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Statement of
THEODORE E. LIU
Director

Department of Business, Economic Development, and Tourism
before the

SENATE COMMITTEE ON WAYS AND MEANS

Friday, March 28, 2008

9:30 AM

State Capitol, Conference Room 211

in consideration of
HB 2587, HD1, SD1
**RELATING TO MAKING AN APPROPRIATION TO ESTABLISH CREATIVITY
ACADEMIES.**

Chair Baker, Vice Chair Tsutsui, and members of the Committee.

The Department of Business, Economic Development, and Tourism (DBEDT) supports HB 2587, HD1, SD 1, as it is also part of the Administration's package (HB 3066 and SB 2988) which would establish Creativity Academies curriculum and programs for middle and high school students statewide. This collaborative initiative between the University of Hawaii Community Colleges, Hawaii Department of Education (DOE)-Career and Technical Education Pathways (CTE) program, the science, technology, engineering and math programs (STEM), digital media programs and the Creative Industries Division at DBEDT is a unique partnership dedicated to the creation of a standards-based curriculum that fuses arts, technology and sciences to reach a broader spectrum of students and empower them with skills necessary to succeed in the 21st century. Arts + Science = Innovation.

We note, however, that critical language detailing the program and key components important to the establishment of creativity academies have been deleted from this draft of HB2587, HD1, SD 1, specifically curriculum development, program partnerships and implementation plans, its partners and the pathways utilized to launch the pilot program. We request that this committee support reinstating the elements by amending the current draft of the Creativity Academies bill to include the language noted on the attachment to this testimony.

The Creativity Academies team will be meeting with the chair of the EDT committee this Friday to fully clarify the intent of the Creativity Academies program, as well as address the fiscal impacts of important elements added in the latest Senate draft, such as support for faculty and student participation in competitions off shore.

Keeping in step with the goals of the P-20 system, Creativity Academies will create a bridge from middle school to college to industry, including at-risk youth in middle and high school, fulfilling a need area identified by industry and educators including the DOE and UHCC leadership.

The Creativity Academies initiative will build upon best practices in Hawaii and other states that provide a robust and clear pathway from education to workforce development, in support of creating a pipeline of educational offerings throughout Hawaii's education system in the areas of STEM, new media arts and digital media.

With only 18 per cent of Hawaii's eighth graders testing proficient in mathematics, compared with 38 per cent among top states in the United States, the establishment of Creativity Academies is a crucial step to engaging these students, providing a pathway for exploration in the sciences and mathematics via creative disciplines in animation, game design, digital media and creative publishing.

As pointed out in recent dialogue between the Creativity Academies team, Maui High School Digital Media faculty, Clint Gima and Candy Suiso, Seariders' faculty and founder of the successful Waianae program, by blending the science standards and digital media disciplines in a Creativity Academies pathway students will receive a much more comprehensive skill set to help accelerate their potential and succeed in the 21st century workforce.

Hawaii also has an opportunity to be a leader nationally by developing a cohesive creativity-infused STEM curriculum for middle and high school students with contextual learning in creative exploration (STEM) and creative expression (New Media Arts) at its core.

Creativity Academies requests an appropriation of \$1,629, 474 to develop the program, including:

- Conducting an inventory on best and promising practices statewide
- Developing the turn-key curricula infusing the arts into STEM learning
- Implementing teacher training for all interested faculty statewide on Oahu at Kapiolani Community College

- Pilot testing the complete pathway program at Kapiolani Community College, Oahu as well as testing the middle school curriculum on a neighbor island
- Supporting hardware and software needs to ramp up program at participating schools
- Solicit additional funding from the National Science Foundation/ATE grants

Both the legislature and the administration have agreed that by providing Hawaii students better access to education in the areas of science, technology and the creative arts is crucial to the development of our innovation economy. The Creativity Academies fulfill this mission.

We urge you to support these amendments to HB2587, HD1, SD1, to ensure that the vision of the creativity academies initiative, as well as our digital media educational programs are developed to their full potential.

