



# FACULTY

R e s e a r c h   A r e a s



**VCU** School of Engineering



# VCU School of Engineering

**The Virginia Commonwealth University School of Engineering's growth strategy over the next five years includes unprecedented faculty recruitment and retention efforts. Why? So that our students get the very best instruction and the most meaningful real-world experience possible. It is with this dynamic future in mind that we applaud our talented and visionary faculty where they make it real for our students every day.**



## OFFICE OF THE DEAN

### Barbara D. Boyan, Ph.D.

Dean

Professor and Alice T. and William H. Goodwin, Jr.

Chair, in Biomedical Engineering

Email: [bboyan@vcu.edu](mailto:bboyan@vcu.edu)

Phone: (804) 828-0190

Website: [www.bsolab.egr.vcu.edu/](http://www.bsolab.egr.vcu.edu/)

*Research Topics:*

- Tissue engineering
- Response of cells to biomaterials
- Mechanisms of action of hormones and growth factors in chondrocytes and osteoblasts

### James E. Ames IV, Ph.D.

Director of Distance Learning Programs and CGEP Program

Email: [jeames@vcu.edu](mailto:jeames@vcu.edu)

Phone: (804) 827-7000 ext. 412

Website: [www.people.vcu.edu/~james/](http://www.people.vcu.edu/~james/)

*Research Topics:*

- Computer security
- Medical applications
- Database and networks

### Lewis Franklin Bost, MBA, IDSA

Executive Associate Dean

Professor and Director, Institute for Engineering and Medicine

Email: [lfbost@vcu.edu](mailto:lfbost@vcu.edu)

Phone: (804) 828-5871

Website: [www.egr.vcu.edu/about/faculty-staff-directory/l-franklin-bost-mba-idsa/](http://www.egr.vcu.edu/about/faculty-staff-directory/l-franklin-bost-mba-idsa/)

*Research Topics:*

- Device design and development processes
- Entrepreneurial business strategy and development
- U.S. FDA quality system regulations and ISO medical device standards

### Afroditi V. Filippas, Ph.D.

Associate Professor and Associate Dean for Undergraduate Studies

Email: [avfilippas@vcu.edu](mailto:avfilippas@vcu.edu)

Phone: (804) 827-4097

Website: [www.electrical-and-computer.egr.vcu.edu/faculty/filippas/faculty/filippas/](http://www.electrical-and-computer.egr.vcu.edu/faculty/filippas/faculty/filippas/)

*Research Topics:*

- Microwave and RF modeling and simulation
- Signal processing
- Medical devices

### Ram B. Gupta, Ph.D.

Professor and Associate Dean for Research

Email: [rbgupta@vcu.edu](mailto:rbgupta@vcu.edu)

Phone: (804) 828-1211

Website: [www.people.vcu.edu/~rbgupta/](http://www.people.vcu.edu/~rbgupta/)

*Research Topics:*

- Supercritical carbon dioxide technology
- Hydrogen fuel, renewable fuels, batteries, bioenergy and liquid fuels from biomass
- Nanoparticles and smart medicine

### Lorraine M. Parker, Ph.D.

Director of Diversity and Student Programs

Email: [lparker@vcu.edu](mailto:lparker@vcu.edu)

Phone: (804) 827-7000 ext. 406

Website: [www.people.vcu.edu/~lparker/](http://www.people.vcu.edu/~lparker/)

*Research Topics:*

- Database design
- Fuzzy database
- Missing Information in relational database

### Zvi Schwartz, Ph.D., D.M.D.

Professor and Associate Dean for Strategic Initiatives

Email: [zschwartz@vcu.edu](mailto:zschwartz@vcu.edu)

Phone: (804) 828-5824

Website: [www.biomedical.egr.vcu.edu/faculty/zvi-schwartz-ph-d/](http://www.biomedical.egr.vcu.edu/faculty/zvi-schwartz-ph-d/)

*Research Topics:*

- Regulation of bone and cartilage
- Implant and bone substitute mechanism of action and clinical use
- Steroid hormone

### John E. Speich, Ph.D.

Associate Professor, Associate Chair and Director of Cooperative Education Program

Email: [jespeich@vcu.edu](mailto:jespeich@vcu.edu)

Phone: (804) 827-7036

Website: [www.engineering.vcu.edu/fac/speich/website/](http://www.engineering.vcu.edu/fac/speich/website/)

*Research Topics:*

- Smooth muscle biomechanics
- Robotic devices for medical applications
- Bladder biomechanics and urodynamics

### Gregory E. Triplett, Ph.D.

Professor and Associate Dean for Graduate Studies

Email: [getriplett@vcu.edu](mailto:getriplett@vcu.edu)

Phone: TBD

Website: TBD

*Research Topics:*

- Optoelectronics/photonics
- Electronic materials
- Computational intelligence

### Bennett C. Ward, Ph.D.

Associate Professor and Director of Project Outreach

Email: [bcward@vcu.edu](mailto:bcward@vcu.edu)

