

glimpses



Christine Yokoyama (left), a first-year medical student, receives a white coat from her father, Wayne Yokoyama, professor of medicine and director of the Medical Scientist Training Program, at the Class of 2013 White Coat Ceremony.

Robert Boston

International students enjoy refreshments at the Chancellor's Reception for New International Students and Parents in Holmes Lounge.



Jerry Naunheim, Jr.

Robert Boston



(From left) Darlene Stewart and Wendy Zhang, both senior research technicians in the Department of Internal Medicine, choose fresh peaches from Baalman's Produce at the farmer's market at the School of Medicine.

Jacqueline Ong (left) and Juanyi Yu (right) listen as Scott McIntosh, events specialist in the Career Center, explains the nuances of dining etiquette during a luncheon for McDonnell International Scholars Academy members.



Mary Burkus

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contacts

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Washington University Alumni Clubs offer alumni and parents of current and former students a way to stay connected with the University.

For more information on the clubs in Asia, visit <http://aisweb.wustl.edu/alumni/internationalrelations.nsf> or contact:

Tamyllyn Holder

Director, International Alumni and Development Programs

Washington University in St. Louis
Campus Box 1060

7425 Forsyth Blvd.

St. Louis, MO 63105, USA

telephone: 1-314-935-4548

fax: 1-314-935-9614

e-mail: tami_holder@wustl.edu

The Alumni and Parents Admission Program (APAP) involves alumni and parents of undergraduates in recruiting, selecting, and enrolling students at Washington University. APAP members interview applicants, staff college fairs, and host receptions for admitted students. For information, contact:

Michelle Gravel

Director, Alumni and Parents Admission Program, and

Associate Director,

Undergraduate Admissions

Washington University in St. Louis
Campus Box 1028

One Brookings Drive

St. Louis, MO 63130-4899, USA

telephone: 1-314-935-4826

e-mail: apap@wustl.edu

Alumni, parents, and friends of the University often help identify students who would benefit from a Washington University education. Refer names and addresses of talented prospective students to:

Julie Shimabukuro

Director, Undergraduate Admissions
Washington University in St. Louis

Campus Box 1089

One Brookings Drive

St. Louis, MO 63130-4899, USA

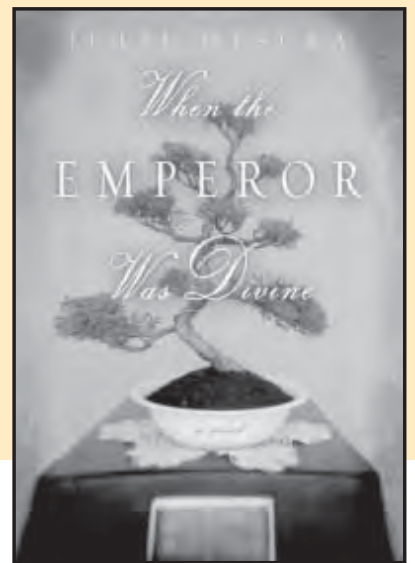
telephone: 1-314-935-4893

e-mail: JShimabukuro@wustl.edu

Asia

winter 2009

extra



The 2009 Freshman Reading Program centered on Julie Otsuka's novel *When the Emperor Was Divine*, which explores the effects of internment on a Japanese-American family.

 Washington University in St. Louis

Researchers Receive \$11 Million to Study Causes of Diabetic Heart Disease

by Gwen Ericson

Researchers at Washington University School of Medicine, led by heart specialist Richard Gross, are studying how altered fat metabolism causes heart failure in diabetic patients. The researchers received a five-year, \$11 million grant from the National Institutes of Health to fund their investigations.

In people with diabetes, lack of insulin or insulin resistance makes it impossible for heart cells to take in enough blood sugar (glucose). So heart cells ingest and digest much more fat to fuel their huge energy demands. But that survival strategy

eventually undermines the health of the heart and contributes to heart disease.

"Two-thirds of people with diabetes die of cardiovascular disease," says Gross, professor of medicine, of chemistry, and of developmental biology. "It used to be unpopular to assert that fats caused heart cell dysfunction in diabetes—it was thought that arterial plaques that diminished blood flow to the heart caused diabetic heart problems. But now we know that many people with diabetes develop heart failure even without having coronary artery disease. And increasingly,

research is showing the detrimental role of fats in diabetic heart disease."

