CRDG

Year in Review 2012

University of Hawai'i at Mānoa

College of Education

Curriculum Research & Development Group

Our Roots

1895	A teacher training department is formed at Honolulu High School, located in Princess Ruth's former mansion (now Central Intermediate School).
1896	The teacher training department moves to Victoria and Young Streets and is renamed Honolulu Normal and Training School.
1905	After annexation, Hawai'i becomes a U.S. territory. Honolulu Normal and Training School is renamed Territorial Normal and Training School and is moved to Lunalilo and Quarry streets.
1921	The school moves to a new 15-acre site (once a pig farm) adjoining the University of Hawai'i at Mānoa. The university's Department of Secondary Education becomes the School of Education.
1930	Benjamin Wist (later dean of Teachers College) becomes the principal of the school.
1931	The legislature transfers the Territorial Normal and Training School to the School of Education. The School of Education is renamed Teachers College.
1939–1941	An elementary school (University Elementary School) is built on Metcalf Street as part of Teachers College. Construction begins on Castle Memorial Hall, a training center for kindergarten and nursery school teachers.
1941–1945	Punahou School, displaced by the military occupying its campus, moves into Castle Memorial Hall and other buildings, but Teachers College continues to operate.
1943	University High School Building 1 on the Metcalf Street side of Teachers College is completed as an intermediate school.
1948	University High School Building 2 is constructed adjacent to Building 1. The schools now offer a complete K–12 curriculum. Hubert Everly (later dean of the College of Education) becomes the principal.
1959	Teachers College becomes the College of Education, and Hawai'i becomes the fiftieth state.
1966	The schools become part of a new entity, the Hawai'i Curriculum Center. This is a joint operation of the Hawai'i Department of Education and the University of Hawai'i to develop curriculum programs and materials for schools.
1969	The Hawai'i Curriculum Center is phased out and the University Laboratory School (ULS) comes under a new College of Education unit known as the Curriculum Research & Development Group (CRDG).
1996	CRDG, along with other research units, reorganizes under the UH Office of the Senior Vice President for Research.
2000	CRDG merges with the College of Education. ULS applies for charter school status.
2001	ULS becomes a charter school and continues to serve as a laboratory for curriculum R & D in partnership with CRDG.

Director's Message

Kathleen F. Berg, Director

Aloha from the Curriculum Research & Development Group (CRDG) and the University Laboratory School (ULS). We are pleased to share with you our Year in Review for 2012, which highlights the exciting and innovative work our faculty and staff are doing. Our vision statement says that we are a learner-centered community of educators that inspires dynamic teaching and learning, and we hope it is this sense of our work that comes through as you read this report.

Much of what we do to support and improve education is changing to reflect the ever-evolving education landscape, in particular the shift to digital curriculum materials and to new and varied ways of forming and maintaining learning communities. Other aspects of our work continue to build on our long history of research into programs of curriculum and professional development that support and enhance the processes of teaching and learning.

The opening section of this report features an exemplary CRDG project, called Teaching Science as Inquiry: Aquatic, in which you can see how the many and varied aspects of our work—curriculum, professional development, evaluation, learning technology, and community involvement—come together in a single program.

We also highlight the collaborative nature of our endeavors, demonstrating how our work within the community, in the broadest sense, enhances our ability to have real impact in education. In this report you will read about some of the many stakeholders and partners with whom we work within our various communities—local, national, and global.

We are happy to share our story with you and hope you will come away with a sense of the continued commitment to excellence that guides our work here.

Our Mission

The Curriculum Research & Development Group (CRDG), with its associated Laboratory School, is an organized research unit in the College of Education at the University of Hawai‘i at Mānoa that contributes to the body of professional knowledge and practice in teaching and learning, curriculum development, program dissemination and implementation, evaluation and assessment, and school improvement. CRDG conducts research and creates, evaluates, disseminates, and supports educational programs that serve students, teachers, parents, and other educators in grades preK–20.

Our Vision

CRDG, a learner-centered community of educators—recognized locally, nationally, and globally for quality research, design, and curricula—that inspires dynamic teaching and learning.

Curriculum Research & Development Group

The Curriculum Research & Development Group (CRDG) is a research unit in the College of Education at the University of Hawai'i at Mānoa. Since 1966, CRDG has served the educational community locally, nationally, and internationally by

- contributing to the body of professional knowledge and practice in teaching and learning, curriculum development, program dissemination and implementation, evaluation and assessment, and school improvement, and
- conducting research and creating, evaluating, disseminating, and supporting educational programs that serve students, teachers, parents, and other educators in grades preK–20.

While CRDG is concerned with addressing current needs, its primary focus is on creating innovations that are intended to go beyond current practice to create quality programs and materials for the future.

CRDG's work focuses on five interrelated areas.

Science, Technology, Engineering, and Mathematics (STEM)
CRDG STEM programs have been recognized nationally and internationally as being among the best inquiry-based programs available.

Hawai'i, Asia, and the Pacific
Programs in social studies, humanities, the arts, and STEM reflect the cultural and environmental influences of Hawai'i, Asia, and the Pacific.

Serving Diverse Learners
Because CRDG believes that developing strategies to include all learners is essential to a democratic society, programs are designed to provide success for diverse student populations taught in heterogeneous classrooms.

Educational Technology Development
CRDG learning technology faculty work in teams with content experts and curriculum designers to create and evaluate more effective uses of technology in preK–12 classrooms and in professional development and support for teachers.

Designing Educational Systems
Designing more effective systemic approaches to schooling is an essential component of CRDG's work. Faculty expertise in program research and evaluation enables CRDG to better understand how systems work (or don't work) in supporting learning.

Teaching Science as Inquiry

The Teaching Science as Inquiry (TSI): Aquatic project is a collaboration with the Hawai'i Sea Grant College Program and the College of Education's Distance Course Design Consulting (DCDC) Group. The TSI-A team is creating a professional development (PD) program for teachers that combines instruction in inquiry teaching with marine science content. The team is also creating a modularized middle and high school marine science curriculum, which forms the basis of the PD's content. This project, funded by the US department of Education (USDOE) Institute of Education Sciences and the National Oceanic and Atmospheric Administration (NOAA) Pacific Services Center, serves as an ideal demonstration of the way CRDG works, in that it includes work in curriculum development, teacher professional development, learning technologies, and evaluation by CRDG staff as well as a range of collaborative partnerships with groups in both the university and the broader community.

Modular Professional Development for Science Teachers

A primary goal of the USDOE funding for the TSI Aquatic project is to research the framework and materials that contribute to a successful PD, which ultimately helps teachers teach aquatic science topics through scientific inquiry. The project is focused on developing a series of PD modules that consist of in-person training coupled with online learning support. The project is also carrying out a rigorous program of research into how the PD impacts both teacher quality and student achievement.

The purpose of the TSI Aquatic PD module series is for teachers to become successful facilitators of scientific inquiry, enabling them to create classrooms that function as a community of scientists—where students learn science by engaging in the practice of science. Other key components of the project include the creation of an online learning community, ongoing evaluation of the PD sessions, a study of teachers' use of the online learning community (OLC), and development of a marine science curriculum website, *Exploring Our Fluid Earth* (EOFE), which comprises updated materials from the CRDG's texts *The Living Ocean and The Fluid Earth*.

The TSI Aquatic PD comprises an introductory meeting followed by a series of four TSI-A modules. Each of the modules consists of a two-day workshop, a three-hour evening mini-workshop,

an asynchronous OLC experience, and a two-hour synchronous online follow-up component (approximately 22 contact hours per module). Teachers participate in two modules per semester for a total of four modules over the course of the school year. Each TSI Aquatic module focuses on a particular aspect of aquatic science: physical, chemical, biological, and ecological. Cohorts 1–3, on Oʻahu, Maui, and Hawaiʻi Island, were completed in June 2012. Cohorts 4 and 5, on Oʻahu and Kauaʻi, began with the new school year in fall 2012. Content and delivery for cohorts 4 and 5 were modified based on feedback from the evaluation team, teacher participants, and external project consultants. Modifications have included an increase in the amount of time focused specifically on content and pedagogy, more attention focused on the use of TSI language in discussions with the teachers, and more time spent on content that teachers in the first three cohorts found difficult. Other changes have included more explicit discussion of TSI pedagogy before and after each activity as well as a new requirement that teachers teach both pedagogical and content lessons to their students.

Exploring Our Fluid Earth Curriculum Website

A primary goal of the NOAA funding and the collaboration with the Hawaiʻi Sea Grant College Program is to create an online marine science curriculum, EOFE, based on CRDG's *The Fluid Earth* and *The Living Ocean* textbooks and NOAA science. The website, developed by the College of Education's Distance Course Design Consulting (DCDC) group, comprises a set of online, inquiry-based coastal and ocean science modules, each with corresponding materials and activities aligned to the national Ocean Literacy Principles (http://oceanliteracy.wp2.coexploration.org/). The modules will also be aligned to the upcoming Next Generation Science Standards (NGSS). The set of five modules relate in content to the NGSS practices of science and the physical, chemical, biological, and ecological elements of aquatic science for middle and high school students. The set is designed as a stand-alone course in marine science. However, the modular structure of EOFE allows teachers to add a marine science component to physics, chemistry, or biology classes if there is not a stand-alone marine science course in their school. Currently the website is password protected for use by PD teachers while the project is in active development. However, much of the content will eventually be available freely to the public, and teachers will be able to purchase additional instructional resources through CRDG.

Emerging Technologies

The CRDG Learning Technologies (LT) team has been a key part of the TSI Aquatic project, complementing the marine science content and pedagogy efforts to explore ways that emerging technologies can expand and enhance both PD and curriculum delivery. In addition to teachers presenting about their own classroom implementation (once per module) via the synchronous Blackboard virtual classroom, teachers interact asynchronously online through the online learning community. This year, the LT team began working collaboratively with DCDC to develop a generalized website to support the PD. The newly revised website integrates the EOFE curriculum and the OLC in a place where teachers interact in a private section for their PD cohort, while simultaneously being connected to the larger EOFE site where they can communicate with all five cohorts (and eventually other teachers) regarding the use of the EOFE online resources.

The LT team is primarily interested in the ways teachers interact in the OLC and how the OLC extends the PD experience, looking at teacher motivation and value-added elements of the EOFE website. Teachers are required to post their lesson plans to the private PD portion of the EOFE website as well as to comment and respond publicly to peers in the curriculum portion of the EOFE website. The LT team is tracking teachers' navigation of the site as well as their patterns of conversation

and information exchange (ideas, comments, and materials). Teachers provide feedback on the usability of the EOFE website and on their use of the website with their students and in their classrooms. This feedback informs the PD, the EOFE website development, and the LT team's understanding of online communication and value for extending educational experiences and community building beyond the PD and the physical classroom.

Research and Evaluation Plays a Key Role

After extensive instrument development activities in the TSI Aquatic project's first two years, the research team focused in large part this year on refining data collection instruments and gathering evidence supporting the validity of the data collected. A total of nineteen evaluation instruments have been used to collect data on contextual issues surrounding the development of the project and to help ensure that the research team was fully aware of aspects of the development that might have affected the implementation and outcomes.

The second major set of activities conducted by the research team had to do with providing formative evaluation feedback to the development team in a timely manner. The project developers reported that they particularly valued the feedback that the research team provided after observing the workshops, the follow-up training, and the Blackboard sessions. The developers used the feedback to make revisions in the training methods, and the research team noted improvements in the training as the year progressed.

As the project has progressed, the data collected have begun to serve, simultaneously, formative project evaluation purposes, formative teacher assessment purposes, and formative student assessment purposes. This is a result of the application of a multi-purpose PD evaluation model, in which data are collected and used for multiple purposes. For example, the results collected for formative project evaluation purposes, such as teachers' content assessment pretest results, were used not only for gauging pre-post gains but also for informing the project developers about teachers' strengths and weaknesses. This expanded role of the research and evaluation tasks has thus helped served the project in multiple ways.

CRDG began as a research center that sought to improve educational practice by creating discipline-based curricula that would be used as the basis of a liberal education for all students. This foundational philosophy was based on the ideas of Arthur R. King, Jr. and John A. Brownell described in their seminal work Curriculum and the Disciplines of Knowledge. While our work has evolved as the educational environment has changed, we are proud to have maintained our focus on discipline-based curricula. In this section we describe the curriculum development projects in progress in 2012..

New Physics Curriculum in Development

The Practices in Physics & Technology (PP&T) project brings together educators, education researchers, and physics professors to create new curriculum materials meant to teach physics as a first high school science course before students take chemistry and biology. Work this year focused on piloting the program in the University Laboratory School and creating a teacher guide based on the experiences of students in these classrooms. The content of this curriculum is based on a set of twenty-four topics dealing with Newtonian mechanics and energy. The curricular experience places students in a problem-solving environment that allows them to invent solutions to the technological problems they encounter as they engage in experimentation. The program is designed to teach physics through the practices and products of laboratory investigation. Using a historically informed sequence, concepts are developed through traditional experimentation and validated using modern digital equipment. The teacher materials are designed to reflect the real world of the classroom where, it is acknowledged, experimentation, and the resulting data, will inevitably be messier than that produced by professional scientists. High school students may struggle with the mathematics or with the ability to communicate the results of their work, while work habits, equipment, or students' lack of background knowledge may lead to inconclusive data. Pedagogical techniques are provided to address these kinds of issues while still working with students in a way that reflects the practices of physicists and engineers at the lab bench.

A History of Hawai'i Revised and Updated

CRDG is excited to be working on the third edition of *A History of Hawai'i*, the most widely used text for high school courses on the history of Hawai'i' since the first edition was published in 1989. The text, which approaches Hawai'i's story by breaking out chapters on government and political history, economic history, social history, and land history, is being revised and updated for a new audience and a new educational environment. The new edition is being updated both to include more depth and detail for some of Hawai'i's most pivotal events and to reflect the growing cultural and language revitalization. The new edition will include more material on the pre-contact era as well as more coverage of the issues Native Hawaiians faced following Western contact. The new book will be published in both print and ebook formats and will include, for the first time, online interactive materials and activities to complement the text.

