college students on Hawai'i Island with the opportunity to receive an engineering degree while getting hands-on experience at world-class facilities. Combined with other opportunities through a workforce development program like the one proposed by this bill creates a generation of Hawai'i students competitive in any academic or professional STEM environment, and gives them the opportunity to take pride in and do work of this caliber at home.

March 31, 2025

Page 2

With the right training and opportunities more kama'āina can become leaders and innovators in the fields of engineering and astronomy and contribute to science as well as their communities. This is why I ask for your favorable consideration in passing this measure.

Sincerely,

Benson Medina
Director



TO: Senator Donovan Dela Cruz, Chair
Senator Sharon Moriwaki, Vice Chair
Committee on Ways and Means

FROM: Maunakea Observatories

RE: **HB 563 HD1 SD1- Relating to the University of Hawai'i's Space Science and Engineering Initiative - In Support**

HEARING: Wednesday, April 2, 2025 at 10:01 AM
Conference Room 211 & Videoconference

Aloha Chair Dela Cruz, Vice Chair Moriwaki, and Members of the Committee,

Mahalo for the opportunity to provide testimony **in support** of HB 563 HD1 SD1 relating to the University of Hawai'i's Space Science and Engineering Initiative (SSEI). Hawai'i faces serious workforce challenges with consequences ranging from worker shortages, lack of living wage jobs, decreased economic productivity, and ultimately a lack of opportunity that causes Hawai'i residents to struggle to stay here or to move away. These challenges and consequences are exacerbated on neighbor islands, including Hawai'i Island where Maunakea Observatories operate.

Investment in space science and engineering workforce development will create significant opportunities for Hawai'i Island youth to enter into STEM careers that will allow them to make a living without having to leave the island or the state. The development of an engineering degree track at UH Hilo that leverages access to Maunakea Observatories will provide local students access to a world-class education in a field that is receiving significant interest and investment on a federal and international level. Furthermore, funding a full-time position for a Maunakea Scholars Coordinator would strengthen the education and workforce development pipeline by engaging high school students statewide and provide exposure to space science that has already been proven to inspire and give students the experience and confidence to pursue STEM degrees and careers.

Investments in space science and astronomy already generate \$200M in annual economic impact statewide, with the potential for this number to grow if we are able to provide the workforce to move more space science-related activities, such as instrument design and fabrication, to Hawai'i. Hawai'i Island makes significant contributions to astronomy, with Maunakea being the most productive ground-based astronomy site in the world. Investing in the education opportunities that will empower local youth to play a significant role in the space sciences field will not only benefit them individually, but will benefit our local community and the field of astronomy.

We support HB 563 HD1 SD1 because cultivating and hiring local talent is a Maunakea Observatories priority. Thank you for the opportunity to provide testimony.

With aloha,



Mark Chun, University of Hawai'i 2.2-meter Telescope



Jean-Gabriel Cuby, Director, Canada-France-Hawai'i Telescope




Geoffrey Bower, Director, East Asian Observatory (James Clerk Maxwell Telescope)



Richard Matsuda, Director, W. M. Keck Observatory



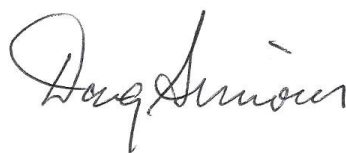
Satoshi Miyazaki, Director, Subaru Telescope, National Astronomical Observatory of Japan



Timothy J. Norton, Director, Submillimeter Array



John Rayner, Director, NASA Infrared Telescope Facility



Doug Simons, Director, University of Hawai'i, Institute for Astronomy



Hawai'i Island Chamber of Commerce

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TESTIMONY BEFORE THE SENATE COMMITTEE ON WAYS AND MEANS
HB 563 HD1 SD1- Relating to the University of Hawai'i's Space Science and
Engineering Initiative – IN SUPPORT
Wednesday, April 2, 2025 10:00 AM

Aloha Chair Dela Cruz, Vice Chair Moriwaki, and Members of the
Committee,

My name is Carla Kuo, and I serve as the Executive Officer of the Hawai'i Island Chamber of Commerce, which represents over 300 business and individual members primarily located on the East side of Hawai'i Island. I am writing in strong support of HB 563, which provides essential funding for the University of Hawai'i's Space Science and Engineering Initiative (SSEI). Investing in astronomy's local workforce pipeline is a strategic decision that will ensure the people of Hawai'i directly benefit from the presence of world-class astronomy on Hawai'i Island.

Maunakea is the most scientifically productive ground-based astronomy site in the world. With the establishment of the Maunakea Stewardship and Oversight Authority as a model for mutual stewardship and astronomy contributing over \$200 million annually to the state's economy, Hawai'i is already a global leader in the field. This bill will help expand Hawai'i's influence by strengthening its workforce and fostering local expertise.

By equipping kama'āina with the skills to design and fabricate instrumentation, operate and maintain observatories, and conduct scientific research, we not only uplift local communities but also enrich astronomy with diverse, place-based perspectives. Programs like Maunakea Scholars introduce high school students to world-class science, while SSEI will provide Hawai'i Island college students the opportunity to earn engineering degrees with hands-on experience at cutting-edge facilities. Together with the broader workforce development initiatives supported by this bill, these programs will empower Hawai'i students to excel in STEM fields and pursue meaningful careers both locally and globally.

