



JOHN A. BURNS

School of Medicine • University of Hawai'i at Mānoa



\$12.6 Million for Hawai'i Health Disparities New Partnership Will Rapidly Transfer Research Benefits to Patients

University of Hawai'i researchers are teaming up with community groups, clinics and hospitals under a prestigious \$12.6 million effort dubbed RMATRIX that supports interdisciplinary and translational research on health disparities among isle residents. The goal is to improve the health of people who suffer from disproportionately higher rates of (and worse outcomes from) serious illness. In Hawai'i, that includes heart disease, diabetes, asthma, cancer and dementia.

The John A. Burns School of Medicine is one of five U.S. academic institutions funded through the National Institutes of Health's Research Centers in Minority Institutions. That's the "R." **MATRIX** stands for **M**ultidisciplinary **A**nd **T**ranslational **R**esearch **I**nfrastructure **E**Xpansion. Translational research rapidly transfers research findings to treatment settings to benefit patients.

Dr. Jerris Hedges, Dean of the John A. Burns School of Medicine and lead investigator for the grant, said it "builds upon years of successful research at the medical school by scientists in its Department of Native Hawaiian Health and numerous other departments and centers. These scientists have

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The lead investigators and administrative staff for the RMATRIX are (L to R): Bruce Shiramizu, Tammy Ho, Jerris Hedges, Todd Seto, Pam Bullard, & Louise Fujisue.

Communities critical partner in fighting disparities

The RMATRIX program will use a "top-down approach" to pool University of Hawai'i talents and resources with community partners to achieve health improvements for the community through scientific research.

The program will be housed at the John A. Burns School of Medicine in Kaka'ako but activities will stretch across communities statewide to achieve the greatest impact.

"In the end, the success of the RMATRIX grant will depend upon its ability to support selected areas of health disparities research," said Dr. David Easa, special advisor to the UH Mānoa Office of the Vice Chancellor of Research and Graduate Education. Dr. Easa, a former UH faculty member, is director of one of the Key Functions for RMATRIX. The Key Functions are components of the grant that support the work of multiple investigators (e.g., Ethics & Regulatory Support).

A strong overseeing team—including the Dean of the Medical School as principal investigator, two Program Directors who are senior faculty of the school, and three key administrators—provides the foundation "to develop meaningful research programs of value to the community by a top-down approach," Dr. Easa pointed out.

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\$12.6 million To Reduce Isle Health Disparities *(cont. from page 1)*

UH Resources Will Support Community Research Programs

identified the challenges of addressing the health disparities of Native Hawaiian and other Pacific Islanders in our multi-cultural and multi-ethnic setting.”

UH Mānoa Chancellor Virginia Hinshaw said the funding “acknowledges the incredible strides the medical school and its health partners have made to excel in clinical care and research. In addition, this outcome reflects the value of the investment Hawai‘i has made in modern research facilities and skilled faculty at the medical school.”

Two medical school faculty members—Dr. Bruce Shiramizu, in the Department of Pediatrics, and Dr. Todd Seto, cardiologist at The Queen’s Medical Center—are Co- Program Directors of the ambitious undertaking to address six health disparities disproportionately affecting Native Hawaiians, Pacific Islanders, Asians and other populations in Hawai‘i. They include: Cardiovascular health, respiratory health, nutritional and metabolic health, cancer health (prevention, epidemiology, treatment, drug discovery), perinatal, growth and developmental health and aging and neurocognitive health (the ability to think and reason).

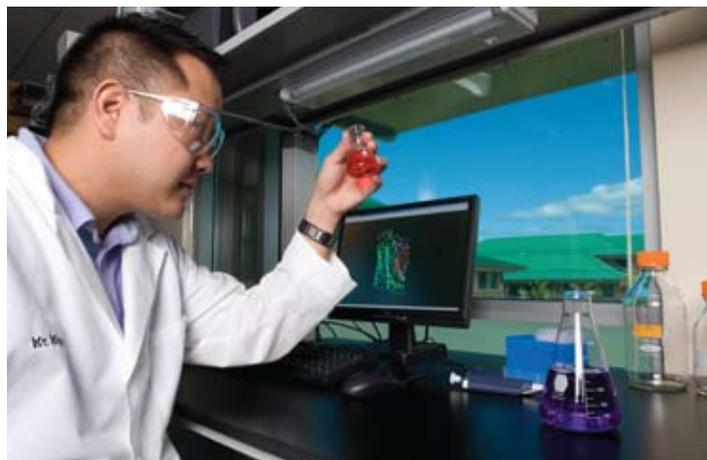
“It is somewhat overwhelming,” said Dr. Shiramizu. “But understanding and addressing these health outcome disparities in our multicultural setting will help our nation as a whole answer why some diseases are more prevalent in minority populations and what can be done to reduce the burden of these diseases.”



