

# Intellectual Property at USC

## Sensor Technology/Faculty Interest



**Donald Allen, Ph.D.**

Dr. Allen is a Professor at the Department of Pharmacology, Physiology, and Neuroscience and the Associate Dean for Basic Science at the School of Medicine. Dr. Allen's research interests include hormonal control of lipolysis, medical/legal consulting, advances in medical education, and education in nurse anesthesia.



**Michael Amirdis, Ph.D.**

Dr. Amirdis is an Associate Professor and Chair of the Department of Chemical Engineering. Dr. Amirdis' research interests are in the area of catalysis and chemical kinetics, and in particular, in the emerging field of environmental catalysis.



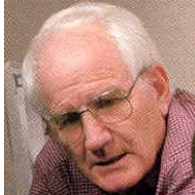
**S. Michael Angel, Ph.D.**

Dr. Angel is a Professor at the Department of Chemistry and Biochemistry. Dr. Angel's research interests include development of *in situ* characterization techniques including fiber-optic chemical sensors and remote spectroscopy including Raman, LIBS and REMPI.



**Abdel Bayoumi, Ph.D.**

Dr. Bayoumi is a Professor and Chair of the Department of Mechanical Engineering. Dr. Bayoumi's research interests are in the areas of manufacturing and design, mechatronics and mechanics of materials.



**Thomas Borg, Ph.D.**

Dr. Borg is a Professor and Chair of the Department of Cell and Developmental Biology and Anatomy at the School of Medicine. Dr. Borg's research interest include investigating the role of the extracellular matrix (ECM) in the heart during normal growth and development and in certain disease conditions.



**John Bowles, Ph.D.**

Dr. John Bowles is an Associate Professor at the Department Computer Science and Engineering. Dr. Bowles' research interests include reliability, maintainability, supportability, producibility, failure prediction, variation control, human factors analysis, life cycle cost analysis, and expert systems.



**Duncan Buell, Ph.D.**

Dr. Buell is a Professor and Chair of the Department of Computer Science and Engineering. Dr. Buell's research is focused on non-numeric computations, computational number theory, parallel algorithms and architectures, and information retrieval.



### **Hanif Chaudhry, Ph.D.**

Dr. Chaudhry is a Professor and Chair of the Department of Civil and Environmental Engineering. Dr. Chaudhry's research interests include mathematical modeling of open-channel and closed-conduit flows and hydraulic transients.



### **Jeff Darabi, Ph.D.**

Dr. Darabi is an Assistant Professor at the Department of Mechanical Engineering. Dr. Darabi's research interests include microelectromechanical systems (MEMS), microfluidic systems, microscale heat transfer, thermal management of microelectronics, and nanotechnology .



### **Harold Friedman, Ph.D.**

Dr. Harold Friedman is Chief of the Division of Plastic and Reconstructive Surgery. His research interests include the interface between soft tissues and biomedical devices particularly breast implants, artificial blood substitutes, and the use of hyperbaric oxygen to improve wound healing.



### **William E. Full, Ph.D.**

Dr. Full is a Senior Scientist at the Advanced Solutions Group (ASG), Department of Physics, and has served as a Professor at several universities. His background is in applied mathematics, geophysics, geology, and computer science. Experience with sensors includes the design and implementation related to government contracts. Dr. Full sees his role, as well as that of ASG, is to support the sensor community and aid in the creation of turnkey systems.



### **Victor Giurgiutiu, Ph.D.**

Dr. Giurgiutiu is an Associate Professor at the Department of Mechanical Engineering. Dr. Giurgiutiu maintains a broad research interest in many areas of applied mechanics. His present focus is on emerging interdisciplinary fields including adaptive materials and smart structures, structural health monitoring, machinery diagnostics and prognostics, and mechatronics. His recent achievements include the development of PWAS (piezoelectric wafer active sensors) for embedded ultrasonics and NDE (nondestructive evaluation) of mechanical and biological systems.



### **Jerry Hudgins, Ph.D.**

Dr. Hudgins is a Professor at the Department of Electrical Engineering. Dr. Hudgins' research involves power electronic device characterization and modeling. This includes devices made from silicon and wide bandgap materials such as silicon carbide and gallium nitride.



### **Paul Huray, Ph.D.**

Dr. Huray is a Carolina Distinguished Professor at the Department of Electrical Engineering. His interests are in the development of superconducting nano sensors for the measure of magnetic fields caused by nanogram material quantities (from biological sources, quantum wells, or spintronics) and in the assessment of signal integrity for currents induced in ICs, boards and switches.



**Michael Huhns, Ph.D.**

Dr. Huhns is a Professor at the Department of Computer Science and Engineering. Dr. Huhns' research is centered around information technology, distributed AI, multiagent systems, machine learning, enterprise modeling and integration, and distributed database systems.



**Joseph E. Johnson, Ph.D.**

Dr. Johnson is an Associate Professor at the Department of Physics and Director of the Advanced Solutions Group and Complex Problems Group as well President and CEO of E811 Inc., a former USC incubator company. His research has explored new mathematical objects, numerical uncertainty, computational algorithms, and advanced mathematical techniques. His development efforts have included numerous practical applications, such as methods to protect computer (sensor) networks from cyberterrorist attacks, data warehousing, data mining, and relational database management systems with Web and voice interfaces.



