<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
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<tbody>
<tr>
<td>1895</td>
<td>A teacher training department is formed at Honolulu High School, located in Princess Ruth’s former mansion (now Central Intermediate School).</td>
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<tr>
<td>1896</td>
<td>The teacher training department moves to Victoria and Young Streets and is renamed Honolulu Normal and Training School.</td>
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<tr>
<td>1905</td>
<td>After annexation, Hawai‘i becomes a US territory. Honolulu Normal and Training School is renamed Territorial Normal and Training School and is moved to Lunalilo and Quarry streets.</td>
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<tr>
<td>1921</td>
<td>Benjamin Wist (later dean of Teachers College) becomes the principal of the school.</td>
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<tr>
<td>1930</td>
<td>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.</td>
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<tr>
<td>1931</td>
<td>The legislature transfers the Territorial Normal and Training School to the School of Education. The School of Education is renamed Teachers College.</td>
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<tr>
<td>1939–1941</td>
<td>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.</td>
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<tr>
<td>1941–1945</td>
<td>Punahou School, displaced by the military occupying its campus, move into Castle Memorial Hall and other buildings, but Teachers College continues to operate.</td>
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<tr>
<td>1943</td>
<td>University High School Building 1, on the Metcalf Street side of Teachers College, is completed as an intermediate school.</td>
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<tr>
<td>1946</td>
<td>Hubert Everly (later dean of the College of Education) writes his doctoral dissertation, in which he recommends educational experimentation as a core function for the Laboratory School.</td>
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<tr>
<td>1948</td>
<td>University High School Building 2 is constructed adjacent to Building 1. The schools now offer a complete K–12 curriculum. Everly becomes the principal.</td>
</tr>
<tr>
<td>1959</td>
<td>Teachers College becomes the College of Education, and Hawai‘i becomes the fiftieth state.</td>
</tr>
<tr>
<td>1965</td>
<td>The Hawai‘i State Legislature commissions a comprehensive review of education programs to prepare teachers, including the function and role of the Laboratory Schools. The results of the review would be published the following year with the title <em>Preparation of Teachers and other Educational Personnel in Hawai‘i</em> and would become known as the ‘Stiles Report.’</td>
</tr>
<tr>
<td>1966</td>
<td>CRDG is born. Following the recommendation of the Stiles Report, the role and function of the Laboratory Schools is changed from one of demonstration and teacher training to one of research and innovation. The schools become part of a new entity, the Hawai‘i Curriculum Center, which will be renamed CRDG three years later.</td>
</tr>
<tr>
<td>1969</td>
<td>Arthur R. King and John A. Brownell publish <em>The Curriculum and the Disciplines of Knowledge: A Theory of Curriculum Practice</em>, laying out the theory that will become the foundation of CRDG’s curriculum research work.</td>
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<tr>
<td>1969</td>
<td>The Hawai‘i Curriculum Center is renamed the Curriculum Research &amp; Development Group (CRDG), with King as its director.</td>
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<tr>
<td>1996</td>
<td>CRDG, along with other research units, reorganizes under the UH Office of the Senior Vice President for Research.</td>
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<tr>
<td>2000</td>
<td>CRDG merges with the College of Education.</td>
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<tr>
<td>2001</td>
<td>CRDG’s application for charter school status for ULS is successful. The new charter school is administered by CRDG with the ULS local school board.</td>
</tr>
<tr>
<td>2003</td>
<td>Donald B. Young succeeds King as director of CRDG.</td>
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<tr>
<td>2009</td>
<td>CRDG and ULS enter a new era in their R&amp;D partnership in compliance with Hawai‘i charter school law.</td>
</tr>
<tr>
<td>2013</td>
<td>Kathleen F. Berg becomes CRDG’s third director when Young becomes dean of the College of Education.</td>
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</table>
On behalf of the Curriculum Research & Development Group (CRDG), I am pleased to present our Year in Review 2013, highlighting the exciting and innovative work of our faculty and staff. As part of a land grant institution and part of the University of Hawai’i at Mānoa’s College of Education, which has a primary focus on improving P–20 education, CRDG is an integral part of the educational research community locally, nationally, and internationally.

CRDG’s work includes pure research, development and publication of curriculum products, professional development programs, and outreach in the form of collaborative projects and partnerships. In this report, we open by featuring our Literacy and Hawaiian Education (LHE) project, a longstanding partnership with the Hawai’i Department of Education (HIDOE) that focuses on improving learning outcomes for Native Hawaiian children. You will also read in this report about programs in science, mathematics, social studies, and learning technologies; about new work in program evaluation; and about cutting edge work being done in partnership with the University Laboratory School (ULS). You will also read about this year’s new publications, which highlight our commitment to our local community—a mathematics program designed specifically for the HIDOE and a biography of a WWII veteran written at the request of fellow veterans who wanted to be sure his story would be remembered.

We think that the work showcased in this report demonstrates CRDG’s continued commitment to being a leader in improving education—a commitment that goes back to its founding in 1966 as a center for creative research and innovation to improve schools. We are proud of the continuing tradition of excellence that guides our work and proud to share it with you here.

Kathleen F. Berg, Director
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
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–20 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.
CRDG’s Literacy and Hawaiian Education (LHE) office has administered seven grants that have collectively served fifty-one local schools. On average, these schools serve larger percentages of Native Hawaiian students than the average across all HIDOE schools. They also typically include a high percentage of children and youth whose educational prospects are hindered by challenging conditions associated with poverty, limited English proficiency, disability, and family circumstances. The primary goal of these projects, collectively known throughout the community as Pihana Nā Mamo, has been to conceptualize, operationalize, and evaluate innovative education programs designed to improve learning outcomes for Native Hawaiian children.

The current set of programs that fall under the umbrella of LHE came out of a partnership between CRDG at the University of Hawai‘i at Mānoa (UHM) and the Office of Curriculum, Instruction and Student Support (OCISS) at the Hawai‘i Department of Education (HIDOE). The initial formal partnership agreement was funded by the U.S. Department of Education in 2000. The project’s current co-director and principal investigator, Hugh Dunn, said, “Pihana’s success can be attributed to cross-agency networks, especially the leadership of former principal investigator, Morris Lai of CRDG UHM, and project co-director, Gloria Kishi of OCISS HIDOE.” This strong inter-agency collaboration has allowed the projects to be informed by teams of researchers, classroom teachers, school leaders, content experts, cultural practitioners,
BUILD ON SUCCESS

instructional designers, curriculum developers, and evaluators. In addition, the projects have received strategic input from the Pihana Nā Mamo advisory council, made up of leaders who serve critical roles across the preschool to post-secondary education continuum.

Although project schools have been among those in the state with the highest percentages of economically-disadvantaged students, Pihana Nā Mamo’s research-based approaches in reading, parent engagement, student transition, and building cultural knowledge within the community have contributed to significant instructional changes and notable gains in student achievement. This array of culturally-appropriate and evidence-based approaches has improved the academic trajectories of struggling students as they progress through the educational pipeline, especially in the areas of preK–Grade 6 reading and student mentoring and transitions.

LHE continues to partner with the HIDOE through its current Pihana Na Mamo project, Piha Pono, which fully integrates reading, mathematics, and behavior supports in 11 elementary schools. Like previous Pihana Na Mamo projects, Piha Pono’s theory of action centers around four high-leverage focus areas:

- schoolwide reading support,
- student transition support toward college and career readiness,
- curriculum enhancement, and
- schoolwide positive behavioral interventions and supports.

Additionally, project implementation has been constantly refined and informed by four cross-cutting processes:

- formative assessment,
- evaluation,
- job-embedded coaching, and
- professional development.

These focus areas and processes are inherent in two of Pihana Nā Mamo’s central components: heluhelu (reading support) and kāko’o (student transition support). Successful implementation of these two components fosters positive student behavior and a school culture that embraces instructional improvement by means of formative assessment, evaluation, and professional development aligned to standards and needs.