Thank you for this opportunity to address your committee.

Report Title:

Economic Development; Creativity Academies

Description:

Appropriates funds to support the development of the creativity academy program, including a turnkey digital media program.

(HB2587 HD1)

H.B. NO. 2587 HD SD1 -

AMENDED LANGUAGE REQUESTED
(highlighted in yellow)

A BILL FOR AN ACT

MAKING AN APPROPRIATION TO ESTABLISH CREATIVITY ACADEMIES.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. The legislature finds that Hawaii's economic policies have been continuously focused on developing its human and economic resources by creating and developing its innovation capacity. Studies reveal that Hawaii students experience a sharp decline in math skills particularly after the sixth grade, signaling a need to find new ways to engage Hawaii's students in the core skills needed to succeed in the 21st century. A major challenge in Hawaii's education system is in providing an adequate number of high school graduates with the skills related to basic science, technology, engineering, and mathematics that are needed to allow them to be adequately prepared for engineering or science programs at either a community college or four-year college.

In fact, according to the National Center for Public Policy and Higher Education, only 18 per cent of Hawaii's eighth graders test proficient in mathematics, compared with 38 per cent among top states in the United States.

The Americans for the Arts, a national nonprofit organization supporting arts education, reports that in order for the United States to maintain and expand its economy, America's schools must encourage more students to pursue careers in science, technology, engineering, and mathematics, and better prepare all students in the science, technology, engineering, and mathematics content areas. National studies are showing that adding a creative arts component to science, technology, engineering, and mathematics education significantly enhances the learning outcomes.

In a paper titled "How do you turn STEM into STEAM? Add the arts!" published in October 2007, Joan Platz, information coordinator for Ohio Alliance for Arts Education, states that "Ohio lawmakers are also concerned about STEM preparation and participation. Music and the arts are essential educational components for all students to learn, including students who are pursuing careers in the STEM areas. Educational opportunities in music and the arts first and foremost prepare students for competitive careers in the \$316,000,000,000 communication, entertainment, and technology industries as musicians, artists, dancers, actors, directors, choreographers, videographers, graphic designers, architects, photographers, designers, film

makers, arts administrators, and other professions. The growth of the visual technologies alone, from computer graphics to digital video, has had a tremendous impact on our nation's economy and the global economy."

According to "The Creative Industries Report", published by Americans for the Arts, more than 548,000 businesses nationwide are related to the arts and employ 2,990,000 people. In 2005, the research, economic analysis division of the department of business, economic development, and tourism reported that 28,884 people in Hawaii were employed in creative industries. Many of these arts-related jobs require employees to understand and apply higher order concepts in the science, technology, engineering, and mathematics content areas in addition to having a preparation in the arts. The knowledge, skills, attitudes, and behaviors students acquire from studying the arts have been identified by the Partnership for 21st Century Skills, and other organizations, as the skills needed to be successful in the global economy. These skills include creativity and innovation, critical thinking and problem solving, communication and collaboration, flexibility and adaptability, and social and cross-cultural skills.

The creativity academies partnership between the University of Hawaii Kapiolani Community College, the department of education career and technical education and digital media programs, and the creative industries division of the department of economic development and tourism seek to integrate the teaching, learning and use of science, technology, engineering, and mathematics and new media arts-related skills throughout Hawaii's education system by:

- (1) Locally developing a turnkey creativity academies curriculum that is responsive to the educational and workforce development needs of Hawaii, building upon best practices to create a standards based curriculum;
- (2) Pilot-testing this turnkey curriculum for the University of Hawaii, community colleges, and the department of education systems at Kapiolani Community College and a neighbor island community college involving area high school students in the first year of the program;
- (3) Developing and pilot-testing "teacher training program activities";

(4) Establishing an after-school program for middle school students in animation, game development, and creative publishing; and

(5) Establishing an after-school program for at-risk youth in animation, game development, and creative publishing.

