Testimony Presented Before the
House Committee on Finance
Friday, April 1, 2022 at 3:00 p.m.
By
Nathan Murata, Dean
College of Education
And
Michael Bruno, PhD
Provost
University of Hawaiʻi at Mānoa

SB 2142 SD1 HD1 – RELATING TO COMPUTER SCIENCE

Chair Luke, Vice Chair Yamashita, and members of the House Committee on Finance:

Thank you for the opportunity to testify in support of the intent of SB 2142 SD1 HD1, relating to computer science.

The University of Hawaiʻi, College of Education (COE) offers comments to the following:

§302A Computer Science; diploma substitution.
The COE defers comments to the Hawaiʻi Department of Education (HIDOE) regarding computer science (CS) for diploma substitution and any other graduation requirements.

§304A Admission Requirements; Computer Science; substitution.
The COE defers comments to the Hawaiʻi Department of Education (HIDOE) regarding computer science (CS) for admission requirements to complete a high school course.

The COE requests clarification to the language to specify to whom the admission requirements pertain, whether to high school programs or UH programs.

§304A Admission Requirements; Computer Science in teaching scholarship program.
   (a) The COE supports the establishment of the computer science in teaching scholarship program to be administered by the University of Hawaiʻi. The COE will work with the HIDOE, and University of Hawaii's Outreach College to promote a pathway for a scholarship program.
   (b) The COE requests clarification to the language that specifies the scholarship is awarded to students "working towards a degree to become a teacher within the department of education."
   (c) The COE requests clarification to the language in this section. The section prioritizes students "from underrepresented groups and students who agree to teach computer science in schools having higher percentages of students from underrepresented groups, rural schools, or under-resourced schools."

If the intent in section (b) is for scholarship students to be working toward a degree and licensed teacher in computer science, then the COE supports prioritizing those students from underrepresented groups or who will teach computer science in schools having higher percentages of students from underrepresented groups. Clarification is requested whether a student pursuing any other teaching degree would be eligible for the scholarship if teaching computer science (not a CS licensed teacher), even if from an underrepresented group or who will teach in schools having higher percentages of students from underrepresented groups.

§304A Pathways in Computer Science
    (a) The COE is supportive of developing and implementing pathways in computer science for students studying to obtain a degree in education.
    (b) The COE requests a change in language to: the pathways shall prepare a student **to be eligible for a HTSB computer science license** to teach computer science at the elementary and/or secondary level.

The College of Education is currently working on a pathway for Computer Science and will submit an "add a field" program proposal(s) to the Hawaiʻi Teacher Standard Board (HTSB) for approval in Computer Science licensing. The College of Education has and will continue to collaborate with other UH programs including Information Technology Services (ITS) and the Information & Computer Science department (ICS).

§304A-802 Licensing and certification standards; policies
    (c) The COE is supportive of any program of teacher preparation leading to a license or certification to include, as part of the curriculum, instruction in computer science and computational thinking as applied to student learning and classroom instruction that are grade-level and subject-area appropriate.

At present the COE meets the current HTSB requirement for educator preparation programs to provide evidence that their candidates are prepared to integrate "..technology effectively into curricula and instruction, including activities consistent with the principles of universal design for learning and the use of technology to effectively collect, manage and analyze data to improve teaching and learning for the purpose of increasing student academic achievement" [HTSB HAR §8-54-19, (3) (F)]. Therefore, the COE requests clarification of language in section (d) to indicate if this is a different or additional curriculum requirement as that stated in HAR §8-54-19.

Thank you for opportunity to provide testimony on SB 2142 SD1 HD1.

<u>**WRITTEN ONLY**</u>
TESTIMONY BY CRAIG K. HIRAI
DIRECTOR, DEPARTMENT OF BUDGET AND FINANCE
TO THE HOUSE COMMITTEE ON FINANCE
ON
SENATE BILL NO. 2142, S.D. 1, H.D. 1

April 1, 2022
3:00 p.m.
Room 308 and Videoconference

RELATING TO COMPUTER SCIENCE

The Department of Budget and Finance (B&F) offers comments on this bill.

Senate Bill No. 2142, S.D. 1, H.D. 1: allows Department of Education students to fulfill world language, fine arts, or career and technical education requirements with computer science courses; establishes a computer science in teaching scholarship program; requires the University of Hawai'i (UH) to develop a pathways program in computer science for students studying to obtain a degree in computer science; requires teaching licensing and certification to include computer science; and appropriates an unspecified amount of general funds in FY 23 for UH for the computer science in teaching scholarship program.