The new edition is being developed by CRDG's Leah Tassill, a social studies researcher and teacher at the University Laboratory School (ULS) who has taught for many years and who worked on aligning this course with Hawai'i social studies standards for the Hawai'i Department of Education. The project, which is in the development and writing stage this year, will be piloted in the ULS before it is finalized.

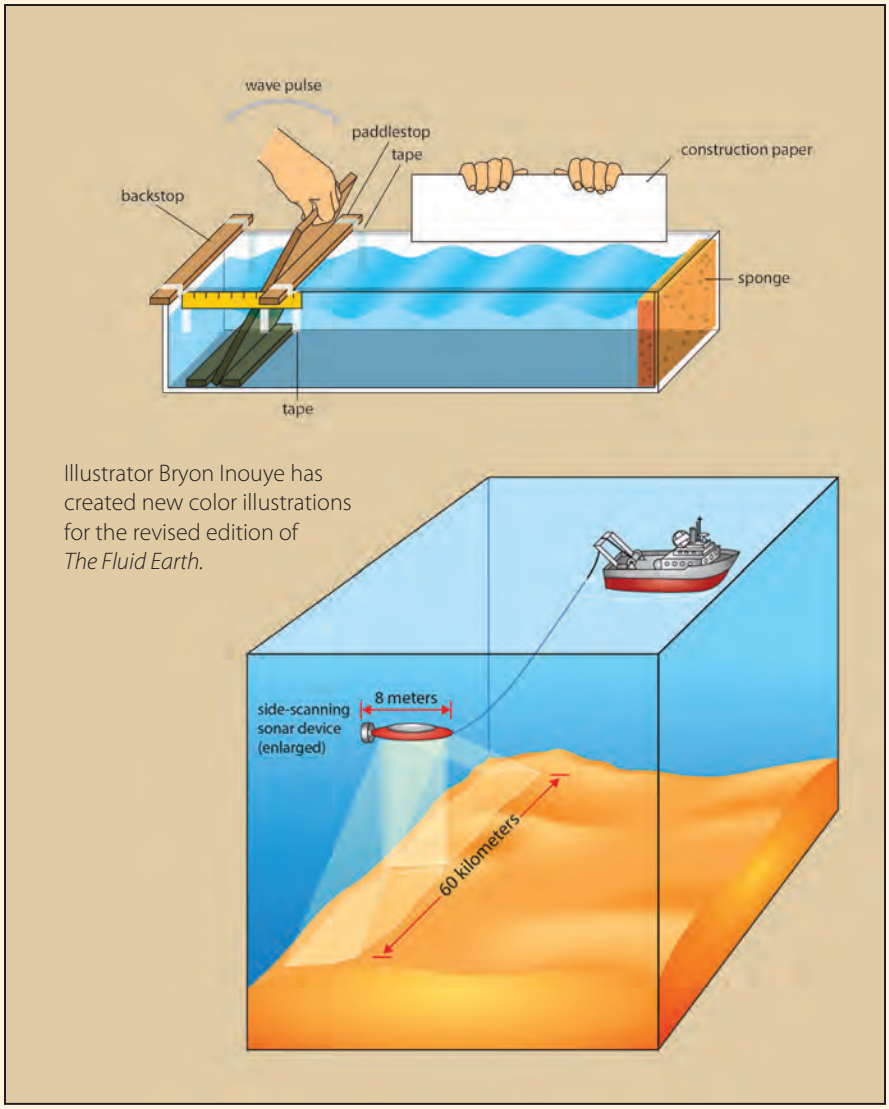
Third Curriculum in the East Asia Series

The newest project in the series of curricula on East Asia will be an activity-driven modular program on the history of North and South Korea since 1945. In addition to providing a comprehensive program on Korea, topics will be "tagged" to allow the materials to be used in a broader world history course in units on such topics as the Cold War, totalitarianism, and freedom versus security. In keeping with the other curricula in the series, the new program will include an abundance of primary sources as well as maps and timelines, archival photographs, literary excerpts, first person accounts, songs and poems, and political cartoons.

The University Laboratory School's Noren Lush, a member of the team that created the first two texts in this series—*China: Understanding its Past and The Rise of Modern Japan*—continued through 2012 working with CRDG to produce the new program on the modern history of Korea.

Updated Marine Science Text

A new edition of CRDG's acclaimed marine science text *The Fluid Earth* is in development. *The Fluid Earth* is part of a marine science program that draws on biology, physics, chemistry, meteorology, geology, cartography, engineering, and ecology and presents all of this in an interdisciplinary marine science context. The text uses inquiry as its core pedagogical strategy and ties the study of science and technology to problems in the global environment, promoting awareness of the wise use of both natural and technological resources. The upcoming fourth edition reflects advances in understanding the circulation patterns in the ocean and their impact on global weather systems and climate; the geology of tsunamis and plate tectonics; the chemistry of acid rain, the greenhouse effect, and water pollution; the economic and technological impact of potential sea level rising; the cautionary potential for mineral resource development; and the role of the United Nations in managing the common heritage of the high seas.



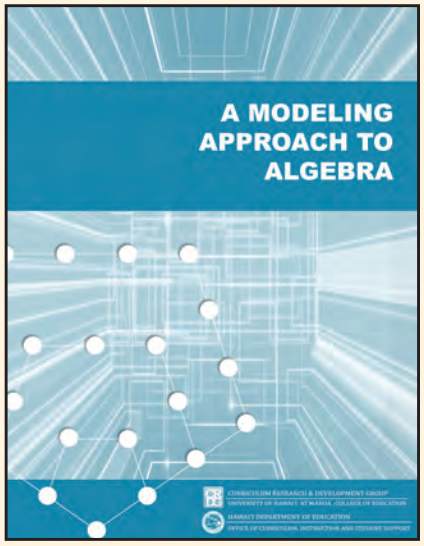
Illustrator Bryon Inouye has created new color illustrations for the revised edition of *The Fluid Earth*.

New Curriculum Supports Algebra Students

The CRDG mathematics team has developed *A Modeling Approach to Algebra*, a curriculum created to support ninth-grade students' learning algebra with understanding. Created under a contract with the Hawai'i Department of Education, the materials support struggling learners by emphasizing modeling both as a practice and as mathematics content as described in the Common Core State Standards for Mathematics.

In 2012, nine mathematics teachers at six high schools in the state are piloting the materials in their classes. The teachers received professional development training to prepare for teaching the new course and then met quarterly to focus on implementation practices and students' progress in the course. In addition, curriculum researchers visited all piloting classes to learn more about how students interact with the materials. While out in the schools, researchers were able to talk with teachers and students about their experiences learning mathematics with a modeling approach.

Teachers took a survey as they completed each unit. The information will help with development of the next version of the program. Teachers' feedback—such as, " I found Insights to Student Thinking/Possible Responses in the Notes section to be of greatest support," and, "Students need help with learning how to write a report"—helps the curriculum developers better understand what worked well and what needs revision.



Throughout CRDG's history, professional development has always been an integral part of its work to improve educational practice. Just as CRDG began in an era of changing needs and practices in education, the professional development programs highlighted here demonstrate how it is still responding to changes in the education environment to serve and strengthen the educational community.

School Internet Safety Initiative

CRDG's learning technologies researchers continued work on their School Internet Safety Initiative with a series of professional development sessions based on their research with the US Department of Justice's Office for Juvenile Justice and Delinquency Prevention and their work on the curriculum Developing WISE Kids: Web and Internet Safe Educated Kids.

Curriculum Focuses on Digital Citizenship

The WISE Kids curriculum is based on the core concept of digital citizenship and addresses many of the issues students face as they learn to function in a global communication environment. Principal Investigator Thanh Truc Nguyen described the way that, even though the framework was completed in 2009 and has remained largely the same, the curriculum continues to change every year. She noted how much modes of communication continue to change as mobile computing becomes more common and we are able to upload content to the Internet instantly and from anywhere. The curriculum addresses such wide-ranging topics as communication skills, cultural norms and differences, personal safety, boundaries between public and private speech and behavior, and carbon footprint. For most of these issues, there is both a strong generational element to attitudes and behaviors and a large shift in the concept of privacy. The curriculum is designed, not to impose ethics, but to facilitate the process by which students build their own sense of right and wrong as they construct their identity both online and off. The chart shows the thirteen elements of the WISE Kids curriculum framework.

New Professional Development Series

With the rapidly changing technology environment, it is as important for teachers and administrators to keep learning as it is for students. For teachers, the field of technological pedagogical content knowledge (see http://www.tpck.org/) focuses on how teachers can use the new technologies to enhance teaching strategies they already do well. But for both teachers and administrators, there is also an urgent and ongoing need to know what the laws and current practices are with regard to using technology and to sharing information. Nguyen described the idea of innocent sharing, something that teachers might warn students against. But this might also happen when an elementary teacher creates a class website so parents can keep up on what's going on in the class. It is important for teachers and administrators to be aware of safety concerns since these kinds of sites inadvertently provide access to children's names and routines that enables strangers to get close to them.

There are also a whole range of issues around the area of copyright and fair use, balancing privacy laws that prevent the sharing of personal identifiable information with first amendment issues of free speech, and the risks and liabilities inherent in allowing access to school networks. And lately, there is even the issue of electrical load as more students bring their smart phones and other devices to school and plug them in. In order to address new issues as they arise, the learning technologies team has created the following workshops for teachers, administrators, and parents.

Is Your School Modeling Digital Citizenship?

This workshop considers the definition of citizenship and digital citizenship; provides a review the International Society for Technology in Education (ISTE) standards and 21st century learning guidelines; introduces participants to the laws on cyberbullying, sexting, piracy, and impersonation; encourages reflection on school's technology integration structure; and

reviews strategies and resources to model digital citizenship.

Digital Efficacy and Teaching Pedagogy
Part of the current trend in education is to collaborate online and explore creative avenues in digital forums. Teachers often encourage students to share documents in the cloud, create ePortfolios, collaborate chat rooms, communicate with "pen pals" overseas, and populate blogs with reflections and musings. This workshop covers some current technology tools and makes recommendations on good practice.

Cyberbullying, Piracy, Impersonation, and Sexting: A School Discussion
This workshop shares practical advice for schools from a non-legal standpoint, increasing teacher and administrator awareness of the laws as they relate to adults and students.

Parent and Teacher Partnerships in Digital Citizenship
Digital citizenship is arguably as important in home environments as it is in schools. The purpose of this workshop is to allow schools and parents to work together in school teams to 1) learn more about cyberbullying and sexting awareness and prevention, and 2) work towards creating parent-school partnerships focused on cybersafety.

Developing WISE Kids: Web and Internet Safe Educated Kids
How do we develop a child's sense of ethics so that they are both safe and responsible when they are online? Where does a school begin? In this workshop, participants are introduced to CRDG's WISE framework and consider how it can be adopted and/or reframed for their school.

Your School's AUP: Informal discussion on technology access and the law
Every school is responsible for creating a safe learning environment, and this includes the online learning environment. The acceptable use policy (AUP) is the first place that schools look for guidance. This workshop considers the two cases decided by the US Supreme Court related to the AUP and the two federal laws, the Children's Internet Protection Act (CIPA) and the Children's Online Privacy Protection Act (COPPA), that should guide a school's mission for online access and practices that teachers and students use to share their work online. .

Two Major Mathematics Research Projects End

The Developing Algebra Resources for Teaching (DART) project spanned three years and involved work with secondary mathematics teachers from more than ten O'ahu schools, helping them to deepen their own understanding of key algebra concepts and the Common Core State Standards for Mathematics. Participants engaged in activities that led to their developing algebra modules, including the use of appropriate technology, that would inform pedagogy and teacher knowledge beyond what was available in their textbook materials.

Kapālama Algebra Readiness in the Elementary School (KARES), also a three-year project that involved a whole-school program of professional development at Kapālama Elementary School, used the Lesson Study (LS) model to educate teachers while promoting their autonomy. Kapālama teachers collaborated in grade-level groups to design and develop educative curriculum materials (ECM) in preparation for the development of research lessons. Educative curriculum materials are intended to promote teacher learning in addition to student learning. Rather than merely providing "guidelines" for teacher actions, ECM provide teachers with insights about the ideas underlying the tasks and choices made for student activities.

Teachers in each project reported that the project assisted them in strengthening their pedagogical content knowledge in mathematics and that their students were actively engaged in the lessons they taught. At the end of the project, Kapālama Elementary School met or exceeded the HSA standards at all grade levels for all populations. An exciting culminating event for each project was that a team consisting of teachers and CRDG researchers gave a presentation on their respective projects at the National Council of Teachers of Mathematics annual meeting in Philadelphia in April 2012.

Professional Development Supports Collaborative Research

A longstanding professional partnership with Connections Public Charter School (CPCS) continued in 2012 with a series of professional development sessions in mathematics for teachers at the elementary, middle, and high school levels. CPCS has been a research partner with CRDG for many years, with teachers participating in the professional development needed to serve as a research

site for a variety of CRDG projects in science, mathematics, and English. The school has been involved in the Measure Up elementary mathematics research program over the years and continues to use the program for their elementary mathematics curriculum. CRDG mathematics faculty Hannah Slovin and Fay Zenigami and ULS mathematics teacher Melanie Ishihara designed and implemented a series of four sessions on Measure Up for teachers who were new to the school and not familiar with the program. This kind of professional development is especially important for teachers new to the Measure Up program because it uses an approach to mathematics that is very different from the conventional approach used in the elementary grades. CRDG also conducted a series of professional development sessions on the *Algebra I: A Process Approach* and *Core Plus* curricula for the middle and high school mathematics teachers, special education teachers, and educational aides in spring 2012.

