



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

Date: 02/11/2022

Time: 03:15 PM

Location: CR 229 & Videoconference

Committee: Senate Education
Senate Higher Education

Department: Education

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

Title of Bill: SB 2142 RELATING TO COMPUTER SCIENCE.

Purpose of Bill: 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 UH to establish computer science pathways for students majoring in education. Requires teacher licensing and certification to include computer science. Appropriates funds.

Department's Position:

The Hawaii State Department of Education (Department) supports the intent of SB 2142 and respectfully offers comments on this measure relating to computer science.

The Department supports the measure to allow computer science to fulfill up to two credits of world language, fine arts, or career and technical education high school diploma credits. However, the Department considers computer science as a separate subject area from world language, fine arts, and career and technical education and believes that adding computer science to the list of subject area options may be more appropriate.

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

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 this opportunity to provide testimony on SB 2142.

DAVID Y. IGE
GOVERNOR



JOHN S.S. KIM
CHAIRPERSON

STATE OF HAWAII
STATE PUBLIC CHARTER SCHOOL COMMISSION
('AHA KULA HO'ĀMANA)

<http://CharterCommission.Hawaii.Gov>
1111 Bishop Street, Suite 516, Honolulu, Hawaii 96813
Tel: (808) 586-3775 Fax: (808) 586-3776

FOR: SB 2142 Relating to Computer Science
DATE: February 11, 2022
COMMITTEE: Senate Committee on Education and
Senate Committee on Higher Education
ROOM: Conference Room 229 & Videoconference
FROM: Yvonne Lau, Interim Executive Director
State Public Charter School Commission

Chair Kidani, Chair Kim, and members of the Committees:

The State Public Charter School Commission ("Commission") appreciates the opportunity to provide testimony in **SUPPORT with COMMENTS on SB 2142** 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 UH to establish computer science pathways for students majoring in education. Requires teacher licensing and certification to include computer science. Appropriates funds.

The Commission respectfully requests that the committee consider also including language that includes those students who would want to teach in a public charter school as well. Specifically in Section 3, of the bill, page 2, line 9-11, we offer the following amendments:

"The purpose of the scholarship program shall be to increase computer science knowledge among Hawaii's department of education teachers and public charter school teachers."

and Section 3, page 2, lines 12-16:

"(b) Subject to available funds, the University of Hawaii shall award scholarships in the amount of @1,000 for each student that completes a course in computer science

and is also working towards a degree to become a teacher within the department of education or a public charter school."

Thank you for the opportunity to provide this testimony.



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the
Senate Committee on Education and
Senate Committee on Higher Education
Friday, February 11, 2022 at 3:15 p.m.

By
Nathan Murata, Dean
College of Education
And
Michael Bruno, PhD
Provost
University of Hawai'i at Mānoa

SB 2142 – RELATING TO COMPUTER SCIENCE

Chairs Kidani and Kim and members of the committees:

Thank you for the opportunity to testify in support of the intent of SB 2142, relating to computer science, provided that its passage does not replace priorities in our BOR approved budget.

The University of Hawai'i, College of Education (COE) offers comments to the following:

§302A Computer Science; diploma substitution.

The COE defers comments to the Hawaii 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 Hawaii 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 Hawaii. 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."

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.
- (c) The COE requests a change in language to: The University of Hawaii shall submit pathway programs to the HTSB for computer science licensure approval, thereby providing opportunity for all students completing the pathway under this section to be eligible to add a computer science license to an elementary or secondary teaching license, or to acquire an initial teaching license in computer science.

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 Hawai'i 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

- (d) 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.



1200 Ala Kapuna Street ♦ Honolulu, Hawaii 96819
Tel: (808) 833-2711 ♦ Fax: (808) 839-7106 ♦ Web: www.hsta.org

Osa Tui, Jr.
President

Logan Okita.
Vice President

Lisa Morrison
Secretary-Treasurer

Wilbert Holck
Executive Director

TESTIMONY BEFORE THE SENATE COMMITTEES ON EDUCATION AND HIGHER EDUCATION

RE: SB 2142 - RELATING TO COMPUTER SCIENCE

FRIDAY, FEBRUARY 11, 2022

OSA TUI, JR., PRESIDENT
HAWAII STATE TEACHERS ASSOCIATION

Chairs Kidani, Chair Kim, and Members of the Committees:

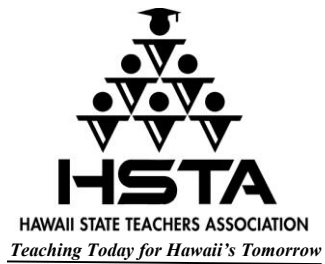
The Hawaii State Teachers Association **supports SB 2142** relating to computer science.

