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2014 Spring/Summer CRL Highlights



2014 IPREP Fellows Ross Nelson, Sage Bates, Alan Tyson II and Michel Companion

CRL Welcomes Inaugural Cohort of IPREP Fellows

The Center for Research and Learning's programming expands this fall with the launch of the IUPUI Post-baccalaureate Program (IPREP), funded by the National Institutes of Health. With the primary objective of improving the diversity of IUPUI graduate students and the professoriate in the United States in the biomedical and behavioral sciences, CRL will prepare four to six recent college graduates each year from underrepresented-minority populations, including students with disabilities, for admission to graduate programs in five areas of interest to the nation's healthcare industry, i.e., biomedical engineering, clinical psychology, human performance and kinesiology, medical neuroscience and the Addiction Neuroscience. Each of the 2014 IPREP fellows—Sage Bates, Michel Companion, Ross Nelson and Alan Tyson II—will complete a full-time paid twelve-month research internship with a faculty mentor in a field relevant to the individual student's career interests. The fellows will also receive additional training and support to help them to prepare competitive dossiers for graduate-school admission.

» **To learn more about IPREP and eligibility information, please [click here](#)**



Vinayak Gupta

Student Spotlight: Vinayak Gupta

Vinayak Gupta graduated this past May and was one of IUPUI's Top 100 Outstanding Students for 2014. He majored in biology and has been accepted into the IU School of Medicine this fall and hopes to be part of the Global Health Track. Vinayak says, "I have been involved with MURI every academic year since my freshman year except for one summer due to studying for the MCAT. My time with the MURI program has been amazingly rewarding and went right along with my major as well as my career goals (to be a doctor in the future). Other than that, the subject matter is interesting because it applies to everyone since it deals with oral health and smoking, both first and second hand." He says that research is important, "because it is essentially like having a 'mini-career' before you graduate to understand if research aligns with your life goals. It also reinforces knowledge that you learn in class, which makes it a very effective learning tool. It also improves public speaking skills, technical writing skills and teaches you time management with experiments." He presented at 2014 IUPUI Research Day and at the 22nd Indiana University School of Dentistry Research Day.

Faculty Spotlight: Richard L. Gregory

Vinayak Gupta said, "My mentor is Dr. Gregory, a researcher at the Oral Health and Microbiology department of the Dental School. Working with him



Dr. Richard L. Gregory

has been a huge reason why I like to research. I have known him before IUPUI through Boy Scouts of America where he was a mentor to me there. He has been critical in my advancement through my undergraduate degree and is one of the main reasons that I was honored with the Top 100 students at IUPUI award." Dr. Gregory's research has been funded by grants from the National Institute of Dental and Craniofacial Research, National Institute of Heart and Lung, Smokeless Tobacco Research Council and has done numerous industrial-research projects. Current efforts are focused on mucosal biofilm biology with specific interests in oral bacteria, particularly *Streptococcus mutans*, *Porphyromonas gingivalis*, *Prevotella intermedia*, *Fusobacterium nucleatum* and *Aggregatibacter actinomycetemcomitans*. To help understand the complex biofilm interactions in *Streptococcus mutans*-induced caries formation, we are defining the role bacterial cell surface proteins play in colonization and bacterial atherosclerosis/endocarditis. Mechanisms that may diminish colonization of *S. mutans* cells to enamel surfaces and cardiac tissue are being explored. The effect of tobacco on *S. mutans* virulence is a major focus. Inhibitory factors being investigated include botanical agents, mucosal vaccines and neutralization of receptor sites. A sensitive and specific in vitro biofilm caries model system has been developed in this laboratory and is being used to assess the ability of various anti-microbial agents and antibodies in prevention of *S. mutans* colonization of enamel surfaces and caries formation. In addition, the model is used to determine the relative cariogenicity of oral microorganisms. His work is currently supported by NIH U01 and RC1 grants. Dr. Gregory has been a winner of the Kathryn J. Wilson Award for Outstanding Leadership and Mentoring of Undergraduate Research.



CRL scholars conducting research

2014 CRL Summer Research Programs

Each summer for over a decade, the Center for Research and Learning (CRL) has hosted full-time undergraduate-research programs. Hailing from IUPUI, IU Bloomington, Ivy Tech Community College and the University of Notre Dame, as well as high schools statewide and across the country, participants span from high schoolers to graduate students. These young investigators delved into faculty-mentored research and presented their findings at a culminating poster session. Students accepted to these dynamic programs engaged in full-time research and professional development for nine weeks, June 2 through August 1. Each student earned a stipend, and some qualified for the RISE transcript notation.