Phone: (804) 828-6371

Website: [www.egr.vcu.edu/about/faculty-staff-directory/ward/](http://www.egr.vcu.edu/about/faculty-staff-directory/ward/)

*Research Topics:*

- Capstone Senior Design program
- Innovation, design and development processes
- High performance polymers and fibers



## BIOMEDICAL

### Henry J. Donahue, Ph.D.

Professor and School of Engineering Foundation Chair

Email: [hjdonahue@vcu.edu](mailto:hjdonahue@vcu.edu)

Phone: (804) 828-3140

Website: TBD

*Research Topics:*

- Regenerative medicine and tissue engineering
- Musculoskeletal mechanobiology
- Space biology and bioengineering

### Barbara D. Boyan, Ph.D.

Dean

Professor and Alice T. and William H. Goodwin, Jr. Chair, in Biomedical Engineering

Email: [bboyan@vcu.edu](mailto:bboyan@vcu.edu)

Phone: (804) 828-0190

Website: [www.bsolab.egr.vcu.edu/](http://www.bsolab.egr.vcu.edu/)

*Research Topics:*

- Tissue engineering
- Response of cells to biomaterials
- Mechanisms of action of hormones and growth factors in chondrocytes and osteoblasts

### Daniel E. Conway, Ph.D.

Assistant Professor

Email: [dconway@vcu.edu](mailto:dconway@vcu.edu)

Phone: (804) 828-2592

*Research Topics:*

- Mechanotransduction
- Live-cell imaging
- Cellular biomechanics

### Ding-Yu Fei, Ph.D.

Associate Professor

Email: [fei@vcu.edu](mailto:fei@vcu.edu)

Phone: (804) 828-2664

Website: [www.biomedical.egr.vcu.edu/faculty/fei/](http://www.biomedical.egr.vcu.edu/faculty/fei/)

*Research Topics:*

- Bioinstrumentation and telemedicine devices
- Technologies for detection and mitigation of drowsy driving
- Ultrasonic imaging techniques for studies of cardiovascular dynamics

### **Rebecca L. Heise, Ph.D.**

Assistant Professor

Email: rlheise@vcu.edu

Phone: (804) 828-3496

Website: www.biomedical.egr.vcu.edu/faculty/heise/

*Research Topics:*

- Lung injury
- Pulmonary regenerative medicine
- Mechanobiology

### **Sharon L. Hyzy**

Senior Research Associate, MS

Email: slhyzy@vcu.edu

Phone: (804) 828-8723

*Research Topics:*

- Bone morphogenic proteins
- Animal defect models
- Biomaterial-cell interactions

### **Russell D. Jamison, Ph.D.**

Professor and Alice T. and William H. Goodwin, Jr.  
Chair, Engineering Education

Email: rjamison@vcu.edu

Phone: (804) 828-0460

Website: www.biomedical.egr.vcu.edu/faculty/  
jamison/

*Research Topics:*

- Innovation and entrepreneurship
- Leadership of teams in ambiguity
- Design for highly-constrained environments

### **Christopher A. Lemmon, Ph.D.**

Assistant Professor

Email: clemmon@vcu.edu

Phone: (804) 827-0446

Website: www.people.vcu.edu/~clemmon

*Research Topics:*

- Mechanobiology in the extracellular matrix
- Biomechanics of fibrosis
- Cellular contractile force measurements

### **Martin L. Lenhardt, Ph.D.**

Professor

Email: lenhardt@vcu.edu

Phone: (804) 828-9687

Website: www.biomedical.egr.vcu.edu/faculty/lenhardt/

*Research Topics:*

- Non-invasive cerebral spinal fluid pressure device
- High noise speech communication system
- Baby echolocator: a device allows babies who are deaf to "see" acoustically, facilitating perceptual motor development

### **Gerald E. Miller, Ph.D.**

Professor and Director of Rehabilitation Engineering

Email: gemiller@vcu.edu

Phone: (804) 828-7263

Website: www.biomedical.egr.vcu.edu/faculty/g\_miller/

*Research Topics:*

- Artificial hearts design and evaluation
- Speech recognition for distorted speech and noisy environments
- Design of Assistive Technology

### **René Olivares-Navarrete, D.D.S., Ph.D.**

Assistant Professor

Email: ronavarrete@vcu.edu

Phone: (804) 828-8718

Website: www.biomedical.egr.vcu.edu/faculty/  
rene-olivares-navarrete-ph-d/

*Research Topics:*

- Surface modifications for dental and orthopedic implants
- WNT signaling
- Mesenchymal stem cell and biomaterials interaction

### **Dianne T.V. Pawluk, Ph.D.**

Associate Professor

Email: dtpawluk@vcu.edu

Phone: (804) 828-9491

Website: www.biomedical.egr.vcu.edu/faculty/  
pawluk/

www.wp.vcu.edu/dtpawluklab

*Research Topics:*

- Assistive technology for individual who are blind or visually impaired
- Hand prostheses
- Human haptic perception

### **Anathea Pepperl, Ph.D.**

Assistant Professor

Email: aapepperl@vcu.edu

Phone: (804) 827-3996

Website: www.biomedical.egr.vcu.edu/faculty/  
pepperl/

*Research Topics:*

- Human motion analysis
- Image segmentation in medical and microscopy applications
- Health informatics

