Department of Biological Sciences

Name: Nicky Anthony
**Interests:** molecular ecology, evolutionary biology and conservation genetics.
**Student projects:** Isolation and characterization of MHC in reptiles; characterization of nuclear integrations of mitochondrial DNA in great apes; butterfly evolutionary diversification in Madagascar
**Web page:** [http://www.uno.edu/cos/biology/people/](http://www.uno.edu/cos/biology/people/)

Name: Mary Clancy
**Interests:** Eukaryotic genetic regulatory mechanisms using the yeast, Saccharomyces cerevisiae as a model organism. 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.
**Web page:** [http://www.uno.edu/cos/biology/people/](http://www.uno.edu/cos/biology/people/)

Name: Jerry Howard
**Interests:** plant-herbivore interactions, the ecology of invasive species, and behavioral problems in conservation biology.
**Potential student projects:** Genetic structure of the Texas leafcutting ant, *Atta texana*, in Texas and Louisiana; Comparative genetics and behavior of the endangered Mississippi Sandhill Crane and other sandhill crane populations; Relationship between fire, primary production by plants, and animal community diversity on the Mississippi coastal plain; Comparative ecology, behavior, and morphology of the fungus-growing ants.
**Web page:** [http://www.uno.edu/cos/biology/people/](http://www.uno.edu/cos/biology/people/)

Name: Simon Lailvau
**Interests:** Sexual selection, physiological and evolutionary ecology, whole-organism performance. My research interests are in the broad areas of ecology and evolution, but I focus in particular on sexual selection (how animals obtain mates) and on functional ecology (understanding how animal performance capacities such as jumping, running or biting allow animals to overcome environmental challenges).
**Potential student projects:** Pinching force and claw allometry in fiddler crabs; Interspecific competition in Anolis lizards; Dung beetle courtship; Context-dependent male combat in house crickets; and The evolution of bite force in Anolis.
**Web page:** [http://www.fs.uno.edu/slailvau/index.html](http://www.fs.uno.edu/slailvau/index.html)

Name: Zhengchang Liu
**Interests:** Signal Transduction Pathways in Yeast. My laboratory is interested in understanding the mechanisms by which cells sense their internal and external environments by focusing on three signal transduction pathways, mitochondria-to-
nucleus signaling, the TOR (target of rapamycin) signal transduction pathway, and the SPS (Ssy1-Ptr3-Ssy5) amino acid sensing pathway. We are addressing these questions by using genetic, molecular, and biochemical approaches in the model organism *Saccharomyces cerevisiae*.

**Web page:** [http://www.uno.edu/cos/biology/people/](http://www.uno.edu/cos/biology/people/)

**Name:** Carla Penz  
**Interests:** phylogenetic systematics, comparative morphology, and general biology of butterflies.  
**Potential 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:** Barney Rees  
**Interests:** Fish physiology, biochemistry, and molecular biology; biochemical adaptation to environmental changes, especially changes in dissolved oxygen; development and application of proteomic technologies in comparative biology.  
**Potential 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.  
**Web page:** [http://www.uno.edu/cos/biology/people/](http://www.uno.edu/cos/biology/people/)

**Name:** 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.  
**Potential student projects:** Students would be involved in cloning and expressing cyanobacterial proteins inside *E. coli* to recreate the entire biosynthetic pathway for each phycobiliprotein.  
**Web page:** [http://www.uno.edu/cos/biology/people/](http://www.uno.edu/cos/biology/people/)

**Name:** Vaniyambadi Sridhar  
**Interests:** Epigenetics; DNA methylation and histone modification in *Arabidopsis*.  
**Potential student projects:** Potential students will be involved in identifying genes that
are required for abiotic stress response using stress regulated reporter genes and transient gene knockouts in the plant *Arabidopsis*. Students will perform reporter gene assays and molecular cloning.