B&F notes that, with respect to the general fund appropriation in this bill, the federal Coronavirus Response and Relief Supplemental Appropriations Act requires that states receiving Elementary and Secondary School Emergency Relief (ESSER) II funds and Governor's Emergency Education Relief II funds must maintain state support for:
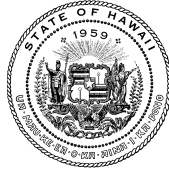
- Elementary and secondary education in FY 22 at least at the proportional level of the state's support for elementary and secondary education relative to the state's overall spending, averaged over FYs 17, 18 and 19; and

- Higher education in FY 22 at least at the proportional level of the state's support for higher education relative to the state's overall spending, averaged over FYs 17, 18 and 19.

Further, the federal American Rescue Plan (ARP) Act requires that states receiving ARP ESSER funds must maintain state support for:

- Elementary and secondary education in FY 22 and FY 23 at least at the proportional level of the state's support for elementary and secondary education relative to the state's overall spending, averaged over FYs 17, 18 and 19; and

- Higher education in FY 22 and FY 23 at least at the proportional level of the state's support for higher education relative to the state's overall spending, averaged over FYs 17, 18 and 19.

The U.S. Department of Education has issued rules governing how these maintenance of effort (MOE) requirements are to be administered. B&F will be working with the money committees of the Legislature to ensure that the State of Hawai'i complies with these ESSER MOE requirements.

Thank you for your consideration of our comments.

STATE OF HAWAII
BOARD OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAIʻI 96804

House Committee on Finance

Friday, April 1, 2022
3:00 p.m.
Via Videoconference
Hawaii State Capitol, Room 308

Senate Bill 2142, Senate Draft 1, House Draft 1, Relating to Computer Science

Dear Chair Luke, Vice Chair Yamashita, and Members of the Committee:

The Board of Education ("Board") respectfully **opposes** SB 2142 SD1 HD1, which would, among other things, allow Department of Education students to fulfill graduation requirements by taking world language, fine arts, career and technical education, or computer science courses.

The Board generally opposes proposed legislation that diminishes the Board's power to formulate statewide educational policy as envisioned and established by Article X, Section 3, of the Constitution of the State of Hawaii.

To this end, the Board **strongly opposes** Section 1 of this measure. This section would essentially alter the Board's graduation requirements it sets through Board Policy 102-15. Setting graduation requirements should be the role of the Board, and we believe the Legislature should leave the responsibility of determining educational requirements to the Board as a foundational part of statewide educational policy. **Therefore, we respectfully request this committee delete Section 1 of this measure.**

Thank you for this opportunity to testify on behalf of the Board.

Sincerely,

Bill Arakaki
Chairperson, Board of Education 2022 Legislative Ad Hoc Committee

**STATE OF HAWAIʻI
DEPARTMENT OF EDUCATION**
P.O. BOX 2360
HONOLULU, HAWAIʻI 96804

Date: 04/01/2022
Time: 03:00 PM
Location: 308 Via Videoconference
Committee: House Finance

Department: Education

Person Testifying: Keith T. Hayashi, Interim Superintendent of Education

Title of Bill: SB 2142, SD1, HD1 RELATING TO COMPUTER SCIENCE.

Purpose of Bill: Allows department of education students to fulfill graduation
requirements by taking world language, fine arts, career and
technical education, or computer science courses. Establishes a
scholarship at the University of Hawaii to encourage students
majoring in education to take a computer science course.
Requires the University of Hawaii to establish computer science
pathways for students majoring in education. Requires teacher
licensing and certification to include computer science.
Appropriates funds. Effective 7/1/2051. (HD1)

Department's Position:

The Hawaii State Department of Education (Department) supports the intent of SB
2142,
SD1, HD1 and respectfully offers comments on this measure relating to computer
science. The Department defers to the Hawaii State Board of Education (BOE) in
regards to where the responsibility of determining educational requirements should lie.

The Department appreciates the extension of the implementation timeline to School
Year 2023-2024 to allow the Department time to seek approval from the BOE to revise
this graduation requirement.

The Department defers to the University of Hawaii regarding admission requirements
related to computer science coursework, the scholarship program, and proposed
computer science pre-service teaching degree pathways.

Thank you for the opportunity to provide testimony on this measure.

April 1, 2022

Committee on Finance
Rep. Sylvia Luke, Chair
Rep. Kyle T. Yamashita, Vice Chair

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

HawaiiKidsCAN strongly supports SB2142 SD1 HD1, which allows department of education students to fulfill graduation requirements by taking world language, fine arts, career and technical education, or computer science courses; establishes a scholarship at the University of Hawaii to encourage students majoring in education to take a computer science course; requires the University of Hawaii to establish computer science pathways for students majoring in education; requires teacher licensing and certification to include computer science; and appropriates funds.