### **Zvi Schwartz, Ph.D., D.M.D.**

Professor and Associate Dean for Strategic Initiatives

Email: zschwartz@vcu.edu

Phone: (804) 828-5824

Website: www.biomedical.egr.vcu.edu/faculty/  
zvi-schwartz-ph-d/

*Research Topics:*

- Regulation of bone and cartilage
- Implant and bone substitute mechanism of action and clinical use
- Steroid hormone

### **Jennifer S. Wayne, Ph.D.**

Professor of Biomedical Engineering and Orthopaedic  
Surgery; Associate Chair & Graduate Program

Director of Biomedical Engineering

Email: jwayne@vcu.edu

Phone: (804) 828-2595

Website: www.orl.egr.vcu.edu

*Research Topics:*

- Experimental and computational modeling of diarthrodial joint function
- Structural stability of fixation constructs
- Articular cartilage: normal function, reparative techniques

### **Paul A. Wetzel, Ph.D.**

Associate Professor

Email: pawetzel@vcu.edu

Phone: (804) 827-0487

Website: www.biomedical.egr.vcu.edu/faculty/  
wetzel/

*Research Topics:*

- Eye tracking systems and eye movement analysis
- Effects of neurological diseases on eye

movement control

- Visual task analysis

### **Ning Zhang, Ph.D.**

Associate Professor

Director, Laboratory for Stem Cell Biology and  
Engineering

Email: nzhang2@vcu.edu

Phone: (804) 828-5352

Website: www.biomedical.egr.vcu.edu/faculty/  
zhang\_ning/

*Research Topics:*

- Stem cell biology
- Central nervous system trauma and diseases
- Biomaterials for oral biofilm prevention



### **B. Frank Gupton, Ph.D.**

Professor and Chair

Email: bfgupton@vcu.edu

Phone: (804) 828-4799

Website: www.chemical.egr.vcu.edu/faculty/gupton/

*Research Topics:*

- Cross-coupling catalysis
- Flow chemistry/continuous chemical processing
- Organic synthesis in pharmaceutical applications

### **Saeed Ahmad, Ph.D.**

Research Assistant Professor

Phone: (804) 828-0915

Email: sahmad@vcu.edu

*Research Topics:*

- Research and development from conception to commercialization in various therapeutic areas including oncology, cardiovascular and infectious disease
- Process development of new and existing active pharmaceutical ingredients
- Development of efficient and cost effective processes using continuous synthesis and flow chemistry

### **Stephen S. Fong, Ph.D.**

Associate Professor and Vice Chair

Email: ssfong@vcu.edu

Phone: (804) 827-7038

Website: www.systemsbiology.vcu.edu

*Research Topics:*

- Metabolic engineering
- Computational metabolic modeling
- Biorefineries

### **Ram B. Gupta, Ph.D.**

Professor and Associate Dean for Research

Email: rbgupta@vcu.edu

Phone: (804) 828-1211

Website: www.people.vcu.edu/~rbgupta/

*Research Topics:*

- Supercritical carbon dioxide technology
- Hydrogen fuel, renewable fuels, batteries, bioenergy and liquid fuels from biomass
- Nanoparticles and smart medicine

### **Shilpa Iyer, Ph.D.**

Research Assistant Professor

Email: siyer@vcu.edu

Phone: (804) 827-7024

Website: [www.chemical.egr.vcu.edu/faculty/iyer/](http://www.chemical.egr.vcu.edu/faculty/iyer/)  
*Research Topics:*

- Mitochondrial genetics and bioenergetics
- Induced pluripotency
- Mitochondrial disorders and gene therapy

### **Rudy Krack**

Instructor and Laboratory Engineer

Email: rkrack@vcu.edu

Phone: (804) 828-6641

Website: [www.chemical.egr.vcu.edu/faculty/krack/](http://www.chemical.egr.vcu.edu/faculty/krack/)  
*Research Topics:*

- Undergraduate instructional laboratories
- Laboratory safety
- Capstone Senior Design projects

### **Nastassja Lewinski, Ph.D.**

Assistant Professor

Email: nalewinski@vcu.edu

Phone: (804) 828-0452

Website: [wp.vcu.edu/nalewinski/](http://wp.vcu.edu/nalewinski/)

*Research Topics:*

- Biological effects of nanoparticles
- Advanced in vitro exposure systems
- Nanomedicine

### **Michael H. Peters, Ph.D.**

Professor

Email: mpeters@vcu.edu

Phone: (804) 828-7790

Website: [www.engineering.vcu.edu/proteinengineering](http://www.engineering.vcu.edu/proteinengineering)  
*Research Topics:*

- Protein engineering: peptide biomimetics and protein misfolding
- Time force autocorrelations
- Multiple time scale perturbation theory

### **Raj R. Rao, Ph.D.**

Associate Professor

Email: rrrao@vcu.edu

Phone: (804) 828-4268

Website: [www.chemical.egr.vcu.edu/faculty/rao/](http://www.chemical.egr.vcu.edu/faculty/rao/)  
*Research Topics:*

