



Fairfield
UNIVERSITY

School of Engineering NEWS



*SOE's new
Materials Lab
(pg. 7)*

SCHOOL OF ENGINEERING NEWS

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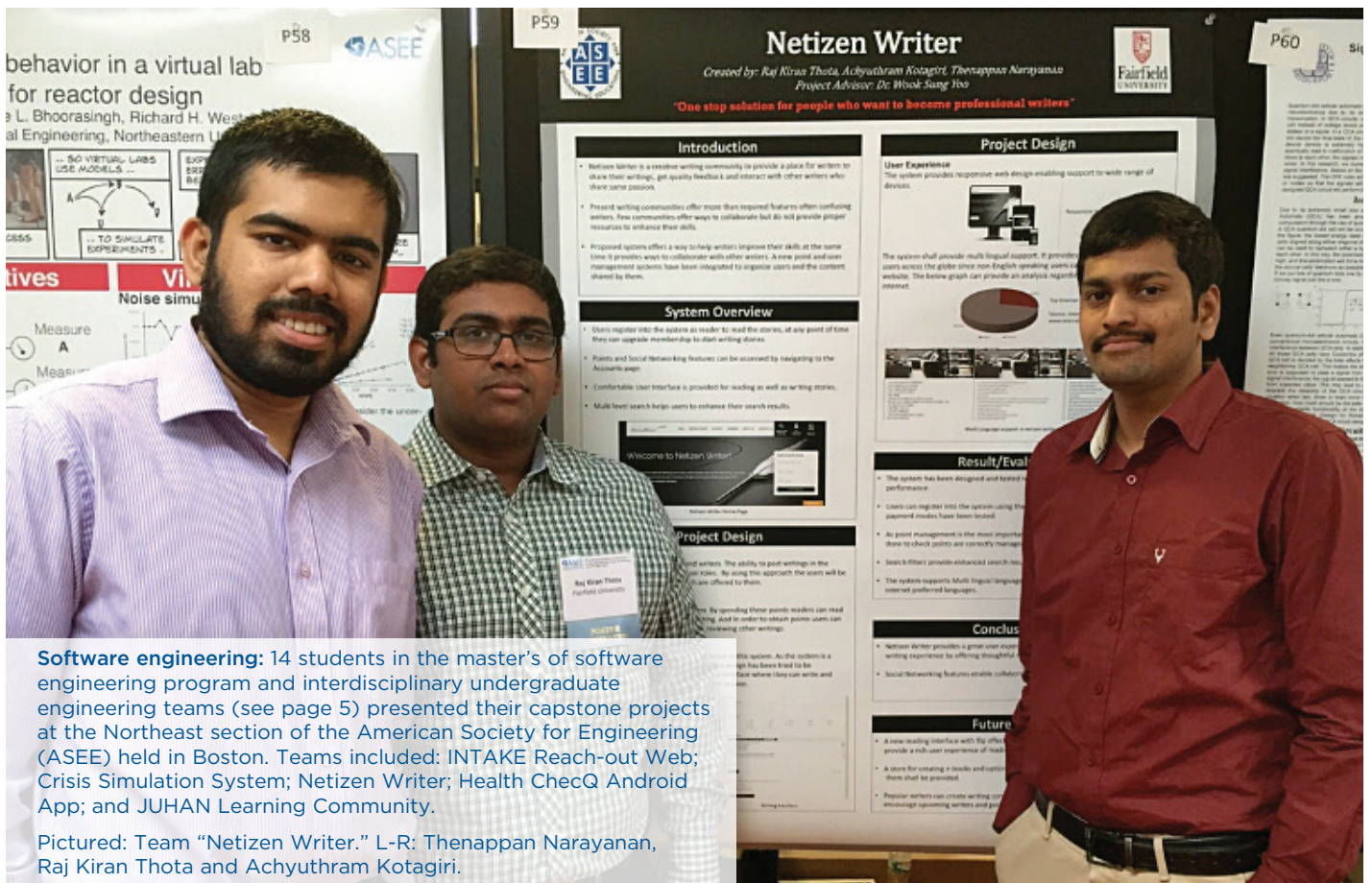
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On the cover: Students Vinicius Zanardi '16 and David Jose '16 in the new Materials Lab with Dr. Sriharsha Sundarram (standing). Cover photography by Cassidy Kristiansen.



