CASCADE

SPRING 2015

UNIVERSITY OF OREGON COLLEGE OF ARTS + SCIENCES

BIO MEETS BIZ

Q+A
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OUR REMARKABLE HUMANITIES

WHAT TRAINING COULD BE MORE RELEVANT IN THIS RADICALLY CHANGING WORLD?

Our science departments have been in the spotlight lately, and rightly so. Our scientists have been garnering prestigious awards, students are flocking to our science majors and the provost's office has launched an initiative to hire clusters of researchers—primarily in the sciences—to advance our national competitive profile.

Yet as we celebrate the sciences, I am also constantly reminded how remarkable our humanities programs are.

Members of the humanities faculty have attracted their own stockpile of awards—most notably a roster of research fellowships from the National Endowment for the Humanities, the American Council of Learned Societies, the Institute for Advanced Study and the Fulbright Program, plus many book awards from professional societies. In total, our humanities faculty have received 25 major national awards over the last three years. Now that is setting the bar for research excellence!

Moreover, these humanists are not just esteemed scholars. Both our tenure and non-tenure-track instructional faculty members are profoundly committed to mentoring the next generation. In our humanities courses, students engage in intensive writing assignments, conduct research on primary texts and address the fundamental values that inform our past, present and future.

Humanities courses still cover topics we may remember from our days as students (e.g., Shakespeare); our faculty display tremendous strength across these fields. At the same time, members of the humanities faculty are leading the way with new programs and specializations that speak directly to student interests. In our last issue of *Cascade*, we featured our groundbreaking comics and cartoon studies minor program, and I'll share with you just two additional (among many more!) examples of this kind of leadership:

The Cinema Studies program, founded four years ago, is now one of the most popular majors on campus, with more than 300 students. First led by the Department of English in collaboration with faculty members from across the College of Arts and Sciences and other schools, this program merges the literary study of film with the practical skills of digital arts and filmmaking to prepare students for 21st-century media careers.

Another growing area of national renown at UO is the environmental humanities, which considers environmental issues through the lens of media and literature. Why is this important? I'll quote *The New York Times*, from their 2014 feature on English professor Stephanie LeMenager's course, The Cultures of Climate Change:

> *"[The] class . . . has all the expected, alarming elements: rising oceans, displaced populations, political conflict, endangered animals. The goal of this class, however, is not to marshal evidence for climate change as a human-caused crisis or to measure its effects—the reality and severity of it are taken as given—but how to think about it, prepare for it and respond to it."*

In other words, the emphasis is on our thoughts and actions as we respond to the radically changing world around us. What training could be better?

In this postrecession era, when students and their families are keenly employment-oriented, I continually remind them that there is no course of study more relevant than the humanities to the student of today and the citizen of tomorrow. Thanks to the leadership and quality of our humanities faculty, the opportunities for those students at Oregon have never been better.

W. Andrew Marcus is Interim Tykeson Dean of Arts and Sciences. He is a professor of geography and proud parent of two UO graduates and three current UO students, all in the arts and sciences.

W. ANDREW MARCUS, INTERIM DEAN

KELLY JAMES

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FEATURES

ON THE COVER: PHOTO ILLUSTRATION BY KELLY JAMES

Q+A

The Business of Bible Lessons

HOW STUDYING OLD TESTAMENT NARRATIVES BUILDS JOB SKILLS

Deborah Green has been a janitor, a secretary, a marketing director and an executive. She has cleaned toilets and she has designed communication campaigns for large companies. She can edit a business publication or plumb actuarial databases for a consulting firm.

Which is to say, Green (left) knows what it takes to succeed in the real world. As the UO's Greenberg Associate Professor in Hebrew Language and Literature, she drills this job readiness into her students.

Her tool is the Hebrew Bible. Green's students learn to evaluate religious texts with a critical eye, interpret a complicated language, develop compelling arguments from various perspectives and work in a team.

"Students are totally unaware that these are the skills they will need later in life," Green said. "When you're reading a complex text in a different language and you have to translate it—it doesn't matter that it's the Hebrew Bible—you're figuring out a problem. 'How do I make the pieces fit together?' That ability to think through a problem translates to any job."

INTERVIEW BY MATT COOPER

Q: How does studying the Hebrew Bible translate to job skills?

A: The "miracle" of the Bible is that two opinions that completely contradict each other can stand in the same text. Students learn that there are multiple ideas, multiple voices, and that these expressions don't agree. There is always a prevailing opinion and a dissenting opinion. I ask my students to deal with both.

One reason that Congress doesn't function anymore is the inability to compromise: "I won't even deal with your bill." No company could work that way. My students argue both the prevailing and dissenting opinions in the Bible, so they understand that compromise means understanding the other side, coming together, talking, negotiating.

Q: Can you provide an example that illustrates this?

A: In the Bible, Ezra serves as the leader of the Jews when they return from Babylonia and rebuild their temple. In one episode, Ezra learns that the Jewish men who returned ahead of his group married outside of the Jewish

faith. Ezra believes these intermarriages will cause the downfall of the new community, and he insists that the men divorce their wives. Divorce, however, entails the disinheritance of the sons. Well, some of these returnees have been married for 20 years or more; in many cases their sons are grown, with families of their own. Ezra's request means that these sons will inherit nothing.

But in the book of Malachi, which is written around the same time, the prophet says, "You don't divorce the wife of your youth, you stay loyal to her, no matter who she is." Those are two completely opposite views, and they both sit there in different texts, in the Bible.

Here we have the ethical message from the prophet and the interpretation of law by Ezra—demonstrating that in life, political issues and ethical issues often collide. How do you decide the proper course of action? My students have to argue one side or the other. Can you write a persuasive paper using evidence? There's no wrong answer, but there are plenty of bad arguments that I'm going to grade you to the hilt on, if you don't argue well, if you don't give evidence.

Q: You've got a similar example in "The Rape of Dinah."

A: Dinah is the daughter of Jacob. In this story, Jacob has bought land from the father of the king of Shechem and settled on it. In the ancient Near East, a virgin is not supposed to leave the compound of her family, and certainly not by herself. But Dinah "goes out to visit with the young women of the land." While in Shechem, Dinah is raped by the king's son. When Jacob first finds out about the rape, he says nothing.

Then the king comes to Jacob to explain that his son is in love with Dinah. The king asks to make a covenant between the two peoples allowing intermarriage, and Jacob agrees—with a major condition. All the men in the city must circumcise themselves. The men of Shechem agree, but while they're all recovering from this very painful procedure, two of Dinah's brothers come and kill everyone, anyway.

I ask my students: Was that right or wrong? Were the brothers right to contradict the wishes of their father? It doesn't matter whether the students agree with the brothers' actions—what matters is whether they can write a persuasive piece.

> "CAN YOU WRITE A PERSUASIVE PAPER USING EVIDENCE? THERE'S NO WRONG ANSWER, BUT THERE ARE PLENTY OF BAD ARGUMENTS."

Q: How is interpreting a complicated language like solving a problem on the job?

A: Hebrew is extremely mathematical—every sentence involves [the question], "How do I get these pieces to go together to make a sentence that makes sense?"

If you don't learn the rules of Biblical Hebrew, you will lose the meaning. In reading "in the beginning, God created . . .", if you took it word by word in translating from Biblical Hebrew, you would end up with "in the beginning, he created God." But it doesn't say that. It's very formulaic; you have to know the rules of the game or you won't know what the Bible is saying.

I teach my students how to break the words apart and put them back together. They learn what the problem is and how to solve it. It's about categorizing information and testing solutions.

It takes patience, perseverance and focus. That's something we desperately need in society—the ability to focus. Anyone who is excelling at making anything has this ability to focus, to block out everything else and really zero in.

Q: What do you do to encourage team learning?

A: My students do this group process of reading and translating a text they've never seen before. They'll have one person look up words in the lexicon, another person figure out everything about the word down to its root, and somebody else looking at the whole of the verses and asking, "Is that really what that verse means?"

These are job skills: How do you work with somebody? How do you decide that person's right, this person's wrong, and still function as a group? I don't care what your job is, you have to be able to work with other people.

Q: What do you mean by the "ethical imperative" in the Bible?

A: The prophetic message is "Take care of the poor, take care of the widow, take care of the orphan." These are the people in your community—if somebody asks you for money, you don't get to just walk by them on the street, you have to take care of them. That may not be so much of a job focus, but it's a life lesson: to be cognizant of those who don't have as much as you. You're going to become this great computer programmer? You need to keep in mind that there are poor kids who desperately need computers in their schools that don't have them.

Q: What do you tell the student who doesn't see how studying the Bible will get them a job?

A: I think that's why students may gravitate to business classes—they think, "That's going to help me right out of school, so I won't have all this debt." But in the long run, people in the humanities end up in higher echelons because they have all these other skills they may not have realized when they graduated.

BIO MEETS BIZ

Student scientist prepares to become a captain of industry

BY MATT COOPER
PHOTO ILLUSTRATION BY KELLY JAMES

Every year, UO seniors compete for a free ride to one of Europe's top business schools.

The competition is a monster—a 20-hour marathon that tests each student's ability to comb through mountains of data, spot strengths and weaknesses, and collaboratively draw up a business plan for a real-world company.

The contest favors those with the skills you'd expect in a Fortune 500 CEO: leadership, research, analysis, team-building, and problem-solving—all on a tight deadline. So why was one of this year's winners—who won a scholarship to an elite business program situated in a 13th century European castle—a *biology* major?

Because there's more to biology than lab coats and Petri dishes, says Matthew Boehmer. After completing his BS in biology in June, Boehmer intends to use his science degree to become a captain of industry.

Boehmer (pronounced "beemer"), of San Diego, was one of three winners of the 2015 University of Oregon–Nyenrode Business Universiteit case competition, conducted on the UO campus by the Lundquist College of Business. This fall, Boehmer (left) will attend Nyenrode, a prestigious private university in the Netherlands, on a full scholarship for an accelerated, one-year master's program in international management.

