

# Research Enterprise

The Office of the Vice Chancellor for Research (OVCR) publishes the RESEARCH ENTERPRISE to keep the academic community and the community at large informed about research activities, opportunities and development on the IUPUI campus.

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If you have a news item or recent noteworthy research-related achievement that you would like to share, please contact Etta Ward at [emward@iupui.edu](mailto:emward@iupui.edu).

Please be aware that

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## ANNOUNCEMENTS

### New IUPUI Human Subjects Website Released

The Office of Research Administration (ORA) announces the release of its new human subjects website for the IUPUI campus. The site provides a much easier way for researchers to obtain information and forms related to the Human Subjects IRB process. The main navigation feature is process-oriented and provides quick access to the May 2009 Revised forms, links for submitting to each of the IRB's and easy access to checking the status of the submissions. In addition, the site provides detailed information on regulatory requirements and guides the user through the basic steps within the Human Subjects IRB process. There will also soon be a new system that the office is implementing to track protocol information called Coeus Lite. Researchers will eventually be able to submit protocols via this same system.

The URL to the new site is [http://researchadmin.iu.edu/HumanSubjects/IUPUI/hs\\_home.html](http://researchadmin.iu.edu/HumanSubjects/IUPUI/hs_home.html). If you access the old website pages, you will encounter a message and be redirected to the new website. Researchers are encouraged to add new bookmarks. For more information, email [resrisk@iupui.edu](mailto:resrisk@iupui.edu) or call 317-274-8289.

## FEATURE STORY

### Research of Innovative Clinical Education Model Shows Promise for Improving Student Learning

According to Dr. Angela McNelis, Associate Professor and Director of Undergraduate Special Programs in the School of Nursing, clinical faculty face many challenges as they design and conduct clinical courses in contemporary practice environments. These challenges include high patient acuity, rapid patient turn over, shortages of faculty and preceptors, and increasing restrictions from clinical sites. Though faculty know that students must know, see, and do more during clinical experiences to be prepared for practice, concerns for patient safety

not all news items will be deemed appropriate or timely for publication, but each item will be carefully considered.

have led faculty to reconsider the traditional model of clinical education.

Faculty observed that students were not getting many of the clinical experiences they needed because of lack of access to the faculty member, leading to increasing amounts of student "down time."

Additionally, students often worked parallel to expert staff nurses with very little professional interaction between them during a clinical day. Indeed, staff nurses often expressed frustration with students' presence, and finding preceptors to assist in clinical education was becoming more difficult. In response to these challenges, faculty worked collaboratively with acute care organizations to create partnerships to address these issues and to improve practice education. "These partnerships, collectively called

**Practice Education Partnerships (PEPs)**, constitute a clinical teaching model designed to maximize students' practice education experiences by providing them with ready access to the clinical expertise of both staff nurses and faculty, a higher level of supervision as they learn to provide care, and the opportunity to more fully engage in the practice environment," says Dr. McNelis.

Distinctly different from the traditional approach to nursing education, PEP requires reconfiguring the role of nursing school faculty and building competencies in staff nurses to serve as clinical instructors for undergraduate students with varying levels of experience. In fall 2008, PEP units were piloted at three local urban hospitals, and for the spring 2009 semester, IUSON partnered with four additional hospitals to create seven PEP units. Thus, there were seven clinical faculty, approximately 40 PEP preceptors, and 120 students involved in this initiative in spring.

Both faculty and student perceptions were assessed using a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Some of the key findings indicate faculty perceive they have more quality time to give students written feedback on clinical paperwork, are valued as a staff educator on the unit, and have improved communication skills in working with collaborative clinical partners and students. Students believe they have gained more knowledge and skills while having clinical on a PEP unit, are obtaining more quality clinical experiences than if they were on a traditional unit, understand more aspects about the complexity of the healthcare environment, are more confident with skills and communication, understand the role of the RN in a hospital-based practice, and able to organize and prioritize patient care. In examining differences in the 6th semester medical surgical didactic course between students who had no PEP rotations and those who had two PEP rotations, significant differences were found on all semester exam scores, the final exam score, and the final course grade. These findings are encouraging that this model of education has great potential for improving student learning.



Angela McNelis, Ph.D.  
Associate Professor and Director of  
Undergraduate Special Programs  
School of Nursing

## Roper Lab Works to Prevent and Treat Newborn Difficulties Concerning Trisomic, Neural Crest Deficits



Randall Roper, Ph.D (front right) and Team of Student Researchers from the Roper Laboratory Department of Biology, School of Science

Dr. Randall Roper, Assistant Professor in the Department of Biology, has come to know and benefit from the curiosity, enthusiasm and sheer energy that IUPUI students have for research. This summer his lab is teaming with student researchers that include four graduate students from the Department of Biology and the Center for Regenerative Biology and Medicine; four undergraduate students associated with either the Louis Stokes Alliances for Minority Participation (LSAMP), Undergraduate Research Opportunity Programs (UROP) or the Department of Biology; and a high school student from Project SEED.

Research conducted in the Roper Laboratory is to understand a specific facet of Down Syndrome (DS). According to Dr. Roper, Trisomy 21 occurs in approximately 1 out of 700 live births and individuals with DS display many clinical traits including cognitive impairment, congenital heart defects, and alterations in the composition of the head and face (craniofacial structure). A number of tissues affected in DS, including craniofacial, nervous system, heart, and digestive tract, are partially derived from a transient developmental precursor, the neural crest (NC). The Roper Lab provided evidence that the small mandible and oral cavity in trisomic mice results from a reduced number of NC in a small 1st pharyngeal arch, the developmental precursor to the mandible, at embryonic day 9.5. The laboratory is interested in understanding the mechanisms by which genes in three copies on human chromosome 21 cause the NC deficit leading to traits associated with DS.