The heluhelu component is based on a prevention model designed to address student risks as early as possible. Instructional methods employed within this model foster students’ understanding of foundational skills in reading, which are delineated in the Common Core State Standards for English Language Arts and described as necessary and important components of a comprehensive reading program. The approach aligns with the empirical summation of multiple years of research findings that conjointly point to skills critical for developing successful readers.

“We’ve changed the way elementary schools delivered reading in terms of data keeping, progress monitoring, using scientifically-based curriculum, and peer coaching.”

The heluhelu model also draws on the work of leading researchers in the field of reading instruction and assessment, some of whom have served as consultants to Pihana Nā Mamo since the project’s inception. Kishi said,

Additionally, the model integrates
early screening for academic risk within a schoolwide response-to-intervention (RTI) framework that incorporates practices found to have the strongest predictive relationship with children’s ability to decode and comprehend connected text. As a means of assessing students’ development on fundamental early reading skills, Pihana Nā Mamo has provided project schools with technical assistance on the use of formative instruments for early screening, including the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). Access to such tools, coupled with ongoing professional development and job-embedded coaching focused on data interpretation and intervention fidelity, has enabled teachers and administrators to provide their students with tailored interventions well before reading deficits are typically identified.

Kāko’o is designed to support the transition of at-risk Hawaiian students by providing mentoring and other critical transition supports as they move from middle school to high school and from high school to post-secondary options. The most recent iteration of this component has served students in three middle/intermediate schools and three of their receiving high schools. The project provides each school with trained staff who work on-site to identify learning challenges and address those challenges through appropriate evidence-based supports, including culturally-based instruction and multi-tiered literacy and behavior interventions.

With the intent to broaden its reach, LHE identified actionable goals in its 2013 strategic plan that included (1) engaging Pihana Nā Mamo project site teachers in multi-modal professional learning opportunities designed to increase educators’ capacity to improve learning outcomes for all children; and (2) developing and disseminating research-based and culturally appropriate reading curricula and materials that promote children’s acquisition of fundamental reading skills. To achieve these goals, in 2013 the LHE office began to diversify the delivery of their services through the launch of a mobile application and a suite of e-learning courses.
Curriculum Enhancement

The first of three interactive mobile tablet applications (apps) that LHE developed for early reading, Pihana ABCs, came out late in the year and was featured on KITV News. This interactive alphabet primer and coloring book is available to the general public for free download onto mobile tablets from iTunes at http://goo.gl/6gKGE or Google Play at http://goo.gl/e4mwhr. The next two mobile apps, Common Letter Combinations and Supporting Your Beginning Reader, will be released in 2014. These apps, based on a selection of Pihana Nā Mamo’s most popular print materials, build on LHE’s history of ground-breaking publications (e.g., Ka Wana Series, No Nā Mamo) that have also been widely disseminated throughout the state of Hawai‘i.

Pihana ABCs overview video on Youtube http://goo.gl/yBbvKD
Supporting Your Beginning Reader flipbook http://goo.gl/Tqx9aQ
LITERACY AND HAWAIIAN EDUCATION PROGRAM

Professional Development

Each year, Pihana Nā Mamo has offered teachers numerous professional development opportunities. Between July 2012 and August 2013, Pihana Nā Mamo sponsored and coordinated thirty workshops that were scaffolded and organized around the goal of ensuring that research-based, effective practices are (a) implemented in schools at sufficient levels to effect significant improvement in student outcomes and (b) sustained over time. Additionally, LHE developed five learn-on-demand e-learning courses to provide teachers with ongoing access to RTI focused professional development opportunities. The content of each course was authored by national and international experts in the field of education who have intimate theoretical and practical knowledge of the subject matter and how it applies to the context of the population served. The initial suite of online courses is hosted on the HIDOE’s Hawai’i Virtual Learning Network.

Evaluation

Despite the challenging conditions common to the schools served by Pihana Nā Mamo, findings reported in rigorous external evaluation studies combined with feedback from the field and ongoing progress monitoring of proximal indicators have confirmed that Pihana Nā Mamo services are critical factors in improving student achievement and teacher effectiveness. Lai said, “Because the evaluation was independent, we feel very confident in it.”

A summary of findings relevant to multiple phases of project implementation can be found on CRDG’s website. The site also highlights the project’s use of culturally appropriate evaluation methodology that resulted in two reports for which LHE received first place honors in the 2008 and 2009 American Education Research Association’s (AERA) School Evaluation and Program Development Outstanding Publications competition.

In 2012 LHE continued to incorporate mainstream standards with alternative techniques for research and evaluation. A team of data collectors recently interviewed site-level personnel at two project schools that have had the longest participation in the Pihana Nā Mamo program. Disa Hauge, Wai’anae High School Principal (former Mā’ili Elementary School Principal), said, “Pihana has supported us to make the changes that needed to be made. Several years ago we made AYP [annual yearly progress] and became a school in good standing, which is kind of unheard of for the coast…Just a few days ago, we also received our first Strive HI reading…we’re incredibly grateful to Pihana for all of the support they’ve given us and for helping us get to this point.” Joy Molina-Yacapin, Reading Coordinator at Halé‘iwa Elementary School, said, “At Hale‘iwa Elementary we have a high poverty rate and we have children who have trouble reading…We actually went through something called restructuring when NCLB [No Child Left Behind] came into play because the proficiency rate was so low. Through Pihana Nā Mamo, the reading program, and the training of everyone, during last year, we actually had a 94 percent proficiency rate in reading. So I credit that to all of the hard work of the teachers, but I also credit all of it to what Pihana Nā Mamo has given us.”
LHE is creating a multi-year roadmap of essential strategies and activities necessary to scale up its coordinated approach into a comprehensive academic support model. Their blueprint is based on the lessons learned from LHE’s work with schools throughout the state since 2000. Central to this plan is strengthening existing partnerships and establishing new partnerships with a major focus on working with teachers and leaders at schools faced with the most challenging conditions. Hauge said, “Pihana Nā Mamo empowered us to transform our school… it has given us the tools to continue this work into the future to face all the future challenges that we will have and that our community will have…We’re very grateful to Pihana Nā Mamo.”

Since 2000, LHE’s original Pihana Nā Mamo project and subsequent related projects have collectively served fifty-one schools across the state.

Next Steps

The Pihana program consistently demonstrated that our reading scores are improving and have advanced over the years, and that says a lot for the approach. I am very proud to have been associated with the program and the project, but I’m most proud of the project itself and the work of everyone involved in the project has just been outstanding.

— Ray Miner
Federal Program Officer (retired)
Modeling Approach to Algebra Partnership with Hawai‘i Department of Education

A discussion initiated by the Hawai‘i Department of Education (HIDOE) about ways to help more students succeed in algebra has resulted in a year-long course created and produced by CRDG mathematics researchers for public high schools in Hawai‘i. The resulting modeling-based course is designed to be taken concurrently with Algebra I and provide students with motivating and engaging experiences in mathematics that addressed the modeling standards in the Common Core State Standards in Mathematics (CCSSM). Course materials, titled A Modeling Approach to Algebra (AMAA), were designed around the premise that learning algebra requires more than memorizing formulas and finding answers. The approach incorporated five criteria that are foundational within CRDG mathematics curriculum projects and that affect how students solve problems:

- opportunities to speak, read, write, and model mathematical ideas;
- connections with prior knowledge or experiences;
- problem-solving tasks to introduce new ideas;
- time to develop concepts, generalizations, and skills; and
- challenging but accessible problems.

The resulting course comprises a series of investigations that introduce and develop concepts through carefully constructed problems. The problems give students the opportunity to use aspects of modeling to interpret problematic situations; understand the goals of a problem; represent, test and revise various approaches to solving the problem; and report on results. The course has an overarching focus on the eight Standards for Mathematical Practice found in the CCSSM and emphasizes positive dispositions for learning mathematics, encourages student perseverance, promotes classroom discourse, and emphasizes communication of mathematical ideas.