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 Hawai'i 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



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Osa Tui, Jr.
President

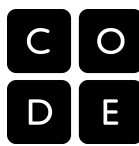
Logan Okita.
Vice President

Lisa Morrison
Secretary-Treasurer

Wilbert Holck
Executive Director

classroom instruction that are grade-level and subject-area appropriate."

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



February 11, 2022

Re: SB 2142; Support

Dear Chair Kidani, Chair Kim, and Members of the Senate Committees on Education and Higher Education,

Code.org enthusiastically supports SB 2142, which 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 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 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.

Though we strongly support the bill as written, we have a few suggestions to amend the bill language to increase opportunities for more students and teachers:

- 1) Change the deadline in section 1 to a later date to ensure an adequate timeline for implementation.
- 2) Instead of allowing two computer science courses to substitute for the world language, fine arts, or career and technical education courses, add “computer science” as a fourth option.
- 3) Broaden the Computer Science in Teaching Scholarship program to allow in-service teachers and pre-service teachers to apply for funding for any preparation for teacher certification in computer science, including test fees for the required Praxis assessment in computer science.

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

Aloha `auinala Chair Kidani, Chair Mercado Kim, and Members of the Education and Higher Education Committees,

As a Preschool-5th grade Computer Science teacher at Queen Ka'ahumanu Elementary, and a parent of a son at Kalani High & daughter at UHManoa, I encourage your support of SB2142.

When I took Computer Programming at the UHManoa College of Education, shh don't tell anyone but bruh it was so boring! The saving grace were the rolling desk chairs that we could scoot & skuttle around on to rescue our minds from deep sleep oblivion.

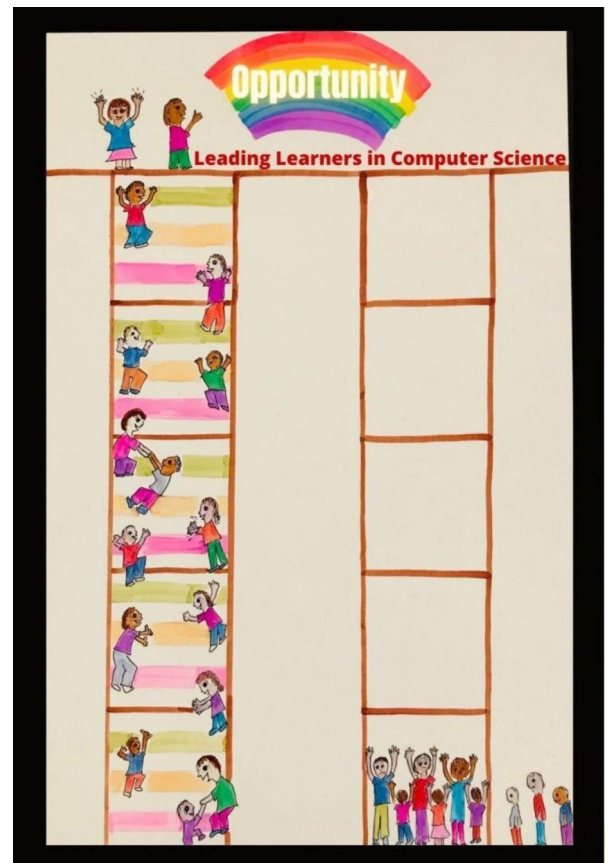
If you had asked me then, if I thought Computer Science was for everyone, I would have said "Heck No!" as I wiped away sweat & tears. Computer Science was not for everyone YET. That was decades ago. Fast forward! Now we have experienced incredible innovations & instrumental contributions to improve Computer Science instruction. Collaborative efforts of the smartest and kindest minds in Computer Science have brought upon amazing advances in Computer Science education.

Computer Science is going through a learning revolution and 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 a very 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. He learned coding and robotics in elementary, yet when he got to middle school didn't have Computer Science experiences. At Kalani, he is learning Computer Science from one of Hawaii's best Computer Science teachers. He enjoys Computer Science class, but doesn't feel confident to continue after this year. I wonder if we can 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



**Growing up to be
Lead Learners.
Making steps to be
Lead Learners.
Raising the roof for
Lead Learners!
Woot, woot, woot, woot!**

