

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

April is one of the busiest months in the academic year. In addition to a variety of conferences, concert recitals and

other academic programs, many students and faculty are starting to think about final examinations, graduation and the transitions they will bring. The Student Research and Visual and Performing Arts Conference serves as a showcase for our students' papers, posters, performances and artistic presentations. Finally, the Honors and Awards Convocation occurs each April and offers the University community another opportunity to celebrate student achievement and our shared commitment to academic excellence.

It is fitting that the publication of the second issue of *The University Research Newsletter* should coincide with the Honors and Awards Convocation. This edition devotes more space to the central role that student-faculty collaborative research plays in the life of the University. As I wrote in the inaugural issue, research is the "life-blood" of the University, and the

growing prominence of student research reinforces one of Millersville University's core academic values.

In the sciences, the humanities and social sciences, and in the diverse fields of education, Millersville's undergraduate and graduate students work collaboratively with faculty on original research that expands the frontiers of knowledge and aids in solving not only intellectual but social problems. Research supports a culture of engagement and provides our students and faculty with a value-added feature to the liberal arts education Millersville offers.

With the celebration of the Honors and Awards Convocation, and with pride in the important student research that enlivens our University, it is my pleasure to share this new issue of *The University Research Newsletter* with you.

Sincerely,

Vilas A. Prabhu, Ph. D.

Provost and Vice President
for Academic Affairs

IN THIS ISSUE

- 1 A Message from the Provost
- 2 School of Science & Mathematics
- 3 School of Education
- 4 School of Humanities & Social Sciences
- 5 Faculty & Student Collaboration
- 6 Non-School Faculty & Centers
- 7 Commentary
- 8 Grants

Millersville University
SEIZE THE OPPORTUNITY

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SCHOOL OF Science & Mathematics

BY ERIN DONOVAN

Dr. Christopher Hardy (Biology) published an article in *BMC Evolutionary Biology* with 21 other authors as the culmination of a collaboration since 2004. In his research, Hardy used DNA to reconstruct evolutionary relationships between flora of the Cape Floristic region of southwest Africa. This re-



search has uncovered adaptive changes in ecology that have not been found in

other floras, and it reveals that shifts in climate tolerance are more important in this flora than is currently recognized. Hardy's funding for this research came from the National Geographic Society and The Swiss National Fund.

Dr. Robert Vaillancourt (Earth Sciences) attended the annual meeting of the American Society of Limnology and Oceanography in San Juan, Puerto Rico, in February, where he presented results from his research on the efficiency of primary production in oceanic waters. His presentation is entitled "Photosynthetic Efficiency is Controlled by Zeaxanthin Pigment in the Western North Atlantic Ocean During the Summer." Funding came from the National Science Foundation.

Vaillancourt is also the Millersville University campus editor for the newly established *Keystone Journal of Undergraduate Research*, which is a research journal for all Pa. State System of Higher Education (PASSHE) universities.

Dr. Todd Sikora (Earth Sciences) co-authored an article with G.S. Young and



C.M. Fisher titled "A synthetic aperture radar-based climatology of open cell convection over the Northeast Pacific Ocean." This article is in press for the *Journal of Climate and Applied*

Meteorology. Open cell convection affects atmospheric circulation and climate and is a high-impact event for ships and aircraft. This article documents the characteristics of open cell convection over the Northeast Pacific Ocean, as well as the environment conducive for it.

Computational Analysis of 3-D Digital Images

Dr. Ron Umble (Mathematics) worked with a team of applied mathematicians and computer scientists last fall at the University of Seville in Spain to develop new computational techniques for analyzing 3-D images of physiological structures, such as the structure of human bone and brain tissue. It is physically impossible to analyze these objects directly; however, medical scientists still wish to compare the physiological differences between such geometrically complicated objects. Because of this impossibility, medical scientists must take advantage of the indirect computational techniques Dr. Umble is developing.