Founded in 2017, HawaiiKidsCAN is a local nonprofit organization committed to ensuring that Hawaii has an excellent and equitable education system that reflects the true voices of our communities and, in turn, has a transformational impact on our children and our state. We strongly believe that all students should have access to excellent educational opportunities, regardless of family income levels and circumstances.

As computer science (CS) skills become more foundational to quality academic and career success, Hawaii must ensure that students have equitable access to CS courses and credits. In Hawaii, 87% of HI high school students attend a school that offers computer science, but only 3.9% of students are enrolled in a foundational computer science course. Just 26% of students enrolled in computer science courses are female, and Native Hawaiian/Pacific Islander and Native American students are less than half as likely as their white and Asian peers to enroll in computer science. When you consider that Hawaii has averaged 1,903 open computing jobs each month, and that these open jobs have an average salary of $83,548, it's clear that we are not fully setting our kids up for success.[1]

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[1] https://advocacy.code.org/state_handouts/Hawaii.pdf

SB2142 SD1 HD1 proposes a simple yet extremely powerful change Hawaii could make to change how CS credits are recognized in a student's path to graduation. States that count computer science as a core graduation requirement see 50% more enrollment in their AP Computer Science courses and increased participation from underrepresented minorities. Hawaii could follow suit by doing more than simply offering honors credit for Advanced Placement CS (which is the current case), and instead make CS count as a core requirement.

Respectfully, the amended language of this bill makes it clear that this measure does not position computer science in opposition to or in competition with other disciples such as world language and fine arts. Rather, this bill provides students with ample choices to develop their passions, interests, and skills.

This bill builds on recent efforts by the legislature – Act 51 in 2018 and Act 158 in 2021 – to significantly boost computer science access and equity. Without additional action by the legislature, it's unclear if the Hawaii DOE will meet the ambitious targets of these laws, including:
- Beginning with the 2021-2022 school year, ensure that each public high school offers at least one computer science course during each school year.
- Beginning with the 2024-2025 school year, all public elementary, middle, and intermediate schools shall offer computer science courses or computer science content.

Mahalo for your consideration,

David Miyashiro
Founding Executive Director
HawaiiKidsCAN

Written Statement of
DR. PATRICK K. SULLIVAN
PRESIDENT/CEO OCEANIT

Before the

HOUSE COMMITTEE ON FINANCE

Friday, April 1, 2022
3:00 p.m. Via Video Conference
State Capitol, Conference Room 308
In Support of

SB2142 RELATING TO COMPUTER SCIENCE

To: Representative Sylvia Luke, Chair, Representative Kyle Yamashita, Vice Chair, and Members of the Committee
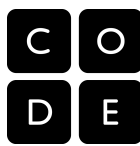
From: Dr. Patrick K. Sullivan, President/CEO

Re: Testimony in Support of SB2142

Honorable Chair, Vice-Chair and Committee Members:

Thank you for the opportunity to submit testimony **in support of SB2142**

Oceanit currently employs about over 100 scientists, engineers and support staff. Computer Science is an integral part of business in Scientific Research and Technology. We regularly host interns, school classes, and conduct numerous outreach activities for elementary thru college levels students to introduce them to science and engineering careers. A Computer Science pathway for students majoring in education is important for our next generation of teachers and for students to work in and be interested in the STEM field. This bill acts as the stimulant to an innovative Hawai'i STEM economy that Hawai'i's future generation can be apart of.

April 1, 2022

Re: SB 2142, SD 1, HD 1; Support

Dear Chair Luke, Vice Chair Yamashita, and members of the House Committee on Finance,

Code.org **enthusiastically supports** SB 2142 SD1 HD1.

This bill would: a) elevate computer science to a core subject area by adding it to an option that students must fulfill for graduation and aligning this with higher education admission, b) provide financial support for pre-service educators to develop content knowledge in computer science, c) develop pre-service educator pathways to become certified to teach computer science, and d) include computer science and computational teaching in all educator preparation programs.

The provisions of this bill are essential elements to ensure that the K-12 system has a robust computer science education available for all students.

Hawaii has made incredible progress in ensuring that every school will provide students with access to computer science courses. In 2018, Act 51 required all Department of Education high schools to offer at least one computer science course by the 2021-22 school year; and in 2021, Act 158 required all middle, elementary, and charter schools to offer computer science by the 2024-25 school year.

Section 4 and 5
In order to ensure that schools and teachers are prepared to enact these requirements and begin teaching computer science, a focus on pre-service educators is necessary. SB 2142 SD1 does this by ensuring that pre-service educators for all grade levels and subject areas will be prepared to incorporate fundamentals of computational thinking and technology into their instruction. Elementary teachers are generalists and are expected to have a foundational knowledge of all subject areas, and in just a few years, computer science will be one of those. This bill ensures that teachers entering the profession are well-prepared for teaching computer science and integrating it with other content areas.

