



# THE QUADRANGLE

University of Hawaii at Manoa • College of Engineering

## ***Doesn't Matter* captures regional victory**

Members of the University of Hawaii Micromouse Team proved their savvy as computer programmers at an inter-collegiate competition.

UH Micromouse *Doesn't Matter* captured victory at the 2000 Institute for Electronics and Electrical Engineers Region 6 Central Area Micromouse Competition, held at the University of Nevada in Reno this past April.

*Doesn't Matter* outsmarted seven other micromice in a competition that required the mice to solve a sophisticated puzzle.

Basically, the micromouse is a robot capable of solving a maze without human intervention. It consists of infrared sensors that detect the maze, motors that enable movement and a CPU unit that functions as the "brain." According to EE student David Yee, member of the UH



Members of the University of Hawaii Micromouse Team wait with anticipation as *Doesn't Matter* finds its way to regional victory.

Micromouse Team, the mechanics of all the micromice at the competition are essentially the same. What distinguishes the winning micromice from the rest of the micromice is the quality of the programming.

"It's fairly evident during the

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### **A Newsletter for Alumni and Friends**

**Winter 2000**

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## **College rewards employee dedication**

The College of Engineering has long been an institution known for its tradition of excellence. This is reflected by the quality of work of its students, faculty and staff. Recently, a special award was established to recognize outstanding service to the College by a full-time employee.

Presented in the spring to a deserving full-time employee, the College of Engineering Service Award has been awarded to three recipients since its inception. This year's award went to Ben

Respicio, the College's scientific instrument technician. Past recipients include Secretary to the Dean Fay Horie and Administrative Officer Patricia Yoseda.

Regardless of their duties, the three awardees have in common a strong sense of commitment to the College. Their dedication to the welfare of the College has often led them to perform tasks over and beyond their job descriptions, and to volunteer their time and energy for

Please see **Dedicated . . .**, page 7

## ME student wins prestigious title

**W**hat does it take to be named Student Engineer of the Year?

Each year, an outstanding student from the College of Engineering earns this highly prestigious title. Recent mechanical engineering graduate Ryan Sugamoto, Student Engineer of the Year 2000, is clearly deserving of this honor.

"Ryan is an exemplary example of an outstanding student engineer," said former ME Department Chair Lloyd Hihara. "He has mastered his engineering courses, has leadership qualities, has



Ryan Sugamoto

already gained significant engineering experience, is of solid character, and is extremely reliable."

Hihara, who hired Sugamoto to assist him in setting up a

sophisticated experiment over a period of two semesters, has nothing but the highest praise for Sugamoto.

"Although he was only an undergraduate student, he was among the most reliable and competent that I have encountered," said Hihara.

Sugamoto holds a major GPA of 3.9, the highest among all his peers. In addition to excelling in the classroom, he was actively involved with several student-engineering societies, such as the Student Chapter of the American Society of Heating, Refrigerating and Air Conditioning Engineers and *Pi Tau Sigma*, the Mechanical Engineering Honor Fraternity. As president of the student chapter of the American Society of Mechanical Engineers (ASME), Sugamoto led the organization of the Year 2000 ASME Region IX Student Conference. Approximately 120 students and faculty from ASME Student Chapters throughout California and Nevada flew to Hawaii this past spring to participate in the conference, which included oral presentations, technical posters and design contests.

"One of Ryan's greatest attributes

is his ability to organize his schedule, which allows him to simultaneously work on many demanding tasks," Hihara commented.

According to Sugamoto, relatives who are engineers played an instrumental role in steering him into the field of engineering. However, it was his father who instilled in him an interest in engineering early on, by getting him to think about why and how things work.

"My dad fixes cars and air conditioners. He'd always ask me 'how do you think this works?'" Sugamoto said.

Sugamoto's inquisitive mind may have driven him to explore the field of engineering, but the satisfaction derived from solving a challenging problem is what keeps him going. The excitement of seeing one's design work or fail makes engineering enjoyable, Sugamoto says. For instance, he recalls having to build a powered wheelchair out of composite materials, which required him and his project teammates to design the frame from scratch.

"We used computers to make it as light as possible and actually manufactured it ourselves," Sugamoto said. "At times we thought that it wouldn't work, but it turned out O.K."

Having graduated this past spring, Sugamoto now works for Thermal Engineering Corporation, where he held a part-time position as a student. He is learning about fire protection systems, building and fire codes, standards and design techniques. His long-term plan is to become a licensed fire protection engineer and to work and live in Hawaii.

A 1995 graduate of the Hawaii Baptist Academy (HBA), Sugamoto devoted his spare time during a period of three years to his high school alma mater, by serving as an assistant coach for HBA's JV tennis team from 1995 to 1998. In his free time, he enjoys playing tennis, listening to music, working on cars, building models and practicing digital photography.

## Micromouse

continued from front page

competition that the smart mice recognize dead ends and useless passages while the dumb ones don't," Yee said.

While *Doesn't Matter* captured first-place at the competition, a second UH micromouse named *Micromoth* placed fourth in the same competition. *Micromoth* also set a new record for being able to maneuver within the maze for 10 minutes without crashing.

According to Yee, building a micromouse and entering the competition took numerous hours of preparation. Team members began as early as last fall to learn how to build the mouse. With most of the groundwork laid in place during the previous semester, the actual construction began early this spring and involved a laborious process of trial and error.

"All the students voluntarily gave up their weekends to work on the micromouse," said Yee. "We spent about 30 hours a week building everything and putting together all the different components."

With the micromouse project being strictly an extra-curricular activity, the team members do not receive any course credit for their hard work. However, such a project provides valuable hands-on engineering experience and opportunity to work in a team environment. In addition, the excitement of winning at the regional competition makes all the hard work even more worthwhile.

This year's UH Micromouse team consisted of EE students Jeffrey Chan, Nathan Mariels and Wen Phan for *Doesn't Matter*; and Nolan Bilgera, Leo Chan, Jodi Enomoto and David Yee for *Micromoth*.

## National HKN recognizes outstanding UH Chapter Activities

The national organization of Eta Kappa Nu (HKN) presented an award to the University of Hawaii Chapter of HKN for the chapter's outstanding activities.



