UC RIVERSIDE
UNIVERSITY OF CALIFORNIA

Marlan and Rosemary Bourns
College of Engineering

Department of Bioengineering

2017 Chair Report

A Message from the Chair

Xiaoping Hu
Chair, UCR Bioengineering
Provost Fellow

This past year has marked an incredible time of transformation and achievement for the Department of Bioengineering at UC Riverside. We are proud that our program has grown not only in size but in research grants, partnerships, collaborations, and diversity, to name a few.

Our research efforts have ramped up significantly and with the addition of our five new faculty, I am excited about how our capacities among the department's five core research areas will continue to grow. In addition, the opening of the UCR Center for Advanced Neuroimaging – for which I serve as the founding director – strengthens our already solid interdisciplinary collaborations with our partners across campus and in industry within the fields of medicine, psychology, and neuroscience.

What's more, our students have done exceptionally well this year. Our graduate students are being awarded with competitive fellowships and recognized by professional societies with presentation awards. Meanwhile, we have a record number of undergraduate students performing critical research in our labs and winning awards for their senior design projects. We joined 117 alumni to our ranks this year, all of whom are already shaping the future of bioengineering both in academia and industry.

More good news – technological advancements in the bioengineering and biomedical fields have resulted in an ongoing positive outlook for the industry, creating continued demand for scholarly research and our students in the workplace. It's an exciting time to be in bioengineering and we look forward to another great year for our program.

BIEN by the Numbers

2019 UCR's new Multidisciplinary Research Building 1 (MRB1) building opens

9 Affiliated Centers

11 Fellows of Professional Societies

75% Of research teams moving in to MRB1 include Bioengineering faculty members

5 **Degrees Offered**
B.S, B.S./M.S., M.S., M.S. Online, Ph.D.

38% Of graduate students are women

5 Research Areas

68% Increase in research expenditures 15/16 to 16/17

358 Undergraduates (38 are transfer students)

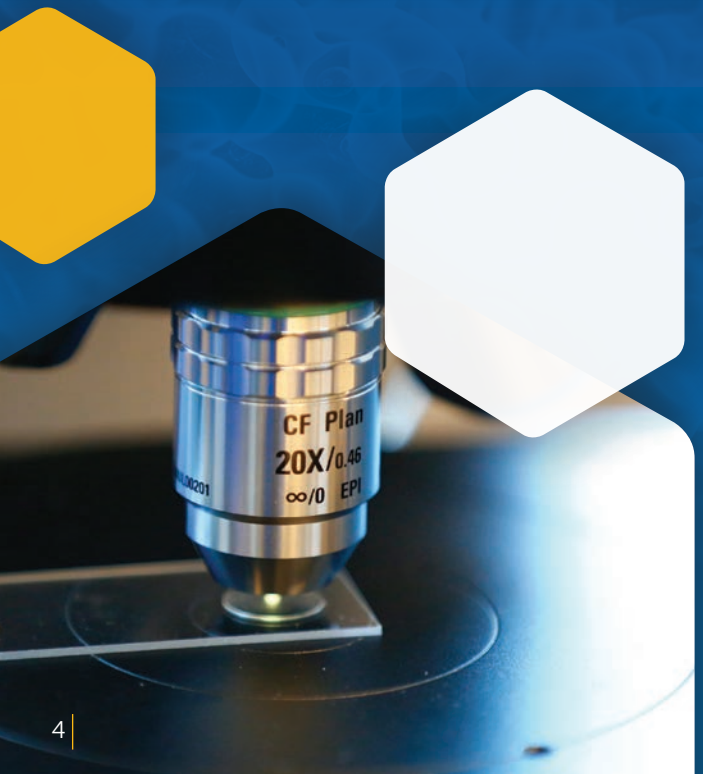
FACULTY
50+ Bioengineering Interdepartmental Graduate (BIG) Program faculty
16 Core Faculty
5 cooperating faculty

