

STRANGE SCIENCE
An astrophysicist meets
a Marvel movie

MOMENTOUS MELIORA!
Highlights from a
signature celebration

LESSONS IN LOOKING
Where poet Jennifer Grotz
found her latest inspiration

Rochester

UNIVERSITY OF ROCHESTER/NOVEMBER-DECEMBER 2016

Review

Lake Effect?

A research team explores the dynamics of naturally occurring greenhouse gases in the Great Lakes.



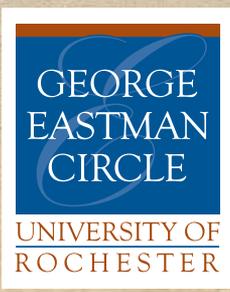
PAYING IT FORWARD

FOR FUTURE GENERATIONS

“You have to feel strongly about where you give. I really feel I owe the University for a lot of my career. My experience was due in part to someone else’s generosity. Through the George Eastman Circle, I can help students with fewer resources pursue their career aspirations at Rochester.”

—Virgil Joseph '01 | Vice President-Relationship Manager,
Canandaigua National Bank & Trust
Rochester, New York

Member, George Eastman Circle Rochester Leadership Council
Supports: School of Arts and Sciences



Members of the George Eastman Circle, the University of Rochester’s leadership annual giving society, commit at least \$1,500 in annual funds to areas they care about most, for a minimum of five years. To learn more about joining, visit www.GeorgeEastmanCircle.com or call (585) 276-5581.

Virgil Joseph '01 and his wife, Lisa Joseph '02 with their children Justin 15, Virgil Jr. 9, Sofia 5, and Hannah 22 months.

Features

NOVEMBER–DECEMBER 2016



26

Momentous Meliora!

Rochester's Bhangra team (above), a competitive troupe specializing in the traditional dance of India's Punjab region, provides entertainment at *The Meliora Challenge Celebration Dinner* in October. A capstone of this fall's Meliora Weekend, the event commemorated the success of *The Meliora Challenge*, the largest campaign in the University's history.

40 Lake Effect

John Kessler and students in his advanced undergraduate seminar in earth and environmental sciences make some surprising discoveries about methane in the Great Lakes.
By Karen McCally '02 (PhD)



34 Opening a Window

What's the connection between place and inspiration? For poet Jennifer Grotz, travels to a 17th-century French monastery taught her a "lesson in looking" and prompted her latest book, *Window Left Open*.
By Kathleen McGarvey

ON THE COVER Photograph by Keith Walters for *Rochester Review*.

Departments

November–December 2016

3 *President's Page* | 4 *Letters* | 62 *Books & Recordings*

In Review

- 6 Fireside Chats** Students mingle in a reinvented Frederick Douglass Building.
- 8 Diner Drama** The International Theatre Program brings a 1970s diner to life.
- 10 Gently Down the Stream** The women's rowing team is up before dawn.
- 12 Kilbourn Convocation** The Eastman School of Music opened the school year in the newly renovated Kilbourn Hall.
- 14 The Mysteries of Fluid Dynamics** Scientist and engineer Douglas Kelley goes with the flow.
- 16 Mother Nature's Son** Explorer and scientist Alexander von Humboldt created the modern idea of nature, says author Andrea Wulf.
- 17 Rubin Leads Humanities Center** The new Ani and Mark Gabrellian Director is a noted historian.
- 18 Ask the Archivist: 'What's the History of This Hat?'** A question for Melissa Mead, the John M. and Barbara Keil University Archivist and Rochester Collections Librarian.
- 19 Strange Science** Physicist Adam Frank helps out the makers of the new Marvel movie *Doctor Strange*.
- 20 In Brief** A Security Commission report, award-winning teachers, and other campus news.
- 22 Discover** Slowing aging,

10



starving cancer, and more research news.

- 24 Milestone Meet** Rochester's 1991 national cross country champions celebrate the 25th anniversary of their title.

Alumni Gazette

- 46 A 'Geeky, Frazzled' Star of Screen** Dena Tyler '94 ditched her plans for a medical career and took a shot as an actress. It's working out.
- 47 Denying Extremists a Powerful Tool** Hany Farid '88 has developed a means to root out terrorist propaganda online.
- 48 Let's Talk about Our Hair** Revelations from *Hair: A Human History*, by Yale dermatologist, pathologist, and hair follicle expert Kurt Stenn '65M (MD).

