

NEWS  
FROM THE  
COLLEGE OF  
ARTS AND SCIENCES

# Columns



Undergrad  
research  
gives  
students  
competitive  
edge

Lit lab  
launched

Walker  
earns OTICA

SPRING

# 2014

ISSUE

## 'VISIONARY LEADERSHIP'

Arts and Sciences selects Joseph S. Francisco to lead college into new era

UNIVERSITY OF NEBRASKA-LINCOLN



## FROM THE INTERIM DEAN



Interim Dean Steve Goddard

As you read this, the college will have just recently conferred its degrees at May graduation. This is one of the most exciting times of the year—a time when we stop to take stock of all that our graduates, faculty and staff have accomplished. This spring, 90 Arts and Sciences undergraduate students participated in UNL's Research Fair—showcasing the results of student-faculty research partnerships on topics ranging from digital archeology, to a mathematical study aimed at projecting the sustainability of groundwater resources for agriculture, to assessing climate change impacts in Central America. One of our very accomplished undergraduates, Aubrey Thompson, was selected from among 14,000 applicants across the country for a prestigious NSF Graduate Research Fellowship on the basis of research she conducted with Prof. Carina Curto (Mathematics). Several students and faculty have been awarded Fulbrights for research and teaching abroad. Across the year, the College has awarded nearly 150 degrees with some form of distinction and made numerous awards to faculty and staff for outstanding teaching, research and service—many of which are described in this issue of Columns.

These are the kinds of accomplishments by which we measure our progress toward the goals we have set for improving student retention and graduation rates, and continuing to grow our national reputation for research. While the College has made great strides toward these goals this year, I look forward to its continued success under the leadership of Joseph S. Francisco, the College's newly appointed dean. An accomplished chemist and member of the National Academy of Sciences, Dean Francisco shares a part of his vision for the college on the pages of this issue.

It's a very exciting time for the College as we prepare for new leadership and continue our efforts to build the kind of globally connected university that positions the University of Nebraska–Lincoln to serve this state and the world. It has been my pleasure to serve as interim dean during the year. I'm very proud of the accomplishments of our students and faculty, only some of which (due to space) can be chronicled here. Please keep in touch with the College by visiting our website, [cas.unl.edu](http://cas.unl.edu), or paying a visit to Oldfather Hall the next time you're on campus.

Sincerely,

A handwritten signature in black ink, which appears to read "Steve Goddard". The signature is fluid and cursive.

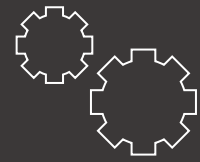
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**On the cover: Joseph S. Francisco**  
(Photo courtesy Kevin Swan, SwanShot.com)

(Photo below by Craig Chandler, University Communications.)

SPRING  
2014



# Columns

NEWS FROM THE  
COLLEGE OF ARTS AND SCIENCES

The College of Arts and Sciences educates every UNL undergraduate through courses in the humanities, social and natural sciences. Our undergraduate and graduate students work with more than 350 world-class faculty members dedicated to teaching and research excellence in more than 50 major and minor programs.

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Story ideas, activities and achievements can be submitted by sending an email to [deann.gayman@unl.edu](mailto:deann.gayman@unl.edu). Receipt does not guarantee publication and the editor reserves the right to edit for space, clarity, grammar and style.

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## RESEARCH

# Study: Large, older trees keep growing at a faster rate

BY DEANN GAYMAN, UNIVERSITY COMMUNICATIONS



Sabrina Russo

Contrary to long-held misconceptions, trees never stop growing during their lifespans, a new study has found.

In fact, as they age, their growth accelerates, even after they've reached massive sizes. This means that older trees play a substantial and disproportionate role in the Earth's carbon cycle—one of the cycles that makes Earth capable of sustaining life.

The groundbreaking findings are in a new study co-authored by University of Nebraska–Lincoln biologist Sabrina Russo and published in *Nature*.

Researchers analyzed the compiled biomass growth measurements of 673,046 trees belonging to 403 species from various temperate and tropical regions across six continents.

They concluded that for most tree species, mass growth rate continues to increase with their size, with some species' largest trees growing by a mass equivalent to a mid-sized tree in a single year.

“Looking at data from whole forests—that is, all trees in a forest considered together as a unit—it is often found that forest productivity declines with the age of the forest, but that does not mean that the growth of the oldest trees declines,” said Russo, a forest ecologist in UNL's School of Biological Sciences. “What turns out to be key to understanding tree growth is to examine the growth pattern of each individual, not just the forest stand as a whole.”

In addition to discovering this property of tree growth, the conclusions also contribute to understanding the global carbon cycle because trees, like all plants, take up carbon dioxide from the air and sequester it in their biomass.

“About 50 percent of a tree's wood is carbon, so a rapidly growing, large, old tree can remove huge amounts of carbon from the atmosphere, through an enormous photosynthetic flux—far more than a younger, smaller tree can,” Russo said.

“While they are alive, these giant elders of the forest play a disproportionately important role in a forest's carbon dynamics.”

While 38 researchers from 29 institutions collaborated on the study, Russo was instrumental in the research. She contributed to development of the data analysis methods, as well as the analysis and interpretation of the results.

Russo's principal research site in Lambir Hills National Park in Malaysia on the island of Borneo also lent data to the study for 76 Southeast Asian tree species.

The study, “Rate of tree carbon accumulation increases continuously with tree size,” can be found at <http://www.nature.com>. In addition to Russo, the paper was authored by Nathan Stephenson and Adrian Das of the U.S. Geological Survey and Richard Condit of the Smithsonian Tropical Research Institute, along with 34 other researchers.