With the right training and opportunities, more kama'āina can become leaders and innovators in engineering and astronomy, contributing to both scientific advancements and their communities. For these reasons, I respectfully urge you to support this measure. Mahalo for your time and consideration.

Sincerely,

Carla Kuo
Executive Officer, Hawai'i Island Chamber of Commerce

April 1, 2025

RE: House Bill 563 HD1 SD1 Relating to the University of Hawai'i's Space Science and Engineering Initiative

Dear Chair Dela Cruz, Vice Chair Moriwaki, and the Senate Committee on Ways and Means,

Founded in 1968, the Kona-Kohala Chamber of Commerce works to enhance the quality of life for our community through a strong, sustainable economy on Hawai'i Island. With 460 member businesses and organizations, our mission is to provide leadership and advocacy for a successful business environment in West Hawai'i.

The Kona-Kohala Chamber of Commerce **strongly supports** HB 563 HD1 SD1: Relating to the University of Hawai'i's Space Science and Engineering Initiative.

This bill promotes workforce development and internship programs in science, technology, engineering, and mathematics (STEM). As an organization that supports the growth of Hawai'i's technology sector, we believe this bill will foster innovation, diversify the island's economy, and provide quality, high-paying jobs for the people of Hawai'i.

We support educational programs that feed into the region's key industries, including the astronomy industry on Hawai'i Island, a global leader in astronomical discoveries.

Funding UH's Space Science and Engineering Initiative and Maunakea Scholars leverages existing investments, programs, and resources. Strategically, workforce development is a key component in this ecosystem. The passage of this bill is critical in providing a pipeline that develops diverse job and career opportunities for Hawai'i's people.

Please vote to pass HB 563 HD1 SD1: Relating to the University of Hawai'i's Space Science and Engineering Initiative.

Sincerely,



Wendy J. Laros, President and CEO
Kona-Kohala Chamber of Commerce



Japanese Chamber of Commerce & Industry of Hawaii

To: Senate Committee on Ways and Means
Senator Donovan M. Dela Cruz, Chair
Senator Sharon Y. Moriwaki, Vice Chair

From: Vaughn G. T. Cook

RE: **HB563 - Relating to the University of Hawai'i's Space Science and Engineering Initiative - In Support**

March 31, 2025

Aloha Chair Dela Cruz, Vice Chair Moriwaki, and Members of the Committee,

My testimony is in **support** of HB 563 relating to the University of Hawai'i's Space Science and Engineering Initiative. As a parent of a young adult entering a Master's Degree program, a college Junior and a High School Sophomore, all either current or former Waiakea High School students in Hilo, Hawaii, I strongly believe creating opportunities for young people to study, work, and make a decent living without having to leave the state is critical to keeping Hawai'i's culture and communities alive.

Furthermore, as Co-Chair of the joint Government Affairs and Economic Development Committee of the Japanese Chamber of Commerce & Industry of Hawai'i (JCCIH), I believe this bill is vital to the interests of our members and their families. For nearly 70 years, the JCCIH has stood up for local businesses while promoting Japanese values. One of our TOP 2025 Priorities is:

Economic Development: Agriculture, Tourism, Technology & Astronomy:

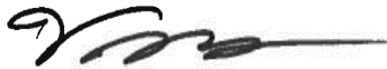
We support efforts to grow new and existing industries on Hawai'i Island, especially in areas that make our community more competitive and secure including agriculture, tourism, technology and astronomy. We support the Thirty Meter Telescope.

With the Maunakea and Haleakala already established as internationally leading locations in the field of astronomy, it makes sense to invest more into space science education in Hawai'i so local people, including our children, can get high-tech, high-pay jobs at these facilities rather than hiring from out of state.

Adding an engineering degree pathway at UH Hilo will provide more opportunities for Hawai'i Island youth, especially those who may not be able to go to college off-island. We have some of the best astronomy facilities in the world on Maunakea, and we should seek programs that provide the opportunities astronomy provides to kama'āina students. Providing resources for the Space Science and Engineering Initiative and Maunakea Scholars to serve more students is a way for these facilities to directly benefit local students in the short-term, and local communities in the long-term.

These programs inspire and create new pathways for kama'āina to find success and security at home, which is why we ask that you pass this bill and make it possible for them to continue to grow. I ask for your favorable consideration in passing this measure.

Mahalo for considering my testimony,

A handwritten signature in black ink, appearing to read 'Vaughn', followed by a long horizontal stroke.

Vaughn G. T. Cook

Vice President and Co-Chair of Government Affairs/Economic Development Committee of the Japanese Chamber of Commerce & Industry of Hawai'i AND Parent of 3 local Children who are current or former students of Waiakea High School in Hilo, Hawaii

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HB-563-SD-1

Submitted on: 3/31/2025 12:41:02 PM

Testimony for WAM on 4/2/2025 10:01:00 AM

Submitted By	Organization	Testifier Position	Testify
Nimr Tamimi	Individual	Support	Written Testimony Only

Comments:

Aloha Chair and Members of the Committee,

My name is Nimr Tamimi, and I am a licensed professional engineer practicing in Hilo for over 37 years. I am writing in strong support of House Bill 563, which seeks to improve STEM education and workforce development in Hawaii.

As an engineer and business owner, I have firsthand experience with the persistent staffing shortages in our field. We have had vacancies in our company for years, struggling to find qualified engineers to fill these critical positions. The lack of a skilled workforce in STEM-related fields is a significant barrier to economic growth, particularly in Hawaii County.

