Dean’s Office and College News

Mike Quinn will present a keynote address at “A Culture of Ethics: Engineering for Human Dignity and the Common Good” in October at the University of St. Thomas.

The Office of Jesuit Mission and Identity announced the College Jesuit Mission Fellows cohort for 2016-2017 including Drea Verdan, (Chemistry) and Michael Zanis (Biology). The JMF program engages faculty in a year-long exploration of the foundational principles of Jesuit education and practical application for pedagogy and scholarship.

The 2016 College Award winners were announced at the year-end College meeting on May 18:

Eric Larson, CSSE, Outstanding Faculty Advisor, for outstanding advising and dedication to student success, exemplifying the Jesuit cura personalis.

Katie Frato, Chemistry, Outstanding Teacher, for student recognition of exceptional mentoring of undergraduate research students and assistance with transitioning students to become self-learners.

Joy Crevier, CEE, The Camille Toutonghi Distinguished Staff Award, for streamlining department processes and generosity in inspiring colleague/student success.

Katie Oliveras and Eric Bahuaud, Math, The Faculty Innovation Award, for major collaborative projects exciting students in math scholarship beyond the classroom: the Math Colloquium, creation of the Eigen Seminar and Math. Contest in Modelling participation. The Dean’s Award went to Agnieszka Miguel, ECE, for exemplary work in recruitment, increase of the number of ECE majors & the percentage of women in those majors, for service as faculty advisor to the Society of Women Engineers, and outstanding fundraising efforts.

On August 23, the College hosted the fourth annual “Distinguished Women in STEM Careers” Seminar sponsored by Boeing. The featured speaker was Elizabeth Nance, PhD, UW Clare Boothe Luce Assistant Professor, Chemical Engineering, with a presentation entitled “Breaking Down Barriers: The Power of Connecting.” Nance, named in Forbes’ “30 under 30 in Science” discussed breaking down barriers in science (and her own career) and establishing effective communication across scientific and engineering disciplines. The event launched the College Summer Undergraduate Research Poster Session, co-sponsored by the Washington State Opportunity Scholarship.

Fall 2016

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Kathy Paul, Donor and Stewardship Coordinator in the College, received word that her poem “Oranges” will appear in POETS UNITE! The LITFUSE @10 Anthology, to be published in September by Cave Moon Press. Her work will appear with that of Ellen Bass, Dorianne Laux, Elizabeth Austen and other notables. http://www.litfuse.us/a-litfuse-journal.html

WELCOME new faculty and staff!
Faculty: CSSE: Mustafa Al-Lail, Pejman Khadivi, Mike Koenig, David Lilletun; ECE: Mehmet Vurkaç; Math: Angela Siple, Liangmin Zhao; Physics: Pavel Bolokhov
**Staff:** Dean’s Office: Sandi Nagel, Grant Accounting and Research Coordinator; Chandra Catron, Academic Operations Coordinator; Chemistry: Luke Marney, Instrumentation Manager, Allie Lee, Sr. Admin. Assistant; Math: John Teegarden, Sr. Admin. Assistant

**Biology**

Lindsay Whitlow spent his sabbatical in Granada, Nicaragua, working with Dr. Jorge Huete and his students at the University of Central America (UCA) exploring research and educational opportunities. During his time there, he visited islands in Lake Nicaragua, the volcanic crater lake Laguna de Apoyo, the lava in the active Volcano Masaya, the Pacific coast, the highland rain forests near Matagalpa, and the cloud forests on volcano Mombacho. He attended school to improve Spanish and played a bit of beisbol.

In November, Lindsay and Wes Lauer (CEE) participated in the International Workshop on the Potential Environmental Impacts from the Interoceanic Canal Project, led by Jorge Huete (UCA), publishing: *Critical Uncertainties and Gaps in the Environmental- and Social-Impact Assessment of the Proposed Interoceanic Canal through Nicaragua* Jorge A. Huete-Perez; Manuel Ortega-Hegg; Gerald R. Urquhart; Alan P. Covich; Katherine Vammen; Bruce E. Rittmann; Julio C. Miranda; Sergio Espinoza-Corriols; Adolfo Acevedo; Maria L. Acosta; Juan P. Gomez; Michael T. Brett; Michael Hanemann; Andreas Härer; Jaime Incer-Barquero; Frank J. Joyce; J. Wesley Lauer; Jean Michel Maes; Mason B. Tomson; Axel Meyer; Salvador Montenegro-Guillen; W. Lindsay Whitlow; Jerald L. Schnoor; Pedro J. J. Alvarez; BioScience 2016; doi: 10.1093/biosci/biw064