A venerable, fast-growing giant of *Shorea smithiana*, a hardwood species found in rain forests in Borneo. (Photo courtesy Sabrina Russo, Biological Sciences)

**It's an exciting time. How we pull it all together, and how we create a clear sense of direction, will have a huge impact on Nebraska and the world.**

— Joseph S. Francisco



Joseph S. Francisco with his wife, Priya Rajagopalan Francisco  
(Photo courtesy Kevin Swan, SwanShot.com)

## Joseph S. Francisco to Lead UNL's College of Arts and Sciences

BY STEVE SMITH, UNIVERSITY COMMUNICATIONS

The University of Nebraska–Lincoln has selected Joseph S. Francisco, former president of the American Chemical Society and member of the National Academy of Sciences, as dean of its College of Arts and Sciences.

Ellen Weissinger, senior vice chancellor of academic affairs, announced the appointment of Francisco as the next leader of the university's largest college in April. Francisco, William E. Moore Distinguished Professor of Earth and Atmospheric Sciences and Chemistry at Purdue University, will begin his UNL tenure July 1. The appointment is pending approval by the University of Nebraska Board of Regents.

Francisco—who in more than three decades as a scholar and researcher has made important contributions in the field of

atmospheric chemistry—brings a combination of scientific achievements and visionary leadership to Lincoln, Weissinger said.

“As a researcher and an educator, Joe has demonstrated the highest level of performance at every stage of his career and he has a rare talent for inspiring excellence in others,” Weissinger said. “His spirited leadership style focuses on enhancing undergraduate education, furthering important interdisciplinary research, and building a rigorous academic culture that evokes great value from diverse people and ideas.

“Joe fits UNL and Nebraska really well. He’s an accomplished person who is humble about his achievements. He is a person of integrity and character. He is passionate about helping students succeed in college and in life. His reputation as a scholar will attract new talent across all of the disciplines in arts and sciences. Joe and his family will be an incredible addition to the campus and to the state.”

The College of Arts and Sciences is made up of 5,600 students, or 23 percent of the UNL student body. Its 18 departments, 44 centers, programs and institutes, and its 16 pre-professional programs offer 38 majors and 57 minors.

Francisco said UNL's strong culture of interdisciplinary collaboration—faculty and staff working across different fields to expand research and create opportunities for students—was a large factor in his decision to come to Nebraska.

“There’s a lot of discussion in higher education about working across disciplines. UNL is taking a leadership role in advancing innovative research at the cutting edge across multiple disciplines, and that is exciting,” Francisco said.

‘JOSEPH S. FRANCISCO’ CONTINUED ON PAGE 15

### ■ Joseph Francisco At a Glance

- B.S. in chemistry from the University of Texas at Austin; Ph.D. in chemistry from the Massachusetts Institute of Technology
- A Fellow of the American Chemical Society; American Academy of Arts and Sciences; American Physical Society; American Association for the Advancement of Science
- Past president and board member of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers
- Past president of the American Chemical Society
- Guggenheim Fellow
- Member of the National Academy of Sciences



# Cather research launches UNL digital literature laboratory

BY LESLIE REED, UNIVERSITY COMMUNICATIONS

How closely does the narration of Willa Cather's novels match the personal voice in her private letters? Which unsigned and pseudonymous newspaper and magazine articles did Cather pen during her journalism career? And did Cather's writing change after she wrote a 1922 manifesto that championed a more spare style for novels?

These are questions recently investigated by University of Nebraska–Lincoln students working in a newly established laboratory for digital literary studies. Their findings have been selected for presentation at the prestigious Digital Humanities Conference in Switzerland in July.

The second of its kind in the nation, the Nebraska Literary Laboratory opened late in the fall 2013 semester. The bright space in Love Library, equipped with a giant monitor and a chalkboard, allows students to gather to develop research strategies, write computer code and analyze data.

Matthew Jockers, assistant professor of English and trailblazer in digital literary analysis, created the lab. Jockers, in his second year at UNL, was co-founder of the Stanford Literary Lab in 2009.

Students in Jockers' fall Microanalysis class dove into UNL's extensive Cather Archive with a goal of shedding new light on the author's work. Now, 10 students are to travel to Lausanne, Switzerland, to present their findings. The students competed with established scholars from around the world to gain a place at the prestigious conference.

Computer programming and analysis enabled three teams of students to closely compare 15 novels and hundreds of letters and journalism articles by Cather. Their findings:

■ “My Mortal Enemy” was the only one of 15 analyzed novels where the narrator's voice resembled Cather's voice in her personal correspondence. The finding backs those of traditional literary scholars, who have also found “My Mortal Enemy” an outlier compared to Cather's other works.

Using computer analysis, a team made up of Gabi Kirilloff, Laura Dimmit, Chandler Warren and Austin Wehrwein, studied the question. They tracked frequently occurring words such as “a,” “the,” “but” and “and”; and measured sentence length, punctuation and grammar. Cather apparently was skilled at muting her personal voice; in 14 of 15 novels studied, the students found the narrator's voice to be markedly different from “the personal signal” found in Cather's letters.

Kirilloff said she came to Nebraska after earning a master's degree from the University of Rochester because she wanted to study with Jockers and other UNL digital humanities stars.

“They have the best digital humanities program in the country right now,” she said. “The faculty is doing cutting-edge work.”

The recently published book of Cather letters made her team especially eager to compare Cather's correspondence with her novels.

“A lot of people were surprised by the voice in the letters. It was bold, unabashed, vibrant and quirky—a voice a lot of people weren't aware of just from her fiction,” she said.