Section 3 and 4
Currently, there are no pathways for pre-service teachers to work towards computer science certification while preparing to become a teacher. SB 2142 SD1 will not only begin the creation of these programs, but the scholarship provision will incentivize all pre-service teachers to learn some fundamentals of computer science prior to entering the classroom.

Section 1 and 2
Allowing computer science as a core graduation credit is crucial for increasing student options and elevating computer science in high schools. While students can currently apply an AP computer science course to the required math credits for the
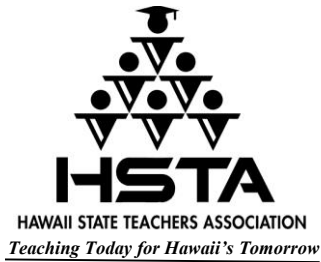
Academic Honors Recognition Certificate, this provision does not apply to all students and their required courses for graduation. The bill proposes expanding these options to allow students to take 2 credits in computer science as an option alongside world language, fine arts, or career and technical education.

Computing is a foundational skill for K-12 students. It develops students' computational and critical thinking skills and teaches them how to create—not just use—new technologies. And Hawaii has averaged over 1,400 open computing jobs each month over the past year. Businesses in every industry are in need of students graduating with computing knowledge. There is incredible interest in supporting K-12 computer science education right now, and this bill furthers the DOE's existing initiatives and leverages the public support for K-12 computer science.

Thank you for your efforts in providing students in Hawaii with opportunities to pursue computer science education. If you have any questions, please contact Katie Hendrickson at Katie@code.org. Thank you for your consideration of this matter.

Mahalo,

Dr. Katie Hendrickson
President
Code.org Advocacy Coalition
www.code.org

TESTIMONY BEFORE THE HOUSE COMMITTEE ON FINANCE

RE: SB 2142 SD1 HD1 - RELATING TO COMPUTER SCIENCE

FRIDAY, APRIL 1, 2022

OSA TUI, JR., PRESIDENT
HAWAII STATE TEACHERS ASSOCIATION
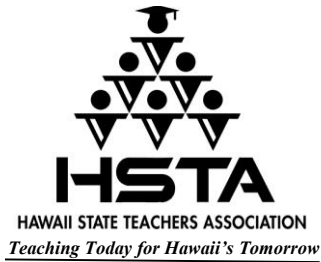
Chair Luke and Members of the Committee:

The Hawaii State Teachers Association **supports SB 2142 SD1 HD1** relating to computer science.

This bill will allow HIDOE students to fulfill world language, fine arts, or career and technical education graduation requirements with computer science. It also establishes a scholarship at the University of Hawaiʻi to encourage students majoring in education to take a computer science course and requires UH to establish computer science pathways for students majoring in education. Finally, the bill requires teacher licensing and certification to include computer science, as well as appropriates an unspecified amount to UH for the computer science scholarship program.

In the 21st century, computer science is an increasingly necessary and useful educational track for high school and college students. This bill will lower barriers and create incentives for more teachers to take up computer science as their primary subject area. By providing computer science as an option alongside a foreign language or fine arts is certainly laudable.

While HSTA supports this bill and its goals, we don't believe curriculum requirements should necessarily be set in statute, we respectfully request one amendment to the bill. Under Section 5 of the bill:

(d) By June 30, 2023, any program of teacher preparation leading to a license or certification shall [~~include~~] offer, as part of the curriculum, instruction in computer science and computational thinking as applied to student learning and classroom instruction that are grade-level and subject-area appropriate."
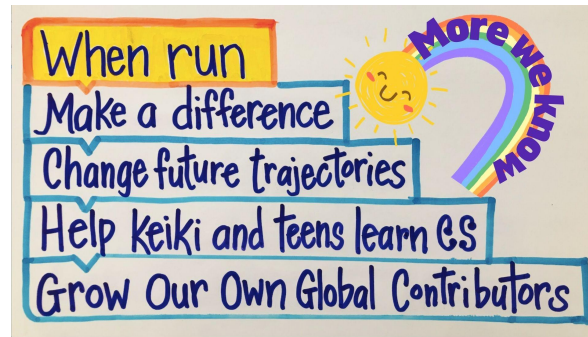
We also highlight some of the comments made by the University of Hawaiʻi, College of Education (COE) relating to §304A Pathways in Computer Science:

(a) The COE is supportive of developing and implementing pathways in computer science for students studying to obtain a degree in education.

(b) The COE requests a change in language to: the pathways shall prepare a student **to be eligible for a HTSB computer science license** to teach computer science at the elementary and/or secondary level.