In order to develop such a technique, Dr. Umble explains that his team looked

"to identify the distinguishing characteristics of an object by computing the number of its physical path components (within a



path component there is a physical path connecting any two points), the number of holes and tunnels within each path component, and the ways tunnels are entangled. Using this information, we build an algebraic model of the object, which

can be analyzed using the power of the computer."

By significantly enhancing the resolution of the models, Dr. Umble and his team were able to improve on techniques previously used to construct algebraic models of geometric objects. Along with improving resolution, their algebraic models encode distinguishing characteristics as algebraic relationships.

These new methods have already been noted by applied mathematicians and computer scientists in Europe at several research centers. Dr. Umble and his research team have submitted their research results for publication, and one paper is currently in press.

SCHOOL OF Education

BY ALYSSA LEISTER

Dr. Hosein Atharifar (Industry and Technology) researched a neural network model for a manufacturing process called friction stir spot welding. This process is used to increase welding efficiency in automotive, shipbuilding, and railway industries. His findings have been published in *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture*.

Dr. Daniel Keefer (Wellness and Sport Sciences) is the co-investigator of a paper entitled "Identification of a core set of exercise tests for children and adolescents with cerebral palsy: A Delphi survey of researchers and clinicians" which was published in *Development Medicine and Child Neurology* (April 2011). Keefer will serve as one of the experts to work further on this project.

Drs. Oliver Dreon and Nanette Dietrich (Educational Foundations) have co-authored a book chapter appearing in the two-book series entitled *Technology in Teacher Education: Key Issues*.

Dreon and Dietrich have also helped implement the nation's first Science Focused Professional Development School to train future teachers. This one-of-a-kind program is in its first year of implementation and has already received national acclaim.

Dr. Leonard Litowitz (Industry and Technology) has created a full-scale prototype of an unmanned vehicle for military use. This vehicle would test for improvised explosive devices (IEDs), which frequently injure or kill soldiers in battle.



Litowitz will present this prototype at the Robotics Day event at the Army War College in Carlisle, Pa.

Dr. Richard Mehrenberg (Special Education) researched traits in special education teachers that influence their choice to remain in or leave the field. He looked specifically at how membership to a particular generation may influence their decision. His article "Millennial Generation Special Education Teachers: Promise or Problem?" focuses on members of the Millennial Generation, born between 1982 and 2002. It was published in the *Journal of the American Academy of Special Education Professionals*, Winter 2011 edition.

Dr. Marcia Nell (Elementary Education) and Dr. Walter Drew, founder and executive director for the Institute for Self Active Education, are currently researching the connection between self-active adult play experiences to professional practices of early child pre-service and in-service teachers.



A New Program for English Language Learners



Drs. William and Persida Himmele (Elementary Education) have continued their work in elementary school classrooms that began in 2009. Utilizing a program called CHATS in Lancaster County schools, the Himmeles published a book entitled

A Language Rich Classroom, which focuses on teaching English language learners.

The most popular chapter from this book looks at total participation techniques (TPTs), which seek to provide evidence of active participation and cognitive engagement from all students at the same time. With this research, the Himmeles wrote a second book, *Total Participation Techniques: Making Every Student an Active Learner*, which will be released this July.

The Himmeles are currently working on research for a third book, which will focus exclusively on TPTs for students in kindergarten through third grade, focusing less on language skills and more on kinesthetic techniques.

SCHOOL OF Humanities & Social Sciences

BY DAN LIPSON



Dr. Francis Bremer (History) has completed two book manuscripts: *First Founders: American Britons and Puritanism in the Atlantic World*, which was submitted to University Press of New England, and *Building a New Jerusalem: John Davenport, a Puritan in Three Worlds*, which is scheduled for publication in 2012 by Yale University Press. He will also be delivering a paper, "Not Quite So Visible Saints" at the international conference, Conversion in the Early Modern World in York, England, in June, 2011.