Dimmit said the difference quantified by the students perhaps affirms why Cather was reluctant for her letters, which were published for the first time in Jewell's book, to be made public.

“The way she writes in the letters—it's less edited and more dashed off,” Dimmit said. “She's more emotional and less reserved. She herself thought there was something to the fact that the letters were different.”

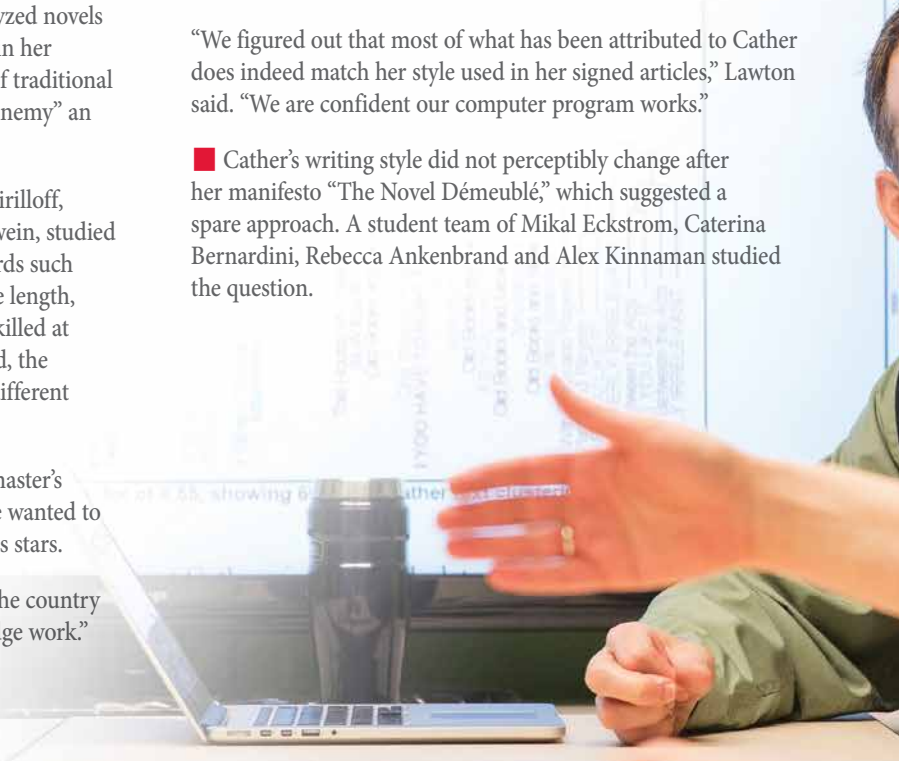
■ With few exceptions, the unsigned or pseudonymous journalism articles attributed to Cather by scholars match the style and voice of her bylined articles. A team composed of Courtney Lawton, Carmen McCue, Jose Moreno, Ashanka Kumari and Grace Thomas made the finding.

Spurred by a few documented instances of misattribution, the second team set out to create a digital tool to determine whether a newspaper or magazine article was likely to be written by Cather. She may have written about 600 articles, many unsigned or under pseudonym, during her career as a journalist.

Their tool was able to distinguish Cather's work from that of 19th-century journalist Fanny Fern. But the students' efforts were hampered because only about a third of Cather's journalistic output has been transferred to a digital format suitable for analysis.

“We figured out that most of what has been attributed to Cather does indeed match her style used in her signed articles,” Lawton said. “We are confident our computer program works.”

■ Cather's writing style did not perceptibly change after her manifesto “The Novel D meubl ,” which suggested a spare approach. A student team of Mikal Eckstrom, Caterina Bernardini, Rebecca Ankenbrand and Alex Kinnaman studied the question.



“We found that her style was largely consistent throughout her entire career,” said Eckstrom. “It really allows us to get some closure through computational analysis because computers typically don’t lie and data stands for itself.”

Andrew Jewell, director of the digital Cather Archive and co-editor of 2013’s “The Selected Letters of Willa Cather,” said the Macroanalysis methods employed by the students hold promise in discovering new insights into authors’ works.

“These techniques apply not just to Cather, of course, but to literature and literary study broadly,” Jewell said. “It’s a way to ask big questions that are not manageable without a computer.”

Jockers said the Nebraska Lit Lab allows students—many of whom have little computer programming experience—to take advantage of one another’s strengths and compensate for their weaknesses. It is a setting where humanities majors can make the important cultural shift from solitary study to collaboration.

“The diversity of experience in a lab like this is really quite important,” he said. “It results in better research and better learning.”

For example, Thomas, an undergraduate who intends to pursue a career in library and information science, is minoring in computer science. Lawton came to UNL specifically to study Cather. Yet Ankenbrand, pursuing a master’s degree in French, had little knowledge of Cather or coding when the class started.

“It was kind of a steep learning curve for me, but I found it fascinating,” she said. “It’s a new way of looking at literature.”

Kumari, who came to UNL seeking a traditional master’s degree in English composition and rhetoric, admits that sometimes she’d still prefer to be alone with her studies. But she saw how her team was strengthened by the diverse abilities of its members.

“Now I’m looking at applying to doctoral programs with a digital focus,” she said. “It’s definitely changed the way I think about my career path.”

**Matthew Jockers (left) discusses with students at the Nebraska Literary Lab their digital projects examining the language of Willa Cather.**

*(Photo courtesy Craig Chandler, University Communications)*



# UNDERGRAD RESEARCH

When Alicia Meyer decided to transfer out of the University of Colorado after her freshman year, she wanted an academic home where she could delve into topics she was passionate about.