ΔΩ Chapter

HKN, an international honor society for electrical engineers, has over 175 college chapters, numerous alumni chapters and more than 200,000 members worldwide. Each year, the national organization of HKN recognizes outstanding student chapters through its Outstanding Chapter-Activities Award Program (OCAA). The Delta Omega Chapter at UH was one of only three U.S. student chapters that received certificates of merits for their 1998-1999 chapter activities.

"Earning this award is a mark of great distinction," said Alan Lefkow, HKN's national OCAA chairperson.

Founded in 1963 under the

guidance of EE Emeritus Professor Kazutoshi Najita, the UH Chapter of HKN strives to help students become better engineers as well as better citizens. HKN membership is by invitation only and prospective members need to be in the top 10 percent of their class. Pledges are required to complete successfully a one-year pledging period before becoming lifelong members.

HKN chapter members participate in a variety of activities that improve their engineering skills, provide service to the community, and enable them to network with fellow students, faculty members and practicing engineers. Some of the highlights from the 1998-1999 activities include dressing up in costumes on Halloween night to collect donations for UNICEF, volunteering at the Salvation Army's annual Thanksgiving Luncheon, and caroling at the annual EE holiday luncheon. Other activities include monthly informative meetings,

fundraisers, talks by guest speakers, free tutoring services to underclassmen, volleyball tournaments, social get-togethers and many more.

According to Eric Young, HKN UH Chapter's 1998-1999 bridge correspondent, this is not the first time that the UH Chapter of HKN has been recognized for its outstanding activities. In the past, the UH Chapter has won four honorable mentions and four other certificates of merits. Indeed, excellence has been a tradition for the UH Chapter of HKN, and its members have been sought after by prominent engineering firms.

"Many companies recognize the excellence that HKN members attain, and know what an asset [the members] may be," said Young. "They know that HKN members strive for the best and that is a quality that many companies look for."

## Symposium brings together professionals and students

How does a female engineer juggle a demanding career, a social life and family responsibilities? How does she overcome various gender issues at work? What are the secrets to succeeding as a woman in the engineering profession?

The Women's Symposium for Successful Women Engineers addressed these and other issues of interest to female engineering students at the College. Co-sponsored by the Consulting Engineers Council of Hawaii and the Society of Women Engineers (SWE) Student Chapter at the University of Hawaii at Manoa, the symposium took place on March 12 at the Honolulu Country Club. About 40 engineering professionals and students attended this event.

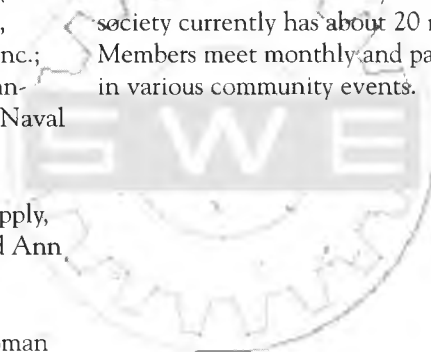
"The objective of the symposium was to provide a place for engineering

students to network with professional engineers, to hear the success stories of several successful women engineers, and to honor those women engineers who have practiced for 25 years or more in Hawaii," said Stephanie Fung, president of SWE.

Guest speakers for the symposium included Beverly Ishii-Nakayama (CE 80), a principal of Shigemura, Lau, Sakanishi, Higuchi & Associates Inc.; Shelley Kaya (EE 72), facilities planning manager at the Pearl Harbor Naval Shipyard & Interm. Maintenance Facilities; Donna Kiyasaki, deputy manager of the Board of Water Supply, City and County of Honolulu; and Ann Yamamoto (ME 72), director of regulatory affairs at the Hawaiian Electric Company and the first woman to earn an ME degree from the University of Hawaii.

"We hope to have a similar symposium held again because it was a great event," said Fung. "I think that it was beneficial to all who attended."

Chartered in 1995, SWE strives to expand the image of the engineering profession as a positive force in improving the quality of life, and to demonstrate the value of diversity. The society currently has about 20 members. Members meet monthly and participate in various community events.



## Congratulations Winter '99, Spring & Summer '00 graduates

### *Doctorate*

#### **Civil Engineering**

Brennon T. Morioka

#### **Electrical Engineering**

Chao-wen Chen

Chengan Guo

Ye Liu

Tianyu Lu

Yi Shao

#### **Mechanical Engineering**

Ronald R. Bozak

### *Master of Science*

#### **Civil Engineering**

Mereoni Bola

Curtis Nagata

Hisato K. Oshiro

Sumita Thakur

Candy Tsui

Shuohang Wang

Ryan Yoshimura

#### **Electrical Engineering**

Ayman S. Al-Zayed

Szeming Cheng

Gia Piao Chin

Iok Fai Chio

Seemant Choudhary

Wenyan Ding

Xiaohong Gong

Ashutosh D. Gore

Pankaj Joshi

Zisheng Le

Frederic O. Lecuyer

Henry W.H. Lee

Jianhong Li

Xiang Li

Tao Lin

Ling Ma

Abhishek R. Mandala

John A. Mazotta

Gavin A. Minami

Divya Muralidhar

Qi Pan

Robert R. Swisher Jr.