Another major focus of the program was the incorporation of technology. As much as possible, the curriculum was built around ideas that can be dynamically explored with spreadsheets, graphing, or links to Internet explorations. TI-Nspire™ technology software was used to create documents that consist of interactive spreadsheets and graphs that teachers can use in a demonstration with the whole class or send to TI-Nspire™ handhelds via networked classrooms using TI-Nspire Navigator™. The materials were digitally formatted using the PublishView feature of TI-Nspire™ Teacher software, and links to these documents were provided within the Teacher Notes and Annotated Student Pages so they can be easily accessed at appropriate
times during instruction. Using TI-Nspire Navigator™ features, the screens of the students’ handhelds can be captured and student work selected and shared so student presenters can explain their work to promote class discourse.

The course CRDG developed and produced, known in Hawai‘i high schools as Modeling Our World, was piloted in the 2012–2013 school year. Feedback from the pilot test was incorporated into a final version that was published in 2013 and implemented with approximately 1800 students in twenty high schools in the 2013–2014 school year. Professional development sessions were conducted for HIDOE teachers in the summer to prepare them to teach the new course, and follow up sessions continued into the fall.

While the initial partnership between CRDG and the HIDOE was focused on producing course materials and providing professional development to teachers, researchers at CRDG also began some limited data collection in the first year of the program’s implementation. When teachers at Kapolei High School and Waipahu High School expressed interest in participating in the research, CRDG mathematics researchers designed a program of classroom observations and data collection on both students and teachers that covered the use of technology, implementation support, and coaching. The data have helped them learn about how the program is being implemented and teachers’ perception of how the course fit their needs. Data from students looked at student achievement as well as their attitudes toward mathematics and technology.

Following the implementation of the Modeling Our World course in Hawai‘i high schools in the fall of 2013, CRDG began a new outreach program to bring the curriculum materials and teacher training to Olomana School, an alternative school for grades seven through twelve that serves at-risk youth. Olomana’s six-campus system includes facilities ranging from youth centers to the Hawai‘i Youth Correctional Facility and serves a range of students with a variety of educational and social challenges. At Olomana’s request CRDG’s mathematics faculty met with their entire mathematics department to help them look at ways to create more appealing and engaging mathematical experiences for their students. The CRDG team provided two professional development sessions in the fall to help the Olomana teachers with their initial implementation.
Mathematics Professional Development Program Continues to Grow and Innovate

The Math Teachers’ Circle (MTC) program was developed at the American Institute of Mathematics (AIM) and has grown into a nationwide movement aimed at establishing the foundation for a culture of problem solving among mathematics teachers in the United States. In 2013, the local program—Math Teachers’ Circle of Hawai‘i (MaTCH)—was in its third year and continuing to empower teachers to initiate more student-centered, inquiry-based pedagogies in their classrooms through a series of monthly meetings as well as a four-day summer retreat. While the monthly meetings continued to be popular with teachers, the summer retreat format allowed for extended time to do more pedagogical development that fostered teachers’ understanding of the Common Core State Standards’ (CCSS) eight standards for mathematical practice. These standards describe important processes and proficiencies that all students should develop. In addition to providing information on connections between the older National Council of Teachers of Mathematics (NCTM) standards and the CCSS, the MaTCH summer retreat emphasized the standards for mathematical practice in their daily blocks dedicated to pedagogical development. “It is easy for teachers to go right to content,” said Principal Investigator Linda Venenciano. “But implementing standards for practice and developing math practices in students is the game changer.”

Program evaluator Dr. Nicole Lewis of the UH COE Department of Educational Psychology reported on several positive outcomes of teachers’ participation in MaTCH. These outcomes included expanded knowledge of mathematics, shared resources and ideas from collaborating with other teachers, and increased familiarity with the Common Cores State Standards. Furthermore, teachers reported a renewed excitement for mathematics with one teacher writing, “I often get so bogged down in the day to day things in the classroom that I forget why I entered this field in the first place; my love for math and problem solving.”

In 2013, the MaTCH program continued to grow, in part with an $86,000 grant to fund its expansion to neighbor islands using the “e-table” model for synchronous professional development in disparate locations. This model was created by Educational Development Center, Inc. (EDC), a private non-profit education research and development organization in the greater Boston area, under a grant from the National Science Foundation. MaTCH and EDC partnered this year to bring an O‘ahu “table” into EDC’s pilot program and to help MaTCH use the model to expand its program throughout the state. Another focus of the grant was to build on the successes and lessons of the first two years to begin planning for long-term sustainability.

CRDG Researchers Share Expertise in Achieving Algebra Readiness

CRDG mathematics researchers Hannah Slovin and Fay Zenigami were invited to teach at the Algebra Readiness for Every Student interactive institute for teachers in grades six through eight organized by the National Council of Teachers of Mathematics in New Orleans in July. The goal of this institute, in its third year in 2013, was to enable teachers to prepare students for algebra. The interactive professional learning experience enabled participants to understand the growth of algebraic thinking and reasoning across the grades. Within this program, Slovin taught a workshop on ratios for teachers of grades six and seven. Zenigami taught proportional reasoning, representation, and connections for eighth-grade teachers. Attendees at the summer institute included teachers from Guam, South Africa, and Europe in addition to the United States. This was the second year that Slovin and Zenigami were invited to be part of the program, where they were able to share their expertise from years of experience developing algebra and other middle grades curricula at CRDG.
Researchers at CRDG began work in 2002 on Measure Up, a unique elementary mathematics program that uses measurement as the basis for developing understanding of algebraic concepts as early as first grade. The program, based on preliminary work by a group of psychologists, mathematicians, and educators in Russia, was developed for grades 1–5 and pilot-tested at the University Laboratory School as well as at another Hawai’i charter school and a laboratory school in Krasnyarsk, Russia. In 2013, the original class of Measure Up first graders were in the twelfth grade, and members of the original research team began looking at ULS seniors to study how students in their final semester of a college track mathematics program integrated their early understanding of quantitative relationships with recent learning of high school mathematics. The study compared six students who went through the Measure Up program in elementary school with a group of seven students who were selected to match the first group in three areas: seventh-grade achievement test scores in mathematics and language arts, and socio-economic background. All the students were in the twelfth grade and all had completed algebra in the eighth grade and had gone on to complete the same sequence of high school mathematics courses. The assessment instrument created for the study included both independent and small-group work and allowed researchers to analyze the effects of the students’ secondary school mathematics experiences. Preliminary findings provided some insights into how high school students assimilated and accommodated the mathematics concepts they learned throughout their schooling. Further research was planned to explore how later mathematics learning may impose distractions to how students see the structure of basic relationships in equations and in linear representations.
Change management is not a term we often hear applied to education. In the domain of technology in the classroom and wider school environment, it is an essential piece of the puzzle for effective deployment of twenty-first-century learning tools.

CRDG’s Information Technology (IT) and Learning Technologies (LT) teams have built up extensive knowledge in this area through both their research and their hands-on experience in supporting ULS’s Google Apps for Education and one-to-one computer programs (see p. 15). While they continue to work with ULS, their support role expanded this year to include work with the Hawai’i Department of Education (HIDOE) in their one-to-one pilot program. The pilot began in eight schools: Kea’au and Pāhoa elementary schools on Hawai’i Island and Mililani Mauka, Mililani Waena, Nānākūloa, and Nānākuli intermediate schools; Nānākuli Intermediate and High School; and Moanalua Middle School on O’ahu. Principal Investigator Thanh Truc Nguyen, CRDG’s head of information technology, Robert Nakama, and evaluators George Harrison and Brian Lawton were joined by ULS’s Dean of Curriculum and Instruction, Miki Tomita and several ULS teachers to implement the Academy for the 21st Century (ACE21) and Runbook projects. These two components of the work with the HIDOE leverage the ongoing research and specialized knowledge of the CRDG team.