HSTA is aware that the College of Education is currently working on a pathway for Computer Science COE will submit an "add a field" program proposal(s) to the Hawaiʻi Teacher Standard Board (HTSB) for approval in Computer Science licensing. We are confident that the College of Education has and will continue to collaborate with other UH programs including Information Technology Services (ITS) and the Information & Computer Science department (ICS).

Lastly, the Department of Education will need to seek approval from the Hawaii State Board of Education to revise this graduation requirement and thus HSTA requests the start date for this implementation be extended to School Year 2023-2024 (or the graduation class of 2028) to allow the DOE to seek BOE approval.

To provide incentives and opportunities for our students and teachers in Hawaiʻi to excel in computer science, the Hawaii State Teachers Association asks your committee to **support** this bill.
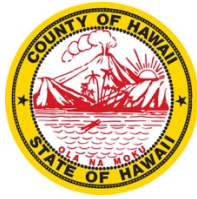
April 1, 2022

Aloha Chair Luke, Vice Chair Yamashita, and Committee on Finance,

We are the Hawaiʻi Society for Technology in Education (HSTE) and we support SB2142 SD1 HD1. As teachers, we find that when students skip curricular steps along the way, it becomes very difficult for learners to regain momentum and catch up with peers. In computer science, when there is a void of experiences to practice and hone skills, students fall drastically behind. It is imperative that we provide a continuous pathway in support of all students looking to include Computer Science as part of their learning journey from elementary to college with confidence and necessary skills.

Instead of leaping into the unknown, let's gift our haumana Computer Science wayfinding knowledge from shared learning journeys with like-minded friends and mentors. Preparing teachers with a Computer Science foundation will empower educators to learn Computer Science innovations alongside our eager youth. Education is a difference maker in our lives. Let's take this path of progress by supporting computer science education in Hawaiʻi.

Mahalo for your consideration,
Hawaiʻi Society for Technology in Education (HSTE)

House Committee on Finance

Date: April 1, 2022
Time: 3 p.m.
Where: Conference Room 308 & Videoconference

RE: **Supporting SB2142 SD1 HD1** Relating to Computer Science

Aloha mai e Chair Luke, Vice Chair Yamashita, and Members of the Committee,

As members of the Broadband Hui, the listed organizations and individuals SUPPORT SB2142 SD1 HD1, which allows department of education students to fulfill graduation requirements by taking world language, fine arts, career and technical education, or computer science courses; establishes a scholarship at the University of Hawaii to encourage students majoring in education to take a computer science course; requires the University of Hawaii to establish computer science pathways for students majoring in education; requires teacher licensing and certification to include computer science; and appropriates funds.

Over more than 20 months, our organizations have collaborated, each within their own ability, to increase Hawaiʻi's digital capacity, thereby supporting the continuity of social connections, education, employment, and access to other essential services throughout the pandemic. Through the work of the Broadband Hui, we have supported broadband infrastructure development in rural communities, provided digital devices and internet connectivity for students and families, supported the accessibility of telehealth, provided information on low-cost internet options, and adopted a Digital Equity Declaration to set a vision and goals for a more equitable digital future.

As we stated at the outset of the pandemic, addressing digital inequity through broadband access, digital literacy, and digitally-enabled societal systems is one of our greatest opportunities for economic and social recovery, diversification, and resilience. The truth of this statement has been proven throughout the past two years and is even more urgent as we look toward future recovery -- now with a once-in-a-generation opportunity with robust federal funding inbound.

In order to build a diverse and sustainable digital economy in Hawaiʻi, we need to ensure we are building a strong local talent pipeline, starting with the keiki in our public schools. By exposing students to computer science and empowering them with foundational skills, we are actively growing our own pool of young innovators and experts who can lead our state this generation and beyond. States like Arkansas have already made a big bet that a strong talent pipeline will help create jobs, attract leading companies, and nurture entrepreneurial ventures.

For these reasons, we kindly request you PASS SB2142 SD1 HD1. Mahalo for the opportunity to testify.
(Please see names on the following page.)

	Name	Organization	Email Address	Zip
1	Burt Lum	Hawaii Broadband & Digital Equity Office	burt.q.lum@hawaii.gov	96813
2	Daniel C. Smith, Ph.D.	(Individual Support)	smithdan@hawaii.edu	96782
3	David Miyashiro	HawaiiKidsCAN	david.miyashiro@hawaiikidscan.org	96734
4	Douglass S. Adams	Dept of Research & Development, COH	douglass.adams@hawaiicounty.gov	96720
5	Jacqui Hoover	Hawaii Island Economic Development Board	jhoover@hiedb.org	96743
6	Jacqui Hoover	Hawaii Leeward Planning Conference and Hawaii Island Economic Development Board	jacqui_hlpc@yahoo.com	96743
7	Todd Robertson	Hyperspective	todd@hyperspective.com	96813
8	William R. Sides II	Hana Broadband Committee	wrsides@hotmail.com	96713
9	Jeanne Skog	Skog Rasmussen LLC	jskog@skograsmussen.com	96793
10	Jenifer Sunrise Winter		jenifer.winter@gmail.com	96821
11	Mark Iha	Tangent Inc.	mark@tangent.systems	96813
12	Susan Tai	Economic Development Alliance of Hawaii, Inc.	susantaikaneko@gmail.com	96814