Hawaii County, especially East Hawaii, remains the most economically depressed region in the state. One of the primary challenges we face is the lack of outreach and education on pathways to STEM careers. Many students are unaware of the opportunities available and the path to engineering and other technical fields, and there is insufficient guidance to help them navigate the journey to a STEM degree and, ultimately, a professional career.

By investing in STEM education, expanding outreach efforts, and creating clearer pathways for students, House Bill 563 can help address these workforce shortages and provide new opportunities for local students to pursue meaningful, well-paying careers in their own communities. Strengthening our local STEM workforce will not only benefit employers like myself and government agencies who rely on engineers, but will also contribute to the overall economic stability and development of Hawaii County.

I urge you to pass House Bill 563 to support the next generation of Hawaii's engineers, scientists, and technical professionals.

Mahalo for your time and consideration.

John Pelletier

Ahupua'a 'o 'O'oma, Kailua-Kona, HI

March 31, 2025

jdp2766@gmail.com

Senate Committee on Ways and Means

Honorable Donovan M. Dela Cruz, Chair

Honorable Sharon Y. Moriwaki, Vice Chair

RE: SB869 - Relating to the University of Hawaii's Space Science and Engineering Initiative.

Aloha nui kākou, aloha Chair, Vice Chair, and members of the Committee,

I'm John Pelletier, a resident of Kona on the Island of Hawai'i, and I'm testifying in **support** of HB563.

Maunakea Scholars is an outstanding program that connects the keiki of Hawai'i with the extraordinary resources available on Maunakea. Through this initiative, high school students have the unique opportunity to propose and earn telescope time for their own science projects. As someone working in Astronomy, I can confidently say that the experiences this program offers to students in our state are unparalleled—there are very few, if any, programs like it anywhere in the world. I've had the privilege of supporting this initiative at Kealakehe High School, a Title 1 school on the Island of Hawai'i, and have seen firsthand the profound impact it has on students.

This program has primarily relied on volunteer support, and HB563 will establish an official position to significantly enhance its impact, allowing it to reach and benefit even more of our local keiki. Additionally, the bill will create a full-time program manager role for the University of Hawai'i's Space Science and Engineering Initiative, further advancing efforts to strengthen our local workforce and provide more opportunities for students in the field.

By aligning STEM education and hands-on experience that prepares students for high-tech jobs, this initiative can help kama'āina benefit from and grow an existing industry.

Mahalo for the opportunity to testify in **support** of HB563, and mahalo ā nui for your ongoing service to the people of Hawai'i!

Ke aloha nō,
John Pelletier

March 31, 2025

Senate Committee of Ways and Means

Senator Donovan M Dela Cruz, Chair

Senator Sharon Y Moriwaki, Vice Chair

My name is Renee Ishisaka. I am submitting testimony in STRONG SUPPORT of HB563 HD1 SD1, which appropriates funds for salaries and fringe benefits of positions for the University of Hawai'i Institute for Astronomy's Space Science and Engineering Initiative Workforce Development Program, Maunakea Scholars program, and Internship program. It also appropriates funds for office equipment and supplies, operational costs, and stipends for the Maunakea Scholars Program and Internship Program.

A sustainable and resilient Hawai'i demands that we empower our youth with experiences, knowledge, and skills necessary for them to thrive in meaningful, good-paying jobs and careers. STEM (Science, Technology, Engineering and Math) learning opportunities enable this empowerment of our youth and lay the foundation for the development of the local workforce of the future and the establishment of local industries.

HB563 HD1 SD1 will sustain programs that deliver valuable experiences to Hawai'i's youth. It will also inspire similar investment and focus in other STEM areas.

I strongly urge the committee to pass HB563 HD1 SD1.

Thank you for the opportunity to testify.

Sincerely,

Renee Ishisaka

HB-563-SD-1

Submitted on: 3/31/2025 2:50:13 PM

Testimony for WAM on 4/2/2025 10:01:00 AM

Submitted By	Organization	Testifier Position	Testify
Justin Manuel Bergonio	Individual	Support	Written Testimony Only

Comments:

To: Senator Donovan M. Dela Cruz, Chair
Senator Sharon Y. Moriwaki, Vice Chair
Committee on Ways and Means

From: Justin Manuel R. Bergonio

RE: HB 563 HD 1- Relating to the University of Hawai'i's Space Science and Engineering Initiative - In Support

DATE: Wednesday, April 02, 2025

TIME: 10:01 AM

PLACE: Conference Room 211 & Videoconference
State Capitol
415 South Beretania Street

Aloha.

My testimony is in support of HB 563 relating to the University of Hawai'i's Space Science and Engineering Initiative. As a teacher of Waipahu High School, I believe creating opportunities for young people to study, work, and make a decent living without having to leave the state is critical to keeping Hawai'i's culture and communities alive.

The connection between Waipahu High and the Maunakea Scholars program can be traced back to 2018 thanks to former physics and Academy of Engineering physics teacher Tessie Ford. In that time we have seen at least nine student projects being awarded coveted time with Maunakea Observatories, several honorable mentions, and even one student awarded the \$10,000 Hokuala scholarship. Accolades and numbers aside, one thing that cannot be quantified is the time and dedication of those who support our students on their journeys in the program: Mary Beth Laychak and the mentors at the Institute for Astronomy. Despite having to juggle the program through many schools throughout all the islands of Hawai'i, they manage to give one-on-one time to our students, guiding them as they create their research proposals and mentoring them after they receive telescope time on their science projects. The human factor in this process is what really makes the difference between this program and all others out there. Furthermore, when the students are able to visit the observatory, see their data being collected in real time in

the biting cold of a telescope control room 32,000 feet above sea level, and learn from professional astronomers and telescope operators—it is just really something else.