DAVID Y. IGE
GOVERNOR



CRAIG K. HIRAI
DIRECTOR

GLORIA CHANG
DEPUTY DIRECTOR

EMPLOYEES' RETIREMENT SYSTEM
HAWAII EMPLOYER-UNION HEALTH BENEFITS TRUST FUND
OFFICE OF THE PUBLIC DEFENDER

STATE OF HAWAII
DEPARTMENT OF BUDGET AND FINANCE
P.O. BOX 150
HONOLULU, HAWAII 96810-0150

ADMINISTRATIVE AND RESEARCH OFFICE
BUDGET, PROGRAM PLANNING AND
MANAGEMENT DIVISION
FINANCIAL ADMINISTRATION DIVISION
OFFICE OF FEDERAL AWARDS MANAGEMENT (OFAM)

WRITTEN ONLY
TESTIMONY BY CRAIG K. HIRAI
DIRECTOR, DEPARTMENT OF BUDGET AND FINANCE
TO THE SENATE COMMITTEES ON EDUCATION
AND HIGHER EDUCATION
ON
SENATE BILL NO. 2142

February 11, 2022
3:15 p.m.
Room 229 and Videoconference

RELATING TO COMPUTER SCIENCE

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

Senate Bill No. 2142: allows the 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.



david.miyashiro@hawaiikidscan.org
hawaiikidscan.org

David Miyashiro
Executive Director

February 11, 2022

Committee on Education
Senator Michelle N. Kidani, Chair
Senator Donna Mercado Kim, Vice Chair

Committee on Higher Education
Senator Donna Mercado Kim, Chair
Senator Michelle N. Kidani, Vice Chair

Aloha Chairs Kidani and Kim, Vice Chairs Kim and Kidani, and Members of the Committees,

HawaiiKidsCAN strongly supports SB2142, 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 UH 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

SB2142 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 a flex credit that can substitute for a core requirement, either in math, science, or the spot held for World Language, Fine Arts, and/or Career and Technical Education / JROTC.

SB2142 also takes a bold approach regarding increasing the CS teacher pipeline coming from the higher education level. HawaiiKidsCAN is supportive of any actions that result in making it easier or more attractive to become a CS teacher in our K-12 public schools.

We did want to note that we anticipate the Hawaii Board of Education and/or the University of Hawaii may oppose SB2142 on the grounds of the legislature overstepping its policy authority. If that is the case, we strongly urge both institutions to consider adding these topics to an upcoming agenda for further discussion on their end so that legislation is not needed.

Mahalo for your consideration,

David Miyashiro
Founding Executive Director
HawaiiKidsCAN

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



TECHNET
THE VOICE OF THE
INNOVATION ECONOMY

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February 8, 2022

The Honorable Donovan Dela Cruz
Hawaii State Capitol
415 South Beretania Street, Room 208
Honolulu, HI 96813

Re: SB 2142 – Relating to Computer Science - SUPPORT

Dear Senator Dela Cruz,

TechNet respectfully submits this letter in strong support of SB 2142, which makes a series of important proposals to enhance computer science access and opportunity for Hawaiian students.

TechNet is the national, bipartisan network of technology CEOs and senior executives. Our diverse membership includes dynamic American businesses ranging from startups to some of the most recognizable companies in the world. TechNet represents over four million employees and countless customers in the fields of information technology, e-commerce, sharing and gig economies, advanced energy, cybersecurity, venture capital, and finance.

Computing is the fastest-growing, highest-paying, and largest sector of new jobs in the country. It is used in virtually every field, making it foundational knowledge for those entering the job market. Providing increased access to computer science education and career pathways is a critical step toward ensuring that the next generation of Hawaiians remain competitive in the global economy.

For these reasons, TechNet strongly supports SB 2142. If you have any questions regarding TechNet's support of this bill, please contact Lia Nitake, Deputy Executive Director, at 310-940-5506 or Lnitake@technet.org.

Sincerely,

Lia Nitake
Deputy Executive Director, California and the Southwest
TechNet



Purple Mai'a Foundation

98-820 Moanalua Road, #15-547

'Aiea, HI 96701

kokua@purplemaia.org

February 11, 2022

Committee on Education

Senator Michelle N. Kidani, Chair

Senator Donna Mercado Kim, Vice Chair

Committee on Higher Education

Aloha Chairs Kidani and Kim, Vice Chairs Kim and Kidani, and Members of the Committees,

Purple Mai'a Foundation strongly **supports SB2142**, 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 Hawai'i to encourage students majoring in education to take a computer science course; requires UH to establish computer science pathways for students majoring in education; requires teacher licensing and certification to include computer science; and appropriates funds.

Native Hawaiians and Hawai'i's youth generally have much to offer as computer scientists and more broadly as innovators and technologists. This bill align's with our organization's belief that we must increase access to tech education while also grounding students in the knowledge that their ancestors were Indigenous innovators. We believe this kind of culturally-grounded CS and STEM education can broaden students' career options and unlock their ability to use their talents and perspectives to serve their communities and lands through technology and innovation.