Biology faculty Michael Zanis, Carolyn Stenbak Lindsay Whitlow worked with UCA’s Huete and his students on a joint research project on biodiversity across regions of Nicaragua, investigating water from large lakes and small bromeliads to discover patterns in algae and virus communities associated with water quality. They visited multiple sites from the mountainous coffee-growing region to Lake Nicaragua over a 7-day workshop. After collecting field samples, the team worked to isolate DNA from algae and viruses across all sites. When Michael and Carolyn returned to Seattle, they incorporated these samples into the Spring Virology class and SU students analyzed the DNA to discover patterns in types and distribution of viruses across the Nicaraguan field sites, comparing them with patterns discovered in Seattle area lakes.

In May, Lindsay Whitlow presented at the Nicaraguan Biotechnology Conference organized by UCA on the joint project. Abstract: “Phycodnaviral biodiversity in Nicaragua: systematics analysis of viral and algal community structure at multiple spatial scales.”

Michael Zanis, Carolyn Stenbak, Lindsay Whitlow*, Jorge Huete, Abi Wells, Yaritza del Socorro Sandoval Tijerino, Braulio Antonio Gutiérrez Rodas, Aída Barberena Guillén, Suyen Solange Espinoza Miranda

Glenn Yasuda and his collaborators at the University of Washington published their research on the effects of sperm telomeric maintenance on early development in “The Deadbeat Paternal Effect of Uncapped Sperm Telomeres on Cell Cycle Progression and Chromosome Behavior in Drosophila melanogaster” in the June issue of Genetics, the journal of the Genetics Society of America.

In July, Yasuda presented the progress on a new research project at The Allied Genetics Conference in Orlando, Florida. He is working with collaborators at University of North Carolina at Greensboro on this new project, which combines classical genetic, genomic, and computational methods to try to identify new regulators of meiotic entry during spermatogenesis in fruit flies.

Becky Hartley completed a 5-day bird banding workshop offered by the Puget Sound Bird Observatory and noted that “Black-capped chickadees are experts at getting themselves tangled in the mist net threads, making extraction a challenge.”
This summer Jenny Loertscher and Vicky Minderhout hosted 25 biochemistry faculty at SU for a third intensive threshold concepts workshop associated with their NSF grant. Faculty came from as far away as New Jersey and Florida from both public and private institutions, and included faculty from HBCUs and Hispanic-serving institutions. They worked to create assessments and learning activities related to threshold concepts in biochemistry. One faculty member enjoyed “working intensively in groups to tackle how to think about and teach threshold concepts and reveal my own misconceptions and tacit knowledge, which are barriers to student learning.”


In early August, the College learned of the death of Emeritus Chemistry Professor David Read at the age of 95. Dave came to SU in 1948 (when Fr. Beezer still ran the department) and taught countless chemistry and nursing students until retiring in 1985. Never content to “just fade away”, in 1990 David wrote “A History of the Seattle University Chemistry Department” later reprinted in a department newsletter. Read’s son Terry teaches in Diagnostic Ultrasound.

Katie Kuder presented the papers “Creep Modeling of Self Consolidating Concrete with High Volumes of Supplementary Cementitious Materials,” at the 2016 RILEM International Concrete Sustainability Conference on Self Consolidating Concrete in Washington, DC, in May, and “Creep of Concrete with High Amounts of Supplementary Cementitious Materials and Applications in Concrete-Filled Tubes,” at the Sustainable Construction Materials and Technologies (SCMT4) Conference in Las Vegas in August.

The CEE department was notified that two student project teams had received runner-up awards of $7,500 each for engineering projects in 2016. Combined with the second place award won by an ECE team, SU received 60% of the total number of runner-up awards bestowed this year in a testimony to the quality of the Project Center and the work that our students, faculty, and staff members are doing. Well done!

Nathan Canney participated in a playground build with members of the Community Engagement Division of ASEE at the Annual Conference in New Orleans in June as part of a two-day build at a local elementary school in Baton Rouge, a project designed and facilitated by a faculty member at LSU.


The second "Just Sustainability” international conference was held SU Aug. 7-9, with an agenda appealing to academics studying sustainability and
practitioners working in the field. Speakers included Brian Cladoosby, president of the National Congress of American Indians and the Association of Washington Tribes, Congressman Adam Smith, Jessica Finn Coven, director of Seattle's Office of Sustainability and Environment, and SU's Pat Twohy, S.J. Director Phil Thompson states that the CEJS Center increasingly covers initiatives involving the human side of sustainability and seeks to increase dialogue around these issues. The conference will publish new research on sustainability in the near future.