Boehmer wants to be in business—specifically, the business of ending Alzheimer's disease, which afflicts his grandmother. But he's not going to be the one in the laboratory staring into a microscope—he's going to be the one empowering that person to find a cure.

This is a young man, mind you, who keeps a folder on his laptop titled, simply enough, "Change the World."

"I have this dream to start my own business—a small- or medium-sized biotech or biopharmaceutical company," said Boehmer, who is minoring in business. "But as a business person, you can't connect with scientists if you don't have a foundation in the field, if you don't speak the language."

His interest in these industries stems in part from the guidance of Paul Truex, the head of a San Francisco-based biotech company, Anthera Pharmaceuticals. From Truex, Boehmer learned the importance of cultivating business relationships so that he is well positioned when opportunity knocks.

But Boehmer also credits his studies in biology for giving him the motivation and tools to build a career that feeds his particular passion.

LEARNING FROM FAILURE

Among many other inspirations, he cites Roderick Capaldi, a UO emeritus professor in biology and the cofounder of a biotech company called MitoSciences. Capaldi makes sure that students in his Mitochondria in Health and Disease course understand that there is a world of career options in biology apart from the predictable paths of medicine, research and teaching. UO graduates with biology degrees have landed careers in fields as diverse as food processing, oil manufacturing and market research.

During the course that Boehmer took last fall, Capaldi wove into his lectures interesting tangents about the broader options available to biology graduates—biopharmaceutical sales, for example, if you have not just the science background but also the people skills.

"Science requires an inquisitive nature, stamina, learning—you learn by success but you also learn by failure," Capaldi said. "In science, when you're doing research, you learn as much from an experiment not working as from one that does work. That would translate to pretty much any (occupation)."

The centerpiece of Capaldi's mitochondria course was an assignment to create a mock grant proposal. The intent was to

push students to explore a career in the biotech industry, and to start envisioning how to make that a reality.

Working in teams of four or five, students studied a medical topic in biotech, and then developed both a grant proposal and a business plan for a startup. Capaldi covered all the bases, even scheduling individual coffee meetings during which each student was asked to deliver a five-minute elevator pitch on why he should "fund" them.

Boehmer's team chose to propose a therapy for brain cancer. His passion for the project was apparent to all: Boehmer papered the walls of a study room with research and planning ideas, and soon his teammates were on board for 10-hour, pizza-powered sessions in the library. Research roles were established for each member—except Boehmer, who was at the helm.

His leadership role introduced him to the manager's art of assessing how each member contributes to the team. "Do they have the potential? How are they going to bring value?" he said. "And how do you motivate them to turn that potential energy into results?"

The team pored over the established body of knowledge about brain cancer, seeking a novel approach to treatment. Their search of the literature prompted a question—how could you control the complex signaling in cells that causes them to grow abnormally?—and they proposed a possible therapy. Although the course didn't include access to a lab, they tested the plausibility of their premise by evaluating it against documented results in the field. Their conclusion: Cancer's ability to dodge single-drug therapies by switching from one pathway to another within a cell calls for an intervention that would target multiple pathways at once.

And while not a lab class, Boehmer likens his team's systematic approach to the gold standard of science inquiry—the scientific method. This step-by-step approach relies on posing a central research question and then gathering data, formulating hypotheses, constructing an experiment to derive measurable outcomes, testing predictions and developing theories.

HIGH-STAKES COMPETITION

For Boehmer, the approach is as well-suited to business as biology, and he deployed it again during the two-day Nyenrode competition earlier this year. Working with four others, he developed a growth strategy for Lendahand, a real-life Dutch finance organization that harnesses crowdfunding to lend money to entrepreneurs in emerging economies around the world.

The high-stakes competition started at 5:00 p.m. on a Thursday when the contestants were given the company's profile.

> BOEHMER WILL ATTEND A TOP BUSINESS PROGRAM SITUATED IN A THIRTEENTH-CENTURY EUROPEAN CASTLE.

Boehmer wouldn't be assigned his partners or the company objectives until the following morning, so strategizing about how he would approach the company's yet-to-be-revealed business challenge was out. Instead, he dove deep into company data, staying up until 2:00 a.m. to wrap his arms around any information that might be relevant once his team was assembled later that morning. He realized quickly it would be pointless to try to absorb everything available on the Internet; instead, he consolidated the data, organizing it into categories that could be tapped as easily as scrolling through the apps on your smartphone.

Once his team had been picked at random by the contest committee, Boehmer again found himself the leader, which he attributed to his penchant for big-picture thinking. Each team was given the company's goals for growth and a list of questions to resolve.

They were then given four hours to write a business plan, and prepare to give a brief presentation and answer questions from the contest committee.

As Boehmer's team assessed options for establishing the business, one member floated a brick-and-mortar approach: expand the company's physical presence in developing countries and boost staffing in an effort to find more funding. But it didn't stand up to the testing that followed, Boehmer said—the team's research showed that the amount of capital the company had to invest wouldn't support it.

On the other hand, the group saw promise in expanding the portfolio of clients. The more they vetted this option, Boehmer said, the clearer it became that it tracked with the company's objectives without putting investors in unnecessary risk. This became their recommended strategy for growth.

"You come up with these strategies, and you have to filter out what would be a good idea or not by thinking scientifically," Boehmer said. "Every step that we ultimately proposed in our business plan was something that was logical and potentially feasible."

Boehmer suspects that his team produced the winning proposal because they went above and beyond what was expected. In addition to completing the assigned tasks, they presented a 10-year plan to expand the company while building brand trust and lowering risk to lenders. "Value-added," in the truest sense of the word.

Looking back on the experience, Boehmer said his business background served him in a contest that might have been daunting for someone whose time in college has been spent almost entirely in a lab. But neither could he discount the role his science major played in the victory, either.

Determining what ails a company is not so different from pursuing a research question in science, he said. Both start with plunging into the unknown, then poring over data, testing hypotheses, and producing conclusions.

"The scientific method is not just, 'this is why the leaves are green,'" Boehmer said. "The scientific method can be applied to finding a solution to almost any problem, scientific or not. That's why we're in college, right? To learn how to learn."

STUDIO MCDERMOTT

Class Act

How to finesse the tricky balance of the elite researcher-teacher

BY MATT COOPER

Dan Tichenor tells a funny story about testifying before Congress on immigration reform.

The year was 2007 and the setting was Ellis Island. Tichenor, then a research professor at Rutgers University and a top scholar on the issue, had been summoned by a committee of the US House of Representatives to provide a legislative history.

Tichenor (above) was deeply honored to provide an expert briefing to Congress, of course, and the trip was also an occasion to visit New York City with his daughter, then 11. Waiting to give his remarks at iconic Ellis Island, the kaleidoscope of races and ethnicities represented at the hearing stirred in Tichenor strong memories of his own German-Hungarian roots. Father and daughter also got a kick out of their escorts, a security detail from the Department of Homeland Security, complete with the tell-tale wires tucked behind one ear.

Then the hearing started. Tasked only with setting the stage for a rigorous debate, Tichenor might have assumed that his would be the only testimony rendered that day without sparking contention. But this was immigration reform—Tichenor had no sooner finished his remarks than he found himself answering a highly speculative line of questioning from committee member Steve King, of Iowa.

"Let's just say the Isle of Atlantis emerged and there were a billion people on the Isle of Atlantis and we decided we're going to take them all in in one fell swoop in a given year," King said.

Atlantis? Tichenor felt his pulse quicken. He had prepared himself for many potential lines of questioning but immigration from Atlantis was not one of them.

He began to respond, but King cut him off. The Congressman suggested that a massive influx of immigrants, as in the scenario he proposed, would dilute "American culture"—an important consideration in the immigration debate. He pressed Tichenor to identify whether there was something missing from American culture that immigrants should fill.

"I don't think we're missing anything in our culture," Tichenor

responded, grateful for an angle that he could thoughtfully address. "We've always been 'a nation becoming' and so, as such, we've always added extra layers to it. If anything, those who are the biggest critics over time—of a new wave of immigrants bringing in a new culture that they find threatening—they've been impatient with how long it takes, in fact, for newcomers to assimilate."

In other words, the fact that our culture adapts to immigrants is part of what defines it.

Apparently satisfied, King turned his questions to another witness and Tichenor exhaled. Thinking back on the experience recently, Tichenor, now a UO political science professor, allowed that he has since thought of many pithy rejoinders he might have delivered that day. But minor regrets aside, he wouldn't have traded his turn on the hot seat for the world.

"I consider my scholarship to be an important contribution (to the public conversation)," he said.

> "IT'S LIKE A PITCHER IN BASEBALL—I DON'T ALWAYS WANT TO THROW A FASTBALL."

WHAT HE'S NOT DOING

On a recent Tuesday afternoon, sophomore Maya Robbins stood shyly at the head of her class, alongside Tichenor, who asked her to portray one of the most famous attorneys in American history—Clarence Darrow, lead defense in the 1925 Scopes "Monkey" trial.

Reading from a transcript—with Tichenor in the role of William Jennings Bryan, a fundamentalist and three-time presidential candidate—Robbins and the professor recreated a spirited exchange between the chief contestants in one of the nation's pivotal court trials.

Spirited exchanges are nothing new for Tichenor, as his congressional testimony attests. And that's just one example of his public profile at a national level (also: *The New York Times* op-eds, National Public Radio commentary, essays for *The Nation*). Heading into a presidential election year, he is likely to be called upon as a go-to analyst, given that he specializes in both immigration and the US presidency.

Yet here he is in a UO classroom with a young undergraduate, urging her to get into character as Darrow.

It's not just his encouragement and kindness that makes this moment special. It's also what he's not doing: lecturing. Here is a prolific scholar who has garnered scores of awards for his research on immigration, the presidency and social movements—someone who might be expected to get up in front of 300 students twice a week in a big lecture hall and personally mentor only a select few PhD students. At most public research institutions, this might be the norm for a professor of this status.

But that is just not Tichenor's style.