MAUI
CHAMBER OF COMMERCE
VOICE OF BUSINESS

**HEARING BEFORE THE HOUSE COMMITTEE ON
FINANCE
HAWAII STATE CAPITOL, HOUSE CONFERENCE ROOM 308
FRIDAY, APRIL 1, 2022 AT 3:00 P.M.**

To The Honorable Sylvia Luke, Chair
The Honorable Kyle T. Yamashita, Vice Chair
Members of the committee on Finance

SUPPORT OF SB2142 SD1 HD1 RELATING TO COMPUTER SCIENCE

The Maui Chamber of Commerce, as a member of the Broadband Hui, **supports SB2142 SD1 HD1** which allows Department of Education students to fulfill world language, fine arts, or career and technical education graduation requirements with computer science; establishes a scholarship at the University of Hawaii to encourage students majoring in education to take a computer science course; requires the University of Hawaii to establish computer science pathways for students majoring in education; requires teacher licensing and certification to include computer science; and appropriates funds.

Over more than 20 months, the Hui organizations have collaborated, each within their own ability, to increase Hawai'i's digital capacity, thereby supporting the continuity of social connections, education, employment, and access to other essential services throughout the pandemic.

In order to build a diverse and sustainable digital economy in Hawai'i, we need to ensure we are building a strong local talent pipeline, starting with the keiki in our public schools. By exposing students to computer science and empowering them with foundational skills, we are actively growing our own pool of young innovators and experts who can lead our state this generation and beyond. States like Arkansas have already made a big bet that a strong talent pipeline will help create jobs, attract leading companies, and nurture entrepreneurial ventures.

For these reasons we **support SB2142 SD1 HD1**.

Sincerely,

Pamela Tumpap

Pamela Tumpap
President

To advance and promote a healthy economic environment for business, advocating for a responsive government and quality education, while preserving Maui's unique community characteristics.

March 30, 2022

Committee on Finance
Representative Sylvia Luke, Chair
Representative Kyle T. Yamashita, Vice Chair

State Capitol
415 South Beretania Street
Honolulu, Hawaii, 96813

Aloha Chair Luke, Vice Chair Yamashita, and Members of the Committee:

As a computer science teacher at Kalani High School, I wholeheartedly support SB2142 SD1 HD1 and respectfully ask you to join me in doing so.

The COVID-19 pandemic has brought with it a sea change in the structure of the workplace along with a realization that business-as-usual is no longer good enough—particularly for a state with as distinctive a geography and population as ours. Although it goes without saying that technology will play a crucial role in our future, the availability of a skilled workforce to support, create, and innovate these new technologies is far from assured. Education is both the solution and the problem. While a strong computer science education pipeline from pre-kindergarten through graduate school would ensure a generous supply of home-grown talent, the infrastructure and incentives needed to construct that pipeline are not yet in place to do so. SB2142 SD1 HD1 would address both sides of the pipeline —the supply and the demand side—by acknowledging the universality of computer science and computational thinking across the curriculum on the one hand, and providing formal pathways for teachers to become highly qualified computer science educators on the other.

As a teacher I see students who choose not to enroll in my computer science classes because they need to prioritize other classes to meet other graduation requirements, and I see schools that are not able to offer robust computer science programs because of the lack of qualified teachers to support them. Both situations are untenable and both can be alleviated through the provisions in SB2142 SD1 HD1, and I therefore invite your consideration and support.

Mahalo for your time and attention.