48



Class Notes

- 50 College** Arts, Sciences & Engineering
- 54 Graduate** Arts, Sciences & Engineering
- 55 Salyer's Century** An alumnus turns 100.
- 56 Honoring Alumni and Friends** University awards recognize service and achievement.
- 57 Eastman School of Music**

58 School of Medicine and Dentistry

58 'Doors Were Suddenly Open to Me' A bachelor's degree changed the lives of a Class of 1966 graduate and her eight children.

59 Edwin Carstensen: Remembering a pioneer in the bioeffects of ultrasound.

60 Donald (D. A.) Henderson '54M (MD): The man who wiped out smallpox.

61 School of Nursing

61 Simon Business School

61 Warner School of Education

61 In Memoriam

64 The Changing Museum: An Educator's Tour Museums see their missions as evolving, says a longtime educator at New York's Museum of Modern Art.



64

A Campus Transformed

By Joel Seligman

This year's Meliora Weekend was a spectacular celebration. We had an opportunity to reflect on how far we have come in the 11 years of *The Meliora Challenge* Campaign which concluded in June.

Visitors to our campus had a chance to see firsthand the University's transformation. The summer of 2016 was one of the most active construction periods in our history. Our campaign leaders, including alumni, friends, and supporters, have spurred dramatic changes. They have used their passion and generosity to help the University navigate a course to the Next Level.

I am grateful to several leaders of our Board of Trustees who have helped to shape the academic and physical plant of our campus. Trustees Danny Wegman, Bob Goergen '60, Ed Hajim '59, and Evans Lam '83, '84S (MBA) are responsible for recent transformative projects that we celebrated during Meliora Weekend. There was much more.

Wegmans Hall was dedicated on October 6 during our board meeting and is scheduled for full occupancy in the winter of 2017. The new state-of-the-art, 50,000-square-foot building will house the Goergen Institute for Data Science as well as the Department of Computer Science and other academic areas. The building will provide much-needed space for collaborative research, conferences, workshops, and special events.

The Edmund A. Hajim Science & Engineering Quadrangle, which includes the Robert B. Goergen Hall for Biomedical Engineering and Optics, Hylan Hall, Hutchison Hall, the Computer Studies Building, and Wegmans Hall, was dedicated on October 7. The new quadrangle will bring vibrancy to the River Campus, offering additional green space and social areas for events and activities.

Evans Lam Square is now open, substantially modernizing the first floor of Rush Rhees Library just off the Roger B. Friedlander Lobby. We dedicated the new space on October 5. Lam Square has transformed the look of the library into a space that will function much like a town square, serving as the central location for library users to do research, collaborate on projects, and



CELEBRATING SUCCESS: In marking the success of *The Meliora Challenge*, Seligman thanked campaign leaders, trustees, alumni, friends, and other supporters for their commitment to the University.

explore new technologies. A “technology sandbox” now serves as an open space for exploring cutting-edge tools that can be used in coursework. Evans Lam Square is also the central location for the library's Q&i service, which provides circulation and basic research support.

On the second floor in Rush Rhees Library, we will soon complete a new 8,500-square-foot Humanities Center space, which will feature lounge and conference space, offices, and a seminar room.

The Frederick Douglass Building has been transformed into a new student common space. The four-story building has opened a reinvented dining facility, redesigned student gathering spaces, the Paul J. Burgett Intercultural Center, and the new Language Center.

A renovation and expansion of the press box in Fauver Stadium and a refurbishment of the concourse was completed in early October. Construction began during the summer on a new 72,000-square-foot residence hall overlooking the University's Brian F. Prince Athletic Complex, due to open next fall. The finished building will feature four residential floors to house approximately 150 new beds, meeting rooms

for study groups and workshops, a new locker room facility, and training rooms for our athletic programs. Parts of Schlegel and Gleason Halls in the Simon Business School were renovated this summer, adding new office space and updated classroom spaces.

At the Eastman School of Music, the year began with a refurbished Kilbourn Hall, with new carpeting, seats, aisle lighting, and handrails.