This is not to say that Tichenor never lectures, but "with most of my class sessions, I'm doing academic exercises, discussions, simulations," he says. "It's like a pitcher in baseball—I don't always want to throw a fastball." Thus the script-reading scenario. The next day, it might be asking students to present various sides of the gun control issue or engage in personality assessments of past presidents. Whether he is standing before 20 students in a select program or 85 in an introductory course on public policy, Tichenor is guided by the same principle: Get them to participate.

The elite researcher-teacher is a tricky balance to maintain, given the demand to constantly publish scholarly articles and books. The UO is unusual among top-tier research universities in its expectation that its most esteemed faculty members will also teach—even introductory classes. This is completely in line with Tichenor's own modus operandi. He holds the prestigious title of Philip H. Knight Chair—and was just named to the inaugural class of Carnegie Fellows—which acknowledge his status as a researcher. Yet he won't allow his research efforts to steal from what he feels is ultimately the more important work awaiting him in the classroom.

Last year, in fact, Tichenor won the university's Ersted Award for Distinguished Teaching (The Crystal Apple), which recognizes exceptional early-career faculty. In presenting the award, then president Michael Gottfredson offered this praise: "His dynamism is matched only by his versatility, polish and depth. Students at all levels, from freshmen to graduates, commend Tichenor's commitment to inspiring his students to take their new knowledge and skills outside the classroom."

HAND-PICKED TOP SCHOLARS

It all comes down to prioritizing what happens in the classroom. Margaret Hallock, director of the Wayne Morse Center for Law and Politics, said flatly, of Tichenor: "I can't believe how much time he spends with those students."

Hallock was referring to Tichenor's commitment to the Wayne Morse Scholars Program, a selective top-scholar program he founded in 2013 to provide talented and service-oriented students such as Robbins with an intensive, hands-on approach to studying complex issues in government and politics. Over two years, 20 or so hand-picked sophomores and juniors from political science and a variety of other majors enjoy seminar-style instruction, mentored research opportunities and practical experience in public affairs and American politics.

The chance to develop a program for top undergraduates was a big factor in recruiting Tichenor away from Rutgers, said Bruce Blonigen, associate dean for the social sciences. "It speaks to his dedication to teaching and engaging the next generation of citizens in important political and societal issues."

With the Morse Scholars Program, Tichenor has created an "intellectual neighborhood," Hallock said—a way for like-minded students to connect at a large university. In this neighborhood, Tichenor is more than just a teacher and scholarly role model, she added—he's committed to the needs of every student, writing endless letters of recommendation and providing individualized academic support and career advising.

Hallock noted that while most Wayne Morse Scholars fulfill the practical requirement of the program through internships, Tichenor also honors requests to complete this expectation through a demanding research project—which for him, is a much more time-consuming undertaking.

Political science major Kelly Brandon, for example, has worked with Tichenor steadily for nearly a year while crafting an undergraduate thesis on the Supreme Court and its handling of juvenile offenders; he helped shape her project, guided her around obstacles in research gathering, connected her with a second reader for the project and edited multiple drafts.

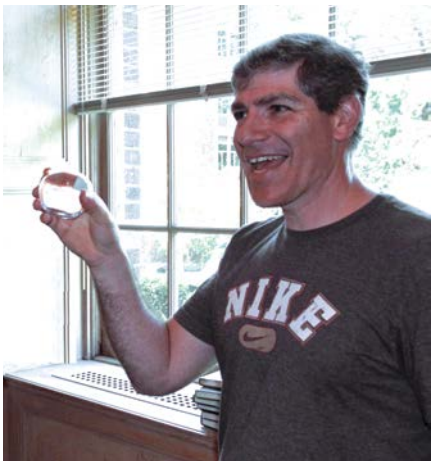
Said Hallock: "He teaches the large classes and small classes, he does the research, he provides the advisory help and mentorship to students and colleagues, and his service record (to the university) is commendable. He does it all."

SUDDEN INCONGRUITY

The Scopes trial exercise was part of a Morse Scholars course called Democratic Dilemmas, designed to inspire students to tackle tough political and policy issues. Following his faux debate with Robbins, Tichenor—in the span of a minute or two—guided the discussion from comfortable and somewhat predictable surface issues into much more ambiguous and challenging depths.

It started easily enough. One student argued that the scientific facts of evolution should trump the position of those who felt creationism should stand unchallenged.

But then Tichenor noted that scientists of the day also favored eugenics, the belief that the human race could be improved by allowing only people with "desired" traits to reproduce. That scientific "fact" has since been widely discredited, he added—so when should we defer to science and when should we question it?



Tichenor was awarded a Crystal Apple for his "versatility, polish and depth" as a teacher.

A palpable and extended quiet fell over the room as 20-some young minds simultaneously shifted into high gear and began sifting through arguments to reconcile this sudden incongruity in logic.

Aerin Lerch, an environmental studies student, eventually waded in, haltingly. "I think the really important thing to always have in the school system is critical thinking," she said. "Because science, I feel like, well, I don't know. OK, so . . ."

"I think you're on to a great point there," Tichenor said, coaxing her along. "Don't move away from that."

Lerch collected her thoughts and tried again. "Scientists are always discovering more things and coming up with new ideas," she said. "So while eugenics might have been the popularly accepted idea within the scientific community, that doesn't make it right.

"We have to be critical of scientific findings," she concluded, "and how they have an impact on ideas."

Bingo. Tichenor, clearly pleased, finished the thought off. "What you're saying here—which I love—is we should have a constant testing and contest of ideas within the classroom," he said, "and within the scientific community."

One of Tichenor's biggest goals, he said later, is to turn his students into well-informed skeptics of status-quo thinking. But that's not enough—he wants them to turn their analysis into action, to actively and thoughtfully pursue solutions that bridge the ideological gaps that are all-too-prevalent in this country.

"I want to make them better citizens," Tichenor said. "In a democracy, we need to get over the typical partisan or ideological split to engage in public discourse on these difficult issues. I'm exposing students to a wide variety of ideas to challenge the initial assumption a student might have on any given question."

WAS ROOSEVELT RIGHT?

Tichenor has published dozens of journal articles and book chapters on the American presidency, and on Theodore and Franklin Roosevelt, in particular. His forthcoming book will address wartime presidents and the challenge of balancing national security and civil liberties.

In one of his recent classes, Tichenor found a "teachable moment" drawing on this research: the moral and ethical dilemma that FDR faced in World War II with "Operation Pastorius."

That was the name given by eight German saboteurs to a plan in 1942 to attack hydroelectric plants at Niagara Falls and other targets. Although they were caught before they had committed any acts of sabotage, Roosevelt was convinced that the country's response should be as ruthless as the Nazi aggressor; he created a military tribunal that—backed by the US Supreme Court—found the accused in violation of the law of war and sentenced them to death. Six were executed in the electric chair, while the sentences of two who cooperated were commuted.

Tichenor introduced this scenario and began probing his students: Should the would-be saboteurs have been held as prisoners of war? What about jail time? Public sentiment was overwhelmingly for execution—what would you do, as president? As chief justice on the Supreme Court?

On one level, Tichenor said, this example forces students to broaden their perspective to see FDR in a light other than the

TIM CHRISTIE

generally glowing one that has survived over the years in popular culture.

But for a group of young students who are studying military tribunals and constitutional law, it's also an opportunity to "peel back the layers of the onion," Tichenor said, by using a compelling, real-life example to explore the tension between executive power and democracy.

"That's a more interesting ethical debate for students—'Was FDR right or not?'" Tichenor said. "Here's an example where you can sink your teeth in. I want them to begin to think about the evidence and arguments on different sides of a tough question. I want them to gain some skills about how they want to clarify their own position on these things and to understand that there aren't always going to be easy answers."

> "I'VE BEEN UNWILLING TO MAKE RESEARCH BE THE BE-ALL AND END-ALL."

WHEN STUDENTS BECOME TEACHERS

"You guys doing OK? I feel like I should get a beach ball or something for you to play with, get your blood flowing again."

It was a Tuesday morning early in the year and students in Tichenor's presidency class were, to be honest, dragging a bit.

The upper-level course pushes students to analyze the American presidency through a multifaceted lens, revealing the uneasy relationship between liberty, democracy and executive power. Tichenor covers the entire history of the presidency over the 10-week schedule, starting with debates by the framers over presidential authority and ending with Obama and leadership in a time of divided government.

As with everything else he teaches, Tichenor places a premium on participation in this class. He likes to cite Paolo Freire, one of the past century's most influential education theorists, who criticized classroom education as a process that too often treats students as empty vaults where instructors make "deposits" of knowledge.

"Education is most effective and liberating when there is a strong 'dialogue' in the classroom," he quotes Freire in the course syllabus. "When students become teachers and vice versa."

On this morning, however, his students needed a little prodding, and Tichenor gradually nudged them back to life, strolling the room comfortably and sprinkling his presentation with plenty of pop-culture references and amusing asides about politics in Dayton, Tennessee, and his parents' adulation for JFK. If the moment calls for it, Tichenor is also quick to assume the character of influential figures ranging from Abraham Lincoln to Supreme Court Justice Antonin Scalia.

On that day, he brought up the late James David Barber, a political scientist famous in the 1970s for predicting a president's success by assessing his personality and classifying him as either "active" or "passive," and "positive" or "negative."

Tichenor rattled off a string of past presidents—Washington, FDR, Nixon, Carter, Reagan, Clinton, Obama—and students responded in turn, calling out and placing each in one of four categories. This call-and-response seemed to rejuvenate the class, and then Tichenor delivered the kicker: Research shows that the top-ranked presidents of history had personalities across the board—completely disproving Barber's theory.

While the punch line may have left some students disappointed that presidents cannot be summed up in such a convenient fashion, it got the ball rolling. Political science major Taylor Thompson spoke up: "Obviously, in practice, (Barber's theory) is not very useful because you don't really know the whole background of someone's life. But let's say you could really get to that (background), do you think his theory would be useful?"

"Oh yeah, that would be great," Tichenor responded. "But the problem is that what contemporary presidents tell biographers is very carefully filtered by their handlers. We will always have imperfect information."