Gross explains that excess fat uptake into heart cells initiates a cascade of molecular events that affects energy-producing cell structures and biochemical reactions. These events make the heart cells very inefficient, which weakens them and may even cause some of the cells to die. Also, extra fats that collect inside heart cells as the result of abnormal fat uptake and metabolism interfere with cellular signaling mechanisms. That in turn can affect the signals the heart

uses to coordinate its continual contraction and relaxation cycles.

Central to this damaging process are enzymes called phospholipases, which break down cellular fats. Gross and coworkers in his laboratory are on the forefront of research that has uncovered the vital role phospholipases play in heart health and heart disease. In work funded by the new grant, Gross and his colleagues will study how activation of phospholipases by the abnormal fat metabolism of diabetic heart cells causes the cells to function so poorly.

"In a diabetic heart, because of the activation of these phospholipases, the machinery becomes uncoupled so that not every energy equivalent taken in becomes useful energy for the cell," Gross says. "So the diabetic heart is energy inefficient and in danger of failing. It's as if you had a car that doesn't function very well and you give it a challenge such as a long, steep slope—it's likely that your poorly functioning car isn't going to make it to the top."

Gross' research requires analysis of the fats in the chambers and membranes that make up heart cells. For that he and his research team developed sophisticated ways of telling apart the myriad forms that fat molecules possess and for measuring extremely small amounts of fat molecules. Gross and colleagues, including Xianlin Han, associate professor of

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Richard Gross (left) and Xianlin Han analyze fats from biological samples using shotgun lipidomics.

Traditional Thai Hill Farmers Help Preserve Genetic Diversity of Rice

by *Melissae Fellet*

Rice is one of the most important crops worldwide, as it feeds more than half of the world's population. Domesticated rice is an important supply of the world's rice. However, these strains are genetically static and cannot adapt to changing growing conditions. Traditional varieties, or landraces, of rice are genetically evolving and provide a pool of traits that can be tapped to improve crops worldwide.

Barbara A. Schaal, the Mary-Dell Chilton Distinguished Professor of Biology in Arts & Sciences at Washington University, and her colleagues at Chiang Mai University in Thailand are showing how natural genetic drift and agricultural practices of the traditional farmers combine to influence the genetic diversity of a given landrace of rice.

Also involved in science policy, Schaal serves as vice president of the National Academy of Sciences and is a member of the President's Council of Advisors on Science and Technology.

Schaal and her colleagues studied a landrace of rice grown by traditional farmers in Thailand. They compared the genetic variation among the same variety of rice grown in different fields and villages. The genetics of the rice population fits the isolation by distance model, much like a native plant species. The further apart fields are, the more genetically distinct they are.

In the lowlands of Thailand, farmers grow modern high-yield rice. In the hills, the farmers practice traditional agriculture, growing ancestral varieties of rice with traditional practices. Expert farmers play a role in maintaining their

crop's genetic diversity by exchanging and choosing seeds to plant the following year.

"It's interesting to see how the expert farmers interact with the plants," says Schaal. "For example, a purple mutation occurred in one of the expert farmer's fields. He was very curious about it. He took the seeds and grew it off in a corner because he wanted to see what it looked like and tasted like. That's probably how humans domesticated plants, smart people were making smart choices in what to plant and grow."

Many crops grown today are genetically optimized to consistently give a large yield. Seeds are purchased from a supplier, and the plants are all genetically similar.

"Most modern varieties of crops, like corn in the Midwest or high-yield rice in the lowlands of Thailand, are artificial constructs developed by plant breeders. They are extraordinarily important in feeding the world. But they are static and not evolving in farmer's fields," says Schaal.

The rice that the Karen people grow is genetically dynamic, due to natural drift and the farmer's artificial selection. Each year, the farmers choose the seeds that grow best in their fields, which may differ in soil type, elevation, and temperature from other fields, to plant next season. Their crop is constantly evolving in response to local conditions.

"My colleagues believe that those local varieties bred within a village are

better than any one single variety could be. Under these circumstances, the farmers have it right," says Schaal.

Although most agriculture in the United States focuses on growing high-yield crops to produce food for people living in cities, landraces of corn and other crops exist in seed banks.