The creativity academies will build on the best and promising practices of other similar innovative programs such as award winning programs in public schools on Oahu: Aiea high, Campbell high, Farrington high, Kalani high, Kawanakoa middle, Moanalua high, Kapolei high, Mililani high, Nanakuli high, Waianae high; Chiefess Kamakahahei middle and Kauai high on Kauai; Maui high on Maui; and Waimea high and Keaau middle college high on the island of Hawaii, as well as career and technical education pathway programs in arts and communications and digital media.

The legislature further finds that the State's administration and lawmakers have recognized the need for the integration of creative cognitive, affective, and psychomotor processes in the classroom by supporting the establishment of programs such as project East, the establishment of science, technology, engineering and mathematics programs statewide and

the academy model of Hawaii excellence through science and technology. These programs provide a framework to integrate new skill set development in the areas of creativity and innovation—both critical components to advanced problem solving, collaboration, and creative solutions to the challenges that face future generations.

To engage, ignite, sustain the interest of students, and to deepen their understanding of the core knowledge and skills necessary for the 21st century workforce, the creativity academies will infuse science, technology, engineering, and mathematics course curriculum with animation, game development, digital media, and creative publishing projects. Creative academies will utilize the existing career pathway framework to blend the academic knowledge and the creative application of current technology.

The goal of the P-20 system is to create a bridge between education and workforce development needs. The Arts and Communication and Industrial, Engineering and Technology pathways provide the structure to ensure a non-duplicative, coherent program of study that progress from one level of education to the next which eventually will lead into the workforce. The establishment of creativity academies at the

postsecondary level will provide expanded opportunities for elementary, middle, and high school students statewide with the goal of encouraging more students to enter into the community college and four-year university system.

Creative academies will be used to:

- (1) Foster creativity, innovation, and entrepreneurship;
- (2) Develop skill sets for creative problem solving at all stages of education;
- (3) Support department of education framework to graduate students proficient in math and science;
- (4) Offer a contextual approach to science, technology, engineering, and mathematics learning through creative engagement;
- (5) Provide an integrated program for the P-20 system;
- (6) Provide an articulated career pathway program of study for creative media that begins at the department of education and connects with the University of Hawaii community colleges and the University of Hawaii system;
- (7) Create science, technology, engineering, and mathematics and creativity programs for under-represented students.

As a logical progression to the effective "arts first" program in kindergarten through first grade, students in grades two to six will be introduced to the relationships between the arts and sciences through a contextual learning approach.

At the middle school level, creativity academy program staff will create opportunities for and to train students to create projects that integrate art, science, math and technology. Through after-school programs, including programs for at risk youth, students will experience art and science concepts through hands-on learning opportunities and enrichment programs.

At the high school level, students will have the opportunity to earn dual credits by enrolling in selected high school career pathway programs of study and receive college credits upon successful completion of that program of study. High school students will also have the opportunity through their participation in the creativity academy to enroll in courses at the University of Hawaii's community college campus and receive both college and high school credit for successful completion of the course.

A pilot program for high school students will be spearheaded by the University of Hawaii, Kapiolani Community

College's science, technology, engineering, and mathematics program, and new media arts programs, and the department of business, economic development, and tourism, creative industries division. Kapiolani Community College staff will work in close collaboration with the department of business, economic development, and tourism, the department of education and local industry experts to develop standards and curriculum that is non-duplicative and is the basis for dual credit articulation and will meet the needs of business and industry.

Within the first year of the program, Kapiolani Community College's creativity academy program staff will work with department of education representatives to develop standards and a turn-key curriculum that ensures a non-duplicative progression of skills and knowledge utilizing the career pathway structure. The standards and curriculum will become the basis for dual credit opportunities and articulation agreements. Student participation requirements will be established to ensure student success in the program(s). Kapiolani Community College's creativity academies program staff will design and implement teacher training programs within the career pathway structure for middle and high school teachers statewide and provide teachers with in-classroom and online support.