Jing Yin

#### **Mechanical Engineering**

Tie Fang

Mikio S. Oshiro

Chiling Pang

Simon P. Sherry

Yunqing Xia

### *Bachelor of Science*

#### **Civil Engineering**

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Ka Tung Au

Kenneth J. Baided

Rodelio S. Baluyot

Allen S. Baquilar

James F. Cabigon

Abigail K. Castaneda

Jocelyn N. Char

Winnie K.Y. Chun

Kelii M. Conway

Kealani R. Cook

Marmelyn David

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Beth Florendo

Matthew K. Fujioka

Julie Ann C. Hashimoto

Jamie M. Hiranaka

Reid K. Ikemori

Calvin K.W. Lai

Eric T.W. Leung

Matthew Ma

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Leilani S. Salvador

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Ross K. Tanaka

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Clayton Y.H. Tang

Joni C. Tanimoto

David J. Thom

Demetrio M. Tolentino

Steven D. Tomita

Jimmy H.L. Tonthat

Larry M. Tuileta

Edward Visaya

Tsang Wong

Kristen A.G.L. Woo

Queenie S.Y. Yap

Barbara J. Yee

Kelly Ann S.L. Yuen

#### **Electrical Engineering**

Randy T. Alupay

Madelyn B. Baptista

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Frederick J. Carberry II

Primo D. Castro III

Iao Mak T. Chio

Joo Perng Chong

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Jory K.I. Paik

Soon Park

Edwin Quach

Melissa M.M. Sato

Hye Young Shin

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Kaufana N. Valita

Alexander M. Vergara

Randall K. Watanabe

Edmund S. Yamamoto

Jared Y. Yamashiro

Crystal Y.S. Yee

William W.L. Yip

#### **Mechanical Engineering**

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Terry L. Hinton

Jessica K. Hiraoka

Charles A. Reeves IV

Lee-Ann E. Shiroma

Ryan M. Sugamoto

Sally L. Tamai

Man Kit Tsoi

Bryce T. Yonemura

## Competition challenges tomorrow's engineering students

For the fourth year, the College of Engineering hosted a competition that encourages high school students to explore the world of engineering and to consider the possibility of engineering studies later in college.

Held nationwide each year in early spring, TEAMS competition enables high school students to develop team work and problem solving skills while applying math and science theories to real-world engineering problems. TEAMS stands for Tests of Engineering Aptitude, Mathematics and Science. The event consists of two parts: Part one includes multiple-choice questions related to math and science; part two requires students to solve open-ended engineering problems and to defend their solutions.

This year, a total of 146 students from 13 high schools around the state participated in the TEAMS competition. Student teams were divided into different divisions, based on the participating schools' senior class sizes and admission policies. Iolani School claimed overall victory; while Seabury Hall, Kailua High School, McKinley High School and the Kamehameha Schools captured first-place in their respective divisions.

Although TEAMS takes place in approximately three hours, intensive preparation for the event in fact begins months before the day of the actual competition. To help student teams get ready for the competition, the College provides them with test materials and solutions from the previous year.

"When students prepare for this event, in effect, they are deepening their understanding of science, technology and mathematics," said Justin Mew, State Science Education Specialist. "In turn their achievement level will increase in school and on assessment instruments."

In addition to providing preparation materials for TEAMS, the College pairs each student team up with a volunteer mentor from the local engineering industry, who coaches the students and provides valuable insight into the working engineering world. This unique relationship between students and their mentors constitutes a special dimension of TEAMS.

"By working with a practicing engineer, students get immersed in activities and processes that professional engineers apply," Mew commented. "Student understanding of 'quality work' is at a much higher place than those not having that opportunity.

When they envision that high quality, they strive for it, which puts them at an advantage in life."

The College of Engineering wishes to thank the volunteer mentors and sponsors for helping to make this year's TEAMS a success. By supporting a scholastic event such as TEAMS, mentors and sponsors ensure that Hawaii's future engineers are given the opportunity to explore the field of engineering and to develop the necessary skills early on. Special mahalo goes out to the following funding sponsors:

- American Society of Mechanical Engineers
- CH2M Hill
- Hawaii Society of Professional Engineers – Maui Chapter
- Hawaii Water Environment Associates
- Institute for Electrical and Electronics Engineers, Inc.
- Society of American Military Engineers
- UH Engineering Alumni Association

## UH places fifth overall in regional ASCE conference

A group of CE students representing the UH Student Chapter of the American Society of Civil Engineers (ASCE) participated in the 2000 ASCE Pacific Southwest Regional Conference and placed fifth overall.

Hosted by the University of Arizona at Tucson, the conference took place in early April. A total of 17 schools participated in the conference, which included events such as surveying, steel bridge, technical paper and presentation, concrete bowling, volleyball, tug-o-war, impromptu,

engineering "jeopardy," and the main event – the concrete canoe competition. The UH students finished in the top five in a variety of conference events and ended up placing fifth overall.

Painted black and decorated with stars, the UH canoe *Nanamua* measured 22 feet long, 23 inches wide, approximately 3/8 inch thick and weighed 115 pounds. *Nanamua* means "to look forward" in Hawaiian and is also the name of the star that Hawaiian navigators studied during their voyages throughout the Pacific.

Next year's conference will take place in California and will be hosted by the California State University at Long Beach. The UH students will take the experiences gained from this year's as well as previous years' canoe building and continue to meet the challenge of making concrete float.

## Local students build robots with support from College

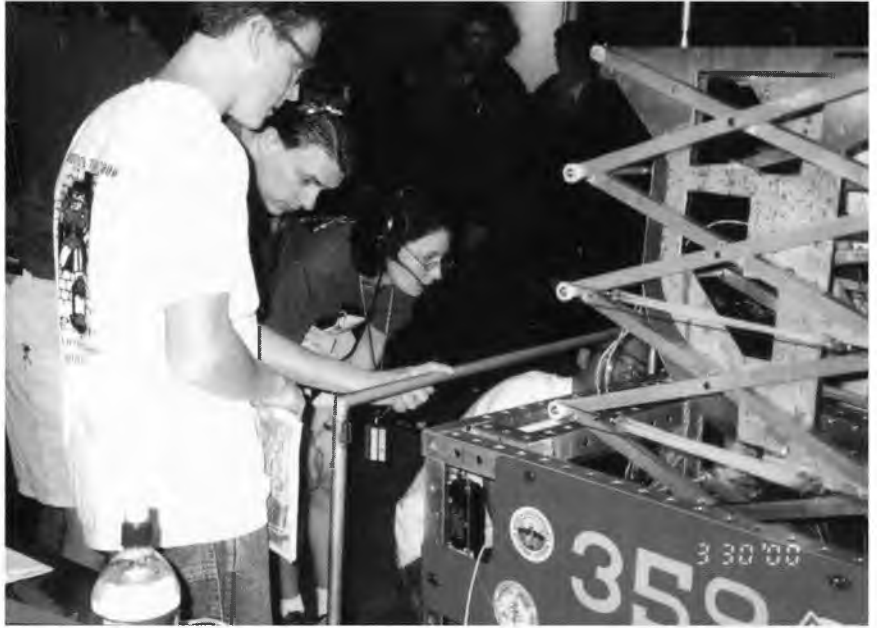
With support from the College and industry engineer mentors, two local high schools completed the challenging task of building a robot for a science and technology competition sponsored by NASA.

