ECE FLORIDA

Department of Electrical & Computer Engineering

FALL Newsletter 2015

ECE Making Waves in the Biomedical World

For Life...For Health...For the Future

In This Issue

ECE Making Waves in the Biomedical World

In This Issue

POWERING the NEW ENGINEER

On The Cover

Photo:brainmappinglab.org
Dr. Gunduz's group performing neural recordings during awake brain surgery. Article featuring Dr. Asye Gunduz, a 2008 PhD graduate of UF ECE under the mentorship of Dr. Jose Principe, is on page 13.

Dr. John Harris, Department Chair

Photo Credits
Sara Schaffer

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JOIN OUR COMMUNITY TODAY

Welcome to our 2015 ECE newsletter. Our Department has just completed a fantastic year. The biggest news is that we have hired 10 new faculty within the last year and a half, growing from 41 to 51 tenured and tenure-track faculty, our largest number ever! Among our faculty are the Director of the National Science Foundation's Engineering Directorate, Pramod Khargonekar, the President of the University of Florida, W. Kent Fuchs, and the Director of the UF honors Program, Mark Law.

Starting this fall, we have 5 new faculty of which 3 are focused on cybersecurity research, particularly on the hardware side. Mark Tehranipoor, who holds the Charles E. Young Intel Leadership Chair in Cybersecurity, and Dominic Forte come from the University of Connecticut; and Swarup Bhunia comes from Case Western University. They join ECE's Daniela Oliveira and 3 CISE faculty to form the Florida Institute for Cybersecurity, which will be officially inaugurated in Spring 2016 following a multi-million dollar building renovation that is currently underway. Also here is Damon Woodard who joins us from Clemson University, working in biometrics, pattern recognition, and machine learning. Finally, Roozbeh Tabrizian, formerly a post doc at the University of Michigan, joins the faculty working on resonant micro-systems, phononic devices, and mixed-domain physical sensors.

On the academic front, our revised undergraduate Computer Engineering curriculum is in full swing, allowing students to choose electives between the CISE and ECE departments. Our new undergraduate EE curriculum is also on track, providing more flexibility to students, more hands-on labs, and now offering a brand new biomedical option, which exploits the talents of our many faculty and proceeds from their research.

In this issue of our newsletter, we focus on the biomedical opportunities in ECE where we highlight the biomedical related work of our faculty—Karim Oweiss, Rizwan Bashirullah, Jose Principe, Jenshan Lin, and YK Yoon—as well as our ECE alumna—Ayse Gunduz, who is an Assistant Professor in the Department of Biomedical Engineering at UF. Other ECE faculty working in biomedical-related research include Michael Fang (mobile health solutions using networked technology, Jack Judy (micro/nanoscale systems for biomedical applications) and Huikai Xie (biophotonics). Finally, my own research in neuromorphic engineering builds novel computational systems inspired by the computation of the brain.

I am excited about the future of the ECE Department in this new year and on behalf of all of our faculty, I invite you to explore some of our other accomplishments highlighted in the video, "This is how we do it ECE Florida" found on our YouTube Page!

GO GATORS!

John Harris
Professor and Chair

UF UNIVERSITY of FLORIDA

ECE Making Waves in the Biomedical World

For Life...For Health...For The Future

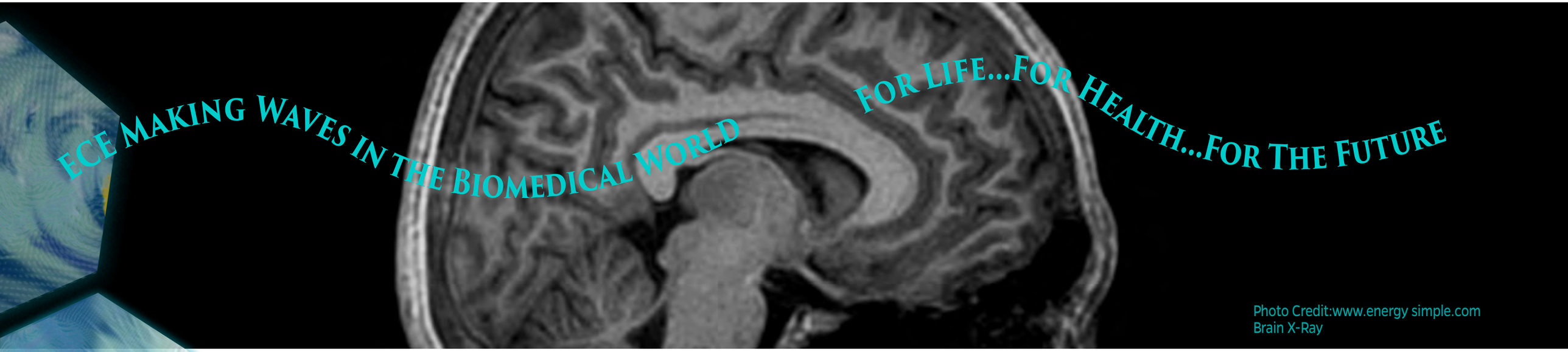


Photo Credit:www.energy simple.com
Brain X-Ray

Electrical engineers are in great demand by the biomedical industry. At the cutting edge of research and development, electrical engineers have revolutionized healthcare and the medical field in fundamental ways. Studies predict a large percentage growth in biomedical related jobs with many of these jobs going to more traditional majors such as electrical engineering, mechanical engineering, or computer science. The job outlook for majors in biology and life sciences is not as promising [2]. Recent studies show that electrical engineers' starting salaries are higher than any other engineering majors; and electrical engineers also have more jobs available to them than any other major [1].