Volcanic Organic Gas (VOG) eruptions have been associated with respiratory complaints in Hawai‘i and are one area of active study by RMATRIX investigators.



Researchers collect airborne samples of VOG.



Modern laboratory facilities at the John A. Burns School of Medicine facilitate the training of medical students and graduate students in high tech research techniques that will help address health disparities.

The basic concept is to provide infrastructure to bolster research collaborations and investigations, he said. For example, he explained, this could involve assisting investigators in putting grants together, obtaining institutional review board approval for research and dealing with regulatory obstacles at different levels. “What our infrastructure is trying to do is make scientific studies of these issues more doable.”

Faculty in nursing, engineering, geosciences, law and other schools are encouraged to collaborate with medical school investigators on issues where they might do research together or assist each other. “Sometimes the right hand doesn’t know what the left hand is doing.” Dr. Shiramizu pointed out. “Through the RMATRIX program, we can help with key information dissemination.”

“Understanding and addressing these health outcome disparities in our multicultural setting will help our nation as a whole answer why some diseases are more prevalent in minority populations and what can be done to reduce the burden of these diseases.”

***--Dr. Bruce Shiramizu,
RMATRIX Co-Program
Director.***

Co-Program Directors Seto and Shiramizu stress the importance of asking Native Hawaiians and others what they feel are major health issues in their communities. “Involving the communities in these research efforts will be vital to the grant’s success,” stressed Dr. Seto, who has introduced programs successfully to high-risk communities.

The program will bring together experts and leaders from multiple disciplines throughout UH’s Mānoa and Hilo campuses, Dean Hedges said, stressing that there will be many opportunities for community participation and interdisciplinary research collaborations. *(continued on page 6)*

RMATRIX---"R" stands for **R**esearch **C**enters in **M**inority Institutions. **MATRIX** means **M**ultidisciplinary **A**nd **T**ranslational **R**esearch **I**nfrastructure **E**Xpansion.

LEADERSHIP



PRINCIPAL INVESTIGATOR

Dr. Jerris Hedges
Dean, John A. Burns
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University of Hawai'i
at Mānoa.



Co-PROGRAM DIRECTOR

Dr. Bruce Shiramizu,
Professor of Medicine
and Pediatrics, UH
medical school;
Investigator, Hawaii
Center for AIDS.



Co-PROGRAM DIRECTOR/

Dr. Todd Seto, Associate
Professor of Medicine,
UH medical school;
Cardiologist, The
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LEAD ADMINISTRATOR

Tammy Ho, MBA—
Director of Grants
Development



CO-ADMINISTRATOR

Pamela Bullard, BA



CO-ADMINISTRATOR

Louise Fujisue, RN, MHA

KEY FUNCTION DIRECTORS

RESEARCH ETHICS AND REGULATORY KNOWLEDGE AND SUPPORT

--Dr. David Easa, Special Advisor, Office of the Vice Chancellor of Research and Graduate Education, Director.
Zoe Hammatt, Esq., Assistant Professor, William S. Richardson School of Law, Associate Director.

RESEARCH DESIGN AND BIostatISTICS

--Dr. James Davis,
Senior Epidemiologist, John A. Burns School of Medicine.

MULTIDISCIPLINARY RESEARCH EDUCATION, TRAINING AND CAREER DEVELOPMENT

—Dr. Rosanne Harrigan,
Faculty Development Director and Chair, Complementary and Alternative Medicine.

COLLABORATIONS & PARTNERSHIPS

—Dr. Todd Seto.

EVALUATION MILESTONES

—Dr. Judith Inazu, Associate
Director, UH Mānoa Social Sciences Research Institute.

COMMUNITY-BASED RESEARCH

—Dr. Marjorie Mau, Professor
and Chair of Department of Native Hawaiian Health.

PARTICIPANT AND CLINICAL RESOURCES

—Dr. Charles Neal,
Neonatologist, Kapi'olani Medical Center for Women and
Children and the John A. Burns School of Medicine.

BIOMEDICAL INFORMATICS

—Dr. Dennis Streveler, Professor,
UH Manoa Information and Computer Sciences, Director;
Guylaine Poisson, PhD, Assistant Professor, Information and
Computer Sciences, Associate Director.

BIOREPOSITORY DATABASE

—Dr. Lynnae Millar Sauvage,
Professor and Chair of Obstetrics and Gynecology, John A.
Burns School of Medicine.

HEALTH INITIATIVE LEADERS

CARDIOVASCULAR HEALTH —Dr. Todd Seto, Associate Professor
of Medicine, UH medical school; specialist on cardiovascular
disease, The Queen's Medical Center.