The ACE21 program comprises a set of professional development courses that lead teachers, administrators, and technology coordinators through the process of implementing and managing a one-to-one technology program and working with Google Apps for Education (GAFE), a free cloud-based collaborative learning environment. The series of courses are delivered in a combination of face-to-face and online formats and focus on the hands-on details of setting up and administering a one-to-one program, beginning with Google 101, which looks at the seven features provided on the Google Drive. Following this introduction, courses go into classroom management and communication strategies, address standards in language arts and mathematics, and review and demonstrate strategies to encourage creativity and collaboration, and focus on Google Apps for administrators. The series wraps up with courses on digital citizenship and Internet safety. An online learning community provides ongoing opportunities for interaction and support through weekly forums as well as asynchronous discussion threads.

In conjunction with the ACE21 program, CRDG collaborated with ULS to develop the Runbook, a web-based publication that functions as a users manual for administrators and technology coordinators in setting up and working with GAFE. It covers the range of issues teachers and administrators face in setting up a new program, including setting up and maintaining a domain; rolling the program out to teachers, students, and parents; data portability; and trouble-shooting. In creating the Runbook, the team started with the acknowledgement that there is a wealth of information available on deploying and maintaining a Google Apps domain. Instead of trying to reinvent the wheel, they used the guide to bring that valuable content together into a one-stop resource and, more importantly, to introduce change management techniques and best practices that can help facilitate a safe and efficient deployment. They also focused on adapting existing best practices to the unique environment and strategic goals of the HIDOE.
The University Laboratory School (ULS), a K–12 public charter school and research partner with CRDG, has taken a leadership role in the education community in its use of technology in the classroom and to support professional development. “ULS is committed to the development of technological literacy in all aspects of the school environment,” said ULS Dean of Curriculum and Instruction Miki Tomita. In partnership with CRDG, ULS is committed to studying ways technology impacts and supports classroom learning and professional development, and to disseminating information about best practices as data become available. This commitment was seen in a number of activities this year, which fall under the umbrella of leveraging technology to create effective, responsible, and ethical citizens in a changing society.

Research and implementation around technology use in the school has followed two primary paths: hardware and software implementation to achieve academic objectives such as collaborative learning environments, and the use of that technology in supporting student learning and professional development, and to disseminate information about best practices as data become available. This commitment was seen in a number of activities this year, which fall under the umbrella of leveraging technology to create effective, responsible, and ethical citizens in a changing society.

CRDG’s information technology team, led by Mark Yap and Robert Nakama, continued efforts to create a data-driven plan for implementation of the school’s one-to-one pilot program, with the goal of sharing findings and best practices with the larger education community. This year’s efforts built upon research carried out during the first year of the pilot last school year, when each seventh grader was provided with either a MacBook or a Chromebook. The initial study focused on typical issues such as how the technology is used by teachers and students to support student learning, but special focus was also directed to cost, time to deploy, and software options the various devices offer. CRDG and ULS worked together in 2013 to apply these data to the expansion of the one-to-one program to grades 6–8 that uses Chromebooks for all students, as well as to a pilot study of mixed device implementation in the elementary grades to collect data on how different devices support student learning and engagement.

Within this unique charter-laboratory school research environment, teachers and administrators continued to explore ways that technology could enhance learning environments locally and globally. Google Apps for Education (GAFE), a specially designed, free and secure service Google provides for schools, has proven to be a powerful tool for teachers and administrators for both classroom teaching and professional development efforts. ULS faculty’s experience with this platform inspired a series of conference presentations and workshops. ULS Dean of Curriculum and Instruction Tomita presented sessions on how GAFE facilitates administrative functions, while teachers Brendan Brennan, Marybeth Baldwin, Melanie Ishihara, Erin Sakamoto, and Hye Jung Kim focused on ways Google Apps can be used to shape and support effective instructional strategies. Baldwin, Brennan and Ishihara presented sessions at the Schools of the Future conference and the Hawai’i Google Apps Summit on how Google Apps is proving to be a powerful, appropriate, and cost-effective tool to meet the rigorous demands of the Common Core State Standards.

Tomita also presented sessions on how the connectivity of living and teaching in this digital environment is helping the school focus on global citizenship and sustainability through a variety of programs, including Mālama Honua, the Polynesian Voyaging Society’s worldwide voyage of the traditional voyaging canoes Hokule’a and Hikianalia. Efforts such as these tie strongly to the work of CRDG’s Learning Technology team of Truc Nguyen and Lauren Mark to build curricula that lead to technologically competent, responsible, and ethical global citizens.
Capturing the Story of a WWII Nisei Spy

The Curriculum Research & Development Group took on a different kind of project this year when a group of World War II veterans from Kaua‘i approached retired Hawai‘i public school principal Yoshinobu Oshiro to ask for help in recording the story of Arthur Komori, one of their former members. Oshiro, in turn, approached longtime friend and colleague, CRDG’s Morris Lai to solicit CRDG’s help with the project, and the collaboration resulted in the publication of *Reflections of Honor: The Untold Story of a Nisei Spy*.

One of the first Nisei recruited into the United States Army in World War II, Arthur Komori worked undercover in pre-war Manila for the Counter Intelligence Corps (CIC). He worked as a translator and undercover agent both on the front lines and behind the scenes in General MacArthur’s headquarters, always in danger of being branded a traitor by Japan and of misidentification by American soldiers, since Japanese Americans were still forbidden from enlisting in the U.S. Army at the time. In part because of the political climate of the times and in part because of the secret nature of his work, the story of Komori’s career with the Military Intelligence Service (MIS) had never been told and was long overdue. Fortunately, he recorded much of his story in his own words through journals, official reports, and even poetry, and this book used all of this as well as additional research to tells his incredible story.

A core group of book production staff at CRDG had worked together in recent years to produce several books on traditional and contemporary Hawaiian practices and beliefs, and this same team came together once again to work on this new project. Morris Lai took on the role of principal investigator, and Lori Ward, CRDG’s managing editor, became the project manager and writer, eventually collaborating with co-authors Kati Erwin and Yoshi Oshiro. Two of CRDG’s graphic artists worked on the project, with Wayne Shishido creating the maps and book cover and Darrell Asato doing the book design and layout. Helen Au, director of CRDG’s Marketing and Publication Services, along with her team, ensured a professional level of publication and marketing.

Several CRDG staff who worked on the book’s production presented the book to the Kaua‘i MIS veteran’s club, of which Arthur Komori had been a past president. At that presentation, the CRDG team was thrilled to meet the two remaining WWII MIS survivors in the club, Jiro Yukimura and Norman Hashisaka. Following this, the book was officially launched on December 13, 2013 in the Andrew W. S. In College Collaboration Center at the University of Hawai‘i at Mānoa’s College of Education, where the MIS veterans in attendance were also honored: Herbert Yamamura, Shinye Gima, and Yoshinobu Oshiro, one of the book’s co-authors.
The twenty-first century job market is vastly different from that of the twentieth century. People who have specialized skills and experience with computer-aided design (CAD), computer assisted manufacturing (CAM), and computer numerically controlled (CNC) machines are expected to have a competitive edge over their counterparts applying for the same positions. The Technology for Untapped Talent (TUT) program, in its third year in 2013, enables people with disabilities to gain experience with CAD, CAM, and CNC at their own pace. Teaching a STEM curriculum not yet found in the typical K–12 program, TUT teaches the STEM disciplines in an applied setting, integrating the four elements and addressing applicable sections of the Next Generation Science State Standards and the engineering standards from both the Common Core and the four elements and addressing applicable disciplines in an applied setting, integrating the four elements and addressing applicable sections of the Next Generation Science State Standards and the engineering sections of the Next Generation Science Standards. The program was designed to lead to secure and meaningful employment for individuals with a range of disabilities. “Every employment situation comes with challenges, but TUT participants gain the self-confidence to realize that they are familiar with tools that most people have never even used,” said Project Director Neil Scott.

2013 YEAR IN REVIEW

After graduating the first cohort in 2012, TUT launched its first Phase II cohort in 2013. The initial program, known as Phase I, introduced participants to the CNC micro mill, laser cutter, and 3D printer through a series of prescribed projects. In Phase II participants honed these skills as they chose a particular field, did more 3D modeling, used the larger mill, and developed the experience and confidence to design and fabricate products independently.