Software engineering: 14 students in the master's of software engineering program and interdisciplinary undergraduate engineering teams (see page 5) presented their capstone projects at the Northeast section of the American Society for Engineering (ASEE) held in Boston. Teams included: INTAKE Reach-out Web; Crisis Simulation System; Netizen Writer; Health ChecQ Android App; and JUHAN Learning Community.

Pictured: Team "Netizen Writer." L-R: Thenappan Narayanan, Raj Kiran Thota and Achyuthram Kotagiri.

Message from the Dean



We are so pleased that Fairfield's School of Engineering (SOE) continued strong growth in both undergraduate and graduate programs during this past year. In the prior two years, the graduate program enrollment was fairly consistent between 120 and 130 students and had actually dipped slightly to about 115 students in the fall of 2013. The

enrollment increased to over 265 students in the fall of 2014, and we believe we will be at our goal of 300 graduate students in Fall 2015. The current success is the result of a deliberate and sustained effort in international recruiting supported by the Fairfield University Office of International Students.

Two years ago we set a goal of 300 undergraduate students by Fall 2017. We were at 180 students in the Fall 2013 and doubled our freshman intake rate in Fall 2014. In Fall 2015 we expect to have nearly tripled our 2013 freshman intake rate. By Fall 2016 we will reach a stable intake rate of 100 students each fall, which will support and stabilize our undergraduate programs going forward.

We are excited with the continued success of our five-year pathways to a dual BS/MS in all of our accredited engineering programs. We see more and more that the MS degree is considered as the entry-level degree in the engineering career as our society continues to become more specialized. Our new BS bioengineering and BS computer science programs are continuing to grow, and we anticipate working on national accreditation for them in the next few years. This fall we will add two new pathways for students to complete any of the undergraduate degrees in engineering followed by the master's degree in management of technology (MOT) and for completion of an MS in software engineering after completion of the BS in computer science.

Exciting work continues in the development of our teaching and research laboratories. Funding from Alden Family Trust, Brinkman Family Trust, Robert Sobolewski and Dorothy Bannow Larson has all been invested into advanced technical equipment development in our various laboratories: Materials Characterization Laboratory, Machine Laboratory, Applied Research Laboratory and Network Systems Laboratory. Additionally, we are working to develop longitudinally connected engaging experiences for our students in their undergraduate programs of study that allow them to learn about advanced

manufacturing concepts that make them leaders in the development of new products in their careers.

Our students are innovative. Dr. Wook-Sung Yoo's students were highlighted throughout the popular press this year for their work in developing a software database that police and other service agencies can use in identifying missing persons who have medical or cognitive disabilities. Dr. Doug Lyon's graduate students won the statewide business plan competition with their Bollywood software application. Undergraduate engineering students won the Business Plan Competition with their Fantasy Team software application. The Dolan School of Business and the School of Engineering (SOE) collaborated with Fairfield Advancement to develop a proposal for an Entrepreneurship Center at Fairfield which will weld together the applied research aspects of all of the SOE laboratories with business planning, incubation and commercialization strengths of the Dolan School.

Our students have a global view. ASML corporation funded the creation of the nationally recognized Engineers Without Borders (EWB) chapter at Fairfield this year. Students from Fairfield are led by me and continue to collaborate with EWB students from South Dakota State University in the design and construction of chlorinators for a rural university and community in Bolivia. Students are currently designing sand filters for the site in Bolivia with construction anticipated in 2016. A Global Grant application is currently being reviewed by Rotary International to support the sand filter construction. Dr. Ryan Munden created a month-long international summer study opportunity for students in Nicaragua. Students will participate in the design and construction of a wind-powered electric generation facility for a rural research station in Nicaragua and will receive credit for Spanish and Project Management courses from Fairfield.

As we go into the next year celebrating our successes and growth, I am engaged with our School Advisory Board to grow and reinvigorate their support both strategically and philanthropically for our school activities.

Thank you for your continued support and interest in the SOE, and enjoy reading the newsletter.

Bruce W. Berdanier, PhD
Dean

SCHOOL OF ENGINEERING NEWS

Award-winning engineering students

Gwen Pellegrino



(L-R) Rev. Jeffrey P. von Arx, SJ, president of Fairfield University, Katherine Pitz '15, and Dr. Ryan Munden, assistant dean of engineering.