The diverse group of student researchers working in the Roper Lab is testing different hypotheses about trisomic NC associated with DS in a variety of experimental systems. Experimental mediums include trisomic NC cell cultures, tissues derived from NC in mouse models of DS at different developmental stages, gene expression correlation analyses from embryonic NC derived tissue, and the correlation of NC derived traits in a retrospective study of infants with DS.

The students talk informally about their results in the lab and meet each week to discuss advances both in the laboratory and the worldwide DS research community. "By examining different facets of the NC deficit our laboratory hopes to gain better insight into the causes and results of the NC deficit in individuals with DS. Our long term goal is to understand the molecular and genetic bases of NC-related phenotypes in DS and be able to treat or prevent newborn difficulties relating to trisomic NC deficits," says Dr. Roper.

## CURRENT EXTERNAL FUNDING OPPORTUNITIES

Funding opportunities in this section include selected current grant announcements from federal agencies for **new initiatives and changes to existing programs**. Announcements with limited scope are not listed here but are, instead, sent directly to IUPUI School Deans. For comprehensive coverage of funding opportunities please use the on-line search tools listed below.

### NATIONAL SCIENCE FOUNDATION

**Urban Long-Term Research Areas: Exploratory Research Projects (ULTRA-Ex):** The focus is on interdisciplinary research on the dynamic interactions between people and natural ecosystems in urban settings in ways that will advance both fundamental and applied knowledge. Application deadline is July, 2009. [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=503283](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503283)

**Behavioral Systems:** The focus is on research on the development, function, mechanisms, and evolutionary history of behavior, with emphasis on a vertically integrated understanding of the behavioral phenotype in nature. To foster this integrative goal, the Cluster specifically encourages projects that seek to understand how combinations of neural, hormonal, physiological, and developmental mechanisms act synergistically as a system from which behavior emerges. Application deadline is July 12, 2009. [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=501086](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501086)

### FOUNDATIONS

#### **ROBERT WOOD JOHNSON FOUNDATION (RWJF) Active Living Research: Investigating Policies and Environments to Support Active Communities**

The focus is on research to identify promising policy and environmental strategies for increasing physical activity, decreasing sedentary behaviors and preventing obesity among children and adolescents. We place special emphasis on strategies with the potential to reach racial/ethnic populations and children living in lower-income communities who are at highest risk for obesity. Grants funded under this call for proposals (CFP) are expected to advance RWJF's efforts to reverse the childhood obesity epidemic by 2015. Application deadline is July 29, 2009. [http://www.rwjf.org/files/applications/cfp/cfp\\_ALRnewConnex2009.pdf](http://www.rwjf.org/files/applications/cfp/cfp_ALRnewConnex2009.pdf)

## DID YOU KNOW?

## Campus Facts

April was a record month for proposal submissions with 437 proposals requesting \$112 million submitted. Compared to last year these are increases of 201% and 277% respectively. May submission requests were also up 155% compared to last year. Awards for the fiscal year to date are 89% (\$249 million) compared to the same period last year.

## IDENTIFYING FUNDING OPPORTUNITIES

On-line search tools are available to IUPUI investigators who are interested in identifying funding opportunities in their areas of interest.

**Community of Science (COS):** COS is a primary on-line search tool for identifying funding opportunities. To take advantage of this tool, register at <http://www.cos.com/login/join.shtml>. Once you have completed the short registration process, you can personalize your search by selecting the option entitled "launch your workbench". You can access federal, local, corporate, foundation, nonprofit and other funding opportunities using key terms and save the results of up to 20 searches and have them delivered to you weekly via email.

**National Institutes of Health (NIH) "NIH Guide":** To take advantage of this search tool, register at <http://grants.nih.gov/grants/guide/listserv.htm>. It allows you to receive discipline specific funding opportunities that are delivered to you weekly via email.

**National Science Foundation (NSF) "MyNSF":** To take advantage of this search tool, register at <http://www.nsf.gov/mynsf/>. It allows you to receive discipline specific funding opportunities that are delivered to you weekly via email.

**Federal Business Opportunities "FedBizOpps":** FedBizOpps is the single government point-of-entry for Federal government procurement opportunities over \$25,000. To take advantage of this search tool, visit <http://vsearch1.fbo.gov/servlet/SearchServlet>. Opportunities found at this site include, but are not limited to, presolicitations and special notices for research and service contracts for specific projects and some national centers and surveys that would not be found in Grants.gov and may not be found in the Community of Science.

**Limited Submission Funding Opportunities:** Occasionally a funding agency places a limitation on the number of proposals that can be submitted from a campus or university system. For a description of the upcoming "limited submission" funding opportunities, as well as guidelines and application forms, go to: <http://ovpr.indiana.edu/lmsub/lmsub.asp> or contact Etta Ward in the IUPUI Office of the Vice Chancellor for Research: [emward@iupui.edu](mailto:emward@iupui.edu) or 317.278.8427.

**Special Handling:** The Special Handling list was created in order to communicate donor restrictions and/or preferences for managing solicitation requests from Indiana University. The list reflects special relationships that exist between donors and the university and includes corporations and foundations that the President's office wishes to review prior to submission in order to coordinate Indiana University's requests to these donors. The Special Handling List was compiled and is maintained by the Indiana University Foundation office of Corporate and Foundation Relations and is provided to OVPR for distribution. Questions regarding this list can be directed Bobbi Bosch at 317-278-5648 or [bsbosch@indiana.edu](mailto:bsbosch@indiana.edu).

IU Authentication is required to view the following attachments:

- [IU/IUF Corporation / Foundation Special Handling List](#)
- [Principal Gifts Review Template](#)

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