This bill will open up opportunities for the students of Hawai'i to experience and take part in computer science creating a foundation for future work here at home. When you consider that many of the job opportunities in Hawai'i are tech related with an average salary of \$83,548 you begin to see that this small change could bring big rewards to our community as a whole.

Mahalo for your consideration,

Donavan Kealoha

Chief Executive Officer, Purple Mai'a

www.purplemaia.org

SB-2142

Submitted on: 2/10/2022 11:28:05 AM

Testimony for EDU on 2/11/2022 3:15:00 PM

| Submitted By | Organization | Testifier Position | Remote Testimony Requested |
|---------------------|--|---------------------------|---------------------------------------|
| Ian Kitajima | Testifying for Oceanit Laboratories, Inc. | Support | No |

Comments:

Oceanit is in support of SB2142.

SB-2142

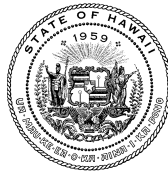
Submitted on: 2/9/2022 8:56:09 PM

Testimony for EDU on 2/11/2022 3:15:00 PM

| Submitted By | Organization | Testifier Position | Remote Testimony Requested |
|------------------|--|--------------------|----------------------------|
| Leinaala Kealoha | Testifying for Department of Education | Support | No |

Comments:

As a special education, computer science, and cyber security educator, I see all of the benefits that students can take advantage of through learning about and participating in computer science education. The skills and knowledge they grow into through computer science are those that indispensable and equally universally fitting to all aspects of their life. It is not just computer science majors that benefit from learning this content, it is fitting for anyone and everyone.



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

**Senate Committee on Education
Senate Committee on Higher Education**

Friday, February 11, 2022
3:15 p.m.
Via Videoconference
Hawaii State Capitol, Room 229

Senate Bill 2142, Relating to Computer Science

Dear Chair Kidani, Chair Kim, and Members of the Committees:

The Board of Education ("Board") respectfully provides comments on SB 2142, which would, among other things, allow Department of Education students to fulfill world language, fine arts, or career and technical education graduation requirements with computer science.

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 opposes Sections 1 and 2 of this measure. These sections would essentially alter the Board's graduation requirements it set 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 these committees to delete Sections 1 and 2 of this measure.**

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

A handwritten signature in cursive script that reads "William N. Arakaki".

Sincerely,

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

SB-2142

Submitted on: 2/9/2022 1:28:02 PM

Testimony for EDU on 2/11/2022 3:15:00 PM

| Submitted By | Organization | Testifier Position | Remote Testimony Requested |
|------------------------------|--------------|--------------------|----------------------------|
| Sarah "Mili" Milianta-Laffin | Individual | Support | No |

Comments:

February 11, 2022

Committee on Education

Senator Michelle N. Kidani, Chair

Senator Donna Mercado Kim, Vice Chair

Committee on Higher Education

Senator Donna Mercado Kim, Chair

Senator Michelle N. Kidani, Vice Chair

Aloha Chairs Kidani and Kim, Vice Chairs Kim and Kidani, and Members of the Committees,

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 category, I strongly support the ideas and goals of SB 2142. 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.

With Aloha,

Sarah "Mili" Milianta-Laffin

Ilima Intermediate School CS Teacher

SB-2142

Submitted on: 2/9/2022 2:59:01 PM

Testimony for EDU on 2/11/2022 3:15:00 PM

| Submitted By | Organization | Testifier Position | Remote Testimony Requested |
|---------------|--------------|--------------------|----------------------------|
| Brook Chapman | Individual | Oppose | No |

Comments:

I am writing to oppose SB 2142. The proposed changes identified in the bill need to take place within the relevant institutions and the bill represents legislative overreach. As a faculty member of the University of Hawai'i College of Education, I am aware of significant work being done to increase computer science coursework and readiness. This work is being done thoughtfully and in collaboration with other stakeholders. Furthermore, we do not want to prioritize computer science at the expense of other critical subject areas such as languages, the arts, and CTE.

February 11, 2022

Aloha Chair Kidani, Chair Mercado Kim, Education Committee, and Higher Education Committee,

My name is Lizzy Pine and I am a computer science teacher at Kealakehe High School. I'd like to voice my strong support of SB2142: Relating to Computer Science.

While I could repeat what I know others will say about the growth of well-paying computing jobs, I will instead focus on the impact that increasing access to computer science education will have on our keiki right now.

Learning computer science, after all, helps students see the importance of attention to detail, ethics around the impacts of technology, and the value of failing, failing, and failing some more before finally succeeding. The fact is, learning does not happen in a silo. Students cannot help but apply the knowledge, skills, and mindsets they learn in one area to another.