4 COLLEGES BIG Participating faculty represent

68 Graduate students

16 Core Faculty

Bahman Anvari
Justin Chartron
Kevin Freedman
Kaustabh Ghosh
William Grover
Jia Guo
Xiaoping Hu
Jiayu Liao
Huinan Liu
Joshua Morgan
Dimitrios Morikis
Jin Nam
B. Hyle Park
Megan Peters
Victor G.J. Rodgers
Valentine Vullev



Full Faculty Listing

Marlan and Rosemary Bourns College of Engineering

Computer Science and Engineering

Bir Bhanu, Video bioinformatics, computational biology, computational neuroscience, big data to knowledge

Tao Jiang, Bioinformatics, design and analysis of algorithms, computational molecular biology

Stefano Lonardi, Computational molecular biology, data compression, data mining, information hiding

Chemical and Environmental Engineering

Xin Ge, Therapeutic antibody engineering

Nosang Myung, Nano-devices

Ian Wheeldon, Protein engineering, synthetic biology

Ashok Mulchandani, Biosensors and biodetoxification

Sharon Walker, Biofilms, bioremediation

Jianzhong Wu, Biothermodynamics and enzymatic process

Charles Wyman, Biological conversion of abundant, non-food sources

Electrical and Computer Engineering

Bir Bhanu, Bio-Imaging, multi-modal imaging, MRI, video bioinformatics, traumatic brain injury

Elaine Haberer, Bio-templated materials for electronics

Mihri Ozkan, Integrating quantum dots with cells

Mechanical Engineering

Guillermo Aguilar, Medical lasers

Cengiz S. Ozkan, Self-assembly of structures and nanofabrication

Thomas F. Stahovich, Computational design tools

Kambiz Vafai, Microcantilever arrays for bioanalysis

Elisa Franco, Biological feedback systems

Masaru P. Rao, Novel micro/nanofabrication methods for biomedical devices

Hideaki Tsutsui, Biomedical microdevices, stem cell engineering

College of Natural and Agricultural Sciences

Botany and Plant Sciences

Sean Cutler, Chemical genomics, analysis and exploitation of natural variation using small molecules

Thomas Girke, Comparative genomics, data mining, cellular network analysis

Eugene Nothnagel, Control of biosynthesis in the golgi apparatus

Molecular, Cell and Systems Biology

Hongdian Yang, Well-controlled perceptual behavior, in vivo electrophysiology and calcium imaging, computational modeling

Sarjeet Gill, Molecular mechanisms of toxic action and xenobiotic metabolism

Manuela Martins-Green, Wound healing and tumor development

Prue Talbot, Effects of cigarette smoke on cellular processes in stem cells

Nicole I. zur Nieden, Bone development to deduce novel therapeutic targets

Chemistry

Christopher J. Bardeen, Transport processes occur in complex systems

Quan Cheng, Biosensing and imaging arrays

Michael Marsella, Synthesis of both small molecules and macromolecules

Michael Pirrung, Chemical biology, synthesis, and nucleic acids

David Bocian, Energy-transducing systems, molecular photonic devices

Cynthia K. Larive, Ligand-protein interactions, tissue-targeted metabonomics

Thomas H. Morton, Mechanisms of receptor-ligand interactions

Entomology

Michael E. Adams, Signaling in the nervous system

Richard Cardullo, Biochemical and biophysical methodologies determining molecules involved in fertilization

Mathematics

Mark Alber, Mathematical and computational biology

Physics & Astronomy

Umar Mohideen, Signal transmission in the human brain

Harry W.K. Tom, Nonlinear optics, surface science

School of Medicine

Biomedical Sciences

Devin K. Binder, Neurosurgery

Nicholas DiPatrizio, Lipid messengers

Iryna Ethell, Molecular mechanisms of synapse development and plasticity

Byron Ford, Pathophysiology of stroke and acute brain injuries

Martin I. Garcia-Castro, Neural crest cells

David Lo, Mucosal vaccines

David Johnson, Enzyme mechanism analysis

Maurizio Pellecchia, Cancer research

Seema Tiwari-Woodruff, Mechanisms of neurodegeneration and neuroprotection

College of Humanities, Arts, and Social Sciences

Psychology

G. John Andersen, Computational models of high level visual processing

Khaleel A. Razak, Development of sensory processing

Aaron Seitz, Brain adaptations to environmental changes

Meet Our New Faculty

Justin Chartron

Ph.D.: Biochemistry and Molecular Biophysics, California Institute of Technology
Postdoctoral Training: Stanford University
Research Focus: Quantitative systems biology, biophysics of protein maturation, molecular and cellular engineering, biotechnology, and biopharmaceutical production