Katherine Pitz '15 wins the William J. Kramer '60 Humanitarian Award

The William J. Kramer '60 Humanitarian Award went to Katherine Pitz '15, a mechanical engineering student, for her commitment to volunteerism. Pitz volunteered during two trips to build water-chlorinating systems on a college campus in Bolivia, and was a founding member of the Engineers Without Borders program at Fairfield. She is also captain of the women's rowing team. "My success barometer in life will ultimately lie in my ability to give back to the community that has provided me with so much," she said.

This award recognizes one senior and is based solely on the senior's commitment to volunteerism and service to an external community activity that best exemplifies the Ignatian tradition of being men and women for others. Dr. Shahrokh Etemad, Chair of mechanical engineering noted that Pitz has participated in numerous clubs and activities, volunteered internationally and locally, engaged in research and has excelled in the classroom all while participating in varsity athletics.

Sean McGuinness '15 Mechanical Engineer and Physics

Sean McGuinness was inducted as an associate member of the Sigma Xi Society. "Sean took an active role in several extra curriculum programs while working on his double majors all without sacrificing his performance," said Dr. Shahrokh

Etemad, Chair of mechanical engineering and McGuinness' advisor. While at Fairfield, McGuinness participated in engineering service projects in Bolivia, worked as a research assistant on a funded National Science Foundation project and as a teaching assistant in undergraduate courses. He was inducted to several honor societies including Tau Beta Phi, Pi Mu Epsilon, Pi Mu Epsilon, the National Society of Collegiate Scholars and the National Honor Society. "We consider Sean to be a good role model on multi-tasking," said Dr. Etemad.

Graduate School Awards: Marcia Arambulo Rodriguez '15

Marcia Arambulo Rodriguez (MS management of Technology) received the Graduate Student Service Award for the School of Engineering. While at Fairfield, she was a team leader on the engineering graduate student team to develop a JUHAN (Jesuit Universities Humanitarian Action Network) learn-

ing center to enable universities to access information and other important curricular and networking resources related to humanitarian action. During the celebration ceremony, she thanked faculty and staff "who are working hard to integrate humanitarianism into the undergraduate curriculum at school, so they can inspire more people to identify with someone else's pain and do what is needed to alleviate it."



(L-R) Rev. Jeffrey P. von Arx, SJ, president of Fairfield University, Marcia Arambulo Rodriguez '15 and Dr. Bruce Berdanier, dean of the School of Engineering.

Contributed

Senior Design Capstone projects: 2014-15

During 2014-15 academic year, nine senior design projects were successfully executed by 33 undergraduate interdisciplinary students. Funding was provided by four different industries and government agencies. In addition, students submitted proposals and were awarded a total of \$9,600 from the Lawrence Scholars Program and the Campus Sustainability program.

(CE: Computer Engineering, EE: Electrical Engineering, ME: Mechanical Engineering, SW: Software Engineering)

Control System for Quadcopter Autonomous Targeting

Advisor: Prof. Munden.

Funding: The Lawrence Scholars program

Students: D. Casique (EE), J. Hogan (EE), B. Hoth (ME) and K. Scherer (CE)

Development of Advanced Transparent Coating

Advisor: Prof. Winn and Prof. Stott

Funding: The National Science Foundation

Students: A. Carrio (EE), S. McGuinness (ME and Physics) and A. O'Farrell (ME)

Design, Analysis and Development of a Compact & Efficient Soil Steam Fumigation

Advisor: Prof. Etemad

Industry Support: Precision Combustion, Inc.

Students: G. Dibble (ME), J. Dubay (ME), N. Spears (ME) and J. Wimer (ME)

Ferrofluid Immersed Windmill

Advisor: Prof. Judge

Funding: The Lawrence Scholars program

Students: A. Grasso (ME), J. Heilweil (EE), J. King (ME) and J. McGlew (ME)

Design and Development of Automated Robotic Production Assembly

Advisor: Prof. Etemad

Industry Support: Northeast Laser

Students: R. Barone (EE), A. DiMauro (ME), G. Kostakis (ME) and T. McCabe (ME)

SpinLeaf v2 - Electric Powered Greens Spinner for Small Scale Commercial Farm

Advisor: Prof. Reckinger

Industry Support: Brooklyn Grange

Funding: The Lawrence Scholars and the Campus Sustainability programs

Students: M. Gallagher (ME), K. Pitz (ME), Y. Rua (ME) and M. Sulciner (ME)