The following paragraphs discuss the biomedical opportunities for the eight major disciplines of electrical engineering.

1. Computer engineering is the largest division of ECE departments across the country. Embedded computers are the heart of biomedical instrumentation systems and implanted devices. Researchers are using the cloud to develop new solutions for aggregating and processing medical data. Robots are designed to assist in surgery and aid in rehabilitation. Machine learning techniques are used to collect and analyze large amounts of data related to medicine and biology, creating a new fi ld called bioinformatics.

2. Signal Processing is a core area of electrical engineering and vital to many biomedical applications. Electrical engineers use mathematical models and statistics to record and analyze signals and images recorded from the body. Useful information can be extracted from these biological signals for diagnostic and therapeutic purposes. For example, ECG signals can be processed to determine cardiac health. Medical images must be quickly compressed, enhanced, and stored and researchers are working on automatic methods to detect tumors and other anomalies. Hearing aids and cochlear implants rely on sophisticated signal processing to restore hearing. Brain machine interfaces are being developed to translate brain signals in to motor commands that can control computer cursors, prosthetic limbs, or even the natural paralyzed limbs of a human with spinal cord injury.

3. Controls is one of the oldest disciplines in all of engineering. Nearly every device—from wheelchairs to robotic surgeons to neural prosthetics—requires sophisticated control procedures and algorithms. In order to function properly, the human body relies on control systems at various temporal and spatial scales. For instance, body temperature is maintained at a fairly constant level and our heart rate and breathing rate automatically increase when we exert ourselves in order to supply more oxygen to the body. Similarly, medical devices must rely on sophisticated control systems to operate. For instance, an implanted heart pacemaker carefully regulates a patient's heart rate, increasing or decreasing electrical stimulation based on the difference between the current heart rate and the desired heart rate. Likewise, an implanted brain pacemaker carefully regulates pathological neural activity associated with an impending seizure in an epileptic patient, or those associated with the abnormal movements of a Parkinsonian patient.

4. Communications and networking are required for all real-world computer systems and devices. Wireless communication systems are becoming standard for wearable medical devices. For example, the field of telemedicine uses networking infrastructure to deliver health care to patients in remote regions. Modern medical evaluation, diagnosis and treatment are also delivered with the help of networked devices. (continued pg. 6)