**Computer Science & Software Engineering**

A recent GeekWire post celebrated the launch of a Seattle Chapter of the Anita Borg Institute. The Institute is famed for the annual Grace Hopper “Celebration of Women in Computing” Conference, the world’s largest tech event for women. The article quoted Sheila Oh, volunteer lead for the local ABI chapter and director of the CSSE Fundamentals Certificate Program. “A lot of work...has been done, but we’re really far away from bridging the gender gap. The awareness is there, (but) the action needs to take place.” “There is real momentum and palpable energy about increasing inclusion in technology,” said Martina Welkhoff, Board President for “Women in Tech”. “The creation of the ABI chapter is one more reason “to be optimistic in Seattle.”

http://www.geekwire.com/2016/anita-borg-institute/

The most popular story in The Commons last year announced the new CSSE chair, Roshanak Roshandel, a first in the department’s history. “A faculty member since 2005, Roshandel says the computer science freshman class last fall was 29 percent female, the highest percentage in university history. Of the 93 computer science graduate students, 42 percent are female.” (Mike Thee)

**Electrical & Computer Engineering**

Agnieszka Miguel was elected Chair of the Professional Interest Council I of the American Society of Engineering Education, with a seat on the ASEE Board of Directors. PIC I includes the areas of aerospace, architectural engineering, biological and agricultural engineering, chemical engineering, civil engineering, construction engineering, electrical and computer engineering, engineering economy, engineering management, industrial manufacturing, and mechanical engineering. Her two-year term will begin in July 2016. Agnieszka is also currently serving as Chair of the ASEE Pacific Northwest Section until July 2017.

In May Miguel received word that she had been selected by the Honors and Awards Committee of the ECE division of ASEE as the 2016 recipient of the Division’s “Meritorious Service Award”. This award recognizes creative and innovative work in professional service to the Division, to ASEE, and to engineering education. The award was presented in June at the annual ASEE meeting in New Orleans.


The City of Seattle’s paid internship program develops youth work readiness skills and exposes young people to various careers. Youth receive case management support and mentorship at the internships sites. In spring, intern Tam Le joined the department as a laboratory assistant and took a challenge to create instructions for assembling an electronic organ circuit in an effort to develop a deeper understanding of electronics, documentation, and video editing. Tam delivered a product beneficial to the department beyond while building his confidence. His circuit can be used for students, workshops, and internet hobbyists. Gary Fernandes mentored Tam through the internship.

Steve Szablya was featured with his students in King5 coverage of the KWH microgrid project in Chilokwa, Zambia. While the project is wrapping up in Africa, it continues to be monitored in real time by ECE students on campus. Plans are moving forward to expand the project to other needy regions.

Agnieszka Miguel has joined the Electrical and Computer Engineering Department Heads Association Board of Directors as Member-at-Large. ECEDHA is composed of the heads of departments offering accredited programs in electrical and/or computer engineering and seeking to advance the field, facilitate member interaction and idea exchange, and improve communication with the profession, industry, government, and others.”

**Mathematics**

John Carter is spending part of his sabbatical year in Madrid teaching Calculus I at St. Louis University of Madrid. The semester will conclude on December 15th.

Allison Henrich, Steven Klee, and AJ Stewart, Tom Edgar (PLU), and Daniel Heath (PLU), supervised 15 research students as part of SU Mathematics Early Research Experience for Undergraduates (SUMmER REU). Research was funded by the NSF, the Henry Luce Foundation, the Dean’s Fund, the Washington NASA Space grant, and support from Rose Southall. SU student participants were: Justin Bryant (Math), Joseph Koblitz (Math/CSSE), Elsa Magness (Math) and Ranjani Sundaresan (Math/CSSE). The research groups have produced the following papers being prepared for publication (*undergraduate students):


P. de Castro*, D. Domini*, T. Edgar, D. Johnson*, S. Klee, R. Sundaresan*, "Characterizing the rows of Pascal’s triangle with no entries divisible by a fixed prime power."


J. Bryant*, D. Heath, A. Robkin*, "Knots in Lorenz-like templates."

Emeritus Professor Andre Yandl’s new book has just been published: Elementary Point-Set Topology: A Transition to Advanced Mathematics.