3D Metal Scaffolds for Battery Applications

Advisor: Prof. Sundarram

Funding: The Lawrence Scholars program

Students: T. Conley (ME), S. Neugebauer (ME) and C. Pereira (ME)

Micromouse Robot Design

Advisor: Prof. Balaji

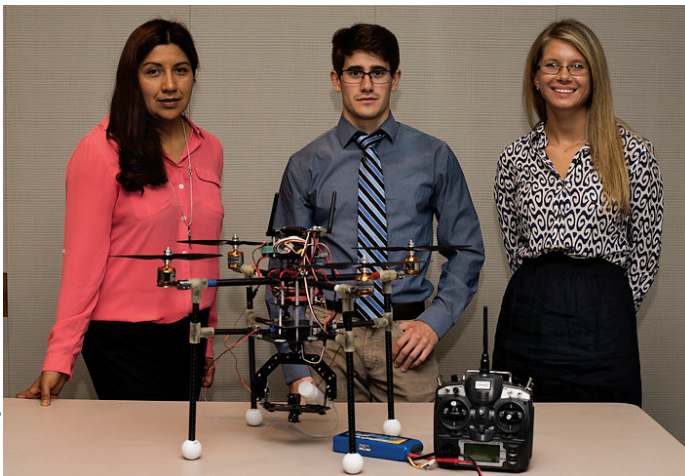
Funding: The Lawrence Scholars program

Students: E. Iannaccone (SE), A. Nezvesky (ME) and K. Wilson (CE)



Cassidy Kristiansen

Cassidy Kristiansen



SCHOOL OF ENGINEERING NEWS

Alumni profile: Giovanni Tomasi '81: President and Chief Technology Officer of RSL Fiber Systems

In 1982, fiber optics, a technology that uses glass or plastic fibers to transmit data, was still fairly new. But, more and more engineers were talking about it and the telephony industry was just starting to embrace it for long distance communications.

That same year, Giovanni Tomasi '81, a graduate of Fairfield's School of Engineering co-op program, was interviewing for a lab technician position and clearly remembers the topic coming up in conversation.

"My experience with fiber optics at that point was seeing a piece of fiber that had been passed around in one of my engineering classes while our professor said 'this is the future of communications,'" said Tomasi. "So when fiber optics was brought up at the interview, I said 'Oh, yes, I'm somewhat familiar.'" That position evolved from lab technician, to engineer, to fiber optic product manager.

Today, Tomasi, who received his bachelor of arts in physics from Fairfield and continued his bachelor of science in electrical engineering at the University of Connecticut, is a lot more than "somewhat familiar" with fiber optics. Over the years, he has worked with the technology alongside some of its first champions and eventually launched RSL Fiber Systems, a company that supplies fiber optic lighting solutions to military ships and has now expanded into fiber optic based sensing systems.

While Tomasi had always wanted to start his own business, the timing never seemed right up until 2001 when the company he was working for eliminated his position. Tomasi said, "That ended up being the best thing that could have happened to me."

Rather than feel discouraged, Tomasi felt elated. "I remember celebrating with my wife, Linda (née Tatarowicz, class of 1983) saying 'Finally, the golden handcuffs are gone and I have the rest of my life to do what I want!'"

After careful planning, Tomasi built RSL through a joint venture between his newly formed company Skyler Technologies and Wire-Pro, Inc. RSL became the first company to supply fiber optic lighting solutions to military ships to solve existing lighting and illumination problems. Today, RSL is the sole supplier for the U.S. Navy's LPD 17 Class, the DDG 1000 Stealth Destroyer Class, and the Italian Navy's FREMM multi-mission frigate class. Tomasi eventually bought out his partners becoming majority owner of RSL.

In 2010, Linda joined the RSL team to manage quality and compliance when they began working with the Italian Navy. Before that, she was the senior director of worldwide quality and compliance at Pfizer. Today, she is the Chief Operating Officer of RSL. Tomasi said that the two work well together, but joked that finding a work/home balance is sometimes difficult. "Some days I've not had my first cup of coffee and we're already holding a board meeting," he laughed.

RSL has received several development grants from the U.S. Navy Office of Naval Research and the National Institute of Occupational Safety and Health, all of which led to products being used in the industry. Because of their dedication and reputation as a company that excels at developing and implementing products, in 2010, 2011, 2012 and 2013 RSL was named one of the fastest growing technology manufacturers in Connecticut by the Connecticut Technology Council and Marcum LLP.

