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Thirty-five years ago, visionary leaders in our state came together from industry, government, academia, military and the non-profit community for strategic dialogue on the future of our economy. Concerned about our over-dependence on the hospitality industry and challenges to large scale agriculture posed by foreign competition, they sought to add more legs to Hawaii's economic stool. They were mindful that our state was exporting our youth—a phenomenon known as the brain drain—with many young people leaving for mainland post-secondary education, and not returning because home did not offer an expanse of career options.

Our founders set us on a path to build a technology future that could attract back and retain our young people. This led to Maui Economic Development Board's formation in 1982 as a not-for-profit focused on diversifying and strengthening our economy. In the following years our sister organizations, Kauai, Hawaii Island, and Oahu Economic Development Boards were formed with similar missions. We are pleased to have the leadership of our neighbor island EDB partners with us today as we work together to grow Hawaii's innovation sector and requisite workforce.

In the late 1990's as we celebrated the success of the Maui Research & Technology Park and the addition of over 1000 new STEM jobs, something was glaringly apparent. Research confirmed the obvious, less than 1% of the new job hires had graduated from Hawaii high schools, and there were even fewer women working in technical fields, they remained segregated in traditional female occupations.

At that juncture, our Board made the tactical decision that half our resources and half our efforts would be directed to growing a homegrown talent pool. We put into practice the guiding principle that business development must be strategically aligned with workforce development. Toward that end, MEDB created the Women in Technology Project (WIT) in 1999 to work in partnership with educators and businesses to strengthen the STEM pipeline, while initiating programs to engage under-utilized resources including women and minorities pursuing STEM fields. The late Senator Inouye seeded our efforts with a congressionally directed appropriation to launch our pilot and demonstration initiative. Begun as a Maui County pilot, we soon expanded the reach statewide.

We explored where the STEM pipeline leaked and adapted, developed, and implemented programs that helped students persist. Today WIT offers a wide range of elementary school through career level (K-career) programs that have been successful in engaging students in STEM through hands-on and project-based learning, job shadowing, career experiences, mentoring, and internships. In addition, Hawaii's native traditions and values have been integrated within our programs so that students inherently understand the marriage between science and culture in our state.

MEDB was one of the first to recognize the direct correlation between successfully filling 21st century jobs and the ability of our teachers to prepare students with the critical thinking skills for science, technology, engineering, and math careers. Investing in those who teach continues to pay the biggest dividends. Providing STEM professional development and accredited workshops to more than 450 teachers annually remains a key underpinning of our program. We provide teachers with training in inquiry-based pedagogy and the tools to manage a student-directed classroom. We are humbled to say that WIT programs now impact over 53,000 students, stretching across the state with a presence on every island.

Our students are using WIT's original curriculum to design and build their own drones and become proficient in GIS/GPS mapping. They are learning the latest industry technologies such as Computer Aided Design, 3D printing, digital media, coding and robotics -- and using these tools to solve real world problems in their communities.

The following programs are part of our latest technology-driven initiatives.

STEMworks™ is WIT's signature service-learning program created specifically to educate and grow Hawaii's innovation sector.

STEMworks™ is a technology lab course using original STEM curriculum and is currently offered in 26 schools across the islands. The overall goal is to provide culturally-aligned and place-based STEM education through real community projects.

Offered as an elective from 5th through 12th grades, STEMworks™ student teams identify existing community problems or opportunities, each is tasked with creating a project design to test the solution using industry standard technology tools. During the process, the teams usually form a relationship with an industry partner, provide an approved deliverable, and build self-efficacy and satisfaction in their abilities to contribute to their community.

This past year, the program has expanded to offer our most popular STEMworks™ courses to students afterschool at participating middle school sites. Students who join the STEMworks AFTERSchool™ program can choose from a diverse range of curriculum including digital media, robotics, cybersecurity, coding, GIS, agriculture and much more.

Another cutting-edge program that has taken off statewide is Geotech Hawaii.

In this K-12 program, even grade school students are learning to use geospatial tools to explore their world, map local resources, cultural assets, and document community conditions and needs. MEDB brokered the first statewide licensure agreement with Esri, the GIS software leader, to provide free licensure to every classroom in Hawaii. WIT facilitates GeoTech teacher workshops, special student events, online support and standards-based curriculum development. By providing engaging environmental activities and cool tech devices, students become energized about solving problems and using their new knowledge to make a difference.

WIT's original **Island Energy Inquiry™ (IEI) program is the first clean energy science K-12 curriculum and accredited professional development program in Hawaii** and among the first in the nation. IEI has been remarkably successful with a near 90% implementation rate by its more than 500 trained teachers. The modules align with standards and have a focus on photovoltaics, wind energy, solar thermal energy and energy efficiency.

The program combines scientific inquiry with engineering design processes and materials. Teachers apply this new knowledge with hands-on activities in the classroom to help their students understand critical energy issues throughout our islands. We are grateful to the Office of Naval Research for their investment in IEI's development and our STEM pipeline programs. It is moving us toward our state's renewable energy goals and a future with energy prosperity.

Learning by interning is the most impactful program in our STEM pipeline strategies. We place 40 paid interns annually with local STEM employers, on every island in our state. The evaluations are stellar, with our employers asking for more. Both high school and college interns make significant contributions to the projects they are assigned to support. Their internship experiences have profound influences on their career choices.

It is because of the strong public/private and industry/education partnerships that MEDB is able to continually evolve and expand, the multi-faceted STEM platform that is already making great strides in building and retaining a skilled Hawaii workforce—a STEM workforce which is reflective of the rich diversity of our state. Our experiences demonstrate that we engage and retain girls/women and underrepresented populations by making STEM education relevant, meaningful, and purposeful.

Thank you Senator Hirono for bringing this field hearing to Maui County and for the honor of sharing our community efforts in STEM education and careers.