**Web page:** [http://www.uno.edu/cos/biology/people/](http://www.uno.edu/cos/biology/people/)

### Department of Chemistry

**Name:** Steve Rick  
**Project title:** Conformational flexibility of proteins and studies of aqueous processes  
**Project description:** Conformational flexibility is an important aspect of protein function. Recently, we have developed efficient algorithms for studying conformational change using computer simulations which work well with recent advances in high performance computing. We are also interested in the using computer simulations to study the properties of aqueous solutions using our newly developed potential models for water, ions, and other molecules.  
**Web page:** [http://www.chem.uno.edu/ChemistryDepartmentfolder/Rick.html](http://www.chem.uno.edu/ChemistryDepartmentfolder/Rick.html)

**Name:** Matthew Tarr  
**Project title:** Nanocomposite materials for photocatalysis and photovoltaics  
**Project description:** In this project, we prepare various nanocomposite materials using wet chemical, templated electrochemical, and photochemical methods. The work focuses on producing nanoscale composites of metal oxides (such as TiO$_2$) with metals (such as Au, Ag, Cu, etc). These nanocomposite materials are characterized and then tested for their photocatalytic and photovoltaic properties.  
**Website:** [www.chem.uno.edu/ChemistryDepartmentfolder/Tarr.html](http://www.chem.uno.edu/ChemistryDepartmentfolder/Tarr.html)

**Name:** Mark L. Trudell  
**Project title:** Development and Optimization of New Methods for Drug Synthesis  
**Project description:** The research project will involve the development and optimization of new synthetic methods for the synthesis of novel compounds targeted for potential medication development. The pharmacological targets include drug addiction, pain and depression.  
**Web page:** [http://www.chem.uno.edu/ChemistryDepartmentfolder/Trudell.html](http://www.chem.uno.edu/ChemistryDepartmentfolder/Trudell.html)

**Name:** John B. Wiley  
**Project title:** Synthesis and Characterization of New Layered Oxides  
**Project description:** The student will utilize low temperature reaction strategies to make new layered compounds. Reactions involving ion exchange and/or intercalation will be exploited to modify the structures of various oxides. The student will learn about the methods used in simple crystallography and thermal analysis.  
**Web page:** [http://fs.uno.edu/jwiley/](http://fs.uno.edu/jwiley/)
Name: Weilie Zhou

Project title: Nanomaterials Synthesis for Solar Cells and Highly Sensitive Sensors

Project description: The student will synthesize one-dimensional nanowire arrays using chemical vapor deposition (CVD) integrated with pulsed laser deposition (PV) for photovoltaic device and chemical sensor fabrication. The nanomaterials will be characterized using scanning and transmission electron microscopy, and devices and sensors will be integrated through e-beam nanolithography.

Web page: http://www.amri.uno.edu/WZhou%20folder/WZhou/WZhouHomePage.html

Department of Computer Science

Name: Christopher Summa

Interests: Protein structure refinement, simulation of macromolecules, statistical analysis of protein structures, computational design of water-soluble membrane proteins, and optimization and analysis of molecular energy functions.

Potential Student Projects: Students would work on a problem involving refinement of protein structure, simulating macromolecules, performing statistical analysis of protein structures, computational design of water-soluble membrane proteins, or optimization and analysis of molecular energy functions.

Web page: http://www.cs.uno.edu/~csumma

Name: Christopher Taylor

Interests: DNA sequence analysis, DNA microarray analysis, and data visualization.

Potential Student Projects: Possible projects include Phylogenetic tree construction to ascertain evolutionary relationships between DNA sequences, high-throughput sequence mapping, statistical techniques for feature detection, smoothing and processing of probe intensities in microarray data, feature extraction and peak finding, and data transformations and visualization techniques.

Web page: http://www.cs.uno.edu/~taylor

Name: Shengru Tu

Interests: Service-oriented architecture (SOA), Web services for GIS, testing for Web services, enterprise software integration, semantic framework supporting computer science education.