Building STEM Capacity in Early Education

The National Research Council's new publication A Framework for K–12 Science Education notes that "teaching science as envisioned by the framework requires that teachers have a strong understanding of the scientific ideas and practices they are expected to teach, including an appreciation of how scientists collaborate to develop new theories, models, and explanations of natural phenomena." Teachers in the early grades are often underprepared to effectively meet these new expectations in STEM teaching.

CRDG's STEM in Early Education (SEE) project addresses this need by providing job-embedded, just-in-time professional development through the use of technology-facilitated approaches. The project's goal is to use inquiry-based professional development to help teachers develop depth of content knowledge in earth/space science, physical science, geography, technology, and engineering and master a variety of teaching strategies. The project has a particular focus on creating professional learning communities within and across schools that facilitate teachers' reflective practice and collaborative learning, an approach that combines CRDG's extensive experience designing, delivering, and evaluating professional development with the distance learning opportunities the new technologies provide.

The SEE project is based on a series of learning progressions that successfully engage students in science and engineering practices using children's natural tendency to attempt to understand, make sense of, and influence the world around them. The SEE project also focuses on teaching progressions as they relate to knowledge of STEM content and science and engineering practices. The project considers to what extent sustained professional development, coupled with existing and emerging technologies, can be designed and implemented with K–2 teachers to support the teaching progressions. The professional development program gives teachers the tools to listen to what students say and observe what they do, then incorporate students' ideas into their instruction, enabling students to construct their knowledge and create ever more sophisticated explanations of their world.

Supporting Implementation of the Common Core Standards for Mathematical Practice with Classroom Videos

CCRDG's ongoing collaboration with Texas Instruments (TI) took a new turn in 2012 with funding from TI to produce of a series of videos for use in teacher professional development sessions. This project came about at the request of TI as a result of the history of collaboration between CRDG and ULS in preparing video vignettes of classroom instructional strategies. A previous video entitled "Bringing It All Together" that featured sixth-grade students at ULS using TI-Nspire handhelds to explore the area of quadrilaterals is an examplar in the chapter "Technology Tools to Support Mathematics Teaching" by Jessica Cohen and Karen F. Hollebrands in the National Council of Teachers of Mathematics book *Focus in High School Mathematics: Reasoning and Sense Making*. Texas Instruments viewed the unique partnership between CRDG and ULS as ideal for the production of additional videos to be used in delivering professional development on ways students use technology to engage in the Common Core State Standards for Mathematical Practice.

Judith Olson from CRDG and Brendan Brennan from ULS worked with ninth- and tenth-grade ULS student volunteers for several hours on two Saturday

mornings as they explored mathematical concepts using the TI-Nspire and Nspire Navigator while engaging in the Standards for Mathematical Practice. Texas Instruments then designed a professional development workshop entitled "Implementing the Common Core Mathematical Practices with TI-Nspire™," centered around the videos. The videos were used at the TI Instructor Professional Development Day with over four hundred of their national and regional instructors from the United States and abroad in March 2012 and in subsequent instructor professional development. Some of these instructors then used the videos during summer 2012with several hundred teachers in "Implementing The Common Core Mathematical Practices with TI-Nspire™" workshops around the nation.

Support for Students Learning Mathematics via Student-Centered Curricula

Taking a closer look at one's own work can reveal new insights. CRDG curricula are designed to support success for all children, but what are the particular features of these curricula that make this possible? To probe this question, mathematics education faculty Hannah Slovin and Fay Zenigami and special education faculty from the University of Hawai'i, College of Education have been collaborating on research about the supports needed for at-risk and struggling students learning mathematics through curricula developed for a constructivist environment. Using classroom observation data from a first-grade class and a sixth-grade class, the researchers identified areas where the respective curricula and pedagogy promoting student-centered learning posed specific challenges for struggling learners and suggested the potential supports that could help students access critical content and processes.

The team observed the classes to investigate how learning activities and group discussions were orchestrated and focused on case studies to examine more closely how this learning environment affects individual children.

A common feature of the elementary- and middle-school curricula in the observed classes is that students are engaged in solving problems that have more than one solution, including those with more than one outcome as well as those with more than one approach to reaching an answer. Furthermore, students are expected to collaborate to share ideas, ask questions, and explain their thinking so they can build conceptual understanding. Utilizing different strategies, comparing and contrasting methods, and making connections between approaches allowed students more access to solve and make sense of problems and provided opportunities to make mathematical generalizations. Communicating through concrete, pictorial, oral, and written forms required students to transmit, receive and reflect on shared information to begin developing their own understandings of the mathematics.

Nspired ALGEBRA Project Works to Increase Algebra Understanding

Nspired ALGEBRA: Algebra Lessons that Give Experiences for Building Reasoning and Achievement is a professional development project involving work with teachers at Moanalua Middle School and Moanalua High School. The project provided teachers with the opportunity to increase their content understanding and instructional strategies and provide deeper student understanding by using Texas Instruments' TI–Nspire networked technology and formative assessment. The project spanned the 2011–2012 school year and addressed tough-to-teach, tough-to-learn topics including percentage/proportional reasoning, reasoning with algebraic concepts, rate of change/linearity/related graphs, systems of equations/manipulating expressions, and exponential growth/decay.

Nspired ALGEBRA built upon CRDG work in Project FANC: Formative Assessment in a Networked Classroom, which was a three-year study that looked at growth in student achievement, teacher and student opinions and attitudes, and teachers' effectiveness in implementing formative assessment using the TI–Navigator system.

Keith Ishihara, at CRDG while on sabbatical leave from Moanalua High School, worked with CRDG faculty members to coordinate project activities (see story on page 19). Along with guidance from Teri Ushishima, Complex Area Superintendent of the Central District, Ishihara made arrangements for Hawai'i Department of Education professional development credit to be available for participating teachers.

Keith Ishihara with his class at Moanalua High School

Improving Science Teaching in the Pacific

Now in its fourth year, the Pacific Education and Research for Leadership in Science (PEARLS) project, a five-year partnership with the John A. Burns School of Medicine (JABSOM), has provided training for science teachers from Hawai'i, American Sāmoa, Saipan, Yap, and Pohnpei, while adding new teachers from American Sāmoa, Guam, Rota, and Tinian. The project's goals include helping middle-school students in Hawai'i and other Pacific Islands learn more about scientific inquiry through the study of the local environment and about the kinds of careers available in science and technology. Teachers in the program attend a series of professional development workshops based on CRDG's Foundational Approaches in Science Teaching (FAST) middle school science curriculum and other projects where the focus is on using the inquiry method and the local environment to teach science through inquiry. In 2012, the program has expanded to Palau, collaborating with Palau Community College and the Ministry of Education.

Teacher Network Fosters a Culture of Mathematics

With its roots in the National Science Foundation-funded GK–12 SUPER–M project, Math Teachers' Circle of Hawai'i (MaTCH) is part of a growing network dedicated to establishing the foundation for a culture of problem solving by fostering the enjoyment of mathematics among teachers. A key focus of the program is to help teachers increase their mathematical knowledge for teaching, defined as the knowledge used to carry out the work of teaching mathematics.

MaTCH continued to hold its monthly workshops in 2012 and, in addition, held a four-day retreat in the summer at the University of Hawai'i at Mānoa. Attendees from O'ahu, Hawai'i Island, Maui, and Moloka'i worked on mathematics problems led by guest presenters who focused on the connections between mathematics and other fields. Presentations included a mathematics activity to highlight the rarity of the Transit of Venus; an activity titled, "Using Music Videos in the Key of Mathematics;" and a demonstration of how some of the most basic equations in mathematics, like the distance formula, is applied to very sophisticated activities, like finding whales. In addition to doing lots of mathematics, both the monthly workshops and the retreat dedicated a good part of each session to unpacking the Common Core State Standards for Mathematical Practice.

The 2012–2013 activities, including the development of a new website, are being supported by a grant from the ESEA Title II program. Project evaluation from the 2011–2012 activities showed statistically significant positive increases in participants' mathematical knowledge for teaching in two areas: patterns, functions, and algebra; and number and operation.

While the production and delivery of research-based curriculum and professional development programs are at the heart of CRDG's mission, it has also engaged in a variety of other work in the educational community that contributes to improving educational practice. In this section, you will find a range of programs that serve students, teachers, and community members, and that describe CRDG's integral place in the educational research community locally, nationally, and internationally.

International Collaborations

Collaborations in Science Education Continue with Russian Educators

In 1993, CRDG began a collaboration with Russian educators at the invitation of leaders in the Russian Academy of Sciences to develop inquiry-based science education in Russia. The Academy's Dr. Alexander Uvarov, then Head of the Laboratory for Telecommunications in Education, met John Southworth at an international telecommunications conference in Moscow at which Southworth introduced CRDG's award-winning science program Foundational Approaches in Science Teaching (FAST). Intrigued by FAST, Uvarov was able to secure funding to sponsor the first FAST professional development institute in Moscow in the summer of 1993. As a result, a Memorandum of Agreement was signed with the Russian Ministry of Education to translate FAST into Russian. CRDG provided support in adapting FAST, and the fully developed project (now known in Russia as The World Around Us) won approval of the Russian Ministry of Education for use in Russia's schools. Today some 120 schools in Moscow, as well as schools in Voronezh, Ryazan, Barnaul, and Krasnoyarsk continue to use The World Around Us in their science courses.

Twenty years later that collaboration continues. Just as CRDG followed the development of FAST for middle school with the elementary school program Developmental Approaches in Science, Health and Technology (DASH), educators in Russia are now building on the success of The World Around Us by creating an adaptation of DASH in Russian for grades 1 to 4. In August 2012, the Institute of Open Education in Moscow sponsored two master teachers for an in-depth training in DASH at CRDG, which was conducted by Carol Ann Brennan. Elena Sokolova and Sergey Lovyagin, following their training in Hawai'i, are leading a team of teachers in Moscow schools to pilot test the adapted DASH materials this academic year.

In October 2012, Donald Young traveled to Moscow at the invitation of Alexander Uvarov to participate in the International Scientific and Practical Conference on Science Education in the School of the Information Age, where he delivered a presentation on science and engineering in early education. At the same conference Young participated in two panel discussions along with science teachers from Russia. The first was a 20-year retrospective of the collaborative work on FAST. The second panel focused on the recent developments in adapting DASH for Russian schools. Following the conference, Young also conducted a one-day workshop on DASH grade 1 inquiry science investigations for the master teachers participating in the DASH in Russia project and other administrative officials and policy makers. A Memorandum of Agreement has now been signed between CRDG and the Institute of Open Education to continue the adaptation of DASH. In support, Brennan has been invited to provide three weeks of training in DASH in Russia in the summer of 2013.

CRDG Science and Mathematics Educators Share Expertise in Korea

CRDG's Frank Pottenger and Carol Ann Brennan were featured as keynote speakers at the International Seminar for the 65th Anniversary of Dankook

University in Seoul, Korea in June. The seminar—co-sponsored within the Dankook University College of Education by the Institute for Education of School Subjects, the Science Education Research Institute, and the Special Education Research Institute—focused on the theory and practice of STEAM (Science, Technology, Engineering, Arts, and Mathematics) integrated education, a core focus at the elementary, middle, and high school levels in Korea.

Pottenger's keynote, "Inquiry: A Mechanism for an Articulated Curriculum," addressed his research into inquiry as an operation of the mind. Brennan's presentation described her work on applying the theories of inquiry from Pottenger's research. In Evidence of Inquiry in Early Childhood Education, she described her research on inquiry conducted over the past several years with the UH Mānoa Children's Center. Pottenger had worked previously with Dankook Professor of Education Dr. Yeon-A Son, one of the primary organizers of the conference, when she spent two years at CRDG in a post-doctoral research position in science education.

CRDG's Linda Venenciano presented the results of her studies on the long-term effects of the Measure Up elementary mathematics project at the 12th International Congress on Mathematical Education (ICME-12) in Seoul, Korea, in July. CRDG began the Measure Up project in 2001. The mathematics of Measure Up builds on the El'konin-Davydov Russian curriculum and uses a measurement context to structure how mathematical concepts are introduced. Studies are underway to examine

how this curriculum affects students' algebraic thinking and reasoning skills.

The ICME-12 allows for high levels of interaction among researchers from around the world. During the congress, Venenciano connected with researchers from Goethe-University in Frankfurt, Germany, who are familiar with the Measure Up project and pursuing related work in their country. They have recently expanded the collaboration to include researchers in Naples, Italy, who are also pursuing work with the Davydov approach.

CRDG Continues Leadership Role in Pacific Organization

As a founding member of the Pacific Circle Consortium (PCC), CRDG has had a long-standing commitment to education in and about the Asia-Pacific region. The PCC was established in 1977 as an initiative in international co-operation among educational research and development institutions in the Pacific region and has produced many collaborative curriculum projects and policy papers in its thirty-five years. This year, CRDG headed a project to look at the organization as it had evolved in light of the issues facing the region today, and to begin a discussion about what makes the PCC unique and how it can best position itself to continue to serve the region well into the twenty-first century. The initial report was presented at the PCC's annual meeting at Ehwa Women's University in Seoul, Korea, to the membership, currently drawn from Australia, New Zealand, Fiji, Sāmoa, Vietnam, Korea, Taiwan, Japan, Mexico, the Netherlands, and several US states. CRDG will host the upcoming meeting in Honolulu in 2013.

High-tech Vocational Training Serves Individuals with Disabilities

Technology for Untapped Talent (TUT), a program that provides vocational training in high-tech manufacturing to individuals with disabilities, honored its first cohort to complete the program on Saturday, October 20, 2012 in the Campus Center Ballroom on the University of Hawai'i Mānoa campus. The thirteen participants recognized for their completion of the TUT program were joined by friends and family for the special ceremony that included congratulations and inspirational messages from guest speakers Susan Foard, assistant administrator of the Division of Vocational Rehabilitation and Services for the Blind, and Kathleen Berg, director of CRDG.

