

# Professional Education News

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Preparing students for professional leadership in business, industry, the arts, government, or educational, human services and nonprofit organizations

## Software engineering degree addresses a high-demand field

The job title of software engineer is on nearly every ‘top careers’ list in the U.S. right now, from the U.S. Department of Labor and *U.S. News & World Report* to Forbes.com and CNNMoney.com, where it’s currently #1.

The University of Delaware began development of its new master of science in software engineering (MSSE) initially at the request of the U.S. Army, which was moving two important communications units from Fort Monmouth, N.J. to Aberdeen Proving Ground in Maryland as a part of the base realignment and closure process known as “BRAC.”

Aberdeen professionals were already taking other engineering coursework at UD, therefore the goal was to provide an additional advanced degree opportunity for the relocated software engineering professionals from CERDEC and CECOM (Communications-Electronics Research, Development, and Engineering Center; and Communications-Electronics Command).

Lori Pollock, UD professor of computer and information sciences (CIS) was on the original program steering committee which included CIS as well as electrical and computer engineering (ECE) faculty. “During the time we were looking for model programs to



Current faculty for the M.S. in software engineering include Stephen Siegel, Lori Pollock and James Clause of CIS and Kristina Winbladh of ECE (seated).

*Photo by Kathy Atkinson*

inform our curriculum, there were just a handful of graduate degree programs in software engineering, and some were only certificate programs, not a complete master’s degree,” explained Pollock.

The committee also included Assistant Professor Stephen Siegel and Department Chair Errol Lloyd from CIS, the late Professor David Sincoskie and Associate Professor Stephan Bohacek from ECE, and Assistant Dean for Engineering Outreach Kathy Werrell.

In addition to input from the U.S. Army, the committee surveyed other companies in the region, confirming that the program would fill a significant need, said Werrell, adding that the degree was

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## Interdisciplinary education: A competitive advantage for professional graduate education

Many modern scientific breakthroughs follow from interdisciplinary research. In much the same vein, professions are becoming increasingly interdisciplinary. For example, innovations have sprung up in the health care field, such as the Patient-Centered Medical Home movement which coordinates multiple medically-related disciplines around the patient so that each practitioner is practicing at the top of his or her license.<sup>1</sup> Science-based industries create teams of scientists, engineers, marketers and manufacturers to develop and launch new products. Science, history, business and art are brought together for art and historic preservation, and to enhance our understanding of society, culture and history.

The University of Delaware, as a broad-based research intensive institution, provides the opportunity to build strong professional programs across disciplines that meet economic and societal needs in a manner with which small teaching institutions cannot compete. Pat Harker, in addressing the faculty noted that “Engineering thrives because arts and sciences thrive: Engineering is strong because they are around a strong health sciences program.”<sup>2</sup> In that discussion Dr. Harker suggested that departments teaching outside their discipline may lead to mediocrity, but that partnering with other departments and colleges to provide the breadth of skills that their students need enhances quality. This newsletter provides just a few of the many examples of excellence derived from

interdisciplinary, cross-department and cross-college efforts and partnerships.

The software engineering program emerged as collaboration between the Department of Computer Sciences and the Department of Electrical and Computer Engineering. That collaboration began when the two departments were in different colleges.

Interdisciplinary professional education is not new at UD. The art conservation program began in 1974 and represents a “true marriage of art history,... studio art, and... chemistry.” More recently the interdisciplinary doctoral program in preservation studies was developed through collaborations across the university.

Not only can research doctoral programs grow from professional master’s focus, but traditional doctoral studies can take on a professional character, as they did in art history with the recent launch of the Ph.D. level curatorial track. As has been true of sciences, Ph.D. studies in art history focus on academe. The curatorial track was created with the realization that traditional art history doctoral graduates frequently take leadership positions in institutions outside academe, and may not be well prepared for the demands of managing and directing an art institution. The curatorial track draws on curriculum from outside traditional art history education to provide those necessary skills.

Other articles in this issue highlight the benefits to students of interprofessional practice experience through the Nurse Managed Health Center, research outreach with the Osher Lifelong Learning Institute, professional science master’s degree program updates and new interdisciplinary offerings in education and health care. Even at the level of the individual course, interdisciplinary participation enhances the learning experience.

There is no question that interdisciplinary programs will form an integral part of the fabric of UD’s future. One aspect of this future is materializing before our eyes as the Interdisciplinary Science and Engineering Laboratory (ISE-Lab) takes shape on campus. With its spaces designed to blur the lines between research and instruction as well as between disciplines, the ISE-Lab will locate diverse students, experts and researchers all in one place where they will have the opportunity to collaborate like never before and serve as a model for interdisciplinary education at UD.

