

# Instructions

On the next page, click on the link of the department to which you would like to apply for a P.U.R.S.U.E. award. From the list of faculty in that department, determine which faculty you would be interested in working with. On the submission form you will be allowed to rank, your top four (maximum) choices. You may find that you have less than four preferences, and that is ok.

## I. College of Business

- A. Department of Economics and Finance
- B. Department of Management and Marketing
- C. School of Hotel, Restaurant and Tourism Administration

## II. College of Engineering

- A. Department of Civil and Environmental Engineering
- B. Department of Electrical Engineering
- C. Department of Mechanical Engineering
- D. School of Naval Architecture and Marine Engineering

## III. College of Liberal Arts, Education and Human Development

- A. Center for Hazards Assessment, Response & Technology (CHART)
- B. Department of Anthropology and Sociology
- C. Department of Educational Leadership, Counseling, and Foundation
- D. Department of English and Foreign Languages
- E. Department of Film and Theatre Arts
- F. Department of Fine Arts
- G. Department of History and Philosophy
- H. Department of Planning and Urban Studies
- I. UNO Transportation Institute

## IV. College of Sciences

- A. Advanced Materials Research Center
- B. Department of Biological Sciences
- C. Department of Chemistry
- D. Department of Computer Science
- E. Department of Earth & Environmental Sciences
- F. Department of Mathematics
- G. Department of Physics
- H. Department of Psychology

# College of Business

## A. Department of Economics and Finance

**Name:** Dr. Mohammad Kabir Hassan

**Interests:** Financial Institutions and Markets; Corporate Finance; Investments; Emerging Markets and Financial Development; International Finance; Applied Economics; Islamic Economics, Banking and Finance

**Student Projects:** Financial Literacy; Criminal Economy; Community Banking; Islamic Banking

**Web page:** <http://www.uno.edu/coba/EconomicsFinance/FacultyStaff/KHassan.aspx>

## B. Department of Management and Marketing

**Name:** Dr. Dong-Jun Min

**Interests:** Consumer information processing; Learning, memory and perception; Judgment and decision making under risk

**Student projects:** Selective processing of product features in advertising; the influence of sequential marketing communications on consumer behavior

**Web page:** <http://www.uno.edu/coba/management-marketing/faculty/dong-jun-min.aspx>

**Name:** Dr. Kyeong Sam Min

**Interests:**

- Decision heuristics and biases;
- Service failure and recovery;
- Cross-cultural psychology

**Student projects:**

- Reducing an individual's optimistic planning bias;
- Facilitating a consumer's product bonding

**Web page:** <http://www.uno.edu/coba/management-marketing/faculty/Min.aspx>

**Name:** Dr. Donald Zimmerman

**Interests:**

- Healthcare Management
- Healthcare Policy
- Patient Experience
- Health Literacy
- Person-Centered Care

**Student projects:**

- Healthcare Management
- Healthcare Policy
- Patient Experience
- Health Literacy
- Person-Centered Care

## C. School of Hotel, Restaurant and Tourism Administration

**Name:** Dr. David Pearlman

**Interests:**

- mega special events
- music festivals use of volunteers
- social media marketing of special events
- adventure tourism
- sustainable tourism development
- cruising market
- big data and hospitality and tourism research
- use of crowdfunding within hospitality and tourism

**Student projects:**

- music festivals use of volunteers
- social media marketing of special events

[Back to Top](#)

# College of Engineering

## A. Department of Civil and Environmental Engineering

**Name:** Dr. Malay Ghose Hajra

**Interests:**

- Coastal Restoration and Coastal Protection Systems
- Coastal infrastructure (levees and floodwalls)
- Mississippi River Sediment Diversion
- Drone Aerial Photogrammetry application and remote sensing in coastal restoration
- Sustainability
- Geothermal Energy
- Geoenvironmental Engineering
- Coastal Geotechnics
- Numerical Modeling of Coastal Restoration projects

