

The University RESEARCH NEWSLETTER

The University Research Newsletter is published twice a year by the Office of the Provost.

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A Message from the Provost

One of the most controversial aspects of faculty and faculty-student collaborative

research is the issue of research involving human subjects. The potential for abuse and misuse is great unless careful protocols are developed and enforced. It does not matter whether the research is based in the natural sciences, in the social sciences and humanities, or in the fields of education. When human beings are the object of interest, and the subject of testing, there is always the possibility for intentional or unintentional exploitation or mishandling of sensitive information.

One need only review the rise of a research culture in the twentieth century to identify instances in which human beings were mistreated, and sometimes had their rights, freedoms and very persons violated through medical, biological, psychological or social science research. Eugenics, the Holocaust, and an array of behavioral

tests that violate norms and standards of decency and confidentiality are well-known concerns in modern human subject research.

Millersville University takes seriously its ethical obligation to assure human subject research is conducted in an appropriate manner. The University Institutional Review Board (IRB), which you will read about in these pages, is one important institutional safeguard against fraud and abuse, and misuse in faculty and student research. The IRB plays a critical role in all aspects of human subject research and is one aspect of Millersville University's institutional commitment to a dynamic, diverse research culture.

Sincerely,

Vilas A. Prabhu, Ph. D.
Provost and Vice President
for Academic Affairs

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Millersville University
SEIZE THE OPPORTUNITY

Millersville University is an Equal Opportunity/Affirmative Action institution. A member of the Pennsylvania State System of Higher Education. 4519-0412

SCHOOL OF Science & Mathematics

BY ERIN DONOVAN

Dr. Roger Webster (Computer Science) and student Edward Kimmel worked on the development of applications for the Android operating system. He and Kimmel worked on the project during the fall 2011 semester as part of an independent study. They are currently completing research on Android mobile phone and iPhone application development.

Dr. Jeremiah Mbindyo (Chemistry) was awarded \$26,736 by the National Science Foundation—Partnership for Innovation (NSF-PFI), extending from November 2011 through July 2012. The award will fund research on a nanotechnology-based drug delivery system, which involves using bioengineered short RNA molecules called “aptamers.” The research is being conducted in collaboration with Aptagen LLC, a biotechnology company.

Dr. Todd Sikora (Earth Sciences) co-authored an article in the *Journal of Atmospheric and Oceanic Technology* entitled “Toward Automated Identification



Paris Vachon and John Wolfe of Defence R&D Canada.

of Sea Surface Temperature Front Signatures in Radarsat-2 Images.” The article was lead-authored by Chris Jones of Dalhousie University, with



Thailand. She gave an oral presentation on the role of ABA in ethylene-independent flower senescence, coauthored by Millersville student Claire Ciaré. Their

Dr. Yuan Zhong (Biology) chaired Session 2 of the 2011 International Conference on Food Engineering and Biotechnology this past summer in Bangkok,

paper was selected from 100 presentations in the conference to be published by the *International Journal of Bioscience, Biochemistry and Bioinformatics*.



Dr. Ajoy Kumar (Earth Sciences) and Dr. Shawn Hu of East Stroudsburg University are working on a grant-funded initiative to understand the impacts of global climate change on coastal wetlands along the East Coast of the United States. Kumar and several Millersville students have developed a Digital Surface Model from LIDAR data collected from a NASA aircraft, and are working specifically with data collected in Wallops Island, VA.

Wildlife Developments

Dr. John Wallace (Biology) and Dr. Jane Huffman of East Stroudsburg University have co-edited a textbook entitled *Wildlife Forensics: Techniques and Applications* (Wiley Publishing).

Dr. Christopher Hardy of Millersville University (Biology) contributed a chapter entitled “Plants and Wildlife Forensics.” This is the first-ever chapter in print dealing with plants and wildlife forensics. Two 2011 Millersville graduates, David Martin and Jill Ross, have co-authored chapters with Hardy and Wallace, respectively.

Wallace was awarded a \$9,000 grant from the Hunterdon County New Jersey,



Vector Control Program to improve the surveillance methodology and control of

black flies in the South Branch of the Raritan River. As part of this grant, Wallace and 2001 Millersville graduate Kristin Sloyer developed a “Manual of Black Fly Ecology and Identification for the South Branch of the Raritan River.” Sloyer gave a presentation entitled “Development of an Area-Specific Pictorial Key for Streamlined larval Black Fly Monitoring Effects” at the North American Black Fly Association Conference in Lake Placid, Fla., in February 2012.