The examples presented in this newsletter represent just a small sampling of the ways that collaboration across disciplines, departments, colleges and programs at UD enriches our understanding, enhances the preparation of our students, and advances our ability to impact our world.

<sup>1</sup>National Committee for Quality Assurance <http://www.ncqa.org/tabid/631/default.aspx>

<sup>2</sup>Faculty Senate Open Hearing on Budget Review, February 13, 2012: <http://udcapture.udel.edu/podcast/watch.php?c=494> (audio archive 52:56).



*John E. Sawyer, Ph.D. is Associate Provost for Professional Education in the Office of Graduate and Professional Education at the University of Delaware.*



◀ Artist's rendering of UD's new ISE-Lab.



## Software engineering

(from page 1)

designed with the part-time working professional student in mind. The program includes a significant project requirement, giving professionals the option to incorporate a workplace problem.

Kristina Winbladh, who joined UD in 2010 as an ECE assistant professor now chairs the MSSE graduate program committee. Winbladh's course Software Design is a core requirement, and is being offered online this semester. "We are keen on accommodating students' work schedules. Most of our core courses are scheduled at the end of the day to make it possible for working students to make it to campus," explained Winbladh. "We also hope that offering some online courses will encourage participation from a wider range of professional students."

### Bridging the gap between industry and classroom

"Having students attend from different professional environments makes a unique and interesting classroom experience as we discuss how different industries do things, what works and what doesn't work," added Winbladh. "Students often volunteer their own experiences which really enriches the learning experience for everyone."

The first MSSE graduate students enrolled in Fall 2011. One of them is Meena Abdou, who recently completed a bachelor's degree in computer engineering at UD. "I was drawn to the MSSE because it was new and it was needed," said Abdou. "I had read lots of articles saying that software engineering was the hottest job in technology. The year I graduated, I read that UD was creating a brand new graduate program for software engineering. I saw this as a godsend and immediately knew I had to enroll."

"In a course like Software Design," added Abdou, "the presence of

working professionals taking classes alongside full-time graduate students is hugely beneficial. This course is all about bridging the gap between what happens in industry and what is taught in universities. The professionals who are expanding their education bring their knowledge of industry practices, and illustrate the difference between what they were taught, what is being taught now, how the field has developed."

Saul Foresta is also taking Winbladh's course this semester. "I enrolled in Software Design because I am interested in pursuing the M.S. in software engineering, and I have already been introduced to concepts and practices that I can incorporate into my work," said Foresta, a computer scientist within the Army's CERDEC unit performing applied research and development in the area of satellite communications.

"One particular focus of our research is in the application of digital signal processing and semiconductor technology in large satellite communication facilities. These systems are heavily reliant on software," explained Foresta. "Professor Winbladh is enthusiastic about her subject and I appreciate how she has structured this course in a way that balances both theory and practice."

### Expanded interdepartmental collaboration

The interdepartmental nature of the program has resulted in beneficial after-effects. As Pollock observed, "The process of building the program together has created stronger collaborations between the departments, and has strengthened faculty partnerships. Since then, we've worked together on research and other collaborations that may not have otherwise occurred."

Added Pollock, "The students are also exposed to faculty in both departments, and I think they benefit from that as well." Current MSSE faculty include Pollock, James Clause and Stephen Siegel of CIS, in addition to Winbladh of ECE.

"We hope that the program will grow significantly in the coming years," added Winbladh. "As a program that targets students from local industry, we also hope to make connections and lasting collaborations with industry. Many of the research opportunities that exist in software engineering have a practical angle where both researchers and industry benefit."

*By Nora Riehl Zelluk*



Photo by Kathy Atkinson

## The art and science of art conservation

Science and art are often thought of as opposites, yet a love for both can be combined into one profoundly interdisciplinary field. With its seemingly disparate blend of art history, studio crafts, and science, art conservation involves the scientific treatment and preservation of the artworks and artifacts that make up our cultural heritage.

One of only five graduate conservation programs in North America, the Winterthur-UD Program in Art Conservation (WUDPAC) has been preparing the field's experts for over thirty years. Its graduates have been responsible for the scientific analysis and preservation of objects ranging from documents like the *Emancipation Proclamation* and the *Treaty of Paris*; to artworks by Rembrandt, Van Gogh and the Wyeths; to artifacts like the 1905 Wright Flyer III and the original R2D2 from Star Wars.

### A marriage of art and science

"UD's interdisciplinary program in art conservation is one of the finest in the world, training students to become professionals in museums or in private practice," said Brian Baade, an instructor and researcher of historic painting materials and techniques at UD. "The Winterthur-UD program is a true marriage of art history, hand-skills like studio art, and science, especially chemistry. Students must have a strong background in all three disciplines for admission to the program, before continuing with even more intensive theory and practice in those subjects," said Baade, a 2006 WUDPAC graduate.