SECTION 2. There is appropriated out of the general revenues of the State of Hawaii the sum of \$ _____ or so much thereof as may be necessary for fiscal year 2008-2009 to carry out the purposes of this Act, including equipping, training, hiring of instructors and guest lecturers, research and development of standards-based curriculum, conducting pilot program on Oahu and a neighbor island, travel costs for teacher and student participation in the creativity academies pilot programs, creative center incubator facility at Kapiolani Community College campus for teacher training and the development of the curricula programs and support for student and faculty participation at competitions out of state.

SECTION 3. The sum appropriated shall be expended by the department of business, economic development, and tourism for the purposes of this Act.

SECTION 4. This Act shall take effect on July 1, 2025.

Date of Hearing: March 28, 2008

Committee: Ways and Means

Department: Education

Person Testifying: Patricia Hamamoto, Superintendent

Title: H.B. 2587, HD1, SD1 (SSCR3097) Making an Appropriation to Establish Creativity Academies

Purpose: Appropriate funds to support the development of the creativity academy program. (SD1)

Department's Position: The Department of Education (DOE) supports creativity academies. The DOE recommends that the creativity academy program be facilitated jointly by the University of Hawaii community college system and the DOE. The continuity and transition from elementary programs to middle school programs to high school programs to postsecondary programs must be aligned to ensure progressive skills and knowledge development and avoid duplication. This program should be included in the Dual Credit Articulated Programs of Study (DCAPS) options for high school students. The DOE defers to the Department of Business, Economic Development, and Tourism (DBEDT) as to this funding priority.

The DOE requests the opportunity to work with the committee, DBEDT, and the community colleges to draft the language in this Bill to ensure current DOE initiatives are not duplicated by the actions proposed in this Bill. The DOE also recommends reinserting the language from the previous amended bill version that establishes the

creative academy curriculum development collaboration between the University of Hawaii Community Colleges and the DOE creative academy faculty members.

Sharon Sussman

KCC | Arts & Humanities
808-734-9382
ssussman@hawaii.edu

March 26, 2008

To: Senator Rosalyn H. Baker, Chair,
Senator Shan S. Tsutsui, Vice Chair, and
Members of the Senate Committee on Ways and Means

Thank you for the opportunity to submit testimony in support of House Bill 2587 would establish Creativity Academies for middle and high school students statewide in partnership with the University of Hawai'i Community Colleges. This is an important step in developing the potential of all of our students to compete in the twenty-first century workforce.

I have been teaching in New Media Arts/Animation at Kapi'olani Community College (KCC) for the past five years. I came here from a six-year tenure at DreamWorks Feature Animation in Los Angeles.

In five years the New Media Arts program at KCC has grown to be an award-winning program. I have students who are the first of their families to graduate college go on to advanced degrees in art and animation. Industry is starting to come to the islands. I have students who are on the production crew for animated shorts for NickToons. If we start a program like Creativity Academies, we will have students who have jumped into Animation Technology from middle school. These students will be competitive for production crews here and on the mainland. I see that the New Media Arts (NMA) program at KCC gives students a direction in life and a confidence in their abilities. My students have expressed how their high school years would have been years of engagement rather than years of indifference had they had a program like NMA at the high school level. They describe KCC's New Media Arts program as a turning point from failure to success. These students found their way back to college, but where are the ones that did not?

The Creativity Academies program can not only catch at risk students with the allure of digital art and animation, but with the integration of Science, Technology, Engineering and Math (STEM) at the core of this curriculum, it may open doors that might never have been possible. This innovative program will help those at-risk students develop math and science skills in tandem with digital art and animation tools. This has the potential to bring these students to the top of the career ladder in animation or to open math and science doors that were seemingly unattainable to them. It may give them confidence to pursue even another career path.

I strongly urge you to support House Bill 2587. Thank you for this opportunity to testify.

