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

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

III. College of Liberal Arts, Education and Human Development
   A. Department of Anthropology
   B. Department of Educational Leadership, Counseling, and Foundation
   C. Department of Film and Theatre
   D. Department of Fine Arts
   E. Department of History
   F. Department of Philosophy
   G. Department of Planning and Urban Studies

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
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  
: http://www.uno.edu/coba/management-marketing/faculty/dong-jun-min.aspx

Name: Dr. Donald Zimmerman  
Interests: Healthcare management and policy; Public health; Global health  
Student projects: Healthcare system improvement; Person-focused care Chronic disease management; Technology and disruptive innovation; Community health improvement Teamwork and communication; Partnership, collaboration, and leadership
College of Engineering

A. Department of Civil and Environmental Engineering

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

B. Department of Electrical Engineering

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: Aircraft trajectory information processing for conflict detection and collision avoidance in next generation (NextGen) air traffic control systems, Guidance of Unmanned Aircraft Systems (UAS)
Senior Student projects: Modeling and simulation of various algorithms for conflict detection & collision avoidance of Unmanned Air Vehicles (UAVs); Basic knowledge of probability and Matlab programming required

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.

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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 CO2 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: Mr. George Morrissey

Research Interests: Ship model testing

Student Projects: Instrumentation of existing remote controlled ship model to measure ship model performance beyond the physical limits of our existing towing tank. This project will involve developing an Arduino or RaspberryPI Data acquisition system with sensors to measure motions of and forces acting on a model trimaran.

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

College of Liberal Arts, Education and Human Development

A. Department of Anthropology

Name: Dr. David Beriss
Interests: Foodways, ethnicity, multiculturalism, migration, urban and applied anthropology, New Orleans/U.S. South, France, Europe, the Caribbean. 
Student Projects: Assist in extending the restaurant row study (see below), archival project on New Orleans restaurant criticism, food sovereignty project.
Contact: dberiss@uno.edu

B. Department of Educational Leadership, Counseling, and Foundations

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

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C. Department of Film and Theatre

**Name:** Laszlo Fulop  
**Interests:** Documentary and Short Film Production, Script Analysis, Video Writing, History of Documentary, Screenwriting  
**Student Projects:**  
I am working on a documentary film about creativity and aging. The film is based on interviews with local (or visiting) creatives (artists, musicians, chefs, writers, architects, Mardi Gras Indians, choreographers and dancers, etc.) older than 60. The student worker  
- would help in producing the film, especially by  
- finding interview subjects for the film  
- researching the career of these individuals and incorporating these research findings into the interview questions  
- scheduling interviews  
- etc.  
Preferably, but not necessary, the student worker  
- would help in filming the interviews as a production assistant or even as a b-camera operator  

**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  

D. 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](http://cargocollective.com/danrule)

E. Department of History

**Name:** Dr. Connie Zeanah Atkinson  
**Interests:** New Orleans history, New Orleans music, tourism, oral history  
**Potential student projects:**  
Conducting oral history projects  
Working with NOLA music museum  
neworleanshistorical.org digital history project  
TriPod: New Orleans at 300 radio show  
Conference planning  
**Faculty web page:** [www.uno.edu/cola/history/midlo](http://www.uno.edu/cola/history/midlo)
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](http://www.uno.edu/cola/history/Faculty/mitchell.aspx)  
**Web page of project:** [http://freedomonthemove.org/](http://freedomonthemove.org/)

F. Department of Philosophy

Name: Dr. Chris W. Surprenaut  
**Interests:** ethics, political philosophy, public policy, entrepreneurship  
**Student projects:** Help with work on forthcoming books on alternatives to incarceration and just/unjust punishment.  

G. Department of Planning and Urban Studies

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](http://transportation.uno.edu/team/staff-directory/tara-marie-tolford)

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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, conservation biology, tropical rainforest ecology and evolutionary biology  
Student projects: Disease resistance in island reptiles; mapping adaptive variation in tropical forest animals  
Web page: http://www.anthonylab.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.

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, Leptosipho, 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. Jerry Howard
**Interests:** Evolutionary ecology, particularly behavioral, physiological, morphological, and life history adaptations; Conservation biology, particularly biology of invasive species and vertebrate conservation and management.

**Student projects:** Developmental plasticity in insects; effect of diet selection on behavior and energy metabolism; tradeoff between growth and reproduction in Chinese tallow tree, pollinator communities on an urban-rural gradient; behavior and conservation of crane species.

Name: Dr. Carla Penz
**Interests:** phylogenetic systematics, comparative morphology, and general biology of butterflies.