RESPIRATORY HEALTH — Dr. Elizabeth Tam, Professor and Chair,
Medicine and Interdisciplinary Biomedical Science, The Queen's
Medical Center.

NUTRITION AND METABOLIC HEALTH —Dr. Rachel Novotny,
Professor, Human Nutrition, Food and Animal Sciences, UH
College of Tropical Agriculture and Human Resources.

CANCER HEALTH — Dr. David Ward, Associate Director of
Scientific Administration, and Dr. Loic Le Marchand, Researcher,
Professor and Director of the Epidemiology Program, UH
Cancer Center.

PERINATAL GROWTH AND DEVELOPMENTAL HEALTH—Dr.
Lynnae Millar Sauvage, Professor and Chair of Obstetrics and
Gynecology, and Dr. Charles Neal, Neonatologist, Kapi'olani
Medical Center for Women and Children.

AGING AND NEUROCOGNITIVE HEALTH —Dr. Cecilia Shikuma,
Professor and Director, Hawai'i Center for AIDS, and Dr. Kamal
Masaki, acting director, Department of Geriatric Medicine.

Communities critical partner in fighting disparities

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Assessment of children in Hawai'i through the National Institutes of Health (NIH) sponsored National Children's Study and other pediatric-focused projects will be a vital part of RMATRIX.

An RMATRIX Council will develop operating policies and monitor progress in research programs designed to help to reduce and eliminate health status differences in population subgroups (i.e., health disparities). Members of the Council include leaders of different disciplines at UH-Mānoa and UH-Hilo, community representatives and the Research Centers in Minority Institutions (RCMI) Translational Research Network. The Multidisciplinary Research Education, Training and Career Development Program will be used to develop careers, train and expand research experiences for investigators and clinicians to engage in clinical and translational research projects for RMATRIX.

The top-down approach is the most important aspect of the new research paradigm, said Dr. Easa, explaining that it is a big departure from past experience in which individual investigators "had the onerous task of choosing their research, seeking funding and collaborators and themselves completing myriad details such as the Institutional Review Board (IRB) or Human Subjects Committee documents and regulatory applications necessary to get started.

"In the present scenario, once the RMATRIX program develops an acceptable concept paper [outlining a specific area of research] and gains approval from the appropriate RMATRIX committees, the resources of the RMATRIX would then be committed

to facilitate and insure the success of the program [in that area of research]," he said. "This seems a win-win for all involved and a sure way of quickly integrating the individual RMATRIX components into an interrelated, comprehensive and functional translational research infrastructure."

Dr. Gary Ostrander, UH Mānoa Vice Chancellor for Research and Graduate Education, credits Dr. Easa "for creating much of the vision for JABSOM in this community as reflected in the RMATRIX (grant)."

Dr. Ostrander is working with the UH Chancellor to develop institutional support for RMATRIX, and will use his office and support personnel "to encourage UH partners to formulate a common vision that enables them to create solutions as they engage in RMATRIX activities."

He also will facilitate implementation of best practices suggested by steering committees and work groups related to Key Functions, he said "may involve modifying institutional policies contributing to common consent forms, patient recruitment strategies, course curricula, protocols, working to develop and implement solutions to impediments to collaborative clinical and translational research."

Dr. Easa directs the Key Functions involving Research Ethics and Regulatory Knowledge and Support. Other Key Functions being launched to build RMATRIX and assist community leaders and collaborators with goals focusing on health disparity issues in their communities include:

Multidisciplinary Research Education, Training and Career Development; Evaluation Milestones; Community-Based Research; Participant and Clinical Resources and Biomedical Informatics and Database Management.

The RMATRIX proposal includes several health disparities that are particularly germane to Hawai'i communities.

*-- Dr. David Easa,
Director, RMATRIX
Research Ethics,
Regulatory Knowledge
and Support*

RMATRIX is a complex grant composed of several infrastructure components, all focused on supporting translational research, Dr. Easa explained. Many were previously funded as separate grants or parts of others. "So the challenge is how to integrate them into one program whose goals are broader but not necessarily harder to achieve," he said. "Indeed, the goal of translational research in Hawai'i is laudable—which is to make tangible and measurable improvements in health outcomes in the community we serve!"

The RMATRIX proposal includes several health disparities that are particularly germane to Hawai'i communities, Dr. Easa noted. "Fortunately, we have talented faculty with proven track records and ongoing independent research programs...that can provide us with the intellectual currency to move our translational research agenda forward and insure the success of our RMATRIX grant and its future."