Sincerely,
Sharon Sussman
Assistant Professor, New Media Arts
Kapi'olani Community College

University of Hawai'i
KAPI'OLANI COMMUNITY COLLEGE
Arts and Sciences Counseling Services

Date: March 25, 2008

To: Senator Rosalyn H. Baker, Chair
Senator Shan S. Tsutsui, Vice Chair
Members of the Committee on Ways and Means

From: Teri Durland, Counselor
Kapi'olani Community College

Hearing: Senate Committee on Ways and Means
Friday, March 28, 2008 at 9:30 a.m.

Measure: HB 2587-Making an Appropriation to Establish Creativity Academies

Thank you for the opportunity to present testimony in support HB 2587.

The Creativity Academies is a pilot program for high school students where science, technology, engineering and math (STEM) is infused with creative expression (New Media Arts) in an integrated curriculum. Students will explore science and mathematics in combination with digital art and animation in an engaging, project-based curriculum. This integrated approach encourages students with passion and skills in digital media to learn and synthesize STEM knowledge, concepts and skills in a new and relevant way. It also offers students directed toward the STEM discipline the opportunity to explore a creative medium to develop and strengthen their learning. Students in the Creativity Academies may earn dual high school and college credit.

For the last five years, I have worked as a counselor at Kapi'olani Community College in two workforce development programs - one in the STEM discipline and one in the New Media Arts discipline. These two programs have collaborated on several on-campus initiatives and I have glimpsed the possibilities of what an integrated STEM and New Media Arts curriculum might look like and the benefits it will provide to students, especially as it is developed to respond to the unique educational needs of our Hawai'i students.

In the last seven weeks, I've had the opportunity to visit digital media programs on Oahu and Maui, and to learn more about what is offered on the Big Island. I hope to also familiarize myself with the digital media programs on the other islands. The Creativity Academies bill is well positioned to strengthen and enhance these high school programs and provide a better student pathway to the community colleges.

The uniqueness of Creativity Academies and the collaborative partnership of DBEDT, DOE, UHCC and industry, make this an especially exciting and well-reasoned initiative.

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An Equal Opportunity/Affirmative Action Institution

Thank you for allowing me to testify today in support of House Bill 2587.

HB 2587, HD1 –
MAKING AN APPROPRIATION TO ESTABLISH CREATIVITY
ACADEMIES

Testimony Presented Before the
COMMITTEE ON WAYS AND MEANS

March 28, 2008 at 9:30 am

Joseph Tremonti
Assistant Professor, New Media Arts
Kapi'olani Community College

Aloha,

I am writing to voice my strong support for HB 2587, HD1- Making an Appropriation to Establish Creativity Academies.

I have served as an educator in the field of new media arts for over five years and have been involved with computer graphics for over a decade. As a professor in the New Media Arts Program at Kapi'olani Community College, I have witnessed firsthand the dramatic impact that digital media education can have on Hawaii's youth. Graduates from the program have gone on to work for leading local, national, and international companies in the Arts & Entertainment sector, including: Atlantis Cyberspace, Electronic Arts, Konami Computer Entertainment, Madskill Productions, Pacific Focus, Polygon Pictures, Sprite Entertainment, and Ubisoft. The fusion of creativity and high tech skills empowers students to pursue rewarding careers and contribute to the diverse industries that utilize digital media.

The Creativity Academies will infuse digital media education into high schools & middle schools with the goal of catalyzing engagement with STEM. KCC is an ideal focal point for the development of this innovative new turnkey curriculum. It has both a STEM center and the top New Media Arts program in the state. The proposed partnership between Kapi'olani Community College, the Department of Education, and the Department of Economic Development and Tourism, will enable this initiative to draw upon the wealth of talent, creativity, and expertise that is available in the aforementioned agencies. The collaboration will produce a unique turnkey creativity academies curriculum that builds upon the best practices at leading educational institutions. After undergoing rigorous testing, this curriculum can then be readily exported to educational institutions across the state.