UD's doctoral level preservation studies program (PSP) was established more recently, and like WUDPAC, enjoys unique collaborations among a wide variety of UD programs and departments, combining studies in anthropology, art conservation, art history, biology, material culture studies, chemistry, materials science, urban affairs and more. Current doctoral students'



Photo by Kathy Atkinson

▲ Brian Baade and Kristin de Ghetaldi examine a historical reconstruction of "Saint Veronica and Verso" by Hans Memling, created by Baade through funding from the Samuel H. Kress Foundation for educational reconstructions of three Kress paintings in the National Gallery of Art.

fieldwork crosses both cultural and disciplinary lines, from researching preservation methods for outdoor murals from Philadelphia to Los Angeles, to examining the reconstruction of buildings and whole towns in the USSR following World War II.

A 2008 WUDPAC graduate, Kristin de Ghetaldi returned to complete UD's preservation studies doctoral program after a three-year Andrew W. Mellon Fellowship in Painting Conservation at the National Gallery of Art. One of the big draws for her was the opportunity to conduct interdisciplinary research by capitalizing on existing interdepartmental relationships at UD, especially between WUDPAC and UD's chemistry department.

De Ghetaldi has already begun communicating with researchers in UD's chemistry department to plan how she can best take advantage of that department's advanced analytical equipment and expertise to examine the microscopic samples of paintings involved in her research. "I knew I wanted that interdisciplinary interaction and

collaboration for my studies, because you get the best research when you can get art historians, conservators and scientists all working together."

### New class includes technical examination of artworks

Baade has just begun teaching a new class developed with UD's new art history curatorial Ph.D. program in mind (see story at right). Decoding the Old Masters is a graduate level course focusing on all the technical matters pertaining to an artwork—like materials, techniques and deterioration—and what that technical information can reveal, like the condition or the provenance of the piece.

As a Mellon Fellow at the National Gallery of Art, de Ghetaldi had the opportunity to interact with many curators in her conservation work on the treatment of Old Master easel paintings. With their traditional education as art historians, most of the curators had relatively little background in how to examine and understand the material aspects of artworks in their own institutions, but they were hungry to learn.



## UD a leader in cross-disciplinary collaboration

With few exceptions, hands-on examination of the methods and materials of artworks has not traditionally been a part of art history graduate studies, said Baade and de Ghetaldi, but that's changing. The National Gallery experience crystallized for de Ghetaldi the continuing need for greater cross collaboration and

interdisciplinary study in the once divergent fields. "While a number of colleges and universities have recently started to adopt a more interdisciplinary educational approach," observed de Ghetaldi, "the University of Delaware is at the forefront of this trend."

The new Decoding the Masters course has art history graduate students making some of their own pigments and painting with

egg tempera, all with the goal of learning more about the physical properties of the artworks they're studying. Explained de Ghetaldi, "As these young art historians begin to apply for museum curatorial positions, their added background in technical art history combined with hands-on experience will make them uniquely qualified."

*By Nora Riehl Zelluk*

## New art history program to prepare future curators

A generous grant from the Andrew W. Mellon Foundation will help launch a new curatorial track for doctoral art history students at the University of Delaware, making the program one of only a handful in the country to prepare future curators for careers as leaders in art museums and other institutions around the world.

"Our goal is to educate the next generation of informed, well-trained curators and serve as a model for curatorial education at the highest level," said Nina Kallmyer, professor and chair of art history.

### Expanding on the art history Ph.D.

Most graduate programs in art history train students for work in academe, especially in teaching critical theory and the social history of art. To explore the idea of developing a curatorial program at UD, Kallmyer began canvassing her own curator friends and colleagues, then interviewing professional curators at major art institutions around the country. "All of them were trained in academic institutions and held 'conventional' art history doctoral degrees. But what all of them emphasized was the extent to which their job involved so much more than 'just' art history," said Kallmyer.

Art museum directors and curators reported essentially having to "learn the ropes" on their own as they rose to leadership positions in their institutions. Faced with the issues and problems involved in managing and directing an art institution—many completely outside their expertise in art

history—they found it necessary to learn on the job from their art conservators, accountants, public relations managers, personnel directors, and so on.

For this reason, in addition to rigorous art historical training through graduate seminars, UD's curatorial track will expose students to a range of interdisciplinary areas that fall outside traditional art history education, including courses in museum studies, art conservation, public engagement and business and nonprofit management.