Directed by CRDG's Neil Scott, this unprecedented vocational training program provides individuals with conditions like autism and Asperger's syndrome, or physical disabilities such as visual impairment, deafness, and hearing difficulties, the chance to acquire gainful employment in the high tech design and manufacturing marketplace. In the twelve to eighteen-month intensive program, participants gain skills using computer-aided design (CAD) software, computer-aided manufacturing (CAM) software, and computer numerically controlled (CNC) machines like CNC mills and routers, laser cutters and engravers, and 3D printers. These emerging technologies are redefining the necessary skill set for employees of companies that want to remain competitive in the design and manufacture of products such as

furniture, musical instruments, jewelry, signs, awards, souvenirs, and more. Managers at two factories—a recent TUT participant has started working at one of the two—stated that their ability to expand their business by incorporating new computer controlled manufacturing processes has been seriously limited by the lack of trained CAD, CAM, and CNC workers within the state of Hawai'i. The training provided by the TUT program is both answering the needs of employers and empowering individuals with disabilities to participate fully in developing the twenty-first century workforce.

CRDG Continues to Build Assessment Expertise in Early Childhood

As part of a growing focus on early childhood education, a team of CRDG evaluators collaborated with the University of Hawai'i's Center on the Family to help evaluate the quality of early language and literacy instruction in preschool classrooms.

The project looked at ten Head Start preschools in a variety of settings. Another ten comparison schools, usually in the same area, were selected to match the project schools for selected criteria. In this final year of the three-year collaboration, a mathematics curriculum was added to project classrooms and the mathematics subtest from the Developmental Skills Checklist was added to the battery of individual child assessments to measure its impact.

As the project comes to a close next year, one of the lasting benefits is the team of seasoned data collectors that are now available to work on other projects in early childhood education. With the growing focus on early childhood education that the state is promoting, CRDG is well positioned to make a strong contribution in this most critical of areas.

Supports for Native Hawaiian Students

Since 2000, CRDG's Literacy and Hawaiian Education (LHE) team has been working directly with the Hawai'i Department of Education (HIDOE) to improve educational services to children and youth in schools with high proportions of Native Hawaiian students. Two of LHE's projects are in their final year of implementation. Heluhelu Maoli provides early and strategic reading and mathematics supports for students in grades K–5. Kāko'o Ikaika employs detection and prevention strategies for at-risk students in grades 6–12 to provide transition support in three middle school/high school pairs. LHE's latest project, Piha Pono, is a scaling-up project that expands successful school-wide practices in grades K–5 reading and grade one mathematics that use the Response to Intervention (RTI) and Positive Behavior Support frameworks.

According to most estimates, between 26 percent and 34 percent of the students in Hawai'i's public schools are Native Hawaiian. Native Hawaiian students represent over 60 percent of the student population across the ten elementary schools at which LHE provides school-wide reading supports. Through Piha Pono, currently in its second year of implementation, LHE will continue to build on the evidence-based approaches that have been shown to have a positive impact in raising school-wide reading achievement in these partner elementary schools. In 2010, in order to meet the state's Annual Measurable Objective (AMO) for reading on the 2010 Hawai'i State Assessment (HSA), 58 percent of the students in a school had to achieve the proficiency benchmark. Despite their having overall substantially higher

percentages of low-income students than the state average (75 percent versus a state mean of 45 percent), all ten of the current LHE project schools met the AMO for reading that year. The following year, the state's AMO for reading (HSA reading standard) increased from 58 percent (2009–2010 School Year) to 72 percent (2010–2011 School Year). Even with the higher AMO for reading in 2011, nine of the ten Heluhelu Maoli project schools either again met the state's AMO for reading or improved in the percentage of students meeting the standard. Of particular note is the most recent HSA data, which shows that at an individual student level, the percentage of Native Hawaiian students in project elementary schools who met or exceeded the HSA proficiency standard in reading increased from 38% in 2011 to 55% in 2012.

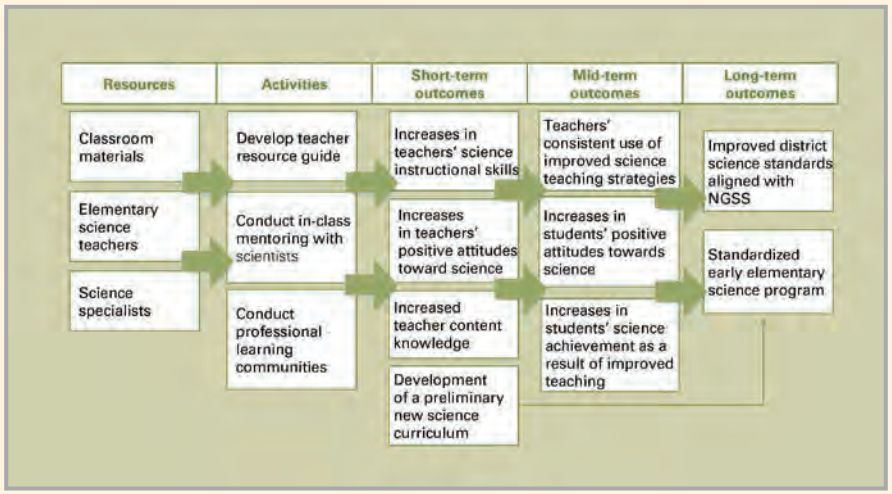
Much like their predecessor project, Pihana Nā Mamo, these three CRDG-HIDOE partnership projects show the result that commitment to best practices combined with sustained effort over time can make.

Building Technical Tools for Assessment

CRDG evaluators Paul Brandon and Brian Lawton worked with McREL'S Pacific Center for Changing the Odds to conceptualize and develop two brief logic model reference guides and an online interactive logic model application as part of the Pacific Regional Education Laboratory program. The reference guides and application are part of a suite of technical tools offered as resources that educators in the Pacific region (including Hawai'i) can use to evaluate and strengthen their programs. They can be viewed on McREL's website at http://relpacific.mcrel.org/technical-assistance-tools.html.

A logic model is a graphical representation of a program's description, design, and intended effects. Inputs to the model may include the resources the program starts with; the activities it intends to implement; and the short-, medium-, and long-term outcomes that are desired. The model is designed to illustrate the relationships between these elements and to provide educators with a tool that will help them plan and monitor their program and address their evaluation questions.

Under McREL's supervision, the CRDG team provided a web designer with the terminology and structure of the online application—a step-by-step electronic program that guides users through the process of designing a logic model. In addition, they wrote two reference guides that will help Pacific educators create and use logic models to monitor and evaluate their programs. The first reference guide describes the ways that logic models are helpful in planning and conducting program evaluations. The second guide provides an overview of the terms and structure of logic models and helps users better understand various inputs and how they fit into the model..



Bringing Ocean Science to the Public

CRDG's Kanesa Seraphin spent much of 2012 travelling to interview scientists about their research and producing episodes of a new television show, *Voice of the Sea*, that will expose viewers to ocean science issues and research relevant to Hawai'i and the Pacific region. The goals of the show are to 1) improve

viewers' understanding of the ocean and of the connection between people and the health of the ocean; 2) strengthen viewers' knowledge of scientific research practices and local scientific work; 3) develop viewers' connection to, identification with, and empathy for scientists; and 4) create interest in the processes of science that will inspire students to pursue careers in science, technology, engineering, and mathematics. In each episode of Voice of the Sea, the host meets with science researchers and support staff in their labs or at their research sites to develop the viewers' understanding of what it means to be an ocean scientist and to expose viewers to current scientific research. Locations Seraphin visited for the first season included volcanoes and the Mokupāpapa: Discovery Center for Hawai'i's Remote Coral Reefs on Hawai'i Island, aquaponics and beach restoration sites on Maui, and the surf forecasting center and Hawai'i Institute of Marine Biology on O'ahu. She also visited the Tara Oceans Expedition research boat during its stop in Hawai'i and traveled to Guam and Palau to film episodes for the second season. *Voice of the Sea* will begin airing in early 2013.

Summer Programs Combines Enrichment and Research

CRDG Summer Programs, a community-based program that brings students in grades three through twelve onto the University of Hawai'i campus for enrichment programs in science and the arts, hosted just over three hundred students from public, private, and charter schools. The field- and laboratory-based programs allowed them to do, rather than merely study, science and mathematics as well as art, drama, language, and driver's education.

Science programs included field-based courses that took students all over the island, both to natural areas at the beach and in the mountains and to research facilities such as the Bishop Museum, the Waikiki Aquarium, the Pacific Aviation Museum, the Palehua Solar Observatory, and both the Imaginarium and aquaculture program at Windward Community College. A new experimental course this year, called A Summer with Galileo and Newton, led students through a series of experiments that allowed them to construct the laws and principles that are the foundations of modern physics and technology. The same investigative approach was used in the Mathematics Around Us and Investigative Mathematics courses. The arts offerings continued to expand in 2012 with courses in beginning and advanced drama, ceramics, and jewelry making as well as graphic design and digital media. Beginning, intermediate, and advanced robotics rounded out the offerings.

Summer Programs also hosted a major research project conducted by CRDG and the University Laboratory School (ULS) information technology (IT) team in preparation for the 1:1 technology pilot program that began at ULS in fall 2012 (see p. 23). The IT team called the summer research their "pre-pilot." They undertook it because it allowed them to develop a set of best practices—both for deploying hardware and for instilling a sense of responsibility in the students—on a much smaller scale than even the grade-level pilot they would conduct during the school year. An example of the kinds of things the summer study allowed them to do was test hardware choices. The team deployed routers to the home of each Summer Programs class member as a way to create a secure online environment similar to the one on the school campus. The particular router they chose for this first implementation turned out not to work as well as they would have liked. With these data, the team conducted further research and chose a different router for the scale-up to a full grade level for the school year pilot. They also responded to the almost immediate issue of lost or damaged hardware by creating a sense of ownership and community among the students. Elements of this community of learners included a test that everyone had to pass for anyone to receive his or her device and a counter to track days without an incident similar to those used at industrial work sites.

CRDG Continues Public Health Research Collaboration

CRDG's Susan Saka has been collaborating with the Hawai'i Departments of Education and Health since 1993 to document and record trends in behavior among middle and high school students. The Hawai'i School Health Survey, which brings the Youth Risk Behavior Survey and the Hawai'i Youth Tobacco Survey together into a combined effort, is part of a nationwide effort coordinated by the Centers for Disease Control and Prevention (CDC). In Hawai'i, the project is guided by the Hawai'i School Health Survey committee, which is made up of representatives from the Department of Education, the Department of Health, the Hawai'i Tobacco Prevention & Control Trust Fund, and the University of Hawai'i. The survey is administered to Hawai'i public school students in odd numbered years. The even numbered years are then spent analyzing and reporting on the data as well as planning for the next survey.

The 2012 report, titled Results of the 2011 Hawai'i State and Counties Youth Risk Behavior Surveys (YRBS) and Cross-Year Comparisons, reported on the 2011 results at the state level, as it had done in past years, and also at the county level in response to increased interest in having more localized data. The county-level section of the comprehensive report identified areas where county results showed a statistically significant difference from the statewide data. In addition to the comprehensive report, county-level reports in the form of a brochure were produced to help distribute the data in an easily useable form to schools and other agencies.

Simultaneous with reporting data from the previous survey, Saka and her team

were preparing for the next year by revising questionnaire items, producing the 2013 surveys, coordinating with schools for the survey to be administered, and getting the parent materials translated into the fourteen languages the state uses for official correspondence

Teacher Sabbatical Builds Mathematics Network

Keith Ishihara, a teacher at Moanalua High School, spent the 2011–2012 school year on sabbatical at CRDG. He started with three primary goals: to find new methods of teaching Algebra I to achieve better student understanding, to learn about the Common Core State Standards and how they apply to an Algebra I class, and to engage in professional development for himself as well as other teachers at his school and complex.

Being able to spend a full school year immersed in a mathematical research group turned out to be an invaluable experience for a teacher who "wanted to participate in more professional development than I could do while working as a classroom teacher." At CRDG, Ishihara experienced a range of professional development programs from the planning stages to the implementation. He researched topics he felt were important for his continued growth as a teacher, and both shared and received information through his attendance and presentations at national and international mathematics conferences.

Among several CRDG projects in which he participated were the A Modeling Approach to Algebra (AMAA) project (see p.8), were he "learned the process of curriculum development from genesis to PD." He also took on the challenge of creating a credit-granting HIDOE course with a new grant-funded course that would focus on designing lessons using TI-Nspire graphing technology. Other highlights of the sabbatical year included classroom observations, attendance at the National Council of Teachers of Mathematics (NCTM) and National Council of Supervisors of Mathematics (NCSM) conferences, and the opportunity to spend time researching the various resources available online, several of which he is anxious to try in his classroom.

Ishihara kept a record of his sabbatical year on a website that integrated a calendar, blog, and links. He summed up his experience by saying, "While my sabbatical is over, my journey is not.

National Leadership Role in Education for Military Children

CRDG Director Kathleen Berg is in her second term as the Hawai'i State Commissioner for the Military Interstate Children's Compact Commission (MIC3), the national governing body of the Interstate Compact on Educational Opportunity for Military Children. The compact was designed to ease the transitions from school to school and from state to state that are part of the reality for children in military families, due to regular moves between postings. Thirty-eight states, which are home to nearly 90 percent of military dependent students in the nation's public schools, had become members of the compact by the end of 2012.

While the armed services have made great strides in easing the transition for personnel, their spouses, and— very importantly—their children, much remains to be done at the state and local levels. Hawai'i has been at the forefront of those efforts, and the state continued its leadership role with Berg's election in November as chair of the MIC3.\

The goals of the organization going forward include recruiting the remaining states and the District of Columbia into the compact. When this is achieved, policies affecting school transitions will be uniform throughout the nation and military children will not be penalized, or their educational opportunities reduced, as a result of their parents' service in the armed forces of the United States.

Berg, who became director of CRDG in 2012, retired from military service in 2009 as brigadier general in the Hawai'i Air National Guard and has served as associate director of CRDG since 2003. Her most recent research interests have centered on issues affecting military dependent students in Hawai'i public schools.