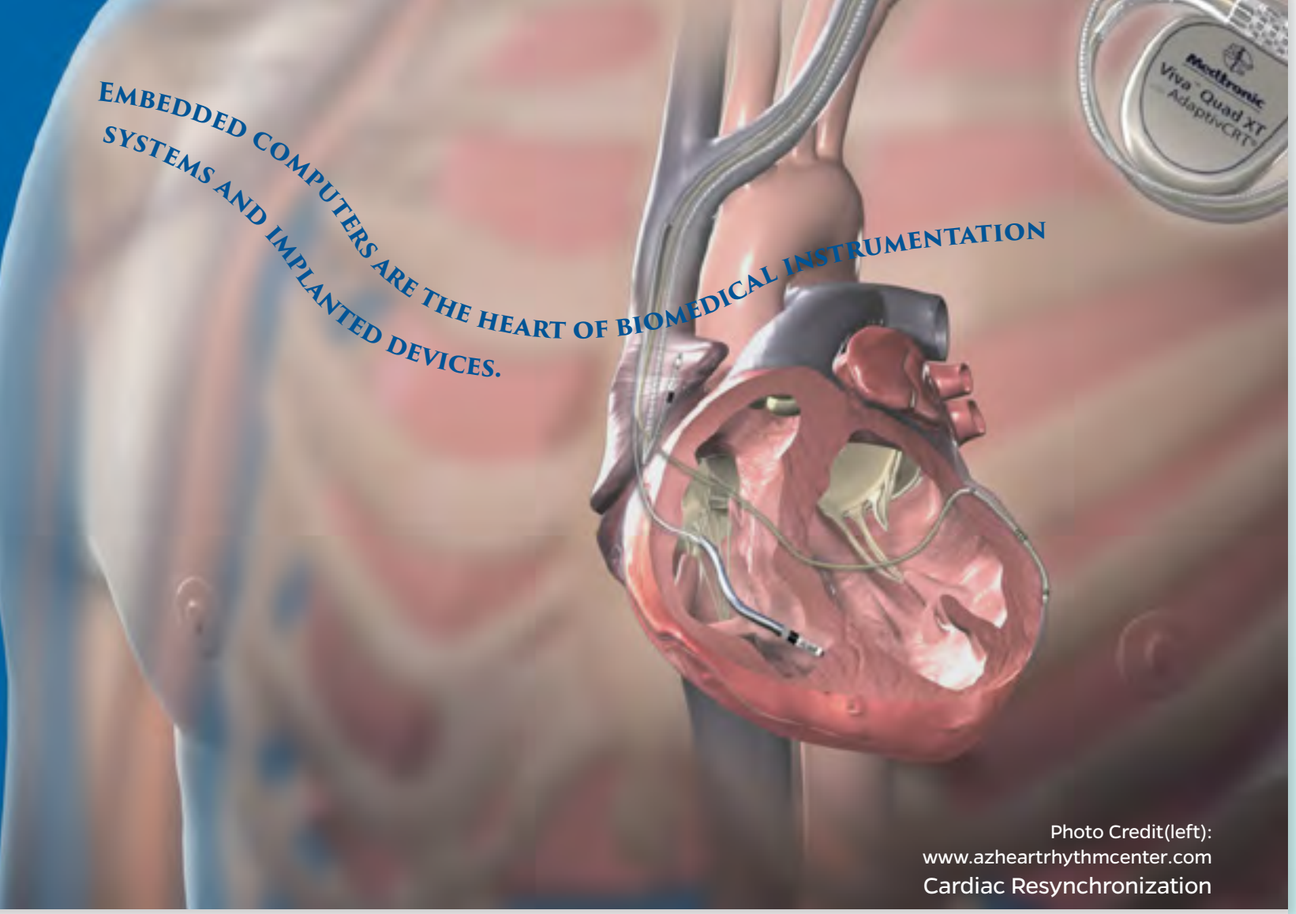


Photo Credit(left):
www.azheartrhythmcenter.com
Cardiac Resynchronization

(cont'd.)

5. Electronics provides the backbone for medical instrumentation. Signals of interest must be amplified and filtered with analog circuits before they can be digitally sampled and processed. For instance, pacemakers, cochlear implants, defibrillators, and prosthetics all rely heavily on electronic circuitry.

6. Device engineers are on the forefront of developing new devices for medical applications that incorporate BioMEMS, biosensors, and microactuators. BioMEMS is a growing part of MEMS (MicroElectroMechanical Systems) that focuses on the integration of mechanical elements, sensors, actuators, and electronics on a silicon chip. Implanted or wearable systems must be compact and lightweight. Biosensors are designed to measure biological signals and transduce the signals to a measurable current or voltage to be measured and processed. Microactuators and electrical stimulators are necessary in many medical procedures.

7. Power systems are necessary for numerous biomedical related applications ranging from uninterruptible power supplies for hospital operating rooms to tiny cochlea implants that need to be remotely powered from outside the body. All medical devices require sophisticated power systems to run the embedded computers, sensors, actuators and electrical stimulation.

8. Electromagnetics is fundamental for many imaging techniques such as conventional x-rays, computerized tomography and magnetic resonance imaging. Low-cost image acquisition systems. Lasers are the key components in many modern surgery tools.

[1] http://www.businessinsider.com/high-paying-college-majors-2014-11
[2] Bruce Wheeler, "Balancing Engineering and Biology in Bioengineering," IEEE Pulse, vol. 6, no. 2, p. 42, Mar/Apr 2015

FACULTY FOCUS
Jenshan Lin

A 60 GHz micro-radar capable of detecting vital signs and vibrations with small displacements. This small radar has a size of 3 cm x 4.5 cm. It can detect 0.2 mm vibration from 2 m away. For closer distance such as 0.3 m, it can detect vibrations as small as 0.02 mm. This radar is currently being used in an experiment to detect heartbeat and respiration of small lab animals such as rats or mice.

Developing Wireless Systems Measurement for Vital Signs

The medical tricorder used by the medical staff of the starship Enterprise is a futuristic handheld device fi st popularized by the original Star Trek TV show. This science fiction device could measure vital health signs, diagnose illnesses and detect the presence of dangerous organisms. ECE professor Jenshan Lin is bringing this device closer to reality with his biomedical radio frequency (RF) circuits and systems research. Lin's device can remotely measure vital signs, such as heart rate and breathing rate. Vital signs associated with pain and stress can be detected in realtime, such as in post-op and recovery, or during the onset of illness or when injury is about to occur. Ultimately, Lin's device will improve the quality of patient care.

Lin's research is being commercialized by a number of companies. Among them, Structured Marketing Products ™ is marketing a baby monitor based on Lin's technology. This monitor sounds an alarm if there are any breathing abnormalities. Lin's research has also led to the development of TruVitals™, a company targeting the animal lovers market allowing vets, zoos and farmers to wirelessly monitor animal vital signs. The monitor will help veterinarians and zoologists diagnose and treat animals faster as well as improve their post-operative care and inevitably quality of life.