In addition to the positive impacts this program has had on our students here at Waipahu High, being a part of the Maunakea Scholars program as a teacher has impacted my practice and even outlook as an educator. As a teacher, we are asked to wear many hats and do many things to meet the needs of our students, administrators, stakeholders, our community—and the list goes on. It is easy for teachers to quickly become jaded and burn out from the profession. However, thanks to this program, I feel like I've been reinvigorated to go on teaching with a lot more purpose. I'm excited to not only share the exciting new discoveries to our Maunakea Scholar students, but I'm also excited to share it with my geometry and calculus students, too! It has injected new life into my practice as I no longer see the disjointed subjects as stand-alone things to be checked off, but rather a beautiful tapestry of things that work together to paint a mosaic that is the universe. I hope to share this passion and beauty with everyone I meet because the world can be a beautiful place when you give yourself the chance to look up above and even down below.

Programs like Maunakea Scholars are important because we as kama'āina deserve access to the best opportunities to learn, work, and take on roles as industry-leading experts in STEM fields. These programs inspire us and create new pathways, which is why we ask that you pass this bill and make it possible for our students to continue to grow.

Mahalo for considering my testimony.

Sincerely,
Justin R. Bergonio

HB-563-SD-1

Submitted on: 3/31/2025 4:07:16 PM

Testimony for WAM on 4/2/2025 10:01:00 AM

Submitted By	Organization	Testifier Position	Testify
Stephanie Pickett	Individual	Support	Written Testimony Only

Comments:

HB563 HD1 SD1 - Relating to the University of Hawai‘i’s Space Science and Engineering Initiative - In Support

3/31/25

Aloha,

My name is Stephanie Pickett, and I am an astronomy teacher at Kealakehe High School. I strongly support HB563 HD1 SD1, which provides critical funding for the University of Hawai‘i’s Space Science and Engineering Initiative. This investment will expand opportunities for Hawai‘i’s students to pursue high-paying, high-tech careers in STEM fields while remaining in their home communities.

My own journey into astronomy was shaped by an invaluable mentorship experience when I was in high school. A professor took the time to mentor me, and that experience changed my life. It inspired me to pursue degrees in physics and astronomy and ultimately led me to my current role as a teacher, where I now have the privilege of guiding my own students as they explore the wonders of the universe.

I see firsthand how programs like Maunakea Scholars, which will benefit from this bill’s funding, ignite students’ passion for science and open doors to opportunities that previously felt out of reach. Right now, my astronomy students are working on their Maunakea Scholars proposals, conducting real research using some of the world’s most advanced observatories. This kind of hands-on experience is invaluable—not only in building their scientific skills but in showing them that they, too, can contribute to cutting-edge discoveries.

Expanding the Space Science and Engineering Initiative at UH Hilo is a necessary next step. Currently, many of my students who dream of careers in astronomy or aerospace engineering feel they have no choice but to leave Hawai‘i for college and employment. This bill creates pathways that will allow them to stay, learn, and work here, strengthening our local workforce and ensuring that Hawai‘i’s scientific and economic future remains bright.

By supporting this bill, you are investing in a future where more kama‘āina can become leaders in space science and engineering, contributing both to global innovation and to the well-being of

their own communities. I urge you to pass this measure and help provide Hawai'i's students with the opportunities they deserve.

Mahalo for your time and consideration.

Sincerely,

Stephanie Pickett

Astronomy Teacher, Kealakehe High School

HB563- HD1 TESTIMONIAL

To: Senator Donna Mercado Kim, Chair

Senator Michelle N. Kidani, Vice Chair

Committee on Higher Education

From: Emilio Macalalad

RE: **HB 563 HD 1- Relating to the University of Hawai'i's Space Science and Engineering Initiative - In Support**

3/31/25 4:55pm

Aloha Chair Senator Donna, Vice Chair Senator Michelle, and Members of the Committee,

My testimony is in **support** of SB767/SB1268/HB 563 relating to the University of Hawai'i.

I have been participating in the Maunakea Scholars program as a teacher for the last eight years while at Molokai High School. It was an experience that was important to me, because I wanted to give my students more opportunities that are available to them here in their own state of Hawaii such as Astronomy. Not many states have access to telescopes that students can use to explore space.

Maunakea Scholars has given my students the opportunity to visit the Canada France Hawaii Telescope on Hawai'i island, more importantly it gave students the chance to explore interests in space and have the program validate their interest with telescope time if they so choose to pursue that opportunity.

Programs like Maunakea Scholars are important because we as kama'āina deserve access to the best opportunities to learn, work, and take on roles as industry-leading experts in STEM fields if that's what we choose for ourselves.

One of my students, Mallory Go, was able to publish her work along with her mentor on the Horsehead Nebula. She did this as part of her science project in high school that went to the Regional Science and Engineering Fair on Maui. Coming from an island where resources are limited, it's amazing to see my students achieve at this level.

Maunakea Scholars inspired me to grow and create new pathways, which is why I ask that you pass this bill to expand the program and create more opportunities like it with a workforce development program at the UH Space Science and Engineering Institute.