Drs. Shaun Cook and Shawn Gallagher (Psychology) presented an abstract with Millersville students Henry Hallock, Heather Garman and Samantha Lavach at the Eastern Psychological Association's March 2012 annual meeting in Pittsburgh. The abstract examines survival processing and memory.



Dr. Nadine Garner (Psychology) implemented a new program called Terracycle in the residence halls at Millersville University. Garner introduced the program in March 2012 to more than 100 resident assistants, graduate assistants, and peer mentors. Terracycle upcycles trash that is generally not recycled. It allows students to dispose of trash while Terracycle donates a small amount of money per item to the Smile Train charity.

Education Standards in the United States

Dr. Jennifer Shettel (Elementary Education) published a chapter entitled "Common Core Standards—The Heat Is On!" in the book *Literacy Trends and Issues: What's Hot*. The chapter examines the history of the Standards Movement in the United States and discusses how practitioners can make the shift from their current state standards to the new national Common Core Standards. Pennsylvania recently adopted the new standards and will implement them in public schools in the 2013-2014 school year.

Shettel is recognized for her workshops and publications on the use of mobile computing devices and their applications in the literacy classroom. She presented three sessions at state and national conferences on using mobile devices and literacy apps and has a forthcoming article in *Learning and Leading with Technology* on the "Top Ten Literacy Apps" for elementary and secondary language arts teachers.

Dr. Abdelhadi Halawa (Wellness and Sport Sciences) presented a research paper entitled "Effects of a Ten-Week College-Based Physical Activity Program on Four Health-Related Fitness Components" at the Intellectbase International Academic Conference in March 2012 in Bangkok, Thailand.

Dr. Richard Mehrenberg (Special Education) published an article entitled "Millennial Generation Special Education Teachers: Promise or Problem?" in the *Journal of the National Association of Special Education Teachers*. The article discusses certain characteristics possessed by special education teachers born between 1980 and 2000. These characteristics include acceptance of diversity, utilization of technology and preference for collaboration.

SCHOOL OF Humanities & Social Sciences

BY DAN LIPSON

Drs. Karen Rice and Heather Girvin (Social Work) coauthored an article entitled “Building Relationships Across Systems to Enhance Resiliency and Improve Foster Care Outcomes,” which was published in the 2011 issue of *Contemporary Rural Social Work*.

Drs. Philip Tacka and Mícheál Houlahan (Music) were the headline presenters for



Dr. Philip Tacka

the Eastern Division Conference of the Organization of American Kodály Educators, which was held at Adelphi University in Garden City, New York. The

presentation was based on their Oxford University Press publication *Kodály Today: A Cognitive Approach to Music Education*.



Dr. Tracey Weis (History), along with faculty from the School of Education, received a \$5,000 grant from the American Association of University Women

for their proposal “Crossing the Line in Lancaster County: Adolescents, Sexual Harassment and Cyber Bullying.” Dr. Weis will use the funds to address the issue of sexual harassment in middle and high schools.

Professor James Pannafino (Art and Design) presented at the International Visual Literacy Association Conference, held in Stockton, New Jersey. The presentation, entitled “Common College Sense: Soft Narrative and Instructional Design,” discussed the role of visual function and the power of narrative within the context of a graphic design course.

Dr. Carla Rineer (English) created an exhibit in celebration of the bicentennial of Harriet Beecher Stowe’s birth, hosted at the Lancaster Literary Guild in February 2012. The exhibit continues to be on display at 113 N. Lime Street in Lancaster.

Drs. Leroy Hopkins and Susanne Nimmrichter (Foreign Languages) created an exhibit entitled “The Civil Rights Struggle: African-American GIs and Germany” that was displayed at the fall meeting of the Central Pennsylvania Chapter of the American Association of Teachers of German. Accompanying the exhibit was an oral history interview with three local African-American veterans.

Flexible Exchange Rates in Dormant Financial Markets

Drs. Sandra McPherson and Osman Suliman, (Economics) published a paper entitled “The Indeterminacy of a Flexible Exchange Rate System When Financial Markets Are Dormant” in the January 2012 issue of *Competitiveness Review*. The paper uses financial data from Sudan to examine the extent to which a flexible exchange rate system is able to function in an undeveloped economy where markets are inactive. Their results suggest that the “financial deepening” of an economy can have strong positive



Drs. Sandra McPherson

effects for a nation’s exchange rate.