Potential students projects (3)

1. Web Application Development for Education on Computational Thinking

   Computing is a dynamic, inventive and ubiquitous filed. Learning Computer Science (CS) should be exciting. However, a typical long course work chain having little connection with the real-world challenges often makes students frustrated. A learning model, the Verification-Driven Learning model, aims at bringing comprehensive real-world problems into CS classrooms. The essential approach is to turning existing real-world Web applications into learning cases. Supported by a previous a UNO Summer Undergraduate Research Project and an on-going NSF grant, we have accumulated a good set of VDL learning cases such as the Gas Law learning case.
developed by Brian Becker (http://137.30.122.107/gas-laws/experiment.html) and many others (http://vcrlsvcs.cs.uno.edu/cpath/). The proposed project is to evaluate VDL the existing learning cases and refine the design of the learning model. More learning cases will be developed with new ideas. The CS undergraduate students are the best judges for the CS education. With their fresh memory of their own CS learning experience, we expect in-depth evaluation and inventive design ideas. Each of the ideas is to be materialized in learning case development.

2. Web Mash-up Frameworks

In software development, classes are designed to be reused. In Web development, applications and services should also be “reused” but in a more direct way – Web mash-up. This concept has been in reality of the commercial world in which one Web application directly utilizes the information of other Web services. Examples of Web mash-up are zillows.com, WeatherBonk.com and mapdango.com among hundreds of others. However, the processes of achieving mash-ups are mostly relied on programmers’ experience and manual tweak of code. A systematic method is not in place yet. The proposed project is to study the current mash-up techniques, to study the design principles for mash-ups, and to develop a software framework that supports a systematic design methodology for Web mash-up practice. We shall start with a focus on data mash-up first.

3. Web Enable the Louisiana Oyster Growth Model Database

With the support of a previous COSURP project and the technical guidance of Dr. Thomas Soniat in the Biological Science Department, student Janak Dohal has developed a local database application for the Louisiana Oyster Growth Model. In the Fall semester, he has successfully integrated the FORTRAN program into his database application, and achieved a full automation of data generation. The proposed project is to make the local database application Web accessible. In doing so, the database implementation will need to be upgraded from Access to a more scalable database engine such as MySQL. We predict that more services will be of demand once the model is published. Therefore, the student will study the Web service technology.

Web page: http://www.cs.uno.edu/~shengru/

Department of Earth & Environmental Sciences

Name: Ioannis Georgiou

Interests: The Coastal and Environmental Hydrodynamics Laboratory (CEHL) has several potential undergraduate research undergraduate students. The Labs research interests include studying the sediment dynamics in semi enclosed systems and the coastal ocean, the circulation and transport dynamics of the coastal ocean and inland bays, river-dominated system, and physical transport processes in barrier islands.

Potential Student Projects:
1. Use of historic discrete salinity measurements and recent CTD profiles to establish a short-term and long-term salinity gradient in the Pontchartrain estuary and Mississippi sound.
2. Saltwater intrusion in Mississippi River. Students will be exposed to old and newly collected data of flow, and salinity in the lower river and assess dynamical effects using empirical and theoretical tools.

3. The fluvial-marine transition. Students will assist in the development of a database of rivers throughout the world, using physical variables such as tides, river flow etc., to test present empirical relationships.

4. Sediment mobility in coastal and shelf seas during storms: a dataset of velocities, waves, storm surge and wind speed is available. Students will explore using mobility relationships, the potential for storms to erode and transport sediment.

5. Sedimentation in river-dominated wetlands: students will work with field and model derived datasets to identify transport pathways, analyze grain size data, and develop correlations.

Web page: [http://labs.uno.edu/cehl/Home.html](http://labs.uno.edu/cehl/Home.html)

Name: Mark Kulp

**Interests:** The Coastal Research Laboratory has potential undergraduate research projects in stratigraphy and geomorphology of the Mississippi River delta plain.

**Potential Student Projects:**
1) Mapping of geomorphologic change across the northern Gulf of Mexico through the use of historical and recently acquired imagery
2) Correlation of stratigraphic units to better understand the framework of the Louisiana shelf
3) Documentation of the shallow stratigraphy below modern barrier islands
4) Investigations of the relative sea level change across the northern Gulf of Mexico

Web page: [http://coastal.uno.edu/Home.html](http://coastal.uno.edu/Home.html)

Name: Martin O’Connell

**Interests:** The Nekton Research Laboratory (NRL) has many potential undergraduate research projects for students in spring 2010. 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.