Mahalo for considering my testimony,

Emilo Macalalad

Science Teacher

Molokai High School

March 31, 2025

STRONG SUPPORT FOR HB563 HD1 SD1 (RELATING TO THE UNIVERSITY OF HAWAII'S SPACE SCIENCE AND ENGINEERING INITIATIVE)

Dear Chair Dela Cruz, Vice-Chair Moriwaki, and Members of the Committee,

My name is Noel Morin. I am submitting testimony on behalf of NexTech Hawaii in STRONG SUPPORT of HB563 HD1 SD1, which *appropriates funds for salaries and fringe benefits of positions for the University of Hawai'i Institute for Astronomy's Space Science and Engineering Initiative Workforce Development Program, Maunakea Scholars Program, and Internship Program. Appropriates funds for office equipment and supplies, operational costs, and stipends for high school and college students.*

A sustainable and resilient Hawaii demands that we empower our youth with experiences, knowledge, and skills necessary for them to thrive in meaningful, good-paying jobs and careers. STEM (Science, Technology, Engineering, and Math) learning opportunities enable this empowerment of our youth and lay the foundation for the development of the local workforce of the future and the establishment of local industries.

HB563 HD1 SD1 will sustain programs that deliver valuable experiences to Hawaii's youth. It will also inspire similar investment and focus in other STEM areas.

NexTech Hawaii urges the committee to pass HB563 HD1 SD1.

Thank you for the opportunity to testify.

Sincerely,
Noel Morin
Secretary
NexTech Hawaii

The Success Factory NexTech Hawai'i (nextechhawaii.org) is a nonprofit that delivers educational programs and develops community engagement and support to create STEM awareness and career readiness for Hawai'i Island youth. We've connected hundreds of our youth to fun STEM experiences and mentorship opportunities since 2017.

To: Senator Donovan M. Dela Cruz, Chair
Senator Sharon Y. Moriwaki, Vice Chair
Committee on Ways and Means

From: Kiana Ejercito

RE: **HB 563 HD 1 - Relating to the University of Hawai'i's Space Science and Engineering Initiative - In Support**

Aloha Chair Dela Cruz, Vice Moriwaki, and Members of the Committee,

My testimony is in **support** of **SB767/SB1268/HB 563** relating to the University of Hawai'i. I participated in the Maunakea Scholars program as a student in 2021 at Kalani High School. This experience was very important for me and was one of the first steps in my pursuit of becoming a professional astronomer.

As a Maunakea Scholar, my project proposed dark matter mapping with the W.M Keck Telescope. While my project was not chosen, it inspired me to work harder and connected me to a graduate student who I was able to discuss with about being an astronomer. This experience encouraged me to major in Astrophysics at the University of Hawai'i at Mānoa. Then, I was fortunate to participate in an internship after my first year of college at the Institute for Astronomy, where I was able to visit the W.M. Keck Telescope and meet the graduate student again! It has been amazing to see how far I have come, starting from this program. Additionally, I had always felt that it was difficult to learn more about astronomy because there were no classes specializing in astronomy at my high school. The Maunakea Scholars Program therefore was crucial to inspire me to continue pursuing my interest in astronomy, helping me learn more about the field and getting real experience.

Programs like Maunakea Scholars are very important because by giving kama'āina opportunities in STEM, it supports and encourages us to find jobs here and help our community. Additionally, I believe that by offering these programs, it may connect the local community to astronomy better. These programs have made me feel very supported in following my passion to become an astronomer and I hope to similarly inspire other students in the future. My appreciation for programs such as the Maunakea Scholars program has motivated me to participate in outreach events with the Institute for Astronomy to help encourage students to become interested in science and increase diversity in the field. I am now in my final semester in my undergraduate degree in Astrophysics and have applied to graduate school to continue pursuing research in astronomy. In the future, my goal is to become a researcher and professor and teach here in Hawai'i. Participating in the Maunakea Scholars program thus has allowed me to make more connections and learn more about the astronomy community in Hawai'i. These programs inspire local students like me, help us explore our passions, and create new pathways. Therefore, I ask that you pass this bill to expand the program and create more opportunities like it with a workforce development program at the UH Space Science and Engineering Institute.

Mahalo for considering my testimony,
Kiana Ejercito

HB-563-SD-1

Submitted on: 4/1/2025 3:17:40 AM

Testimony for WAM on 4/2/2025 10:01:00 AM

Submitted By	Organization	Testifier Position	Testify
Ciana-Lei Bence	Individual	Support	Written Testimony Only

Comments:

Aloha Members of the Committee,**My testimony is in support of SB767/SB1268/HB 563 relating to the University of Hawai‘i.****I participated in the Maunakea Scholars program as a student in 2022-2023 while I was attending Kamehameha Schools Kea‘au. As a high school student interested in astronomy and physics it was a tremendously formative experience that exposed me to the field and helped to get me where I am today, studying astrophysics at Yale University.****My project used data from the Keck telescope along with archival data to conduct an independent research project analyzing Active Galactic Nuclei (AGN) mass evolution patterns using emission spectroscopy to investigate the M-Sigma correlation. This project won me first place in the astronomy field at the Hawai‘i State Science and Engineering Fair and awarded me a spot at the International Science and Engineering Fair where I presented my research. From this project, I also received a certificate from the State of Hawai‘i House of Representatives. Since then I have gone on to complete a Research Experience for Undergraduates with the Institute for Astronomy and have recently presented my research at the American Astronomical Society conference this past January and have taken up research positions at my home institution. Without this experience, I can’t say that I would have had the opportunity to do any of this or develop a deep passion for Astronomy, especially as a native Hawaiian member of the community.****Programs like Maunakea Scholars are incredibly important to us kama‘āina in developing confidence and interest in STEM fields that are less accessible here in Hawai‘i. We deserve**

access to the best opportunities to learn, work, and take on roles as industry-leading experts in STEM fields rather than outsourcing these positions.