### Capitalizing on established UD programs

A major asset at UD, explained Kallmyer, is the existence of established, world-renowned conservation and preservation studies programs, the Winterthur-UD Program in Art Conservation (WUDPAC) and the UD preservation studies program (PSP). Through coursework in those programs, the art history students will focus on such topics as techniques and materials of paintings, examination and treatment of art objects, conservation ethics and research methods.

UD's museum studies program is already a valuable resource for many art history students, some of whom complete the graduate certificate in museum studies along with their graduate art history coursework, to broaden their skill set. Course options include collections management, museum education, exhibition design and organization and public engagement.



**Nina Kallmyer, professor and chair of art history**

*Photo by George Freeman*

Another valuable asset, added Kallmyer, is UD's mid-Atlantic location, with the wide variety of high caliber museums and art institutions nearby. The program requires two internships in art museums, where students will gain real-world curatorial, exhibition and publication experience. The program's partner museums include the Delaware Art Museum, the Philadelphia Museum of Art, the Pennsylvania Academy of the Fine Arts and The Walters Art Museum in Baltimore, among others.

"I often meet students who wish to pursue a career in museum work but are frustrated by the lack of curatorial Ph.D. programs," said Michael Taylor, director of the Hood Museum of Art at Dartmouth College and former Muriel and Philip Berman Curator of Modern Art at the Philadelphia Museum of Art. "This program's core curriculum will attract excellent students from across the nation and world."

*By Nora Riehl Zelluk*

## Nurse Managed Health Center provides service while also educating students

The Nurse Managed Health Center (NMHC) at the University of Delaware was launched in August 2010 to provide health care for UD employees on campus, but the center is also providing a valuable interprofessional education opportunity for UD students.

During January 2012, the NMHC conducted physical exams and fitness testing for the 45 officers in the UD police force, with graduate students from three academic units in the College of Health Sciences participating in all aspects of the screenings under the direction of NMHC director and nurse practitioner Allen Prettyman.

Through the program:

- Graduate students in kinesiology and applied physiology performed treadmill exercise stress tests;
- Students in the graduate nurse practitioner program performed physical exams and assisted with stress testing; and
- Graduate students in health promotion, working through UD's Employee Wellness Program, gained experience with biometric measurements and health education.

In addition, undergraduates in medical technology collected blood samples, performed routine urinalysis, and processed and prepared laboratory samples.

### Programs enriched by hands-on clinical experience

"Interprofessional education has been endorsed by the Institute of Medicine as a mechanism to improve the overall quality of health care," said College of Health Sciences Dean Kathleen Matt. "The project with UD Public Safety is a great example of an academically enriching interdisciplinary program for our students, that also provides a medical screening service for an important segment of the University community."

Bethany Hertzog and Kayla Andrews, students in UD's clinical exercise physiology master's program, assisted with exercise stress testing for the officers.

"This program is enabling them to see in real time some of the things they're learning about in class," said Associate Professor Shelley Provost-Craig. "In some instances, they're observing symptoms that they might otherwise only read about in a book, and they're learning what they should do in these cases. It's also a nice experience for them to interface with students in other health care disciplines."

Nurse practitioner student Amanda Galloway works in the medical intensive care unit at Christiana Care, where she sees only very sick patients. "Here, I'm working with people who are mostly healthy," she said. "The experience I'm gaining in performing routine physicals is good practice for what I'll be doing when I graduate."

According to Kathy Corbitt, director of UD's Employee Wellness Program, the current program builds on an existing physical assessment protocol that her office had been conducting for the UD Police over the past four years.

"Through our new partnership with the College of Health Sciences, we were able to expand the existing protocol and provide the officers with a very comprehensive physical to include lab work and stress testing, among other things," she said.

"Our portion of the appointment assesses their individual fitness level in the areas of muscular strength, endurance, flexibility and body composition. Together, the entire experience provides them with a better understanding of both their individual fitness level and their overall health. Our staff and students take time during the appointment to discuss their current fitness regimen and set goals to prepare them for their annual fitness test in the spring."

### Benefits to the UD community

For the UD police officers, the program enabled all of the required annual health services to be provided under one roof in one coordinated appointment.

"By its very nature, police work can have a profound effect on an officer's health," said Chief Patrick Ogden, director of Public Safety at UD. "Officers encounter many challenges to their health that include shift work, physically demanding tasks, exposure to the outdoor elements, and the responsibility of making life-and-death decisions at any moment of their tour of duty, all while maintaining their own safety."

"A large part of an officer staying safe is by being healthy and staying physically fit," he added. "This annual assessment allows officers to maintain a level of health and physical fitness that will help them make it home safely to their families and loved ones at the end of each tour of duty."

*By Diane Kukich*

Alex DelCollo, a student in the health promotion master's program, checks an officer's pulse before conducting fitness tests.