Here is the problem with access to computer science education that I have seen in the trenches of public school life: Assuming a school has a qualified computer science teacher who is willing to teach classes, the students who can take those classes are those who are free to choose an elective. This has the unintended effect of shutting out students who need to use their elective time to retake a core class that they failed last year. By broadening CS credits to count toward world language, fine arts, or career and technical education graduation requirements, more students will have access to CS education.

If we continue to only offer computer science as an elective at our high schools, we will continue to see a significant gap in the diversity of our AP computer science classrooms and beyond. Students need to experience success early and often in order to give computer science a chance.

Thank you for your consideration of this legislation.

Lizzy Pine

SB-2142

Submitted on: 2/9/2022 9:00:50 PM

Testimony for EDU on 2/11/2022 3:15:00 PM

| Submitted By | Organization | Testifier Position | Remote Testimony Requested |
|---------------------|--------------|--------------------|----------------------------|
| Raul Nohea Goodness | Individual | Comments | No |

Comments:

I'm a kanaka software developer who was educated in Hawaii public schools. I think there is a strong need for more computer science education pathways. It seems fair to substitute for technical education requirements, but does not seem right to substitute for language or arts requirements.

Senate Committee on Education
Senate Committee on Higher Education

Friday, February 11, 2022

3:15 PM

Via Videoconference

Hawai'i State Capitol Conference Room 229

Senate Bill 2142, Relating to Computer Science

Person Testifying: Luca Barcenilla

Position: Support of SB 2142

Aloha e Chair Kidani, Chair Mercado Kim, and Members of the Committee:

My name is Luca Barcenilla and I am a Hawai'i public school teacher that has been teaching computer science for several years within the Hawai'i Department of Education and previously at one of our Hawaiian-focused charter schools. I strongly support SB 2142 because I believe that it will help pave the way for incredible CS learning experiences for our haumāna.

Hawai'i 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 does not offer CS courses at the high school level but there are 44 public high schools that do 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.

Initially, I started off my teaching career as an English teacher, but my passion for educational technology steered me towards CS and I was lucky to have a po'o that gave me an opportunity to do so. In the DOE my new po'o shares my passion for CS and we seek out opportunities to provide our haumāna with CS-designated and CTE CS-related opportunities. SB 2142 will provide incentives for haumāna to pursue their CS education journey at the college level and help strengthen our schools by providing our haumāna with a larger pool of kumu with a background in CS.

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

Luca Barcenilla

February 10, 2022

Committee on Education
Senator Michelle N. Kidani, Chair
Senator Donna Mercado Kim, Vice Chair

Committee on Higher Education
Senator Donna Mercado Kim, Chair
Senator Michelle N. Kidani, Vice Chair

State Capitol
415 South Beretania Street
Honolulu, Hawaii, 96813

Aloha Senators Kidani, Luke, and Members of the Committee:

As a computer science teacher at Kalani High School, I wholeheartedly support SB2142 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 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, and I therefore invite your consideration and support.

Mahalo for your time and attention.

Respectfully,

Michael P. Ida, PhD

SB-2142

Submitted on: 2/10/2022 9:46:07 AM

Testimony for EDU on 2/11/2022 3:15:00 PM

| Submitted By | Organization | Testifier Position | Remote Testimony Requested |
|--------------|--------------|--------------------|----------------------------|
| Natalie Cruz | Individual | Oppose | No |

Comments:

In response to the proposed SB 2142 Relating to Computer Science, I am compelled to express my opposition to the measure due to the adverse affects it would have on our school programming, our students' ability to understand different perspectives and the adverse affects it has for those that seek employment in the tourist industry. Computer Science is not an equivalent exchange for World Language or Fine Arts. Furthermore, students need World Language more than ever, not only because it is a 21st Century Skill but because particularly in Hawai'i, we live in a multilingual, multiethnic and multiracial state, that relies on tourism, with the Indigenous Hawaiian community that has suffered tremendous damage due to previous educational policies that almost brought their language to extinction.

To be clear, an ever increasingly connected, multicultural world our ability to communicate accurately and respectfully through various languages has become a necessary skill. Embedded in every language as it is spoken in each region of the world is the perspective of a group of people. Communication in a language devoid of worldview renders communication inept. In other words, in order to communicate effectively one must have a high degree of multicultural competence. Multicultural competence is an understanding of ones own word view, as well as the practices and world views of multiple other cultures which allow a person to communicate and interact respectfully among people of different cultures. It also indicates a positive attitude towards cultural differences and flexibility in communication. This includes but is not limited to pragmatics (such as register, turn taking and honorifics) and non verbal communication (such as gestures and bowing).

