

The University RESEARCH NEWSLETTER

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

President

Dr. John M. Anderson

Provost

Dr. Vilas A. Prabhu

Newsletter Staff

Dr. Dennis B. Downey, Editor

Amy Parker, Managing Editor

Lara Adams, Associate Editor

Chelsey Wirth, Associate Editor

Anthony Saraceno, Associate Editor

Emily Yost, Associate Editor



A Message from the Provost Research & University Renewal

There is a season of change in the air at Millersville

University. The arrival of a new president, the commencement of a new strategic plan and the appearance of a new class of entering students who follow on the heels of recent graduates, signal the never-ending transitions that are part of University life. President John Anderson has used the phrase “renewal” as a way to re-imagine Millersville’s historic commitment to the public we serve. Millersville University is poised to embrace President Anderson’s vision for a reimagined future, a future anchored in the University’s commitment to the arts and sciences as the foundation for advanced learning and purposeful engagement.

My own sense is that scholarly research (broadly defined) must continue to play a vital role in any new strategic direction. As I have written before in these pages, research is the engine of innovation, and when matched with intellectual curiosity and technical expertise, it becomes the life-blood of an active and informed university academic climate. We remain rooted in the liberal arts and science tradition, and

we are committed to building a research culture that supports both student and faculty expertise.

In this fall issue of *The University Research Newsletter*, readers are introduced to some of the important and ongoing research conducted by students and by current and retired faculty. Much of the research is collaborative in nature, the result of intellectual engagement in scholarly and social concerns. I am confident that these pages contain added evidence of the vibrancy of a diverse research culture at Millersville University. I believe that the projects and initiatives found herein also lend credence to the importance of research in the achievement of individual, institutional and community aspirations. Research, one might say, is vital to “renewal” and to Millersville University’s commitment to scholarship and service for the public good.

Sincerely,

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

IN THIS ISSUE

- 1 A Message from the Provost
- 2 Three’s Company
- 3 Historian Awarded Prestigious NEH Fellowship Applying Technology to the Mathematics Classroom
- 4-5 Millersville Students Performing Research
- 6 South African Shark Study Flipping the Classroom
- 7 Research in Retirement
- 8 Interview with Dr. Lyman Rickard

Millersville University
SEIZE THE OPPORTUNITY

Millersville University is an Equal Opportunity/Affirmative Action institution. A member of the Pennsylvania State System of Higher Education.
5434-HONO-12.13-JR

Three's Company



From left to right: Jonathan Shue, Thi Ahn Nguyen and Phuoc M. Phan

Commencement Day in May 2013 was a bright, brilliant day filled with glorious sunshine and the expectant ambitions of graduates, their families and friends.

Among the many undergraduate students who had reason to be proud of their achievements, three students stood out for their singular accomplishments. Each was a member of the University Honors College, and each was headed to graduate school in their chosen field. Perhaps most remarkably, each student had completed a rigorous course of study that included a research thesis in just three short years!

In an age when it is increasingly more difficult to graduate in four years, to have completed such a program in three gives new meaning to Millersville University's slogan of "Seize the Opportunity!" Jonathan Shue, Thi Ahn Nguyen, and Phuoc M. Phan did just that, setting a high-water mark of academic excellence in undergraduate research that few will rival. Each student entered Millersville in the fall semester 2010 and completed their studies in time to participate in the spring 2013 commencement ceremony. Shue, Nguyen and Phan are products of Lancaster County high schools who achieved high distinction before embarking on an accelerated course

of study in their baccalaureate programs. Faculty committees, led by their thesis advisors, lavished praise on them for their intellectual curiosity, persistence and for the sophisticated analyses found in their respective theses. One professor referred to the trio as "brilliant" young scholars with bright futures, and as men of "exceptional character."