While "technology" has long been lauded as a means of stimulating student learning, it needs to be presented within a coherent conceptual framework. Teachers need to have the skills, knowledge, and guidance to utilize digital media effectively. The Creativity Academies will provide the requisite support to usher in a new era of educational innovation, an era in which students use the tools & technology to learn, create, and build connections to a wide array of educational pathways.

Hawaii's need for greater economic diversification is well known. Events of the recent past (9/11, SARS, etc.) have demonstrated how concentrated and consequently precarious the local economy is. The twin engines of tourism and defense spending cannot provide the requisite high-skilled living-wage job opportunities to sustain future growth. Hawaii needs to invest in innovative educational initiatives to help generate robust new industries that can thrive in an increasingly competitive global economy. The Creativity Academies initiative is ideally suited to this objective; it will provide students with cutting edge workforce skills in Science, Technology, Engineering and Math and Digital Media/ New Media Arts. The aforementioned skills are at the core of emerging knowledge based industries. For example, the entertainment sector has undergone unprecedented growth in the past few years, creating strong demand for artists with high-tech skills. In a 2004 study, the US Department of Labor projected a 39.5% increase in multimedia and computer animation related jobs in the next decade. By establishing the Creative Academies, we will provide Hawaii's youth with the opportunity to profit from this growth and succeed in an era of rapid technological change.

By providing innovative curriculum that encompasses both STEM and Digital Media/ New Media Arts, the Creative Academies will promote a progressive integration of art and science. This will enable the next generation to effectively utilize technology to solve complex scientific/artistic challenges, and communicate with diverse media such as film, television, music, video games, and the web.

In conclusion, I believe the Creative Academies will provide a powerful stimulus to an educational system that is increasingly out of touch with trends in the competitive global economy. The Creative Academies will leverage the unique capabilities of the UHCC System, DBEDT, and DOE to support and enhance the tremendous potential of Hawaii's youth. Thank you for the opportunity to testify in support of HB 2587, HD1- Making an Appropriation to Establish Creativity Academies.

Sincerely:

Joseph Tremonti

Cherie Tsukayama
tsukayam@hawaii.edu

March 26, 2008

Senator Rosalyn H. Baker, Chair
Senator Shan S. Tsutsui, Vice Chair
Members of the Committee on Ways and Means

Notice of Hearing

Date: March 28, 2008

Time: 9:39 PM

Place: Conference Room 211

State Capitol

415 South Beretania Street

I am a student at Kapiolani Community College in the New Media Arts – Animation program. I will be graduating from the program in the summer of 2008. I support bill HB 2587, HD1 100%. I attended Castle High School and was one of the students that floated in the middle with no guidance or direction. I was interested in gaming but had no idea about how it was made or the process of it. I spent a lot of my high school career gaming. School was a priority but it seemed to tailor to all the other types of studies except art. For example, there was a class that prepared students and alerted students about the nursing field, business field, entrepreneurship, athletics, student government, science, foreign languages but there was nothing for the arts. That's where they lost me. I had a .7 GPA in high school and once I entered the program a year later I had a 4.0 GPA and I maintain that GPA till present.

While entering in this program I learned so much about the arts, not only does this program teach computer graphics but it covers how having fine arts skills are important to do well in the industry. It sparks curiosity about opportunities that would have been nice to have in high school, for instance only after entering this program, I am starting to look into going to an art college/university to better my 3D skills. Alerting the high school students who are interested about the requirements that are needed to attend an art college early on helps so much in getting ahead. My grades suffered in high school because nothing interested me, so it made classes harder to deal with, in effect I had to take classes in college that I could have taken in high school making the transition slower, and pushing me a year back.

In this program you build a community that helps drive you and keep you on track with your goals. It's a positive community that this program provides. I am surrounded by people with the same interest as me and have been through similar struggles as me in high school. We support each other by doing critiques and helping each other out when we have a question about anything, work or life.