Photo:
subspacecommunique.com
Qualcomm Tricorder X PRIZE

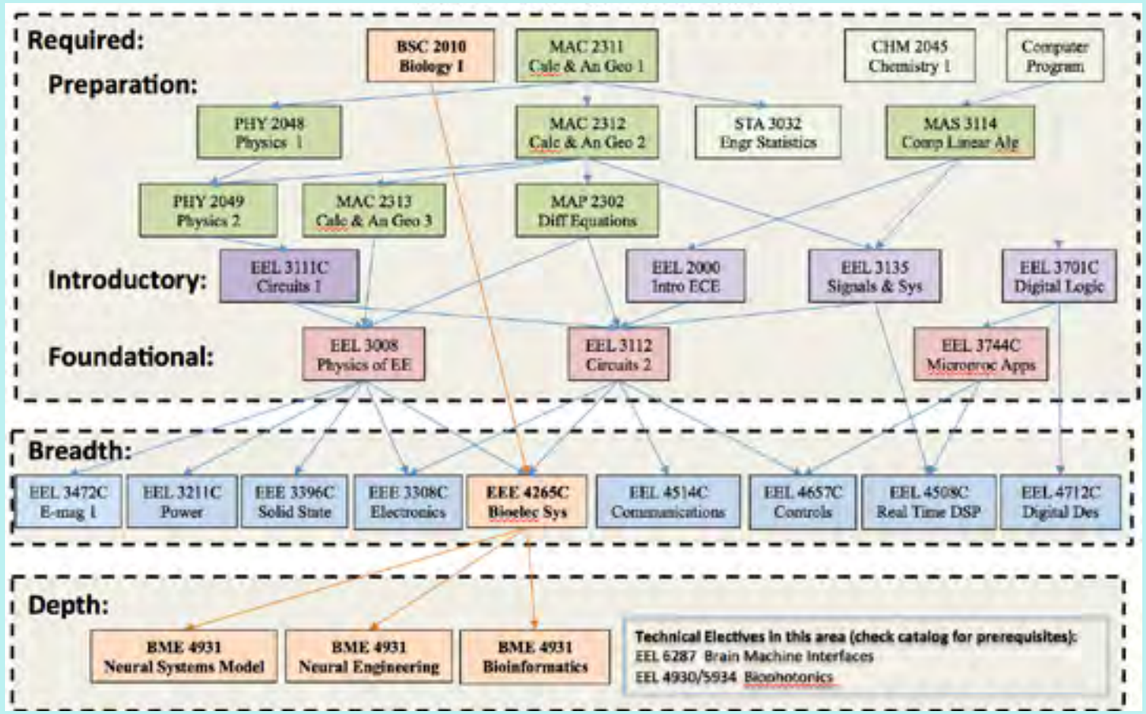
The NEW Biomedical Option
for the BSEE degree

The new BSEE curriculum in Electrical Engineering now includes a biomedical option that trains students in biology, medicine, and related engineering applications. This option helps prepare students for medical school, graduate school, or for employment in the health-care industry.

Students interested in the Biomedical option take BSC 2010 Integrated Principles of Biology I instead of Chemistry II. The fi st EE course in the option is EEE 4265C Bioelectrical Systems, created by ECE Professor Karim Oweiss. The course covers the theoretical and quantitative perspectives of bioelectrical signals reflecting the activity of the brain, the muscles, and the heart. Modeling and analyzing bioelectrical signals are discussed, as well as common clinical applications. At this time, the Biology 1 prerequisite is waived. After the Bioelectrical Systems course, students take at least two depth courses in the biomedical option, such as Bioinformatics, Neural Engineering and Neural Systems Modeling.

There are many other ways for EE students to get exposure to biomedical applications. For instance, interested students are encouraged to participate in biomedical research with faculty members in ECE and in other departments. Students may sign up for course credit or get paid for their work in these research laboratories. Also, many students select biomedical topics for their fi al design project in the required EE Design course EEL 4924C.

Curriculum Flowchart
breadth and depth coursework



ECE Ambassadors gator chomp

ECE Graduate Student Spring Showcase

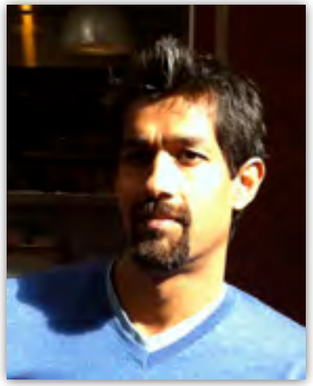
ECE grdauate student withMike Robinson NFL Superbowl winner reviewing the smart mouthguard

PhD Research student Meiyu Li works on noncontact radars for e-health

Dr. Y.K. Yoon presents hydration and concussion detection with smart mouthguard technology

UF Undergrad shows young children how wireless devices transmit signals to computers

Rizwan Bashirullah, Changing the World with Biomedical Electronics



Ultra low-power devices for in-vivo or implantable applications are the wave of the future in biomedical electronics. At UF's Department of Electrical and Computer Engineering, Dr. Rizwan Bashirullah is a pioneer in this area where he has utilized biomedical electronics in applications ranging from medication delivery systems to limb prosthetics and retinal prosthetics for wthe eye.

It is estimated that 125,000 people die annually because they do not follow the correct dosage of medications prescribed by their doctors and almost a tenth of hospital admissions are associated with this non-adherence at a cost of $15.2 billion dollars annually. Bashirullah has developed a miniature, low cost electronic transponder that reliably detects orally ingestible electronic pills (e-pills). The e-pill monitors dosage levels based on percent of doses taken over a period of time. The e-pill has applications for geriatric medicine, mental health and addiction treatments, and pharmaceutical clinical trials.

According to a 2015 report of the Department of Defense (DoD) over 1,645 soldiers have suffered major limb amputations during the Iraq and Afghan wars. This summer, the Defense Advanced Research Projects Agency (DARPA) an agency of the DoD awarded Bashirullah and his team a $5.4 million dollar contract to develop an implantable neural interface that can restore closed-loop sensory motor control of mechatronic prostheses. In other words, Bashirullah will develop an artificial limb that moves and behaves like a human limb.

Bashirullah leads the DARPA-sponsored HAPTIX (Hand Proprioception & Touch Interfaces) project. In this project, Bashirullah and his team will extract voluntary motor command signals from muscles and nerves and provide tactile feedback and proprioceptive (the amputees own) feedback by patterned micro-stimulation of sensory nerves. More effective, realtime bidirectional control of the prosthetic hand in real-time will be achieved with new state-of-the art peripheral nerve interfaces with greater channel and electrode density, and information stability. Ultimately the DoD wants to provide military amputees with limbs that function naturally, so that they can return to a more normal life after they have suffered a catastrophic injury in combat.