When looking at all that RSL has accomplished, Tomasi credits the people that make up the company. "The dedication of our employees is the best thing about RSL," Tomasi said. "We work with the U.S. Navy, so if there is ever a problem, we can't say 'we'll get back to you.' Rapid response is needed and our employees are ready 24 hours a day. That's the reason for our success."



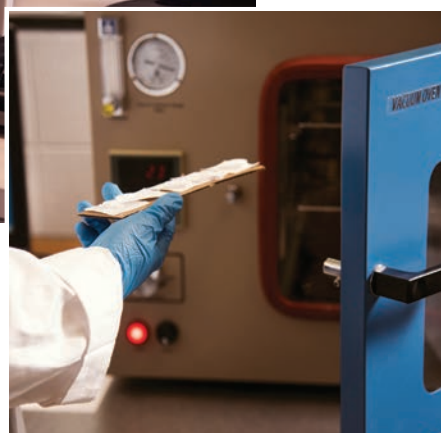
Giovanni Tomasi with his wife Linda and daughter Alexandra at their son, Giovanni Jr's, graduation from U.S. Army Ranger School at Ft. Benning, Georgia.

The new Materials Lab



Graduate students Vinicius Zanardi '16 and David Jose '16 worked in the Materials Lab, under the guidance of Dr. Sriharsha Sundarram during the summer 2015 intercession. (Above) Jose '16 views scanning electron microscope display of his research.

Cassidy Kristiansen



Fairfield University's School of Engineering has opened a Materials Characterization Laboratory that is helping prepare students to work in the aerospace, biomedical and materials industries, among many other science and engineering fields. The new lab is benefitting not only the School of Engineering, but also the School of Nursing and the College of Arts & Sciences.

The Alden Family Trust and Brinkman Family Foundation jointly awarded the School of Engineering \$120,000 in grants that have contributed to constructing and equipping the new lab. School of Engineering Advisory Board member Robert Sobolewski donated additional funds to help leverage the foundation funds.

Dr. Bruce Berdanier, dean of the School of Engineering, said the lab and its equipment, including a Scanning Electron Microscope (SEM), will help faculty develop curriculum and experiential learning opportunities for undergraduate and graduate level coursework. "This endeavor will be a wonderful enhancement to our existing laboratories in support of our engineering programs as well as research opportunities for engineering, chemistry, physics, biology and nursing faculty," he said.

The ultimate purpose of the lab is to provide students with state of the art equipment to visualize, identify and measure the

surface characteristics of natural and manufactured material used in the design and fabrication of products ranging from biomedical sensor devices to biological cells to chip scale photonic circuits to military and aerospace equipment. The proposed equipment for the laboratory has been selected to offer micro-structure characterization, optical 3D microscopy and material preparation

to complete detailed and sensitive analyses.

Dr. Berdanier noted, "The new lab is serving as a research laboratory with advanced analytical instrumentation to enable students across disciplines to understand the properties of both commonly used

and innovative materials, including diverse metals, plastics, composites, innovative nano-materials and living cells."

Dr. Shahrokh Etemad, chair of mechanical engineering who was responsible for the initial set-up, equipment procurement and operation, said, "The real world knowledge that students gain in this innovative space will greatly assist them as they enter the research and/or industry workforce."

The Scanning Electron Microscope is the "anchor" piece of equipment for the lab. It offers versatility and wide application for the life sciences, physics and for material sciences applications. Technical training on the operation of this equipment was held for faculty in physics, biology, chemistry and engineering during November 2014 with additional training planned for fall 2015.

This Scanning Electron Microscope will enable a wide range of Fairfield University students to apply their knowledge while gaining skills to be successful in the workforce. "It is crucial to respond to industry demands," said Ellie Hawthorne, of the Brinkman Family Foundation. "Students can practice being innovators with this equipment, and it will give them real-world experience. An understanding of how to use this Microscope is essential for the next generation of engineers and scientists."

SCHOOL OF ENGINEERING NEWS

Faculty in the news

Publications



Dr. Hoffman

Harvey Hoffman

Book: Hoffman, H. F. (2014). *The Engineering Capstone Course - Fundamentals for Students and Instructors*, New York: Springer.

Shahrokh Etemad

Awarded U.S. Patent 8,739,550 “Two Stage Combustor with Reformer” and U.S. Patent 8,864,491 “Direct Injection Method and Apparatus for Low NOx Combustion of High Hydrogen Fuel”

Doug Lyon

Book: *Java Digital Signal Processing*, Douglas A. Lyon and H. Rao, Revised Epub Ed., Amazon, Jan. 2015.