Another thing that I feel this program will provide for the high school and intermediate students, is guidance. Whether it be on how to go about starting a career in the computer graphics industry or bettering their skills as an artist or, what I feel is most important, guidance about getting through school and life. The creative learning skills that they would learn in the program can be used in every aspect

of their life. The reason that I feel this program is important is because if I had this type of community in high school I'd feel that there would be people or someone that could understand me, coming from an artist point of view. I had questions but no one to answer them; I had problems but no one that could understand my train of thought; I had potential but no one to see it or help it grow.

I am very supportive of this project and would like to see it put in action. Thank you for the opportunity to testify in support of HB 2587, HD1.

Cherie Tsukayama

HB 2587, HD 1 - MAKING AN APPROPRIATION TO ESTABLISH
CREATIVITY ACADEMIES

Testimony Presented Before the Committee on Ways and Means

March 28, 2008 at 9:30 am
by

Mark Loughridge
Ulua Media

HB 2587, HD1, SD1 - Making an Appropriation to Establish Creativity Academies

Chair Baker, Vice Chair Tsutsui, and Members of the Committees:

Thank you for this opportunity to offer testimony in support of the HB 2587 to establish Creativity Academies for middle and high school students statewide. I think this is a very important step in helping all of our students gain 21st century skills to compete in the rapidly changing global economy.

Ulua Media works in education and technology to help learners of all ages gain 21st century skills. We are already working towards this vision in partnership with public and private schools throughout the state, with local colleges as well as with the MIT Media Lab and the California Institute of the Arts. We are contributing capital, industry talent, and many hours to help make these programs work. We are recruiting other local firms to join in the effort, including Aloha Island Inc and Avatar-Reality. The Creativity Academy programs we have helped start here are generating great excitement and excellent results among middle school students. We seek your support to help expand this public-private partnership. We seek your help to accelerate the effort so Hawaii can lead the country and the world in innovative programs that teach STEM and creative arts in ways that truly excite and empower students. Top global institutions such as the MIT Media Lab and the California Institute of the Arts (best animation school in the world) are eager partners in what we are pioneering. The Chinese Ministry of Education and leading digital media companies in Beijing, China and Singapore are also eager to extend partnerships. Please signal that you, too, are interested in helping Hawaii lead globally in education and innovation.

Hawaii is at a crossroads. As reported recently in the media, the visitor industry is on a gradual decline with no reversal in sight. Fuel costs are escalating and inflation is rising here faster than most of the US. By and large, visitor industry jobs are not high-paying. Are we equipping our students with the right skills to earn a better wage as traditional industries decline and costs rise?

Unfortunately, a disheartening number of students in Hawaii do not graduate from high school, do not go to college, and many of those who do go to college require serious remediation. Meanwhile, studies show that the gap in earning power between college graduates and those who do not attend college is widening substantially. Students without a solid-grounding in 21st century skills are ill-prepared for the ways in which the global economy is quickly transforming.

The world is rapidly moving toward a knowledge-based economy with extreme competition. In many ways, US education is failing to keep up with rising global standards, and the US is losing dominance in industry after industry. Earning power is declining for labor with low skills as more and more industries outsource to less expensive countries. The skills needed to survive and thrive in our flat, hyper competitive world are radically different and much more complex than just a few generations ago. How can we practically help our students here in Hawaii to compete effectively in the future?

The Creativity Academies give students the opportunity to grow important 21st century skills in ways that truly engage them.

These programs develop fundamental skills in creativity and technology, help students explore fascinating careers, spur innovation, and ignite their passions to learn and master new fields. The Academies use project-based learning where students invent original works that combine skills from mathematics and science (STEM), and the arts. For example, the skills learned in the Game Academy program – core academic skills, brainstorming, computer programming, art and animation, project management, and team work – are lifelong skills that apply to a wide range of careers in digital media and beyond.