Participating programs included CRL's Bridges to the Baccalaureate in Central Indiana, Diversity Scholars Research Program (DSRP), Indiana Clinical and Translational Sciences Institute (CTSI), IU Simon Cancer Center Summer Research Program (IUSCCSRP), Multidisciplinary Undergraduate Research Institute (MURI) and IUPUI Undergraduate Research Opportunities Program (UROP) Summer Fellows. Partner programs were Undergraduate Research and Mentoring in the Biological Sciences (URM), Research Experiences for Undergraduates (REU) and Commitment to Engineering Excellence (CEE).

» **For additional information, please click here**



Congratulations to CRL graduating seniors!

The Center for Research and Learning recognizes the CRL graduating seniors from the class of 2014. These scholars displayed substantial dedication and commitment toward research while pursuing their degrees at IUPUI. It is because of these students and others like them that the Center for Research and Learning exists. We wish them the best in their future endeavors and are confident they will excel!

2014 commencement exercises

Class of 2014

Anna Brenneman
Michael Jerald Bertram, pursuing employment in Indianapolis
Loreliss Bonilla, pursuing teaching position
Jon Michael Carnahan, entering Marian University College of Osteopathic Medicine
Sujay Shashank Chandorkar, working full time and attending graduate school
Kai-Wen Chiu, pursuing full-time, F-1 visa Optional Practical Training (OPT) and possibly attending graduate school in imaging
Evgeny Jenya Chumin, entering IU School of Medicine BioMedical Gateway (IBMG) Program to pursue Ph.D. in medical neuroscience
Armando Andrés Díaz González, pursuing Master of Science in biomedical engineering at IUPUI
Katherine Harvard, entering physician-assistant program at the University of St. Francis
José H. Miranda, accepted as National GEM Consortium Fellow
Kathleen Noël Newsome, pursuing nursing career in labor and delivery or trauma care
Gabrielle "Bree" Rayner, pursuing position in business
Joseph Edward Robert, pursuing graduate school in geology
Tory L. Schendel, entering internship in California
Christina Nichole Schneider, entering Master of Public Health program at IUPUI
Alexis Coral Taylor, pursuing professional position
Leah Rachel Van Antwerp
Katherine White



Program Leader Elizabeth Rubens presenting the Bowling-Jones-Russo Award to Andrew Engle at the 2014 CRL award ceremony

The Center for Research and Learning annual award celebration

Friday, May 2, 2014, marked the ninth annual Student and Faculty Recognition Celebration presented by the IUPUI Center for Research and Learning (CRL).

Each year the award event honors individuals whose notable efforts have distinguished them. This year's award recipients included Associate Chair and Professor of Earth Sciences Andrew Barth, Ph.D., who received the Kathryn J. Wilson Award for Outstanding Leadership and Mentoring of Undergraduate Research, and biology major Andrew Engle, honored with the 2014 Bowling-Jones-Russo Memorial Undergraduate Research Award. The Center for Research and Learning also recognized graduating seniors in the Class of 2014 who have participated in the center's programs, CRL scholars from IUPUI's Top 100 and the inaugural cohort of CRL Ambassadors.

» [For additional information, please click here](#)



2014 LMI Institute participants

Vicki Bonds attends Leadership and Mentoring Institute

CRL Program Leader Vicki L. Bonds, M.S., M.Ed., attended the 2014 Leadership and Mentoring Institute (LMI) of the American Association of Blacks in Higher Education (AABHE) July 6-13, 2014. Miles College, an historically black college founded in 1898 hosted the event on their campus in Fairfield, Alabama, just outside Birmingham. This training, with tracks in administration and teaching/research, supports African-Americans who want to enhance their skills in preparation for senior administrative and faculty positions.

» [For additional information, please click here](#)



Richard Blanco, acclaimed presidential inaugural poet, at the 2014 IUPUI Research Day

2014 IUPUI Research Day: The most successful yet!

Over 500 people attended the 2014 IUPUI Research Day. The CRL had over 130 undergraduate researchers presenting. Dr. Kody Varahramyan, Vice Chancellor for Research, said, "I agree that this was the best Research Day ever, thanks to the program and everyone who participated and made contributions." Highlights of the day included graduating CRL scholar Kendrea Williams, who delivered the student keynote address in the morning. Over 20 undergraduate students presented their research twice, once to the over 140 high-school students who visited the university and once in the general poster session in the afternoon. Poster topics crossed all aspects of academia from "Optics and Visio Dei: Interpretations of Female Mystic Art" to "Effects of Aerobic Exercise Training on Diaphragm Muscle Metabolism in a Rat Model of Pulmonary Arterial Hypertension." Congratulations to all presenters on their accomplishments!

» **2014 Research Day**