**Potential Student Projects:**
1. Processing and identification of larval fishes and invertebrates to assess the impacts of the closure of the Mississippi River Gulf Outlet (MRGO);
2. Analysis of multivariate data on the influence of non-native Rio Grande cichlids (*Herichthys cyanoguttatus*) on native fishes in Bayou St. John and City Park;
3. A survey for populations of southern redbelly dace (*Phoxinus erythrogaster*) in stream of Louisiana’s Florida parishes;
4. Recapture of radio tagged red drum (*Sciaenops ocellatus*) from Bayou St. John for growth and otolith analyses; and
5. A survey for juvenile tarpon (*Megalops atlanticus*) and assessment of potential habitats in southeastern Louisiana.

Web page: [http://www.nekton.uno.edu/](http://www.nekton.uno.edu/)
Name: William Simmons

Interests: The Mineralogy, Pegmatology, and Petrology research group (MP²) in Earth and Environmental Sciences investigates the mineralogy, geochemistry and genesis of pegmatite deposits.

Potential Student Projects:

1) Methods to quantify the amount of lithium and H₂O in pegmatites
2) Mineralogy of pegmatites from Maine
3) Muscovite-trilithionite evolution in LCT type pegmatites
4) Effects of fluxes on the properties of granitic melts and resulting mineral assemblages.
5) Heavy mineral analysis as tool to characterize rare-element minerals from various pegmatite districts.
6) Scanning Electron Microscopy and Electron Microprobe characterization of pegmatite mineral phases.
7) Light element chemistry of feldspars, micas and whole rock samples from the South Platte pegmatite district, Colorado.

Web page: http://pegmatology.uno.edu/

Department of Mathematics

Name: Craig Jensen

Interests: Geometric group theory and the cohomology of groups. These areas explore algebraic objects (groups) via visual means (geometry and topology.)

Potential Student Project: Explore ideas in geometric group theory.

Name: 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.

Potential Student Project: Use basic statistics and software to analyze data.

Name: Ralph Saxton

Interests: Nonlinear analysis and its applications to field theories. Some problems involve harmonic mappings, nematic liquid crystals, phase transitions, fluid dynamics and elasticity. Each of these produces surprisingly interesting equations to study. Equations are to mathematics something like planets to astronomy or species to biology; new ones are as exciting to discover as their properties are to uncover.

Potential Student Project: We would examine the theories behind waves. Waves are everywhere, in sound, in water, underground (in earthquakes), in light - they can be produced, and behave, in very different ways. We discover how waves are propagated through their medium.

Name: Tumulesh Solanky
**Interest:** Statistics. In particular, deriving sampling strategies where the sampling cost is high, such as in clinical trials where the subjects are human beings. The overall goal is to achieve precise estimation of key parameters based on a smallest possible sample.

**Potential Student Project:** I am looking at the data for some clinical trials for selected antipsychotic drugs which have been approved by FDA and have gone through independent clinical trials. The goal would be to see if using the current research methodologies, one could achieve the same precision as in the published studies, based on a smaller sample.

**Name:** Dongming Wei  
**Interests:** Finite element analysis, nonlinear heat transfer, non-Newtonian flows, non-linear materials, and the coupled fields. Classical solutions to non-linear partial differential equations, special functions

**Potential Student Projects:**
1. Exploring properties and applications in nonlinear mechanics of several types of generalized trigonometric functions
2. Solving nonlinear partial differential equations in Non-Newtonian flows, including pipe flows in pipeline design and pump selection with applications in food processing and in drilling industries
3. Performing finite element analysis of real life engineering problems in mechanical, civil, biomechanical, and chemical engineering
4. Solving differential equations as models for human blood flows and other bio-flows in channels