Joshua Morgan

Ph.D.: Mechanical and Aeronautical Engineering, University of California, Davis
Postdoctoral Training: University of California, Davis, University of Delaware
Research Focus: Aging-associated disease, tissue engineering, and cell and tissue mechanotransduction

Kevin Freedman

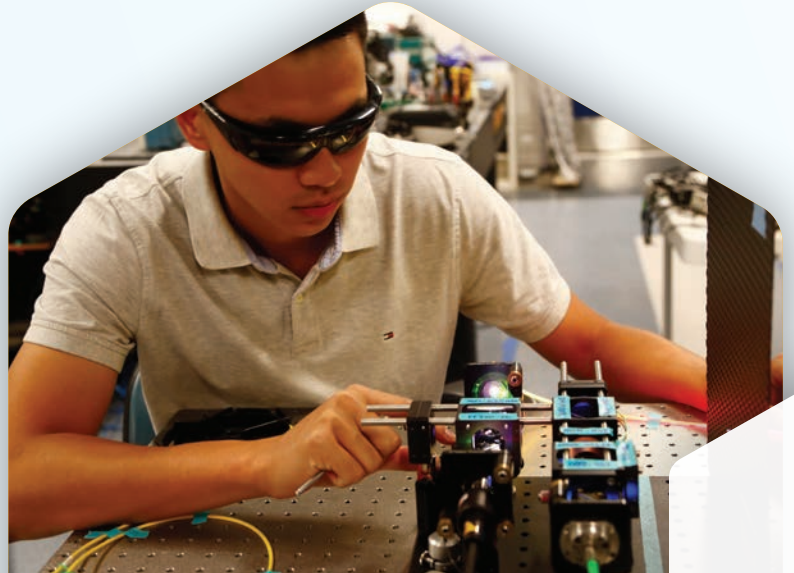
Ph.D.: Chemical and Biological Engineering, Drexel University
Postdoctoral Training: Imperial College London, Joint Genome Institute
Research Focus: Single molecule methods, nano-sensors and molecular manipulation, biophysics, device characterization and device physics, microfluidics, molecular kinetics, and electrical and optical recordings

Megan Peters

Ph.D.: Computational Cognitive Neuroscience, University of California, Los Angeles
Postdoctoral Training: University of California, Los Angeles
Research Focus: Neuroimaging, computational modeling, machine learning, perception and awareness, and neural representations of uncertainty

Jia Guo

Ph.D.: Biongineering, University of California, San Diego
Postdoctoral Training: University of California, San Diego, Stanford University
Research Focus: Method development of arterial spin labeling, fast simultaneous ASL/ BOLD acquisition, noninvasive oxygenation measurement, new MRI contrast mechanism, MRI sequence development, and image processing and analysis



Faculty Accomplishments

Service

Professor Bahman Anvari
- Appointed Chair of the Early Mentorship Committee of ASLMS
- Serves as Chair of the "Optical Imaging and Nano-Technology" Session at the Annual Meeting of the Biomedical Engineering Society in Phoenix, Oct. '17
- Serves on NIH Review Study Section "Medical Imaging" to review Small Business Grants
- Serves on Expert Review Committee reviewing proposals submitted to the Canada Foundation for Innovation, Jan. '17

Professor Dimitrios Morikis
- Appointed Editor-in-Chief of BMC Biophysics, part of the Springer Nature Publishing Group
- Named Guest Associate Editor of Frontiers in Physics – Biomedical Physics, for Special Issue Research Topic in ImmunoPhysics and ImmunoEngineering

Associate Professor Jiayu Liao
- Appointed Distinguished Adjunct Professor of Huaxi Hospital, China, which is associated with RMB $5 million in funding