MIC3 Military Interstate Children's Compact Commission

USPACOM Longitudinal Study of Military Child Education in Hawai'i

With up to 8 percent of students enrolled in Hawai'i's public schools coming from military families, many of them coming to Hawai'i for a period as short as three years or less, the specific educational needs and opportunities of these students are of critical importance to the Hawai'i Department of Education, to the Department of Defense, and to their families. In order to better understand these needs, The Longitudinal Study of Military Child Education in Hawai'i (better known as the Military Child Education in Hawai'i Study) was commissioned by the United States Pacific Command (USPACOM) to help provide a picture of the educational needs and opportunities facing military students and their families in Hawai'i. The study was designed and carried out by researchers from the Johns Hopkins Bloomberg School of Public Health. These same researchers worked on a previous study of military students in Hawai'i that CRDG conducted in 2007, and CRDG worked with Johns Hopkins on this current study facilitating the collection of data and consulting on the local education environment.

Designed to use online surveys and face-to-face focus groups, the study had the following specific objectives: 1) document youth and parental perceptions of education in Hawai'i and possible factors contributing to those perceptions; 2) explore how attitudes, concerns, and perceptions about education (public, charter, private, and home school) in Hawai'i change over time; 3) identify the consequences of living and being schooled in Hawai'i after families move to a new duty station; and 4) provide policy and programmatic guidance to ensure that military families experience a positive tour of duty in Hawai'i and that their children have optimal educational and social opportunities.

Are you a parent of a school age child?

THIS IS YOUR CHANCE TO BE HEARD!

Go to ***www.hawaiikids.org***

and take a brief survey about schools in Hawaii and the special stresses and opportunities you and your children have experienced.

This survey is for parents of all school age children, ages 5 to 18. In addition, you can give permission for your children over 10 to take a youth survey.

- For parents, the survey takes less than 30 minutes.
- Children 10 years and older can also complete the survey. For them, it less than15 minutes.
- Children are eligible for prizes!
  - iTunes cards
  - MP3 Players
  - *Grand Prize*: Flat screen HD TV

USPACOM has contracted Johns Hopkins University, who has teamed with the University of Hawaii, to complete this first-ever study. We meet every six months with senior military leadership to review the data and discuss recommendations.

MILITARY CHILD IN HAWAII

Implementation of the study began in 2010 and concluded the end of 2012. Preliminary results reported in 2012 supported the conclusion that education is one of the top concerns of military families about living in Hawai'i. Some of the key messages that emerged from the preliminary data analyses were that transition support, academics, school quality, interpersonal relationships, and being treated fairly all matter to military parents and students, as do school safety, transition experiences, emotional supports, and perceptions of and experiences with Hawai'i residents. Interestingly, "outside the gate" community engagement mattered a lot: positive engagement with the local community was associated with perceptions of school quality as well as with less child stress when a child's parent was deployed.

Low participation levels by military parents and students limited the usefulness of the study, but in spite of its limitations, this study made some unique contributions that built upon previous work. It was the first study to report on the families of private school or home schooled students as well as those in public school in Hawai'i. And it was the first study to collect social and contextual information that can now be correlated with the reports about school so as to see which of those factors are associated with perspectives and opinions about schooling. The final study results will prompt valuable recommendations for actions that can be undertaken by the military services as well as the state's schools to ensure military children have optimal educational opportunities and experiences during their stay in Hawai'i.

New Book from CRDG

One of the first Nisei recruited into the US Army in World War II, Arthur Komori worked undercover in pre-war Manila for the Counter Intelligence Corps (CIC) as the United States prepared for war. When war came, he worked as an undercover agent both on the front lines and behind the scenes in General MacArthur's headquarters.

In part because of the political climate of the times and in part because of the secret nature of his work, the story of Arthur Komori's military career has never been told. CRDG began working with local veterans to collect documents and recollections of his story and to produce this long overdue biography, which will be published in 2013.

MaPS Encourages Customers to "Buy UH"

With the theme of "Buy UH," CRDG's Marketing and Publications Services (MaPS) held an open house for old friends and new on March 23, 2012.

Originally an in-house print shop for CRDG publications, MaPS has grown to be a full-service one-stop-shop for graphic design, web design, and printing and finishing services for the University of Hawai'i community as well as non-profit organizations in the community. As part of UH, MaPS offers many advantages to clients within the university family, including their convenient location on campus; their understanding of UH procedures and protocols; and their friendly, flexible, and professional service. An added bonus is that when UH departments come to MaPS for their web or print needs, the money stays within UH.

The open house highlighted MaPS's shift from offset printing to digital printing and its web development services. Guests got to go behind the scenes to see the two newest machines: the Xerox Color 550 and the Nuvera 120EA, the primary black/white printing machine. A Xerox paper specialist was on hand to do mini-presentations of their various paper options, including customizable papers for folders and specialized marketing projects.

New Hawaiian Collection Established

A major new resource of the Curriculum Research & Development Group is the CRDG Hawaiian Library (CHL) (also known as the "Laiberry"), whose inventory consists of approximately 5,700 references largely focused on Hawaiian culture and history. The Hawaiian/Pacific collections in the University of Hawai'i's Hamilton Library and the state of Hawai'i's public library system are larger in number, but the CHL has many items that are not in either of those libraries. Furthermore, virtually all of the resources in the CHL may be borrowed and used outside of the CHL's premises.

A major impetus for the development of the CHL was the production of the Ka Wana series, twelve books on different aspects of Native Hawaiian traditional and contemporary practices and beliefs written by Malcolm Nāea Chun. These books were produced as part of the Pihana Nā Mamo project that was funded through the US DOE Native Hawaiian Education program. As the five-year project grew, principal investigator Morris Lai saw a critical need to have numerous references close at hand. Lai's father, Kum Pui Lai, had been a long-time collector of books on Hawai'i and, upon learning of the project at CRDG, donated a large number of his Hawai'i book collection to CRDG. Morris Lai also donated most of his collection. As the collection grew, and as word of it spread and scholars and students began to make increasing use of it, the Laiberry was formally established with the creation of a University of Hawai'i Foundation account for its continued support.

MaPS Helps Bring Historical Resource to the Public

Brother Gabriel Bertram Bellinghausen of the Society of Mary arrived in Hawai'i as the nineteenth century was coming to a close. Over the next twenty years, Brother Bertram shot over 2,000 images of the Hawaiian Kingdom on 8x10-inch glass plates. In 2012, Chaminade University created a traveling exhibit of these photographs curated by Dr. Albert Lum and entitled "Na Pa'i Ki'i 'o Brother Bertram, Photographs of the Kingdom of Hawai'i, 1883 to 1905."

CRDG's graphic designer Darrell Asato worked with the Chaminade team on the technical aspects of mounting the exhibition. His initial work involved restoring and printing the photographs in a way that was visually appropriate for the time period they depict. This involved research on such things as what tones of black (cold, warm, neutral, etc.) and what types of paper might have been used in Hawai'i at that time. He then travelled with the team to help mount the exhibition on Kaua'i, Maui, and the Big Island and at the National Geographic Museum at Explorers' Hall in Washington, DC. Following the initial exhibit, Asato has continued to serve as a technical consultant for additional groups that want to display Brother Bertram's photographs, most recently the Catholic Women's Guild in Honolulu and the National Museum of the American Indian in Washington, DC.

View of the Great Chinatown fire of 1900

Princess Ka'iulani's residence, Waikiki

Lū'au at the Catholic Mission, 1893

Chinese Cattle

Nu'uanu Pali

Main Street, Lahaina, Maui

Evaluators Help Strengthen Two School Success Programs

CRDG evaluators are documenting the process of school improvement for six schools funded under the School Improvement Grants (SIG) program, which is part of the American Recovery and Reinvestment Act (ARRA) of 2009. All six Hawai'i Department of Education schools that received ARRA SIG funds selected the School Transformation Model to completely reorganize the school. The evaluation team reviewed program and school documents, interviewed state-level project leaders, and tracked progress through a variety of measures. As part of the evaluation, the evaluators compared teacher and student variables between project schools and similar schools by matching project schools with a set of schools based on selected school community characteristics.

The 21st Century Community Learning Centers (CCLC) program seeks to address the needs of the most at-risk students through tutoring, homework help, and academic enrichment activities to help them succeed in school. The program provides grants to school communities where the need is the highest for the purpose of establishing centers for students to obtain academic help, a sense of connection with school, and the chance for personal success in school. Subgrantees are organizations that receive 21st CCLC grant funds and are responsible for providing services to fulfill the purposes of the grant. CRDG's team of evaluators began working with 21st CCLC subgrantees in School Year 2002–03. Since then, they have been evaluators for ten subgrantees with sixty-nine public school centers located on O'ahu, Kaua'i, and Maui. Currently, CRDG's team of evaluators are documenting and evaluating the program at three subgrantees—two on O'ahu and one on Kaua'i.

The University Laboratory School (ULS) is a New Century Public Charter School with two interlocking missions: to design and deliver to its students the best possible education and to serve the educational research and development community through the invention and testing of high quality educational programs. The curriculum is performance-based and built on multi-year sequences of learning emphasizing creativity, inquiry, problem solving, and active learning. ULS is widely recognized as successful with all learners, as substantiated by standardized test scores, graduation rates, and post-secondary enrollment.

Building Best Practices for Technology Use in Education

In 2012, University Laboratory School (ULS) began a year-long pilot to research and develop "gold standards" for implementing and sustaining technology in education, including current trends involving 1:1 technology, Google Apps for Education, and Internet service routing devices.

Unlike other schools, districts, and states, ULS designed their pilot not simply to deploy technology, but to determine best practices in technology integration that are tied to effective teaching, learning, curriculum development, and professional development. Further, the pilot included a router program, meant to increase student Internet security and help parents create safe online access in the home as an extension of the constantly supervised secure networks at school.

This study built upon the successful ULS Tech PD, a year-long technology professional development initiative, which

aimed to build basic fluency and understanding of ULS hardware, software, and virtual communities among the entire faculty and staff as well as a much smaller scale "pre-pilot" conducted in the summer of 2012 at CRDG Summer Programs (see p. x). ULS and CRDG researchers involved in this 1:1 pilot program believe that advanced planning, administrative support, carefully structured experiences for teachers and staff, and a comprehensive view of technology and its role in teaching and learning are needed to ensure appropriate and innovative use of technology in education. Because of this careful planning, the program at ULS has been a success; but these kinds of successes are not easy to come by. Thus, the 1:1 pilot study researchers have created a variety of ways to share their knowledge and experiences with others. Educators and education-related professionals from around the state and country have visited ULS in person or via Google Apps for Education to observe what is possible when technology is utilized to support collaborative learning communities, the key to understanding and using practices and habits of mind necessary for college and career readiness and critical thinking..

ULS Senior Becomes Presidential Scholar

ULS senior and Student Body Government President Kimiko M. Matsuda-Lawrence was recognized as one of two 2012 Presidential Scholars from Hawai'i. Matsuda-Lawrence and a student from Hawai'i Preparatory Academy were two of 141 US Presidential Scholars selected by the US Department of Education to be honored in 2012.

Since its creation in 1964, the US Presidential Scholars Program has honored more than 6,000 graduating high school seniors for academic excellence, artistic accomplishments, and civic contributions. Each year this unique program engages more than 3,000 students to pursue recognition based not only on outstanding scores on the national tests such as the SAT and ACT, but also on the basis of school reports and transcripts, leadership activities, and contributions to family, school, and community.

Kimiko will study at Harvard University where she will "seek the tools needed to bend the arc of history toward justice." Congratulations, Kimiko!

ULS Students Excel in the National Scholastic Arts Exhibit

Every year, ULS students participate in the National Scholastic Arts Exhibit, the longest-running and most prestigious student arts recognition program in the United States. The Scholastic Awards were established in 1923 to encourage, foster, and reward student creativity across the country. Entries are received from middle and high schools statewide, including public, private, home, and charter schools, and local judging takes place through the Hawai‘i Regional of the National Scholastic Art Exhibition. In 2012, seventy-eight ULS students in grades seven through twelve entered artwork representing all disciplines of the ULS art program (ceramics, drawing/painting, fiber arts, sculpture) to compete among over fifteen hundred entries. From those, 260 student works were chosen to be in the exhibit; twenty-two of them from ULS. The most outstanding works received the regional Gold Key Awards and Silver Key Awards. ULS students received eight Gold Key Awards (this designation includes being selected to represent Hawai‘i in the National Exhibit) and fourteen Silver Key Awards (selected for the Hawai‘i Regional Exhibit). All Gold Key Award artworks represent the Hawai‘i region in the national judging held each April in New York City. Congratulations to our ULS artists and their art teachers!


Ananya Rafalovich, Gold


Carley Kida, Gold


Courtney Albios, Gold


Kimiko Matsuda-Lawrence, Gold


Angelina Elido, Silver


Alyssa Garcia, Silver

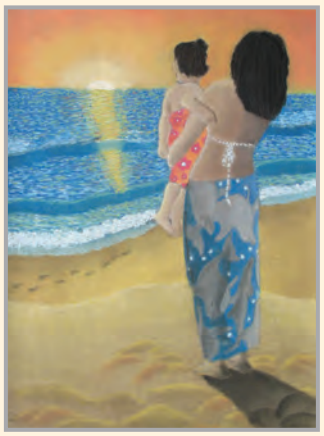

Jared Kanoa, Gold


Catherina Guerero, Silver


Joseph Choy, Silver


Nicolina Pascua, Silver


Olena Pishchalenko, Silver


Nolan O’Conner, Silver

Peer Reviewed Publications

Brandon, P. R., Smith, N. L., & Grob, G. F. (2012). Five years of HHS home health care evaluations: Using evaluation to change national policy. *American Journal of Evaluation*, 33, 251–263.