*Photo by Karby Atkinson*



## Master's program and new certificate option pave path to wellness

According to Mike Peterson, chair of the Department of Behavioral Health and Nutrition (BHAN) at the University of Delaware, UD is "out in front in health promotion, wellness and behavioral change."

BHAN already offers a bachelor's degree in health behavior science and a master's degree in health promotion, and a team led by Peterson is currently developing a post-baccalaureate health coaching certificate program.

"Sixty percent of the factors leading to premature death are under our control," said Peterson, "including behaviors like smoking, obesity, stress and inactivity. Health coaching is emerging as a viable way to help people adopt behaviors that reduce their risk for chronic disease as well as modify and stop behaviors that are detrimental to their health."

The new post-baccalaureate program is aimed at preparing health professionals to work in a clinical setting as part of a

team to facilitate behavior change among at-risk patients, to decrease demand for health care services and to reduce morbidity across the lifespan.

Overlap in the course offerings for the M.S. in health promotion and the coaching certificate will enable interested students to earn both credentials at the same time with just a few additional requirements.

"Enrollment in our programs is growing every year," Peterson said, "and the placement rate for graduates of our health promotion master's is close to 100 percent."

For more information about the graduate health promotion program and the health coaching certificate program, contact Peterson at [pmpeter@udel.edu](mailto:pmpeter@udel.edu).

By Diane Kukich

## Professional Science Master's program update

The University of Delaware launched two Professional Science Master's (P.S.M.) degree programs in 2010, one in biotechnology and one in bioinformatics. Both now have students in the pipeline, and the biotechnology program has had its first graduate.

Professional Science Master's degrees are designed to produce graduates with in-depth knowledge of science coupled with strong business skills. The programs give students the rigorous science and math of a traditional graduate science degree at UD, but also provide courses in business and project management, communications, policy and law, and team-building, which are essential for successful careers in industry.

Brett Friedberg, the first graduate of the UD P.S.M. in biotechnology, said that the interdisciplinary nature of the program is what first attracted him. "I was able to gain business experience," he said, "without sacrificing my interest in biology."

Chris Ahmer, a current student in the biotechnology P.S.M. echoed Friedberg's thoughts. The opportunity to take the additional courses through the Alfred Lerner School of Business and Economics drew him to the P.S.M. as opposed to a traditional M.S.

program. "I wanted to have more doors open for me within the science industry," he said.

Friedberg appreciated the flexibility the biotechnology program offered. "There is a lot of room to hone in on what you are truly interested in. It also gives you a chance to step outside of your comfort zone and take a class or two that you would otherwise never get an opportunity to take."

Another advantage, according to Friedberg, is the internship portion of the P.S.M. degree. "This program gives you an opportunity to gain experience in an industrial environment," he noted. In his internship at Ashland, Inc., a specialty chemical company, Friedberg supported the marketing and communications function for their food, pharmaceutical and personal care industries. Friedberg said, "Ashland utilizes an understanding of chemistry and abundance of research to help sell its products, and I was able to apply my strong science background to the business side of marketing and communications." A perfect fit for someone in the P.S.M. program.

"I gained experience in multiple areas that have allowed me to expand my education and grow as a person," Friedberg reflected on his P.S.M. experience. "The coursework was



Photo by Ambre Alexander

▲ Biotechnology P.S.M. graduate Brett Friedberg with faculty director Melinda Duncan.

tough, but gave me an opportunity to experience and gain knowledge in both biotechnology and business. Between the wide variety of coursework and the internship, the P.S.M. program gave me an opportunity to meet and work with people from many different backgrounds. This has helped me grow in areas that you don't get from studying a textbook."

By Tara White Kee

## Following the knowledge: Graduate students cross college lines for advanced coursework and development

There are many opportunities across UD for graduate students to take advantage of professional development programs in colleges and departments outside their core academic discipline, providing benefits for all involved.

### Research integrity class trains grad students to become peer 'ethics educators'

Last semester, 21 UD graduate students completed what may be the most interdisciplinary graduate-level class on campus: Research Ethics, part of UD's Responsibility and Integrity in Science and Engineering (RAISE) program.

Representing diverse fields, including geography, psychology, business, education, wildlife ecology, political science, physics and engineering, the students complete the seminar-style class on research ethics, receiving a stipend and committing to lead research ethics activities as peer educators.

"The math is pretty simple," said philosophy professor Tom Powers, one of three professors leading the seminar-style course. "We are leveraging the training these students receive to reach many more across the University."

UD's program began as a National Science Foundation-funded pilot project in 2007. Since then, applications to join the class have increased to such an extent that Powers and his co-instructors, philosophy professor Mark Greene and oceanography professor Bill Ullman, have doubled the number of students in the class and are contemplating adding additional sections in the future.