**Student projects:**

- In-situ testing and monitoring of coastal deposits
- Use of Unmanned Aircraft Systems (UASs) to monitor coastal hazard, design mitigation measures, and evaluate long term health of Louisiana coastline
- Erosion and subsidence evaluation of coastal deposits
- Sedimentation and resuspension of dredged sediments
- Numerical model development to predict and evaluate long term performance of Louisiana coastal restoration and protection projects
- Design and evaluation of Geothermal energy systems

**Name:** Dr. Bhaskar Kura

**Interests:** Air quality monitoring, modeling, and management; greenhouse gas (GHG) emissions management; energy efficiency; world ports and sustainability; software technologies for the management of the environment, public health, and worker health

**Student projects:** Air/odor monitoring at the wastewater treatment plants, landfills, and other sources; air monitoring at the critical traffic sources/intersections; air dispersion modeling; software development

**Web pages:** <http://fs.uno.edu/kura> <http://labs.uno.edu/meric>

**Name:** Dr. Guillermo Rincon

**Interests:** Water and wastewater advanced treatment technologies. Industrial wastewater quality and treatment. Photocatalytic reactor systems, including photocatalyst synthesis and characterization.

**Student projects:**

- Comparative study of different metal-doped titanium oxides efficiencies in the treatment of persistent water contaminants.
- Synthesis and characterization of metal-doped photocatalysts.
- Study of photocatalysts efficiency through bench-scale reactor experiments

## B. Department of Electrical Engineering

**Name:** Dr. Edit Bourgeois

**Interests:** Digital communications (theoretical and simulations); Neural networks; Signal processing

**Student projects (examples only):** Digital communications: 5G, channel modeling, coding;

Neural networks: applications to communications, medical imaging;

Signal processing: applications to sonar, wireless communications

**Web page:** <http://fs.uno.edu/ejbourge/>

**Name:** Dr. Huimin Chen

**Interests:** Data fusion, target detection and tracking, optimization, sensor management, machine learning and data mining

**Student projects:** Nonlinear filtering for tracking a maneuvering target; Optimizing decision fusion with practical budget constraint; Battery prognostics and health management; Distributed estimation for power system and smart grid

**Web page:** <http://www.uno.edu/coe/electrical-engineering/faculty/chen.aspx>

**Name:** Dr. Jeffrey Gray

**Interests:** Autonomous Robotics

**Student projects (examples only):** Navigational design and programming: High performance drive systems; Imaging and image processing; Sensor and computer networking

**Name:** Dr. Vesselin P. Jilkov

**Current Interests:** Constrained multiple model estimation for moving objects tracking; Guidance and optimal control of moving robots (unmanned air, underwater, ground vehicles) for obstacles and collision avoidance.

**Student projects:** Computer simulation for performance evaluation of various algorithms for: (1) constrained moving target tracking, (2) guidance and optimal control of moving robots (unmanned air, underwater, ground vehicles) for obstacles and collision avoidance.

- Basic knowledge of probability and Matlab programming is required.

**Web page:** <http://www.uno.edu/academicaffairs/endowed-chairs/vesselin-jilkov.aspx>

**Name:** Prof. Kim Jovanovich

**Interests:** telecommunications, optical communications, fiber optic sensing and fiber optic illumination

**Student projects (examples only):** (1) Develop optical sensors to measure a variety of situations including temperature, presence of liquids, gases, etc. (2) design and build atmospheric optical communications systems for voice/music (3) design and build fiber optic communications systems supporting digital voice systems (4) Using interferometry measure quality of fiber optic connector endfaces.

[Back to Top](#)

## C. Department of Mechanical Engineering

**Name:** Dr. Ting Wang

**Interests:** General thermal-fluid science and engineering, clean energy, power plants, jet engines, gas turbines, combustion, emissions, coal gasification, biopower, polygeneration, drag reduction, enhanced cooling on micro-structured surfaces, mist/steam cooling, and CCHP (combined cooling, heating, and power).