Assistant Professor Kaustabh Ghosh
- Serves on Editorial Board of Scientific Reports, a multidisciplinary research journal from the Nature Publication Group

Recognition

Professor Dimitrios Morikis
- Recognized by UCR's Research and Economic Development Office and the Entrepreneurial Proof of Concept and Innovation Center (EPIC) for their issued patent on novel compstatin analogs for the treatment of inflammatory and autoimmune diseases

Assistant Professor Kaustabh Ghosh
- Named a "Featured Scientist" by the BrightFocus Foundation
- Received 2017-18 UC Regents Faculty Development Award

Assistant Professor William Grover
- Received 2017 Distinguished Teaching Award from the UCR Bourns College of Engineering

Speaking Engagements

Professor Bahman Anvari
- 9th International Conference on Advanced Nano Materials - University of Aveiro, Portugal, *Erythrocytes-Derived Optical Nanoparticles as Theranostic Agents,* July '17
- Ryerson University - Toronto, Canada, *Light-based Theranostics Using Optical Particles Derived from Erythrocytes,* Dec '17

Professor Dimitrios Morikis
- 7th Annual Southern California Systems Biology Conference - University of California, Irvine, *Mathematical Modeling of Complement System Dynamics,* Jan. '17
- Christodoulos A. Floudas Memorial Symposium - Princeton University, *Celebration of the Life of Professor Chris Floudas, a Pioneer Researcher and Educator: Reflections from 19 Years of Collaborative Research*, May '17
- AIChE Annual Meeting – Minneapolis, MN, *A Computational ODE Model for the Evaluation of Complement System Activation, Function, and Regulation in Homeostasis and Disease, Multiscale Systems Engineering II - In Honor of Professor Christodoulos A. Floudas,* Oct. '17
- 12th Annual Peptide Therapeutics Symposium - Salk Institute for Biological Studies, La Jolla, CA, *Design of Complement-based Therapeutics and Testing in Computational Disease Models,* Oct. '17

Assistant Professor Kaustabh Ghosh
- Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting, *Vascular stiffening and EC dysfunction in AMD and diabetic retinopathy,* May '17
- Evening of BrightFocus, June '17

Assistant Professor Megan Peters
- Hong Kong Cognitive Science Meeting - Lingnan University, Hong Kong, *Neuroscientific approaches to understanding uncertainty in perception and awareness,* Dec. '17

Research Funding and Corporate Collaborations

FIVE-YEAR
$1.9M GRANT (RO1)

Award by: National Eye Institute of the National Institutes of Health
Award to: Assistant Professor Kaustabh Ghosh with collaborators at Case Western Reserve University
Outcome: To understand the role of retinal capillary stiffness in diabetic retinopathy

FOUR-YEAR
$1.5M GRANT (RO1)

Award by: National Eye Institute of the National Institutes of Health
Award to: Professor Dimitrios Morikis in collaboration with fellow Bioengineering faculty members Dr. Kaustabh Ghosh, Dr. Valentine Vullev, and Dr. Hyle Park
Project title: Discovery of biomarkers for age-related macular degeneration

$270,000 PHASE I SMALL BUSINESS INNOVATION RESEARCH (SBIR) GRANT

Award by: National Institutes of Health
Award to: Professor Bahman Anvari with collaborators at Radoptics LLC and colleagues at City of Hope
Project title: Erythrocyte-derived optical nano-probes for image-guided identification of tumor margins and cancer resection

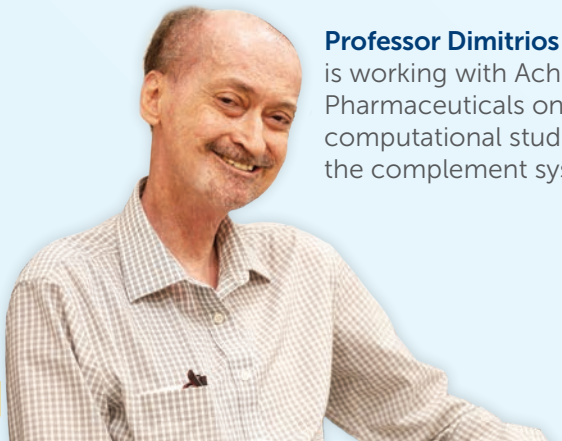
ONE-YEAR
460,000 MOLECULAR DYNAMICS UNITS