Bashirullah first worked on biomedical electronics as a graduate student, when he contributed to the development of a retinal prosthesis device to help provide sight to subjects blinded from degenerative diseases, such as age-related macular degeneration (AMD) and retinitis pigmentosa (RP). The research eventually lead to the 2002, fi st human subject trials conducted by Second Sight, a biomedical start-up company located in Sylmar California.

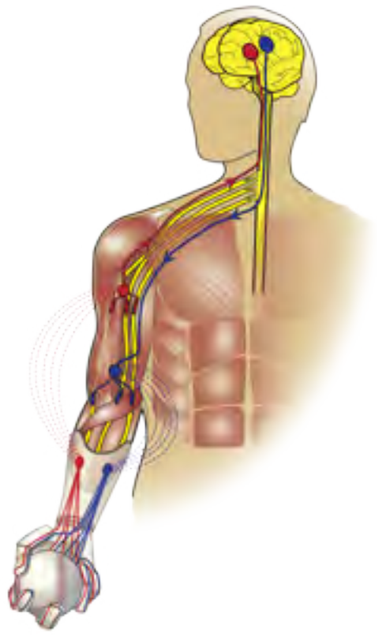


Figure 1(right): A peripheral nervous system (PNS) electronic interface to enable bi-directional control of a mechatronic robotic hand.

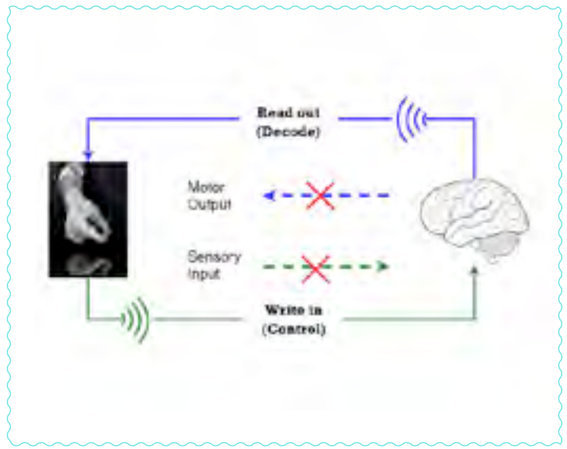
Karim Oweiss, New Preeminence Hire in NeuroEngineering

Karim Oweiss is a Professor of Electrical and Computer Engineering with appointments in Biomedical Engineering (BME) and Neuroscience at UF's McKnight Brain Institute. Oweiss has developed a new course, EEE 4265C Bioelectrical Systems, the first course of the new Biomedical Option for undergraduate electrical engineers.

Over the past 15 years, Oweiss and his team have explored new techniques to advance our understanding of how the brain works and to translate this understanding to clinical applications of brain-machine interfaces (BMIs). These BMIs, which offer a direct communication path between the brain and an external device, assist and repair damaged human cognitive and sensorimotor functions.

For example, in a DARPA funded research project, Oweiss built a clinically viable BMI to help people with severe paralysis improve their quality of life. The research team focused on neural decoding—the ability to translate brain signals from people with spinal cord injury or amputation—into useful motor commands for dexterous control of artificial limbs, such as to grasp and manipulate external objects. In another project funded by the National Institute of Neurological Disorders and Stroke (NINDS), Oweiss' team built miniaturized electronic chips fully implanted in the brain and programmed wirelessly to optimize the bidirectional communication between the patient's brain and the machine.

More recently Oweiss and his team received another NINDS award (2015-2020) to close the BMI sensorimotor loop by making these implanted chips restore touch and proprioception—the sense that informs the brain about body movements in physical space—through artificial stimulation of brain areas associated with natural sensation and coordination of motor commands. His team will use clinically established deep brain stimulation techniques to manipulate the activity of neurons involved in these functions. Specifically, Oweiss will use optogenetics—an emerging tool that combines optics and genetics to probe neural circuits with millisecond precision —to examine specific cells' involvement in these functions.



Oweiss received his B.S. (1993) and M.S. (1996) degrees in Electrical Engineering with a minor in bioengineering from the University of Alexandria, Egypt, and the Ph.D. degree (2002) in Electrical Engineering and Computer Science from the University of Michigan (UM), Ann Arbor. In 2002, following post-doctoral training in BME at UM, Oweiss founded the Neuroscience and Cognitive Sciences Lab at Michigan State University where he was an assistant (2003-2009) then associate professor (2009-2014) of ECE, before he moved to UF in 2014 as a preeminent hire. Oweiss received the excellence in Neural Engineering Award from the National Science Foundation in 2001. He is the editor and co-author of the book: Statistical Signal Processing for Neuroscience and Neurotechnology, published by Academic Press in 2010.

FOR LIFE...FOR HEALTH...FOR THE FUTURE

Jose Principe
Brain Interface Pioneer

Dr. Jose Principe is a Distinguished Professor of Electrical and Computer Engineering and was just named UF's Teacher/Scholar of the Year, the most prestigious faculty award given by the university. Principe is also the founding director the Computational NeuroEngineering Lab (CNEL). Led by Principe, CNEL studies brain function in order to better treat brain disorders, and ultimately to interface directly with the brain. He, his students, and post docs combine principles from machine learning, signal processing theory, and computational neuroscience to advance the science of engineering systems. At CNEL's inception more than two decades ago, the term Computational NeuroEngineering was a new concept. Today, the phrase appears regularly in DARPA, NSF, and NIH requests for proposals, and the CNEL name is recognized worldwide.