This is the rhythm of the give-and-take. With apologies to Will Rogers, Tichenor apparently never saw a raised hand that he wouldn't call on.

"He loves listening to what students have to say," said political science major Ansel Carr, who took the presidency class last winter. "He'll listen to what the student says, and then he'll talk about it. He's interested in everything."

"I CAN DO BETTER THAN THAT"

A story: Preparing to teach for the first time, Tichenor, then an assistant professor at Rutgers, visited the classroom where one of his courses was to be held.

Three hundred students were seated in a sprawling expanse as flat and uninviting as a desert. A teaching assistant walked to the front of the room, announced that the professor was traveling (again), and pressed a button on a tape recorder. With that, the monotonous drone of the professor's voice began.

"There was a PowerPoint, too, and periodically he would say, 'next slide,' and the assistant would change the slide," Tichenor said, laughing. "You could hear the traffic in the background. He

STUDIO MCDERMOTT

was probably recording it on the way to the airport. I thought, 'I can do better than that.'"

Needless to say, his commitment to active instruction was not inspired by this virtual professor. Instead, it can be traced to his mother, a public-school principal, and his father, a Lutheran minister. But Tichenor owes the development of his approach to what he saw from the professors around him—both good and bad—while earning his PhD in political science from Brandeis University and teaching at Rutgers.

"I've been unwilling to make research be the be-all and end-all," Tichenor said. "Even the most successful work one could do as a scholar will only have a fraction of the influence that you'll have on the students that you're going to spend time with. Those relationships matter a great deal to me." CAS

STAR STUDENT

First B ever leads to Truman

A shining example of political science professor Dan Tichenor's impact on his students: Andrew Lubash.

Last year, Lubash (right), a major in both economics and political science, became the first UO student since 1992 to win the highly competitive Harry S. Truman Scholarship, which includes $30,000 to attend graduate school and launch a career in public service. Lubash, a Beaverton, Oregon, native, credited Tichenor and the Wayne Morse Scholars Program—a select program founded by Tichenor for talented, service-oriented students—for giving him the tools in research, writing and debate necessary to win the Truman.

It was a storybook ending to a student-professor relationship that got off on an entirely different foot—Tichenor gave Lubash his first B. In anything. Ever. (It was Tichenor's presidency class, Lubash said, noting that he absolutely deserved the grade, but there were extenuating circumstances, it was freshman year and this was an upper-level course. . . .)

Lubash came to the UO with a passion for political science and a sense that he'd never felt challenged in school. That changed when he entered the Morse Scholars program, he said. Week after week, he and his cohort had spirited debates on the controversial issues of the day: drones and the National Security Agency, immigration reform, gun control.

He learned quickly that Tichenor wouldn't allow you simply to defend the position you hold personally—you had to be equally adept at the other side of the argument. Lubash, whose politics lean left, recalled with relish his turn as Ted Cruz, the right-wing senator from Texas, during a simulation in which he and his fellow students attempted to "approve" legislation for immigration reform.

"We failed badly but it was really fun," Lubash said, grinning. "The only way to learn about comprehensive immigration reform in Congress is to do something like this. Would you rather be an integral part of the education itself, or have someone just lecture to you?"

TIM CHRISTIE

Notwithstanding Tichenor's track record as a prominent researcher who has testified before Congress, Lubash seemed most impressed by the professor's commitment to students. It can be hard to find a good letter of recommendation, Lubash said, but it's something that Tichenor does readily for dozens of students.

As Lubash matured as a student, he found in Tichenor a steady guide, someone who pushed each student to dive into advocacy efforts, connected them to internships and contacts in Washington, D.C., and spelled out which scholarships to pursue—a huge service in and of itself, Lubash said. Tichenor is also supervising Lubash's honors thesis in political science for the Robert D. Clark Honors College, which focuses on changing university governance structures (with emphasis on the UO's new independent board).

> HE LEARNED QUICKLY THAT TICHENOR WON'T ALLOW YOU SIMPLY TO DEFEND THE POSITION YOU HOLD PERSONALLY.

Lubash became a frequent visitor to Tichenor's office to talk strategy as he charted his own future. He'll use the Truman funds toward his costs to attend law school, but Lubash, who might work for a year or two first, was unsure which occupations would best bolster an application to an elite institution: A government post? Something with a nonprofit?

Tichenor put all those questions to rest—the schools will see that you're a change-maker, he told Lubash, and the job will not be significant in their decision.

"He's really been a mentor to me," Lubash said. "It's changed my life dramatically." —MC

DIRECT IMPACT

Fiction writer plunges into a war zone to tell a real-life story

Jason Brown and his sister had just climbed into an armored United Nations car and were being jostled through the war-ravaged streets of Kabul, Afghanistan, when they got a text message from their security consultant.

"Whatever you do, don't get into one of those United Nations cars," it read.

On a scale of 1 to 10, the words pretty much spun the dial on Brown's war-zone jitters to 11. An associate professor of creative writing, Brown had barely arrived in Kabul with his sister, Elizabeth Schaeffer Brown, and already their carefully crafted security plan had taken a wrong turn.

Assigned a freelance magazine feature for Salon.com, the two made the journey to interview family and friends of Roya Mahboob, an Afghan woman whose work teaching computer literacy to young girls had generated outrage in a society that often restricts girls' access to education. Facing death threats, Mahboob had fled to New York, where Brown and his sister interviewed her before leaving for Afghanistan to talk with those close to her. Their fascinating profile was published in March (see Online Extras, page 24).

Brown is happy to admit he's no war correspondent—he is best known for short story fiction centered on his childhood in rural Maine—so his visit to a still-dangerous nation was a big step outside his life in Eugene. But the resulting story, a long-form nonfiction article that let Brown apply fiction writing tools to a real-life story, let him stretch in other ways, too.

Brown believes too much of today's fiction and nonfiction centers on the writer—an inward focus he also sees in creative writing programs across the country. He wants to turn the writing spotlight outward, to stories that matter, and if that requires traveling to a recent war zone, well, nothing says commitment like braving suicide bombers and kidnappers.

"What's really interested me over the years is nonfiction that doesn't look inward, it looks outward," Brown said. "This is a form of creative writing that takes life—someone else's story or something that's going on in life—as the most important priority in the creative process. This is a way of using some of the skills of fiction to reach a lay audience, to have the possibility of having direct impact."

CC ALENA SOBOLEVA

Roya Mahboob, one of* Time*'s 100 most influential people of 2013, was profiled by Jason Brown of creative writing.

A month of planning didn't really prepare Brown for the reality of Afghanistan, where the best advice was to get in and out quickly, before danger caught up with them, and to keep the lowest of profiles—hence the security advisor's concern about beingin a UN car.

BROWN BELIEVES TOO MUCH OF TODAY'S FICTION AND NONFICTION CENTERS ON THE WRITER.

The trip was shorter than it seemed: two days in Kabul visiting Mahboob's students and a girls' soccer team she supports, then two days interviewing family members in the northwestern city of Herat. They returned unscathed, but not unmoved.

The experience left Brown with deep respect for people like Mahboob and her family, who have lived their whole lives not knowing what danger each day will bring.

"For the Mahboobs and people like them, threat has always been a part of their lives, war has been a part of their lives, and they've had to live with it one way or the other," he said. "I'm just a middle-class guy from Maine, and that's just an amazing thing to encounter."

—GB

NATIVE SPEAKER

A Tibetan student aims to create a written system for a dying tongue

A villager from **Warming Your Hands with Moonlight**, *a book by a UO linguistics student about the folk stories and customs of her people.*

G.YU LHA

A young Tibetan woman named G.yu Lha gained a memorable example of the humor of her people when she encountered an uncle one day.

Tasked with a high school project to document her native tongue, the young woman—who goes by a Chinese translation of her name, "Yina"—approached Cho Idan and asked for some proverbs or metaphors.

"I'm not the right person to ask," her uncle replied. "Asking me is just like warming your hands with moonlight. I'm just an old man who knows nothing." Then he laughed and went inside.

It was only later that evening, when she asked her mother what her uncle meant, that Yina could see his cleverness. "She explained that 'warming your hands with moonlight' meant trying to do something that brings no results," Yina said. "I was astonished that my uncle had refused my request for a proverb with a proverb, and I had not even noticed."

The expression became the title of a book that she wrote—her crowning achievement as a talented high school student. It was also the first chapter in the ongoing story of Yina's remarkable journey, which has brought her to the UO as a linguistics major—part of her ambitious plan to save a dying tongue.

Yina hails from Siyuewu Village, a farming community of 500 or so in a valley near the Dadu River. The language spoken is Khroskyabs—pronounced "tros-gaff"—a unique dialect that is unwritten and spoken only in the local area.

Working with her high school English teacher, Yina spent two years exhaustively interviewing and recording her family and friends, compiling a rich, 250-page book of folk stories and other oral traditions. In a section on figurative speech, for example, Yina notes that when something "has a head and a tail," it means it has been described clearly and completely.

Yina's passion for language resonated with her teacher and together they pursued options for continuing her education. His contacts in linguistics included a graduate student at the University of Oregon; Yina applied, and with scholarships from the honors college and the International Cultural Service Program, she arrived on campus in fall 2013.

Majoring in linguistics and minoring in business administration, Yina plans to work with her village to develop livelihoods based on their traditional skills of weaving and handicrafts. She also wants to preserve her people's customs, culture and language by creating a system to capture Khroskyabs in written form.

Her linguistics training has given Yina the tools she needs to understand her language, not just as a native speaker but also as a scientist. In phonetics and phonology courses, she developed an ear for the nuances in speech patterns; using sophisticated instruments in those classes, she saw how the pronunciation of vowels and consonants rises and falls based on the pitch and intensity in the speaker's voice.

Department head Scott DeLancey has been a source of inspiration, greeting each discovery about Yina's language with a burst of infectious excitement.

"When we find out something, he's like, 'Oh my gosh, this is so cool, I didn't know your language does this!'" Yina said. "It makes me want to learn more and dig more to see what's there."