Held this past spring, the Western Regional Robotics Competition of *For Inspiration and Recognition of Science and Technology* (FIRST) took place in California at San Jose State University. A total of 44 high school teams entered the competition, including two Hawaii teams representing McKinley High School and Waialua High and Intermediate School (WHIS).

Designed to spark and increase high school students' interest in science and technology, FIRST brings together students and mentors from both academia and industry. Under the guidance of the mentors and faculty advisors, the students tackle a broad spectrum of tasks. In addition to designing and building the robot, other tasks include fundraising, documenting the experience in a written report or a video, as well as designing team t-shirts, buttons and a Web page.

The founders of FIRST hope that during the process of preparing for the competition, students will look upon the mentors as role models and eventually pursue careers in science and technology. In addition, FIRST simulates real life by structuring the competition with a nearly impossible goal, schedule limitations, insufficient resources and limited manpower, much like what happens in the real world. FIRST also aims to provide students with the valuable experiences of failing and overcoming obstacles, so that they may gain the necessary skills to cope with similar situations in the future.

Key personnel from the College who volunteered to help the two high schools prepare for the competition include Dr. Song Choi, ME Professor Deane Kihara and Assistant Specialist Cheryl Sato Ishii. Choi and Sato Ishii arranged for team visits to the College,



**Waialua Robotics Team members answer technical questions about their robot *Poipounder*, posed by the competition event inspectors.**

where the students toured the Autonomous Systems and the Micromouse Laboratories and learned about robotic technology. While Sato Ishii acted as an administrative liaison between the College and the high schools, Choi and Kihara personally visited WHIS on many occasions to provide guidance as well as critique for the design of the robot. Choi and Kihara also worked closely with WHIS in the overall planning of the project.

According to Stuart Nishimura, a Naval Undersea Warfare Center engineer who served as an industry mentor to WHIS, the competition was formatted like a sporting event with a central playing field, an announcer, referees and the audience. The field measured 25 feet by 50 feet and included central goals and a ramp. Student teams were paired up in alliances of two teams. Each round of elimination consisted of four teams competing as two alliances with each other. Basically, the robots had to pick up balls from the field and place them in the goals to score points.

Together with its alliance, the

McKinley HS team finished second overall. The WHIS team was selected to be a back-up partner for McKinley and its alliance. In addition, the WHIS team won the Daimler Chrysler Team Spirit Award, for exhibiting extraordinary enthusiasm and team spirit.

"Activities like these are the apex or ultimate motivation for students to consider engineering as a major in college," said Choi, who has always had an interest in furthering engineering education in the secondary schools.

Choi believes that university involvement is crucial in encouraging prospective students to consider the institution in their pursuit for higher education.

"I would not be surprised to hear, in the near future, that many of the students involved will be going into engineering either [at UH] or elsewhere," Choi said.



ENGINEERING FUND DRIVE 1999-2000

# ANNUAL REPORT

University of Hawaii at Manoa • College of Engineering

## Message from the Dean

Dear Alumni and Friends:

I have been dean of the College of Engineering for a little over a year and wanted to share with you some of the exciting events that have happened during this time. Our faculty, staff, students and alumni are working very hard as a team to bring excellence to the College. You are a part of this team and together we will take our College to the next level of engineering excellence.

One highlight this last year was Legislative appropriation of \$1 million for the Hawaii Center for Advanced Communications, an initiative supported by Governor Ben Cayetano. The center specializes in the rapidly changing broadband and wireless communications arena. We also celebrated the dedication of the Donald Chang Won Kim Multimedia Computer Laboratory, named for Donald Kim, a 1958 civil engineering graduate. Mr. Kim's generous \$1 million gift created this instructional lab with 23 state-of-the-art computer stations linked with unrivaled multimedia equipment and allowed us to place an additional 10 computers in a walk-in laboratory for students to use in completing homework assignments. In addition, the University and the engineering community via their Corporate Fund Drive have provided special equipment funds to strengthen our instructional facilities.

The College provides a strong, accredited undergraduate program. We have quality faculty and students as evidenced by the number of the faculty research awards and performance of our students in various national competitions. Twenty-three percent of our faculty have received National Science

Foundation Presidential Young Investigator or Career awards, which are prestigious, extremely competitive grants. Student teams from the College have consistently placed on the top of various regional and national engineering competitions, including the:

- Concrete Canoe Competition sponsored by the American Society of Civil Engineers
- Human Powered Vehicle Competition sponsored by the American Society of Mechanical Engineers, and
- Micromouse Competition sponsored by the Institute of Electrical and Electronic Engineers

Our engineering graduates are in high demand. During the last year, I met with personnel from Pearl Harbor who indicated that over the next five years, they would be hiring 40 mechanical engineers per year for various positions. Local high tech firms are looking for electrical engineering students to fill vacant positions; these firms are expanding and prefer to hire local talent. And civil engineers are always needed to support our Hawaii infrastructure. We expect this demand to increase during the next decade.

To meet the demand, we must increase our faculty, student and staff size. Over the next five years, our plans call for increasing the number of faculty by at least ten positions, doubling the number of our graduate students, and increasing our undergraduate enrollment by 50 percent. Our strategy for attracting and retaining the very best faculty is to concentrate our effort on building on our acknowledged strengths in areas of future national importance. During the past academic year, we performed a critical assessment of our

strengths, our needs, and future opportunities, and our faculty has been forming "focus areas" of research and teaching. These include advanced wireless communication, modeling and simulation of civil infrastructure systems, and advanced mechanical systems and materials. We have also developed a recruiting plan to greatly increase our efforts to recruit our local high school graduates to enroll in the College of Engineering. Achieving these goals will bring our college to the next level of engineering excellence, so it is indeed an exciting time for our College.

Finally, we have hired Mark Fukeda as Director of Development to coordinate and manage our fund raising efforts. He, along with our development committee, will create and implement our fund-raising strategy. If you have any questions about donations, please contact him via email at [fukedam@eng.hawaii.edu](mailto:fukedam@eng.hawaii.edu) or via phone at (808) 956-7266.

I hope that you find this letter informative and useful. If you have any comments or suggestions, please send me an email at [chenwf@eng.hawaii.edu](mailto:chenwf@eng.hawaii.edu) or call me at (808) 956-7727.