This year also saw the expansion of the program to all four major islands with the opening of a program on Maui. The project has been based on O‘ahu, but has also had a Hilo location from the beginning. While there was not yet a location on Kaua‘i, they had one participant from that island who flew over each week to participate in the program.

All of this growth meant that the program finally outgrew the already tight space where it had started on the campus of the College of Education at UH Mānoa. A move in the fall to much larger quarters in Iwilei tripled their space. An open house in December showed off both student work and the new space, which included a larger classroom; dedicated rooms for wood shop, metal shop, and finishing; a conference room overlooking twenty-first century manufacturing machines; and space for a gallery to display exemplary student work. And, importantly, the new location left room for continued growth and expansion.

In Hawai‘i, the SNE is made up of seventy-five educators who will, over the course of five training sessions, review and provide feedback on the resources in the library. The eight-member leadership team, on which Venenciano serves, is tasked with identifying, recruiting, and training the Hawai‘i SNE members, monitoring the twenty-six SNEs’ reviews of resources and making final publishing decisions, and providing overall leadership to the SNEs. Venenciano is one of two members of the state leadership team from higher education. The project is scheduled for full implementation and launch of the digital library in the 2014–2015 school year.

Building Teacher Skills in Assessment

CRDG’s Linda Venenciano is serving on the leadership team of the Hawai‘i State Network of Educators (SNE), one of twenty-six state-based teams working with the Smarter Balanced Assessment Consortium to help build a digital library that will provide resources to help teachers develop their skills using formative assessment. The program aims to help teachers balance summative assessments benchmarked to college and career readiness, teacher resources for formative assessment practices to improve instruction, and flexible interim assessments, all based on the Common Core State Standards and aiming for college and career readiness for all students.

A History of Hawaiʻi Revised and Updated

The third edition of A History of Hawai‘i will bring the most widely used text for high school courses on the history of Hawai‘i up to date when it is published next year. 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 will include more depth and detail for some of Hawai‘i’s most pivotal events and will reflect the growing cultural and language revitalization by incorporating more material about the issues Native Hawaiians faced following Western contact.

The new book will be in color, will be published in both print and ebook formats, and will include web-based enhancements and activities.

The new edition is being authored by Leah Tassill, a social studies researcher and long-time teacher at the University Laboratory School (ULS) who worked at CRDG on aligning the previous edition of this text with Hawai‘i Department of Education standards for social studies. The project, which is in the writing stage this year, will be piloted in the ULS before being finalized.
Online Marine Science Curriculum and Professional Development

The Teaching Science as Inquiry: Aquatic (TSI Aquatic) project, which is funded by the US Department of Education (USDOE) Institute of Education Sciences and the National Oceanic and Atmospheric Administration (NOAA) Pacific Services Center in partnership with the UH Sea Grant Center for Marine Science Education, aims to learn more about the factors that go into making teacher professional development programs successful. To do this, a series of professional development modules focused on the pedagogy of inquiry and the subject area of marine science was created to include a combination of in-person and online formats. Over the past three years, cohorts of teachers on all the major islands have participated in a series of workshops and evaluation studies that will advance the research on professional development effectiveness (see p. 21). In addition to working closely with the evaluation team, the TSI Aquatic team wrapped up the professional development program for cohorts on O‘ahu and Kaua‘i this year. As the professional development schedule began to wind down, it left more time for them to work on the accompanying curriculum, Exploring Our Fluid Earth, which will be delivered entirely online (exploringourfluidearth.org). While the curriculum had been developed over the three years of the project, this final year saw them looking at the program as a whole. Activities this year included conducting extensive activity testing, making sure that the recommended materials were readily available, re-reading all the activities from the standpoints of both safety and clarity, and aligning the materials with the Next Generation Science Standards (NGSS). The curriculum comprises six modules, allowing it to be used as a whole for a marine science class or to be broken up to supplement other science courses. Four of the modules—chemical, biological, ecological, and physical—are content based, and two—practices of science and standards—are process based. The Practices of Science module is made up of activities that explicitly teach the process of inquiry, whereas the Standards module links activities in the other five modules to the Ocean Literacy Principles (OLP) and to the NGSS.

Community outreach is a hallmark of the TSI Aquatic project, which has built strong partnerships with many marine science programs and organizations. One such connection is the ongoing collaboration with the UH Sea Grant College Program. Two programs came out of that collaboration this year, both showcased at the School of Ocean and Earth Science and Technology (SOEST) 25th anniversary open house, held every other year in October.

The first program resulted from a series of workshops conducted to teach inquiry methods for science teaching to Sea Grant graduate students. The courses used pedagogy similar to those in the TSI Aquatic program but were tailored for graduate science students. These students are likely to be teachers at some point in their careers, but their training is typically only in science. Students who participated in the program presented the lessons they had developed at the SOEST open house.

The second program showcased at the SOEST Open House was an art contest for students in grades K–12, which was organized in conjunction with the UH Sea Grant Center for Marine Science Education and sponsored by Maui Jim, Inc. Nearly two hundred students entered, and winners in each of three age categories received a prize package from Maui Jim, Inc. that included a certificate for a pair of Maui Jim sunglasses, a bag, a t-shirt, a hat, and a water bottle. Other sponsors included Pizza Hut and Wahoo Tacos.
CRDG evaluators who worked alongside the Teaching Science as Inquiry (TSI) Aquatic project staff conducted studies that went beyond the formal requirements of the project evaluation. These efforts were designed to contribute to the research and evaluation literature on methods and strategies for program evaluation and to support CRDG’s mission to conduct and publish research.

In one of these studies, PhD candidate Brian Lawton examined the fidelity of project implementation under the supervision of CRDG’s Paul Brandon (serving as Lawton’s dissertation chair). Lawton’s focus was on the multiple components of implementation and on the relationships among those components. Lawton and Lisa Vallin, a graduate assistant for the evaluation, studied the implementation of the TSI Aquatic program via classroom observations using a modified version of the Education Development Center’s Inquiring into Science Instruction Observation Protocol. The observations were designed to elicit the degree to which teachers implemented the program as it was intended by the project developers. Having multiple observers in each observed classroom increased the reliability of the data. Lawton plans to analyze the implementation data for his dissertation. Furthermore, even though it was not part of the original evaluation plan to collect the observation data, preliminary findings from the effort provided insights that were helpful to the TSI Aquatic project staff as the project proceeded.

In a second study, CRDG’s George Harrison conducted additional analyses of the data that the evaluators had collected on students’ understanding of science content and the nature of science. The purpose of his study was to determine whether the eight themes that are addressed in the Next Generation Science Standards (NGSS) elements are best assessed globally or as independent items. Data from this study will serve as the basis for a research journal article designed to help teachers address those areas where students are struggling with the critical nature-of-science concepts.
Elementary Science Program Focuses on Climate Change in the Pacific

As part of a larger effort that seeks to expand education about climate change in Micronesia, CRDG’s Carol Ann Brennan and Tom Scarlet are working to create curriculum for elementary schools that will build toward a deep understanding of climate. The program is a partnership among Pacific Resources for Education and Learning (PREL), the various departments of education in the Pacific entities, and CRDG. Brennan and Scarlet are working on the curriculum for grades 3 and 4, writing the curriculum and providing training and support for teachers and administrators. The basic science curriculum is based on the inquiry strategies developed for the CRDG elementary program Developmental Approaches in Science, Health and Technology (DASH). It is not unit-based, but, rather, is based on the long-term collection of data. These data can then be used to create monthly and seasonal summaries that will allow students to build an understanding of climate as opposed to weather. As part of the training process, teachers take this basic science curriculum and add cultural knowledge to make it specific to their island and regional location. Teachers who participate in the training are expected to take the program back to their islands and eventually become teacher trainers themselves.