**Student projects:** (a) Application of using chemical looping to capture CO<sub>2</sub> to reduce emissions from industrial plants such as power plants, chemical and petrochemical plants, cement plants, etc. (b) An innovative approach to compress natural gas (NG) and hydrogen for NG cars and fuel-cell cars. (c) Use computational fluid dynamics (CFD) to design high-efficient and low-emissions boilers and gasifiers. (d) Cooling enhancement for paper industry. (e) Instrumentation for wind tunnel testing (f) Simulation of power plant designs

**Web page:** <http://eccc.uno.edu/>

## D. School of Naval Architecture and Marine Engineering

**Name:** Dr. Brandon Taravella

**Research Interests:**

- hydrodynamics
- robotics
- ship stability
- ship dynamics

**Student Projects:**

- Development and programming of eel-like robot.
- Participation in experiments of eel-like robot.
- Experiments to determine effects of high speed vessel slamming.
- Computer simulations of high speed vessels.
- Computer simulations of ships in waves

**Name:** Dr. Xiaochuan (Vincent) Yu, Assistant Professor

**Research Interests:** Ship/offshore platforms motions and responses; cable dynamics (mooring, riser, pipeline, etc.); FEM analysis of ship and offshore structures; smart structures, etc.

**Student Projects:**

1. Mooring/riser analysis
2. Ocean platform design
3. Bilge keel loads calculations for FPSO

**Web page:** <http://www.uno.edu/coe/naval-architecture-marine-engineering/faculty/yu.aspx>

[Back to Top](#)

# College of Liberal Arts, Education and Human Development

## A. Center for Hazards Assessment, Response & Technology (CHART)

**Name:** Dr. Tara Lambeth

**Interests:** Disaster Resilience, Hazard Mitigation, Community Education and Outreach, City and Regional Planning

**Student Projects:**

- Louisiana's Strategic Adaptations for Future Environments
- Multidisciplinary knowledge integration to support Louisiana coastal indigenous communities' response to natural and technological disasters and adaptation to climate change
- Community Rating System Users Group Support
- Grant Research and Writing
- Community Rating System Strategic Plan for the State of Louisiana
- Louisiana Hazard Mitigation Plan Update

**Web sites:** <http://www.uno.edu/chart/>

## B. Department of Anthropology and Sociology

**Name:** Dr. Jeffrey Ehrenreich

**Interests:** cultural anthropology & sociology; humanism; writing culture; ethnography & ethnology; poetry & creative nonfiction; publishing

**Student Projects:** editorial assistant to the editor and book review editor of the journal Anthropology and Humanism.

The student worker would:

- Help in the management and editorial production of the journal Anthropology and Humanism
- Prepare "Books Received" and track inventory of books and reviews
- Participate in copyediting and proofing
- Correspond with book reviewers, authors, and publishers
- Manage journal files
- Read and critique submitted work from the perspective of a student reader/user

Interest in the social sciences and/or humanities, as well as in academic publishing, is highly desirable.

**Name:** Dr. D. Ryan Gray

**Interests:** Historical Archaeology of New Orleans; Race and Segregation; Native and African Presence in New Orleans in the Eighteenth Century; Storyville

**Student Projects:** The Material Culture of Storyville, New Orleans' Red Light District; Native American Pottery from the 810 Royal Street Site

**Webpages:** <http://theartofdigging.com/> <http://archaeologynews.uno.edu/>



C. Department of Educational Leadership, Counseling, and Foundations

D. Department of English and Foreign Languages

**Name:** Dr. Doreen M. Piano

**Interests:**

- Visual Rhetoric
- Graffiti and Street Art
- Writing Studies
- New Orleans Culture
- Social Media
- Community Literacy