Happy Holidays,

W.F. Chen  
Dean

**1999 - 2000 College of Engineering Donors  
(July 1, 1999 - June 30, 2000)**

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Gary Y. Yamagata  
Jocelyn C. Yamagata  
Roy T. Yamagishi  
Keith K. Yamaguchi  
David M. Yamamoto  
Douglas I. Yamamoto  
Edwin T. Yamamoto  
Gerald T. Yamamoto  
James H. Yamamoto  
Jeffrey S. Yamamoto  
John S. Yamamoto  
Richard S. Yamamoto  
Alfred Y. Yamaoka  
Myron S. Yamaoka  
Eric K. Yamasaki  
Eric H. & Iris J.M. Yamashige  
Charlene M. Yamashige  
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Lambert J. Yamashita  
Gary F. Yamauchi  
James H. Yamauchi  
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Alan K. Yoshimoto  
Charles Y. Yoshimoto  
Arthur A. Yoshimura  
George S. Yoshimura  
Dwight T. Yoshinaga  
Ryan H. Yoshiyama  
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Leonard H.L. Young  
Linda M.L. Young  
Melvin Young  
Nathan K.N. Young  
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Robert K.W. Young  
Stanley S.Y. Young  
Wah Chun Young  
Byung Hwan Yu  
Eric T. & Janette L. Yuasa  
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Brooks Yuen  
George A.L. Yuen  
Kenn W.G. Yuen  
Michael R.K. Yuen  
Seung Fa Yuen  
James T. Yuki  
Kyle Y. Yukumoto  
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## Dedicated College employees receive recognition

continued from front page

special events that promote the College to the community.

For example, Respicio has consistently played an instrumental role in making the college reception a success. He volunteers for many duties including setting up the tent, purchasing food and supplies, preparing the food, and cleaning up. His attention to detail ensures that everything runs smoothly, which promotes a positive image of the College to the guests at the reception.

"Ben does things on his own initiative and does things that someone always forgets," said Horie, who nominated Respicio for the award. "He is always behind the scenes and makes himself available, any hour, any day."

A member of the College's staff since 1980, Respicio also helps the students with their engineering design projects, offers his services to other departments, and assists other technicians at the College whenever necessary.

"Ben is the best skilled and most knowledgeable technician in the College," commented Horie. "He never grumbles about the long hours he spends in the shop for free."

Like Respicio, Horie also deserves many thanks from the College for her efforts in coordinating special events ranging from laboratory dedications, open houses, tours to receptions. She plays a vital role in ensuring the success of the events, by taking care of details such as sending out invitations, designing and printing event programs, posting maps, and many other tasks.

Besides supporting the College's events, Horie also deeply cares about the students and volunteers to help student organizations in planning conferences and fundraising for projects and trips. For instance, in 1994, the ASCE UH Student Chapter hosted the Pacific Southwest Regional Conference,

which included the concrete canoe competition and many other events. Horie assisted the ASCE students every step of the way, beginning with fundraising, arranging for accommoda-



Fay Horie



Ben Respicio



Pat Yoseda

tions to student teams, helping with food preparation on canoe race days, to reserving campus facilities for some of the conference's events.

"The CE Department was complimented by many conference attendees that this was perhaps the most well-organized conference," said former Assistant Dean Sheryl Nojima. "Much of this could not have been realized without Fay's commitment to the College."

Assistant Specialist Carrie Matsuzaki says that Horie always has the attitude that the job can be done and that she will help to the best of her ability to get the job done. Horie willingly does anything that helps the College put forth its mission of excellence, even if the task is above and beyond her official job description.

"Nominating Fay for the service award was a small gesture to thank her for all of her efforts in support of the College of Engineering," Matsuzaki said.

Last but not least, Yoseda also deserves much mahalo from the College. An employee at the College since 1967, Yoseda takes care of many fiscal duties including budgeting, purchasing, disbursements, as well as processing personnel forms and records.

Yoseda's unwavering loyalty to the College and her strong work ethics have led her to working many additional hours in the evenings and on the weekends to ensure that the College's

fiscal and personnel operations run smoothly.

"Pat's commitment to the College is unparalleled," said Dr. Paul Yuen, former Dean of the College. "She works long hours, on weekends, whatever it takes to get the job done."

Due to budgetary deficits, the College has not always been able to fill vacant staff positions on a timely basis. On several occasions, the Fiscal Section has been short-staffed. However, Yoseda is always willing to put in extra time to make sure that the job gets done.

"She badly needs help but never complains," Yuen said. "She is always cheerful and ready to assist our faculty."

Matsuzaki cites examples that illustrate Yoseda's willingness to go the extra mile. For instance, on many occasions, Yoseda drives to the airport for the last mail pick-up of the day. She volunteers for this task so that personnel actions and other transactions are executed in a timely fashion.

In addition, Yoseda once volunteered to deliver medical forms to a staff member who urgently needed the forms.

"Although it was an evening with heavy rains, Pat did not hesitate to drive to the staff member's residence to ensure timely delivery of the forms," Matsuzaki said.

The College is fortunate to have staff members who are committed and dedicated to the College's mission. Without such support, the College would not be able to provide quality education to the students and serve the community. Mahalo once again to Horie, Respicio and Yoseda for all their hard work, and to all the other staff members at the College for helping the College achieve its mission.

## FACULTY HIGHLIGHTS

### Retirements

#### Dr. Shu Lin

An internationally renowned researcher, Dr. Shu Lin began his career at the University of Hawaii as an electrical engineer in 1965. The following year he joined the College as a faculty member in the EE Department. In addition to teaching and conducting research, Lin also chaired the EE Department between 1989 and 1995. A specialist in communication coding theory, Lin has received support for his research from numerous sources. Agencies such as the National Science Foundation and NASA provided long-term, continuous funding for his research. Lin has published extensively in scientific journals and chaired many international symposiums. He won several prestigious awards and honors for his contributions to the field of coding theory, including the IEEE Fellowship, the IEEE Richard W. Hamming Medal and the Alexander von Humboldt Research Prize for Distinguished U.S. Senior Scientist.