Respectfully,

Michael P. Ida, PhD

Aloha 'auinalā Chair Luke, Vice Chair Yamashita, and Committee on Finance,

As a PreK-5th grade Computer Science teacher at Queen Ka'ahumanu Elementary, plus a parent of a son at Kalani High & daughter at UHManoa, **I support superb SB2142 SD1 HD1!**
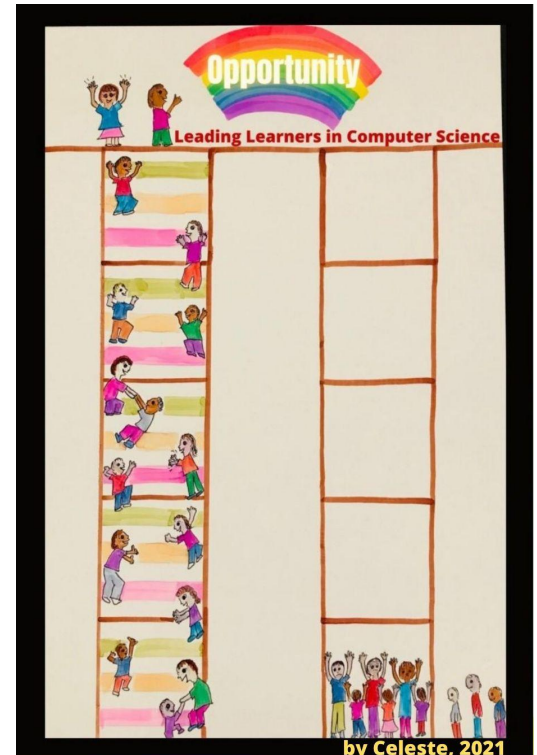
When I took a Computer Programming class, at the UHM College of Education decades ago, shh don't tell anyone but bruh it was so boring! The saving grace were rolling chairs we could scoot on to rescue our minds from deep sleep oblivion.

If you had asked me then, if I thought Computer Science was for everyone, I would have said "Heck No!" as I wiped away sweat & tears. Computer Science was not for everyone YET. Fast forward! Now we have experienced incredible innovations & instrumental contributions to improve CS instruction.

Collaborative efforts of the smartest and kindest minds in CS have brought upon amazing advances in CS education. Computer Science is in a learning revolution. It is up to Hawai'i to step up and join the movement toward trailblazing progress.

As a Computer Science Lead Learner, I could tell you all about our interactive chant, coded dances, command movements and glorious code.org curriculum that is FREE and mega fun for keiki, yet today I would really love to tell you about my son.

My son from an early age showed a keen sense of creativity. He would tinker with LEGOs and as a toddler would imaginatively build all kinds of intricate LEGO designs, just like so many of our keiki at home! He learned coding and robotics in elementary, yet when he got to middle school didn't have Computer Science experiences. At Kalani, he gets to learn CS from one of Hawaii's best CS teachers. He enjoys Computer Science class, but doesn't feel confident to continue after this year. Let's close the huge ladder gaps in learning Computer Science by providing pathways and incentives for preservice teachers, fulfillment of more graduation requirements for high schoolers, and overall more support for educators to teach Computer Science. **Now is the time. Let's go Hawai'i!!**

With Love, 💗 *Celeste Yukiko Endo*

Submitted By	Organization	Testifier Position	Testify
Cullen Slavens	Individual	Support	Written Testimony Only

Comments:

Teachers require modernized understandings and methods of instruction to educate students effectively—two arguments on teachers' need for received computer science instruction regarding teaching methods and topic instruction. First, on teaching methods- understanding computer science enables better technological integration. Teachers who better understand computers are more comfortable incorporating beneficial software, hardware, and more, in the classroom and when communicating with students. To the point that technology enhances learning and information retention, teachers' lack of comfort with the relevant computer technologies prevents more efficient teaching methods. Additionally, teacher's who understand the value of technology may better encourage technological literacy amongst students. The upsurging technology industry provides a powerful opportunity for upward socioeconomic mobility through high-paying jobs. Teachers who understand computer technology can better inform students on desirable career paths and the necessary learning required for preferable job access.

Second, on-topic instruction- By subsidizing the costs of computer science instruction, teachers may be more inclined to specialize in Computer Science and related topics. The mechanism is that persons consider costs when selecting areas of study. Importantly, there is a significant need for greater computer science instruction. An increase in computer science instructors expands access to computer science knowledge, allowing students to improve viability for desirable post-secondary stem programs, broaden potential job opportunities, and more. Increased Computer science knowledge also incentives entrepreneurship. In recent years, many tech-focused start-ups have best addressed modern problems like climate change, COVID-19 tracking, and more. By strengthening students' tech acumen, we better equip future leaders to solve our generation's most critical issues.

Invest in computer science learning amongst Hawai'i's educators and ensure a brighter future for Hawai'i. For the reasons listed above, I urge you to support SB 2142.

Submitted By	Organization	Testifier Position	Testify
Sarah "Mili" Milianta-Laffin	Individual	Support	Written Testimony Only

Comments:

April 1, 2022

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

As a Computer Science (CS) teacher at 'Ilima Intermediate School in Ewa Beach, who is a 2021 Hawaii State Finalist for the *Presidential Award for Excellence in Mathematics and Science Teaching* (*PAEMST*) in the CS catagory, I strongly support the ideas and goals of SB 2142 SD1 HD1. Modern problems require modern solutions, and the ideas in this piece of legislation focus on making our state and student-citizens future ready.