McPherson coauthored a paper with Dr. Oscar Flores of Minnesota State University Moorhead entitled “Provincial Disparities and Structural Unemployment in Canada” that will soon be published in *Regional and Sectoral Economic Studies*. The paper examines the causes and disparities of Canadian provincial structural unemployment rates.

Non-School Faculty

BY AMY PARKER



Ms. Carolyn Rittenhouse (Educational Foundations) received funding from the Commission on Cultural Diversity, the Women's Commission, and the 2011-2012 University Theme Committee for research on a Native American Studies project entitled "The Plains Indian Tipi." She conducted research in South Dakota and designed the tipi artwork with help from Plains Ledger Artist Dwayne Wilcox. Rittenhouse presented her findings to the

Commission on the Status of Women in October 2011 and displayed the tipi in the Student Memorial Center during Native American Awareness Month in November 2011. She presented her project at the March 2012 PANAME conference held at Millersville University.

Drs. Ralph Anttonen (Director/Chair of Undecided Program) and **Michelle White** (Director of Academic Advisement) published an article in the February edition of *The Mentor*, a Penn State University electronic journal. The article, entitled "Reinvigorating Faculty Advising on Your Campus," identifies several strategies to get faculty to become more involved in academic advisement.

INSTITUTIONAL REVIEW BOARD

Millersville University's Institutional Review Board for the Protection of Human Subjects (MUIRB) reviews all campus-based research pertaining to human subjects. As at other universities, Millersville's nine-member board provides oversight and ensures compliance with federal research and testing guidelines, whether that research originates in the sciences, social sciences or the humanities. Both faculty and students who propose to conduct research involving human subjects are required to submit their proposals for approval and to receive relevant clearances before research begins.

Among the considerations in evaluating research proposals are the voluntary and informed consent of all subjects, issues of safety and health, and larger ethical and human rights protections. The MUIRB is sponsored under the authority of the Office of the Provost and the Dean of Education. Researchers are required to submit periodic updates and a final disposition of research. A "Statement of Individual Research Ethics" is available on request, along with specific guidelines and protocols for research.

Faculty & Student Collaboration

BY JESSICA JONES

A large number of undergraduate and graduate students at Millersville University engage in original, directed research as part of their course of study. This section offers sampling of recent undergraduate thesis topics. Many of these students are members of the University Honors College who are pursuing both departmental and University Honors.

Undergraduate Theses

Jessica Do (Communication and Theatre)



worked with Dr. Gregory Paul to evaluate “The Influence of Reporter Ethnicity and Gender on Perceived News Story Credibility.”

John Timlin (Physics) studied the supernova DEM L71 with Dr. Sean Hendrick. His project, “Supernova Remnants in the Magellanic Clouds,”

Researching State Institutionalization

Danielle Rapp (Psychology) worked with Dr. Shawn P. Gallagher on “The Lancaster Alms House and State Institutionalization in Pennsylvania” project. The study traced the development of institutions caring for the mentally ill in Pennsylvania’s Susquehanna Valley, with emphasis on the Lancaster County Almshouse and Asylum and its ties to the Harrisburg State Hospital. The study was accepted as a paper presentation for the 2012 meeting of the Eastern Psychological Association held on Pittsburgh in March 2012.



Katelyn Coleman, Justin Neideigh and Stephanie Coleman.

analyzed the nucleosynthesis yields of the supernova DEM L71 to determine the size and location of the progenitor star.

Katelyn Coleman (Mathematics) performed a study, directed by Dr. Janet A. White and Dr. Travis K. Miller, to determine which methods are perceived as most beneficial in teaching algebra.

Stephanie Coleman (Mathematics) worked with Dr. Janet A. White and Dr. Travis K. Miller to assess the role of the calculator in mathematics and how teachers incorporate the device in the classroom.

Wesley Shope (English) performed a case study with Dr. Tim Shea. They looked at a new model of orphan care in Latin America.

Michael Parker (Biology) worked with Dr. Yuan Zhong on his thesis “Genome-Wide Comparative Analysis of the Terpene Synthase Gene Family in *Arabidopsis thaliana* and *Medicago truncatula*.” The study identified, compared and analyzed the Terpene Synthase (TPS) gene families in two model plant species.