Principe has a long history of research in biosignal analysis and brain modeling, including the development of methods to quantify and predict epileptic seizures using the electroencephalogram (EEG). However, Principe has really made his mark in the development of artificial brain interfaces. He has been a pioneering leader in this field. Some of CNEL's key milestones in the history of brain interfaces include:

History of CNEL
1990: CNEL developed and demonstrated the fi st brain computer interface (BCI), a cortical mouse using a NeXT computer.
2002: CNEL was part of the fi st large research initiative sponsored by DARPA for the development and validation of brain machine interfaces (BMIs) with implanted technology. The DARPA grant provided the opportunity to develop and compare multi-input multi-output (MIMO) linear and nonlinear models for motor BMI decoding, including low power miniaturized hardware development for real time processing of up to 100 channels of neural data.
2006: CNEL published fi st book in Brain Machine Interface Engineering
2007: CNEL proposed a BMI based on reinforcement learning algorithms, which for the fi st time did not require the availability of a desired response to train the decoders. CNEL also envisaged and implemented the fi st workstation for neurophysiology data collection and close loop feedback using cloud computing , opening the neurophysiology laboratory to the world.
2012: CNEL helped develop bidirectional BMIs that not only decode motor intent but also encode sensory information in the brain via electrical stimulation. Instead of using traditional point process theory, they developed adaptive filters in functional spaces that are easier to train including the fi st recurrent adaptive filter in functional spaces that can be trained online.

Building on previous work, Principe and CNEL are currently involved in the HAPTIX DARPA project with the goal of facilitating the control of bionic hands for amputees. Here, the interface is done at the peripheral nerve level, and the goal is to project the collected multichannel neuro spike trains to a subspace that spans the space of all possible movements that can be implemented by a biotic hand.

While BMIs remain a key focus, Principe and CNEL are using the knowledge gathered from the nervous system and computational neuroscience to address a wide range of research areas including information theoretic learning, neuromorphic engineering, and cognitive architectures for sensory processing.

Alumni Focus:
Dr. Aysegul "Ayse" Gunduz

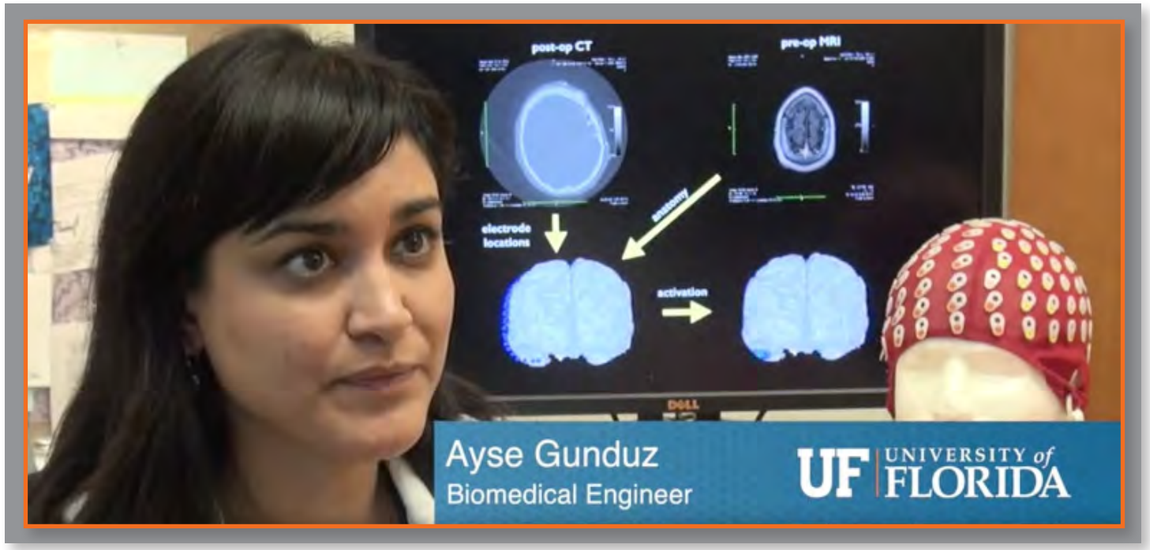


Photo credit: brainmappinglab.org; Dr. Gunduz's research is aimed at understanding and treating neurological disorders

Alumna, Dr. Aysegul Gunduz is a 2008 PhD graduate of UF ECE under the mentorship of Dr. Jose Principe. Following her graduation, Gunduz completed her postdoctoral training at Albany Medical College, Department of Neurology and at the Wadsworth Center, Division of Translational Medicine in Albany, NY. Gunduz is the Director of the Brain Mapping Laboratory and Assistant Professor in the J. Crayton Pruitt Family Department of Biomedical Engineering at UF.

Dr. Gunduz examines precursors to behavior and aftereffects of stimulation in neural networks through electrophysiology and bioimaging. Her lab translates this knowledge into clinical diagnostic and therapeutic systems to improve quality of life for sufferers of neurologic disorders. Gunduz works with many clinical populations, among them neurosurgical patients with epilepsy and movement disorders, such as Parkinson's disease, as well as stroke patients undergoing neurorehabilitation. Her work, with neurosurgeon Dr. Kelly Foote and neurologist Dr. Michael Okun, on Deep Brain Stimulation (DBS) for the treatment of Tourette's syndrome was featured on CNN's Vital Signs with Dr. Sanjay Gupta.