Similar to his outstanding research contributions, Lin's teaching merits did not go unnoticed, either. He received the University of Hawaii IEEE Outstanding Faculty Award in 1987 and the IBM Education Award in 1979. He holds honorary professorships at three Chinese Universities and taught as a visiting professor in Texas, Utah, Australia, Germany and Japan.

Lin holds a master's degree and a doctorate in electrical engineering from Rice University. He is a member of Eta Kappa Nu, IEEE, and Sigma Xi society. He has been listed in *American Men and Women of Science* and *Who is Who in Technology*.

#### Dr. Katzutoshi Najita

Throughout his 40-year-tenure at the College, Dr. Katzutoshi Najita has played a paramount role in the development of the EE Department from a fledgling program to one ranked



Dr. Shu Lin



Dr. K. Najita

nationally at present.

Najita joined the College in 1959 and became one of three faculty members who established the EE Department. At the time, the program had no laboratories and the curriculum for each course had to be designed from scratch.

With the help of student volunteers, Najita and the other two professors worked diligently to set up needed equipment and facilities. By the end of the first semester, their hard work paid off and the department had basic laboratories for circuits, electronics and electrical power. The department began offering an M.S. program in 1962 and received national accreditation for its undergraduate program the following year.

Appointed department chair in 1981, Najita grappled with issues such as severe faculty attrition, increasing student enrollment, and insufficient funding for the upgrading of laboratories. Najita initiated numerous proposals to lobby for support from industry and the university administration. As a result, the department received much-needed equipment donations, and eventually was able to offer more competitive salaries in order to retain its faculty.

By serving on a variety of organizations such as the Manoa Faculty Senate and the Faculty Promotion and Tenure Committees, Najita helped improve the working conditions for the engineering faculty. In addition, he also advised the founding of EE student clubs, including the UH Chapters of IEEE and Eta Kappa Nu.

Najita holds a master's degree in

Mathematics from Brown University and a doctorate in Physics from the University of Hawaii. According to Najita, he became interested in electrical engineering while presenting a report for his 10<sup>th</sup> grade English class, which was about "making the blind see." Though he thought that such an idea would never become a reality within his lifetime, Najita was delighted to learn about a recent on-going research project conducted at Johns Hopkins University. Project reports indicate that a man who has been blind for decades was able to see the letter "H" through an electrical connection to the retina in the back of the eye.

\* The College wishes to express its sincerest gratitude to Lin and Najita for dedicating their careers to the establishment and continued growth of the EE Department, and for serving as mentors to both students and faculty. They have been instrumental in helping the department through times of hardship, and has in many ways paved the way for further improvement and growth in the future.

### Special Achievements

#### Dr. Roger Babcock

CE Assistant Professor Roger Babcock has been appointed Associate Director (Engineering) for the Marine Bioproducts Engineering Center (MarBEC). The center aims to build a foundation of applied research, education and technology transfer to support a marine biotechnology industry of increasing commercial and national importance. As MarBEC's Associate Director, Babcock assumes the leadership role in MarBEC's engineering research and in integrating MarBEC's science research into the center's engineering goals.

#### Dr. Rahul Chattergy

EE Professor Rahul Chattergy received a 1999 University of Hawaii Board of



## FACULTY HIGHLIGHTS

Regents' Medal for Excellence in Teaching. The award pays tribute to faculty members whose extraordinary level of subject mastery and scholarship, teaching effectiveness and creativity, as well as personal values exemplify UH's commitment to quality teaching. Chattergy prepares students for the everyday engineering practice by encouraging them to think critically about engineering principles within the framework of engineering problems. He believes that the two most persistent conditions for real-life engineering are teamwork and face-to-face discussion of problems and solutions.

### Dr. Arthur Chiu

CE Emeritus Professor Arthur Chiu was elected President of the Applied Technology Council (ATC) by the council's Board of Directors earlier this year. A non-profit corporation established in 1971 through the efforts of the Structural Engineers Association of California, ATC assists structural engineering design professionals in keeping abreast of technological developments and in the effective utilization of such. In addition, ATC identifies and encourages needed research, and develops consensus opinions on natural hazard structural engineering issues in a non-proprietary format.

### Dr. Michael DeLisio

EE Assistant Professor Michael DeLisio received a *Kuhina* award from the Hawaii Visitors and Convention Bureau. The bureau's *Kuhina* or ambassador to tourism program encourages Hawaii residents who belong to professional organizations to help bring meetings to Hawaii by using their out-of-state contacts. Through the collaborated efforts of DeLisio and EE Assistant Professor Wayne Shiroma, Hawaii will host the International Microwave Symposium (IMS) in 2007. The weeklong symposium is expected to draw more than 10,000 participants and 650 exhibitors, who will generate about \$13.9 million in visitor spending and

\$1.2 million in tax revenues for Hawaii. The latest advances in microwave and related technologies, such as broadband, wireless and Internet-related telecommunications, will be presented at the symposium.

### Dr. Tep Dobry

Assistant Dean Tep Dobry is a member of the Hawaiian Academy of Science (HAS) Executive Council for the year 1999-2000. The goal of HAS is to improve science education and research in Hawaii. A firm believer that engineering curricula should provide students with technical skills as well as the communication and teamwork skills required of entry-level engineers, Dobry is actively developing new approaches in engineering education.

### Dr. C.S. Papacostas

With cooperation from the Traffic Operations Center of the State Department of Transportation, CE Professor C.S. Papacostas created a Web page that displays traffic conditions on the H-3 freeway. Motorists and commuters can visit <<http://www.eng.hawaii.edu/hawaiiidot>> to obtain real-time information about traffic flow on the H-3. Eight traffic surveillance and control cameras installed along the H-3 provide images that "refresh" every few minutes for the Web page. The H-3 traffic Web page complements an existing Web site that provides traffic information to Oahu residents. Warren Yamauchi, who manages the College's computer facility, provided technical support for the H-3 Web page.