Dr. Erin Shelor (History) published an article for ABC-CLIO, a publisher of reference works for the study of history and social studies in academic, secondary school, and public library settings. Entitled "The Common Experience of the First Industrial Revolution in Britain: A Radical Change in Daily Life," the work is part of the larger online collection, Daily Life through History: Enduring Questions.

Dr. Victoria Khiterer (History) recently submitted an article, "We Did not Recognize Our Country: The Rise of Anti-Semitism in Ukraine Before and After World War II (1937-1947)" for publication in *Polin: Studies in Polish Jewry*. Dr. Khiterer also received a PASSHE Faculty Professional Development Council Grant to publish her doctoral dissertation. Entitled "The Social and Economic History of Jews in Kiev before 1917," it will be published as a monograph.

Dr. Gregory Paul (Communication and Theatre), collaborating with Millersville



University student Stacey Dill, is researching the discourses of justice. Working in conjunction with the Lancaster Area Victim Offender Reconciliation Program, they are studying the negotiation of forgiveness and revenge in victim-offender mediation sessions.

Dr. Jeffrey Prushankin (History) recently completed a monograph for the United States Center of Military History. Focusing on the Civil War in the West, it will be published in a series of works commemorating the 150th anniversary of the Civil War.

Dr. Theresa Russell-Loretz (Communication & Theatre) co-authored a paper entitled "When Groups Go Bad: How Public Relations Faculty Members Prepare Students for Group Work and Group Conflict in Public Relations Campaigns."



Working with Dr. Gregory Paul and undergraduate student Stacey Dill, the paper was presented at the National Communication Association Conference in November 2010.

Drs. Enyang Guo and Osman Suliman (Economics) recently published an article in *Applied Financial Economics* entitled, "Corporate Operating Characteristics and Capital Structure: Causality Testing in Heterogeneous Panel Data." Their study focuses on how businesses and industries are influenced by different financial factors and decisions.

A New Standard for Life-Long Learning

Dr. Saulius Suziedelis (History, emeritus) retired from teaching in May 2008 but continues to contribute to the academic world.

His most recent publication, *Historical Dictionary of Lithuania*, 2nd Edition, is a 426-page volume and the latest work in the Historical Dictionaries of Europe Series. Another work, "Listen, The Jews are Now Ruling Us": Anti-Semitism and National Conflict during the First Soviet Occupa-

tion of Lithuania, 1940-1941," is scheduled for publication in *Polin: Studies in Polish Jewry* in November of 2012.

In June 2008 Dr. Suziedelis delivered a paper, "Lithuanians and the Holocaust," for a seminar at the United States Holocaust Memorial Museum. In December of the same year, he traveled to Herzilya University in Tel-Aviv to present his paper "Israeli-Lithuanian Academic Forum of Intellectuals: Nation-State and Nationalism in the Twenty-First Century." In

February 2011, Dr. Suziedelis traveled to the West London Synagogue in England to speak at a panel discussion, where he delivered his paper "Why is it Still Difficult to Speak About the Holocaust in Lithuania?"

By continuing his scholarly activities, Dr. Suziedelis demonstrates that retirement is not the end of an academic career, but rather an opportunity for new lifelong learning experiences.

Faculty & Student Collaboration

BY ALYSSA LEISTER

The Millersville University Robotics Team

SAM the Robot



The Robotics Team comprises David Oliver, Bradley Sensensig, Pauline Gemberling, Michael Edkin, Adam Fox, Joshua Jordan, Sean Farrow, Jake Girton, Mylinda Johe, Greg Betz, Brendon Fowler, and Curtis Rosche, under the direction of Dr. John Wright (Industry and Technology).

The team took top honors at The Association of Technology, Management, and Applied Engineering Conference's Robotics Competition. Their robot is named "SAM," which stands for Semi-Autonomous Marauder.