DeLancey said Yina will be served well by the department's international standing in "language description"—that is, instruction in how to write the grammar of a language, starting from scratch. "The really formidable task is analyzing the grammar, which may do things differently from anything you've seen before," he added.

If everything goes as planned, Yina will be back in Siyuewu Village in June 2017. That's when the real work of instilling pride in her language will begin: The older generation no longer feels that storytelling is valued, as the younger generation increasingly turns to TV and the Internet.

"That will be my biggest challenge," Yina said, "showing the younger generation the value of their culture." —MC

FUN WITH GERMAN

Internship sends undergrads to local school to teach language skills

Visit the office of Matthias Vogel and you will invariably find yourself asking this question: Why is there a Mr. Potato Head on his desk?

The senior instructor in German and Scandinavian is only too happy to explain. "Here we have Mr. Potato Head's 'Augen' or 'eyes,'" Vogel said with great flourish to a recent visitor, while fiddling about with the multicolored appendages of his plastic companion, "and here we have his 'Ohren' or 'ears' . . ."

For Vogel, who can break out in song at the drop of a "Hut," learning German should be fun. That's the message he is espousing to his students and to a group of grade-schoolers in an unusual collaboration between his department and Edison Elementary School in Eugene.

Starting this spring, Vogel will be supervising Teaching Fun With German, an internship program in which eight undergraduate German majors will get practical experience as teachers, introducing new and fun-centric approaches for learning German to Edison students.

"A difficult perspective for our undergraduates to understand is the role of a language learner who doesn't know German yet," Vogel said. "Our students experience all the intricacies of instruction. They learn about teaching and they learn about learning."

Fairy Tales Can Come True

Theater arts alumna lands a dream job at Disney Interactive

Yes, it's true: Tiffany Thomas, BA '13, is getting paid to play video games all day.

But the path from theater arts major to a dream job with one of the world's largest entertainment companies isn't a slacker fantasy. It was a logical step, she says, given her interests and the skills she developed at the UO.

Thomas (right) is a brand quality-assurance tester for Disney Interactive, a division of the multinational corporation. Her job is to ensure that new video games that use Disney characters respect the Disney brand.

This means working exhaustively with a small portion of a game. "The way I describe it is, take your favorite song and take a 30-second clip of it and play it over and over for eight hours a day," Thomas said, laughing. "It can get very monotonous—but my job is lucky because I get a lot of projects coming through."

What's she looking for? Suppose, for example, that in a children's video game centered on Cinderella, a developer proposes that the Fairy Godmother turn the pumpkin into a white stretch limo for Cinderella. This would be a brand violation because the Disney Cinderella story takes place around the 15th century, before cars, Thomas said.

Thomas' passion for all things Disney helped her land the position, of course. She keeps an image of Mickey Mouse on her keychain, and Disneyland was a regular stop when she was a kid.

But her education also paid off, she says, because it taught her how to adopt different perspectives—a vital skill in this job.

Thomas must speak the language of the animators, musicians and graphic artists who send her games, and she must explain their missteps and necessary

It's well documented that learning a second language conveys benefits beyond just the language itself. Research suggests that multilinguals score better on standardized tests, are better at remembering lists or sequences and are better at focusing on important information while weeding out less relevant information.

"Schoolchildren in many other industrialized nations start learning a second language in elementary school, and they may learn a third language in high school," said former department head Susan Anderson. "Yet for Americans, as the need for multilingualism is increasing in the global society we live in, the opportunities to learn another language before college are decreasing."

Anderson hopes that the Edison partnership will help "plant a seed" in the kids to take a language when they reach high school. For Vogel's students, meanwhile, it's a litmus test for determining whether they've got the stuff to be teachers.

Vogel's undergraduates start with a seminar during which he teaches them how to teach. One approach they take into the elementary classroom is TPR or "total physical response," a method based on the coordination of language and physical movement.

> "IT'S LIKE IMPROV COMEDY. YOU CAN HAVE REAL, GENUINE MOMENTS."

You're familiar with the classic kids' exercise song, "Head, Shoulders, Knees and Toes"? At Edison, it becomes "Kopf, Schulter, Knie und Füße."

"When you combine movement with vocabulary, you're activating many more of your senses," Vogel said. "It's easier to remember new words if you use more senses."

Much of the instruction takes the form of games, animal sounds or tasty snacks such as "Orangen" and "Äpfel" (oranges and apples).

But the student teachers must be careful not to dumb down the language, Vogel stressed, or "the kids will jump all over them." Lessons must be clear and easy-to-grasp while staying true to grammar and syntax, for example.

German major Mitch Marinello can't wait to get in front of a classroom. A whirling dervish of energy himself, he seems particularly well-suited to getting inside the head of an eight-year-old. One idea he's pondering: toting a huge suitcase into class and then pulling out items for the students to name—"Hemd" for shirt, "Hose" for pants ...

Marinello will also have backup, because the undergraduates teach in pairs. He and his partner, Blythe Kalson, have been rehearsing give-and-take conversations that they'll demonstrate before asking their young charges to try.

"Language has this amazing potential to be really fun—it's like improv comedy," Marinello said. "You can have real, genuine moments."

The program also plans to expand by launching a Eugene branch of Portland's Sophie Scholl German Saturday School.

"There's a lot of interest in the local community among parents who would like to see their kids continue to develop their German language proficiency," Vogel said. "The Saturday school will be an answer for all those parents who have asked me for tutors for their young kids." —MC

changes in a clear, concise but ever-diplomatic way. It reminds her of a Hinduism class she took at the UO that required her to articulate the point-of-view of the author of a text, whether she agreed with that author or not.

Working through the fits and starts of a video-game prototype also requires the ability to envision different narratives and outcomes. Thomas often must deduce what the game developers intend for a particular sequence and, when licensing obstacles emerge, she dreams up alternative scenarios and solves problems with her clients to keep the game on track.

This ability to think creatively directly draws on her studies in set design, which Thomas took as a requirement for the major and embraced as a passion. Studying props under Jerry Hooker, an associate professor, Thomas worked her imagination as you would a muscle group. Hooker once assigned the class to collect random objects from around the house, then announced they would spend the day reimagining them as sci-fi alien firearms.

> WORKING THROUGH VIDEO-GAME PROTOTYPES REQUIRES THE ABILITY TO ENVISION DIFFERENT NARRATIVES AND OUTCOMES.

"We took things normally used for one thing and tried to picture them differently," Thomas said. "It definitely took me out of what was comfortable and placed me in a really creative mindset." —MC

OUR EVOLVING UNDERSTANDING OF AUTISM

History professor develops a digital chronology

As recently as the 1960s, mothers were blamed for autism. A lack of love by indifferent moms, the theory went, left newborns with dramatic antisocial behaviors.

Today, the consensus is that autism is a developmental brain disorder and the notion that mothers were hurting their kids is laughable, said Ellen Herman, a UO history professor. But she's astonished by the evolution in our understanding of this disability over just 50 years.

There is no comprehensive history of autism, so Herman has set about creating one. With support from the American Council of Learned Societies, she is developing a digital history of autism that begins with the coining of the term in 1911 by Swiss psychiatrist Eugen Bleuler, who used it to describe a key feature of schizophrenia.

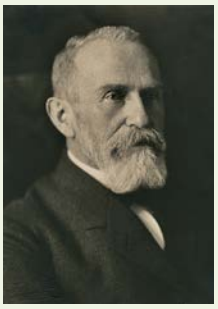
Herman's project documents efforts to understand the causes of autism, reduce the risks of its occurrence and help children and families living with the diagnosis. It also chronicles the controversy around the increased prevalence of diagnosis. Though still in the early stages, the history, which will live in digital form on the web, will include texts, narratives, timelines, images and profiles of relevant figures. Visitors will be invited to share their stories of autism.

It's not the first time that Herman has undertaken so broad a topic. Her 2008 book, *Kinship by Design: A History of Adoption in the Modern United States*, traced definitions of "family" over the past century. Herman's autism project also builds on her interest in modern US history and the "human sciences"—that is, the scientific study of our experiences as human beings through fields such as psychiatry, psychology and anthropology.

> "IT'S A HUMAN STORY, A VERY DRAMATIC AND COMPELLING AND SOMETIMES PAINFUL STORY."

"Autism seems like a very contemporary issue, so it's important just to let people know it has a history at all," Herman said. "It's a human story, a very dramatic and compelling and sometimes painful story." —MC

This timeline of autism was provided by Ellen Herman, history professor, and Betsy Wheeler, English professor:



1911 Swiss psychiatrist Eugen Bleuler coins the term "autism," borrowing from the Greek word "autos" (meaning self) to suggest a state of "detachment from reality, together with the relative and absolute predominance of the inner life."

1943 Leo Kanner, a child psychiatrist at Johns Hopkins University, publishes the first clinical description of 11 children with autism. He identifies "the children's inability to relate themselves in the ordinary way to people and situations from the beginning of life" as the primary characteristic of this new syndrome.

1944 Hans Asperger, a Viennese pediatrician, describes "autistic psychopathy." Decades later, his name will become a diagnosis: Asperger syndrome.

1950 The National Association of Parents and Friends of Mentally Retarded Children is founded. It is later renamed the Association for Retarded Citizens of the United States and has been known as The Arc since 1992.

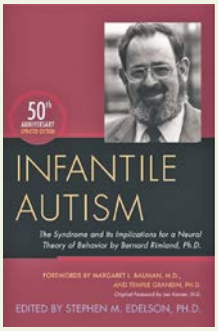
1952 The first edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM), which offers a common language for these disorders and standard criteria for their classification, mentions autism only to describe symptoms of schizophrenia before puberty.

1954 In *Brown v. Board of Education*, the US Supreme Court declares racial segregation in American schools unconstitutional, but children with disabilities have no federal guarantee of a free and equal public education until 1975.

TEMPLE GRANDIN: CC STEVEN WALLING; SHERLOCK HOLMES: PBS

1962 Eunice Kennedy Shriver (third from left) goes public with the story of her sister, Rosemary (front row, far right), who underwent a lobotomy at St. Elizabeth's Hospital in 1941 that left her incapacitated for the rest of her life. The story attracts attention to children's mental and developmental disabilities.