Jonathan Shue and Thi Ahn Nguyen were chemistry majors, and Phuoc Phan, who is known as "Win," was a double major in economics and business administration. Shue's research was completed under the direction of Dr. Edward Rajaseelan, Dr. Stephen Bonser chaired Nguyen's thesis committee, and Dr. Ronald Baker supervised Phan's research. As members of the Honors College, the trio successfully completed a more demanding set of undergraduate academic requirements, and they achieved University and departmental honors. Shue graduated with a perfect 4.0 G.P.A. and received several prestigious University awards, as did Nguyen, who completed his undergraduate studies with a better

than 3.9 cumulative average. Phan followed closed behind, also graduating with Latin honors.

What does the future hold for the three?

Jonathan Shue is enrolled at the University of Pennsylvania's School of Dentistry, with complete financial support through a United States Air Force Scholarship. Thi Ahn Nguyen has gone west to pursue a fully funded doctorate program in chemistry at the University of California-Irvine. Win Phan intended to enter law school but an unexpected business opportunity persuaded him to return to his native Vietnam in the summer after graduation. He no doubt will apply elements of the market analysis contained in his undergraduate economics honors thesis.

Three students with separate career paths, but united in their determination to succeed at Millersville University as the foundation for greater personal and professional success to come. Research, rigor in their academic pursuits and the resolve to excel—the three R's of excellence, if you will—made possible by seizing the opportunity. And they did it in three short years!

BY LARA ADAMS

Historian Awarded Prestigious NEH Fellowship



Dr. Tanya Kevorkian

Dr. Tanya Kevorkian, Department of History, was the recipient of a year-long National Endowment for the Humanities Fellowship grant to complete her book, *The Musical Experience in German Baroque Towns*. Kevorkian says that the book's subject grew out of her previous research on music, religion and society in the German town of Leipzig. She spent the 2012-13 academic year engaged in research.

"I was initially going to write a social history of music in Baroque Germany, but narrowed the topic down to towns to make the study

more manageable and to give it a better focus." As for research advice to students? "First, keep an open mind," she says. "The process of doing research and writing can take unexpected turns. Second, take notes on anything you find that is interesting to you, even if you do not think it is relevant at the moment. Some day it will probably become relevant." In fall 2014 semester, Dr. Kevorkian is planning to teach a new course entitled "Music from 1500 to 1800 Through the Eyes of Historians," which will incorporate insights Kevorkian gained through her research.

Applying Technology in the Mathematics Classroom

One question in higher education for the past several years has been how to incorporate new resources and equipment into the learning experience. **Dr. Lewis Shoemaker**, Department of Mathematics, has demonstrated how new technologies can be integrated successfully into the classroom. Shoemaker has been using the Livescribe Smartpen in his Introductory Statistics class, which allows Shoemaker to record what he says and writes in the classroom, and also records students' responses to questions asked in class. It enables him to send notes with audio to students who missed class and those who would like to review the class. Shoemaker has also been making use of MyStatLab, a site similar to Desire2Learn but more tailored to statistics.

"There are actually two issues here," Shoemaker says. "First, does the technology improve student performance? I don't believe we should be using technology for the sake of using technology. That is why I continue to collect data on student performance. The second issue is convenience. I find it very convenient to use the smart board, computer and Elmo projector in my classes as opposed to the blackboard, copious handouts and overhead projector. However, I don't believe these technologies necessarily improve student performance in my courses."



Dr. Lewis Shoemaker

MILLERSVILLE STUDENTS Performing Research

Linford Ranck
Class of 2014,
History Honors with
a minor in German



Linford Ranck is a recipient of the German Academic Exchange Service Undergraduate Scholarship. This scholarship is a highly competitive program that provides scholarships supporting study, senior thesis research and/or internships in Germany. The goal of this program is to support study abroad in Germany and at German universities. Ranck is studying in Mainz, Germany at Johannes Gutenberg University.

In addition to enrolling in coursework, Ranck is researching his departmental honors thesis while he is in Germany. His topic relates to German nationalism and Mennonites in Germany during the 19th and early 20th centuries. Ranck has taken three semesters of German at Millersville in preparation for his time abroad. He plans to graduate in December 2014 and then attend graduate school.