**Student projects:** Using collection specimens, students can study butterfly color patterns and/or morphology. If we establish inter-lab collaborations, students might be able to learn about DNA sequencing. We have available collection material for butterfly groups that would be suitable for undergraduate research.

**Web page:** [http://fs.uno.edu/cpenz](http://fs.uno.edu/cpenz)

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.

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C. Department of Chemistry

Name: Dr. Viktor Poltavets
**Research Interests:** Poltavets group research program is focused on the rational design of novel solid state phases and establishing how crystal structure, spin and oxidation state correlates to the magnetic, electronic, catalytic, and electrochemical properties of materials. While focusing on fundamental scientific problems, we are attempting to address critical needs of current technologies in novel energy storage (cathodes with multiple electrons transfer) and energy conversion (new catalysts for ammonia decomposition) materials.

**Project description:** Syntheses and investigation of new materials for rechargeable batteries
Ammonia for renewable energy storage: ternary nitrides as catalyst for ammonia decomposition
Materials with strongly correlated electrons (superconductivity, magnetic materials)
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](http://www.uno.edu/cos/chemistry/rick.aspx)

Name: Dr. Matthew Tarr  
**Interests:** Environmental chemistry, photochemistry, nanomaterials for photocatalysis, nanomaterials for biomedical applications  
**Student Projects:** Photochemistry of crude oil in environmental systems; Preparing and testing nanomaterials for pollutant degradation; Preparing and testing nanomaterials for biomedical applications  
**Web Page:** [http://www.uno.edu/cos/chemistry/tarr.aspx](http://www.uno.edu/cos/chemistry/tarr.aspx)

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](http://www.uno.edu/cos/chemistry/trudell.aspx)

Name: Dr. John B. Wiley  
**Interests:** Synthesis and Characterization of Nanoscrolls; Solid state and materials chemistry; new oxides; nanomaterials  
**Student Projects:** The student will utilize low temperature reaction strategies to modify various layered compounds so as to create nanoscrolled materials. High temperature synthesis, followed by exfoliation, will be used in the formation of the nanoscrolls. Various oxide and non-oxide compounds will be investigated and in some cases, nanoparticles will be captured so as to make nanopeapod structures. The student will learn about the methods used in synthesis, simple crystallography, and electron microscopy.  
**Web page:** [http://fs.uno.edu/jwiley/](http://fs.uno.edu/jwiley/)
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. 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. Stephen G. Ware
Interests: Artificial Intelligence, Video Games, Interactive Narratives
Student projects: Students would develop small, web-based games for assessment of basic reading and math skills, or students would annotate and study the narratives of classic adventure video games and develop an interactive narrative designed to test how people make narrative choices in games.
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
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/ioannisgeorgiougroup/

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. 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: Dr. Jairo Santanilla  
Interests: Stochastic and deterministic modeling. These topics include stochastic, fractional, and deterministic differential equations in different areas including actuarial, financial, biological, and engineering problems.  
Student Projects:  
• To study fractional calculus and eventually fractional differential equations.  
• To study specific stochastic differential equation in connection with one of the areas mentioned above.  
• To compare specific models using stochastic tools vs. deterministic ones.  
• To collect and analyze data to support actuarial models.

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.

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 in 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
**Name:** Dr. Robert Laird  
**Interests:** In the Families and Teens Lab we conduct research on the contexts in which children develop social and behavioral competencies with an emphasis on parent-child and peer relationships. Specifically, we conduct research designed to understand family and peer relationship contributions to the development of a broad range of social skills and problem behaviors.  
**Potential Student Projects:** We are beginning a new project focused on understanding how families adjust to having a new teen driver. We also hope to learn what families can do to make driving safer for new teen drivers. Research assistants are needed to help collect (i.e., interview parents and teens, code interviews) and manage data (e.g., maintain databases and manage on-line surveys).  
**Web Page:** [http://fs.uno.edu/rlaird/](http://fs.uno.edu/rlaird/)

**Name:** Dr. Sonia Rubens  
**Interests:** Children exposed to chronic and acute trauma are at risk for a number of negative mental and behavioral health outcomes. In her research, Dr. Rubens examines ways to promote resilience among youth exposed to trauma. Using a developmental framework, her research primarily focuses on health behaviors (e.g., sleep, physical activity), contextual factors (e.g., peers, schools, neighborhood), and cultural factors (e.g., language, acculturation, ethnic identity) that foster resilience among diverse youth exposed to chronic and acute trauma.  
**Potential Student Projects:** Sleep, trauma exposure, and mental health  
**Web Page:** [http://labs.uno.edu/care/index.html](http://labs.uno.edu/care/index.html)

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