We have seen the magic of these programs at work. A Game Academy course for middle school premiered at the Iolani Summer School in 2007. It was the most oversubscribed course in the summer school. It received high marks from the students— an average ranking of 8.7 out of 10— and the graduates of the course have been requesting the opportunity to continue with an advanced course.

Meanwhile, the reception in public schools has been equally enthusiastic. Again, the course was oversubscribed when offered at Niu Valley Middle School in the fall of 2007. Informal pre and post tests revealed marked improvement in mathematics for those students who engaged in building and playing math-based games created during the course. Again, students gave the program high marks. Other public schools on the Big Island and Oahu are now launching Game Academy courses this spring (2008). Kealakehe High School on the Big Island responded to our program with the strongest student response ever for an after school program. One of our goals is to equip their older students to then turn around this fall and teach the elementary school students in their complex how to make their own games and animations while developing 21st century skills.

As digital media become ubiquitous, every industry and sphere of life is transforming. The future is hardly predictable, companies of all sizes are less stable and more vulnerable to competition than ever before, and *everyone* needs to learn to be more self-reliant and better equipped to shape their careers. The Creativity Academies deeply engage students and effectively teach STEM, creativity, and entrepreneurial skills— the skills that are essential for students to take charge of their futures and lead in a rapidly changing world.

Thank you for this opportunity to provide testimony in support of House Bill 2587.

testimony

From: Chris Gargiulo [gargiulo@hawaii.edu]
Sent: Thursday, March 27, 2008 8:08 AM
To: testimony
Subject: Support for HB 2587 - Making an Appropriation to Establish Creativity Academies

Chris Gargiulo
 Instructor in New Media Arts
 Kapi'olani Community College
 4303 Diamond Head Road
 Honolulu, HI96816
gargiulo@hawaii.edu

March 27th, 2008

To: THE SENATE
 THE TWENTY-FOURTH LEGISLATURE
 REGULAR SESSION OF 2008

COMMITTEE ON WAYS AND MEANS

Senator Rosalyn H. Baker, Chair
 Senator Shan S. Tsutsui, Vice Chair

From: Chris Gargiulo, Instructor - KCC New Media Arts

HB No. 2587, Making an Appropriation to Establish Creativity Academies

I am writing to offer testimony in support of HB 2587 and the Administration's bills HB3066 and SB2988 which would establish Creativity Academies for middle and high school students statewide. This is an important step in developing the potential of all of our students to compete in the twenty-first century workforce.

As an interface design teacher within the New Media Arts program at Kapi'olani Community College (KCC), I am familiar with the demand for more education in the areas of art, new media, and all related creative local industry sectors associated with digital arts such as animation, web design, graphic design, digital video, gaming, film, and television, amongst others. HB 2587 and the establishment of Creativity Academies seek to meet this demand in accordance with the Hawaii legislature and administration's recognition of the value of education in the creative arts as critical to our future workforce development.

Creativity Academies are a unique opportunity for middle and high school students to synergize their interests across multiple disciplines. KCC's STEM (Science, Technology, Engineering, and Math) program has already had great success with students using a turnkey inter-disciplinary curriculum that will act as a model for the curriculum that will be developed for the proposed Creativity Academies.

Most importantly, Creativity Academies will provide the opportunity needed for Hawaii's students to succeed in our growing creative economy and for the state of Hawaii's innovative economy to flourish. By creating a curriculum and learning environment that combines the arts and sciences, with digital technology as a bridge, the goal is to provide a framework of study that will encourage students to continue their post-secondary education and to develop workforce skills in creative problem solving, innovative thinking, science, technology, math, digital media, interface design, animation, and creative publishing (ie. graphic design, music production, fashion, etc) – all key elements necessary to sustain a

career in Hawaii's growing creative economy.

Thank you for allowing me to provide testimony in support of HB 2587 and the Administration's bills HB3066 and SB2988 which would establish Creativity Academies for middle and high school students statewide.

Sincerely,

Chris Gargiulo