Uriah Renzetti (English), with Dr. Jill Craven, compared Orson Welles’ roles in two classic films, Carol Reed’s *The Third Man* and his own creation, *Mr. Arkadin*.

Justin Neideigh (History), with Dr. Ronald B. Frankum Jr., examined Woodrow Wilson’s published papers and declassified files from the National Archives. His study, “Woodrow Wilson and the Mexican Interventionist Movement of 1918-1919,” traced family history to explore a relatively unknown chapter of American diplomatic history.

Allison Heck (Psychology) worked with Dr. Shaun Cook on a study concerning “Prospective Memory and Children with Autism Spectrum Disorder.” She investigated whether age affects the memory abilities of children with autism, as compared to typically developing children.

Emily Morgan (Education) worked with Dr. Laurie Hanich to study the impact of the influence of unemployment on the average PSSA and SAT scores for Pennsylvania.

Alyssa Leister (English), with Dr. Kenneth Shields, studied the “Current Patterns and Trends in Pennsylvania Dutch Dialect.” She examined the prevalence of certain Pennsylvania Dutch terms in everyday speech in schools in Lancaster, York and Berks Counties.

Justin Hurst (Chemistry) collaborated with Dr. Karl Wallace of the University of Southern Mississippi on a project entitled “Spectroscopic Studies of a Pyrene Molecular Receptor.” Hurst studied a macromolecule nicknamed “bisclick” in order to understand its ability to bind to different transition metal salts.

Model Arab League Team

The Millersville University Model Arab League Team performed at the 2012 Ohio Valley Regional Model Arab League and earned five awards for representing the Kingdom of Saudi Arabia. Bjorn Bolte, Derek Smith and Dannon Stewart received Honorable Mention awards. Alyssa Anderson and Barney Cannon received the Best Delegation award. Barney Cannon was also elected to Assistant Secretary General of the Ohio Valley Model Arab League for next year’s simulation at Miami University.



This time of year has me thinking about the Marine Science Consortium at Wallops Island, Virginia. Each summer, for more than 40 years, Pennsylvania State System of Higher Education (PASSHE) faculty and students migrate to the Marine Science Consortium (MSC) to participate in field-based learning and research. For marine science and oceanography students, summer courses at the MSC are a rite of passage, and include renovated barracks that serve as dorms, relentless mosquitoes, wading through knee-deep mud and trawling for marine creatures. For my class there's also the 4 a.m. wake-up call to go longline fishing for sharks. Summer courses at the MSC are not just classes, they are experiences. Things have changed at the MSC: brand new dormitories, state-of-the-art laboratories, and new classes in art, mathematics and literature. The MSC has grown into a leading educational center on the East Coast. Change is good, in this case, very good. What hasn't changed are the experiences. Each year faculty and students will hike into the marsh and be attacked by more mosquitoes than most humans encounter in a lifetime. They'll emerge hot, muddy, perhaps sunburned, most definitely covered in bug bites and slime. Students may not remember the names of all the

fish or marsh plants, but they never forget the field and research experiences obtained through their MSC classes.

Each year a new class of freshmen enters Millersville, and new enthusiastic students enter their classes and labs and can't wait to get involved in research. Whether it's biology or history or anthropology, students at Millersville are "Seizing the Opportunity" to engage in learning in a new, and often very difficult, way. Yes, some will be facing mud and mosquitoes at the MSC, but others are digging into library archives, building specialized electronic equipment or analyzing statistical data. In four years those same students are heading off to graduate schools, jobs or other experiences utilizing their unique research skills.

What is it that makes research so rewarding? I am usually pondering this question at times when I am immersed in my work, which typically involves lots of fish guts and other disgusting fluids. Most times the work is gross and smelly; it's cold and uncomfortable or buggy and hot. Typically, getting real results takes years of hard work, and in terms of the big picture, what is learned is a mere drop in the bucket of knowledge. Why do we do it? Why do our students do it? We do

PROFILE



Dominique Didier, Ph.D.

Didier is an Associate Professor of Biology and an expert on fish morphology, development and phylogeny. She is the author of numerous scholarly articles and regularly directs student research at Wallops Island and on campus.

it because it is hard. That is the reward – doing something new and difficult, and knowing you can do it. Yes, you learn something, but what you learn about your topic pales in comparison to what you learn about yourself. That is why we do research, and that is why our students do research with us and emerge not just better trained in their field, but better trained for the world.