**Asif Khan, Ph.D.**

Dr. Khan is a Professor and Chair of the Department of Electrical Engineering. Dr Khan's research focuses on solar blind UV sensors using AlGaN material system. In addition his work includes developing high power electronics for microwave radars and deep UV LEDs and Lasers for biological sensors.



**Steve McNeill, Ph.D.**

Dr. McNeill is an Associate Professor at the Department of Mechanical Engineering. Dr. McNeill's research interests include computer vision, digital image correlation, microprocessors, experimental mechanics, and reverse engineering.



**Michael Myrick, Ph.D.**

Dr. Myrick is an Associate Professor at the Department of Chemistry and Biochemistry. Dr. Myrick's research interests include multivariate optical computing, nanowires and nanodevices, and nanoparticle beam deposition.



**Srihari Nelakuditi, Ph.D.**

Dr. Nelakuditi is an Assistant Professor at the Department of Computer Science and Engineering. Dr. Nelakuditi's research is based in quality of service routing, multimedia communication, wireless and mobile networks.



**Ferdinanda Ponci, Ph.D.**

Master in Electrical Engineering from Politecnico di milano (Italy) in 1998. PhD in Electrical Engineering from Politecnico di Milano (Italy) in 2002. Research interests: modeling in power electronics, advanced time-frequency analysis, simulation of faulty conditions and diagnostics for complex systems.



**Gang Quan, Ph.D.**

Dr. Quan is an Assistant Professor at the Department of Computer Science and Engineering. Dr. Quan's research interests are in the area of electrical design automation (EDA), with special interest in the areas of hardware/software co-design, low power design, real time computing, and reconfigurable computing.



**Bill Ranson, Ph.D.**

Dr. Ranson is a Professor at the Department of Mechanical Engineering. Dr. Ranson's research interests include scale invariant computer vision applications to the measurement of mechanical systems, mathematical modeling of mechanical systems measurements to the system life predictions, and application of technology to learning systems.



**John Rose, Ph.D.**

Dr. Rose is an Associate Professor at the Department of Computer Science & Engineering. Dr. Rose's research is focused on computational science, data fusion, pattern recognition, knowledge discovery in databases, and planning under uncertainty.



**Enrico Santi, Ph.D.**

Dr. Santi is an Assistant Professor at the Department of Electrical Engineering. Dr. Santi's long-term research interests are in the area of power electronics.



**Jorge Seminario, Ph.D.**

Dr. Seminario is an Associate Professor at the Department of Electrical Engineering. His research interests include, molecular electronics, nanoelectronics, molecular wires, molecular scale logical gates, quantum computation, quantum chemistry and molecular physics (Formalism of ab initio and density functional theory), and molecular dynamics simulations.



**Michael Sutton, Ph.D.**

Dr. Sutton is a Professor at the Department of Mechanical Engineering. Dr. Sutton's research interests include coherent and incoherent optics applications, experimental mechanics, digital image processing, 2D and 3D computer vision, applications of integral methods and experimental mechanics, boundary value problems in solid mechanics, elastic and elastic-plastic fracture mechanics in 2-D and 3-D, and finite elements modeling of cracked bodies.



**Marco Valtorta, Ph.D.**

Dr. Valtorta is an Associate Professor at the Department of Computer Science and Engineering. Dr. Valtorta's research is centered on knowledge based systems, evidential reasoning, heuristics, and computational complexity.



**Juan Vargas, Ph.D.**

Dr. Vargas is an Associate Professor at the Department of Computer Science and Engineering. Dr. Vargas' research is focused on distributed data mining, Bayesian networks, Holter monitoring, sensor fusion and embedded systems.



**José Vidal, Ph.D.**

Dr. Vidal is an Assistant Professor at the Department of Computer Science and Engineering. Dr. Vidal's research is based in the areas of multiagent systems, learning in multiagent systems, agent based software engineering, distributed programming, distributed objects, component programming, complex systems, e-commerce, and machine learning.



**George Voulgaris, Ph.D.**

Dr. Voulgaris is an Assistant Professor at the Department of Geological Sciences and the Marine Science Program. Dr. Voulgaris' research interests are in the area of coastal processes and sediment dynamics, with special interest in the areas of *in-situ* turbulence measurements, use of acoustics and optics for sediment and flow measurements, autonomous underwater vehicles as instrument platform, numerical modelling of estuarine and coastal ocean circulation and sediment transport.



**John W. Weidner**

**Associate Professor**

Ph.D., North Carolina State University, 1991

B.S., University of Wisconsin, Madison, 1986

Dr. Weidner is an Associate Professor in the Department of Chemical Engineering. His research group is involved in the synthesis, characterization, and mathematical modeling of electrochemically active materials. They have studied these materials in relation to batteries, supercapacitors, fuels cells, electrochemical sensors, and chemical synthesis.



**John Zachary, Ph.D.**

Dr. Zachary is an Assistant Professor at the Department of Computer Science and Engineering. Dr. Zachary's research is based in the areas of network security, cryptography, and distributed systems.