Use of CRDG Science Programs in Russia Expands

The adaptation of CRDG’s elementary science program Developmental Approaches in Science, Health and Technology (DASH) by educators in Russia continued this year with Carol Ann Brennan’s summer visit to Moscow to teach a DASH course for teachers, administrators, and other educators. This followed a previous visit by two teachers from Moscow to CRDG to observe DASH in use at ULS and to begin training with Brennan and Frank Pottenger. In addition to expanding the training in DASH for Russian educators, Brennan had the opportunity to see video of DASH classes in Russia, participate in their online learning community, observe some of the unique innovations they are testing, and serve as a consultant to the educators who are adapting and translating DASH for Russian teachers.

The current work with the DASH curriculum represents the latest chapter in a long-standing collaboration between CRDG and the Russian Academy of Science that began over twenty years ago when CRDG’s award-winning middle school science curriculum Foundational Approaches in Science Teaching (FAST) was introduced into Russia by Don Young and Frank Pottenger.
Two Projects Address Science in Elementary Education

The Science in Early Elementary (SEE) project began work this year to build an elementary science curriculum that is aligned with the Next Generation Science Standards (NGSS). The research team of Lori Fulton and Brian Lawton has begun to develop a curriculum that starts with activities from CRDG’s award winning Developmental Approaches in Science, Health and Technology (DASH) program and builds on that foundation to address the practices and cross-cutting ideas articulated in the NGSS. They are working with the elementary teachers at ULS to see how teachers interpret the NGSS. As an early step, they are collecting information from teachers about how they see the performance expectations—what the expectations mean to them and how they work with them to determine what students need to know and be able to do in order to meet that expectation. The project is moving forward on two parallel tracks: curriculum development and data collection.

Fulton and learning technology researcher Seungoh Paek also worked with ULS elementary teachers in 2013 to examine the role of digital science notebooks in the elementary curriculum. As a first step, they focused on science notebooks as a learning tool. Teachers and students learned about the role of a notebook in scientific practice as they used them in a manner similar to the way real scientists do. In keeping with the NGSS focus on practices of science and cross-cutting concepts, notebooks are being used to move beyond documenting what students are doing to address explanation, argumentation, and communication as well as bigger ideas such as patterns, modeling, and cause and effect. The next step in the process will be to move to a digital format. Paek’s role was looking at ways the multi-media functions can help young children use the notebook concept. For example, children who are not proficient at writing may be able to record data using drawing, graphics, and other applications. They may also be able to use cameras and voice recordings long before they would be able to record their thoughts in writing. Paek and Fulton will be gathering data on how children use digital science notebooks, looking toward developing something specifically for children in the early elementary grades.
CRDG hosted the 37th Annual Pacific Circle Consortium Conference in June at the Hawai‘i Imin International Conference Center. Delegates from around the Pacific gathered in Honolulu to share their work and to build on common interests in planning for future collaborative projects. Participants came from New Zealand, Australia, China, Sāmoa, South Korea, Taiwan, Fiji, Japan, Vietnam, Mexico, and the United States. Keynote speaker Dr. David Grossman opened the conference with an address entitled “Preparing Globally Aware Citizens,” and participants carried on this theme with presentations on topics that addressed the conference theme Sharing Perspectives—International Conversations about Education. The winner of a student teacher essay contest in the University of Hawai‘i’s College of Education shared an upcoming teacher’s perspective in her address entitled “A Time to Blend: Synthesizing Traditional and Progressive Educational Approaches.”

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 cooperation among educational research and development institutions in the Pacific region and has produced many collaborative curriculum projects and policy papers in its thirty-seven years.
MaPS Performs Array of Support Roles

CRDG’s Marketing and Publication Services (MaPS) is a one-stop center for educational resources and support, marketing consultation, and publishing services, not only for our CRDG and College of Education family, but for other university departments, schools, and non-profit organizations. The multi-faceted MaPS office handles an array of services including marketing and disseminating CRDG-developed materials to schools both nationally and internationally, coordinating professional development opportunities for teachers, creating quality layouts and graphic design, and providing photocopying, binding, laminating, and 4-color printing services.

MaPS was busy this year supporting a variety of initiatives that resulted in broad distribution of CRDG products and services. In mathematics, MaPS worked with the HIDOE to produce and distribute the new curriculum *A Modeling Approach to Algebra* (see p. 11) to Hawai‘i schools. They also worked with Rasmussen College to deliver a modified version of CRDG’s *Algebra I: A Process Approach* textbook and support materials tailored to Rasmussen’s developmental mathematics course needs on multiple campuses in the midwest. The arrangement started with distribution of print materials, but now involves electronic delivery of materials to students. In science, MaPS renewed the Texas adoption of CRDG’s high school marine science materials, *The Fluid Earth* and *The Living Ocean*. MaPS also increased CRDG’s visibility and sales outside the educational arena this year by initiating sales of CRDG products on Amazon. So far, they have seen steady sales on the forty-plus titles available. Finally, MaPS coordinated production and marketing of the new publication *Reflections of Honor*, arranging for distribution by the University of Hawai‘i Press and hosting a launch reception in December (see p. 18).
GAs Contribute to CRDG

As a research unit within the University of Hawai‘i, CRDG is home to a talented group of graduate assistants (GAs) who advance their education while contributing in significant ways to CRDG’s work. The graduate students featured here study in departments throughout the university, and they share their talents in ways that greatly enhance the learning community at CRDG.

Maryam Abhari
Maryam’s work in the Doctorate of Architecture program focuses on experience-rich architectural design and on the new design approaches to enhancing users’ environmental experience. At CRDG she has worked on graphic design, illustration, and web development for the mathematics program A Modeling Approach to Algebra and has assisted with data entry and analysis for implementation research. She has also supported the Math Teachers’ Circle of Hawai‘i (MaTCH) project with management, data entry, and web design.

Stephanie Capen
A PhD student in the Department of Educational Foundations, Stephanie is working on the mathematics program A Modeling Approach to Algebra by supporting the development of its digital platform using the PublishView feature of the TI-Nspire’s Teacher Edition software. Stephanie has also worked on other CRDG Mathematics projects supporting data entry and analysis and assisting with professional development. Inspired by her work as a mathematics teacher at the University Laboratory School and her work at CRDG, Stephanie plans to conduct her dissertation research on teacher identity.

Susanne DeVore
Susanne is a master’s student in the Department of East Asian Languages whose studies focus on Chinese language. At CRDG, she is part of the editorial staff, bringing her experience as a newspaper editor in Taiwan to such CRDG projects as a new curriculum on the modern history of Korea, a revision of the popular Hawai‘i Nature Study program, and CRDG’s recent publication about World War II, Reflections of Honor.

Darienne Dey
Darienne is a PhD student in Curriculum Studies, specializing in mathematics and science education with an emphasis on indigenous education. At CRDG she supports the Math Teachers’ Circle of Hawai‘i (MaTCH) project, assisting with its workshops and helping to manage the project’s data, media, and communications. She also serves as a faculty mentor for the College of Education’s Ethnomathematics & STEM Institute and as a crewmember for the Polynesian Voyaging Society.
Frank Jumawan
A PhD student in the Department of Educational Technology, Frank is on the grant-funded Teaching Science as Inquire (TSI) Aquatic project. He works collaboratively with the college’s Distance Course Design & Consulting group to assist in the design and development of online courses and collaborative communities of the TSI Aquatic professional development institutes in aquatic sciences.

David Lin
David is a PhD candidate in the Department of Biology where his work focuses on food web dynamics in marine soft-sediment communities. David is part of the TSI Aquatic project at CRDG where he works as a curriculum developer.

Lauren Mark
A PhD student in the Department of Educational Psychology, Lauren has been an integral part of the School Internet Safety Initiative, contributing original research and disseminating information through journal articles and conference presentations. Her research for this project focuses on cyber safety education and family-school-community partnerships.

Brian Lawton
Brian is a PhD candidate in the Department of Educational Psychology. At CRDG he applies his work on validity and fidelity of implementation to study the implementation of the TSI Aquatic as well as the ACE21 and Runbook projects.