1964 Bernard Rimland, a research psychologist and father of a son with autism, publishes *Infantile Autism*, a book that helps to turn the tide away from psychological explanations of autism and toward neurodevelopmental theories.



1965 *Life* reports on Ivar Lovaas, a UCLA psychologist, whose work is the foundation of applied behavior analysis, an intensive and controversial method of behavior modification used with autistic children.

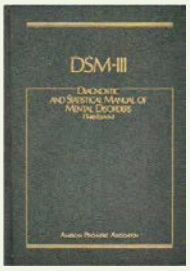
1965 The National Society for Autistic Children (later renamed the Autism Society of America) is founded.

1967 Clara Claiborne Park publishes one of the first parent memoirs about raising a child with autism, *The Siege*.

1970 The term "developmental disability" is introduced in the Developmental Disabilities Services and Facilities construction amendments to the Mental Retardation and Community Mental Health Centers Construction Act of 1963. This extends eligibility for community-based mental health services beyond individuals with mental retardation to those with epilepsy, cerebral palsy, autism, dyslexia and other neurological conditions. The definition of developmental disability requires that it "originates prior to age 18 years, is expected to continue indefinitely and constitutes a substantial handicap."

1972 *Pennsylvania Association for Retarded Children v. Commonwealth of Pennsylvania* and *Mills v. Board of Education of the District of Columbia* establish the right of developmentally disabled children to free public education appropriate to their learning capacities.

1975 The Education for All Handicapped Children Act requires schools to provide equal access to children with physical and mental disabilities in "the least restrictive environment." The legislation is renamed the Individuals with Disabilities Education Act (IDEA) in 1990.



1980 Autism appears for the first time as a diagnosis in the third edition of the *Diagnostic and Statistical Manual of Mental Disorders*, which lists infantile autism along with three other types of "pervasive developmental disorder." Autism is also removed as a feature of adult schizophrenia.

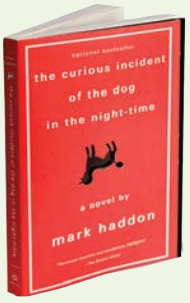
1988 *Rain Man* is released, starring Tom Cruise as selfish yuppie Charlie Babbitt and Dustin Hoffman as his brother Raymond, an autistic savant.

1990 The Americans with Disabilities Act is approved.

1994 The fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* lists four subcategories within autistic disorder: pervasive developmental disorder-NOS, Asperger syndrome, Rett's disorder, childhood disintegrative disorder.

1996 Autistic activist Temple Grandin publishes *Thinking in Pictures: My Life with Autism*, considered a breakthrough book for autism awareness.

2003 Mark Haddon's *The Curious Incident of the Dog in the Night-Time* is published, allowing readers to place themselves inside the interior experience of autism in a respectful way.



The novel becomes an international bestseller and a stage version is in development.

2010 The British television series *Sherlock* begins airing, in which the famous detective is characterized as having Asperger syndrome.

2013 The fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* merges three of the four subcategories of possible autistic disorder listed in the fourth edition into a single diagnosis, and eliminates the fourth subcategory. The diagnosis is renamed autism spectrum disorder, or ASD.

Zombies, Pirates and Voodoo

THE REALITY OF CARIBBEAN CULTURE VERSUS HOLLYWOOD MYTH

From the classic horror flick *Night of the Living Dead* to Brad Pitt's *World War Z* and beyond, zombies have been on a hair-raising mission to hunt us down and eat our brains.

But the movie versions are just myths. The reality of zombies is far more terrifying.

Wait—don't turn the page just because you read "zombies" and "reality" in the same sentence.

"Zombies may have been a real phenomenon," anthropology professor Philip Scher said. "There's strong evidence of certain individuals, anthropologists believe, who, for all intents and purposes, were temporarily turned into zombies."

Scher's focus on the Caribbean region and its cultural identity includes topics that have long captured our collective imagination: pirates, zombies and voodoo. But for Scher, the truths behind these touchstones of Caribbean history are far more interesting than the fictions perpetuated in popular culture.

Pirates, for example, are characterized as vicious or bungling, wild-eyed and wild-haired, sailing the seven seas in humongous galleons flying the skull and crossbones.

> IN HAITI, NO ONE IS AFRAID OF BEING ATTACKED BY A ZOMBIE—THEY'RE AFRAID OF BECOMING ONE.

While that depiction can be traced to a golden age of piracy in the Caribbean in the 1700s, it bears little resemblance to the actual pirates of that era. Although capable of brutality, Caribbean pirates were often nonviolent and could be quite disciplined—various rules were enforced to preserve order and cleanliness, given a pirate ship had no safe harbor to which it could turn when in distress.

Piracy offered the poor and disenfranchised upward mobility, Scher says—the pay was better than most jobs in the colonies and the democratic approach to ship governance meant that even the lowliest mariner had a say. There was even an

DATA-DRIVEN

History classes pave the way for career in bioinformatics

If Shane Lofgren's life was like a movie, someone would have pulled him aside after his high school graduation and said, "I just want to say two words to you. Just two words.

"Liberal arts."

No one did, of course. College isn't like a movie, whether it's *The Graduate* or *Animal House*. So chalk it up to foresight or just plain luck that Lofgren (right) landed in the College of Arts and Sciences at the UO.

He graduated in 2011 with a bachelor's degree in economics. But on the way Lofgren also studied ethics, poetry, international studies, creative writing and history. Now, guess what he's doing today.

Score two points if you guessed analytical bioinformatics.

That's right. You can study history, economics, ethics and poetry at the UO and land a career doing research on potential new cancer treatments at Stanford. Lofgren did.

And he never even took biology.

What he did take, though, prepared him for just about anything. History in particular not only gave him perspective, it helped teach him how to analyze, see patterns, form concepts and construct arguments. It taught him how to think.

"Having those history classes and the great courses I took at the UO helped open my mind," Lofgren said. "They gave me the ability to see facts and generate useful narratives and models. They gave me the ability to write."

History, of course, is much more than just dates and places. In assistant professor

insurance plan: You were compensated if, say, during battle you lost an eye or a hand.

Piracy was a form of rebellion against colonial rule by Spain and others. "The lower class was very aware of the way that the cards were stacked against them," Scher said. "They were signing their own death warrant by becoming pirates, but the prospect of living free was more attractive to them than living other ways."

Zombies, meanwhile, are typecast in pop culture as attackers. But in Haiti, no one is afraid of being attacked by a zombie—they're afraid of becoming one.

Evidence suggests there may have been individuals who, at the hands of voodoo priests, were surreptitiously administered a toxic powder, usually through abraded skin. This rendered them immobile and uncommunicative—seemingly dead.

As a part of this practice, these unfortunates were buried and later exhumed secretly—thus becoming the living dead—then given another drug to keep them docile and easily controlled by another. It appears some of them may have been spirited away to remote locations and coerced into labor.

This situation—powerlessness, captivity and forced servitude—resonates with Haitians, Scher says, because it speaks to the nation's painful history with slavery, which began after Christopher Columbus' arrival in 1492.

In a nation where the threat of being forced to serve another was all too real, talk of "zombies" or "ghosts" may have functioned as a way to ensure order, Scher says, i.e. "behave yourself, don't alienate yourself from the community, or you might get taken away."

Scher has also unearthed a fascinating history of voodoo, or "vodou" in the region.

Voodoo is typically characterized in North America as a nefarious and irrational belief in magical powers, used to harm. In truth, voodoo practitioners are "primarily concerned with doing good," Scher said.

In Haitian vodou, physician and patient seek help from a world of spirits through prayers, offerings, devotional objects, ceremonies and ritual foods such as fowl.

Scher argues that our approach to health is not so different from that of the vodou priest or priestess. But, while stricken Americans looking for answers might end up in a doctor's office, on a psychologist's couch or in a philosophical debate, the vodou priest offers all three services under one roof.

"They know how to heal medicinally," Scher said. "But they're psychologists because they understand that you can't be healed unless your mind is healthy. And as philosophers, they're also imparting the right moral behavior."

—MC

Reuben Zahler's classes, Lofgren was pushed to dig for information, find new ways to interpret it and lay out his case in clear, concise language.

In his job at the Department of Biomedical Informatics at the Stanford School of Medicine, Lofgren combs through massive amounts of data on diseases, existing drugs and outcomes, in search of connections that could lead to breakthrough treatments. The goal is to find a treatment that works well for a particular aspect of one illness, say inflammation from lupus, and see if there are other diseases that have a similar characteristic, such as cancer, that could be treated the same way.

Thanks to what he learned from Zahler, Lofgren can whip out a bullet-point outline for a research paper and complete it in no time at all. His colleagues with advanced science degrees, on the other hand, sometimes spend weeks or even months writing a paper and enjoy not a minute of it.

"The most directly relevant benefit of the study of history was the practice it gave me with the crucially important skills of filtering an excess of facts and data and assembling salient points into meaningful and useful narratives," Lofgren wrote, in an e-mail to Zahler. "This is actually an incredibly important skill in science."

Zahler wasn't surprised that a student studying the "soft sciences" might end up working in the "hard sciences."

"A liberal arts education is a way of thinking about humanity—or how humans relate to the world—that doesn't always accept the accepted wisdom, that is constantly thinking of questions that challenge accepted thought," Zahler said. "It always assumes that we have very deeply profound assumptions that may be wrong. And in the business world, that is a very important way of viewing reality."

—GB

> "LIBERAL ARTS ALWAYS ASSUMES THAT WE HAVE VERY DEEPLY PROFOUND ASSUMPTIONS THAT MAY BE WRONG."

MOLECULAR KNOW-HOW

A biophysicist probes the mechanics of life

In a way, anthills are what led Tristan Ursell into the strange world of biophysics.

Not anthills literally, but the idea that very simple organisms are capable of producing vastly complex but well-ordered structures. If you've ever seen a cast made by pouring plaster or concrete into a giant African anthill, you've seen a life-size example of just that.