Looking at her options, the Lincoln native discovered the University of Nebraska—Lincoln offered something very appealing

that CU had not: opportunities for undergraduate research.

“UNL specifically really allows you to create the experience you want from your education,” Meyer said.

Undergraduate research through the UCARE (Undergraduate Creative

Activities & Research Experiences) program helped shape Meyer’s and so many other students’ futures. Meyer and many like her have found themselves on a trajectory toward graduate school and careers in fields that require the experience gained through undergraduate research opportunities.

## Bridging the gap between Broadway and Dartmouth

Whether it’s on stages across North America or in biology laboratories at UNL, Brad Bartholomai chases his dreams.

Bartholomai, 32, never saw himself as a scientist—he wanted to perform before audiences. So when the Lincoln native graduated high school and spent a short time at Kansas State University, he turned his attention to New York City, where he spent six years living the “gypsy lifestyle” of a musical theater performer.

As a cast member of touring musicals, Bartholomai traveled across North America. He was running to auditions between tours, mixing with other Broadway performers and soaking up New York culture.

But after five national tours, including a turn in “Cats,” Bartholomai began to wonder: Would his love for theater carry him throughout life?

“I felt like I had got out of it what I wanted,” he said. “I really started thinking about finishing my degree. I knew that by not having a degree my future was a lot more limited. And I wanted to put down some roots.”

Fatigued from the schedule he’d been keeping in New York, Bartholomai moved back to Lincoln in 2007 to mull his options.

“Then the sciences really pulled me in.”

Bartholomai began working in a laboratory with associate professor of biology Cathy Chia during his second year at UNL and changed his major to microbiology. He found himself excelling at conducting research—something he did by putting science and art together.



Visit [go.unl.edu/columns](http://go.unl.edu/columns) to see video of Brad Bartholomai explaining his research



“I can utilize my creativity and artistic background to think outside the box,” he said. “Most scientific discovery is born out of creative thinking or happy accidents, both of which I seem to come by naturally.”

Bartholomai said his experience and perseverance as an actor have also made him a more patient researcher—something his mentor has noticed, as well.

“He is not discouraged when experiments go wrong, which is important because there usually are more failures than successes,” Chia said. “Brad has displayed the mental focus needed to be a professional scientist.”

Since last year, Bartholomai has participated in UNL’s UCARE program, which provides funding for student research. He said his involvement in undergraduate research has been central to his success at UNL and played a very large role in guiding him through the process of applying to graduate schools. Bartholomai has earned a place at Dartmouth College, where he will pursue his doctorate in molecular and cellular biology.

“Working in the lab, having my own research project, and having a faculty mentor has helped me learn and grow as a scientist far better than any course work I have taken,” he said. “My UCARE project was also a major source of material for my graduate school applications and interviews. The fact that I have had almost three years of research experience and have worked closely with current graduate students really enhanced my graduate school application and gave me good material to draw from during my interviews.

“My experience helped assure my interviewers that I already have a firm understanding of what graduate studies in biological sciences will be like and I am up for that challenge.”

Bartholomai hopes his love for research and teaching will evolve into a career after he finishes his doctorate.

“Being a performer seems to translate well to leading a classroom full of students,” he said. “I think I’d be an awesome professor.”

**Brad Bartholomai will take what he learned in UNL’s UCARE program and apply it to earning his doctorate at Dartmouth College.**

(Photo courtesy Craig Chandler, University Communications)



# GIVES STUDENTS EDGE

Bridget Goosby, associate professor of sociology, said the benefits for students performing undergraduate research can't be understated.

"The experience students gain from it is invaluable," she said. "The hands-on type of training is a major benefit of undergraduate research and allows

students to see what it is like to be part of a large research project. It prepares them and makes them more competitive when applying to graduate schools."

Undergraduate research opportunities exist across the College of Arts and Sciences. Here we feature two students who credit the undergraduate research

opportunities they had at UNL with helping them secure their futures.



Visit [go.unl.edu/columns](http://go.unl.edu/columns) to read more on Alicia Meyer's story.

## Undergrad research shaped future for student



Max Reason

Like a lot of new freshmen, Max Reason didn't have a clear path in front of him when he enrolled at UNL four years ago.

Admittedly, he wasn't a book worm in high school.

"I wouldn't say I was studious," he said. "I got decent enough grades, but that was more of something I started when I got into college."

And start studying he did, as he's now preparing to embark on a pursuit of his doctorate at the University of North Carolina at Chapel Hill, one of the top ten schools in sociology. Reason's path seems much more concrete now thanks in large part to the opportunities he had at UNL in undergraduate research.

As a sociology major, Reason was implored by his professors and teaching assistants to keep asking questions and seek the answers, but he never saw himself in graduate school.

"I kept comparing graduate school to medical school or law school," Reason said. "That's hundreds of thousands of dollars. Why would I want to pay that much?"

But he decided to look at graduate school anyway, and attended a forum on the topic. He was surprised to learn that financially, graduate school was not out of reach.

"I realized I wouldn't have to pay, that graduate schools pay a stipend," he said. "That was eye opening because if I could pull it off financially, that would be the most important consideration."

But, to be competitive in applying to grad school, Reason learned he'd need some undergraduate research experience. After mulling his options, and seeking advice from his professors, he joined the team of Bridget Goosby, associate professor of sociology, and earned a UCARE scholarship.

For the past two years, he's been racking up a lengthy resume, complete with experiences in data collection, data analysis and academic writing.