**Mechanical Engineering**

In June, Electrical and Computer Engineering students Adnan Ettayeb, Abdul Kassamali, Alex Kvenvolden, Yin Mak, and Keiko Schleicher traveled to Zambia with alumnus Akilu Biniam and faculty members Henry Louie, Matt Shields and AJ Stewart to install a solar energy kiosk in the rural community of Chalokwa. This project, funded by General Electric partnered with Seattle and Zambian non-profit organizations, was to custom design the kiosk for the specific needs of the community. Services included ice production, laptop support for a local school, and the sale of solar home kits. These students, along with a number of SU classmates, were integral to the design of the kiosk and directly applied their engineering talents during the implementation. As a result of their hard work, the Chalowka kiosk is now providing first-time access to electricity to hundreds of Zambians afflicted by energy poverty.
**Physics**

**Jeff Brown** has accepted a position as Associate Director of University Core Curriculum. As Director Kate Koppelman stated in the campus announcement “Dr. Brown brings to this position expertise in statistical analysis and an enthusiasm to help the Core develop a reliable, data-driven means for scheduling Core courses.” Jeff’s previous experience as data analyst at Safeco Insurance and the Fred Hutchinson Cancer Research Center combine with his Physics background to make him an excellent choice for the position. His principal duties will be to oversee and manage the logistics of delivery of the Core, beginning with analyzing enrollments in Core courses and finding data-driven ways of predicting needs for Core offerings, especially Module II and III courses, with a goal toward achieving stability and predictability.

In August, **Chris Varney** and his year-old golden retriever, Tesla, certified as a trailing team for in-county missions with King County Search Dogs, a volunteer organization that trains dogs to search for missing people. KCSD is a branch of King County Search and Rescue Association and was heavily involved in the search efforts in Oso after the landslide in 2014, among other efforts. Chris has been involved with KCSD since the late ‘90s. He and Tesla are now deployable on in-county missions and will soon test for out-of-county missions as well.

**Project Lead the Way**

Since 2007, the College has partnered with PLTW whose curriculum trains K-12 teachers to provide transformative STEM learning experiences students across the United States. SU provides the professional development training necessary to bring this engaging, hands-on and collaborative learning back to their classrooms. This summer participant numbers grew 70% over last year! For the first time “Introduction to Computer Science” was offered in a new Computer Science curriculum. The course was filled to capacity. On July 20th, PLTW CEO, Dr. Vince Bertram, visited campus for the first time, meeting with the Dean, PLTW teachers and participants. Bertram was also interviewed by Q13 News where he discussed the program goal of teaching educators high-tech skills which they can pass on to students. He articulated a belief that schools involved with PLTW are “seeking to better match student career goals with the demands for a highly trained workforce in an emerging economy.”

http://q13fox.com/2016/07/20/teachers-back-in-school-learning-how-inspire-students-with-high-tech-skills/

Nimmy Gnapragasam (CEE) brings the program to campus each summer with logistical support from **Annemarie Riese**.

**Grants and Awards News**

The Jesuit Honor Society Alpha Sigma Nu recognized SU as the 2016 “Chapter of the Year”, only the third institution to receive such recognition. The award was presented to Interim Faculty Adviser **Dan Smith**, Faculty Adviser **Paul Fontana**, and student chapter officers **Sara Beery**, Alyssa Garcia, *Cecilia Johnson* and *Nataya Rakanitimane*. "The Seattle Chapter has consistently impressed (ASN's) Board with its diversity of programming, connection to the Jesuits and university administration, group camaraderie and signature innovative programs that engage not only the campus community but also the wider Seattle area alumni.” Dan Smith wrote, "Receiving the (award) wouldn't be possible without the dedication, attention to detail and hard work of the student officers. They each took responsibility and did their part. It is a student-run club in the truest sense of the word.”

(*Mike Thee*)

Associate Dean **Jean Jacoby** and Jodi O’Brien have been notified that their proposal, “ADVANCE Institutional Transformation at Seattle University”, has been funded by the National Science Foundation. With a focus on improving career opportunities for women
for faculty members in the STEM disciplines, the award is $2,333,846. Agnieszka Miguel (ECE) and Donna Sylvester (Math) will also be members of the research team funded by this grant.

In May, Eric Bahuaud received word that his application for a Simons Foundation Collaboration Grant was successfully funded. The 5 year grant is for $35,000 and allows for research travel, visits of collaborators and some funds to help increase the research environment in the mathematics department.

Allison Henrich was awarded a Simons Foundation Collaboration Grant for her research in knot theory. Like Eric’s this award, it is a 5-year, $35,000 grant from September 2016 through August 31, 2021. “The Department Discretionary Funds should be used to enhance the research atmosphere of the department. Allowable expenses in this category include support for departmental colloquia and seminars as well as refreshments and other research related amenities.”