- Stem cell bioprocessing
- Biomaterials and biomarkers
- Pluripotency

### **Christina Tang, Ph.D.**

Assistant Professor

Email: ctang2@vcu.edu

Phone: (804) 827-1917

Website: [www.vcusoftmaterials.wu.weebly.com/](http://www.vcusoftmaterials.wu.weebly.com/)  
*Research Topics:*

- Multifunctional polymer nanomaterials
- Self-assembly of metal-polymer nanoparticles
- Rheology of polymers/biopolymers

### **Xuejun Wen, M.D., Ph.D.**

William H. Goodwin Professor

Email: xwen@vcu.edu

Phone: (804) 828-5353

Website: [www.regenerativemedicine.vcu.edu](http://www.regenerativemedicine.vcu.edu)

*Research Topics:*

- Biomaterials: natural, pure synthetic and hybrid

- Stem cell biology and engineering
- Cell/tissue engineering and regenerative medicine

### **Kenneth J. Wynne, Ph.D.**

Commonwealth Professor

Email: kjwynne@vcu.edu

Phone: (804) 828-9303

Website: [www.engineering.vcu.edu/wynne-lab](http://www.engineering.vcu.edu/wynne-lab)  
*Research Topics:*

- Surface polymer science
- Kinetics nanoscale and mesoscale diffusion
- Antimicrobial and cytocompatible coatings

### **Vamsi K. Yadavalli, Ph.D.**

Associate Professor

Email: vyadavalli@vcu.edu

Phone: (804) 828-0587

Website: [www.people.vcu.edu/~vyadavalli/](http://www.people.vcu.edu/~vyadavalli/)  
*Research Topics:*

- Functional biomaterials
- Nanoscale surface characterization
- Microfabricated biosensors

### **Hu Yang, Ph.D.**

Qimonda Associate Professor

Email: hyang2@vcu.edu

Phone: (804) 828-5459

Website: [www.wp.vcu.edu/hyang2](http://www.wp.vcu.edu/hyang2)

*Research Topics:*

- Clickable polymers for drug delivery
- Drug delivery for glaucoma
- Brain cancer therapy



## **COMPUTER SCIENCE**

### **Krzysztof J. Cios, Ph.D., D.Sc., MBA**

Professor and Chair

Email: kcios@vcu.edu

Phone: (804) 828-9671

Website: [www.cioslab.vcu.edu](http://www.cioslab.vcu.edu)

*Research Topics:*

- Machine learning
- Data mining
- Computational neuroscience

### **Tomasz Arodz, Ph.D.**

Assistant Professor

Email: tarodz@vcu.edu

Phone: (804) 827-3989

Website: [www.people.vcu.edu/~tarodz](http://www.people.vcu.edu/~tarodz)

*Research Topics:*

- Machine learning
- Systems biology
- Computational biology

### **Eyuphan Bulut, Ph.D.**

Assistant Professor

Email: ebulut@vcu.edu

Phone: (804) 828-6382

Website: [www.people.vcu.edu/ebulut](http://www.people.vcu.edu/ebulut)

*Research Topics:*

- Mobile computing and mobile data mining
- Cybersecurity, network security, and privacy and trust
- Mobile (3G/4G) systems

### **Wei Cheng, Ph.D.**

Assistant Professor

Email: wcheng3@vcu.edu

Phone: (804) 827-4003

Website: [www.people.vcu.edu/~wcheng3/](http://www.people.vcu.edu/~wcheng3/)

*Research Topics:*

- Security and privacy
- Vehicle networks
- Underwater networks

### **Alberto Cano, Ph. D.**

Assistant Professor

Email: acano@vcu.edu

Phone: (804) 827-4002

Website: [www.people.vcu.edu/~acano](http://www.people.vcu.edu/~acano)

*Research Topics:*

- Big data
- Efficiency and scalability of algorithms
- Parallel, distributed and GPU computing

### **Kostadin Damevski, Ph.D.**

Assistant Professor

Email: kdamevski@vcu.edu

Phone: (804) 827-3607

Website: [damevski.github.io](http://damevski.github.io)

*Research Topics:*

- Software maintenance
- Software engineering
- Applications of information retrieval in software engineering

### **Thang Dinh, Ph.D.**

Assistant Professor

Email: tdinh@vcu.edu

Phone: (804) 827-4007

Website: [www.people.vcu.edu/~tdinh/](http://www.people.vcu.edu/~tdinh/)

*Research Topics:*

- Network vulnerability assessment
- Security and privacy in social networks and wireless networks
- Approximation algorithm, combinatorial optimization

### **Carol Fung, Ph.D.**

Assistant Professor

Email: cfung@vcu.edu

Phone: (804) 828-9731

Website: [www.people.vcu.edu/~cfung/](http://www.people.vcu.edu/~cfung/)

*Research Topics:*

- Security management and collaborative security
- Intrusion detection and malware/botnet detection
- Security in social networks, mobile networks and cloud environment