Maunakea Scholars inspired me to grow and create new pathways, which is why I ask that you pass this bill to expand the program and create more opportunities like it with a workforce development program at the UH Space Science and Engineering Institute.

Mahalo for considering my testimony,

Ciana-Lei Bence

March 30, 2025

Subject: HB563 HD1 - UH Space Science and Engineering Initiative (SSEI)

Aloha Senate Committee on Ways and Means;

As an advocate for STEM (Science, Technology, Engineering, and Mathematics) education in Hawai'i, I have seen firsthand how transformative opportunities to explore careers in these fields are for youth. In STEM education, my community contributions to raise student confidence and STEM and career learning are in several organizations and all are voluntary. Students are hungry to learn and be successful; more opportunities are needed. I support HB563_HD1, a Space Science Education bill being considered by the Hawai'i State Legislature, presents a pivotal opportunity for our state to invest in the future of our youth and economy by expanding workforce development programs.

Hawai'i is uniquely positioned to lead in space sciences, but we must ensure our students have the skills and knowledge to excel in this fast-evolving field. Our geographic location makes us an unparalleled hub for astronomical research and space exploration, with world-class observatories atop Maunakea and a deep-rooted cultural legacy of exploration and navigation. This combination presents an extraordinary opportunity to cultivate a new generation of homegrown scientists and engineers. However, to fully realize this potential, we must prioritize STEM education from elementary school to higher education.

HB563_HD1 aims to expand hands-on educational opportunities in space sciences through two key workforce development programs: the University of Hawai'i's Space Science and Engineering Initiative and Maunakea Scholars. These programs provide students with real-world experience—launching rockets, analyzing data from distant planets, and engaging in scientific research—while also developing essential skills in critical thinking, problem-solving, leadership, and creativity.

In recent years, student interest in space exploration, astronomy, and climate-related technologies has grown significantly. They are even more excited to discover that they can pursue these careers right here in Hawai'i. Yet, despite this enthusiasm, we still face significant challenges in providing strong STEM education opportunities. Disparities in funding, resources, and infrastructure hinder student access to these fields.

Organizations like NexTech Hawai'i are working tirelessly to bridge this gap by providing hands-on learning experiences and mentorship. Similarly, the student led Hawai'i International Science Experience was started to foster collaborations among local and international science-minded peers to benefit younger students on Hawaii Island. However, to truly build a sustainable STEM pipeline, we need stronger partnerships between schools, businesses, and community organizations. Passing HB 563 will expand access to quality STEM education and career pathways, ensuring more students have the tools they need to succeed.

If the Legislature passes HB563_HD1, the University of Hawai'i will gain critical resources to expand these workforce programs, increasing hands-on learning opportunities that strengthen students' skills and career prospects. The university is already advancing its space science capabilities by establishing a Space Engineering and Instrument Development Center at the UH Institute for Astronomy in Hilo. This facility will provide hands-on training for students to develop instruments for space missions and ground-based telescopes. HB 563 would enhance this initiative, further cementing UH's role as a leader in space sciences.

The bill would also increase support for the Maunakea Scholars program, which has awarded more than 1,200 Hawai'i high school students telescope time on Maunakea, allowing them to conduct independent research on black holes, star clusters, and other celestial phenomena. While organizers would like to expand Maunakea Scholars to every high school in Hawai'i, the program faces resource and staffing limitations. HB 563 would create a dedicated program coordinator position, providing more students with access to transformative STEM education experiences.

Investing in space sciences is an investment in Hawai'i's future. HB563_HD1 has the potential to spark interest in STEM at all educational levels. I urge lawmakers, educators, and community leaders to support this bill. Together, we can create a vibrant ecosystem that nurtures innovation and empowers our youth. Let us inspire them to reach for the stars—not just in their dreams but in their realities, right here in Hawai'i.

As a 100% volunteer developer of youth STEM and Leadership learning since 2009, I ask for your consideration.

Mahalo,

Gail Takaki

Gtakaki808@gmail.com

808 430-5898

NexTech (The Success Factory) Co-Founder, www.nexttechhawaii.org

Hawaii International Science Experience, Co-Founder, www.hise.world

RYLA, Rotary Youth Leadership Awards, The Rotary Club of Hilo

To: Senator Dela Cruz, Chair
Senator Moriwaki, Vice Chair

From: Mary Beth Laychak, Maunakea Scholars

RE: **HB 563 HD1 SD 1- Relating to the University of Hawai'i's Space Science and Engineering Initiative - In Support**

DATE: April 2, 2025

TIME: 10:01 am

PLACE: VIA VIDEOCONFERENCE Conference Room 211

Aloha Chair Dela Cruz, Vice Chair Moriwakii, and Honorable Members of the Committee,

Thank you for the opportunity to testify in **strong support** of HB 563 HD1 SD1, which would expand hands-on STEM learning for Hawai'i students by supporting workforce development through the University of Hawai'i's Space Science and Engineering Initiative and the Maunakea Scholars program.