Teah R. Nauman
Class of 2013,
Biology Honors,
University Honors
College

A December
2013 graduate,

Teah Nauman was the recipient of the Wickersham Memorial Scholarship. The scholarship is typically awarded to the top ranking junior for excellence of scholarship and character.

Nauman's research focuses on whether the

baiting activity on white-tailed deer can be determined by analyzing the chemical composition of deer feces and if unique chemical signatures are left by commercial baits. The results of her research may allow conservation officers to determine if illegal baiting activity is occurring in an area by simply testing deer feces. Nauman's work has been published in *Wildlife Professional Magazine* (Vol. 7 No. 2 Summer 2013), in the Field Notes section. Nauman plans on attending graduate school in veterinary science.

Sharon Folkenroth Hess
Class of 2014,
History Honors with
a minor in Historical
Archeology



A rising senior, Sharon Hess is the recipient of several prestigious undergraduate research awards, including the Joseph E. Walker American History Scholarship and the Robert Sayre Writing Award. She has also been nominated for the 2014 PASSHE Ali Zaidi Award, which recognizes outstanding research by an undergraduate student.

In addition to her local awards of merit, Hess was selected to present her research at the acclaimed UPenn/McNeil Center for Early American Studies Undergraduate Research Conference in Philadelphia. She has been active in Phi Alpha Theta activities and has completed a research internship with the Pennhurst Memorial & Preservation Alliance (PMPA) this past spring. Hess has worked as a research historian for Rodgers & Associates at the Armstrong Manor in Lancaster, and

completed the archaeological field school experience at the Historic Rockford Plantation in Lancaster, Pa. She currently is completing her undergraduate thesis.

Casey J. Swank
Class of 2015,
Social Studies
Education Honors,
University
Honors College



Casey Swank is the recipient of the Albert, Christina and Eric Hoffman Scholarship for Humanities and Social Sciences. The award is presented to a student in the Honors College with a major in the School of Humanities and Social Sciences. She is beginning her undergraduate thesis research in the spring 2014.



Brian R. Luckenbill
Class of 2014,
Physics Honors,
University Honors
College

Brian Luckenbill is the recipient of the Albert, Christina

and Gregory Hoffman Scholarship for Science and Mathematics. The award is presented to a student in the Honors College with a major in the School of Science and Mathematics. Luckenbill, who is engaged in his thesis research, also received the 2013 George F. Stauffer Scholarship, which is presented to a junior majoring in the physical sciences.

Jennifer C. Bennis

*Class of 2014
Psychology Honors,
University Honors
College*



A May 2014 graduate with a psychology major and sociology minor, Jennifer Bennis completed her Honors thesis under the direction of Dr. Frederick Foster-Clark. Entitled "The Effect of Parental Food Rule Perceptions on Young Adults' Food Choices and BMI," the study focuses on issues of nutrition, food choices and obesity. Researched and written over three semester, Bennis's work involved significant data collection and analysis. Her findings reinforce the necessity of sound nutritional and dietary habits in young children. Bennis plans to attend graduate school in occupational therapy in the fall of 2014.



Jessica R. Clark
*Class of 2013,
Psychology Honors,
University Honors
College*

Jessica Clark is the recipient of the Susan P. Luek University Honors College Award. The award is presented to graduating seniors in the University Honors College who have a Cumulative Grade Point Average (CGPA) of 3.5 or higher and show promise for graduate school or post-baccalaureate professional school.

Suzanne M. Yocom

*Class of 2013, Biology Honors,
University Honors College*

Suzanne Yocom is the recipient of the Susan P. Luek University Honors College Award. The award is presented to graduating seniors in the University Honors College who have a CGPA of 3.5 or higher and show promise for graduate school or post-baccalaureate professional school.