### **Sevag Gharibian, Ph.D.**

Assistant Professor

Email: sgharibian@vcu.edu

Phone: (804) 828-0407

Website: [www.people.vcu.edu/~sgharibian/index.html](http://www.people.vcu.edu/~sgharibian/index.html)

*Research Topics:*

- Quantum complexity theory
- Quantum algorithms
- Theory of quantum entanglement

### **Preetam Ghosh, Ph.D.**

Associate Professor

Email: pghosh@vcu.edu

Phone: (804) 827-3995

Website: [www.people.vcu.edu/~pghosh/](http://www.people.vcu.edu/~pghosh/)

*Research Topics:*

- Modeling and simulation
- Systems biology
- Wireless networks

## Vojislav Kecman, Ph.D.

Professor

Email: vkecman@vcu.edu

Phone: (804) 827-3608

Website: www.people.vcu.edu/~vkecman/

*Research Topics:*

- Machine learning and data mining
- Fuzzy logic modeling
- SVM algorithms for large datasets

## Lukasz Kurgan, Ph.D.

Professor and Qimonda Chair

Email: lkurgan@vcu.edu

Phone: (804) 827-3986

*Research Topics:*

- Structural bioinformatics
- Intrinsic disorder in proteins
- Structural genomics

## Milos Manic, Ph.D.

Professor

Email: miskom@vcu.edu

Phone: (804) 827-3999

Website: www.people.vcu.edu/~mmanic/

*Research Topics:*

- Fuzzy neural data mining techniques
- Energy security
- Human-machine interfaces

## Bridget McInnes, Ph.D.

Assistant Professor

Email: btmcinnes@vcu.edu

Phone: (804) 828-0403

Website: www.people.vcu.edu/~btmcinnes

*Research Topics:*

- Natural language processing
- Biomedical text processing
- Information retrieval

## Hong-Sheng Zhou, Ph.D.

Assistant Professor

Email: hszhou@vcu.edu

Phone: (804) 827-4006

Website: www.people.vcu.edu/~hszhou/

*Research Topics:*

- Theoretical and applied cryptography
- Information security
- Privacy quantum (resilient) cryptography



**ELECTRICAL and COMPUTER**

## Erdem Topsakal, Ph.D.

Professor and Chair

Email: etopsakal@vcu.edu

Phone: (804) 828-1313

Website: www.electrical-and-computer.egr.vcu.edu/faculty/topsakal/

*Research Topics:*

- Microwave early cancer detection and monitoring
- Microwave hyperthermia and ablation
- Computational electromagnetics

## Gary M. Atkinson, Ph.D.

Associate Professor and Director of Virginia Microelectronics Center

Email: gmatkins@vcu.edu

Phone: (804) 827-0185

Website: www.egr.vcu.edu/departments-centers/

wright-virginia-microelectronics-center/

*Research Topics:*

- Micro and nanofabrication
- Sensors and actuators
- Energy conversion devices

## Vitaliy Avrutin, Ph.D.

Research Assistant Professor

Email: vavrutin@vcu.edu

Phone: (804) 827-7000 ext. 357

Website: www.morkoc.vcu.edu/people-details/dr\_vitaliy\_avrutin.htm

*Research Topics:*

- III-nitride epitaxial structures for light emitters and high-power devices
- Semipolar and nonpolar III-nitride epitaxial structures on silicon and sapphire substrates for light emitters
- ZnO-based heterostructures and transparent conductive oxides (TCOs) for electronic and optoelectronic devices and plasmonics

## Supriyo Bandyopadhyay, Ph.D.

Commonwealth Professor

Email: sbandy@vcu.edu

Phone: (804) 827-6275

Website: www.people.vcu.edu/~sbandy

*Research Topics:*

- Straintronics
- Coherent spin transport in nanowires for sensing and information processing
- Nanowire-based room temperature infrared detectors

## Michael J. Cabral, Ph.D.

Associate Professor

Email: mcabral@vcu.edu

Phone: (804) 828-9068

Website: www.electrical-and-computer.egr.vcu.edu/faculty/cabral/

*Research Topics:*

- Engineering education
- Nanofabrication techniques
- Molecular electronics

## Alen Docef, Ph.D.

Associate Professor and Associate Chair

Email: adocef@vcu.edu

Phone: (804) 827-7032

Website: www.electrical-and-computer.egr.vcu.edu/faculty/docef/

*Research Topics:*

- Medical image processing
- Signal processor architectures
- Document compression for archiving

## Carl Elks, Ph.D.

Assistant Professor

Email: crelks@vcu.edu

Phone: (804) 828-8222

Website: www.people.vcu.edu/~crelks/

*Research Topics:*

- Embedded systems design and analysis
- Dependability analysis of safety critical systems
- Cyber physical systems