Award to: PI UCR Professor Dimitrios Morikis, Pittsburgh Supercomputing Center (PSC), Carnegie Mellon University
Project Title: Large-scale, Functional Conformational Transitions in Complement C3

$800,000

Award by: Santen, Inc.
Award to: Associate Professor B. Hyle Park with colleagues Amir Kashani and Mark Jumayun of the University of Southern California
Project Title: Hyperspectral imaging of the retina

Research Collaborations



Professor Dimitrios Morikis is working with Achillion Pharmaceuticals on computational studies of the complement system

Associate Professor Jiayu Liao is working with Biomiga and Allele Biotechnology

Assistant Professor Kevin Freedman is working with NASA's Center for Astrobiology in Madrid, Spain

Introducing...
UCR Center for Advanced Neuroimaging

As UCR's newest center, CAN facilitates cutting-edge neuroscience and neuroengineering research that uncovers the secrets of brain disorders, including those affecting the mature population. Department of Bioengineering Chair Xiaoping Hu serves as the center's inaugural director.

The center houses a 13-ton "3 Tesla Siemens Prisma" Magnetic Resonance Imaging (MRI) machine – a high-end, research grade system that is the first of its kind in the region. CAN's MRI is capable of acquiring and analyzing numerous images of the brain to understand precisely how the brain works, how the brain is wired, how we see, why we can smell, and how the brain functions differently when an individual is dealing with mental illness.

Other Affiliated Centers

- Center for Glial-Neuronal Interactions
- Center for Molecular and Translational Medicine
- Center for Nanoscale Science and Engineering (CNSE)
- Center for Research in Intelligent Systems (CRIS)
- High-Performance Computing Center (HPCC)
- Institute for Integrative Genome Biology (IIGB)
- Interdisciplinary Center for Quantitative Modeling in Biology
- UCR Stem Cell Center

Advancing Mapping Technology... One Heartbeat at a Time

Since earning his Ph.D. in Bioengineering at UC Riverside in 2014, Michael C. Oliveira has worked at Acutus Medical, Inc., a global heart rhythm technology company transforming the way electrophysiologists diagnose and treat cardiac arrhythmias. This past year, the former NSF IGERT Fellow was promoted to senior biomedical systems engineer.

Recently, he worked as part of a team on the development of the AcQMap High Resolution Imaging and Mapping System, which received U.S. Food and Drug Administration clearance in October 2017. The system detects and displays both standard voltage-based and higher resolution dipole density (charge-source) maps. It uniquely combines ultrasound anatomy construction with an ability to map the electrical-conduction of each heartbeat to identify complex arrhythmias across the entire atrial chamber. Following each ablation treatment, the heart can be re-mapped in seconds to continually visualize changes from the prior mapping.

Where Are They Now?

From industry to university, our Bioengineering alumni are making a difference around the world.

2017 Bioengineering Alumni

This year, we welcomed 117 new Bioengineering alumni to our ranks:

80 Undergraduate **20** Master's **17** Ph.D.

Movers and Shakers

New positions for alumni

Devin McBride, Ph.D. Bioengineering, 2013
Assistant Professor, University of Texas Medical Health Science Center in the McGovern Medical School in the Department of Neurosurgery

Zied Gaieb, Ph.D. Bioengineering, 2016
Postdoctoral Fellow, Center for Research in Biological Systems, University of California, San Diego

Alex Cheung, B.S. Bioengineering, 2009
Received Ph.D. in Engineering and Applied Science, Harvard University, 2017
Currently at Unum Therapeutics, Cambridge, MA

Harry Scott, Ph.D. Bioengineering, 2016
Scientist, Krestel BioSciences

Bioengineering Interdepartmental Graduate (BIG) Program

The BIG program combines internationally acclaimed bioengineers with more than 50 additional faculty members from four colleges across campus to offer graduate students an immersive, interdisciplinary experience unique to UC Riverside.