World Language programs in the Hawai'i give students the opportunity to learn or refine a language other than English. Culture studies within the language classes teach cultural competency. While multilingual and multicultural understanding are a necessary skill set for the vast majority of students personally and professionally, students are only required to take World Language classes for two years. Our students' reality is so far disconnected from language requirements, that a simple addition of more years of one language will not do, although it would be a good start. To serve our students as they face the reality of a plurilingual and pluricultural society, an overhaul of World Language programming is required. This means, we need students to be studying languages other than English for a much longer extent during their educational programming. The proposed bill SB 2142 is going in entirely the wrong direction. If we are to face the problems of todays world, from issues such as climate change, hate crimes against our

fellow Asians, Hawaiians, Pacific Islanders and African Americans, and so much more, we need an educational system that teaches our children other languages so they can understand other people's perspectives and collaborate with them.

At a time when the planet is facing not only an incredible loss of species, we are also facing an incredible loss of languages. These languages, once gone, will never be able to be recovered. Languages "contain specific and significant cultural and ecological knowledge" (Lee-Hammond & Jackson-Barrett, 2019, p. 306) that if lost are irreplaceable. Indeed "It is within the myriad cultures and diverse languages of the world that the rich treasures of human knowledge are stored. When a language dies, something of its unique perspective on human experience vanishes with it" (Tao, 2019, p. 41).

As a citizen of Honolulu, a parent, a tax payer, a World Language teacher, a PhD student at UH Mānoa in Curriculum Design and Instruction, a multilingual person with multilingual and multiethnic children, I urge the Senate to ask themselves what kind of world they would like to live in. Would you like to live in a world that values diversity? Would you like to live in a world where children are taught to understand how other people think and why they act? Or would you like to be part of the Senate that effectively stunts our students ability to learn other languages and therefore understand other people's cultural viewpoints? If you would like to be part of the solution to these bigger problems, then you must oppose SB 2142. Computer science is not equivalent to World Language. It is an illogical, irrational, and ill advised idea. Thank you for your thoughtful consideration.

Lee-Hammond, L., & Jackson-Barrett, E. (2019) Indigenous Children's Linguistic Rights in the 21st Century: Intentions and Tensions in Practice. *International Journal of Early Childhood* 51, 301-318.

Tao, G. (2019). Globalization of English: Loss of Minority Languages and Cultural Destruction. *International Forum of Teaching and Studies*, 15(2), 36-44.

SB-2142

Submitted on: 2/10/2022 11:17:46 AM

Testimony for EDU on 2/11/2022 3:15:00 PM

| Submitted By | Organization | Testifier Position | Remote Testimony Requested |
|---------------------|---------------------|---------------------------|-----------------------------------|
| Paul M Chandler | Individual | Oppose | No |

Comments:

Dear Senators.

This bill is horrible. There is no way computer classes, which teach students less than 500 terms, in any way is similar to learning a language, where students learn more than 5000 words that can be used in real world communication. I believe we all support computer and technology instruction, but this should never be through sacrificing language learning, especially in our beloved Hawaii, one of the most multilingual and multicultural places in the world. Please do NOT support SB 2142.

Sincerely

Dr. Paul M Chandler

SB-2142

Submitted on: 2/10/2022 1:30:21 PM

Testimony for EDU on 2/11/2022 3:15:00 PM

| Submitted By | Organization | Testifier Position | Remote Testimony Requested |
|----------------------|--------------|--------------------|----------------------------|
| Angela Haeusler, PhD | Individual | Oppose | No |

Comments:

Dear Committee Members,

In my role as the program manager of a federally funded language technology center at the University of Hawai‘i at Mānoa (UHM) I am fortunate to witness on a regular basis that world language education and computer science can offer students a 21st century education if these academic subjects are allowed to thrive together instead of promoting one at the expense of the other. The latter is what SB 2142 intends to set in motion.

At my UHM workplace I encounter well over one hundred college students every year who are passionately engaged in technology projects, internships, and hacker events. They combine their proficiency in languages such as Chinese, Korean, Portuguese, Russian, Farsi, and Arabic with a passion for programming, web applications, virtual reality, and artificial intelligence. The students attend public universities in different areas of the United States, including Hawai‘i. Each of these students has made a conscious decision to major in a world language and some complement (not substitute!) their language studies with a major in computer science or other technology-focused programs, understanding their world language skills give them a competitive advantage on the national and international job market after graduation. Research proves the students are correct in their perception.