## Afroditi V. Filippas, Ph.D.

Associate Professor and Associate Dean for Undergraduate Studies

Email: avfilippas@vcu.edu

Phone: (804) 828-4097

Website: www.electrical-and-computer.egr.vcu.edu/faculty/filippas/

*Research Topics:*

- Microwave and RF modeling and simulation
- Signal processing
- Medical devices

## Xubin He, Ph.D.

Professor and Graduate Program Director

Email: xhe2@vcu.edu

Phone: (804) 827-7627

Website: www.people.vcu.edu/~xhe2

*Research Topics:*

- Data storage and I/O systems
- Computer architecture
- Erasure coding techniques for reliable big data management

## Rosalyn Hobson Hargraves, Ph.D.

Associate Professor

Email: rhobson@vcu.edu

Phone: (804) 828-8308

Website: www.electrical-and-computer.egr.vcu.edu/faculty/hobson/

- STEM education
- Medical image and signal processing
- Artificial neural network applications

## Ashok Iyer, Ph.D., P.E.

Professor

Email: aiyer@vcu.edu

Phone: (804) 827-7035

Website: www.electrical-and-computer.egr.vcu.edu/faculty/iyer

*Research Topics:*

- GPS applications
- Neural networks
- Linear and nonlinear control theory

## Robert H. Klenke, Ph.D.

Professor and Director of the Vertically Integrated Projects Program

Email: rhklenke@vcu.edu

Phone: (804) 827-7007

Website: www.people.vcu.edu/~rhklenke/

*Research Topics:*

- Collaborative unmanned aerial vehicles
- Cyber-physical systems security
- Hardware/software codesign

## Robert J. Mattauch, Ph.D.

Dean Emeritus and Commonwealth Professor

Email: rjmattau@vcu.edu

Phone: (804) 828-4000

Website: www.electrical-and-computer.egr.vcu.edu/faculty/mattauch

## Hadis Morkoc, Ph.D.

Founders Professor

Email: hmorkoc@vcu.edu

Phone: (804) 827-3765

Website: www.morkoc.vcu.edu

*Research Topics:*

- Group III-IV semiconductors
- Light emitting diodes
- Nitride semiconductor heterostructures

### **Yuichi Motai, Ph.D.**

Associate Professor  
Email: ymotai@vcu.edu  
Phone: (804) 828-1281  
Website: www.people.vcu.edu/~ymotai/  
*Research Topics:*

- Sensory intelligence
- Medical imaging
- Computer vision

### **Ruixin Niu, Ph.D.**

Assistant Professor  
Email: rniu@vcu.edu  
Phone: (804) 828-0030  
Website: www.people.vcu.edu/~rniu/  
*Research Topics:*

- Statistical signal processing
- Information fusion in sensor networks
- Wireless communications

### **Ümit Özgür, Ph.D.**

Qimonda Associate Professor  
Email: uozgur@vcu.edu  
Phone: (804) 828-2581  
Website: www.people.vcu.edu/~uozgur/  
*Research Topics:*

- Group III-nitride and zinc oxide optoelectronics
- Ultrafast optical spectroscopy
- Physics of semiconductor heterostructures

### **R. Daniel Resler, Ph.D.**

Associate Professor  
Email: dresler@vcu.edu  
Phone: (804) 827-3987  
Website: www.danresler.net  
*Research Topics:*

- Programming languages
- Compiler design
- Automatic generation of software

### **Gregory E. Triplett, Ph.D.**

Professor and Associate Dean for Graduate Studies  
Email: getriplett@vcu.edu  
Phone: TBD  
Website: TBD  
*Research Topics:*

- Optoelectronics/photonics
- Electronic materials
- Computational intelligence

### **Zhifang Wang, Ph.D.**

Assistant Professor  
Email: zfwang@vcu.edu  
Phone: (804) 828-5330  
Website: www.electrical-and-computer.egr.vcu.edu/  
faculty/wang/  
*Research Topics:*

- Electric power system modeling and optimization
- Renewable integration
- Demand management in smart grids

### **Weijun Xiao, Ph.D.**

Assistant Professor  
Email: wxiao@vcu.edu  
Phone: (804) 828-5339  
Website: www.electrical-and-computer.egr.vcu.edu/  
faculty/xiao/  
*Research Topics:*

- GPU and heterogeneous computing
- Emerging memory and storage technologies
- Embedded systems

### **Wei Zhang, Ph.D.**

Professor, Director of Computer Engineering  
Email: wzhang4@vcu.edu  
Phone: (804) 827-2631  
Website: www.people.vcu.edu/~wzhang4/  
*Research Topics:*

- Real-time and embedded systems
- Computer architecture
- Parallel computing



**MECHANICAL and NUCLEAR**

### **Gary C. Tepper, Ph.D.**

Professor and Chair  
Email: gctepper@vcu.edu  
Phone: (804) 827-4079  
Website: www.mechanical-and-nuclear.egr.vcu.edu/  
faculty/tepper/  
*Research Topics:*

- Chemical sensors
- Nanomaterials
- Radiation detectors

### **Jayasimha Atulasimha, Ph.D.**

Qimonda Associate Professor  
Email: jatulasimha@vcu.edu  
Phone: (804) 827-7037  
Website: www.mechanical-and-nuclear.egr.vcu.edu/  
faculty/atulasimha/  
www.people.vcu.edu/~jatulasimha  
*Research Topics:*