### Dr. Wayne Shiroma

EE Assistant Professor Wayne Shiroma received a *Kuhina* award from the Hawaii Visitors and Convention Bureau. The bureau's *Kuhina* or ambassador to tourism program encourages Hawaii residents who belong to professional organizations to help bring meetings to Hawaii by using their out-of-state contacts. Through the collaborated efforts of Shiroma and EE Assistant Professor Michael DeLisio,

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## Research Highlights

### Dr. Horst Brandes

The State of Hawaii Department of Transportation awarded funding to CE Assistant Professor Horst Brandes in support for his research entitled "Correlation of aggregate properties to performance of asphalt pavements in Hawaii." For this project, Brandes plans to improve existing quality standards used by the state for evaluating the suitability of various aggregates for use in asphalt pavements. Aggregates have a significant effect on the mix behavior and performance of asphalt pavements. Brandes will develop aggregate test methods specifically tailored to Hawaii's unique environmental requirements and aggregate types.

### Dr. Lloyd Hihara

ME Associate Professor Lloyd Hihara received support from TRW Space & Electronics Group for his project entitled "Electrochemical machining of SiC/Al metal - matrix composites."

### Dr. Anthony Kuh

EE Professor Anthony Kuh received funding from The Boeing Company for his research entitled "Computer aided classification IR&D study." Kuh is developing computer-aided methods for detecting nonlinear features of image data. Such methods have useful applications in pattern recognition.

continued on next page

## FACULTY HIGHLIGHTS

### Dr. Phillip Ooi

The State of Hawaii Department of Transportation awarded CE Assistant Professor Phillip Ooi funding for his projects entitled "Correlation of resistance value with California bearing ratio for use in design of flexible pavements," and "Correlation of resilient modulus of fine-grained soils with common soil parameters for use in the design of flexible pavements." The stiffness of soils is an important factor in the design of flexible pavements. Civil engineers use a number of measurements such as the resilient modulus and R-value to characterize soil stiffness. However, as estimating such values involves costly tests, engineers use established correlations between values to derive measurements for soil stiffness. Ooi's research will establish such correlations for Hawaiian soils.

### Dr. Chittaranjan Ray

CE Assistant Professor Chittaranjan Ray received funding from the U.S. Army Corps of Engineers for his project entitled "Agriculture - based bioremediation of petroleum contaminated soils and shallow groundwater in Pacific Island ecosystem." The objective of the project is to identify local plants that have the potential to degrade petroleum and other contaminants found in the soils at a local military base. Once identified and tested, such plants will provide a more economical way for the cleanup of contaminated sites, as compared to using traditional engineering methods. In other news, Ray is under contract with the Pineapple Growers Association of Hawaii to examine the transport of pineapple herbicides under current plantation management practices. In his research entitled "Modeling herbicide transport practices through the vadose zone under pineapple cultivation," Ray will determine if a reduced level of herbicide use is necessary to prevent its leaching to the soil subsurface.

### Dr. Panos Prevedouros

The State of Hawaii Department of

Transportation awarded funding to CE Associate Professor Panos Prevedouros for his projects entitled "Investigation of traffic detectors for use in Hawaii," and "Evaluation of light guard flashing lights at pedestrian crossing on Pali Highway." For the first project, Prevedouros will conduct a detailed review of the different types of traffic detectors available. Traffic data such as volume, speed and classification counts obtained via detectors are essential in the management of transportation systems. By studying the specifications of different detectors, Prevedouros will be able to determine the suitability of detectors for different traffic conditions. For the second project, Prevedouros will assess the effectiveness of experimental flashing lights on pedestrian crossings without signals along the Pali Highway. Installed in response to recent pedestrian fatalities, the lights are in-pavement LED devices that light in the direction of on-coming traffic. The pedestrians can activate the lights using push buttons similar to those used at signalized intersections.

### Dr. Ian Robertson

CE Associate Professor Ian Robertson received support from the State of Hawaii Department of Transportation for his project entitled "Test of pre-stressed concrete beam repaired with carbon fiber fabric." Robertson will test the strength of concrete beams repaired with carbon fiber reinforced polymer strips (CFRP), in order to determine the effectiveness of using CFRP in various strengthening and retrofit projects in Hawaii and the rest of the U.S. Robertson also received funding for his research on earthquake engineering from various sources. He has a grant from the National Science Foundation for a project entitled "Instructional shake tables: A cooperative effort in earthquake engineering education." A collaborative effort by 22 universities in the U.S., this project involves an 18"X18" platform that can be programmed to produce simulated seismic movements. Small-scale

buildings placed on the platform enable researchers to study the response of structures to seismic activities. The University of California at Irvine's Pacific Earthquake Engineering Research Center awarded Robertson funding for his project entitled "PEER summer interns for slab-column research program." This project will provide support for two of the College's CE undergraduate students to study the seismic response of flat-slab structures, which are commonly used for hotel and condominium buildings in Hawaii.

### Dr. Michael Smith

The Semiconductor Research Corporation awarded funding to EE Associate Professor Michael Smith for his project entitled "Synthesis libraries of the future." Smith's research will concentrate on the issues of design, optimization and evaluation of cell libraries, especially for synthesis. Effective synthesis library design will enhance the efficiency and performance of chips.

### Dr. Michelle Teng

CE Associate Professor Michelle Teng received funding from the State of Hawaii Department of Transportation for her project entitled "Instrumentation and monitoring of sand plugging and bridge scour at selected streams in Hawaii." Working with CE Professor Edmond Cheng, co-principal investigator of the project, Teng will study the effects of flooding on bridge foundations along coastal highways in Hawaii. The flow of water during a flood can weaken the support for a bridge by washing away or scouring riverbed materials from the foundations. Teng and Cheng will develop state-of-the-art instrumentation to monitor such effects and ensure the safety of Hawaii's highway bridges.

### Dr. David Yun

EE Professor David Yun received research funding from Georgetown University for his project entitled "Ohana health."

# ALUMNI NEWS

## 1950s

·Harry Imai (CE 50) is retired. ·Stanley Shimabukuro (CE 54) is president and CEO of Shimabukuro, Endo & Yoshizaki Inc. ·David Yamamoto (CE 55) works at Sato & Associates Inc. as a vice president. ·Harold Hamada (CE 57) is a professor at the College of Engineering's Department of Civil Engineering.