The grant encompasses and supports collaborations, partnerships, community-based research liaisons, participant and clinical resources, research education and training, biomedical informatics, research ethics and regulatory resources.

"In the past," said Dr. Easa, "these infrastructures attracted both junior and senior investigators with different and varied backgrounds, whose goals varied but who all knocked on the infrastructure door to consider the various opportunities for support that was made available to them. Ultimately, the success of that type of structure depended upon the interest level and volume of interested investigators, and the marketing capacity to attract them to each destination."

He said research areas were determined almost entirely by the investigator's interest, "which was reasonable for the time given the developmental nature of our research agenda. But this led to a potpourri of uncoordinated research programs, each with its own needs and expectations and often lacking the support to expand to a meaningful level that could grow and reach maturity.

"RMATRIX leadership will be tested," he said, "by having to successfully engage our experienced health disparities investigators, and then to incorporate and commit appropriate RMATRIX core activities in order to develop meaningful translational research studies. Ultimately, what will be needed are manageable outcomes with discrete endpoints."



Transferring research results from labs at the John A. Burns School of Medicine to patients for better health is the goal of the new RMATRIX program.

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"New studies will take some months to get underway," he said, "but other portions of the grant (e.g. research training for junior investigators, enhancements in regulatory operations, clinical trials support for existing trials in the community, etc.) are already underway."

The program will integrate successful programs existing in major hospitals that serve Hawai'i communities and partner with the medical school as teaching hospitals. Other participants will include neighborhood health clinics, Hawaiian civic groups (the longest-standing community organizations representing Native Hawaiians) and health policy leaders.

The network of professionals will begin working as quickly as possible with leaders in communities with the greatest health disparities. Community leaders such as Jessie Marques, executive director of the Big Island's Ka'u Rural Health Community Association, are excited about contributing and collaborating to address the health problems.

Environmental health is an overriding issue on the Big Island because of the Volcanic Organic Gas (VOG) created by gases from the ongoing eruption of Kilauea Volcano, said Marques. "Our focus is health education, research opportunities and economic sustainability," she said, noting that the association has been working on these issues for years with Dr. Elizabeth Tam, Professor and Chair of Medicine in the medical school. Dr. Tam is leading the RMATRIX respiratory health initiative.

The medical school will establish a single administrative infrastructure for what it envisions as a statewide research focus on health disparities. The goals are to consolidate and enhance existing resources, foster collaborations and support investigators through education, training and career development. Resources to enhance and support clinical and translational research in the state would be available for use by different researchers for various projects. Resources will be drawn from similar NIH-funded sites with overlapping research needs and interests

Arthur Ushijima, president of The Queen's Medical Center and president and chief executive officer of The Queen's Health System, has offered to partner with the new research program and explore opportunities to share resources, such as education, clinical data systems and biostatistics.



Patients at the Kōkua Kalihi Valley Health Center created a garden to promote exercise, better nutrition, and to help them reconnect with the land. Researchers are evaluating the outcomes.

A member of the RMATRIX Council, Mr. Ushijima also said Queen's will help identify ways to enhance collaborative activities, recruit investigators, encourage community involvement and assist efforts to streamline the Institutional Review Board process for approval of studies based at The Queen's Medical Center.

Dr. David Derauf, executive director of the Kōkua Kalihi Valley Health Center which serves about 10,000 clients, said, "Sometimes the world of community and the university can seem very far apart. This grant gives us an opportunity to narrow that gap considerably." If the interests of the community and its members are the starting point, he added, "Everyone will benefit by that."

It is challenging for the university and the community to work together, Dr. Derauf acknowledged. "Research shows this doesn't happen easily. They are two very different cultures."

However, he said the Kōkua Kalihi Valley Health Center has collaborated successfully with the UH over the past five to 10 years on a number of projects, including some through the medical school's Department of Native Hawaiian Health. Some exploratory research was done to get patients with chronic diseases, particularly diabetes, onto the land through gardening projects, he said.

The gardening project "was useful in patient outcomes and successful in involving patients and the community," Dr. Derauf said, pointing out, "It wasn't the great idea of researchers from the medical school to test this out. We went to a group of patients in the community and said what would be an effective way to approach your illness and we can study it while you do it."



The John A. Burns School of Medicine, University of Hawai'i at Mānoa, was established in 1965. It has trained more than 2,000 medical doctors to date. The Hawai'i Residency Programs have trained nearly 2,300 physicians. Nearly half of the physicians practicing in Hawai'i are graduates of the John A. Burns School of Medicine MD or residency programs.

Our Vision is ALOHA, to Attain Lasting Optimal Health for All

Dean Jerris Hedges, MD, MS, MMM • Professor of Medicine, Barry and Virginia Weinman Endowed Chair

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