Jessica Jones
*Class of 2013,
Biology and Athletic
Training, University
Honors College*

Jessica Jones successfully defended her

Honors thesis entitled "Females are More Susceptible to ACL tears than Males - A Collection of Studies" under the direction of Dr. Julie A. Lombardi from the Department of Wellness and Sports Sciences. A sports enthusiast with an interest in medical science, Jones completed several internships and rotations. Her most recent internships were with the Franklin and Marshall College football program and Millersville University men's soccer team. She also has worked with Central Pa. Rehabilitation Services (CPRS Physical Therapy) and the Big 33 Football Classic, as well as the Harrisburg City Islanders, a professional soccer team.

Hilary Louth

*Class of 2013,
English Honors,
University Honors
College*



Also scheduled to graduate in December, Hilary Louth is authoring a science fiction novel entitled "Soul Shadow" as her senior thesis. Written under the direction of Dr. Timothy Miller, the creative work deals with an imagined world in which propaganda, distribution of wealth and societal separation, and morality in wartime are ever-present concerns.

Charles Loughery

Class of 2013, History Honors

Charles Loughery will be awarded the A.G. Breidenstine Award for his thesis on the significance of Reverend William Tennent. The award is presented to the student whose honors work is judged most outstanding by the Honors and Award Committee. In addition Loughery also received the Jack Loose Sons of the Revolution American History Research Award. The award is presented to a junior, senior, or graduate student who is pursuing current research on the American Revolution. A May 2013 graduate, Loughery is enrolled at the College of William and Mary Law School.

In the Field

South African Shark Study



Joseph Receveur, a junior biology secondary education major and Honors student, spent this past summer in Mossel Bay, South Africa, conducting research on great white sharks and other marine animals, in partnership with Oceans Research. Specifically, Receveur studied the feeding behaviors of great white sharks and whether different visual patterns may discourage or encourage the sharks to feed. Part of this research involved developing a visual that is applied to the bottom of surfboards to deter shark attacks on humans.

Receveur worked at the research institute's onsite facility, tending to the animals, giving tours to visiting groups, and assisting with conservation efforts at local schools.

In Mossel Bay, he gave presentations about marine conservation and performed dissections on sharks.

Of his educational experience, Receveur says, "This trip impacted my education by opening my mind to a whole different dimension of learning and how important hands-on education is. It also gave me the opportunity to be immersed in a different culture, which has helped me understand more about South Africa."



Flipping the Classroom



Honors student **Lauren Kriebel**, a junior early childhood and special education dual major, has always desired to pursue a career in education. At Millersville, the Flipped Classroom project spawned further passion. The Flipped Classroom is an innovative method of learning was initiated by scholars Jonathan Bergmann and Aaron

Sams and incorporates strategies to increase student engagement. The program involves recording a digital lesson for the students to watch at home, then completing a homework assignment or a higher-order activity with direct teacher assistance in

class. This method of teaching is beneficial to instructors who foster student knowledge while assisting them according to individual needs.

In the spring 2013, Kriebel had the opportunity to apply this method in an Instructional Technology course offered

by Dr. Oliver Dreon, in partnership with Penn Manor School District. Specifically, they flipped the classroom for literacy using non-fiction texts. Kriebel was so fascinated by the project that she extended her research to be used as her University Honors thesis next year. She continues to be involved in the project by helping the next group of Millersville students working with Dreon. Kriebel says, "Using their experiences and results, as well as my own, I can determine the effectiveness of using the flipped classroom as a tool to increase student engagement and success."

Her research is supported by a Joseph P. and Marianne S. Nolt Family Scholarship.

RESEARCH In Retirement

Charting Trans-Atlantic Religious Cultures



Dr. Francis J. Bremer has continued to make his mark in scholarly circles following his 2011 retirement from Millersville's history department, where he holds the title of Professor Emeritus of History.