Ryan Munden

Book Chapter: R.A. Munden, M.A. Reed, “Chemical Beam Epitaxy of Gallium Nitride Nanowires.” *The Science and Function of Nanomaterials*. Ed. A.S. Harper-Leatherman and C.M. Solbrig. ACS Symposium Series. Vol. 1183 pp. 13-39. (2014)



Dr. Munden

Shanon Reckinger

Rua, Y., Muren, R., Reckinger, S. M., “Limitations of Additive Manufacturing on Microfluidic Heat Exchanger Components,” *Journal of Manufacturing Science and Engineering*, March 2015



Dr. Berdanier

Bruce Berdanier

Kant, J.A., Larson, G.E., Burckhard, S.R., Berdanier, B.W. and Meyers, R.T., (2015) “Contemporary Use of Wild Fruits by the Lakota in South Dakota: Implications to Cultural Identity,” *Great Plains Research Journal*, 25(1), 13-24.

Presentations

Shahrokh Etemad

Session Organizer and chair of Emissions and Emissions Measurement, ASME, IC Engine 2014 Fall Conference, Columbus, Indiana.

Mastanduno, R., Roychudhury, S., Etemad, S., “Hydrogen Generation for Internal Combustion Engine Emissions Reduction,” ICEF2014-5627, Proceedings of the ASME, 2014.



Dr. Etemad

Shanon Reckinger

Reckinger, S. M., M. Petersen, S. J. Reckinger, “Sensitivity of resolution and vertical grid types on 3D overflow simulations using mpas-ocean,” November/2014, APS Meeting, Division of Fluid Dynamics-Talk, San Francisco, CA.

Gibson, T., F. Hohman, T. Morrison, S. M. Reckinger, S. J. Reckinger, “Experimental and Numerical Studies of Oceanic Overflow,” November/2014, APS Meeting, Division of Fluid Dynamics-Talk, San Francisco, CA.

New faculty and staff in the School of Engineering



Dr. Balaji

Uma Balaji, PhD, has several years of teaching and research experience including some years in industry prior to joining Fairfield University as an assistant professor in Fall 2014. She received her PhD in electrical engineering from University of Victoria, B.C. Canada. Her research work is in the design of waveguide components such as filters and polarizers for satellite applications. She has also worked in the

area of RF power amplifiers and Electromagnetic Compatibility both in industry and with students and has mentored students to succeed in national and international contests. She is a Senior Member of the Institute of Electrical and Electronic Engineers (IEEE). At Fairfield University she has taught “Signals and

Systems,” “Introduction to Electronic circuits and Devices,” “Analog Electronic Design” and “Engineering Application of Numerical Methods.” She has received the CT NASA space grant as a CO-PI to teach “Electromagnetic Compatibility.”

James Cavallo, MBA, has 10 years of experience as a computer chip design engineer, first at Analog Devices and then at Broadcom corporation. He was one of the key architects of and is the named inventor of two key patents relating to the DOCSIS standard, which enabled cable companies to offer telephone service on their networks. James is an alumnus of both Fairfield Prep and Fairfield University, and has also earned degrees from Carnegie Mellon University, and MIT. He has been an affiliated faculty member at Fairfield for four years, teaching “Digital Electronics and Physics,” and is now running the Electronics Lab.



Dr. Reckinger

Rua, Y., K. Kharbouch, C. Sanford, S. M. Reckinger, "Determining Suction Feeding Efficiency in the Bowfin fish (*Amia*) using Particle Image Velocimetry and Computational Fluid Dynamics," APS Meeting, Division of Fluid Dynamics-Talk, San Francisco, CA.

Reckinger, S. M., S. J. Reckinger, "How to get students to love (or not hate) MATLAB," November/2014, APS Meeting, Division of Fluid Dynamics-Talk, San Francisco, CA.

Reckinger, S. M., R. Governale, C. Nerich, C. Pierre, S. Seyal, "SpinLeaf: A Sustainable Greens Spinner for a Local Farm," *Just Sustainability: Hope for the Commons-Poster*, Seattle, WA, August 7-9, 2014.