Data collected from stakeholders in STEM industries, in particular IT, highlight that intercultural communication and world language skills are critical career competencies when it comes to software development, team-building, and conflict management in culturally diverse STEM workplaces. In fact, IT companies report that, while they are able to offer further professional development to their staff in IT-related areas, they welcome prospective employees with world language skills upon hire, as language classes cannot be a focus of their employee training programs. Meanwhile, research evidence reveals that the structural setup in U.S. education, which segregates STEM fields such as computer science from world language education, - similar to the proposed SB 2142 - , severely disadvantages and even mentally impacts students who desire to integrate their language learning or existing multilingual competencies with their interest in STEM coursework, forcing them to neglect, rush, or quit their language studies to dedicate more or all of their time to STEM.

Clearly, these findings demonstrate that the promotion of computer science at the expense of world languages jeopardizes rather than bolsters our local students’ prospects of employability in high-demand industries. I would like to urge Hawai‘i State Senators to support students in our

public school system with legislative decisions that will expand rather than limit their opportunities of participation in a technology-driven AND multilingual world. Please do not cast your vote for the further erosion of world language credits by pitting them against computer science and a lopsided infrastructure. Practical and visionary educational policies need to see the interconnectedness between world languages and technology.

Thank you for the opportunity to testify.

Angela H. Haeusler, PhD

University of Hawai‘i at Mānoa

Jeenna Canché
Spanish Teacher, Maui High School
jeennacanche@gmail.com

February 10, 2022

Members of the Committee,

Please accept my testimony in opposition of Senate Bill HB2142 relating to computer science. I have been a World Languages educator and advocate in the state of Hawaii for 16 years, and I firmly believe that multilingual education is a vital part of our community and our interconnected world. It is through learning about other languages and cultures that we learn to respect one another and that we can achieve a more peaceful world. Although I completely agree that it is important to promote computer science education, it is important to remember that it is not interchangeable with World Languages. Therefore, I ask that this bill not be passed as is, because if it does, we will be promoting computer science at the expense of World Languages.

Mahalo,
Jeenna Canche

Testimony in OPPOSITION to SB2142, RELATING TO COMPUTER SCIENCE

COMMITTEE ON EDUCATION

Senator Michelle Kidani, Chair

Senator Donna Mercado Kim, Vice Chair

COMMITTEE ON HIGHER EDUCATION

Senator Donna Mercado Kim, Chair

Senator Michelle Kidani, Vice Chair

Hearing Date: 2/11/2022

LATE

Dear Chairs, Vice Chairs and Committee Members,

I am writing in OPPOSITION to SB 2142, a bill that fails to take into consideration the place of computer science in Hawai'i's K-12 public school curriculum. My familiarity with computer science comes from my home upbringing and my formal education. My mother worked for IBM in her first job out of college, and later returned to the workforce as an employee of the former Computer Sciences Corporation (CSC), learning the ADA coding language and participating in testing the real-time programming for the Navy's Aegis defense system when it was being developed. She was a smart lady who, back in 1970s, knew that computers were the future, and that her children should include computer science classes in their education. I took courses on coding, and worked as an intern at CSC in high school, and took courses on coding and artificial intelligence in college. As a graduate student in the 1980s, I read papers and attended lectures on new advances in parallel processing and neural networks. I am no expert, but I have a comfortable understanding of computer science as a field, and, as a lifelong educator (32 years at the college level), I have seen three decades of changes in education, and have taken note of the steady, monotonous drumbeat of STEM and "Tech" growing louder over the past decade.

As a private citizen who cares deeply about the long-term success of our children and our state, I have deep concerns about the goals and processes proposed in this bill. First, this bill proposes to squeeze computer science courses into an already well-populated space for electives. Electives are offered to provide students with breadth and diversity. The arts, world languages and career and technical education courses provide students with opportunities to explore their creativity and their local and global communities. They move students into spaces that are increasingly underrepresented in a child's education. Allowing students to explore and develop proficiencies in these areas enables the child to expand their presence in the world and open themselves to new ideas, interlocutors, and sources of inspiration. This domain is priceless for students who avail themselves of these opportunities. Both of my children, proud graduates of Kalani High School, took courses in the arts (music and art, specifically) and continue to pursue and expand their interests in these fields, respectively, even in their college, and post-college lives. Allowing computer science courses to infringe on this oh-so-small opportunity to explore these areas is a disservice to our children.

Second, as I've noted above, computer science in schools is not new. It is a field that has come of age, and, as such, it should take its proper place in K-12 education, indeed, it is somewhat surprising that this has not already happened. I would point to the exceptional work that the DOE has done over the past decade working on developing and implementing the Nā Hopena A'o (Hā) framework. The implementation of this framework involved extensive consultation

within the DOE and with the community. The framework was implemented through consultation with the State Board of Education, as well. The adoption of the framework was a priority for the state, and the value of its well-defined outcomes are clear.