Becoming a BIG student provides access to benefits including:

- Competitive financial support packages including fellowships
- Experienced faculty with dedicated leadership training
- Exposure to industry leaders through distinguished speaker series
- Collaborative, cutting-edge medical research with UCR's School of Medicine, partner universities, and research institutes
- A rigorous but exceptionally interactive and welcoming educational training environment

Graduate Student Breakdown (2017)

Men	**42**	M.S.	**18**
Women	**26**	Ph.D.	**50**
TOTAL	**68**	TOTAL	**68**

Awards and Acknowledgements

- Reed Harrison received the Bioengineering Best Teaching Assistant Award by UCR's Graduate Division
- Joshua Burns selected as the Early Career Scientist Board Representative (2017-2019) of the American Society for Laser Medicine and Surgery (ASLMS)
- Zhehao Xiong awarded Podium Presentation Award at the 18th UC Systemwide Bioengineering Symposium
- Dieanira Erudaitius awarded Rapid Fire Presentation Award at the 18th UC Systemwide Bioengineering Symposium
- Joshua Burns received a $1,800 grant from The International Society for Optics and Photonics (SPIE) to attend and present at Photonics West in San Francisco

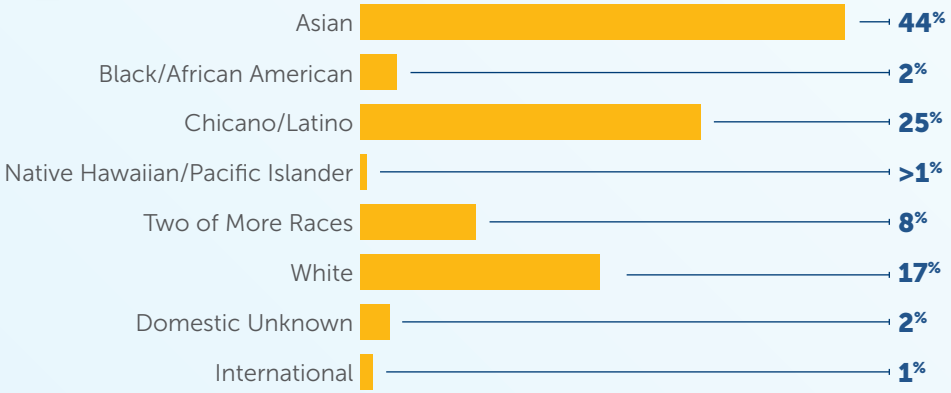
Fellowships, Internships and Collaborations

- Reed Harrison – University of California President's Dissertation Year Fellowship for the 2017/2018 academic year
- Andrea Cabrera – Graduate Research Mentoring Program (GRMP) Fellowship from UCR's Graduate Division for the 2017-2018 academic year
- Heran Bhakta – summer internship at Illumuna in San Diego, CA
- Rohith Mohan – summer internship at Biogen in Boston, MA
- Vipul Madahar – six month internship at the Chinese National Compound Library/National Drug Screening Center of China
- George Way – six month internship at the Chinese National Compound Library/National Drug Screening Center of China
- Patrick Gregory – working at a collaborator's lab at Stanford University on a NIH-funded project as part of NEI's Audacious Goals Initiative
- Jason Qiu and Jorge Sanchez – working with collaborators at University of Southern California's Keck Medical Center

Bioengineering Undergraduate Program

The Bioengineering undergraduate program provides students with a broad but rigorous education that prepares them for rapid develop into leadership roles in the biotechnology/biomedical device industry as well as enter into medical schools or advanced degree programs. Complementing the classroom experience, students have the opportunity to work directly with talented and innovative faculty members in the lab and work collaboratively with graduate students on high-profile research projects, giving them an experience unlike any other bioengineering program.

Ethnicity



Enrollment

Freshmen → **320**

Transfer → **38**

Gender

Female → **161**

Male → **197**

Congrats Team Mantis!