Cox T. E., Philippoff, J., Baumgartner, E., & Smith, C. M. (2012). Expert variability provides perspective on the strengths and weaknesses of citizen driven intertidal monitoring program. *Ecological Applications*, 22, 1201–1212.

Daly-Engel, T. S., Duncan Seraphin, K., Holland, K. N., Coffee, J. P., Nance, H. A., Toonen, R. J., & Bowen, B. W. (2012). Global phylogeography with mixed-marker analysis reveals male-mediated dispersal in the endangered scalloped hammerhead shark (*Sphyrna lewini*). PloS ONE, 7(1): e29986. DOI:10.1371/journal.pone.0029986

Duncan Seraphin, K., Philippoff, J., Parisky, A., Degnan, K., & Papini Waren, D. (2012). Teaching energy science as inquiry: Reflections on professional development as a tool to build inquiry teaching skills for middle and high school teachers. *Journal of Science Education and Technology*, 1–17. DOI 10.1007/s10956-012-9389-5

Olson, M., Olson, J., Slovin, H., Brandon, P, & Yin, Y. (2012). Sustaining knowledge of and self-efficacy in using formative assessment. In L. R. Van Zoest, J. J. Lo, & J. L. Kratky (Eds.), *Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (p. 911). Kalamazoo: Western Michigan University.

Olson, T., & Olson, M. (2012). Preservice teachers' perceptions of where instruction in college courses emphasizes connections to middle grades mathematics. In L. R. Van Zoest, J. J. Lo, & J. L. Kratky (Eds.), *Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (p. 790). Kalamazoo: Western Michigan University.

Olson, T., & Olson, M. (2012). Examining the role of instruction in mathematics to prepare preservice teachers for mathematics instruction in Grades 7–9. In S. L. Reeder, (Ed.). *Proceedings of the 39th Annual Meeting of the Research Council of Mathematics Learning* (pp. 67–74). Charlotte, NC

Slovin, H., Olson, J., & Olson, M. (2012). Teachers' classroom practices using technology for formative assessment: The connection to knowledge and perceptions of mathematics, learning, and teaching. In S. L. Reeder, (Ed.). *Proceedings of the 39th Annual Meeting of the Research Council of Mathematics Learning* (pp. 144–152). Charlotte, NC.

Venenciano, L., & Slovin, H. (2012). Algebra I preparedness and the Measure Up program: Implications from a theoretical model. In L. R. Van Zoest, J. J. Lo, & J. L. Kratky (Eds.), *Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (p. 130). Kalamazoo: Western Michigan University.

Venenciano, L., Dougherty, B., & Slovin, H. (2012). The Measure Up program, prior achievement, and logical reasoning as indicators of algebra preparedness. In *Proceedings of the 12th International Congress on Mathematical Education* (ICME-12) (p. 7597). Seoul, Korea.

Young, D. B, Pottenger, F. M., Brennan, C. A., Brandon, P., and Nguyen, T. T. (2012). Science and engineering in early education: A conceptual framework for improving teaching and learning. *Proceedings of the International Scientific and Practical Conference Science Education in the School of the Information Age* (pp. 233–253). Moscow, Russia.

Zenigami, F., Olson, M., Olson, J., & Slovin, H. (2012). Two models of professional development using educative curriculum materials. In L. R. Van Zoest, J. J. Lo, & J. L. Kratky (Eds.). *Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (p. 578). Kalamazoo: Western Michigan University.

Other Publications

Curriculum Research & Development Group. (2012). *A modeling approach to Algebra*. Honolulu: Author.

Duncan Seraphin, K. (2012). Improving ocean literacy through targeted professional development. *NSTA Reports*. http://www.nsta.org/publications/news/story.aspx?id=59238

Harrison, G. M. (2012). A SAS macro for estimating education-study statistical power parameters [Computer software code]. http://goo.gl/moLFl

Higa, T, F., Oshiro, E. M., & Nakamura, A. D. H. (2012). *An evaluation report on the implementation and outcomes of the Kapālama Algebra Readiness in the Elementary School project in 2011–12 (project year 3)*. Honolulu: University of Hawai'i at Mānoa, Curriculum Research & Development Group.

Jumawan, F. V., Nguyen, T. T., & Liebengood, F. D. (2012). Teachers' self-perception versus actual use: A science online learning community. *Proceedings of the 2012 International Society for Technology in Education Conference*. San Diego, CA: ISTE. http://www.isteconference.org/2012/uploads/KEY_70233986/2012_ISTE_TeacherPerceptionvUse_ScienceOLC_RP.pdf

Lawton, B. E. (2012). A SAS macro for producing benchmarks for interpreting school effect sizes [Computer software code]. http://goo.gl/Op3q4

Olson, T., & Olson, M. (2012). When are key mathematical concepts, Grades 7–12, explored in preservice secondary mathematics teacher preparation? *Proceedings of the Annual Hawai'i International Conference on Education* (pp. 565–572). Honolulu, HI.

Pottenger, F. M. (2012). Inquiry: A mechanism for an articulated curriculum. *Proceedings of the International Seminar for the Sixty-fifth Anniversary of Dankook University*, Seoul, Korea.

Saka, S. M. (2012) *Results of the 2011 Hawai'i state and counties Youth Risk Behavior Surveys (YRBS) and cross-year comparisons*. Honolulu: University of Hawai'i at Mānoa, Curriculum Research & Development Group.

Slovin, H., Rao, K., Zenigami, F., & Black, R. (2012). Teaching and learning mathematics within the RtI process: Building a research community. *Proceedings of the Annual Hawai'i International Conference on Education* (pp. 3516–3522). Honolulu, HI.

Young, D. B. (2012). *Standards streamlining project performance report addendum August 1, 2011 through May 30, 2012*. Honolulu: University of Hawai'i at Mānoa, Curriculum Research & Development Group.

Zenigami, F., Olson, M., Olson, J., Slovin, H., & Ishihara, K. (January 2012). Teachers develop educative curriculum materials to enhance the teaching and learning of tough to teach and tough to learn topics in Algebra I. *Proceedings of the Annual Hawai'i International Conference on Education* (pp. 3009–3021). Honolulu, HI.

Grants and Contracts

Berg, K. Hawai'i Quality of Life Survey: A Study of Military Families on Tour in Hawai'i. US Department of Defense (USPACOM through Johns Hopkins University). $52,799. 2009–2012.

Cooper, P., Lemus, J. D., Duncan Seraphin, K., Sakamoto, C., & Thomas F. I. M. Center for Ocean Science Education Excellence (COSEE)–Island Earth. National Science Foundation. $300,000. 2010–2015.

Cooper, P., Duncan Seraphin, K. M., Sakamoto, C., & Strang, C. Pacific Ocean Literacy for Youth, Publics, Professionals and Scientists (POLYPPS). National Science Foundation Centers for Ocean Science Education Excellence (COSEE) Collaboration. $150,000. 2008–2014.

Duncan Seraphin, K., Okimoto, D., & Lerner, D. T. Exploring our Fluid Earth: NOAA Ocean Science Curriculum, Teacher Professional Development and Public Outreach. National Oceanic and Atmospheric Administration (NOAA), Office of Education. $1.2 M. 2010–2013.

Duncan Seraphin, K. M., Nguyen, T., & Brandon, P. R. Accessible Professional Development for Teaching Aquatic Science Inquiry. U.S. Department of Education—Institute of Education Services. Teacher Quality –Mathematics and Science Education, Goal 2. $1.49 M. 2010–2013.

Duncan Seraphin, K. M. UH Sea Grant Center for Marine Science Education. National Oceanic and Atmospheric Administration (NOAA) via UH Sea Grant College Program. $150,000. Indefinite.

Higa, T. F. An Evaluation of the Central Kaua'i Sub-grantee's 21st Century Community Learning Centers. Hawai'i Department of Education. $30,000. 2011–2012.

Higa, T. F. KARES Evaluation. Hawai'i Department of Education. $12,960. 2011–2012.

Higa, T. F. An Evaluation of the Campbell Sub-grantee's 21st Century Community Learning Centers. Hawai'i Department of Education. $45,000. 2011-2012.

Higa, T. F. An Evaluation of the Farrington-Kalihi Learning Center Sub-grantee's 21st Century Community Learning Centers. Hawai'i Department of Education. $58,000. 2010–2012.

Lai, M. K. Kāko'o Ikaika: Supporting Adolescent Hawaiian Students to Achieve High Standards. US Department of Education. $2,570,936. 2009–2012.

Lai, M. K. Heluhelu Maoli: Building Strong Foundations in Reading and Mathematics. US Department of Education. $3,203,361. 2009–2012.

Lai, M. K. Piha Pono: A Robust RTI Approach to Integrating Reading, Mathematics, and Behavior Supports. US Department of Education. $2,868,557. 2011–2014.

Manes, M. & Venenciano, L. Math Teachers' Circles of Hawai'i. US Department of Education, Improving Teacher Quality Higher Education Grants Program. $62,546. 2012.

Nguyen, T. T. Evaluation of Waikiki Aquarium's Bay Watershed Education and Training Hawai'i Program. National Oceanic and Atmospheric Administration. $6,005. 2011–2012.

Nguyen, T. T. Development of Internet/Cyber Safety Website. Hawai'i Department of Education. $7,500. 2012.

Olson, M., & Olson, J. Nspired Algebra. U.S. Department of Education. $48, 017. 2011–2012.

Olson, M. Kapālama Algebra Readiness in the Elementary School (KARES). Hawai'i Department of Education, Mathematics and Science Partnerships Program. $450,000. 2009–2012.

Pottenger, F. M. Pacific Education and Research for Learning Science (PEARLS). US Department of Health and Human Services–NIH. $72,468. 2009–2013.

Saka, S. M. To Coordinate and Administer The Hawaii Youth Risk Behavioral Study. Hawai'i Department of Education. $50,000. 2011–2013.

Saka, S. M. Hawai'i School Health Survey: Modules 6–8. Hawai'i Department of Health. $143,000. 2011–2012.

Saka, S. M. Hawai'i School Health Survey—Tobacco Settlement. Hawai'i Department of Health. $150,000. 2011–2013.

Saka, S. M. Administer and Score Peabody Picture Vocabulary Test. Hawai'i Department of Education. $103,956. 2012–2014.

Saka, S. M. Hawai'i School Health Surveys. Hawai'i Department of Health. $244,900. 2012–2013.

Scott, N., & Nguyen, T. T. Technology for Untapped Talent. Hawai'i Department of Vocational Rehabilitation. $1,250,000. 2012–2014.

Slovin, H., Olson, J., Venenciano, L., Zenigami, F., & Olson, M. Modeling Our World. Hawai'i Department of Education. $300,000. 2012–2013.

Young, D. B. Standards Streamlining Project. Hawai'i Department of Education. $1,376,574. 2008–2012.

Young, D. B. Evaluation Services for the Kindergarten and Junior Kindergarten Programs of the Hawai'i Department of Education. Hawai'i Department of Education $254,900. 2008–2012.

Young, D. B. Mizushima International Kimono Program. University of Hawai'i Foundation. $141,100. 1998–2012.

York, S. Hui A'o Mua: An Early Reading First Project. UH Center on the Family. $1,083. 2009–2013.

Zenigami, F. (Gilbert, M. in 2009–2010). Developing Algebra Resources for Teaching (DART). Hawai'i Department of Education: Mathematics and Science Partnerships Program. $450,000. 2009–2012.

Presentations

Brandon, P. R. (2012, April). *Ruminations on research on evaluation*. Presented at the annual meeting of the American Educational Research Association, Vancouver, BC.

Brandon, P. R., Vallin, L. M., & Philippoff, J. (2012, October). *A quantitative summary of research on evaluation published in the* American Journal of Evaluation *from 1998 through 2011*. Presented at the annual meeting of the American Evaluation Association, Minneapolis. MN.

Brennan, C. A. (2012, March). *The multiple dimensions of scientific inquiry in the preK–12 school setting*. Presented at the annual conference of the National Science Teachers Association, Indianapolis, IN.

Brennan, C. A. (2012, March). *Living or not living*. Presented at the annual conference of the National Science Teachers Association, Indianapolis, IN.

Brennan, C. A. (2012, June). *Evidence of inquiry in early childhood education*. Presented at The International Seminar for the 65th Anniversary of Dankook University, Seoul, Korea.

Brennan, C. A. (2012, June). *Exploring the role of questioning in the development of inquiry skills with young children*. Presented at the 36th Pacific Circle Consortium Annual Conference, Seoul, Korea.

Chun, M. N., & Ward, L. (2012, May). *Hearing for a deeper understanding of indigenous knowledge: Things we learned from publishing indigenous material*. Presented at the Hawai'i Book and Music Festival, Honolulu, HI.

Duncan Seraphin, K. (2012, June). *Communicating ocean science*. Presented at the NOAA Education Showcase, Honolulu, HI.

Duncan Seraphin, K. (2012, June). *Marine science education activities and opportunities*. Presented at the University of Hawai'i Sea Grant College Program Annual Meeting, Honolulu, HI.

Duncan Seraphin, K. (2012, July). *Communicating ocean science*. Presented in the Kai Connections: Building Education Partnerships in the Ocean Sciences session of the Hawai'i Environmental Education Symposium, Honolulu, HI.

Duncan Seraphin, K. (2102, November). *Communicating ocean science across audiences*. Presented at the University of Hawai'i College of Education, Curriculum Research & Development Group (CRDG), Honolulu, HI.

Duncan Seraphin, K., Brandon, P., Philippoff, J., Lurie, M., Kaupp, L., Harrison, G., Vallin. L., & Pottenger, F. (2012, February). *Symposium on impacting inquiry skills of students and teachers through an accessible professional development series in aquatic science*. Presented at the annual meeting of the Hawai'i Educational Research Association, Honolulu, HI.

Duncan Seraphin, K., Philippoff, J., Parisky, A., Degnan, K., & Papini Waren, D. (2012, March). *Island energy inquiry professional development: Content enrichment and pedagogical approaches to teaching about energy sustainability*. Presented at the annual conference of the National Science Teachers Association. Indianapolis, IN.