The bill under consideration proposes to create a fully-elaborated path to licensure in teaching computer science in two years while failing to consider just how the instruction of computer science courses can be implemented in a meaningful and effective manner across the K-12 curriculum. The goals of this bill are unclear: While one might imagine that the focus is on developing instructional content that is valuable and meaningful for our students, there is not one statement to this effect in the bill. Moreover, as noted above, the current proposal stands to infringe on student access to other areas of the curriculum that have already been reduced to a mere two courses. In sum, the bill does a disservice to our students, our educators, our Board of Education, and to the state, all of whom have a right to expect that an area of study as significant as computer science would be incorporated into K-12 education with a well-considered consultative process informed by local and national expertise. This includes a recognition that all teachers can benefit from training in this critical area of 21st century expertise, so that they can bring computer science into their classrooms, and incorporate it into their instruction. This approach to computer science -- Computer Science across the curriculum -- is the focal concern of a Summit to be hosted by Computer Science Teachers of America, the national organization of computer science teachers, in April of this year. Our children, our DOE and our state deserve a bill that promotes a broad approach to computer science in our DOE schools, building buy-in and finding appropriate ways to grow this area of education. This bill fails on all counts.

For the reasons outlined above, I oppose SB 2142.

Thank you for your consideration of these concerns,

Dina R. Yoshimi, Ph.D.
Aiea, O'ahu



LATE

February 11, 2022

Dear Chair Kidani, Vice Chair Kim, and Members of the Committee:

The Joint National Committee for Languages and the National Council for Languages and International Studies (JNCL-NCLIS) represents over 300,000 language educators and professionals throughout the United States. On behalf of our members, I write to you today to oppose the substitution of world language credits with computer coding courses outlined in SB 2142. We believe that this legislation proceeds from three deeply flawed premises, namely: that world language study has no benefit to high school students, particularly students with disabilities; that the study of computer coding and world languages is essentially the same and that one can be substituted for another; and that biliteracy is irrelevant to the workplace. We could not disagree more.

Knowledge of a second language has been shown to confer a wide array of cognitive benefits on the individual at all life stages. In early childhood, acquisition of a second language has strong, positive behavioral and developmental effects, including greater cognitive flexibility and improved problem solving. In K-12 schools, language education, particularly the growing trend of dual language immersion, improves test scores for native English speakers and English learners alike and narrows achievement gaps. The University of Hawaii recognizes these benefits, with world language courses counting towards Freshman Admission Requirements. For an adult, language proficiency has been associated with stronger executive function in the brain, greater likelihood of recovery from stroke, and delayed onset of Dementia-related ailments. Knowledge of a foreign language pays its dividends over a lifetime.

Further, studying computer coding and world languages are fundamentally dissimilar activities, yielding results that are not equivalent. While computer coding is unquestionably a valuable skill, its study does not allow students to gain the intercultural skills, insight, and perspectives to know how, when, and why to express what to whom. Additionally, unlike world language study, computer coding cannot be used by people to interact and negotiate with other people. Finally, we must note that the coding community itself suggests that the most logical place to locate coding would be among the sciences and mathematics, not in world languages.

Finally, we assert that the bill's underlying assumption that businesses value computer coding skills and view world language skills as irrelevant is belied by the facts. A 2019 report from the American Council on the Teaching of Foreign Languages, entitled "Making Language Our Business," found the following:

- 9 out of 10 US employers rely on employees with world language skills.
- 1 in 3 foreign language-dependent employers reports a language skills gap.
 - The construction sector (40%) and healthcare and social assistance sector (37%) report the greatest foreign language skills gap.

"Ensuring that Americans have the opportunity to learn English and at least one other language."

Joint National Committee for Languages • National Council for Languages and International Studies

202-580-8684 | www.languagepolicy.org | info@languagepolicy.org

- 1 in 4 employers lost business due to a lack of foreign language skill.
 - 35% of employers in the construction sector and 29% in the professional and technical services sector are most likely to be unable to pursue or have lost business in the past three years due to a lack of world language skills.

If enacted, SB 2142 would steer students with disabilities away from world language study and potential workforce opportunities to their detriment, to the detriment of U.S. employers, and to the detriment of the U.S. economy.

All Hawaii students need and deserve world language skills. Substituting computer coding for world languages will put Hawaii high school students at a significant disadvantage in school, in the workplace and throughout their lives. Therefore, to protect every student's right to a free and equal education that prepares them for higher education, the workforce and life, JNCL-NCLIS opposes SB 2142.

Sincerely,



Amanda Seewald
JNCL-NCLIS President