Senior design team wins first at the 18th Annual UC Systemwide Bioengineering Symposium

For their senior design project, five bioengineering senior students (Zach Carrier, Vamsi Choday, Jaclyn Hirbawi, Kyle LaRue, and Raymond Wan) set out to create a healthier and safer driving environment. Their development, the Mantis System, is an innovative steering wheel and dashboard. Using a combination of 13 sensors, a web-cam, notification L EDs, vibration monitors, two Arduino microcontrollers, and two Raspberry Pi computers, the system detects the events of distracted, drowsy, and aggressive driving and alerts the driver by various visual, tactical, and auditory feedback mechanisms. Team Mantis presented their project at the 18th Annual UC Systemwide Bioengineering Symposium and won first place among all UC bioengineering and biomedical senior design projects. Way to go Team Mantis!

Thank You
Board of Advisors

John Watson
Advisory Board Chair

Matt Chludzinski

Ruben Flores-Saaib

Bruce Tromberg

Warren Grundfest

William R. Pratt

Walt Baxter

Ben VerSteeg

Amit Gandjbakhche

Andrew Carmen

Top Row (L-R): Victor Rodgers, Jiayu Liao, Valentine Vullev, Xiaoping Hu, Dimitrios Morikis, B. Hyle Park, Bahman Anvari, Huinan Liu, William Grover, and Jin Nam

Bottom Row (L-R): Warren Grundfest, Andrew Carmen, William R. Pratt, Dr. John Watson, Ben VerSteeg, and Walt Baxter

Publications

Bahman Anvari

- Guerrero Y, Singh SP, Mai T, Murali RK, Tanikella L, Zahedi A, Kundra V, Anvari B (2017) Optical characteristics and tumor imaging capabilities of near infrared dyes in free and nano-encapsulated formulations comprised of viral capsids, *ACS Appl. Mater. Interfaces*, 9: 19601-19611.
- Burns JM, Saager R, Majaron B, Jia W, Anvari B (2017) Optical properties of biomimetic probes engineered from erythrocytes, *Nanotechnology*, 28: 035101.

Kevin Freedman

- Freedman KJ, Goyal G, Ahn CW, Kim MJ (2017) Substrate Dependent Ad-Atom Migration on Graphene and the Impact on Electron-Beam Sculpting Functional Nanopores, *Sensors* 17 (5), 1091.

William Grover

- Wang J, Rodgers VGJ, Brisk P, Grover WH (2017) Instantaneous simulation of fluids and particles in complex microfluidic devices. *PLoS ONE* 12(12): e0189429.
- Mesbah Oskui S, Bhakta HC, Diamante G, Liu H, Schlenk D, Grover WH (2017) Measuring the mass, volume, and density of microgram-sized objects in fluid, *PLoS ONE*, 12(4): e0174068.
- Norouzi N, Bhakta HC, Grover WH (2017) Sorting cells by their density, *PLoS ONE*, 12(7): e0180520.
- Wang J, Rodgers VGJ, Brisk P, and Grover WH (2017) MOPSA: A microfluidics-optimized particle simulation algorithm, *Biomicrofluidics*, 11, 034121.