- Nanomagnetic memory and computing
- Novel magnetic materials
- Nanofabrication

### **Sama Bilbao y León, Ph.D.**

Associate Professor and Director of Nuclear Engineering Programs  
Email: sbilbao@vcu.edu  
Phone: (804) 828-2570  
Website: www.mechanical-and-nuclear.egr.vcu.edu/  
faculty/bilbao/  
*Research Topics:*

- Nuclear thermal hydraulics
- Nuclear reactor design and safety
- Energy and environmental policy

### **Lewis Franklin Bost, MBA, IDSA**

Executive Associate Dean  
Professor and Director, Institute for Engineering and Medicine  
Email: lfbost@vcu.edu  
Phone: (804) 828-5871  
Website: www.egr.vcu.edu/about/faculty-staff-directory/l-franklin-bost-mba-idsa/  
*Research Topics:*

- Device design and development processes
- Entrepreneurial business strategy and development
- U.S. FDA quality system regulations and ISO medical device standards

### **Charles Cartin, Ph.D.**

Assistant Professor  
Email: cartincp@vcu.edu  
Phone: (804) 827-3569  
Website: www.mechanical-and-nuclear.egr.vcu.edu/  
faculty/cartin/  
*Research Topics:*

- Design engineering
- Design optimization
- Fuel cell and hybrid technology

### **Daren Chen, Ph.D.**

Professor, Floyd D. Gottwald, Sr. Chair in Mechanical and Nuclear Engineering, and Co-Director of Particle Science and Engineering Center  
Email: dchen3@vcu.edu  
Phone: (804) 828-2828  
Website: www.mechanical-and-nuclear.egr.vcu.edu/  
faculty/daren-chen-ph-d/  
*Research Topics:*

- Nanoparticles and nanotechnology
- Powder and spray technology
- Particle instrumentation and characterization

### **Mohamed Gad-el-Hak, Ph.D.**

Inez Caudill Eminent Professor  
Email: gadelhak@vcu.edu  
Phone: (804) 828-3576  
Website: www.people.vcu.edu/~gadelhak/  
*Research Topics:*

- Turbulence and flow control
- Microelectromechanical systems
- Large-scale disasters

### **Laleh Golshahi, Ph.D.**

Assistant Professor  
Email: lgolshahi@vcu.edu  
Phone: (804) 827-3742  
Website: www.wp.vcu.edu/lgolshahi/  
*Research Topics:*

- Respiratory aerosol and fluid dynamics
- Pediatric lungs targeted drug delivery
- Aerosol filtration and bio-aerosols

### **Frank A. Gulla MS, P.E.**

Assistant Professor  
Email: fagulla@vcu.edu  
Phone: (804) 827-4012  
Website: www.mechanical-and-nuclear.egr.vcu.edu/  
faculty/gulla/  
*Research Topics:*

- Engineering education
- Process control engineering
- Manufacturing engineering

### **Ravi Hadimani, Ph.D.**

Assistant Professor  
Email: rhadimani@vcu.edu  
Phone: TBD  
Website: TBD  
*Research Topics:*

- Biomagnetics
- Magnetic materials
- Energy harvesting

### **Ibrahim Guven, Ph.D.**

Assistant Professor

Email: iguven@vcu.edu

Phone: (804) 827-3652

Web: [www.mechanical-and-nuclear.egr.vcu.edu/faculty/guven/](http://www.mechanical-and-nuclear.egr.vcu.edu/faculty/guven/)

*Research Topics:*

- Failure and fracture in materials
- Peridynamic modeling and simulation
- Multiscale computational solid mechanics

### **P. Worth Longest, Ph.D.**

Professor and Co-Director of Particle Science and Engineering Centerr

Email: pwlongest@vcu.edu

Phone: (804) 827-7023

Website: [www.mechanical-and-nuclear.egr.vcu.edu/faculty/longest/](http://www.mechanical-and-nuclear.egr.vcu.edu/faculty/longest/)

*Research Topics:*

- Respiratory therapeutics
- Targeted drug delivery
- Pharmaceutical aerosols

### **James G. Miller, MS, P.E.**

Assistant Professor

Email: jgmiller@vcu.edu

Phone: (804) 827-4000

Website: [mechanical-and-nuclear.egr.vcu.edu/faculty/miller/](http://mechanical-and-nuclear.egr.vcu.edu/faculty/miller/)

*Research Topics:*

- Engineering education
- Reactor simulation
- Reactor theory

### **Reza Mohammadi, Ph.D.**

Assistant Professor

Email: rmohammadi@vcu.edu

Phone: (804) 827-3997

Website: [wp.vcu.edu/rmohammadi/](http://wp.vcu.edu/rmohammadi/)

*Research Topics:*

- Ultra-incompressible superhard materials
- Thin film deposition and characterization
- Superhydrophobic materials

### **Karla M. Mossi, Ph.D.**

Associate Professor and Graduate Program Director

Email: kmrossi@vcu.edu

Phone: (804) 827-5275

Website: [www.people.vcu.edu/~kmrossi](http://www.people.vcu.edu/~kmrossi)