Phase II construction of the new Golisano Children's Hospital building has begun and will feature six additional operating rooms, the Clay E. and Rita M. Buzzard Pediatric Cardiac Cath Lab Suite, and 23 new private pre-op and post-op recovery rooms. Construction is scheduled to be completed in 2017.

Construction also continues on a new 90,000-square-foot, state-of-the-art building for imaging sciences and complex pediatric care on East River Road to provide the region's first outpatient interventional radiology clinic and the region's first standalone clinic for the integrated care of autism, the William and Mildred Levine Autism Clinic.

I am grateful to many other trustees and friends for their vision, their counsel, their guidance, and their confidence in the ability of this University to always strive to be *ever better*. Our achievements together are a result of always aiming higher. Now, onward, to the Next Level. 

Star Trek Memories

As a lifelong *Star Trek* fan, I enjoyed the article “Star Trek’s Half-Century Voyage” (September-October). As a freshman in the fall of 1986, I remember being pleased to learn that Alexander Courage ’41E was a Rochester alumnus.

Among the many Meliora connections to *Star Trek*, there was one that you missed. My freshman class was the first to participate in the Rochester Conference. Freshmen were summoned to the River Campus a week before the spring semester for a weeklong program that was both educational and entertaining. The theme of the January 1987 conference was “Creation.” The keynote speaker was to be Captain Kirk himself, William Shatner. Shatner was to kick off the conference along with a screening of the first three *Star Trek* films. I was very excited. That excitement was short lived, as a month before the conference, Shatner had to cancel his appearance. Ironically, the announcement came on the same day that he was on *Saturday Night Live* and uttered the famous line to Trekkies, “Get a life!”

Fortunately, the conference still had another *Star Trek* connection: Harlan Ellison. Ellison, who wrote what many believe to be the finest *Star Trek* script—“City on the Edge of Forever”—was a guest speaker at the conference. He proved to be entertaining and cantankerous at the same time.

As for the perceived connection between *Star Trek*’s William T. Riker and Rochester’s William H. Riker, we talked about that many times at the DKE house as we watched *The Next Generation* every night during dinner. Thank you for finally debunking the myth.

Joseph Bailey ’90, ’97W (MS)
Newark, New York

I loved reading about *Star Trek* in the September-October issue of *Review*. I was a freshman in September 1967, and remember well those Friday nights watching *Star Trek* with my fraternity brothers. It was a weekly ritual. The sets were day-glow paint and papier-mâché, but the storylines were fantastic.

Over the years as I continued to watch *Star Trek*, it occurred to me that the Starship *Enterprise* was actually a living Jungian symbol of a single human being. Inside were competing elements trying to make sense of the universe. Spock was the

Intellect, Bones was the Emotion, Scotty was the Will to Power, Uhura was the mysterious Anima. The Shadow showed up in many disguises, like the Klingons and all the other aliens who were always trying to take over the crew and the ship for their own designs. Captain Kirk was the Self, doing his best to coordinate everyone to work together to solve the problem, whatever it was.

The *Enterprise* was a living human being going where no one had gone before. It was purely Jungian, which may be why it resonated so well for so many years!

Tony Boccaccio ’71
Spokane, Washington

A One-Sided Portrayal

The article “A Class on the Cusp” (September-October) led to a long discussion on the Facebook page for the Class of 1966, which I help lead. Our discussion offers a more nuanced perspective on the Class of 1966 experience than the article’s, which affected me more deeply (and negatively) than I should admit.

We were, indeed, leaders in change on a broad number of fronts. But the piece failed to take note of the fact that the members of the Class of 1966 made a range of choices. Not all of us protested the Vietnam War, and not all of us took paths that kept us out of the conflict.

The article noted the protest at an NROTC sunset parade—a parade of classmates, including me. Certainly those of us in the parade who were destined, as prospective Marines, for combat duty in Vietnam—’66 classmates Dick Hulslander, Bob Rivers, Tom King (killed in 1967), and me—were disappointed, probably angered. Others in that parade became Navy officers. I think they would have felt the same way.

That was 50 years ago. Throughout our classmates’ recent interaction on Facebook, I felt sincerely that our diverse perspectives could and should be respected. I honor the courage of people like Cecily Drucker ’66 and Betsy Weingart Cullen ’66, quoted in the article, who had come to conclude that the war was wrong and acted in protest.