"I've probably learned more through UCARE, as far as how to properly write, how to do more advanced stuff—a lot of the stuff you wouldn't learn until you are in a graduate school setting—than I did in the classroom," he said.

But more importantly, Reason feels he's found his passion, which is researching how social disparities affect health outcomes. Goosby has been instrumental in helping develop Reason's scientific skills, but she said he's done well also because he truly cares.

"He very much sees the bigger picture," she said. "He's been thinking about complexities of the bio-social processes that lead to health disparities. He's the first undergrad I've worked with that has thought in this way."

Reason said he sees the need for real change in policy. It is for this reason that he has expressed interest in perhaps entering the governmental sector after he earns his doctorate degree.

For now, though, he's concentrating on starting graduate school, knowing he has a solid foundation from his undergrad research at UNL.

"That's been the most important thing: knowing, going in, that I have a better base of knowledge going forward," he said. "I'm not going in blind." →



## FACULTY ACCOLADES



Judy Walker

**“Helping students look at mathematics beyond just a set of rules and procedures and see it instead as truth and as beauty is what I enjoy doing.”**

— Judy Walker

### Walker’s passion for ‘beauty in math’ earns OTICA

BY DEANN GAYMAN, UNIVERSITY COMMUNICATIONS

Sometimes it’s hard to find beauty in everyday life. Not for Judy Walker.

“Mathematics really is beautiful,” she said. “Helping students look at mathematics beyond just a set of rules and procedures and see it instead as truth and as beauty is what I enjoy doing.”

Walker, chair and Aaron Douglas Professor of Mathematics, demonstrates this enjoyment with her students every day. It’s earned her the University of Nebraska system-wide Outstanding Teaching and Instructional Creativity Award.

The award recognizes individual faculty members who have demonstrated meritorious and sustained records of excellence and creativity in teaching.

Fellow Aaron Douglas Professor Jim Lewis nominated Walker. Lewis hired Walker in 1996 and said in his nomination letter that “hiring Judy is easily one of the five most important things” he accomplished during his tenure as chair of the department of mathematics.

Walker has written courses, mentored graduate students and, by developing the Nebraska Conference for Undergraduate Women, has helped thousands of undergraduate women succeed in mathematical careers.

“We believe that over time, the conference will merit part of the credit for helping change the gender distribution in our profession,” Lewis wrote.

The conference has already earned national acclaim, consistently earning funding from the National Science Foundation and earning the Programs That Make a Difference award in 2013 from the American Mathematical Society.

On campus, Walker has made significant strides in improving general education mathematics courses. Walker took the lead in reviewing the courses and worked to develop teaching methods that helped both students and the faculty be more successful in the classroom.

Walker said the reason she has accomplished so much at UNL is that she loves math and she loves sharing that with her students.

“The best thing about teaching math is watching students learn to recognize beauty in math and get excited by it,” Walker said. “It’s really fun when you see them have that ‘Aha’ moment. There’s nothing that compares to it.”

As department chair, she’s continued developing new curriculum, mentored graduate students and elevated the stature of the department.

“She is a visionary leader and contributes enormously to our reputation among math departments across America,” Lewis said. “She’s remarkably creative and a superb research scholar.”

## Four given Arts and Sciences awards for teaching, research

The College of Arts and Sciences recently recognized four faculty members for outstanding accomplishments in teaching and research.

Each year, the college awards one Hazel R. McClymont Distinguished Teaching Award and three Outstanding Research and Creative Activity Awards—one in each of the three subdivisions within the college: natural sciences, social sciences and humanities.

The recipients were formally recognized during the college's Celebration of Excellence April 13.

This year's recipient of the Hazel R. McClymont award is **Petronela Radu**, associate professor of mathematics. The McClymont Award, which is chosen by the faculty instructional development committee, honors exemplary teaching and carries a \$6,000 stipend.

Radu joined the UNL faculty in 2004 as a research assistant professor. She received tenure in 2012. Her research interests focus on partial differential equations, continuum mechanics, peridynamics and calculus of variations. She was a Fulbright winner in 2013 and is the principal investigator on a National Science Foundation research grant that is allowing her to lead the "Math in the City" course. Radu designed "Math in the City" as an interdisciplinary course that promotes hands-on learning experiences through the use of mathematical modeling to understand current societal issues. The course is run through collaborations with local businesses, research center and government organizations.

"Dr. Radu's record of teaching and dedication to educating our students is impressive and she is truly deserving of this award," said Steve Goddard, interim dean of the college.

Faculty recognized with an Outstanding Research and Creative Activity honor are **Kwame Dawes**, Chancellor's Professor of English and Glenna Luschei Editor of *Prairie Schooner*; **David DiLillo**, professor of psychology; and **Patrick Dussault**, Charles Bessey Professor of Chemistry. The award was

established to recognize Arts and Sciences faculty who have realized extraordinary accomplishments in the recent past. The award is not affiliated with the University of Nebraska's systemwide Outstanding Research and Creative Activity Award.

"I am pleased that faculty members with such high-caliber work have been selected to represent the research accomplishments of the college," Goddard said. "The work demonstrated by this year's recipients will help set the standard for future awards."

Dawes is the author of 17 books of poetry, along with publications of fiction, non-fiction, criticism and drama. He has won several awards including a Guggenheim Fellowship in 2012 and an Emmy in 2009. Most recently, he established the African Poetry Book Fund and Series, which publishes four new books of poetry from Africa each year and works to promote and advance the development and publication of the poetic arts through its book series, contests, workshops and seminars.