Throughout the semester, the students ponder issues such as the falsification of results, conflicts of interest in industry-funded research, whistle-blower vulnerability, plagiarism and more. Real-life examples keep the discussion lively, said Powers, who also directs the Science, Ethics and Public Policy program at UD. "Having students from so many different disciplines can make the conversation in class more difficult," added Powers, "but it can also make it richer as we discuss how different disciplines approach ethical questions."

"The participation of students from diverse disciplines has actually enriched our concept of science," said Sudarshan Dutta, a postdoc in plant and soil sciences. "We can get out of our own discipline and get a sense of the overall community of science and what every 'citizen' of the 'republic of science' needs to know."

### Economic analysis class provides advanced research tools

Last semester, graduate students from three UD colleges enrolled in Professor William Latham's Applied Econometrics (ECON 803), an advanced course in applying statistical techniques to analyze economic data.

One such student is Robin Dutta, a graduate student in the School of Public Policy and Administration whose research focus is in energy and environmental policy. "I took ECON 803 to learn more about economic modeling to better understand economic predictions," said Dutta. "Specifically, I am looking at the economics of sustainable energy, and I would like to apply what I learn to politics and the policy arena."

"Teaching students with diverse backgrounds presents both challenges and advantages," commented Professor Latham. "Sometimes, dealing with a challenge can produce an unexpected advantage. For example, when I need to discuss concepts that should already be familiar to economics students I try to find ways of doing so that communicate well to non-economics students. But the economics students hear these explanations and learn new ways of thinking about economic concepts."

Latham further capitalizes on the students' diversity of backgrounds through classroom discussion. "I use a lot of current events to illustrate the analytical techniques and invite students to contribute to these discussions. So finance students contribute more to discussions about the values of companies while agriculture students understand commodity markets and energy and environmental policy students understand global warming better."

Added Dutta, "In my research, I have constantly wanted to get the economist's perspective. My research would not be as well developed without the input from Dr. Latham. His economic and business expertise has been invaluable to me, and I can apply that knowledge in my own field."

◀ Faculty and students from last year's Research Ethics class.





## Business class broadens science students' education

Designed for non-business graduate students across UD who have a desire to include business basics in their graduate education, Survey of Business (BUAD 500) was developed as one of the “plus courses” for UD’s Professional Science Master’s (P.S.M.) degree programs in biotechnology and bioinformatics.

UD biotechnology graduate student Chris Ahmer said the opportunity to take business classes to supplement his core science coursework is what attracted him to the P.S.M. degree. “I knew that a traditional M.S. in a biology field would mean a career

pretty exclusively within the realm of research, and I wanted to have more doors open for me within the science industry.”

P.S.M.s at UD were developed with input from leading industry representatives to prepare students to go directly from the classroom to positions in business, industry, government or nonprofit employment. For that reason, the plus courses are intended to provide practical knowledge in business, leadership, entrepreneurship, project management, public administration and more.

Along with other P.S.M. graduate students, Ahmer completed BUAD 500 last fall.

Taught by Allen Fisher, instructor in

business administration, the course covers key business principles like organization and management, market research and marketing, operations management and decision analysis, accounting and financial analysis. The course also stresses business technical writing and presentation skills.

Commented Ahmer, “This class was one of my favorites, with a really flexible, open learning environment. We discussed business topics relating to the U.S. and around the world that were relevant not only to what we were learning, but how these facts related to us as students and future members of the American work force.”

*By Beth Chajes and Nora Riehl Zelluk*

## SPPA marks 50 years of scholarship and public service

UD’s School of Public Policy and Administration (SPPA) is celebrating its 50-year anniversary with a career conference; a reception to honor its local, national and global partners; and a “Leadership, Service and Policy” lecture series featuring speakers like Delaware Gov. Jack Markell and U.S. Sen. Chris Coons.

Established in 1961 with funding from the Ford Foundation, SPPA became one of the first interdisciplinary university programs in the nation to focus on the challenges of urban America and has since established itself as a first class program focused on integrating academic excellence with professional experience. “A half-century later, we have emerged as a globally recognized, comprehensive school of public affairs, with nationally-ranked academic programs and research and public service programs that impact the public and nonprofit sectors at all levels,” says SPPA director Maria Aristigueta.

Speaking at the March 19 reception, UD President Patrick Harker praised the School’s contributions to UD and the public. “When we talk about UD’s service mission—when we talk about ‘Citizen University’—we’re talking about the School of Public Policy and Administration,” said Harker. “It’s at the heart of service scholarship—research applied to public policy and the public good.”