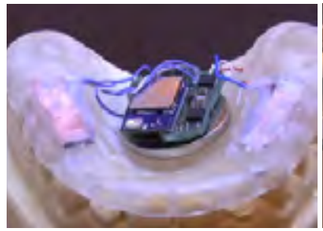
Along with faculty in ECE, Gunduz is currently working on a DARPA-sponsored HAPTIX (Hand Proprioception & Touch Interfaces) project developing portable hardware that enables restoration of failed motor and sensor-system communication, which will be used in prosthetic limbs that feel and function like natural limbs.

Gunduz is the recipient of NIH's Clinical and Translational Science Institute KL2 Scholar award and recipient of the International Academy of Medical and Biological Engineering Early Career Award. Gunduz holds affiliations with the UF Center for Movement Disorders and Neurorestoration and the Malcolm Randall VA Medical Center Brain Rehabilitation Research Center (BRRC).

ECE FLORIDA

Innovative Inventions

Biomedical Electronics/Wearable Technology



SMART GUARD

Good news for those facing the nightly grind
Published: June 25 2015
A team of University of Florida students representing the United States took a second-place prize in an international technology competition for its development of a smart mouth guard that dentists can use to diagnose and treat teeth grinding.

The team was led by Yong-Kyu "YK" Yoon, an associate professor of electrical and computer engineering, and Fong Wong, an associate professor in UF's Restorative Dental Sciences Department and Craniofacial Center. They garnered the recognition at the International Contest of Applications in Nano/Micro Technologies in Anchorage, Alaska. The group was one of 19 fi alist teams from 12 countries. More than 15,000 students from countries including China, Germany, Japan, Switzerland and New Zealand vied throughout the year for a berth in the fi als.

The smart mouth guard is equipped with sensors that allow it to detect if you're grinding your teeth, tell your dentist and even help you stop doing it. The prototype the team created does all of that and can send the information via Bluetooth to a computer or smart phone, where a dentist or orthodontist can retrieve it, make a diagnosis and suggest treatment.

An estimated 20 percent of the U.S. population – about 60 million people – suffer from teeth grinding, also known as bruxism, and most aren't even aware they do it.


Mike Robinson (Orange Bowl winner) with Dr. Y.K. Yoon, discussing smart-guard technology for detection of dehydration and concussion.

The next iteration, currently under development, could be aimed at athletes. Using different types of sensors, Yoon said, it could detect dehydration or dangerous core body temperature and alert a coach to pull a player off he field. That same information could be useful in protecting fi efighters.

"We identified a niche market that's in a very important area," said Yoon, who also is director of the Multidisciplinary Nano and Microsystems Lab at UF.

The UF team took one of four second-place spots. The contest also awarded two first-places prizes, six third-places and four special (honorable) mentions.

Also serving as a team adviser with Yoon and Wong was electrical and computer engineering professor Huikai Xie. Student members of the UF team were Justin Correll and Tim Ajmani, electrical and computer engineering undergraduates; Troy Templin, a biomedical engineering undergraduate; and Sheng-Po Fang, a graduate student in electrical and computer engineering.
Credits
Writer: Steve Orlando, sfo@ufl.edu
Source: Yong-Kyu "YK" Yoon, ykyoon@ece.ufl. du, 352-392-5985

Academic Year 2014-2015

FACULTY AWARDS

UNIVERSITY

Teacher/Scholar of the year: **JOSE PRINCIPE**

Doctoral Dissertation Advisor/Mentoring Award: **JANISE MCNAIR**

Academy of Distinguished Teaching Scholars: **HANIPH LATCHMAN**

COLLEGE

Teacher/Scholar of the year: **JOSE PRINCIPE**

College Faculty Mentoring Award: **MARTIN A. UMAN**

Undergraduate Teacher of the year: **GREG STITT**

Doctoral Dissertation Advisor/Mentoring Award: **JANISE MCNAIR & JING GUO**

Junior Faculty International Educator of the Year: **ROBERT MOORE**

The annual ECE Excellence Awards signify dedication and commitment to teaching, research or service in the past year.

2015 ECE Excellence Awards

RESEARCH: MARTIN A. UMAN
TEACHING: GREG STITT
SERVICE: ERIC SCHWARTZ

NEW FACULTY

POWERING THE NEW ENGINEER

Reliable, efficient, and cost effective power systems are required for everything from micro-Watt implanted biomedical devices to large MegaWatt data centers. Without exaggeration, sustainable energy and power systems are fundamental for the future of the planet. With the preeminence funding from the state of Florida, ECE was able to hire two excellent faculty who will lead our power program:

Shuo Wang (PhD 2005) is an expert in power electronics, electrical power, electric vehicles, and integration of renewable energy sources with smart grid. He has received over $1.6M in research funding including as NSF CAREER Award. He has published over 110 journal and conference papers with three IEEE paper awards. He holds 7 U.S. patents and he is an Associate Editor for the IEEE Transactions on Industry Applications.

Arturo Bretas (PhD 2001) is an expert in power and distribution systems protection, reliability optimization and restoration, renewable generation and distribution systems operation, power systems dynamics and control, and applications to the smart grid. He received over $20M in research funding while at Federal Unversity of Rio Grande do Sul in Brazil. He has published over 175 journal and conference papers.