"There is a movement among Native Americans in Arizona to grow ancestral varieties of crops. These varieties are important because they are adapted to hot and dry conditions, something that will become more prevalent as our climate changes," says Schaal.

Time will tell if those farmers are able to "get it right" too. ✂



A new study suggests that traditional varieties of rice provide a genetically evolving pool of traits that can be tapped to improve crops worldwide.

Researchers, cont'd from page 1

medicine, created shotgun lipidomics, a technology that sorts fat molecules and allows researchers to identify and quantify them.

In the funded research, Han will use shotgun lipidomics to examine the fats in diabetic heart cells. Focusing on the cell's energy production machinery, Han will look for a telltale sign of distress—oxidation. The researchers think that changes in the fat composition of cellular structures make them unable to use oxygen correctly. The extra oxygen hangs around, and being highly reactive, it can damage important components of the cell.

Co-investigator Nada A. Abumrad, the Dr. Robert C. Atkins Professor of Medicine and Obesity Research, will be working another angle of the diabetic heart problem under the new grant. She and her colleagues will research the role of a fat transporter in diabetic cardiovascular disease. Earlier, she discovered this particular fat transporter—its job is to pull individual molecules of fat into cells. The transporter, called CD36, helps bring in the extra fats that diabetic heart cells use. But in the process, CD36 sends out abnormal signals that could interfere with the careful coordination of heart muscle cells.

Another question to be addressed in this study with the new funding is which cellular mechanisms are affected by the decrease in insulin that occurs with diabetes. Anthony J. Muslin, the Oliver M. Langenberg Distinguished Professor of the Science and Practice of Medicine, developed mice whose pancreases stop producing insulin in a way that mimics diabetes development in people. These mice provide a better model of diabetes than previous experimental mice and will make it possible for Muslin and his colleagues to study precisely how the drop in insulin affects heart cells. ✂

Alumni Profile

By Promoting Civil Rights, Nishi Contributes to Social Change

by Blaire Leible Garwitz

"The most rewarding part of my work is when the research and advocacy produce the desired understanding and contribute to social change," says Setsuko Matsunaga Nishi, AB '44, MA '44. A civil rights advocate and a sociological researcher, Nishi received The Order of the Rising Sun with Gold Rays and Neck Ribbon from the Japanese government in recognition of her work to ensure the well-being of Japanese Americans and others.

"This honor was a deeply thought-provoking recognition, given the dramatic historic changes in my lifetime in the meaning and the consequences of being of Japanese ancestry in American society," she says.

During World War II, the U.S. government incarcerated approximately 120,000 Japanese Americans in what FDR called "concentration camps," including Nishi and her family. A junior at the University of Southern California, Nishi was forced to leave school. Her family lost almost all of their assets. Released after five months, Nishi was permitted to attend Washington University.

"The University's splendid faculty in the social sciences maintained rigorous standards of scholarship and open inquiry that prepared me for the demanding challenges of the dramatically changing field of American race relations, including the wartime incarceration of Japanese Americans in violation of their constitutional rights as U.S. citizens," she says.

Nishi began to devote her life to civil rights during college by helping to prepare the Midwest for the resettlement of incarcerated Japanese Americans. She and her father, Tahei Matsunaga, established the Chicago Resettlers Committee, now known as the Japanese American Service Committee, to help Japanese Americans resettle.

She co-founded the Asian American Federation, Inc., an advocacy organization in New York. She is a longtime member of the Japanese Americans Citizenship League, the oldest and largest Asian American civil rights organization in the United States. A former chair of the New York Advisory Committee of the U.S. Commission on Civil Rights, Nishi also helped develop the Japanese American National Museum in Los Angeles.

In addition, Nishi has conducted sociological research on civil rights, the resettlement of Japanese Americans from the wartime camps, and the long-term sequelae of their wartime incarceration. Her research is highly appreciated by scholars since very little has been done on this period and focus of Japanese-American history.

Currently professor emerita of sociology at Brooklyn College and the Graduate School of the City University of New York, Nishi also serves as the principal investigator of a national study that compares long-term effects on those who left the camps to go to the military, college, or work, and those who remained segregated during wartime.

Nishi and her late painter/sculptor husband, Ken, have five children and six grandchildren.



Ambassador Shinichi Nishimiya (right), consul-general of Japan, presents Setsuko Matsunaga Nishi with *The Order of the Rising Sun*, one of the most prestigious Japanese decorations.