DiLillo is a member of the Clinical Psychology Training Program, which was recognized nationally in 2013 as the Association of Behavioral and Cognitive Therapies Outstanding Training Program. He is a clinical psychologist whose research focuses on understanding the causes and consequences of various forms of interpersonal trauma. For the past 10 years, DiLillo has received funding from the National Institutes of Health for his research conducted in the Trauma, Violence and Abuse Lab. Several of his students have been recognized by the NIH. DiLillo's work has been published more than 80 times, including seven papers currently in press.

Dussault is the co-director of the Center for Nanohybrid Functional Materials. His research involves both fundamental and applied aspects of organic synthesis, the field that employs designed sequences of chemical reactions to construct target molecules. The Dussault lab is a world leader in the synthesis and chemistry of organic peroxides. These often unstable cousins of hydrogen peroxide are of interest as chemical reagents, agents of terrorism, short-lived intermediates in human bodies, and as potential therapeutics.

**Petronela Radu, left, was the recipient of the Hazel R. McClymont award. Kwame Dawes, David DiLillo and Patric Dussault were each recognized with an Outstanding Research and Creative Activity honor.** (Photos courtesy Craig Chandler, University Communications)



## FACULTY ACCOLADES

### Named professorships given to five faculty

UNL awarded professorships to five Arts and Sciences faculty members this spring at its annual Honors Convocation.

Arts and Sciences faculty recognized with endowed professorships are Alexei Gruverman, physics and astronomy; Jordan Stump, modern languages and literatures; Mark Walker, mathematics; Rebecca Lai, chemistry; and Laura White, English.

Three faculty members were named Willa Cather/Charles Bessey professors. The Willa Cather/Charles Bessey professorship honors a full professor with an exceptional record of distinguished scholarship or creative activity. Each winner will pick the Cather or Bessey designation.

■ **Alexei Gruverman**, professor of physics and astronomy, joined UNL in 2007 as an associate professor and was promoted to full professor in 2012. He has a highly regarded publication record and is in high demand as a leading speaker in a rapidly growing field of piezoelectric force microscopy.

■ **Jordan Stump**, professor of modern languages and literatures, joined UNL in 1992 after receiving his doctorate from the University of Illinois. He is a distinguished scholar on the French writer Raymond Queneau and is recognized as the leading United States authority on the author. Stump has gone on to translate 20 novels with three more to arrive before spring 2014. He was awarded the French-American Foundation's Translation Prize in 2001.

■ **Mark Walker**, professor of mathematics, joined UNL in 1996. He is an internationally recognized leader in research in algebraic K-theory and is making significant contributions to the fields of algebraic geometry and commutative algebra. In addition to his research, he is a winner of a College of Arts and Sciences Distinguished Teaching Award and has had a major impact on the graduate program through his service as graduate recruiting chair.

■ **Rebecca Lai** was named the Susan J. Rosowski Associate Professor of Chemistry, while **Laura White** was named John E. Weaver Professor of English.

The Rosowski professorship recognizes faculty at the associate professor level who have achieved distinguished records of scholarship or creative activity and who show exceptional promise for future excellence.

Lai joined UNL in 2007 as an assistant professor and was promoted early to associate professor in 2012. Lai has developed a well-deserved national reputation as a bright young scholar and a rising star in the area of biosensors and bioanalytical chemistry. She is an effective classroom teacher, combining a passion for education with a sense of humor—a combination illustrated by her current honors seminar course “A Muggle's Guide to Harry Potter's Chemistry.”

The Aaron Douglas or John E. Weaver Professorship for Teaching Excellence is awarded to faculty holding the full professor rank, and who demonstrate sustained and extraordinary levels of teaching excellence and national visibility for instructional activities and/or practice.

White joined UNL as associate professor of English in 2000. She was promoted to full professor of English in 2010. She has made a significant contribution to her field of 19th century British literature, with an emphasis on Jane Austen studies, through publishing three books. White has also received a College of Arts and Sciences Distinguished Teaching Award in 2003 and both the Annis Chaikin Sorensen Award and the universitywide Outstanding Teaching and Instructional Creativity Award in 2010. She has combined her scholarship with her excellence in the classroom.

### UNL bestows teaching awards on seven faculty

UNL awarded two teaching awards—the 2014 College Distinguished Teaching Awards and the Annis Chaikin Sorensen Award for outstanding teaching in the humanities.

“These faculty have made important contributions to UNL's teaching community,” said Amy Goodburn, associate vice chancellor. “They inspire their students and their colleagues with their passion and commitment to student learning.”

**Carole Levin**, professor of history, received this year's Sorensen Award.

Levin joined UNL in 1998 and has served as the Director of the Medieval and Renaissance Studies Program since 2007. Her reputation as a scholar of Elizabethan and early Stuart England is

one of the highest in the United States and extends internationally. Levin is a proactive mentor of graduate students at UNL and demonstrates her devotion to the success of these students, as well as every student she meets in lectures and conferences.

College Distinguished Teaching Awards are \$1,000 awards in recognition of consistent excellence in teaching. Winners of the 2014 College Awards for Distinguished Teaching are: **Mark Brittenham**, associate professor of mathematics; **Sergio Wals**, assistant professor of political science; **Catherine Johnson**, lecturer of modern languages and literatures; **Shari Stenberg**, associate professor of English; **Rebecca Lai**, professor of chemistry; **Petronela Radu**, associate professor of mathematics.

## Parents fail to recognize their children are overweight

BY LESLIE REED, UNIVERSITY COMMUNICATIONS

In Garrison Keillor's idyllic town of Lake Wobegon, all the children are above average. And, judging by a new study by University of Nebraska–Lincoln researchers, none are obese.