These hires will not only help us build up the power area within ECE, but collaborations will enhance every other research area of ECE including the smart grid, green computing, power system security, and power efficient electronics and devices. Furthermore, UF has existing strengths in solar energy systems, novel energy conversion cycles, and energy systems control and optimization. With these hires and other preeminent hires within the college, we hope to combine these existing strengths into integrated, multidisciplinary systems-level research, achieving true national prominence for UF in sustainable energy systems.

ALUMNI

NETWORKING FOR THE GATOR GOOD

Gator Handley(left) with Dr. Harris in Gainesville. He serves as the Chairman of the ECE External Advisory Board. All ECE alumni are invited to share how the University of Florida has impacted your life accomplishments.

Ryan Tseng graduated from UF in 2006(BSEE). Photo right: He received the UF Outstanding Young Alumni Award in 2015 and is pictured here with Dr. Harris and Sarah Johnson, ECE Development Director. Ryan cofounded Warehouse Innovations where he designed and commercialized a highly rated health and wellness product called the Kitchen Safe, which was featured on Shark Tank.

Email harris@ece.ufl.edu to visit ECE Florida in Gainesville.

Dr. Shea with Jim Proctor, Jr.(BSEE 1991), Jim Proctor Sr. (BSEE 1964) and James Proctor (projected BSEE 2020). The Proctor family supports ECE Florida with generous contributions used in communication hardware

We pride ourselves on networking with Alumni for the future and stability of our department and the ability to offer students cutting experiences in learning technology with world class professors.

Alumni have a unique and strong connection to the place where they made some of their first footsteps into gaining knowledge essential for success in industry. We regard our alumni with great respect for taking time to visit with us, share and network with current faculty and students.

STUDENT

BEST

News & Awards

COMPUTER "E" AWARD

ELECTRIC "E" AWARD

Students who recieve a 3.9 or higher GPA are eligible for the Electric "E" and Computer "E" awards. Pictured above in left photo: (left to right) Austin Bruch, Forrest Voight, Dr. Herman Lam, Kyle, Kryazis, Nicholas Evans and Daniel Rincon. Pictured above on right: Riley Duff , Mihalo Zivkovic, Dr. Harris, Forrest Voight, Keettana Settaluri, Troy Bryant. Not in photo-Nicholas Cox, Eric Schwartz.

The UF Team above won the NSF I-Corps Top Team Award among the 2015 Winter Cohort in San Francisco. The UF team consists of Kaikai Liu(center) as the Entrepreneurial Lead, (left to right) Erik Sander as the Mentor, and Andy Li as the Principal Investigator.

Trent Fields (left), ECE Florida student, was awarded the Thomas O. Hunter Leadership Scholarship and was recognized at the 2015 Gator Engineering Leadership & Diversity Summit.

NEW STAFF

ROSE FARLEY

Rose Farley recently joined the College of Engineering ECE Payroll Department as an Office Assistant. She begin working at the University of Florida over 15 years ago. She started out as a Fiscal Assistant with the Department of Molecular Genetics and Microbiology. Since that time she has worked in other departments at the University of Florida processing Purchasing, Travel and Payroll. She has a broad knowledge of the University of Florida's policies and procedures. She is very happy to be a part of the Electrical and Computer Engineering Family. Rose loves spending time with her husband and her kids. She has 3 kids total. Her oldest son is 21 and her daughter is 14. She also has a 9 month old son that she is very proud of and enjoys telling others about him.

NICOLE BARBIER

I joined the department in May 2015 as a Grants Assistant. I am a Florida native, born and raised in Ft. Lauderdale. I have a B.A. in English, a specialization in British Literature, and taught secondary English in South Florida until deciding to go back to school for a Masters degree. I later graduated from UF with a M.Ed. in Educational Leadership. While completing my Masters degree, I fell in love with not only UF and Gainesville but my future husband, making me a permanent resident. I have a background in HR, specifically compliance and international relocations, and Finance, AR, AP and general accounting. I am an avid reader, my favorite book is Pride and Prejudice, and enjoy home renovation projects.

CHERRIE HUGHES

Cherrie Hughes is a native Washingtonian but proud to now be a part of the Gator Nation! As project manager for a translational and economic development program, Maryland Industrial Partnerships (MIPS) at the Maryland Technology Enterprise Institute (MTECH) in the A. James Clark School of Engineering at the University of Maryland she mentored startup companies, managed technical projects, tracked and created financial and administrative operations for the Program. Prior to this she served as Associate Director of the Supply Chain Management Center for six years in the Robert H. Smith School of Business at the University of Maryland. She joined the MIST Center in November 2014. She enjoys learning about craft beers with her husband, singing and traveling with the internationally acclaimed St. Augustine Gospel Choir (Washington, DC) and managing the academic and social careers of her two kids Rory 7 and Harper 3.

LIMOR HERB

Limor Herb joined our department in March 2015 as a Fiscal Assistant. She is a marketing professional with 20 years of experience in the field of program development and administration. She has been a Mosaic art instructor here in Gainesville since 2005. As the Gainesville Fine Arts Association volunteer Social Media Director she is dedicated to revitalizing the downtown arts district. You could fi d her art work here in Gainesville's Smokey Bear Park, and her current project "TREE OF LIFE" will be featured in the downtown area. She is a trilingual mom whose hobbies are creating and directing art festival and surfi g.

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