Investing in STEM education drives innovation, cultivates critical thinking, and prepares students for careers in high-demand fields. Programs like the Space Science and Engineering Initiative and Maunakea Scholars provide Hawai'i students with hands-on experience and direct exposure to STEM career opportunities, equipping them with the skills needed to thrive in these industries.

As the lead program officer for Maunakea Scholars, I appreciate the opportunity to provide more information on this program and the impact that it has made on Hawai'i students.

For nearly a decade, Maunakea Scholars has awarded Hawai'i high school students observing time on Maunakea's powerful telescopes, enabling them to conduct independent research on black holes, star clusters, and other celestial phenomena. The competitive, one-of-a-kind program allows students to develop proposals, which are then evaluated by a panel of professional astronomers. Students awarded observing time complete their own, independent research projects driven by their curiosity about our universe. Throughout this process, students are mentored by astronomers, the majority from the University of Hawai'i Institute for Astronomy.

Budget and logistics permitting, we bring students to Hawai'i Island to visit the observatories and conduct real-time observations alongside support astronomers—an experience mirroring that of professional researchers. Since its inception, Maunakea Scholars has also grown to include telescopes worldwide that contribute viewing time and mentorship opportunities.

The students we serve are, and will remain, exclusively in Hawai'i and primarily attend Hawai'i Department of Education schools. By the end of the 2024-2025 school year, **over 1,300 students** will have participated in the program from 13 high schools across the state:

Hawai'i Island

- Honoka'a High School
- Kamehameha Schools Kea'au
- Kealakehe High School
- Kohala High School
- Waiakea High School

Maui

- King Kekaulike High School

Moloka'i

- Moloka'i High School

Lāna'i

- Lāna'i High School

O'ahu

- Kalani High School
- Kamehameha Schools Kapālama
- Kapolei High School
- Nanakuli High School
- Waipahu High School

Maunakea Scholars alumni leverage the knowledge and confidence gained through the program to pursue a wide range of careers. Our goal is not solely to produce astrophysicists; **we strive to broaden students' horizons and empower them to explore new opportunities**. Graduates go on to fields such as astronomy, education, engineering, and technology, with many securing internships or jobs in Hawai'i. Two program alumni currently work in Hawai'i astronomy with positions on Hawai'i Island. Another has recently been accepted to several graduate schools with the goal of pursuing her PhD in astronomy. Project alumni are working in engineering fields in Japan and on the continent with the hopes of gaining the experience to return home to Hawai'i, potentially to work at the newly formed UH Space Science and Engineering Institute. Two more alumni are educators, striving to inspire their students to embrace STEM fields.

We founded Maunakea Scholars with the deeply held belief that if world-class astronomical research is being conducted on Maunakea using the best tools available, then those opportunities must be accessible to our kama'āina youth. We firmly believe in this mission and are honored to support students as they harness these resources to fuel their intellectual curiosity and academic growth.

While our vision is to expand Maunakea Scholars to every high school in Hawai'i, our ability to do so is currently constrained by staffing and financial limitations. This bill would create a dedicated program coordinator position, allowing us to serve more students and grow access to transformative STEM education opportunities. When combined with the proposed workforce development program at the UH Space Science and Engineering Institute, Maunakea Scholars becomes an even more powerful tool in the effort to supporting kama'āina students from kindergarten to their career.

I **strongly support** this bill and so humbly ask for your favorable consideration in passing this measure.

With gratitude,



Mary Beth Laychak
Program Lead
Maunakea Scholars

HB-563-SD-1

Submitted on: 4/1/2025 8:24:28 AM

Testimony for WAM on 4/2/2025 10:01:00 AM

Submitted By	Organization	Testifier Position	Testify
Brock Taylor	Individual	Support	Written Testimony Only

Comments:

Aloha Chair, Vice Chair, and Members of the Committee,

My testimony is in support of HB 563 relating to the University of Hawai‘i’s Space Science and Engineering Initiative. As a student of Hawai‘i, I believe creating opportunities for young people to study, work, and make a decent living without having to leave the state is critical to keeping Hawai‘i’s culture and communities alive.

With the Maunakea and Haleakala already established as internationally leading locations in the field of astronomy, it makes sense to invest more into space science education in Hawai‘i so local people can get high-tech, high-pay jobs at these facilities rather than hiring from out of state.

Adding an engineering degree pathway at UH Hilo will provide more opportunities for Hawai‘i Island youth, especially those who may not be able to go to college off-island. We have some of the best astronomy facilities in the world on Maunakea, and we should seek programs that provide the opportunities astronomy provides to kama‘āina students. Providing resources for the Space Science and Engineering Initiative and Maunakea Scholars to serve more students is a way for these facilities to directly benefit local students in the short-term, and local communities in the long-term.

These programs inspire and create new pathways for kama‘āina to find success and security at home, which is why we ask that you pass this bill and make it possible for them to continue to grow. I ask for your favorable consideration in passing this measure.

I have personally found great success through these programs and am incredibly grateful for their existence. Having participated in Maunakea Scholars during high school, I grew a relationship with one of the telescopes which later directly led to internships and even a job that I am now moving to Japan in the summer to begin. Needless to say, I would not be in the spot I am now without the support of the Maunakea Scholars program. I think it would be a disservice to the islands to not further support programs like these that provide such incredible opportunities to their students.