Matt Lurie
Matt is a PhD candidate in the Department of Botany at UH Mānoa where his research focuses on mechanisms that allow non-native plant species to become successful invaders. At CRDG Matt is a member of the TSI Aquatic project where he works as a curriculum developer for the Exploring Our Fluid Earth program.

Lisa Takeuchi
Lisa is a master’s student in the Department of Public Health Sciences in the John A. Burns School of Medicine at UH Mānoa where her studies focus on epidemiology. As a GA, she helps to coordinate the administration and reporting of the Youth Risk Behavior Survey (YRBS) and Youth Tobacco Survey (YTS) in public middle and high schools across the state.

Lisa Vallin
Lisa is a PhD student in the Department of Educational Psychology where her dissertation work examines the use of metacognition as a pedagogical model. As a part of Paul Brandon’s evaluation team, Lisa has contributed to the evaluation of CRDG’s TSI Aquatic and ACE21 and Runbook projects. She has also worked on instrument development, data collection, and analyses for the College of Education’s Ethnomathematics and STEM Institute.

Fan Yang
As a PhD student in the Department of Educational Technology, Fan’s work focuses on online education, computer supported collaborative learning, and adult learning. At CRDG she works on the TSI Aquatic project where she maintains and updates content for the Exploring Our Fluid Earth marine science curriculum website.
SCHOLARSHIP

Books/Media


Peer Reviewed Publications


Paul Brandon began a three-year term as editor-in-chief of *New Directions for Evaluation*. The quarterly thematic journal, which publishes empirical, methodological, and theoretical works on all aspects of evaluation, is one of two official journals of the American Evaluation Association (http://www.eval.org/p/cm/ld/fid=47). The journal focuses on evaluation theory, methods, practice, and professional issues, often contextualized in substantive areas such as government performance, energy, environment, health, and education. It offers evaluators, program administrators, institutional researchers, consultants, and others in-depth information about concepts, techniques, and procedures for conducting evaluations, with a focus on new developments or the compilation of recent developments. All issues are guest-edited; Brandon’s responsibility is to solicit guest editors, vet proposals, coordinate reviews by panels of rotating members of the Editorial Advisory Board, and administer the process of submitting full issues to the publisher. During his tenure as editor-in-chief, Brandon plans to expand the breadth of topics that the journal covers by focusing on new aspects of evaluation, particularly international topics.
Grants and Contracts


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. 2009–2014.


Presentations

Au, H. O. (2013, January). American higher education, high tuition, and high student loans: The debt implications for students during and after college. Case studies at the University of Hawai’i. Presented at the 11th Annual Hawaii International Conference on Education, Honolulu, HI.


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**Fulton Wins Outstanding Doctoral Research Award**

Lori Fulton was selected for the 2013 National Association for Research in Science Teaching (NARST) Outstanding Doctoral Research Award for her dissertation, *Writing in Science: Influences of Professional Development on Teachers’ Beliefs, Practices, and Student Performance.* “This is a great honor, as Dr. Fulton’s doctoral dissertation has been judged by her colleagues in NARST to have great significance in the field of science education,” CRDG Director Kathleen Berg said. NARST is a worldwide organization that has worked to improve science teaching and learning through research since 1928. In its effort to help all learners achieve science literacy, the association encourages and supports the application of diverse research methods and theoretical perspectives from multiple disciplines to the investigation of teaching and learning in science; communicates science education research findings to researchers, practitioners, and policy makers; and cooperates with other educational and scientific societies to influence educational policies.


Olson, J., & Olson, M. (2013, April). Tasks and technology provide a foundation for teachers to put standards for mathematical practices into action. Presented at the National Council of Supervisors of Mathematics Annual Conference, Denver, CO.


Council of Supervisors of Mathematics Annual Conference, Denver, CO.


Olson, M., & Zenigami, F. (2013, April). We have chosen a good task. Presented at the National Council of Supervisors of Mathematics Annual Conference, Denver, CO.


Philippoff, J., Laskowsky, A., & Seraphin, K. (2013, July). Integrating the ocean into science classrooms of all disciplines: A professional development story. Presented at the Hawai’i Environmental Education Symposium, Honolulu, HI.


Empowering people to make the things they need. Presented at the 37th Annual Pacific Circle Consortium Conference. Honolulu, HI: PCC.


Vallin, L. M., Philippoff, J., & Brandon, P. R. (2013, October). An examination of the purposes and data collection methods of published research on evaluation and of the disciplines or professions within which the research has been conducted. Presented at the American Evaluation Association Annual Conference, Washington, DC.


CRDG ORGANIZATION

College of Education
Donald B. Young, Dean

Curriculum Research & Development Group
Kathleen F. Berg, Director
Thanh Truc T. Nguyen, Associate 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
Mathematics (Graduate Assistant)
BS 2006, BS 2010, Hawai‘i

Afaga, Lorna
Program Research and Evaluation
BA 1977, MPH 1981, Hawai‘i

Anatolos, Christine
Learning Technologies
BA 1996, San Francisco State

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

Au, Helen
Marketing and Publication Services
BBA 1993, MEd 2006, PhD 2012, Hawai‘i

Baldwin, Marybeth
Learning Technologies
BA 2000, Seattle; MA 2003, Portland; PhD 2013, Hawai‘i

Berg, Kathleen F.
Administration

Bossler, Amy
Administration (Graduate Assistant)
BA 2006, Bucknell; MEd 2008, Hawai‘i

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

Brennan, Brendan
Learning Technologies
BA 1999, Gettysburg; MA 2005, Phoenix

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

Cagaoan, Emma
Administration
AS 1980, Kapi‘olani Community College

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

Castillo, Elizabeth
Learning Technologies

Clark, Robin
Literacy and Hawaiian Education
BA 1994, Hawai‘i

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

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

Dey, Darienne
Mathematics (Graduate Assistant)
BA 2004, Stanford, MEd 2011, Hawai‘i

Dunn, Hugh
Literacy and Hawaiian Education
BEd 1990, MEd 1999, Hawai‘i

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, Hawai‘i

Fukata, Laverne
Administration
BA 1976, Hawai‘i

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

Gill, Kevin
Learning Technologies
Hapai, Marlene
Science
BA 1970, Gonzaga; MS 1977, PhD 1981, Hawai‘i

Hamasaki, Brian
Administration
BBA 1997, Washington State; MBA 2004, Hawai‘i

Harrison, George
Program Research and Evaluation
BA 1994, UC Santa Cruz; MA 2002, PhD 2013, Hawai‘i

Hartle, Alison
Social Studies
BA 1992, UC Berkeley; MA 1996, Hawai‘i

Hashimoto, Valerie
Science
BS 1993, Hawai‘i Pacific; MAEd 2003, Phoenix

Higa, Terry Ann
Program Research and Evaluation

Ilawan, Elizabeth
Learning Technologies
BA 2006, Oklahoma

Inouye, Byron
Learning Technologies
BA 1993, Hawai‘i

Ishihara, Melanie
Learning Technologies
BEd 1990, Hawai‘i

Jumawan, Francisco
Learning Technologies
AS 1991, Electronics Institute; BS 2006, MEd 2011, Hawai‘i

Kaupp, Lauren
Science
BS 2003, Maryland-Baltimore County; MS 2005, Hawai‘i

Kido, Lillian
Literacy and Hawaiian Education
BA 1971, Hawai‘i

Klenske, Terry
Science
BA 1972, Pacific

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

Lawton, Brian
Program Research and Evaluation
BA 2001, Nevada; MEd 2005, Hawai‘i

Lee, Aaron
Marketing and Publication Services
BFA 1999, Hawai‘i

Leong, Jaret
Marketing and Publication Services
BBA 2013, Hawai‘i

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

Lin, David
Science (Graduate Assistant)
BS 2006, UCLA; MS 2011, Hawai‘i

Lurie, Matthew
Science (Graduate Assistant)
BS 2005, UCLA; MS 2010, Hawai‘i

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

Marano, Thomas
Learning Technologies
AS 1975, Butler; BS 1990, Slippery Rock; MURP 1994, Virginia Polytechnic