Harrison, G. M., Brandon, P. R., & Lawton, B. E. (2012, April). *Observing the quality of integrating the arts into elementary school reading instruction*. Presented at the annual meeting of the American Educational Research Association, Vancouver, BC.

Harrison, G. M., Vallin, L. M., & Brandon, P. R. (2012, September). *Scoring teachers' responses to mini-vignettes for measuring professional-development effects*. Presented at the annual meeting of the Hawai'i-Pacific Evaluation Association, Kāne'ohe, HI.

Harrison, G. M., & Vallin, L. M. (2012, October). *Developments in measuring teachers' knowledge and practice in teaching science as inquiry*. Presented at the annual meeting of the American Evaluation Association, Minneapolis, MN.

Harrison, G. M. (2012, October). *Charting L1 vocabulary growth with the Vocabulary Size Test: Rasch-based validation for L2 interpretation*. Presented at the Second Language Research Forum, Pittsburgh, PA.

Jumawan, F. V., & Nguyen, T. T. (2012, February). *An online learning community: Fine tuning its effectiveness in professional development workshops*. Presented at the annual meeting of the Hawai'i Educational Research Association, Honolulu, HI

Jumawan, F. V., & Nguyen, T. T. (2012, June). *Teachers' self-perception versus actual use: A science online learning community*. Presented at 2012 International Society for Technology in Education Conference, San Diego, CA.

Lai, M. K. (2012, June). *The prevalence of settlers as bad global citizens*. Presented at the 36th Pacific Circle Consortium Annual Conference, Seoul, Korea.

Lai, M. K. (2012, October). *Evaluation in indigenous ecologies: Identifying issues of importance across indigenous contexts*. Panelist at the annual meeting of the American Evaluation Association, Minneapolis, MN.

Lai, M. K. (2012, November). *The value of indigenous assessment and evaluation*. Presented at the Native Hawaiian Education Program Grantee Symposium, Kāne'ohe, HI.

Lai, M. K. (2012, November). *What the federal human subjects regulations really say about educational evaluation*. Presented at the annual meeting of the Hawai'i-Pacific Evaluation Association, Honolulu, HI.

Lai, M. K., York, S. E., & Dunn, H. H. (2012, October). *Questioning the continuing denigration (since Campbell and Stanley in 1963) of the use of matching to create comparison groups*. Presented at annual meeting of the American Evaluation Association, Minneapolis, MN.

Lawton, B., Philippoff, J., & Duncan Seraphin, K. (2012, October). *Examining evaluation process use as a result of project developers' participation in an inquiry-based science program evaluation*. Presented at the annual meeting of the American Educational Research Association, Minneapolis, MN.

Lawton, B. E., Kekahio, W., Brandon, P. R., & Narayan, K. (2012, August). *Development of the Pacific Education Research Resource (PERR) Logic Model Module*. Presented at the annual meeting of the Hawai'i-Pacific Evaluation Association, Honolulu, HI.

Lewis, J. C., Scott, N. G., Nguyen, T. T. (2012, May). *The Technology for Untapped Talent project: STEM opportunities for students with disabilities*. Presented at the 2012 National Transition Conference College and Careers for Youth with Disabilities, Washington, DC

Liebengood, F. D., & Nguyen, T. T. (2012, February). *Adult and adolescent sexting: Epidemic or exaggeration?* Presented at the annual meeting of the Hawai'i Educational Research Association, Honolulu, HI.

Mark, L. K, Liebengood, F. D., & Nguyen, T. T. (2012, February). *Digital citizenship: School faculty perspectives on cyberbullying, sexting, & online sharing*. Presented at the annual meeting of the Hawai'i Educational Research Association, Honolulu, HI.

Nguyen, T. T. (2012, March). *Prevention strategies in schools: A positive approach to Internet safety and cyber crimes*. Invited presentation at the 9th Annual Institute on Violence, Abuse & Trauma Conference, Honolulu, HI.

Nguyen, T. T. (2012, June). *The digital citizen: Considering how children develop their identity and behavior online*. Presented at the 36th Pacific Circle Consortium Annual Conference, Seoul, Korea.

Nguyen, T. T. (2012, August). *Are you modeling digital citizenship?* Invited keynote presentation at Iolani School, Honolulu, HI.

Nguyen, T. T. (2012, August). *Educator online safety: Discussing how to keep your cookies from crumbling*. Invited presentation at Iolani School, Honolulu, HI.

Nguyen, T. T. (2012, August). *Let's be W.I.S.E. Kids! Web and Internet safe educated*. Invited presentation at Sacred Hearts Academy to middle school, Honolulu, HI.

Olson, T., & Olson, M. (2012, January). *When are key mathematical concepts, Grades 7–12, explored in preservice secondary mathematics teacher preparation?* Presented at the Hawai'i International Conference on Education, Honolulu, HI.

Olson, T., & Olson, M. (2012, March). *Examining the role of instruction in mathematics to prepare preservice teachers for mathematics instruction in Grades 7–9*. Presented at the Research Council of Mathematics Learning, Charlotte, NC.

Olson, J., & Olson, M. (2012, March). *TI–Nspire Published View moves teaching and learning beyond the classroom*. Presented at the T3—Teachers Teaching with Technology International Conference, Chicago, IL.

Olson, J., Hartweg, K., & Olson, M. (2012, April). *A PD model that increases teacher content knowledge of math and science while modeling inquiry and problem-based teaching*. Presented at the Mathematics and Science Partnerships Program Regional Conference, Chicago, IL.

Olson, M., Zenigami, F., & Slovin, H. (2012, April). *One school's use of reflective teaching to understand the CCSS*. Presented at the annual meeting of the National Council of Teachers of Mathematics, Philadelphia, PA.

Olson, M, Slovin, H, Zenigami, F, & Olson, J. (2012, April). *Supporting teachers' efforts to increase the cognitive demand of lessons and promote students' mathematical discourse to address the Common Core State Standards*. Presented at the National Council of Supervisors of Mathematics Annual Meeting, Philadelphia, PA.

Olson, M. (2012, September). *The importance of context to help students form models and represent solutions*. Invited presentation to the National Council of Teachers of Mathematics Algebra Readiness Institute Webinar.

Olson, M., Olson, J., Slovin, H., Brandon, P, & Yin, Y. (2012, November). *Sustaining knowledge of and self-efficacy in using formative assessment*. Presented at the 34th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Kalamazoo, MI.

Olson, T., & Olson, M. (2012, November). *Preservice teachers' perceptions of where instruction in college courses emphasizes connections to middle grades mathematics*. Presented at the 34th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Kalamazoo, MI.

Philippoff, J., Duncan Seraphin, K., & Brandon, P. R. (2012, October). *Overview of the Teaching Science as Inquiry–Aquatic professional development project and its evaluation*. Presented at the annual meeting of the American Evaluation Association, Minneapolis, MN.

Philippoff, J., & Duncan Seraphin, K. (2012, July). *Impacting inquiry skills of students and teachers through an accessible professional development series in aquatic science*. Presented at Kai Connections: Building Education Partnerships in the Ocean Sciences session at the Hawai'i Environmental Education Alliance (HEEA) Symposium, Honolulu, HI.

Philippoff, J. (2012, January). *Benefits of inquiry-based science education: Successes and challenges of teaching science as inquiry*. Presented at the IDeA Network for Biomedical Research Excellence (INBRE) Inquiry-Based Learning (IBL) and Resource Workshop, Honolulu, HI.

Philippoff, J. (2012, March). *Chemical aquatic science activities from Teaching Science as Inquiry: Aquatic Science*. Presented at National Marine Educators Association "A whale of a tale share-a-thon" session at the annual conference of the National Science Teacher's Association, Indianapolis, IN.

Philippoff, J. (2012, July). *Impacting inquiry skills of students and teachers through an accessible professional development series in aquatic science*. Presented at the Kai Connections: Building Education Partnerships in the Ocean Sciences session at the Hawai'i Environmental Education Alliance (HEEA) Symposium, Honolulu, HI.

Philippoff J., & Baumgartner, E. (2012, August). *An analysis of common student technical errors in field data collection*. Presented at the Conference on Public Participation in Scientific Research, Portland, OR.

Philippoff J., Conklin, E., Smith, C. M., & Hunter, C. (2012, August). *Movement and dietary preference of the sea urchin Tripneustes gratilla (Echinodermata) on a patch reef in Hawaii*. Presented at the annual conference of the Ecological Society of America (ESA), Portland, OR.

Philippoff, J., & Gundersen, A. (2012, September). *Chemical aquatic science activities from Teaching Science as Inquiry: Aquatic Science*. Presented at the Waikiki Aquarium Educators Night, Honolulu, HI.

Pottenger, F. M. (2012, January). *Special workshop session: University Laboratory School and research at Curriculum Research & Development Group (CRDG)*. Presented at the Hawai'i International Conference on Education, Honolulu, HI.

Pottenger, F., Brennan, C. A., Scarlett, T., & Kaupp, L. (2012, February). Symposium: *Application of a theoretical model of inquiry in three science professional development projects*. Presented at the annual meeting of the Hawai'i Educational Research Association, Honolulu, HI.

Pottenger, F., (2012, June). *Quantitative, theoretic, and descriptive inquiry in early childhood education*. Presented at the 36th Pacific Circle Consortium Annual Conference, Seoul, Korea.

Pottenger, F., (2012, June). Keynote address—*Inquiry: A mechanism for an articulated curriculum*. Presented at Dankook University 65th Anniversary International Seminar, Seoul, Korea.

Saka, S. M. (2012, October). *Twenty-five years of developing relationships, responsibilities, and relevance*. Presented at the annual meeting of the American Evaluation Association, Minneapolis, MN.

Scott, N. Tokuhama, R., & Gill, K. (2012, February). *Careers: Computerized design and manufacturing*. Presented at the 27th Annual International Technology & Persons with Disabilities Conference, San Diego, CA.

Slovin, H., Olson, J., & Olson, M. (2012, March). *Teachers' classroom practices using technology for formative assessment: The connection to knowledge and perceptions of mathematics, learning, and teaching*. Presented at the Research Council of Mathematics Learning, Charlotte, NC.

Tomita, M. K., Brennan, B., Jeremiah, A. K., Young, D. B., & Zorn, C. (2012, January). *Designing your own school-wide professional development: Examples from 2011–12 ULS Technology PD*. Presented at the annual conference of the Hawai'i Charter Schools Association, Honolulu, HI.

Venenciano, L., & Slovin, H. (November, 2012). *Algebra I preparedness and the Measure Up program: Implications from a theoretical model*. Presented at the 34th annual meeting of the North American chapter of the International Group for the Psychology of Mathematics Education, Kalamazoo, MI.

Venenciano, L., Dougherty, B., & Slovin, H. (July 2012). *The Measure Up program, prior achievement, and logical reasoning as indicators of algebra preparedness*. Presented at the 12th International Congress on Mathematical Education (ICME-12), Seoul, Korea.

Venenciano, L., & Kim, H. J. (February, 2012). *The mathematical practices of the Common Core State Standards*. Presented at the Hawai'i Council of Teachers of Mathematics Annual Conference, Honolulu, HI

Ward, L. (2012, June). *English in the digital Age: What's changing and what isn't?* Presented at the 36th Pacific Circle Consortium Annual Conference, Seoul, Korea.

York, S. E., & Saka, S. M. (2012, October). *Managing data collections using mobile devices and the cloud: Is there an app for that?* Presented at the annual meeting of the American Evaluation Association, Minneapolis, MN.

York, S. E., Saka, S. M., & Lai, M. K. (2012, April). *An evaluation approach that is invitational*. Presented at the annual meeting of the American Educational Research Association, Vancouver, BC.

Young, D. B. (2012, October). *New trends in the training of teachers of natural sciences for the schoo*l. Presented at the Science Education in the School of the Information Age conference, Moscow, Russia.

Young, D. B. (2012, September). Moderator. University of Hawai'i faculty panel: Cross-sector alignment partnerships. *Aligning our efforts: the Common Core State Standards, Smarter Balanced Assessments, and the role of higher education*. Presented at the P20 Partnerships for Education summit, Honolulu, HI.

Young, D. B., Brandon, P., Oshiro, E., Brennan, C., Slovin, H., Berg, K., & Nguyen, T. T. (2012, February). *Development and application of instructional materials selection criteria for elementary and secondary schools*. Presented at the annual meeting of the Hawai'i Educational Research Association, Honolulu, HI.

Zenigami, F., Olson, M., & Olson, J. (2012, April). *Teachers designing algebra lessons to address the common core standards*. Presented at the annual meeting of the National Council of Teachers of Mathematics, Philadelphia, PA.

Zenigami, F., Olson, M., Olson, J., & Slovin, H. (2012, November). *Two models of professional development using educative curriculum materials*. Poster session at the 34th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Kalamazoo, MI.

Zenigami, F., Olson, M., Olson, J., Slovin, H., & Ishihara, K. (2012, January). *Teachers develop educative curriculum materials to enhance the teaching and learning of tough to teach and tough to learn topics in Algebra I*. Presented at the Hawai'i International Conference on Education, Honolulu, HI.

COLLEGE OF EDUCATION
Donald B. Young, Dean

CURRICULUM RESEARCH & DEVELOPMENT GROUP
Kathleen F. Berg, Director
Helen O. Au, Assistant Director

UNIVERSITY LABORATORY SCHOOL
Keoni Jeremiah, Principal
Tracy Teixeira, Dean of Students
Miki Tomita, Dean of Curriculum and Instruction

Staff

Abhari, Maryam
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Afaga, Lorna
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BA 1977, MPH 1981, Hawai'i

Asato, Darrell
Marketing and Publication Services
BFA 1979, Hawai'i

Au, Helen
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BBA 1993, MEd 2006, PhD 2012
Hawai'i

Berg, Kathleen F.
Administration
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Bossler, Amy
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BA Anth 2006, Bucknell; MEd 2008, Hawai'i

Brandon, Paul
Program Research and Evaluation
BS 1970, Portland State; MEd 1978, PhD 1983, Hawai'i

Brennan, Carol Ann
Science, Early Childhood Education
BA 1965, Catholic University of America; MS 1984, Nebraska; EdD 1996, Hawai'i

Congratulations Dean Young

It was with bittersweet congratulations that CRDG bid Director Don Young farewell as he left to take on the position of dean of the College of Education. While we will miss his leadership in CRDG, we are happy for him and wish him well in his new role.