Ursell (below), an assistant professor who joined the Department of Physics last fall, isn't working on ants, yet. But he is exploring the relationship between proteins, bacteria and other microscopic life forms that have something in common with these workmanlike insects. Like ants, these tiny organic machines create intricate community structures to perform various environmental tasks, such as moving over surfaces or gaining access to a resource—and they do it without any obvious form of guidance.

"I'm studying down at the order of cells," Ursell said. "But there are a lot of similarities [with the anthill analogy]. It's unguided, there's no central orchestration to the problem. Nobody's holding up a set of blueprints saying, 'You guys go over here and build this thing, you guys go over there and build that thing.' These molecules just have to know how to do it."

Finding out how molecules "know" what their job is takes Ursell across the boundary of physics into biology. As a rising star in the field of biophysics, he's engaged in a relatively new way of looking at the natural world.

Not all that long ago, biology and physics were two fields that, frankly, didn't play well together. It's as though biologists saw physicists as people who spent their time measuring dead stuff—forces, asteroids, proton collisions—while physicists thought biologists cared only about gunk that grows in swamps.

"At one time there was a sort of stigma in physics about looking at biology," Ursell said. "Biology is squishy and it's dirty and it crawls. Physics is like wires and things that blink and maybe catch fire occasionally, which are exactly the qualities that biological systems do not have."

But in recent years there's been something of a revolution in our approach to biology, including fresh interest in what might be called the mechanics of life. Ursell is fascinated by such things as the workings of cell walls, how cells die and what allows cells or bacteria or proteins to do what they do.

One thing Ursell studies is how bacteria die, which is a hop and a skip from knowing how to kill them, which is pretty much the definition of an antibiotic. He's not specifically looking for new drugs, but the things he learns about how cells and bacteria can be damaged or killed could be the building blocks of the next breakthrough treatment.

"He combines really important biological questions—how do cells live and die, how do antibiotics work, how do bacteria become resistant—with cutting-edge materials physics," said biophysicist Raghuveer Parthasarathy, who led the committee that hired Ursell in 2014.

Ursell is one of just a handful of scientists approaching the biological world from so many angles. His combination of experiments, computer simulations and theoretical analysis has great potential for discoveries, Parthasarathy said.

But Ursell doesn't confine his inquisitive nature to the classroom or lab. He has a passion for outreach and is among a growing number of researchers who enjoy talking science with nonscientists.

He's gone so far as bringing science to Burning Man, the huge arts and culture festival in the Nevada desert. In addition to giving science talks to packed crowds, he and fellow scientists have brought microscopes to the festival so that people could get a look at some of the tiny organisms that live all around us.

Ursell found that people are fascinated by the weirdness of the microscopic world. But he's also learned that real discovery requires attention to the mundane, as well.

"I think an important aspect to being a scientist is not just focusing on things that are outside your normal experience, but also questioning things that are inside your normal experience," he said. "You can't understand the weird things until you understand the normal things. Then you can begin to push the bounds of knowledge."

Check out Online Extras for an interview with Ursell at Burning Man. —GB

Extreme Makeover

LEAVING THE LECTURE BEHIND IN FAVOR OF ACTIVE LEARNING

Okay, class, raise your hand if you spent most of your time in college sitting in a big room listening to a professor talk.

Thought so. Lecturing has dominated college classrooms for the last 800 years—they don't call them "lecture halls" for nothing—and it's a safe bet the lecture isn't going away anytime soon. But some erstwhile lecturers at the UO are showing that for many classes, especially science, students learn more when professors talk less.

"The overwhelming majority of science courses are taught by a professor lecturing the students, even in the face of studies showing that alternative teaching methods demonstrate much greater learning and much lower student failure," said Michael Raymer, a physics professor and codirector of the UO Science Literacy Program with Judith Eisen, a biology professor.

That alternative method—active learning—is at the heart of the Science Literacy Program, a pioneering effort that's giving a chunk of the introductory science curriculum an extreme makeover. It has two main goals: to improve the way science is taught so students learn more and retain it longer, and to make the things students learn—especially students who aren't majoring in science—more relevant to their everyday lives.

What's more, the Science Literacy Program provides fellowships for graduate students to coteach classes and the opportunity for advanced science undergraduates to sign on as teachers. The program was launched with a $1.5 million grant from the Howard Hughes Medical Institute, and the UO has now committed to continued funding to sustain it.

Since 2011, 32 professors have used active-learning methods in 30 science literacy courses. What sets these courses apart is student involvement, achieved through small-group discussions, question-and-answer sessions or classroom technology such as "clickers." These hand-held devices allow student responses to be tabulated in real time—and shown on a big screen—enabling the teacher to quickly assess how well students are learning.

Real or pseudo science (or satire)? All students, no matter what their major, need to be discerning consumers of scientific information in their daily lives.

THE SCIENCE LITERACY PROGRAM HELPS NONSCIENCE MAJORS DELVE INTO PRACTICAL APPLICATION OF SCIENTIFIC KNOWLEDGE.

Studies have shown that failure rates in a traditional lecture class are 55 percent higher than in an active-learning class; conversely, letter grades increase by an average of 6 percent with active-learning, said Elly Vandegrift, associate director of the Science Literacy Program. That's the difference between a B and a B+.

But the program does more than boost grades. The UO requires all students, even those not majoring in science, to take at least 15 science credits, or about four courses. The Science Literacy Program helps students who are not majoring in science to leave college with a solid understanding of how science works and the ability to use that understanding in their daily lives.

Take the Biology 140 course Vandegrift taught winter term. It covered stem cells and cloning, genetically modified organisms and human genetics, helping students understand the science behind hot-button issues while giving them a solid grounding in the basics of biology.

"We weave in all the basic biology that you might do in a traditional lab-based Biology 101 course," Vandegrift said. "We talk about cells, we talk about how proteins are made, we talk about genetics. But we're not just talking about them in isolation. We're looking at the real, practical application of it, how this will matter to you in your life outside the classroom." —GB

CHEMICAL TWOFER

New filter will extract valuable metals and create clean water

Darren Johnson doesn't want to "get the lead out." But he does want to get the neodymium and ytterbium out.

Yes, those are real things. They're among the so-called rare earth elements, metals that often get leached from underground minerals and brought to the surface in briny, hot, underground water that's increasingly being tapped to generate electricity in geothermal energy plants. Often toxic, the metals need to be removed before the water can be used and then discharged into a river.

Johnson, a professor in the UO's Department of Chemistry and Biochemistry and the Materials Science Institute, is working on a new, ultraporous filter material that not only would strip these metals out of the water but also allow them to be recovered and used. The result would be a chemical twofer: clean water and a new source of valuable metals.

"Essentially, what we want to do is mine the water," Johnson said.

Johnson and his lab team are working with Pacific Northwest National Laboratory, a unit of the US Department of Energy, to develop the filter material that would be packed into a pipe or similar container to create a filter. Kara Nell, a doctoral student in Johnson's lab, is helping lead the UO side of the project.

One of the keys to the filter is a newly developed, silica-based material that is engineered with billions of microscopic pores. With the right chemical treatment, those pores can be "programmed" to grab onto the metals and let the water pass through.

Then it's just a matter of stripping away the filter material, and voilá, ready-made rare earth metals.

> RARE EARTH ELEMENTS AREN'T REALLY RARE; THEY'RE JUST GOOD AT HIDING INSIDE DIFFERENT MINERALS.

(Rare earth elements really aren't rare, but people thought they were when they were first discovered. It turns out they're just good at hiding inside different

WHOSE MUSCLES FATIGUE MORE QUICKLY?

Anita Christie studies "healthy agers"

It turns out that the phrase "You're not getting older, you're getting better" may have more scientific truth to it than one might imagine.

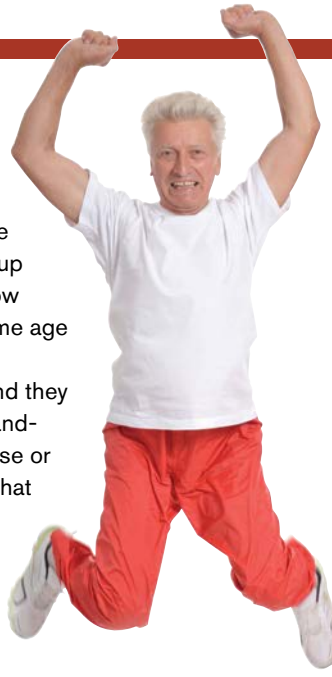
For example, some older people actually experience lower levels of muscle fatigue from exercise than younger people. You read that right: The muscles of healthy people in their 70s actually tire less quickly than those of 20-year-olds.

This is a conundrum that Anita Christie, an assistant professor of human physiology, is trying to sort out. Christie studies how nerve impulses traveling between muscles and the brain change with age. She's looking for clues that could lead to treatments that would help older people maintain muscle control and slow the onset of frailty.

Christie starts with older adults who have retained mobility and muscle control, a group she calls "healthy agers." She wants to know what sets them apart from adults of the same age who have become frail or infirm.

"You can take two 75-year-old people and they can look very different from a functional standpoint," Christie said. "In some cases exercise or physical activity has a lot to do with it, but that doesn't explain everything."

She's found that muscles in healthy older adults tend to get their energy from oxygen, whereas muscles in younger people get fuel from a sugar known as glucose. The process in older adults



minerals, which makes them difficult and expensive to get at.)

The filter material—a simple white powder similar to chalk or talcum—is pretty amazing stuff by itself. With all those billions of divots, the surface area of the material is vastly increased, in the same way that a meandering line is longer than a straight line even if they both start and end at the same place.

"If you have one gram of this material, which easily fits in the palm of your hand, the surface area of that gram of material is the same as the surface area of the entire football field in Autzen Stadium," Johnson said.

Johnson and his lab team are now working on fine-tuning the chemical coating that makes the pores in the filter material a trap for metals. They have one that works, but it's not so easy to separate the metals from the filter material afterward.

That's a key issue. The effort will be for naught if these potentially dangerous substances can't be removed and put to good use.