The teams were judged on performance, electrical and control methodology, construction and design, a poster, and a technical paper. The team won first place overall, as well as taking first place in the categories of performance and electrical and control methodology. Betz also won an award for the best driver. It is estimated that the robot cost more than \$7,000 to create and required more than 2,500 hours to prepare it for the competition.

Diamond Edmonds, Neidin Lopez, Aimee Shute, and Alyssa Warfield *Philadelphia Urban Seminar Surveys*

Diamond Edmonds, Neidin Lopez, Aimee Shute, and Alyssa Warfield, teacher certification students, under the direction of Dr. Timothy Mahoney (Educational Foundations), have collected research based on their experiences at the Philadelphia Urban Seminar, which focuses on urban teaching and communities. They researched how new teachers viewed students' resistance to school in urban settings and how their perceptions of resistance differed after the seminar.

School attendance, academic engagement, and resistance to behavioral expectations generally illustrate students' resistance to school. Pre-testing of survey participants showed that the sources of these acts of resistance were the students, their families,

and communities. Surveys taken after the seminar illustrate a change in the participants' perceptions of school itself, school policies, and teacher relationships. Their findings were presented at the Fall Forum of the Coalition of Essential Schools in November 2010 and at the Equity and Social Justice Conference in March 2011.

Andrew Kaufman and Jessica Buechele *Exemplary Technology Education Teachers*

Andrew Kaufman and Jessica Buechele, working with Dr. Scott Wagner (Industry and Technology), wrote an article on their research concerning dispositions of exemplary technology education teachers, which will be published in the May/June issue of *The Technology and Engineering Teacher*. Their article, "The Characteristics of Model Technology Education Teachers," examines

professional writings, lesson plans, and class recordings of teachers from across the United States in grades K-12. Wagner, Kaufman, and Buechele presented their findings at the 2009 ITEEA Conference in Louisville, Kentucky.

Art, Computer Science, and Business Students

Face the Waste

Students from computer science, art, and business, under the direction of Dr. Stephanie Elzer (Computer Science), Dr. Pat McCaskey (Business) and Professor Nancy Mata (Art) collaborated with Runoff Studios, a company interested in creating environmentally-focused games for iOS devices like the iPad and iPhone. Runoff Studio's first game, "Face the Waste," was developed by this team of Millersville students and professors and was released to the application store.

Lauren Nye

Here, There, and In-Between Exhibit

Lauren Nye, Class of 2010, and Line Bruntse (Art) completed a collaborative research project started in the summer of 2010. They participated in an international residency at the Nyholm Foundation, the studio of the late Erik Nyholm, in Denmark, and travelled to study the work of Sonja Ferlov-Mancoba, a Danish artist known for her paintings and sculptures. Through their research at the Foundation as well as at the Royal Library and local museums, Bruntse and Nye created a sculpture exhibition entitled "Here, There, and In-Between." This exhibition details their reflections on travelling and the journey through their research. "Here, There, and In-Between" was on display in the Sykes Gallery in Breidenstine Hall from December 20, 2010, to January 27, 2011, and included several gallery talks throughout its showing.

Non-School Faculty

BY DAN LIPSON

Drs. Lisa House and Joseph Lynch (Counseling and Human Development) have submitted a manuscript to *Crisis: The Journal of Crisis Intervention and Suicide Prevention* regarding the effectiveness of a gatekeeper suicide prevention program conducted with college students. Research studying the effectiveness of such a program has so far been limited, especially when examining its success on college campuses. Their study trained 97 residential advisors and graduate assistants in this gatekeeper program, and all participants showed significant gains in knowledge, skills, and emotional connectivity in post-training. A follow-up conducted three months later showed there were still improvements in all three domains.