Mark, Lauren
Learning Technologies
(Graduate Assistant)
BS 2001, Washington; MA 2009, Hawai‘i

McCann, Kimble
Learning Technologies
BBA 2001, Georgia; MA 2007, MA 2008, California State University Los Angeles

Minaya, Carmela
Learning Technologies

Nakama, Robert
Information Technology
BBA 2006, Hawai‘i

Nakamura, Aric
Program Research and Evaluation
BA 2004, Hawai‘i

Nako, Patrick
Information Technology

Narimasu, Bert
Marketing and Publication Services
BA 1976, MFA 1993, Hawai‘i

Ngo, Amy
Program Research and Evaluation
BFA 2012, Hawai‘i

Nguyen, Thanh Truc
Learning Technologies
BA 1996, MEd 2000, Hawai‘i; 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, Hawai‘i

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, Hawai‘i

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

Pottenger, Marcus
Summer Programs
BA 1981, Hawai‘i; MA 1987, Northern Colorado

Ramos, Rosemarie
Administrative
AS 1976, St. Ferdinand

Romero, Gary
Information Technology
BS 1986, DeVry
The team of Jordan Wang and Brittany Supnet were selected as the University of Hawai‘i at Mānoa’s Student Employee of the Year for their work with CRDG’s Teaching Science as Inquiry (TSI) Aquatic program.

Wang, a 2012 UH Mānoa Presidential Scholarship recipient, has worked for CRDG since 2010. Supnet joined the group over a year ago. They are responsible for ordering and organizing the supplies for the TSI Aquatic program, which has facilitated more than thirty science teacher professional development workshops for five cohorts of teachers across the state of Hawai‘i over the past two years. Additionally, Wang and Supnet manage fiscal paperwork and procedures, assist with the writing and distribution of TSI Aquatic workshop contracts, and serve as liaisons between the project and participating schools. As a result of their quality work and collaboration, they have played an increasingly important role in curriculum and research aspects of the program.

“The members of the entire TSI Aquatic team are continually impressed with Jordan and Brittany’s reliability, independence, and leadership,” said TSI Aquatic Program Manager Joanna Philippoff. “We would not be as successful, efficient, or organized without their hard work, dedication, and valuable contributions.”
CRDG ORGANIZATION

Staff

Sagaysay, Lolito
Program Research and Evaluation
BBA 1982, Hawai‘i

Saka, Susan
Program Research and Evaluation
BS 1980, BBA 1980, MEd 1994, Hawai‘i

Scarlett, Thomas
Science

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

Seraphin, Kanesa
Science
BS 1999, Cal Poly; MS 2004, PhD 2005, PBCSE 2008, Hawai‘i

Shimabukuro, Erin
Administration
BEd 2001, Hawai‘i

Shiraishi, Jana
Marketing and Publication Services
BA 2011, Hawai‘i

Shishido, Wayne
Marketing and Publication Services
BFA 1972, Hawai‘i

Shon, James
Standards Streamlining Project
BA 1969, Syracuse; PhD 2001, Hawai‘i

Slovin, Hannah
Mathematics

Subedi, Lillette
Literacy and Hawaiian Education
BFA 1977, BA 1977, MA 1989, Hawai‘i

Takeuchi, Lisa
Program Research and Evaluation (Graduate Assistant)
BA 2011, Willamette

Tassill, Leah
Social Studies
BA 2011, Hawai‘i

Tokuhama, Raemi
Learning Technologies
BS 2006, Portland State

Tomita, Miki
Learning Technologies
BS 1999, Hawai‘i; PhD 2009, Stanford

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, Hawai‘i; MNM 2002, Regis; MA 2012, Hawai‘i

Watanabe, Erin
Science
BA 2005, Washington; MEd 2012, Chaminade

Watts, Margit
BA 1970, Michigan; MSW 1974, PhD 1989, Hawai‘i

Wong, Kristen
Program Research and Evaluation (Graduate Assistant)
BA 2006, Hawai‘i, MPH (Public Health) 2007, Hawai‘i

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

Yap, Mark
Information Technology
BA 2001, Hawai‘i

Yonemoto, Kory
Administration
BA 2005, Hawai‘i

York, Susan E.
Literacy and Hawaiian Education

Zenigami, Fay
Mathematics
BEd 1974, PD 1975, MEd 1975, Hawai‘i
MAJOR CRDG PROJECTS AND PROGRAMS 1966–2014

CRDG Initiated and Developed

- Hawaii English Program (HEP)—Secondary
- Consumer Education
- Metric, K–6
- SCOPE Mathematics
- Japanese Language and Culture
- Language Systems
- Families in Hawaiʻi
- Your Place and Mine: A community Study
- Comprehensive Musicanship Program, K–12
- Hawaiʻi Nature Study
- Hawaiʻi: Ko Kākou Mau Moʻolelo (Hawaiʻi: Our Traditions)
- Coastal Problems and Resource Management
- Energy Education Program
- British and European Literature
- Computer Literacy Project
- Foundational Approaches in Science Teaching (FAST)
- Ke Kai Ola Project
- Hawaiian Language and Polynesian Culture Program
- Modern History of Hawai‘i
- Telecommunications in Education
- Home/School Partnership for Bilingual/Multicultural Education in Early Learning
- Hawai‘i Bilingual/Multicultural Project for Secondary Students of Limited English Proficiency
- Hawai‘i Multicultural Awareness Program
- Aloha Oahu: Tourism in the City and County of Honolulu
- To Find the Way
- Hawai‘i School Success Project
- Hawai‘i Network for Education in Science and Technology (HI-NEST)
- Guidance Curriculum Guide
- Hawai‘i Marine Science Studies
- JASON III, Expedition to the Galapagos Islands
- The Geometry Learning Project
- Hawaii Algebra Learning Project
- Water Resource Management
- Archimedes Laboratory
- Nutrition Education
- Health Education
- The Hōkūle‘a Project
- Ukulele: A Comprehensive Approach
- Ethics in Thought and Action
- Developmental Approaches in Science, Health and Technology (DASH)
- History of East Asia
- Integrated Developmental Experiences for Active Learning (IDEAL)
- Classroom Electronic Portfolio
- The “Write” Way Journal Prompts
- High School Physics
- Performance English
- DODEA School Safety Project
- Reshaping Mathematics for Understanding
- Weather and Ratios
- Traffic on the Information Superhighway
- Explorations in Algebra
- Working ’Round a Problem
- Teaching Science as Inquiry
- Invention Factory
- Developing Algebra Resources for Teachers (DART)
- Pacific Education and Research for Leadership in Science
- Kapālama Algebra Readiness in the Elementary School (KARES)
- Technology for Untapped Talent
- USPACOM Longitudinal Study of Military Child Education in Hawai‘i
- School Internet Safety Initiative
- Math Teachers Circle of Hawai‘i
- A Modeling Approach to Algebra
- Voice of the Sea
- Reflections of Honor: The Untold Story of a Nisei Spy

Partnerships with the Hawai‘i Department of Education

- Hawaii English Program (HEP)—Elementary
- Artists in the Schools
- Pihana Nā Mamo
- Hawai‘i School Health Surveys
- Modeling Our World
- Academy for the Twenty-first Century

Partnerships with the Pacific Circle Consortium

(International collaborations)

- The Ocean Project I: Wise Use of Ocean Resources
- The Ocean Project II: Environments for Pacific Peoples
- Pacific Basin Forestry Project
- Pacific Basin Coastal Zone Project
- Bay and Harbor Communities of the Pacific
- Fishing in the Pacific Project
- Asian/Pacific Literature
- Pacific Area Technology and Health
- Educational Media Technology for International Understanding
- Pacific Tourism Project
- The Antarctic Project
- Education for the XXI Century: A Bridge for the Pacific Rim