Reckinger, S. M., Reckinger, S. J., "An Interactive Programming Course Model for Mechanical Engineering Students," American Society of Engineering Education Annual Conference-Talk, Indianapolis, IN, June 15-18, 2104.

Funding

Ryan Munden

National Science Foundation, Northeast Advanced Technology Education Center (NEATEC), \$100,000. A regional ATE center dedicated to micro and nano-technology education and workforce development. Fairfield's funding will support extending NEATEC's work into southern New England, by providing an

industrial workmanship course at Fairfield University, as well as funding for nanotechnology course development and enhancement, and local STEM outreach events with K-12 students.

Doug Lyon and Uma Balaji

NASA CT Space Grant Consortium, Faculty Curriculum Development Grant of \$4000 to P.I. Dr. Doug Lyon with Dr. Uma Balaji for "Electromagnetic Compatibility Courseware Development." Matching funds from the School of Engineering bring the full project total to \$8,000.



Dr. Lyon



Dr. Yoo

Wook-Sung Yoo

NASA CT Space Grant Consortium, Faculty STEM Ed Programming Grant of \$5000 to P.I. Dr. Wook-Sung Yoo for "Enhanced Curriculum Development for Computer Education Academy."

Awards

Shanon Reckinger

Best Paper in the Mechanical Engineering Division for the American Society of Engineering Education National Conference, \$500 award, June/2014.



Professor Figueiredo

Dominic Figueiredo joined Fairfield in February 2014 as a staff/instructor in manufacturing area. With a background at Sikorsky Aircraft, he has extensive experience with plastics fabrication, mill, lathe, spot welding, metrology, CNC programming and shop control. He received an associate's degree from Housatonic Community College as well as a degree in advanced manufacturing and certificates in both CNC lathe and mill programming from

Haas School of Business, University of California, Berkeley. Dominic works with students on projects encompassing 3D printing, CNC application and programming, laser engraving, metrology and geometric design & tolerancing.

Sriharsha S. Sundarram, PhD,

joined Fairfield in September 2014 as an assistant professor in mechanical engineering. He received his PhD in mechanical engineering from The University of Texas at Austin and his master's degree from Texas A&M University in mechanical engineering and bachelor's degree in manufacturing engineering from College of Engineering (Guindy), India. He teaches courses in design, manufacturing, control and materials. Dr. Sundarram's current research interest is in the area of micro/nano manufacturing, specifically large-scale processing of advanced micro/nano-structured materials with applications in energy, thermal management and biomedicine.



Dr. Sundarram

SCHOOL OF ENGINEERING NEWS

“Fantasy Squared” wins Fairfield University’s Business Plan Competition



Cassidy Kristiansen

The engineering team “Fantasy Squared” won this year’s Business Plan Competition. (L-R) Martin Gallagher ’15 and Eric Iannaccone ’15’

The heat was on at the Dolan School of Business Dining Room where students competed for \$20,000 in prize money and sponsorships.

“Fantasy Squared,” an innovative idea for a web resource to empower fantasy sports game players, won first place at Fairfield University’s 4th Annual Business Plan Competition. The event was held March 31 after six months of preparation that included a semi-final round, an elevator pitch contest and multiple meetings with mentors.

The duo behind the winning team was from the School of Engineering: Martin Gallagher ’15, a mechanical engineering major from Woodcliff Lake, N.J., and Eric Iannaccone ’15, a software engineering major from Washington Township, N.J. They received \$12,000 in prize money at the finals, which is envisioned to serve as start-up funds for the new businesses.

“This would be a great addition to the fantasy sports market,” said Gallagher, whose team was mentored by Matt Powers ’03 and Dan Leitao ’12.

The finalists included an imaginative group of self-starting undergraduate and graduate students from the Dolan School of Business, the School of Engineering and College of Arts & Sciences who pooled their knowledge and skill sets to develop business plans. Contenders included a number of international students this year,

including graduate engineering students from India who pitched “Bollywood Bee,” a mobile app for lovers of Bollywood movies which had already won first place at the state Business Plan Competition held earlier at Bridgeport University.

Each of the semifinalist teams of students from across the University got six minutes to pitch their plan for a new business. A panel of five venture capital experts, entrepreneurs and alumni judged the plans and awarded the teams they believed had the most viable plans.

Dr. Bruce Berdanier, dean of the School of Engineering, said that the business plan competition is representative of the increased level of collaboration between the two schools over the past two years. “I am very pleased to see all of our faculty and students working in an integrated environment that is representative of the work they will be pursuing in their careers. Dean Gibson and I believe that our corporate partners and alumni want to engage with our students in this component of their education.”