Dr. Kendra Saunders (Counseling and Human Development) has co-authored two book chapters in *Eating Disorders in Women and Children: Prevention, Stress Management, and Treatment*, 2nd Ed. The chapter entitled “Body Image” defines body image, explains factors that impact it, and provides strategies for therapists to help clients struggling with body image. The chapter entitled “Measures of Eating Disorder Symptoms and Body Image Disturbance” examines what measures of eating-disordered behavior and body image are available, as well as the benefits and limitations of these measures are.

Dr. Marilyn McKinley Parrish (Archives and Special Collections, Library) co-authored a chapter for the *2010 Handbook for Adult and Continuing Education* entitled “Adult Education in Cultural Institutions: Libraries, Museums, Parks, and Zoos.” She also co-edited *Adult Education in Libraries, Museums, Parks, and Zoos: New Directions for Adult and Continuing Education*. In addition to co-editing, she also co-authored or authored two chapters within the text. Parrish gave a presentation on this publication at the American Association for Adult and Continuing Education Annual Conference in Clearwater, Florida, in October 2010.



CENTERS

Millersville University has several centers and institutes working to promote research, leadership, education, community involvement, and overall civic engagement.

BY ALYSSA LEISTER

Center for Disaster Research Education (CDRE) research assistants Nick Genovese and Devin Fisher completed a disaster plan for the National Watch and Clock Museum in Columbia, Pennsylvania. The creation of a disaster plan is part of the accreditation process required by the American Association of Museums. Their research included site visits, analysis of the museum’s holdings, identification of natural and man-made hazards, and a review of existing disaster plans for other museums. Genovese and Fisher presented their work at the Fourth Annual Pennsylvania State System of Higher Education Graduate Research Symposium in April 2010.

Dr. Sepideh Yalda, director for the CDRE, was recently invited to participate in updating the Commonwealth of Pennsylvania’s all-hazard mitigation plan. Representing Millersville University and the CDRE, she worked with other representatives to identify and rank different hazards affecting the state. Dr. Yalda helped create an updated mitigation plan, which was recently approved. The CDRE has been invited to be a part of its implementation.

Civic & Community Engagement & Research Project’s (CCERP) Center for Public Scholarship recently created The Engaged Scholars Program. This program brings together faculty with a shared interest in service-learning and community-based research. Their hope is to build a community of practitioners that collaborate and support each other in the development of engaged public scholarship. Eight “scholars” are working on community-based and research-based projects ranging in topic from student empathy, urban community research, research on teaching mathematics in the community, and research on civil dialogue and conflict management.

The Center for Public Scholarship’s Polling & Research Office conducts two regularly occurring polls: the Quality of Life survey of Lancaster County residents, which occurs annually in the fall, and the Civic Engagement Survey regarding student experiences and perceptions on civic and community engagement, which will occur biennially with the first occurring late-March to early April of this semester.

Commentary: Value Added Education

BY MARY GLAZIER

“Millersville, that’s a teachers’ college, isn’t it?” Most of us who teach at Millersville University have been asked that question. My standard response is to affirm the value of Millersville’s fine teacher training programs but to acclaim the educational opportunities in other areas and to extol its virtues as a liberal arts institution. In other words, to answer, “Yes, but so much more.”

Sometimes, the question of Millersville’s educational mission takes a slightly different form. For example, one evening I checked my email and read a message from the father of a prospective student. He was a criminal justice professional and his daughter thought she might like to follow in his footsteps. They were weighing her educational options. He thought she should enroll in a criminal justice program specifically focused on preparing students for jobs in the field, but his daughter liked Millersville and he wondered if I could explain what we could offer her. His question was my cue to describe our emphasis on teaching students the skills of inquiry and analysis and to pitch the extraordinary opportunities we offer undergraduate students to engage in research.