Though childhood obesity rates in the United States have tripled in the last 30 years, more than half of parents do not recognize that their child is overweight, according to a new meta-analysis study conducted by UNL graduate student Alyssa Lundahl and Timothy Nelson, assistant professor of psychology.

Seeking a clear answer on when and whether parents realize their children are overweight, Lundahl combined and analyzed data from 69 studies conducted worldwide between 1990 and 2012 that involved children ages 2 to 18. In an article published online in the journal *Pediatrics*, Lundahl found that more than 50 percent of parents underestimate the weight of their overweight or obese child.

"This is a topic that has a lot of implications for children and their weight," Lundahl said. "Parents who underestimate their children's weight may not encourage healthy eating and physical activities that can optimize their children's health and reduce their risk of obesity."

Surprisingly, parents' perceptions about whether their children are overweight have not changed as childhood obesity rates increased, Lundahl found. Nor are they influenced by obesity rates in the place where they live.

"No matter where you are and no matter what the rate of obesity is in that area, parents are still underestimating the weight of their overweight children," she said.

Parents of younger children, ages 2 to 5, are less likely to perceive their children as overweight or obese, the study found.

"Perceptions grow more accurate with age," Lundahl said. "Parents realize it's not just baby fat any more and they're not going to grow out of it."

Parents also are less accurate in judging the size of their sons, believing that normal weight sons are actually underweight.

"There is a belief that boys are supposed to be big and strong," she said. "If they're not a little bit bigger, they're seen as being too small."

Parents who are overweight also are less likely to accurately assess their children's weight, the study found.

The study has important implications for pediatricians, Nelson said. Overweight 2- to 5-year-olds are five times more likely than their non-overweight counterparts to be overweight at age 12. Obesity in adolescence is highly predictive of adult weight problems.

"The cases that are missed by parents are actually really unfortunate because those are the cases where early intervention can have some good effects," Nelson said.

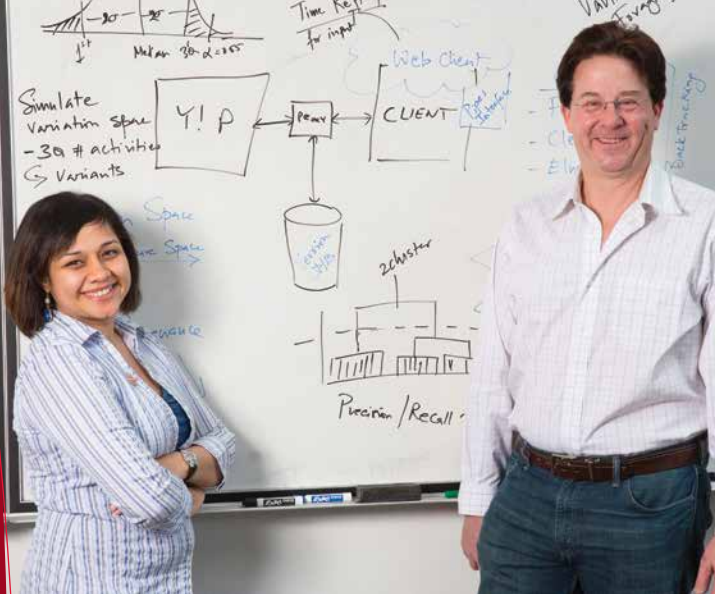
If pediatricians recognize that many parents don't accurately judge whether their child has a weight problem, they can help parents improve their children's health by encouraging healthy eating and physical activity, Lundahl said.

Lundahl, who is pursuing a doctorate in clinical psychology, spent about a year on the study. Katherine Kidwell, a fellow UNL graduate student, assisted Lundahl in coding data for the research.

**"No matter where you are and no matter what the rate of obesity is in that area, parents are still underestimating the weight of their overweight children,"**

— Alyssa Lundahl





## RESEARCH BRIEFS

University of Nebraska–Lincoln computer scientists Anita Sarma and Greg Rothermel are working to improve end-user programming tools. Their work is part of collaborative research funded by the National Science Foundation. (Photo courtesy Craig Chandler, University Communications)

### ■ UNL computer scientists aim to improve software tools

Whether they know it or not, millions of software users are also programmers, writing spreadsheet formulas, creating websites or developing scientific models, for example. Errors are common and can be legendary, costing professional credibility or even billions of dollars.

UNL computer scientists Anita Sarma and Gregg Rothermel are part of a large collaborative research project funded by the National Science Foundation to develop tools to improve end-user programming, as it's known. Their collaborators are at Carnegie Mellon University, Oregon State University and the University of Washington.

Professional programmers use sophisticated tools with the goal of producing a software product. In contrast, end-users program to accomplish tasks. While end-users far outnumber professionals, the tools to help them lag far behind those available to professionals, resulting in errors and inefficiency.

To improve the tools, Sarma and Rothermel are using information foraging theories from computer science and psychology. People use cues to find and evaluate information, whether it's the name on a file folder or judging a source's credibility. With so many programming examples available on the Internet, providing cues to a program's behavior or underlying code will help end-users narrow the search and more effectively evaluate how programs or features would function in their own programs.

UNL's researchers also are helping to develop tools that allow users to selectively undo changes rather than backtracking through work they may want to keep and have to re-enter, which increases the likelihood of errors.

The four-year collaborative project is funded by a \$3 million NSF grant, of which UNL received \$857,000.

### ■ Team develops chemical solution for graphene challenges



Alexander Sinitskii

There's no question that graphene is a really cool material.