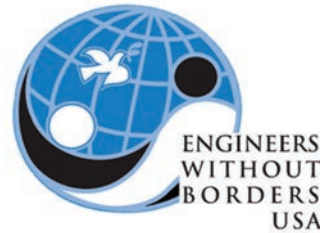
Dr. Donald Gibson, dean of the Dolan School of Business, said the field of proposed companies showed great promise and were all “worthy of investment.” “We hoped we would have ideas for companies that are economically viable and led by students who are going to make them a business, and we got them,” Dr. Gibson told the audience of more than 200. “Each year the student teams get more impressive. You should all be proud of your hard work.”

Graduate Engineering team Bollywood Bee is shown pitching to the judges. (L-R) Marilyn Peizer (DSB), Sai Krishna Vennam (SOE) and Trinadh Venna (UB-SOE)



Cassidy Kristiansen

Engineering change: Engineers Without Borders



Faculty and students in the School of Engineering (SOE) have opened up a new chapter of Engineers Without Borders (EWB), which will offer students in any area of study the chance to help build a better world.

EWB is a nonprofit, humanitarian organization established to support community-driven development programs worldwide through partnerships that design and implement sustainable engineering projects, while creating transformative experiences that enrich global perspectives and create responsible leaders.

EWB chapters work on both international and domestic projects in the areas of water supply, sanitation, civil works, structures, energy, agriculture and information systems.

Dr. Bruce Berdanier, dean of the School of Engineering, said, “Since Fairfield’s mission includes service to society — espe-

The School of Engineering first became involved with EWB through Dr. Berdanier. Before he became dean of SOE, Dr. Berdanier was involved with EWB while a professor at South Dakota State University. Because of those connections, he and Fairfield University students have participated informally with students from EWB-USA South Dakota for the past two years on projects that involve water and sanitation projects at the Universidad Academica Campesina, Carmen Pampa, Bolivia (UAC-CP).

Christopher Calitri ’16, an electrical engineering student and the current president of EWB-USA Fairfield University said, “This year we’ll be completing the current projects with South Dakota State University. We hope to have our designs for a Chlorinator system and a Sand Filter to be implemented within the next calendar year. From there, we would like to launch



Dr. Berdanier (far right, center photo) with Fairfield University and University of South Dakota students, plus Bolivian community members. Together, they worked on an Engineering Without Borders project to deliver clean water to the community

cially the less fortunate — and the SOE mission involves solving society’s greatest challenges, we see the initiation of the EWB chapter here as a natural fit. We are especially thankful for all of the engineers at ASML Corporation, in Wilton, Conn., who recognize the importance of a global co-curricular educational experience and reached out to us to create this opportunity at Fairfield.”

Three engineering students have stepped forward to build and lead the chapter. John O’Neill ’18, the secretary/treasurer of EWB-USA Fairfield University, said, “I was not familiar with EWB until this year but immediately was drawn to it. The idea of helping others while also being able to apply what I learn in my engineering classes entranced me. I am beyond excited to begin my involvement with such an incredible organization.”

our own project location in a country of need. This project would be the first that was exclusively sponsored by the Fairfield University chapter.”

Excitement about Fairfield’s chapter is building on campus. Dennis Turano, vice president of Fairfield’s chapter said, “I joined EWB because I wanted to start applying the knowledge that I was learning in my classes to real-life situations. When you’re in a classroom doing problems out of a textbook you learn a great deal, but not every situation is going to be like the ones in the textbook so you have to go out into the world and learn. I hope that with EWB students will feel more encouraged to look for problems in the world or in our local community and want to create a solution.”

Summer 2015

The SOE NEWS is published once a year by Fairfield University for alumni, students, benefactors and friends of the School of Engineering, as well as selected corporations.

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The School of Engineering, in collaboration with the office of Career Planning held its third Alumni Career Night on April 14, 2015. Nine alumni from Sikorsky, ASML, Eversource Connecticut, Northeast Utilities, Sonics and Materials, Precision Combustion, Inc., Radiall USA, Sendzimir Inc., Thule Group and Prolific Interactive participated as panelists. The returning alumni shared their professional experience and provided valuable tips to more than 50 students who attended. The program was spearheaded by Dr. Shahrokh Etemad and Sue Quinlivan.