Mahalo for considering my testimony,

Brock Taylor

HB-563-SD-1

Submitted on: 4/1/2025 8:53:46 AM

Testimony for WAM on 4/2/2025 10:01:00 AM

Submitted By	Organization	Testifier Position	Testify
Andrew Odell	Individual	Support	Written Testimony Only

Comments:

Aloha Chair Dela Cruz, Vice Chair Moriwaki, and Members of the Committee,

My testimony is in **support** of HB563 HD1 SD1 relating to the University of Hawai‘i’s Space Science and Engineering Initiative. As a resident of Hawai‘i Island, I believe creating opportunities for young people to study, work, and make a decent living without having to leave the state is critical to keeping Hawai‘i’s culture and communities alive.

Hawai‘i is facing a workforce crisis with a shortage of high-paying jobs that support the cost of living here, and many of the available jobs being low-wage in the service and hospitality industry. As a result, many young people end up leaving Hawai‘i not because they want to, but because they are seeking opportunity, or survival, elsewhere.

Funding UH’s Space Science and Engineering Initiative and Maunakea Scholars is a strategic investment in Hawai‘i’s workforce. High tech jobs already exist at home with the potential for even more jobs based on the existing space science industry in Hawai‘i, but for many local students seem out of reach due to a lack of opportunities to engage in internships and other workforce development programs. By aligning STEM education and hands-on experience that prepares students for high-tech jobs, this initiative can help kama‘āina benefit from and grow an existing industry.

For our communities to thrive, we need to invest in education and developing a workforce that will attract, fill, and keep good jobs in Hawai‘i. This is why I ask for your favorable consideration in passing this measure.

Mahalo for considering my testimony,

Andrew Odell

Aloha e Chair and Committee Members,

My name is Heather Kaluna. I am an Associate Professor of Astronomy in the Physics & Astronomy department at University of Hawai'i at Hilo as well as a program manager for the Akamai Workforce Initiative. As someone who was born and raised on Hawai'i island, I greatly support the idea of expanding educational opportunities in STEM for our local students. As a astronomy and physics educator, I have invested a large portion of my career working to foster and support STEM training and workforce opportunities here on Hawai'i island. Nonetheless, **I am writing to express my concerns regarding HB563 HD1 SD1.**

While outreach and internship programs are valuable in helping students learn and get excited about STEM career pathways, many of these programs already exist on Hawai'i island and are largely successful in this efforts. For example, the Akamai Workforce Initiative has served our community since 2001, with almost 90% of alumni still pursuing science and engineering careers. Additionally, the observatories and organizations like the Hawai'i Science and Technology Museum have a suite of outreach programs dedicated to fostering STEM interests among our keiki. **Despite the success of these programs, there is still a pressing need¹ to provide a substantive physics education for secondary school students on Hawai'i island.**

Additionally, one of the major components to the Space Science and Engineering Initiative is to build a pre-engineering program at UH Hilo. It is important to note that the success of students entering UH Hilo's pre-engineering track greatly depends on their foundation in math and physics from high school. National data (consistent with local trends) demonstrates that the largest attrition in physics and engineering majors occurs within the first one to two years of these programs. A report² from the American Institute of Physics found that "over 70% of students left physics by the end of their introductory physics course or the start of their second year." As physics educator at UH Hilo, I can speak first-hand to these challenges that our physics students face and the low retention rates of physics majors after their first and second years.

For the reasons outlined above, our community would more greatly benefit from positions that can support physics and STEM teacher preparation programs (e.g. UH Manoa's program that serves out-of-field physics teachers³). Additionally, funding for resources that support physics education at the college level, such as learning assistant programs⁴, dedicated physics and engineering tutoring (integral parts of any effort to build a sustainable pre-engineering program), and administrative support for UH Hilo's pre-engineering program would go much further in

¹Physics Teacher Education Coalition - The Shortage of Physics Teachers
<https://phystec.org/teacher-shortage/>

² Porter, Anne Marie, Raymond Y. Chu, and Rachel Ivie. (2024, July 23) [Attrition and persistence in undergraduate physics programs](#). AIP.org.

³ University of Hawai'i at Manoa - College of Education [Curriculum Research & Development Group | Physics Project Serves Out-of-Field Physics Teachers](#)

⁴ Physics Teacher Education Coalition - Learning Assistant Programs Website:
<https://phystec.org/resources/learning-assistants/>

helping the program to succeed. **Without addressing these foundational needs, we risk high dropout rates and the failure of the program to meet its full potential.**

Lastly, I also want to highlight an inaccuracy in the bill's language that may mislead lawmakers and the public about the history of engineering education at UH Hilo. The bill currently states that this initiative will be "offering for the first time an engineering degree pathway for University of Hawaii at Hilo students." To clarify, this initiative is not the first time UH Hilo has attempted to provide an engineering-related academic pathway. There have been at least two prior iterations of a pre-engineering track at UH Hilo⁵. The existence of these prior engineering programs demonstrates that the idea of engineering education at UH Hilo is not new, and underscores the importance of learning from these previous attempts to ensure the success of any future pre-engineering pathway at UH Hilo.

In conclusion, **I urge the Committee to revise the bill to reflect the accurate history of pre-engineering programs at UH Hilo and to use these funds to support substantive physics education for students in high school and during their first few years at UH Hilo.**

Thank you for the opportunity to testify on this important matter.

Mahalo nui loa,



Heather Kaluna
Associate Professor of Astronomy
University of Hawai'i at Hilo

⁵ Matthews, Alyssa. (2018, October 22). [UH Hilo pre-engineering program prepares students to pursue degree](#). UH Hilo Stories