Within the sociology program, examples of these opportunities were abundant. Some students surveyed Lancaster residents regarding crime and disorder and saw their analysis of this data published by the Lancaster Crime Commission. Another student

partnered with the Lancaster Bureau of Police to assess its officers’ acceptance of a new policing philosophy. Her research told the Chief of Police that many of his officers did not understand how to implement what was expected of them. A Lancaster newspaper featured a study showing that county judges did not discriminate by race or gender in sentencing offenders. A student working in partnership with two faculty members conducted that research. Other students presented the results of student-faculty research projects dealing with gangs and graffiti, policing strategies, and businesses’ concerns with crime at professional meetings. Some co-authored journal articles with their professors.

The following fall, his daughter enrolled at Millersville as a sociology major and in the first semester of her freshman year surveyed residents of the East King Improvement District regarding problems in their community. By her senior year, she was the research assistant assigned to the Lancaster Public Safety Research Institute, a university-community collaboration that does community-based research. She had identified delinquency prevention and intervention programs focused specifically on the challenges experienced by Latinos, documented the impact of the East King Improvement District on the quality of life experienced by residents living in that area. She helped run a three-day Crime Summit sponsored by the Lancaster County Com-

PROFILE



Mary Glazier

Mary Glazier earned her PhD in Sociology from the University of Pennsylvania and is chair of the Department of Sociology/Anthropology. Her research interests include urban violence, juvenile delinquency and community policing. Dr. Glazier chairs the Capital Campaign Committee on Research.

missioners as well as assisted in the preparation of the resulting report. Her research activities contributed to her winning the “Outstanding Sociology/Criminology Senior Award” when she graduated.

What makes this story unusual is the direct connection between this father’s inquiry about the sociology/criminology program and the enthusiasm with which his daughter embraced the research opportunities it offered. No doubt many prospective students and their parents wonder, what opportunities does Millersville University offer its students beyond prescribed course work? As this issue of *The University Research Newsletter* vividly illustrates, Millersville offers myriad opportunities in every field of study for students to embark on challenging research endeavors, to make significant scholarly contributions and to reap rich rewards of intellectual growth. Yes, Millersville offers “so much more.”





Kathleen Schreiber (Geography) has received National Science Foundation and Millersville University funding to support research on improving climate downscaling methods and the assessment of climate change on particular localities. The goal of the research is to create more accurate predictions of climate change impacts at the local level. Schreiber's research is in collaboration with Penn State University climatologists.

Ajoy Kumar (Earth Science) with Millersville University students and colleagues at East Stroudsburg University received a \$62,435 grant to support research at NASA's Wallops Island Flight Facility.



Their research is directed toward "Projecting the Impacts of Climate Change and Identifying Adaption Options at Chincoteague National Wildlife Refuges."



John Wallace (Biology) has received funding from PASSHE Faculty Development Grants, as well as outside support from the National Science Foundation through Michigan State University and the University of Tennessee, to support field research on *Mycobacterium ulcerans* with mosquito species, and environmental sampling in Victoria, Australia, and Benin, West Africa.

Wallace has received funding from the Hunterdon County Vector Control Program in Hunterdon County, NJ, to improve surveillance efforts for nuisance black fly species in the South Branch of the Raritan River. More locally, Dr. Wallace has received an EPA/RARE grant through the Pa. Department of Environmental Protection and F&M College to study the macro-invertebrate community and structural changes in response to stream restoration on Big Spring Run in Lancaster County, Pa. Millersville University student researchers are involved with aspects of all of these projects.

Dominique Dagit (Biology) and an international team of scientists have received National Science Foundation funding for the "Tree of Life" project to research the relationships among all cartilaginous fishes (Class Chondrichthyes). Her research focuses specifically on the evolution of a group of deep sea cartilaginous fish known as ratfish, or chimaeras.



James Cosentino (Biology) is conducting research supported by four separate grants. In addition to a Keystone Innovation Grant (with Lyman Rickard, Chemistry), Cosentino is conducting research supported by the National Science Foundation, and the International Organization for Chemical Sciences and UNESCO. The latter two organizations have provided grants to assist in providing books and computers to students in developing countries in Africa.