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**Department of Physics**

**Name:** George Ioup and 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:**
1. Analysis of underwater fish videos. The National Oceanic and Atmospheric Administration National Marine Fisheries Service records underwater videos of fish for the purpose of fish counting and identification. Image analysis and processing research is needed to automate the counting of fish and the classification of species. Fish counting algorithms have already been developed but can be improved. Current research is to develop fish classification algorithms. Several projects are suitable for undergraduates. Research partner: Dr. Dimitrios Charalampidis of the Department of Electrical Engineering.
2. Geophysical monitoring of levees. Both because of their construction and changes over time, the protection offered by levees can be compromised. Remote methods are needed to test levees for possible weaknesses without actual coring or other invasive, time-consuming procedures. An inter-institutional levee-monitoring group has been
formed to evaluate geophysical techniques for monitoring levees. Methods include seismic, ground-penetrating radar, electromagnetic induction profiling, and electrical resistance measurements. Projects are suitable for undergraduates. Research partners: Dr. Juan Lorenzo, Department of Geology and Geophysics, LSU-BR; Dr. Ken Holladay, Department of Mathematics; Drs. Mark Kulp and Royhan Gani, Department of Earth and Environmental Sciences.

3. Analysis of whale and dolphin clicks. Animal bioacoustics includes the study of sounds made by marine mammals. Whales and dolphins communicate and echolocate by emitting short powerful clicks that they use to communicate and to echolocate for finding prey and navigation. High quality underwater recordings have been made of these clicks and detailed analysis has been underway for 10 years. Progress has been made in using clicks to identify individual whales. Methods include clustering of clicks, cadence analysis of clicks, click train identification, localization of click sources, and click change detection. The number of clicks versus time is also being used to make population abundance estimates of the animals. Some projects are suitable for advanced undergraduates with suitable background. Research partners: Dr. Natalia Sidorovskaia, Department of Physics, UL Lafayette; Dr. Azmy Ackleh and Dr. Nabendu Pal, Department of Mathematics, UL Lafayette; Dr. Chris Tiemann, Applied Research Laboratories, UT Austin; Dr. Joal Newcomb, Naval Oceanographic Office, Stennis Space Center; Dr. Stan Kuczaj, Department of Psychology, University of Southern Miss.; Dr. James Stephens, Department of Physics, University of Southern Miss.

Name: Leonard Spinu

Research Interests: Dr. Spinu is an experimental condensed matter physicist who is interested in the magnetic and electronic properties of nanostructured materials, high frequency characterization of magnetic and dielectric materials, spin-dependent transport, tunneling magnetoresistance. He also performs mathematical modeling and computer simulations on magnetization processes in fine particle systems micromagnetics.

Student Projects:
1. Novel Architectures of High Temperature Permanent Magnet Nanocomposites with a Superior Energy Product: In this period of reconstruction of the Gulf Coast and New Orleans area, energy management, supply and conservation are very important issues. The availability of new ways to produce, store and transfer the energy relies heavily in the existence of new materials. This project is focused in the area of high energy density nanostructured materials for DoD and civil power and energy storage applications. Magnetic fields produced by permanent magnets or running currents supply the driving force behind the motor generators. Permanent magnet motors have a high power energy density, high efficiency, high torque density and compact size, which are the major advantages over the conventional motors. Performance parameters of permanent magnet motors are ultimately limited by the energy product (a measure of the amount of work that can be extracted from a magnet) and operating temperature of the available permanent magnet materials. In this project we propose to employ a variety of synthesis and assembly techniques to build novel permanent magnets based on nanosized building blocks.

2. Ultra-Low Temperature Properties of Strongly Correlated Materials: Strongly correlated materials are a broad class of materials that show unusual electronic and
magnetic properties, such as metal-insulator transitions or half-metallicity, that are very important for technological applications. The term strong correlation refers to behavior of electrons in solids that is not well-described by simple one-electron theories such as the local density approximation of density functional theory or Hartree-Fock theory. Consequently, these materials have electronic structures that are neither simply free-electron like nor completely ionic, but a mixture of both. The most commonly known strongly correlated materials are high-temperature superconductors. Also, most of the transition metal oxides belong into this class which may be subdivided according to their behavior, in high Tc superconductors, spintronic materials, Mott insulators, spin Peierls materials, heavy fermion materials, or quasi low-dimensional materials. This research project will focus in studying electronic and magnetic properties at temperature well below 1K (15mK- 100 mK) of various strongly correlated materials. The materials will be prepared in collaboration with Tulane University and/or obtained in our Pulsed Laser Deposition Laboratory. Students involved in these interdisciplinary research programs, which are situated at the border of solid state physics, materials science and engineering, will acquire a broad range of skills as materials synthesis, magnetic characterization and computational skills.