Young first came to CRDG in 1971 and became an integral part of the CRDG science section where he co-authored ground-breaking and award-winning inquiry-based science programs. The middle-school program Foundational Approaches in Science Teaching (FAST) and the elementary program Developmental Approaches in Science, Health & Technology together span a nine-year science sequence that teaches basic science concepts through inquiry methods. Both programs included a two-week teacher professional development institute to teach the inquiry methods that few teachers had learned or experienced at that time. Young's expertise, in particular, involved the dissemination and implementation, and later the scaling-up, of the professional development program.

In 1998 Young moved to the position of CRDG associate director, then became director of CRDG in 2003. In this role, he guided CRDG through a time of tremendous change in the education community with great insight, energy, and compassion. His door was always open and his support unwavering as we all worked to navigate the changes in our field. He leaves us now a stronger organization for his leadership, and we count ourselves fortunate to have him in the role of dean of our college.

Cagaoan, Emma
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AS 1980, Kapiʻolani Community College

Capen, Stephanie
Mathematics (Graduate Assistant)
BS 2010, Eastern Nazarene College

DaSilva, Maria
Science
BA 1990 Antioch; BA 2006 Hawai'i

Devore, Susanne
Administration (Graduate Assistant)
BA 2003, Pittsburgh

Dunn, Hugh
Literacy and Hawaiian Education
BEd 1990, MEd 1999, Hawaiʻi

Erwin, Katherine
Editorial
BA 2009, Hawai'i

Faure, Laurie
Science
BA 1994, San Jose State; MEd 2005, Hawai'i

Fujii, Alycia
Marketing and Publication Services
BA 1996, Hawaiʻi

Fukata, Laverne
Administration
BA 1976, Hawaiʻi

Fulton, Lori
Science
BEd 1992, Western Michigan; MEd 1993, New Mexico; MA 2004, UNLV; PhD 2012, UNLV

Gill, Kevin
Learning Technologies

Hamasaki, Brian
Administration
BBA 1997, Washington State; MBA 2004, Hawaiʻi

Harrison, George
Program Research and Evaluation
BA 1994, UC Santa Cruz; MA 2002, Hawaiʻi

Hashimoto, Valerie
Science
BS 1993, Hawaiʻi Pacific; MAEd 2003, Phoenix

Hayden, Marcus
Administration
BAS 2001, MBA 2007, Hawaiʻi

Higa, Terry Ann
Program Research and Evaluation
BEd 1977, MEd 1978, PD 1984, MEd 1994, PhD 2005, Hawaiʻi

Inouye, Byron
Learning Technologies
BFA 1993, Hawaiʻi

Jumawan, Francisco
Learning Technologies (Graduate Assistant)
AS 1991, Electronics Institute; BS 2006, MEd 2011, Hawaiʻi

Kaupp, Lauren
Science
BS 2003, Maryland-Baltimore County; MS 2005, Hawaiʻi

Kido, Lillian
Literacy and Hawaiian Education
BA 1971, Hawaiʻi

Klemm, E. Barbara
Science
BA 1964, Ohio Wesleyan; MEd 1972, EdD 1982, Hawaiʻi

Klenske, Terry
Science
BA 1972, Pacific; SpEd 1974, Alberta

Lai, Morris
Literacy and Hawaiian Education
BS 1965, Stanford; MA 1967, Hawaiʻi; PhD 1972, UC Berkeley

Lawton, Brian
Program Research and Evaluation
BA 2001, Nevada; MEd 2005, Hawaiʻi

Lee, Aaron
Marketing and Publication Services
BFA 1999, Hawaiʻi

Leong, Jaret
Marketing and Publication Services

Lewis, Jeanine
Administration
BS 1993, CSU-Chico; MA 2003 San Francisco State

Liebengood, Fawn
Learning Technologies
BA 2010, Hawaiʻi

Lurie, Matthew
Science (Graduate Assistant)
BS 2005, UCLA; MS 2010, Hawaiʻi

Lush, Noren
Social Studies
BA 1974, Franklin; MA 1988, Hawai'i

Mark, Lauren
Learning Technologies (Graduate Assistant)
BS 2001, Washington; MA 2009, Hawaiʻi

Nakama, Robert
Information Technology
BBA 2006, Hawaiʻi

Nakamura, Aric
Program Research and Evaluation
BA 2004, Hawaiʻi

Narimasu, Bert
Marketing and Publication Services
BA 1976, MFA 1993, Hawaiʻi

Nguyen, Thanh Truc
Learning Technologies
BA 1996, MEd 2000, Hawaiʻi; EdD 2007, Southern California

Olson, Judith
Mathematics
BS 1968, Valley City State; MST 1981, Wyoming; EdD 1985, Oklahoma State

Olson, Melfried
Mathematics
BS 1968, Valley City State; MS 1972, Arkansas; EdD 1975, Oklahoma State

Oshiro, Elliot
Program Research and Evaluation
BA 1981, PD 1987, Hawaiʻi

Paek, Seungoh
Learning Technologies
BA 2000, Med 2002 Sungshin Women's University; Med 2010, MS 2012, EdD 2012 Columbia

Philippoff, Joanna
Science
BA 2002, Delaware; MS 2011, Hawaiʻi

Pottenger, Francis
Science
BS 1951, Otterbein; MEd 1957, Xavier; MS 1964, New Mexico Highlands; PhD 1969, Claremont Graduate School

Pottenger, Larma
Editorial
BA 1950, Otterbein

Ramos, Rosemarie
Clerical
AS 1976, St. Ferdinand

Romero, Gary
Information Technology
BS 1986, DeVry

Sagaysay, Lolito
Program Research and Evaluation
BBA 1982, Hawaiʻi

Saka, Susan
Program Research and Evaluation
BS 1980, BBA 1980, MEd 1994, Hawaiʻi

Scarlett, Thomas
Science
BEd 1973, MEd 1980, MEd 1997, PhD 2008, Hawaiʻi

Scott, Neil
Learning Technologies
BE 1970, DSc 2006, Canterbury University

Seraphin, Kanesa
Science
BS 1999, Cal Poly; MS 2004, PhD 2005, PBSCE 2008, Hawaiʻi

Shimabukuro, Erin
Administration
BEd 2001, Hawaiʻi

Shiraishi, Jana
Marketing and Publication Services
BA 2011, Hawaiʻi

Shishido, Wayne
Marketing and Publication Services
BFA 1972, Hawaiʻi

Shon, James
Standards Streamlining Project
BA 1969, Syracuse; PhD 2001, Hawaiʻi

Slovin, Hannah
Mathematics
BA 1966, Pennsylvania; MEd 1970, Temple; EdD 1996, Hawaiʻi

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Three CRDG faculty members were honored at the May 2012 meeting of the University of Hawai'i at Mānoa College of Education's Congress.

Dr. Francis Pottenger III received the 2012 COE Lifetime Achievement Award. Pottenger joined CRDG in 1966, where he led the science faculty in the creation of award winning inquiry-based curricula for elementary and secondary school science. His groundbreaking Developmental Approaches in Science, Health and Technology (DASH), a six-year sequence for elementary school; Foundational Approaches in Science Teaching (FAST), a three-year middle school program; and The Fluid Earth/The Living Ocean, a high school marine science course, have been used in Hawai'i, throughout the mainland United States, and internationally. Over the course of his career Pottenger has engaged in science curriculum collaboration and experimentation with colleagues in Japan, Korea, Russia, Australia, and New Zealand. CRDG His nomination for the award read, in part, "For the last 45 plus years, Dr. Pottenger's work in science education as part of CRDG can only be described as extraordinary, innovative, seminal, diverse, impactful, cross-national, collaborative, award-winning."

Dr. Paul Brandon was the recipient of the 2012 COE Exceptional Contributions to Scholarship Award. Brandon has been with CRDG since 1989 as a professor of education with a focus on research and evaluation. He has published several evaluation instruments that have been developed and validated in projects and regularly serves as a consultant on developing research and evaluation designs. He has won two best evaluation awards from the American Educational Research Association (AERA) and was selected by the AERA Research on Evaluation Special Interest Group as their first annual Distinguished Scholar in April 2011. Beginning January 2013, he will serve a three-year term as Editor-in-Chief of the American Evaluation Association's topical journal, New Directions for Evaluation. CRDG Director Kathleen Berg wrote that "I nominated Paul for this award based on recent awards and recognitions that come on the heels of an already outstanding, long, and productive scholastic career. He is most deserving of an award for his scholarship, which is well-respected both locally and nationally."

Dr. Truc Nguyen was awarded the 2012 COE Leadership Award. Nguyen's role within CRDG as a faculty member in Learning Technologies includes authoring and teaching science and computer literacy courses; developing instructional strategies for existing science curricula; overseeing the development of science, economics, and computer distance-learning courses; developing evaluation and assessment modules; and coordinating professional development workshops and conferences. This year, she also chaired the College of Education Faculty Senate, represented the college on the Mānoa Faculty Senate, led the Faculty Distributed Learning Advisory Committee on the All Campus Council of Faculty Senate Chairs, and served as president of the Hawai'i Educational Research Association (HERA). Her nomination for this award read, in part, "She exemplifies exceptional leadership that demonstrates commitment in ways that move programs, departments, units, and the entire college in positive directions."

Subedi, Lilette
Literacy and Hawaiian Education
BFA 1977, BA 1977, MA 1989, Hawai'i

Tassill, Leah
Social Studies
BA 2011, Hawai'i

Tokuhama, Raemi
Learning Technologies
BS 2006, Portland State

Towata, Carolyn
English
BEd 1967, 5-yr Diploma 1968, MEd 1968, Hawai'i

Vallin, Lisa Michaela
Program Research and Evaluation (Graduate Assistant)
BA 2006, MA 2008, San Francisco State

Venenciano, Linda
Mathematics
BA 1993, MAT 1994, Pacific; PhD 2011, Hawai'i

Ward, Lori
Editorial
BA 1983, MA 2012, Hawai'i; MNM 2002, Regis

Watts, Margit
Mānoa Partnerships
BA 1970, Michigan; MSW 1974, PhD 1989, Hawai'i

Yang, Fan
Science (Graduate Assistant)
BS 2003, Beijing; MEd 2010, Peking; MS 2011, Wilkes

Yap, Mark
Information Technology
BA 2001, Hawai'i

Yonemoto, Kory
Administration
BA 2005, Hawai'i

York, Susan E.
Program Research and Evaluation
BA 1992, MA 1994, MEd 2001, PBCSE 2007, Hawai'i

Young, Donald B., Jr.
Administration
BS 1968, MS 1969, SUNY; EdD 1986, Hawai'i

Zenigami, Fay
Mathematics
BEd 1974, PD 1975, MEd 1975, Hawai'i
BA 2006, MA 2008, San Francisco State

In Memorium

Sister Edna Louise DeManche, a Sacred Heart's sister and giant in Hawai'i's science education community, died this year at the age of 96. Her love of both religion and science, and her ability to bridge the two, would be one of the defining themes of her life. Sister Edna entered the Maryknoll convent in New York in 1934, and she took her final vows and completed her bachelor's of science degree in zoology in 1940. She came to Hawai'i that same year to teach at Maryknoll School. Over the next six decades she contributed to science education in Hawai'i as a teacher, a curriculum developer, a leader in the Hawaiian Academy of Science where she served as executive secretary and director of the annual Marine Symposium, and associate superintendent of the Catholic School Department. Sister Edna worked as a curriculum developer at CRDG from 1967 until 1980 and is most well known as the author of the Hawai'i Nature Study program and for her contributions to CRDG's signature middle school science program Foundational Approaches in Science Teaching (FAST).

Longtime science educator Will University of Hawai'i at Mānoa College of Education (COE) Professor **Will Kyselka** passed away on July 1, 2012. With the COE for more than 30 years, Kyselka devoted his career to teaching, mentoring, and developing curriculum. A revered geology and astronomy expert, he co-authored the Foundational Approaches in Science Teaching program that is internationally recognized as an exemplary middle school science program. Kyselka, who came to Hawai'i a few years after graduating from the University of Michigan with BS and MS degrees in geology and an MA in education, was on the science education faculty in the COE and joined the Curriculum Research & Development Group (CRDG) when it was formed in the late 1960s. In 1966, he was appointed an associate in astronomy at the Bishop Museum where he conducted lectures at the planetarium. His life-long friendship with Nainoa Thompson would begin there. In An Ocean Mind, Kyselka recorded the problem-solving and learning process that Thompson went through in learning to non-instrument navigation. Kyselka and his wife, Lee, were on the escort vessel Ishka that accompanied Hōkūle'a on its 1980 maiden voyage, and Will was on board the Hōkūle'a during part of its 1986 Voyage of Discovery. In a Polynesian Voyage Society (PVS) announcement about Kyselka's passing, Thompson said, "He has been one of the most important and crucial teachers that we have had in the whole 37-year journey of rediscovering our voyaging knowledge."

Leila (Lee) Kyselka died this year at the age of 95 following a lifetime spent in social service and education. She moved to Hawai'i from Oregon in the mid-1960s where she worked on teen programs at the Windward and Nu'uanu YMCAs. She came to CRDG later in her career as director of the Summer Science program. She also lectured in the Women in Transition program at Leeward and Windward Community Colleges. She became involved in the Polynesian Voyaging Society along with her husband Will, and sailed on the escort vessel for the Hokule'a's 1980 voyage to Tahiti.

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