But I will say, frankly if reluctantly, that the article’s absence of any mention of Rochester mates, from whatever class, who entered the conflict with motives every bit as honorable as those who opposed the war, rekindled in me the feeling I felt on

Rochester Review

NOVEMBER–DECEMBER 2016
VOLUME 79, NO. 2

Editor

Scott Hauser

Associate Editors

Karen McCally ’02 (PhD)

Kathleen McGarvey

Contributors

Theresa Danylak, Adam Fenster, Peter Iglinski, Jim Mandelaro, Bob Marcotte, Melissa Mead, Mark Michaud, Sara Miller, Dennis O’Donnell, Leslie Orr, Susanne Pallo, Monique Patenaude, Scott Sabocheck, and Brandon Vick

Business Manager

Maureen Baisch

Editorial Office

22 Wallis Hall
University of Rochester
Box 270044, Rochester, NY 14627-0044
(585) 275-4121
Fax: (585) 275-0359
E-mail: rochrev@rochester.edu
www.rochester.edu/pr/Review

Address Changes

300 East River Road
Box 270032
Rochester, NY 14627-0032
(585) 275-8602; toll free: (866) 673-0181
Email: giftoffice@rochester.edu
rochester.edu/alumni/stay-connected/
alumni-update-form

Design

Steve Boerner Typography & Design Inc.

Published six times a year for alumni, students, their parents, and other friends of the University, *Rochester Review* is produced by University Communications.

Opinions expressed are those of the authors, the editors, or their subjects and do not necessarily represent official positions of the University of Rochester.

ISSN: 0035-7421

Credits

Alumni photographs, courtesy of the subjects. Unless otherwise credited, all others are *Rochester Review* photos.



UNIVERSITY of
ROCHESTER

returning to the United States in 1968. No one cared, and no one had a word of kindness, empathy, or interest.

That is not how those participating in our Facebook group have approached our discussion. I feel strongly that the gap that might have existed between us is closed.

I wish the author and editors of the *Rochester Review* article had taken notice of this other part of the Class of 1966 experience and offered it the respect it gave to the protest wing. Our class was a much more complex group than the article gave us credit for being.

Andres Vaart '66
Reston, Virginia

A Nod to Goethe

I have vivid memories of the antiwar vigil written about in "A Class on the Cusp" (September-October). We in the Student Peace Union had negotiated with the ROTC, who agreed that we could hold our vigil and that they would march around us. We certainly were pleased, and a bit surprised, by their cooperation. We sat quietly holding a banner calling for "Peace in Vietnam." All of a sudden, some students from the crowd rushed over and torched the banner. It took every ounce of our new training in nonviolent resistance to prevent each of us from reacting with force against our attackers. It was a remarkable moment, as I remember: the sun was strong behind us, the banner was burning, and ROTC was marching.

On another, completely different, issue, I'd like to add a tidbit to the fascinating description of Susan Gustafson's new book on Goethe ("Love Is All You Need," September-October): that he married the mother of his children after 18 years of living together. In the 1960s, we liked to think we were challenging societal expectations. But Goethe, for one, was way ahead of us.

Louise Forsyth '68
Brooklyn, New York

An Ode to English

Russell Peck's recollections of Russ MacDonald brought back some happy memories for me of life in the English department as an undergraduate back in the late 1970s.

I was among Russ's first students when he arrived to teach Shakespeare, and I appreciated his energy and insights. Russell Peck's classes were the most thrilling and intellectually challenging of my time at Rochester. I still look back at passages he read to the class for their sheer beauty: for example, Book 22 of the *Iliad*, in which the Trojan women wash their clothes before

the war; and the story of Francesca and Paolo in Canto V of Dante's *Inferno*. I'm still stirred by the words.

I also studied with Cyrus Hoy, George Ford, Joseph Summers, and Jim Rieger—distinguished scholars who loved the classroom. I went on to earn a master's degree in English from the University of Virginia, and from there to law school, but I will never forget the education I received in the English department at Rochester.