**Student Projects:**

- New Orleans' Graffiti and Street Art
- Social Media and Fan Culture
- Photography as an Ethnographic Tool

**Web page:** <http://www.uno.edu/cola/english/faculty/doreen-piano.aspx>

E. Department of Film and Theatre Arts

**Name:** Erik Hansen

**Interests:** Film studies; Screenwriting

**Student Projects:**

Film studies (e.g. Theory and Criticism) of different genres and styles of screen storytelling

Analysis of screenplays and plays

Scholarly research in support of a specific creative project

**Web page:** <http://www.uno.edu/cola/film-theatre-arts/faculty-staff/hansen.aspx>

**Name:** John Overton

**Interests:** Cinematography in motion pictures

**Student Projects:**

- Research current and past cinematographers work
- Help create lighting scenarios as illustrations pieces
- Research current/future technology in cameras, lighting equipment and post production manipulation software
- 

F. Department of Fine Arts

**Name:** Dan Rule, Fine Arts

**Interests:** 3d modeling, Animation, Projection mapping

**Student projects:** 3d Animation loops and Animating for projection mapping

**Web page:** <http://cargocollective.com/danrule>

## G. Department of History and Philosophy

**Name:** Dr. Mary Niall Mitchell

**Interests:** Civil War and Reconstruction; Slavery, Visual History, 19th century studies, digital history.

**Student projects:** "Freedom on the Move: a digital history project that collects runaway slave advertisements from 19th century New Orleans newspapers as image files and enter the metadata for collaboration with a national project.

**Web page:** <http://www.uno.edu/cola/history/Faculty/mitchell.aspx>

**Web page of project:** <http://freedomonthemove.org/>

**Name:** Dr. Andrea Mosterman

**Interests:** Early American History, Atlantic History, Comparative Slavery, Trans-Atlantic Slave Trade, Precolonial Africa and the African Diaspora, Dutch Atlantic World

**Student projects:** Slavery in Early America (New York in particular), Trans-Atlantic Slave Trade, Precolonial African societies (especially Loango and Gold Coast).

**Name:** Dr. Chris W. Surprenant

**Interests:** ethics, political philosophy, public policy, entrepreneurship

**Student projects:** Help with work on forthcoming books on alternatives to incarceration and just/unjust punishment.

**Web pages:** <http://www.uno.edu/tocqueville-project/> <http://chriswsurprenant.com/>

## H. Department of Planning and Urban Studies

**Name:** Michelle M. Thompson, PhD, GISP

**Research interests:** Community and Economic Development, Housing, Applied Public Participation Geographic Information Systems, Citizen Science, Historic Preservation

**Student Projects:**

Students can participate in parcel-based research focusing on community reinvestment or revitalization. Field & e-research may include participation in neighborhood surveys using historic property assessments and/or property condition surveys. With integrated public-private data, students may develop skills using applied public participation geographic information systems (computer mapping) crowd-sourced data in Citizen Science projects. Knowledge of GIS is not required but is desired.

**Web page:** [https://works.bepress.com/michelle\\_m\\_thompson/](https://works.bepress.com/michelle_m_thompson/)

## I. UNO Transportation Institute

**Name:** James Amdal

**Research interests:**

- History of streetcar development and how it affected the growth of New Orleans. Post-Katrina streetcars projects and effects: economic development not enhanced transportation services.
- Development dynamics affecting the Port of New Orleans post-Katrina with emphasis on IHNC and Uptown wharves.

**Student Projects:**

- Transportation systems and their impact on New Orleans post-Katrina.
- The trials and tribulations of new passenger rail service linking New Orleans and Baton Rouge. Sunset Limited extension to Florida. New proposed rail service Meridian, MS to DFW.