"We've shot ourselves in the foot if the material ends up in a landfill," Johnson said. "Rare earths have a really useful value."

With tongue-twisting names like "praseodymium" and "lutetium," rare earths are kind of second-class citizens on the periodic table of elements, shunted off to those two separate rows at the bottom of the chart. But they're essential to the design and production of everything from sunglass lenses to electronics to high-tech lasers.

GREG BOLT

One gram of the ultraporous material under development by chemist Darren Johnson has the same surface area as the entire football field in Autzen Stadium.

What's more, if the filter material is developed for large-scale commercial use, its price would come down to the point it could be used as a cheap alternative in home water filters or portable units for recreation or military use. And that would open the door for uses in developing countries that need an economical way to treat contaminated water to make it safe for human use.

Tests already have shown the material works well using both Columbia River water and seawater, although it does not remove salt, only metals. It still needs to be tested on geothermal water, but Johnson said that, barring any surprises, he's confident it will work there as well.

"Since we know this can extract metals from seawater, I think we're golden," Johnson said. —GB

produces less of a signal that tells the brain the muscle is tired, giving older people the ability to use the muscle longer.

Unfortunately, people also lose muscle mass and strength as they age. That more than offsets the gain in endurance and prevents grandpa and grandma from spending their retirement years as members of the League of Superheroes.

Because of that muscle loss, it's important that older people are able to get everything they can out of the muscles they have, which is what brings Christie back to the healthy seniors.

"If we can understand the physiology of what's going right in the healthy agers," she said, "we can apply that to interventions for those people who are not frail yet but who are on the brink of getting there."

Christie also has learned that in older adults who have mobility problems, muscles tend to work like those in younger people. They get their energy from glucose, producing the chemicals that tell the brain the muscle is tired.

> OLDER PEOPLE MUST GET EVERYTHING THEY CAN OUT OF THEIR MUSCLES.

Combined with the loss of muscle strength, this places frail adults in a downward spiral. Christie will soon begin studying muscle fatigue in frail adults in an effort to keep them on the move.

"We understand the muscle-response mechanism now," she said. "Next, we want to see if we can do something to buffer it." —GB

ONLINE EXTRAS

1

1) Body and Mind. When you meditate, good things happen in your brain—reduced tobacco cravings, for example. Michael Posner, professor emeritus of psychology and winner of the 2008 National Medal of Science (right, receiving the award from the president), has identified benefits from integrative body-mind training (IBMT), a technique that involves whole body relaxation. Watch a lecture by Posner on the neuroscience of IBMT in the Online Extras section at cascade.uoregon.edu.

2

2) Bread 101. There's a lot of science behind bread and four educators from the sciences—Judith Eisen, Miriam Deutsch, Karen Guillemin and Elly Vandegrift—have teamed up to create an honors college colloquium on bread. Visit the Online Extras section of cascade.uoregon.edu for their reflections on the essence of that most common of foodstuffs.

3

3) Visit the Microzoo. Physicist Tristan Ursell (page 20) is a fan of Burning Man (right), the week-long music and art festival in the Nevada desert. During the 2010 event, Ursell operated a "microzoo"—a hands-on science tent in which festival-goers viewed single-cell photosynthetic organisms, "water fleas" and other exotic attractions through a microscope. Watch the "Explorato-rium" interview with Ursell in the Online Extras section at cascade.uoregon.edu.

4

4) Powerful Profile. Jason Brown (left), of creative writing, recently traveled to war-torn Afghanistan to research a feature story on an Afghani activist (page 12), at great personal risk. The compelling profile appeared in the online news website Salon, which you can read in the Online Extras section at cascade.uoregon.edu.

Visit Online Extras at **cascade.uoregon.edu**

CASCADE

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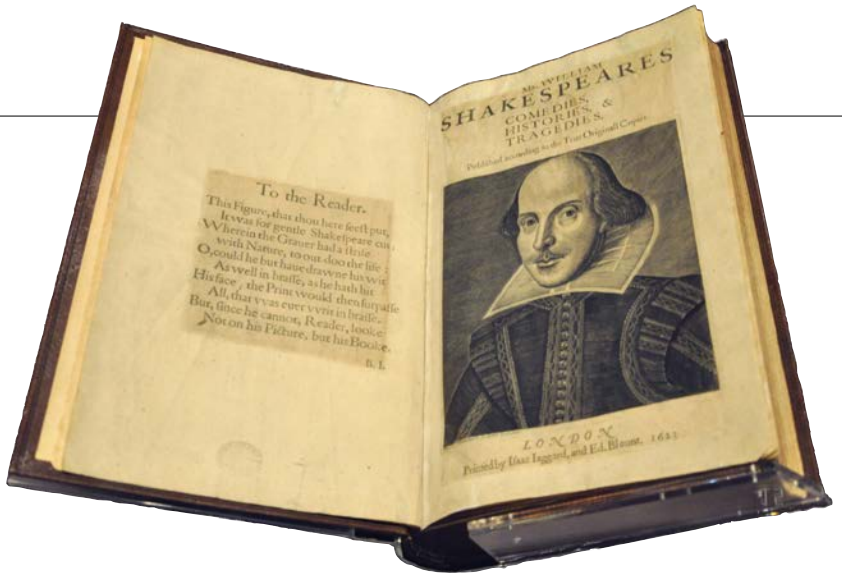


BARD'S WORK IS OREGON BOUND

Thanks to Lara Bovilsky, associate professor of English, William Shakespeare is coming to campus.

His original work, that is. To mark next year's 400th anniversary of the death of the renowned poet and playwright, the book that contains the first collected edition of Shakespeare's plays is being shepherded on a cross-country tour that will include one stop in Oregon—at the UO.

This is the *First Folio*, published in 1623, seven years after his death. It includes 18 plays—among them, *Macbeth*, *Julius Caesar*, *Twelfth Night*, *The Tempest*, *Antony and Cleopatra*, *The Comedy of Errors* and *As You Like It*—that, without their collection in this folio, might have otherwise been lost.

Competing to host what has been called "one of the world's most treasured books," the UO's winning proposal was a collaborative effort among the English department faculty, the Jordan Schnitzer Museum of Art, the Oregon Shakespeare Festival and UO Libraries Special Collections and University Archives.

Between January 5 and February 7, 2016, faculty members will give gallery talks and the UO will make available its own copies of Shakespeare's *Second* and *Fourth Folios*. An opening gala will feature an original performance by the Oregon Shakespeare Festival, in collaboration with English department faculty. Also, field trips to campus for Oregon middle and high school students will cover Shakespeare and the power of creative expression.

Deer Mapping

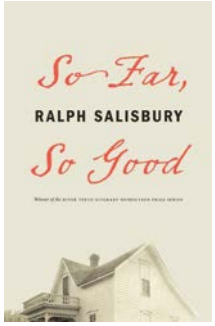
The InfoGraphics Lab is now mapping mule deer. And elk. And other migratory ungulates.

The laboratory (part of the geography department) joined universities and wildlife agencies to document a heretofore unknown 150-mile migration of Wyoming's mule deer (below). The project is overseen by UO alum Matthew Kauffman, BS '92 (biology), of the Wyoming Cooperative Fish and Wildlife Research Unit.

Kauffman turned to the InfoGraphics Lab for help—because of his UO connections, and because the lab is "one of the leading cartography groups nationwide." The lab created a stunning map of the routes covered by the deer on their epic journey (a *New York Times* feature on the migration credits the InfoGraphics Lab for a map in its story.)

Now the laboratory and Kauffman are on to a multiyear effort to create an atlas of ungulate migrations across the Wyoming area.

Lifetime Achievement



To 11 books of poetry, three short-story collections and a prize-winning memoir, Ralph Salisbury can add one more achievement: a prestigious award that recognizes a renowned career in Oregon letters.

The professor emeritus in the English department recently received the C. E. S. Wood Retrospective Award from the Literary Arts organization in Portland.

Salisbury's work spans a wide variety of subjects, influenced by his personal experience as a Cherokee-Shawnee-English-Irish-American man. A veteran of World War II and a child of the Great Depression, Salisbury has also written about the effects of a constant state of warfare and poverty. His memoir is titled *So Far, So Good*.

"Though I have lived and worked among the intelligentsia of many nations, my writing comes from having lived as a questing, mixed-race, working-class individual in a violent world," Salisbury says on his website.

Fantastic Four

The Department of Chemistry and Biochemistry has just scored serious bragging rights, with four assistant professors receiving national accolades, and funding for their research.

Three of them—Shannon Boettcher, Michael Harms and Michael Pluth—were among 126 United States and Canadian researchers from 57 institutions to win 2015 Sloan Research Fellowships from the Alfred P. Sloan Foundation. The fellowships, which provide $50,000 over two years, honor early-career scientists whose achievements identify them as rising stars.

Boettcher studies the chemistry and physics of energy conversion and storage. Harms explores the relationship between the biophysical properties of proteins and their evolution. Pluth is pursuing the use of chemistry to understand the biological roles of hydrogen sulfide, important to the treatment of diabetes, hypertension and inflammation.

Pluth and George Nazin, another assistant professor in the department, won National Science Foundation career grants that recognize top-performing young scientists. Each will receive approximately $650,000 over five years.

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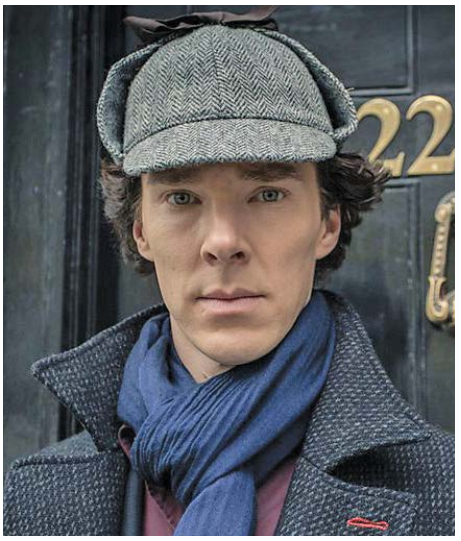

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