## 1960s

·Herb Minakami (CE 60) is chief of the Planning and Engineering Division at the Board of Water Supply of the City and County of Honolulu. ·Yoshiaki Miyashiro (GE 61) is retired. ·Kenneth Okumura (CE 62) is retired. ·Allen Kaya (ME 64) works at the Hickam Air Force Base as a general engineer. ·George Shintani (ME 66) works at the Pearl Harbor Naval Shipyard as a supervisory mechanical engineer. ·Ronald Ho (EE 67) received a 2000 UH Distinguished Alumnus Award. ·John Arizumi (ME 68) is president of Carrier Hawaii. ·Wesley Takemori (ME 68) works at the Pearl Harbor Naval

Shipyard as a mechanical engineer. ·Michael Umemoto (ME 68) works at the Pearl Harbor Naval Shipyard as a mechanical engineer. ·Michael Yamasaki (CE 68) is a geotechnical engineer at Dames & Moore. ·Warren Sato (CE 69) works for SSFM Engineers as a project manager. ·Daniel Takai (EE 69) is a staff engineer at Raytheon Co.

## 1970s

·Maurice Kaya (CE 70) works at the State of Hawaii Department of Business Economic Development and Tourism as an energy and technology administrator. ·Robert Tasaka (GE 70) is a project engineer at Ralph Inouye Co. Ltd. ·Gary Shimamoto (CE 71) is president of Integrated Construction Inc. ·Warren Haraki (EE 72) works for TRW Inc. as a senior staff engineer. ·Shelley Kaya (EE 72) works at the Pearl Harbor as a Facilities Managing Engineer with the U.S. Navy. ·Bryce Miyasaki (CE 73) is a project manager with Fletcher Pacific Construction Co. ·Don Yorimoto (ME 74) is a mechanical engineer with the

U.S. Army Corps of Engineers. ·Brooks Yuen (CE 74) is an executive assistant at the Board of Water Supply of the City and County of Honolulu. ·Jonathan Suzuki (CE 75) works for the Board of Water Supply of the City and County of Honolulu. ·Gregory Fukumitsu (CE 77) is vice president of Tom Nance Water Resource Engineering. ·Keith Kaneshige (ME 77) works at the Pearl Harbor Naval Shipyard as a nuclear engineer. ·Stephen Green (ME 78) is a chief field engineer with West Hawaii Utilities. ·Eric Hirano (CE 78) works for the State of Hawaii Department of Land and Natural Resources. ·Norman Nagamine (CE 78) is president of Nagamine Okawa Engineers Inc. ·Bert Yamamoto (CE 78) works for Wesley Segawa and Associates. ·Melvin Arakaki (CE 79) is a foreign service construction engineer with the Department of State. ·Laverne Nance (CE 79) works for the City and County of Honolulu as a program coordinator.

continued on back cover

If you want to join the Engineering Alumni Association (EAAUH) or pay your 2000 dues, you may also use the form on the right.

Annual EAAUH membership rate is \$10. Annual membership rates for the University of Hawaii Alumni Association are as follows:

### OAHU

single-\$50, couple-\$60.

### NEIGHBOR ISLANDS

single-\$25, couple-\$45.

### MAINLAND/INTERNATIONAL

single-\$25, couple-\$35.

Rates for single and couple life members are \$750 and \$1,000, respectively. There is a special Life Membership rate of \$175 for alumni who graduates in or before 1949. \$10 of whatever category you choose will go to the EAAUH for dual membership.

Contact any of the officers listed on the back cover for more info.

## ENGINEERING ALUMNI UPDATE

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Address \_\_\_\_\_ Phone Res ( ) \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Employer/Company \_\_\_\_\_

Job Title/Description \_\_\_\_\_

Year Graduated (B.S.) \_\_\_\_\_ CE/EE/ME? \_\_\_\_\_ Graduate Degrees \_\_\_\_\_

News about children, marriages, promotions, recognitions, hobbies, travels, etc.

Please share what you are doing with your classmates. Send your news and photos to: Newsletter Editor, College of Engineering, 2540 Dole St., Holmes Hall 240, Honolulu, HI 96822. Email: editor@wiiki.eng.hawaii.edu

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Tel. 533-2210, Fax. 533-2686

## ALUMNI NEWS

### 1980s

·Lance Iwami (CE 80) works at Marine Corps Base Hawaii as an assistant public works officer. He has three sons aged 2, 6 and 11. ·Arnold Lam (CE 80) is president of E3 Corp. ·Eric Nakagawa (ME 80) works for Randolph Murayama & Associates as an associate project engineer. ·Mike Nojima (CE 81) works at Gray, Hong Bills & Associates. ·Glenn Sakai (ME 81) works at the Pearl Harbor Naval Shipyard as an engineer. ·Bryan Shinsato (ME 82) works at the Pearl Harbor Naval Shipyard as a nuclear engineer. ·Ken Hayashida (CE 83) is president of Kai Hawaii Inc. ·Andy Ragasa Jr. (CE 84) works for Koga Engineering & Construction Inc. as the Kauai Island Manager. ·Gary Hashiro (EE 85) is director of Integrated Resource Planning at the Hawaiian Electric Co. Inc. ·Edward Shikada (CE 85) is a city traffic and transportation engineer with the City of Long Beach in California.

·Stanley Katsura (CE 86) works for Parsons Brinckerhoff as a senior civil engineer. He and wife Debra have three children. ·Scott Kunioka (CE 86) works for SEY Engineers. ·Wayne Shiroma (EE 86) is an assistant professor at the College of Engineering Department of Electrical Engineering. ·Randall Urasaki (CE 86) is a senior lead civic engineer with Parsons Brinckerhoff. ·Michael Ishikawa (CE 87) is a project manager at Sato & Associates Inc. ·Darin Okuda (CE 88) works for KAI Hawaii as a structural engineer. ·Russ Miyahara (CE 89) is a structural engineer with Sato & Associates Inc.

### 1990s

·Martin Nakasone (CE 90) works for M&E Pacific.

·Richelle Suzuki (CE 92) is a transportation engineer with the Federal Highway Administration. ·Darrin Tanaka (ME 92) works at Heide & Cook Ltd. as a sales manager. ·Cary Watanabe (CE 94) works for the State of Hawaii Department of Transportation. ·Ryan Yamauchi (CE 94) works for URS Greiner Woodward Clyde as an assistant project manager.

### DROP US A LINE...

Share your latest news with fellow classmates. Have you started your own business, changed jobs, received special recognition, gotten married, become a parent, or gone back to school? Send your news to:

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