**Web page:** <http://www.uno.edu/cola/transportation/index.aspx>

**Name:** Tara M. Tolford, AICP (with Bethany Stich, PLUS)

**Research interests:** Urban planning, complete streets, walking and bicycling, transit, transit-oriented development, green infrastructure, smart growth

**Student Projects:**

Working with the Pedestrian Bicycle Resource Initiative to collect and analyze active transportation data in support of safer streets for all users, e.g., collecting and visualizing count data, street auditing for safety, benchmarking complete streets implementation, public participation in transportation planning, etc.

**Web page:** <http://transportation.uno.edu/team/staff-directory/tara-marie-tolford>

**Name:** Dr. Bethany Stich, PLUS

**Research interests:**

- Public policy and administration
- Freight-based economic development
- Intermodal Transportation
- International Trade
- Energy, the Environment and Navigation

**Student Projects:**

- Policy Analysis
- International Trade Pattern Identification
- Global Energy Market Analysis
- Port Development Projects
- Rail Development Projects
- Trucking Industry Issues

**Web page:** <http://www.uno.edu/cola/transportation/index.aspx>

[Back to Top](#)

# College of Sciences

## A. Advanced Materials Research Center

**Name:** Dr. Weilie Zhou

**Interests:** Nanomaterials Synthesis; Structure and Properties Characterization, and Nanodevice Fabrication

**Student Projects:** Growth II-VI Nanowire Arrays; Fabrication of Photovoltaics, Sensors, and Photo-detectors

**Web page:** <http://www.uno.edu/amri/faculty-staff/zhou.aspx>

## B. Department of Biological Sciences

**Name:** Dr. Nicola “Nicky” Anthony

**Interests:** Molecular ecology, evolutionary genomics

**Student projects:** Adaptive variation in tropical forest vertebrates; relatedness and inbreeding in wild mandrills; field herpetology; ecological niche modeling

**Web page:** <http://www.anthonylab.org> and [www.caballiance.org](http://www.caballiance.org)

**Name:** Dr. Joel Atallah

**Interests:** Comparative developmental biology, Drosophila genomics, bioinformatics, and the computational analysis of biological datasets

**Student projects:** A comparison of the maternal-zygotic transition in embryos of closely related insect species; Deciphering gene regulation at the transcriptional and post-transcriptional levels; Analyzing the role of transposable elements in evolution.

**Web page:** <https://sites.google.com/view/atallahlab>

**Name:** Dr. Charles (Chuck) Bell

**Interests:** molecular systematics and evolution of plant, phylogenetics and biogeography.

**Student projects:** Molecular systematics of plants including Valerianaceae, Symphoricarpos, Linathus, Leptosiphon, and others; Determining the wild relatives of the sweet potato; Divergence time estimation; computer simulation studies; RADseq and GBS methods.

**Web page:** <http://phylodiversity.net/cbell>

**Name:** Dr. Mary Clancy

**Interests:** Eukaryotic genetic regulatory mechanisms using the yeast, *Saccharomyces cerevisiae* as a model organism.

**Student Projects:** Current work in the laboratory is focused on identifying and analyzing proteins necessary for RNA-mediated pathways governing meiotic cell differentiation in this organism. In one pathway, production of an RNA-modifying enzyme promotes entry into the meiotic cycle. The production of the modifying enzyme is itself regulated by an “antisense” RNA that inhibits production of the sense RNA. Together, these processes ensure that meiosis will occur only in the correct cells (diploids) and under the correct environmental conditions.

**Name:** Dr. Bernard (Barney) Rees

**Interests:** Fish physiology, biochemistry, and molecular biology; biochemical adaptation to environmental changes, especially changes in dissolved oxygen.

**Student projects:** Students are involved with routine characterization of responses of fish to environmental stress, in particular decreased oxygen concentration. Former students have measured changes at the organismal level (behavior, oxygen consumption), tissue level (blood oxygen-carrying capacity, tissue enzyme activities), and molecular level (specific proteins and mRNAs). Live animal handling and husbandry might be involved depending upon the student and the project.