When we talk about Computer Science, one thing that gets left out is that there are not many teachers who teach it in Hawaii Public Schools. I'm one of what often feels like a small group of CS educators, and this makes my job more complicated. Teaching is a collaborative effort, and when I taught traditional Science courses, I had a team of teachers to work with on campus. Yet, I'm the only CS teacher on my campus, and one of the few in my complex. It's lonely, and I have to rely on national networks for support, mostly through social media, and trainings that I pay out-of-pocket to attend.

Bills like this one give more opportunities to our students, and grows CS Education statewide, which is a benefit to everyone. Please join teachers like me in supporting SB 2142 SD1 HD1.

With Aloha,

Sarah "Mili" Milianta-Laffin

Ilima Intermediate School CS Teacher

Board Member of HSTE - Hawaii Society for Technology in Education

SB-2142-HD-1
Submitted on: 3/31/2022 11:27:25 AM
Testimony for FIN on 4/1/2022 3:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Leinaala Kealoha	Department of Education	Support	Written Testimony Only

Comments:

I support this bill. Computer Science has so many underlying soft skills embedded into it. Every student and teacher can benefit from learning and teaching in this approach.

April 1, 2022

Aloha Chair Luke, Vice Chair Yamashita, and Committee on Finance,

As a teacher from `Ewa Beach at Ka`imiloa Elementary, I support SB2142 SD1 HD1: Relating to Computer Science.

In addition to the many testimonials you may have received in support of this bill, I wanted to add my perspective.

As a creative arts teacher in an elementary school, I am finding that despite the technical savvy of many students in creating social media content (TikTok, Instagram, etc…), a large portion of them lack basic computer skills when using a laptop or iPad for educational purposes. My class time with these students is already limited to 45 minutes every other week but I need to dedicate portions of my instructional time to either teach or review basic skills such as formatting documents or inserting photos or diagrams to supplement their work. I try to integrate technology into many of my art, dance, music, and drama lessons but cannot move as far as I would like to because of the students' lack of knowledge.

Having more teachers trained specifically in computer science would not only help our students but support other teachers in their curricula. Please support this bill and allow Hawai`i's teachers to continue to grow our keiki into the 21st century learners that they can be.

Mahalo for your consideration,

Allan J.N. Lau

House Committee on Finance

Friday, April 1, 2022
3:00 PM
Via Videoconference
Hawaiʻi State Capitol Conference Room 308

Senate Bill 2142 SD1 HD1, Relating to Computer Science

Person Testifying: Luca Barcenilla

Position: **Support of SB 2142 SD1 HD1**

Aloha e Chair Luke, Vice Chair Yamashita, and members of the Committee on Finance:

My name is Luca Barcenilla and I am a Hawaiʻi public school teacher that has been teaching computer science for several years within the Hawaiʻi Department of Education and previously at one of our Hawaiian-focused charter schools. I strongly support SB 2142 SD1 because I believe that it will provide incredible CS learning experiences for our haumāna and pave the way for them to be college and career-ready.

Hawaiʻi has made remarkable progress in the advancement of computer science (CS) courses within the DOE and I am thrilled that my school is able to provide our haumāna with CS courses at the middle school level. Currently, my school is planning on offering one CS course at the high school level and there are dozens of public high schools in Hawaiʻi that offer CS-designated or career and technical education (CTE) CS-related courses. With your support, more DOE high schools can offer CS courses and provide haumāna with an incentive to take these courses as they will fulfill a portion of their DOE high school graduation requirements.

This bill provides haumāna with an opportunity to explore a different career option that will prepare them to be successful in our technology-driven society. I ask for your support of this bill so we can provide haumāna with an option to choose courses that will count towards their graduation requirements and give them a leg up on college and career readiness.

Mahalo for the opportunity to share my manaʻo and for your continued efforts to provide our haumāna with rich learning experiences and opportunities to pursue their CS education.

Luca Barcenilla

SB-2142-HD-1
Submitted on: 3/31/2022 2:57:30 PM
Testimony for FIN on 4/1/2022 3:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Patrick Gilbert	Individual	Oppose	Written Testimony Only

Comments:

I am not submitting as UH instructor but as myself as a professional and knowledgeable person of the broad scope of CS eduction in hawaii for at least 2 decades.

The bill should not be needed and you have tried before. And, much of the bill's requirements shows total ignorance of what is "computer science".

MORE IMPORTANT - -you use CODE.ORG (an advocacy group) and you site their extremely dubious and error prone statistics that are also very old. It is laughable that you would have to go to an outside organization to learn what OUR DOE is doing -- and so it is really full of errors and overstatements. SAD!

I support the idea of technology and its various options but to label it COMPUTER SCIENCE means you don't even understand what computer science is. You confuse computer science with technology and application.

I know its no sense writing to you because this is just a FOR SHOW bill as other have been in the past.