Web Page: http://fs.uno.edu/lspinu/home.html
Department of Psychology

Name: 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 have 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/

Name: Connie Lamm
Interests: Everyday moment-to-moment, as we navigate through our busy lives, we continuously apply various self-regulation strategies, e.g., just as we are about to back into a parking spot downtown another car slides into it. At this point, we have to inhibit our desire to yell at or hit the other driver. In the Developmental Cognitive Affective Psychophysiology (DCAP) lab, we examine the neural correlates underlying various self-regulation strategies and how these mechanisms change in the context of emotion. Furthermore, we examine both the typical and atypical developmental trajectories of these self-regulatory mechanisms. Knowledge about the typical developmental trajectories of various self-regulation strategies provides insight into why some children, adolescents, or adults with aggressive behavior problems have difficulty applying self-regulatory mechanisms.
Potential Student Project: We are beginning a new project focused on understanding why emotional contexts often interfere with our ability to pay attention to important events. Research assistants are needed to help collect EEG data. The RA(s) will be trained in EEG acquisition and data quality inspection.
Web Page: http://psyc.uno.edu/Faculty%20pages/Lamm.html

Name: Birdie Shirtcliff, Stress Physiology in Teens (SPIT) laboratory
Interests: Dr. Shirtcliff is a behavioral endocrinologist which means that she researches how hormones influence how we behave and how the social environment impacts our hormones. Dr. Shirtcliff is the director of the Stress Physiology in Teens (SPIT) laboratory. The SPIT lab research is interdisciplinary, which means that students gain an appreciation of biology and psychology and the importance of social context. Research examines both short term responses to stressors such as laboratory challenges, as well as changes that are not necessarily temporary but can consistently or even permanently change an individual’s biology. Dr. Shirtcliff’s focus is on hormones because they are stress responsive, often mirroring an individual’s social environment. Because this research involves adolescent humans, Dr. Shirtcliff uses a variety of noninvasive tools, primarily saliva, to examine hormones that relate to sex, stress and psychopathology, as well as measures of immune competence.
Potential Student Projects: Students are encouraged to be involved in existing research projects and may be given the opportunity to design their own research project. For example, a study about the stress of skydiving was designed by 2 independent research SPIT lab students. Current COSURP and independent research students gain hands-on experience working with participants in interviews, video and direct observation, questionnaires, as well as collect and analyze biological measures collected in saliva or via electrodes that measure autonomic nervous system functioning.

Web page: www.psyc.uno.edu/Shirtcliff_Lab_Pages/People.html

Name: Carl F. Weems, Child and Family Stress, Anxiety and Phobia Lab (CAFSAPL)

Interests: The research focuses on the developmental psychopathology of anxiety and depression. In particular, his research integrates developmental, cognitive, biological and behavioral theories in attempting to understand the etiology and course of internalizing disorders in youth. Special areas of interest include the assessment and treatment of childhood anxiety disorders, the role of severe stress, physiological response, brain development, brain function, and cognitive processing in emotional disorders as well as the theoretical and methodological underpinnings of psychological inquiry.

Potential Student Projects: Students in the Weems lab have examined a multiple facets of anxious emotion in youth. Including: Testing a model of Actual and Perceived Control, Examining the effects of Cognitive Therapy for PTSD in youth, Cognitive Models of Anxiety, The role of Family Factors in Anxiety and PTSD, Contextual Indirect Models of Adolescent Development

Web Page: http://psyc.uno.edu/Faculty%20pages/Weems.html