**Name:** Dr. Wendy Schluchter

**Interests:** Microbial physiology; cyanobacterial photosynthesis; biosynthesis of light-harvesting proteins and environmental influences on gene expression. Cyanobacteria alter the composition of their light-harvesting proteins for photosynthesis (phycobilisomes) in response to light intensity, light quality, and nutrient availability. Their phycobilisomes (PBS) are composed primarily of phycobiliproteins (PBP). Phycobiliproteins range in color from yellow to red to purple to blue, depending upon which of a combination of four possible chromophores called bilins are covalently attached to these proteins.

**Student projects:** Students would be involved in cloning and expressing cyanobacterial proteins inside *E. coli* to recreate the entire biosynthetic pathway for each phycobiliprotein.

### C. Department of Chemistry

**Name:** Dr. Steve Rick

**Project title:** Computational studies of aqueous, ionic, biological and polymeric systems.

**Project description:** Recent advances in algorithm development and computer architecture have greatly increased the ability of computational methods to play a major role in chemistry, enabling computer simulations to provide valuable insight into the structure and dynamics of materials. Our lab is interested in a range of systems, from both aqueous and non-aqueous liquids to biological systems. These studies include biological ion channels, stimuli responsive polymers, and ionic liquids.

**Web Page:** <http://www.uno.edu/cos/chemistry/rick.aspx>

**Name:** Dr. Matthew Tarr

**Interests:**

- Environmental photochemistry
- Nanomaterials for photocatalysis
- Nanomaterials for biomedical applications

**Student Projects:**

- Measure effects of photochemistry on oil spilled in aquatic systems
- Make and test nanomaterials for photocatalysis
- Make and test nanomaterials for biomedical applications

**Web Page:** <http://www.uno.edu/cos/chemistry/tarr.aspx>

[Back to Top](#)

**Name:** Dr. Mark L. Trudell

**Interests:** Medication Development for Psychostimulant Abuse, Iridium catalyzed reaction for Carbon-Nitrogen bond formation, Natural Product Total Synthesis

**Student Projects:** Synthesis and structure-activity relationships of synthetic cannabinoid metabolites; Total synthesis of amphibian alkaloids; Iridium catalyzed polymerization

**Web Page:** <http://www.uno.edu/cos/chemistry/trudell.aspx>

## D. Department of Computer Science

**Name:** Dr. Irfan Ahmed

**Interests:** Malware, Digital Forensics, Cloud Computing, and Industrial Control System (ICS) Security

**Student projects:** Development of cybersecurity tools for the cloud using virtual machine introspection; Development of digital forensic tools for Industrial Control System

**Web page:** <http://cs.uno.edu/~irfan/>

**Name:** Dr. Shaikh Arifuzzaman

**Interests:** Big Data, Graph (Network) Mining, Parallel Algorithms, High Performance Computing (HPC), Social Network Analysis, Data Science

**Student projects:**

- Network Data Visualization
- Designing MapReduce-based Parallel Algorithms for Big Data
- Designing GPU-based Algorithms for Big Data
- Analyzing Large-scale Biological Data
- Mining and Analysis of Large Social Networks (e.g., Facebook, Twitter)
- (Or, any similar Topics Involving scalable computing and big data)

**Web page:** [www.cs.uno.edu/~arif/](http://www.cs.uno.edu/~arif/)

**Name:** Dr. Md Tamjidul Hoque

**Interests:**

Bioinformatics, Machine Learning and Artificial Intelligence, Algorithm Development

**Student projects:**

Semi-disordered Prediction, Energy function optimization, Fold-recognition, Binding region prediction, Support vector machine (SVM) optimized by Genetic algorithms, Neural Network optimized by Genetic algorithms, Gene-Regulatory-Network (GRN) for Algal genome, Sampling algorithm development, Anomaly detection in drug usage.