Student/Graduate News:

**Biology**

Katie Wood and Kristin Hultgren were joined by Stephen Harris and Solomon Chak of Columbia University for research in the Florida Keys.

Katie Wood (Biology ’16) accompanied biology professor Kristin Hultgren to sample snapping shrimp in the Florida Keys this summer. Katie will continue to work in the Florida Keys this fall as part of a Coral Restoration Foundation Internship.

Three biology alums returned to campus recently; Penny (Schubert) Chow, Class of 2000, came to speak to students about her career in Genetic Counseling. Penny works in the craniofacial group at Seattle Children’s Hospital where she helps parents understand the genetic basis for the congenital anomalies of their children.

Chemistry

In August The Seattle Times featured SU alumna “Jamie” Garcia in a story about the 30th anniversary of the IBM Almaden development lab in San Jose, CA. Jamie is a polymer chemist in Almaden where she “accidentally” created a new type of plastic. She studied organic chemistry in PJ Alaimo’s labs, where she also met her spouse, Bobby O’Brien.

http://www.seattletimes.com/business/at-30-ibms-research-lab-is-going-strong/
Civil and Environmental Engineering

Samiah Rizvi was awarded a Structural Engineers Association of Washington (SEAW) 2016 Scholarship. Samiah completed the SU MSST program in spring 2016 and is now working for DCI Engineers.

Jillian Gayler and Sam Garcia received “Second Place” and $300 at the annual “Institute of Transportation Engineers” student competition which included UW graduate student teams. The SU team presented several design solutions for improving safety along the Sand Point Way corridor to 50+ professional engineers. Each student received internship offers before leaving the room.

Connie Kuney was awarded a graduate scholarship from the Associated General Contractors of American Education and Research Foundation for AY17. Connie begins the SU Master of Science in Structural Engineering (MSST) graduate program this fall.

Computer Science and Software Engineering

In spring, the department launched an after-school Robotics Club at Washington Middle School. MSE students Nanya Ugwuh and Sukhman Ghumman ran the club for 5 weeks with an enthusiastic response from the students. Roshanak Roshandel has applied to repeat the offering in Fall (Sukhman graduated in 2016) and Nanya intends to continue the program and is actively recruiting additional volunteers.

On Sept 14, the Computer Science Club assisted the SU Art Gallery staff set up several computers for their art exhibits. They installed a “Raspberry Pi” to play videos and display rotating images and a “Mac Mini” for Facial Recognition Software. Club members included senior Zean Rivera, CS Club President, juniors Wesley Taylor and Justin Shields, and CS Cert. students Michael Kung, Juan Renteria and Jason Mattingly.

In May, the SU Women in Tech Club competed in “We Hack! 2016”, a two-day coding event at TUNE Seattle. The event, focused on social & environmental activism, targeted female students with a passion for computer science, hardware/software engineering, UI/UX, HCDE and/or information technology. Adrienne Grieco and Nancy Mariano were part of the Winning Team. A second team with Mariano, Bailey Strom, and Kellie Fontes received Honorable Mention.

Diagnostic Ultrasound

During the summer, two students were notified of significant awards. Karl Finken received First Place for his paper in the literature review category of the W. Frederick Sample Student Award of the Society for Diagnostic Medical Sonography. Abigail Cone received a Second Place award in the same competition.

Electrical and Computer Engineering

Senior design team ECE 16.3 received one of six $7,500 awards in the 2016 NCEES Connecting Professional Practice and Education Competition. Their submission, “Solar Microgrid in Rural Zambia with Real-Time Cloud-Based Monitoring” include students Dave Goldsmith, Sergey Russu, Keiko Schleicher, and Natalie Swope with faculty advisor Steve Szablya. The sponsor liaisons were Henry Louie and Matthieu Back.

Over the summer, a cohort of 9 engineering students across the state were selected to work as fellows of the Washington MESA Washington/Washington STEM Engineering Fellows Program. Four of the 9 were from SU: Armand Shahbazian (ECE), Barbara Medina (ME), Kristina Stern (ME/CSSE) and Kelemua Tesfaye (CEE). The group worked with fifth grade teachers throughout the state to develop and implement 10 design changes that will engage and educate students in engineering at a level that meets the Next Generation Science Standards. Engineering Fellows is a highly competitive program that brings engineering expertise directly into fifth grade classrooms. The program will be expanded over the next 3 years. Nathan Canney (CEE) is also heavily engaged in the program.

GOT NEWS?
Please send stories and photos to Pat Whitney, whitneyp@seattleu.edu