*Photo by Ambre Alexander*

▲ **Tony Allen, a UD alumnus and trustee, and communications executive with Bank of America, addresses the SPPA career conference.**

The Careers in Public and Community Service conference brought together notable leaders and alumni from government, public policy and the public and private sectors, with the goal of providing students across UD with strategies for gaining a competitive edge in their employment search while highlighting the diverse array of public service careers.

With more than 300 in attendance, the conference was “our collective gift back to students, alumni, partners and friends,” comments Aristigueta. In the future, the School plans to continue the momentum from this year’s conference with annual

career conferences and job fairs in which current students can meet with potential employers in the public sector.

“As we celebrate a historic milestone, we are also rededicated to our longstanding mission of benefiting the communities we serve,” says Aristigueta.

The culminating anniversary event will be the Alumni Social and Scholarship Fundraiser on Saturday, June 2, part of UD’s Alumni Weekend festivities. The event is open to all. Visit [www.sppa.udel.edu/june-2012-alumni-social/](http://www.sppa.udel.edu/june-2012-alumni-social/) for details.

*By Artika Rangan Casini*

## Material culture research provides outreach platform

A punch bowl in the China trade; citizen soldier monuments; lynching memorials remembering a dark past.

These and other fascinating artifacts populate the syllabus of the “Objects as Cultural Artifacts” class at UD’s Osher Lifelong Learning Institute in Wilmington. Presented for four years running by UD graduate students in the humanities, the course involves collaboration between UD’s Center for Material Culture Studies and the Osher Lifelong Learning Institute at the University of Delaware, a member-based teaching and learning program for those over 50.

The graduate students’ presentations are an outgrowth of their participation in UD’s Public Engagement in Material Culture Institute (PEMCI), funded by a grant from National Endowment for the Humanities (NEH) to encourage and train graduate students to communicate their research to the public. The institute gives graduate students hands-on experience in public speaking, interviews and more.

### Developing public engagement skills

Sarah Beetham presented her research on the emergence of the ‘citizen soldier monument’ as public sculpture after the Civil War. “The PEMCI workshops really helped develop my skills in public speaking. I enjoyed presenting at the lifelong learning program,” said Beetham, who is completing a Ph.D. in art history at UD. “The art historian plays a crucial role in working with the public to come up with new ways to think about and preserve public art. Much more so than art in museums, public works are accessible for people to visit and learn from, and they are owned by the community. Art historians who specialize in public engagement can convey why that process is so important.”

The Osher presentations serve as an excellent opportunity for the graduate students to practice what they’ve learned in the PEMCI training, and fulfill the outreach requirements of the NEH grant, said



Photo by Ambre Alexander

### ▲ Osher Lifelong Learning instructors Nan Norling and Stuart Siegell, with UD art history graduate student La Tanya Autry.

Deborah Andrews, English professor and director of the Center for Material Culture Studies. Osher members, in turn, learn about research taking place at UD, she added.

### A win-win across-campus project

Earning an award in 2009 from the University Continuing Education Association for its unique cooperative format, the class is a win-win, across-campus project, commented Jim Broomall, assistant provost of professional and continuing studies, which oversees UD’s lifelong learning programs. “There is wonderful dialogue between the graduate students and lifelong learning students,” said Broomall. “Osher Lifelong Learning is proud to provide a forum for emerging scholars to share their research with an engaged community of learners. It illustrates the positive synergy between the Osher program and UD.”

Coordinating on the lifelong learning side, Nan Norling and Stuart Siegell both have taught art history courses in the Osher program. Norling is a graduate of UD’s master of arts in liberal studies program and Siegell is a docent at the Delaware Art Museum.

“Learning about different objects and art takes you places you never thought you’d go,”

commented Norling. “This course continues to attract an audience of 60 or more each week, many of whom come back every year.” Siegell added, “We are delighted that previous presenters have returned this semester to update us on their research.”

### Seeing research with fresh eyes

La Tanya Autry is one of the repeat presenters, a doctoral student in art history studying the history of lynching in America by examining lynching memorials. She’s given many outreach presentations in addition to the ones at Osher. “I find it helpful to present my research to people from various backgrounds. In addition to encouraging me to see the project with fresh eyes, the comments and questions often point the way to other approaches or research sources,” commented Autry. “Although working on the dissertation is rigorous, it feels good to know that many people are interested in my project.”

And while she’s always had an interest in sharing her topic through outreach, Autry said the PEMCI experience solidified the concept of public engagement for her: “I now consider it an integral part of my identity as an emerging scholar and a vital component of a democratic society.”

By Nora Riehl Zelluk



## School of Education addresses high needs areas with interdisciplinary programs

Within the last several years, the School of Education has created three one-year master's degree programs in partnership with the College of Arts and Sciences. All three professional programs train teachers to take roles in high needs areas.