Xiaoping Hu

- He N, Huang P, Ling W, Langley J, Liu C, Ding B, Huang J, Xu H, Zhang Y, Zhang Z, Hu X, Chen S, and Yan F (2017) Dentate nucleus iron deposition is a potential biomarker for tremor-dominant Parkinson's disease, *NMR Biomed 30*: e3554.
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- Zhang J, Ji B, Hu J, Li L, Li Z, Wang J and Hu X (2017) Differential impairment of thalamocortical structural connectivity in amyotrophic lateral sclerosis, *CNS Neuroscience & Therapeutics*, 232: 155-161.
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- Huddleston DE, Langley J, Sedlacik J, Boelmans K, Factor SA, and Hu X (2017) In vivo detection of lateral–ventral tier nigral degeneration in Parkinson's disease, *Human Brain Mapp* 38(5): 2627-2634.
- Zhang T, Razavi MJ, Chen Hu, Li Y, Li X, Li L, Guo L, Hu X, Liu T, and Wang X (2017) Mechanisms of gyral convolution in circumferential direction of primate, *J Comput Neurosci*, 42(3): 217-229.
- Zhang X, Zhou Z, Chen SY, Chen S, Li R and Hu X (2017) MR fingerprinting reconstruction with Kalman filter, *Magn Reson Imag*, 19; 41: 53-62.
- Deshpande G, Rangaprakash D, Oeding L, Cichocki A, and Hu X (2017) A new generation of brain-computer interfaces driven by discovery of latent EEG-fMRI linkages using tensor decomposition, *Frontiers in Neurosci*, 11, 246.
- Li Z, Prudent CN, Hess EJ, Stilla R, Sathian K, Jinnah HA and Hu X (2017) Alterations of resting-state fMRI measurements in individuals with cervical dystonia, *Human Brain Mapp*, 38(8): 4098-4108.
- Jin CF, Jia H, Lanka P, Rangaprakash, Li L; Liu T, Hu X and Deshpande G (2017) Dynamic brain connectivity is a better predictor of PTSD than static connectivity, *Human Brain Mapp*, 38 (9): 4479–4496.
- He N, Langley J, Huddleston DE, Ling H, Xu H, Liu C, Yan F, and Hu X (2017) Improved neuroimaging atlas of the dentate nucleus, Cerebellum, 16: 951–95.
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- Razavi MJ, Zhang T, Chen H, Li Y, Platt S, Zhao Y, Guo L, Hu X, Wang X, Liu T (2017) Radial structure scaffolds convolution patterns of developing cerebral cortex, *Frontiers in Computational Neuroscience*, 11, 76.
- Ge F, Li X, Razavi MJ, Chen H, Zhang T, Guo L, Hu X, Wang X, and Liu T (2017) Denser growing fiber connections induce 3-hinge gyral folding, *Cerebral Cortex*.
- Syed M, Yang Z, Hu X, and Deshpande G (2017) Investigating brain connectomic alterations in autism using the reproducibility of independent components derived from resting state functional MRI data, *Frontiers in Neurosci*.

Jiayu Liao

- Liao JY, Ni Q, Zhao Y (2017) Catalyst-Enabled Scaffold Diversity: Highly Chemo-and Stereoselective Synthesis of Tricyclic Ketals and Triarylmethanes, *Organic*, letters 19 (15), 4074-4077.
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- Pirrung MC, Dorsey A, Howitt ND, Liao J (2017) β-Deuterium Isotope Effects on Firefly Luciferase Bioluminescence, *ChemistryOpen*, 6 (6), 697-700.

Huinan Liu

- Cipriano AF, Lin J, Lin A, Sallee A, Le B, Cortez Alcaraz MC, Guan RG, Botimer G, Inceoğlu S, Liu H (2017) Degradation of Bioresorbable Mg–4Zn–1Sr Intramedullary Pins and Associated Biological Responses in Vitro and in Vivo, *ACS Applied Materials and Interfaces*, Epub.
- Jiang W, Rutherford D, Liu H (2017) Nanomaterials for Treating Cardiovascular Diseases: A Review, *Bioactive Materials*.
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- Jiang W, Tian Q, Vuong T, Shashaty M, Gopez C, Sanders T, Liu H (2017) Comparison Study on Four Biodegradable Polymer Coatings for Controlling Magnesium Degradation and Human Endothelial Cell Adhesion and Spreading, *ACS Biomaterials Science and Engineering*, 3(6): 936-950.
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- Wang Y, Guan R, Hou D, Zhang Y, Jiang W, Liu H (2017) The Effects of Eutectic Silicon on Grain Refinement in

an Al–Si Alloy Processed by Accumulative Continuous Extrusion Forming, *Journal of Materials Science*, 52(2): 1137-1148.

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- Tian Q, Rivera-Castaneda L, Liu H (2017) Optimization of Nano-Hydroxyapatite/Poly(lactic-co-glycolic acid) Coatings on Magnesium Substrates using One-Step Electrophoretic Deposition, *Materials Letters*, 186: 12-16.

Dimitrios Morikis

- Gaieb Z, Morikis D (2017) Detection of side chain rearrangements mediating the motions of transmembrane helices in molecular dynamics simulations of G protein-coupled receptors, *Computational and Structural Biotechnology Journal*, 15:131-137.
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