It's the thinnest substance ever made, a one-atom-thick sheet of carbon atoms arranged in a hexagonal honeycomb pattern. Although it's as stiff as diamond and hundreds of times stronger than steel, it's flexible and stretchable. On top of that, it conducts electricity faster at room temperature than any other known material.

Finding a way to make use of those properties has proven to be an enormous challenge, however. One of graphene's greatest strengths—its extreme conductivity—is also one of its greatest weaknesses. Once electrical current starts flowing through graphene, it's very hard to turn it on and off, a vital requirement in digital electronics.

Theoretically, it is possible to turn the conductivity of graphene on and off with a graphene nanoribbon; however, the practical realization of these nanoribbons is challenging because of their extremely small size—their width is about 100,000 times smaller than the diameter of a human hair.

At least some of those challenges may have found an answer. A team of scientists led by Alexander Sinitskii, assistant professor of chemistry, has developed a chemical approach to mass-producing graphene nanoribbons, a process that may provide an avenue to harnessing graphene's conductivity.

Sinitskii and his collaborators found a successful approach that they described in the Feb. 10 issue of *Nature Communications*, the online multidisciplinary journal of the Nature Publishing Group.

"Instead of starting with a large sheet of graphene and trying to cut it down to something small—the essence of a top-down approach—we decided to use a bottom-up approach, making small graphene nanoribbons by coupling even smaller organic molecules," Sinitskii said.

## ■ Scientists link genetics and political leanings



Kevin Smith and John Hibbing

research that linked politics with genetics.

A research paper that appeared in the academic journal *Political Psychology* re-affirms the genetic underpinnings of political beliefs, refuting critics who challenged previous

The new paper, “Genetic and Environmental Transmission of Political Orientations,” is based upon a 2009 survey of nearly 600 sets of twins in their 50s and 60s, sought through the Minnesota Twin Registry.

“The data from the twin studies is strong enough now that if you don’t believe political attitudes and behaviors are genetically inherited, you can’t believe that breast cancer is genetically inherited and you can’t believe that addictions are genetically inherited,” said Kevin Smith, a political scientist who co-authored the study with John Hibbing, Regents Professor of Political Science.

The reasoning behind a twins study is that pairs of twins share the same environment—they are reared by the same parents, in the same household, with the same socioeconomic and political influences. But monozygotic twins—who develop from the same fertilized egg—share 100 percent of their genetics, while dizygotic twins, who develop from separate fertilized eggs, share about half their genetics, like any other pair of siblings. Therefore, if monozygotic twins show a greater tendency to share political orientations than do dizygotic twins, that tendency can be attributed to genetics, not to environment.

Hibbing cautions that the latest study shows a genetic connection to general political orientations, which in turn influence a person’s stance on specific issues.

Smith emphasized that genetics are not destiny. Even though people may be genetically predisposed to take a conservative or liberal view toward politics and social issues, those views also are influenced by their social environment and experiences.

“I know people get bent out of shape about this,” he said. “The environment is important, it’s just not everything. You can talk about biology and you can talk about the environment. Who we are is a combination of both.”



Visit [go.unl.edu/columns](http://go.unl.edu/columns) to see video of Kevin Smith talking about the research.

## New Era 'JOSEPH S. FRANCISCO' CONTINUED FROM PAGE 5

“To prepare students to be truly successful, we need to help them acquire a diverse set of skills that come from the liberal arts and humanities, social sciences and the sciences. At UNL and in the College of Arts and Sciences, we have that all under one umbrella. This is a great opportunity to do something as a college toward rethinking about how we’re preparing our students to be good global citizens.”

Francisco served as president of the American Chemical Society, the premier organization for chemists and chemical engineers with a membership of more than 160,000, from 2009 to 2010. He has received a National Science Foundation Presidential Young Investigator Award, an Alfred P. Sloan Fellowship and a Camille and Henry Dreyfus Foundation Teacher-Scholar Award. He also earned an American Association for the Advancement of Science Mentor Award and a John Simon Guggenheim Fellowship, which he spent at the Jet Propulsion Laboratory at the California Institute of Technology.

Francisco also is a fellow of the American Physical Society, the American Association for the Advancement of Science and the American Academy of Arts and Sciences, has published more than 400 journal articles and co-authored the textbook “Chemical Kinetics and Dynamics.” From 2006 to 2008, he was president of the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers.

He earned a bachelor’s degree in chemistry at the University of Texas at Austin and a doctorate in chemical physics at the Massachusetts Institute of Technology.

“I’m passionate about what I do, and my collective experiences have given me a sense of new directions we’ll need to take to serve the citizenry of this state and this country,” Francisco said. “The research enterprise is becoming more global, the expectations of student preparation are changing and there are many new opportunities for us to change how we do things in research and in the classroom.

“It’s an exciting time. How we pull it all together, and how we create a clear sense of direction, will have a huge impact on Nebraska and the world.”

Francisco and his wife, Priya Rajagopalan Francisco, have three daughters. Rajagopalan Francisco, an economist and marketing expert, will join UNL as business solutions director for the Office of Research and Economic Development. She will work with UNL Industry Relations and Nebraska Innovation Campus personnel to recruit, mentor and support new businesses, start-ups and entrepreneurs at Nebraska Innovation Campus.



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(Photo by Craig Chandler, University Communications)

Haley Stopak from Columbus High School does a dramatic presentation dressed as a sheep along with flock mate Baylee Barcel and Big Bad Wolf Haley Ballentine for the Spanish drama contest. The 38th annual Modern Language Fair for high school students was in April. The language fair broke participation records with nearly 1300 students ascending on UNL's campus for the event.