**Web page:** <http://cs.uno.edu/~tamjid/>

**Name:** Dr. Ben Samuel

**Interests:**

Interactive Narrative, AI-Driven Game Design, Social Simulation, Computationally Assisted Performance

**Student projects:** Potential student projects include using an existing, novel artificial intelligence system to produce believable, empathetic virtual characters (for video games and other contexts), assisting in the development of a mixed-initiative game that encourages players to craft their own stories, and helping to increase the accessibility and distribution of an award winning game that combines social simulation, world generation, and live improvised performance.

**Web page:** <http://www.ben-samuel.com>

**Name:** Dr. Stephen G. Ware

**Interests:**

- Artificial intelligence
- Game development
- Interactive narrative

**Student projects:** Prof. Ware is looking for an undergraduate student with an interest in designing 3D levels for an RPG-like game. The student will use pre-made, high quality 3D assets to lay out the insides of rooms and the outsides of buildings.

**Web page:** <http://nil.cs.uno.edu>

**Name:** Dr. Minhaz F. Zibran

**Interests:** Software Engineering with particular focus on source code analysis and manipulation, empirical studies, tool support for aiding software development and maintenance. Program Comprehension

**Student projects:** Code Clone Detection, Clone Visualization, Code obfuscation

**Web page:** <http://www.cs.uno.edu/~zibran>

[Back to Top](#)

## E. Department of Earth & Environmental Sciences

**Name:** Dr. Ioannis Y. Georgiou

**Interests:** I am interested in various surface processes occurring in rivers, deltas and estuaries. My recent efforts have focused on fluvio-deltaic and coastal plain systems, focusing on the hydrodynamic and geomorphic response of these systems to internal and external forcings at various time-scales, frequently spanning from inter-annual to century. We do so by studying regional-to-local processes driving geomorphic change using observations in the field, numerical process-based models, and often reduced complexity models. Much of my research takes place in the Mississippi River Delta Plain, where the ongoing transgression provides unique conditions to study the effects of sea level rise, storms, and other processes on wetlands, barrier islands, and the modern delta, with transferable knowledge to other systems around the world. Recent research efforts include paleo wave climate and tidal current reproductions to better understand regressive systems and basin infilling, processes controlling the development of stratigraphy in tidal point bars, the morphodynamics of the fluvial-to-marine transition, morphodynamics of barrier islands, controls on delta distributary channel kinematics, and exchange processes between estuaries and the coastal ocean.

**Potential Student Projects:**

1. Fine sediment dynamics in Lake Pontchartrain
2. Lateral accretion of tidal bars with and without fluvial input
3. Tidal inlet and basin infilling processes
4. Understanding marsh edge erosion in coastal wetlands
5. Coastal morphodynamic response to tropical and extratropical storms
6. Sedimentation in river-dominated deltaic wetlands
7. Morphometrics of tidal channel networks

**Web page:** <https://sites.google.com/site/ioannisgeorgiougrou/>

**Name:** Dr. Martin O'Connell

**Interests:** The Nekton Research Laboratory (NRL) has many potential undergraduate research projects for students in spring 2015. Our research interests include studying the ecology of local freshwater and marine fishes with the hopes of improving the management and conservation of these species. The NRL has a history for recruiting undergraduate researchers and volunteers, some of whom continue on as graduate students either in the NRL itself or elsewhere.

**Student Projects:**

- Processing and identification of larval fishes and invertebrates as related to measuring their responses to possible settlement cues;
- Assessing the interaction of non-native Rio Grande cichlids (*Herichthys cyanoguttatus*) and native fishes in Bayou St. John and City Park;
- Determining if Louisiana populations of sheepshead minnows (*Cyprinodon variegatus*) practice inter- and intra-species cleaning behavior or lepidophagy;
- A survey for populations of southern redbelly dace (*Phoxinus erythrogaster*) in stream of Louisiana's Florida parishes;
- Recapture of radio tagged red drum (*Sciaenops ocellatus*) from Bayou St. John for growth and otolith analyses;
- A survey for juvenile tarpon (*Megalops atlanticus*) and assessment of potential habitats in southeastern Louisiana; and
- Surveying for non-native channeled apple snails (various species) in southeastern Louisiana.