### Teaching English as a second language

Designed to meet the growing need for certified ESL teachers in Delaware and surrounding states, the M.A. in teaching English as a second language (TESL) program is an interdisciplinary program involving the School of Education and the departments of Linguistics, and Foreign Languages and Literatures. The degree prepares students for teaching in ESL classrooms, and also in colleges and language institutes in the U.S. and abroad.

The "4+1" program allows an English major to graduate with a B.A. in English and an M.A. in teaching English as a second language at the end of five years, compared to a four-year bachelor's degree and a two-year master's degree.

The collaboration among education, linguistics and foreign languages is crucial to TESL. To be effective in the field, teachers need background in the process of second language acquisition, and a command of linguistics concepts relating to the English language. They also must be able to translate their knowledge into classroom practices that allow their students to learn English effectively.

### Secondary special education

UD undergraduate secondary education majors can opt to apply for a "4+1" master's program in secondary special education. This is a five year program combining undergraduate and graduate work. Upon completion of the program students earn a bachelor's degree in secondary education and a master's degree in special education.

Additionally, they are eligible for dual certification in their general education content area and secondary special education.

Students are placed in local partnership high schools as special education teacher interns where they receive supervision from UD and school district staff.

### Master of arts in teaching

Students with degrees in English, mathematics or science can become high school or middle school teachers in their discipline by pursuing a one year master of arts in teaching (MAT). This program is intended for students to become certified in teaching at the secondary level (grades 6-12) in a single subject.

Students learn how to lead a classroom, plan lessons, assess student learning, reflect on their own teaching, and improve their practice over time, then complete a year-long internship with a partner school to gain intensive classroom experience.

Upon successful completion of the program, students receive a master of arts in teaching with an institutional recommendation for teacher certification.

### About the School of Education

Consistently ranked as a top education school by *U.S. News & World Report*, UD's School of Education is a vibrant learning community that prepares graduate students for careers devoted to the solution of our most pressing educational problems. Over 400 graduate students in the School of Education learn alongside faculty with interests ranging from teacher education to curriculum theory and development to community-based education models and educational leadership.

*By Tara White Kee*

## UD library resources serve graduate students

The University of Delaware Library is heavily used by graduate students in all disciplines, many of whom consider it a second home during their graduate studies.

Library collections include print, electronic, film, digital media, microforms and Special Collections. An in-depth array of licensed electronic resources including e-journals, ebooks and databases is available only for use by current UD students, faculty and staff through legally binding licensing agreements. The outstanding holdings of the Special Collections Department include books,

manuscripts, maps, prints, photographs and other original resources from the 15th to the 21st century.

The Student Multimedia Design Center has 80 workstations, six studios, two classrooms and a variety of laptops, iPads, cameras and digital equipment available for use. Graduate student carrels are available in the Morris Library.

Library instruction services are available to graduate students, with workshops on topics like using RefWorks to organize references for research. Instruction by



*Photo by Kathy Atkinson*

librarians from the Reference Department and the Special Collections Department to classes focused on the specific subject matter of a course may be scheduled by graduate teaching assistants.

Graduate students are frequent users of interlibrary loan, through which non-UD materials can be obtained at no charge to students.

For services of special interest to graduate students visit [www2.lib.udel.edu/ref/gradstudents.htm](http://www2.lib.udel.edu/ref/gradstudents.htm).

*By Julia Hamm*



## Financial aid update for graduate certificate programs

Students in graduate degree programs (master's and doctoral) can qualify for federal financial aid by filing the FAFSA application. Recently, the University of Delaware has developed a number of graduate certificate programs to provide targeted skills for students who are seeking to develop specific skill sets. The U.S. Department of Education classifies all non-degree programs as "Gainful Employment" (GE) programs. GE programs must be pre-approved by the U.S. Department of Education before students in those programs can apply for federal financial aid. The UD Office of Student Financial Services has submitted the following graduate certificate programs for approval:

- Graduate Certificate in Bioinformatics
- Graduate Certificate in Biotechnology
- Certificate in Statistics
- Certificate in Computational Science and Engineering

- Graduate Certificate in Early Language and Literacy
- Certificate Program in Geographic Information Science
- Graduate Certificate in Health Coaching
- Graduate Certificate Program in Historic Preservation
- Leadership in Early Childhood and Human Services Certificate
- Parent Education and Family Support Certificate

The College of Health Sciences' Dietetic Internship Certificate program has been approved for federal financial aid for several years and has been grandfathered into the GE program policies.

The UD Office of Student Financial Services continues to monitor the approval process and will notify directors of the above programs and the Office of Graduate and Professional Education when approval is granted.