*Research Topics:*

- Energy harvesting
- Smart materials
- Fluid mechanics

### **Dmitry Pestov, Ph.D.**

Nanocharacterization Center Scientist

Email: dpestov@vcu.edu

Phone: (804) 828-2143

*Research Topics:*

- Electron beam-assisted polymerization

- Electron beam lithography for graphene electronics
- Chemical and biological miniature sensors

### **Supathorn Phongikaroon, Ph.D., P.E.**

Associate Professor

Email: sphongikaroon@vcu.edu

Phone: (804) 827-2278

Website: [mechanical-and-nuclear.egr.vcu.edu/supathorn-phongikaroon/](http://mechanical-and-nuclear.egr.vcu.edu/supathorn-phongikaroon/), (New Web:

[sphongikaroon.wordpress.com/](http://sphongikaroon.wordpress.com/))

*Research Topics:*

- Nuclear and chemical separation technology in fuel cycle research and development
- Electrochemical processes
- Special material detection and analysis via laser and mass spectroscopy techniques

### **Jessika Rojas, Ph.D.**

Assistant Professor

Email: jvrojas@vcu.edu

Phone: (804) 828-4267

Web: [mechanical-and-nuclear.egr.vcu.edu/faculty/rojas/](http://mechanical-and-nuclear.egr.vcu.edu/faculty/rojas/)

*Research Topics:*

- Radiation-induced synthesis of nanomaterials
- Modification of nanomaterials properties through irradiation.
- Radiation damage and radiation effects on nuclear materials

### **John E. Speich, Ph.D.**

Associate Professor, Associate Chair and Director of Cooperative Education Program

Email: jespeich@vcu.edu

Phone: (804) 827-7036

Website: [www.engineering.vcu.edu/fac/speich/website/](http://www.engineering.vcu.edu/fac/speich/website/)

*Research Topics:*

- Smooth muscle biomechanics
- Robotic devices for medical applications
- Bladder biomechanics and urodynamics

### **Arunkumar Subramanian, Ph.D.**

Assistant Professor

Email: asubramanian@vcu.edu

Phone: (804) 827-7029

Website: [www.mechanical-and-nuclear.egr.vcu.edu/faculty/subramanian/](http://www.mechanical-and-nuclear.egr.vcu.edu/faculty/subramanian/)

*Research Topics:*

- Sustainable batteries
- Nanomanufacturing
- Self-powering of implantable/wearable systems

### **Robert M. Sexton, Ph.D.**

Associate Professor

Email: rmsexton@vcu.edu

Phone: (804) 827-7044

Website: [www.mechanical-and-nuclear.egr.vcu.edu/faculty/sexton/](http://www.mechanical-and-nuclear.egr.vcu.edu/faculty/sexton/)

*Research Topics:*

- Response dynamics and vibrations of offshore drilling and production systems

- Deepwater marine riser systems and the various nonlinear effects
- Simulation and control of sophisticated, high-capacity tensioning systems

### **Hooman V. Tafreshi, Ph.D.**

Professor

Email: htafreshi@vcu.edu

Phone: (804) 828-9936

Website: [www.people.vcu.edu/~htaafreshi](http://www.people.vcu.edu/~htaafreshi)

*Research Topics:*

- Modeling interfacial phenomena and superhydrophobicity
- Fluid, heat and particle transport through porous media
- Separation and filtration science

### **Gokul Vasudevamurthy, Ph.D.**

Assistant Professor

Email: gvasudev@vcu.edu

Phone: (804) 828-3679

Website: [www.mechanical-and-nuclear.egr.vcu.edu/faculty/vasudevamurthy/](http://www.mechanical-and-nuclear.egr.vcu.edu/faculty/vasudevamurthy/)

*Research Topics:*

- Actinide bearing ceramic nuclear fuel
- Nuclear structural materials
- High temperature materials processing and mechanical testing

### **Wei-Ning Wang, Ph.D.**

Assistant Professor

Email: wnwang@vcu.edu

Phone: (804) 827-4306

Website: [sites.google.com/site/wnwangyz/](http://sites.google.com/site/wnwangyz/)

*Research Topics:*

- Aerosol science and technology
- Nanomaterial synthesis and characterization
- Catalysis and separation

### **Woon-Hong Yeo, Ph.D.**

Assistant Professor

Email: whyeo@vcu.edu

Phone: (804) 827-3517

Website: [www.people.vcu.edu/~whyeo](http://www.people.vcu.edu/~whyeo)

*Research Topics:*

- Nanomembrane electronics for human health monitoring
- Human-machine interfaces via skin-like electronics
- Nano-biosensors for disease diagnostics

### **Hong Zhao, Ph.D.**

Assistant Professor

Email: hzhao2@vcu.edu

Phone: (804) 827-7025

Website: [www.wp.vcu.edu/hzhao2/](http://www.wp.vcu.edu/hzhao2/)

*Research Topics:*

- Surface science and surface engineering
- Transport and self-assembly of colloidal nanoparticles
- Printed functional devices