**Web page:** <http://www.uno.edu/nekton-research-laboratory/>



## F. Department of Mathematics

**Name:** Dr. Kenneth Holladay

**Interests:** Combinatorics - Circle systems

**Student Project:** I am writing a text book for discrete math on circle systems. The student can work on several topics of research as well as the exposition of this work. This includes completing the list of 8 point systems, finding extremal systems with 9 to 12 points, geometric representations, density theorems, counting results and other topics

Name: Dr. Linxiong Li

Interests: My research focuses on both theoretical and applied statistics with applications in various fields including biomedicine, engineering, financial industry, etc. Currently, I am working on a project funded by the USDA about cotton fiber length estimation.

Student Project: Use basic statistics and software to analyze data

**Name:** Jairo Santanilla

**Interests:**

- Mathematics for Data Analysis,
- Actuarial Science
- Stochastic Analysis
- Differential Equations (including stochastic)

**Student Projects:**

- Data analysis in actuary.
- Preparation for actuarial exams (Society of Actuaries)

## G. Department of Physics

**Name:** Dr. Juliette Ioup

**Research Interests:** Acoustic, geophysical, and aerospace signal analysis and processing; deconvolution, mathematical digital filtering, and spectral estimation; Fourier and wavelet transforms; higher order correlations and spectra; underwater acoustics and bioacoustics; modeling and simulation; computational physics.

**Student Projects:**

- Analysis of underwater fish videos.
- Geophysical monitoring of levees.
- Analysis of whale and dolphin clicks.

[Back to Top](#)

## H. Department of Psychology

**Name:** Dr. Elliott Beaton

**Interests:** At the Stress, Cognition, and Affective Neuroscience (SCAN) Laboratory, we study how the physiological effects of stress shape development in children at high risk for mental illness in adulthood. To this end, we use a variety of methods to study children including interviews and questionnaires, computer-based cognitive games, brain imaging, hormone and immunological analyses, and reactive physiological measures such as heart rate and blood pressure.

**Potential Student Projects:** We are currently working on a National Institute of Health funded project examining the role of stress on development in children with chromosome 22q11.2 deletion syndrome and Down syndrome. Students are needed to assist with data collection and management and will have an opportunity to be involved in a variety of ongoing projects. COSURP students may also be able to develop their own research project questions in the context of the ongoing work.

**Web Page:** [www.SCANLaboratory.org](http://www.SCANLaboratory.org)

**Name:** Dr. Christopher Harshaw

**Interests:** I am interested broadly in how homeostatic mechanisms/bodily signals influence cognition and behavior. My current focus is on deficits in thermal homeostasis and microbiome dysfunction in mouse models of autism and how these may provide translational leverage for understanding Autism Spectrum Disorders (ASDs). ASDs often co-occur with gastrointestinal issues, thermoregulatory and immune disorders, as well as mitochondrial dysfunction. I take a translational approach to investigating potential links between such somatic variables and social behavior/cognition, employing several mouse models of autism (e.g., oxytocin knockout, BALB/c, and BALB/cByJ mice). My lab brings a range of techniques to bear on such questions, including behavioral and blood assays, pharmacological manipulations, perfusion, immunohistochemistry, infrared thermography, small animal surgery, and radiotelemetry tracking of core body temperature and other physiological parameters.

**Potential Student Projects:** There are a number of ongoing projects available for students to assist on, including (1) an experiment aimed at elucidating the effects of oxytocin on brown adipose tissue thermogenesis and behavior, (2) experiments investigating thermoregulatory dysfunction in mouse models of autism, and (3) a study of thermoregulation and social cognition in humans using facial thermography.

[Back to Top](#)