Bremer gave the keynote address to kick off a September 16-17 conference at Trinity College in Dublin on "Catholics and Puritans in the Trans-Atlantic World, 1500-1800." Dr. Bremer, a leading authority on religion in the Atlantic World in the early modern period, spoke on "Houses Divided Against Themselves: Families Torn Asunder by Religious Conflict in Early Modern Anglo-America." His presentation focused on three families that produced leaders of the

Puritan movement as well as prominent Roman Catholic clergy. Bremer, published two books in 2012 concerning Atlantic Puritanism and is currently studying the role of the laity in shaping Puritan ideas and institutions in England and America during the 16th and 17th centuries. His research has revealed a strong democratic impulse of believers searching for religious truth. Bremer took a break from this project to open an October conference in Boston that commemorated the 350th birthday of the Puritan clergyman and historian Cotton Mather.

Maintaining the Balance

During his time at Millersville University, **Dr. David Hill** taught a number of graduate and undergraduate psychology courses. After his retirement from the psychology department, Hill maintains an active part-time practice seeing a variety of clients and renting clinic space to his colleagues. He continues to serve on doctoral committees at the Philadelphia College of Osteopathic Medicine, assisting with research and occasionally serving as a guest lecturer. Shortly after his retirement in 2011, Hill rode his bike 3,260 miles, raising more than \$6,000 for the Compass Mark program, that aids high risk children and adolescents who have addiction or mental illnesses in their families. Hill is an active member of the Lancaster South Rotary Club. He and his wife, Dr. Patricia Hill,

chemistry professor, have been married for more than forty years and have two daughters; Jessica is a professor at Southern Utah University and Emily is involved in Duke University development and participates in a theater company. Hill continues his private practice where he sees a variety of clients, including individuals on the autism spectrum, recovering drug and alcohol patients, and marriage and family support groups.



INTERVIEW WITH Dr. Lyman Rickard

Lyman Rickard, Ph.D., is a professor of chemistry at Millersville University. A “research chemist” with an interest in the development of chemical and biological sensors, Rickard is currently in Guwahati, India, as part of the Fulbright International Exchange Program. The purpose of this program is to promote international peace through educational and cultural exchange.

What are the scientific implications of your current research on Electrochemical Impedance Spectroscopy?

Electrochemical Impedance Spectroscopy is an analytical technique that is designed for making measurements of changes on an electrode surface. It has been successfully used by other chemists to measure the binding of antibodies to antigens at the electrode surface. I hope to be able to apply this binding of aptamers to a target molecule that is a marker for a disease such as cancer.

You have also done proprietary research for private corporations. How does that experience relate to the research you are doing now?

One of the projects that I participated in with a private corporation also involved the development of a biosensor. However, the current project is using a different way of targeting molecules and different analytical techniques (electrochemical impedance spectroscopy) to measure the concentration of the target molecule.



Do you expect any practical implications from your research?

The purpose of the project is to develop a point of service biosensor that could be used right in a doctor's office. The initial work that has been done involves targeting disease markers for different types of cancer. The development of a successful biosensor could lead to earlier detection of cancer.

Do Millersville students participate in any of the research projects you have conducted?

One of the major objectives of my research at Millersville has been to use research as a teaching tool for undergraduates. Undergraduate research allows students to become involved in doing science and using all of the techniques and concepts that they have learned on solving a real world problem. This is one of the most gratifying parts of my job.

Are there any connections between your role as a research chemist and your role as a Fulbright scholar?

There are no direct connections between my role as a research chemist and a Fulbright scholar. I am here as a Fulbright-Nehru Visiting Lecturer. Therefore, my primary function is teaching classes and interacting with faculty and students. However, I have given several seminars here at different colleges describing my research developing a biosensor and my work in chemical education.

As an American professor of chemistry, what are your greatest impressions of India?

India is a land of contrasts. For example, India has an incredible diversity of wildlife with beautiful forests and national parks. It also has densely populated, crowded cities. Living in India for an extended period of time like this is certainly a learning experience – an opportunity for personal growth. My observation on people in general is that they are all alike in terms of loving their families, enjoying being with friends, wanting a job that is fulfilling and will provide for their families, concern and pride for their communities, and wanting peace and security. Those seem to be universals for the vast majority of people – a few outliers in all cultures.