Courtesy Photo

NEWS BRIEFS

Ethnic profiling examined in semester-long series

A semester-long series of events in fall 2009 examined the history, impact, and ethical issues surrounding ethnic profiling. "Ethnic Profiling: A Challenge to Democracy" included lectures, debates, and panel discussions, as well as workshops, performances, and film screenings. "A Challenge to Democracy" takes its name from a World War II propaganda film defending the U.S. government's forcible internment of approximately 120,000 Japanese Americans. Several events dealt specifically with the internments. Additionally, the Freshman Reading Program centered on Julie Otsuka's novel *When the Emperor Was Divine*, which explores the effects of internment on a Japanese-American family.

Ip assists Olin Business School students

"As an enthusiast in education and a loyalist of Washington University, I have always wanted to find ways to give back to my alma mater," says Albert Ip, BSAMCS '73. A member of the International Advisory Council for Asia, he is "more determined than ever to explore channels to support the University."

Ip visited the Danforth Campus on September 28–29 and spoke to Olin Business School students about credit lending and risk management. He is the managing director of investments, Pacific Rim, Private Banking & Investment Group, Merrill Lynch (Asia Pacific); council member of The Better Hong Kong Foundation; and court member of Lingnan University. During his presentation, Ip discussed the challenges and opportunities in banking, especially in the area of credit lending/corporate banking. In addition, he offered to provide advice and suggestions for Olin students in their career search after graduation, particularly in the area of banking.

A strong believer in the globalization of higher education, Ip is most interested in exploring ways of increasing cooperation between universities in Hong Kong and Washington University. During his visit to St. Louis, he met with a group of students from Hong Kong and briefed them on the recently formed Washington University Alumni Club in Hong Kong, under the direction of Tami Holder, director of international alumni and development programs at the University, and the leadership of Vincent Lee, AB '04. One of the objectives of the organization is to enhance the visibility of Washington University vis-à-vis students, high schools, parents, and employers in Hong Kong.



Albert Ip, BSAMCS '73, discussed finances with Olin Business School students on September 29, 2009.

Courtesy Photo

VOLUNTEER SPOTLIGHT

Julie Kohn, BSBA
Travel Consultant, Beijing

Dan Swift, BFA
Managing Director,
Goldman Sachs Gao Hua

“Washington University is an integral part of our lives,” says Julie Kohn, who worked at the University for more than 14 years and is the former director of Alumni and Parent Programs.

Kohn and her husband, Dan Swift, now live in China and continue to help out the University by organizing events, meeting with prospective students, and serving as a resource for alumni living in China. Swift also is a member of the University’s International Advisory Council for Asia.

The couple makes it back to St. Louis at least once a year to visit Washington University. During these trips, Swift speaks to fine arts students and counsels students interested in investment banking.

“We love Washington University, and we have many life-long friends around the world we met during our time on campus,” says Kohn.



Courtesy Photo

Julie Kohn and Dan Swift serve as a resource for Washington University alumni in China.

Shimabukuro named director of admissions

Julie Shimabukuro, AB '87, was named director of admissions at Washington University. Formerly director of international recruitment in the Office of Admissions, Shimabukuro will oversee the University’s team of recruiters and high school outreach program. She also will manage the application-review process. “Washington University is such a special place to me,” she says. “I remember visiting the University with my parents when I was a prospective student and being immediately drawn to the dynamic and welcoming spirit of the community. It felt right then, and it still does now. I look forward to the new challenges ahead for the University and admissions, and I feel really privileged to work with great colleagues recruiting talented students from around the world to continue to make Washington University a special place to us all.”

Two recent grads selected as Singapore scholars

Arash Sabet, BSBE '06, MSME '06, MBA '09, and Elise DeVries, BSBE '09, participated in the first-ever Kauffman-Singapore Entrepreneurship Program. They are two of only five U.S. students in science, technology, and engineering to be selected. Sabet and DeVries were chosen from 160 applicants from across the nation for the Kauffman-Singapore Scholars program because of their experiences in bringing new innovations to the market. The two scholars spent five months in Asia at the Nanyang Technopreneurship Center at Nanyang Technological University in Singapore, learning about the Asian market and pursuing entrepreneurial ventures on a global scale. ✂