Robert Cohen '80
Media, Pennsylvania

Radio Days

Several people wrote in to identify the two WRUR crew members pictured in the opening photograph of Class Notes ("Turn On, Tune In, Drop In," September-October). Among them were the crew members themselves: Joseph Lambert '59 (right, seated) and Morey Waltuck '59.

"We were roommates our junior year

to read the news into a microphone. Once, the news came in so late that I had to tear off the printout before it was finished and run to the microphone. While I was reading it, someone else tore off the rest of the news when it finished and brought it to me in time for me to continue reading it. The teletype machine typed onto a continuous roll of paper, one letter at a time, as it came in from the Associated Press—excruciatingly slow by today's standards."

Joseph Lambert adds: "I was an engineer at WRUR for much of my time at the U of R. Although my responsibilities were mainly in the studio, I traveled with the basketball team regularly to engineer remote broadcasts from other college campuses.

"This photo was published in the 1959 *Interpres*. As layout editor of our yearbook, I think I had something to do with not only getting this photo into the book, but having it very prominently placed!

"Morey and I met as college freshmen in



STATIONED: Program manager Waltuck (left) and engineer Lambert in the early days of WRUR.

and we both worked at WRUR. I was a program manager on Monday nights," Waltuck writes.

"Notice there are three turntables. That was how the music was played. While the host was introducing the music, we would place the needle on the recording and listen for the break between the songs. Then, holding the pad under the record so it would not spin, we turned on the turntable and let go of the pad as soon as the host gave us the signal. This was because the turntables took too long to get up to speed.

"I remember waiting for printouts of the news from a teletype machine just before the top of the hour, then hurrying it into the small room that was just behind where the photographer was standing to take this picture. Then we would sit down

1955, roomed together as juniors, and have remained close friends to this date—an interval of 61 years! I often tease him that he is indeed my 'oldest friend.'"

We also heard from David Appelbaum '59. "We were classmates and fraternity brothers in Sigma Alpha Mu," he writes. "I had a Sunday night show, 'The Music Hour,' and briefly served as a studio engineer during my freshman year."

Review welcomes letters and will print them as space permits. Letters may be edited for brevity and clarity. Unsigned letters cannot be used. Send letters to Rochester Review, 22 Wallis Hall, P.O. Box 270044, University of Rochester, Rochester, NY 14627-0044; rochrev@rochester.edu.

STUDENT LIFE

Fireside Chats

GETTING CONNECTED: Students gather in the fireplace lounge in the reinvented Frederick Douglass Building, now designed to serve as a hub of student life. Connected to Wilson Commons, the two buildings are collectively known as the Campus Center. Douglass is home to the Paul J. Burgett Intercultural Center, the Language Center, a dining facility with kosher and international selections, and a multipurpose ballroom. PHOTOGRAPH BY ADAM FENSTER



inclusion

achieving more TOGETHER
The Campaign Resource Board is an integral part of The College
administered by the Office of the Dean of Students.
www.rochester.edu/campaign

INCLUSION	+	RESPECT	+	RESPONSIBILITY
+		+		+
FAIRNESS	+	FREEDOM	+	HONESTY

achieving more TOGETHER
THE COLLEGE
INCLUSION
+
FAIRNESS

ject
je...
tomer
DE

THEATER

Diner Drama

CHARACTER STUDIES: The International Theatre Program launched its 27th season this fall with *When You Comin' Back, Red Ryder?*, a psychological thriller by Mark Medoff set in a 1970s diner. Marta Kontny '17 played the waitress Angel; she poses here in character behind the counter at Pat's Coffee Mug, a fixture of Rochester's South Wedge neighborhood. PHOTOGRAPH BY ADAM FENSTER

New York State
Department of
Taxation and Finance

8%
Sales and Use Tax
Collection Sheet

Amount of Sale	Tax to be Collected	Amount of Sale	Tax to be Collected
80.00	6.40	8.00	0.64
10.00	0.80	1.00	0.08
15.00	1.20	1.50	0.12
20.00	1.60	2.00	0.16
25.00	2.00	2.50	0.20
30.00	2.40	3.00	0.24
35.00	2.80	3.50	0.28
40.00	3.20	4.00	0.32
45.00	3.60	4.50	0.36
50.00	4.00	5.00	0.40
55.00	4.40	5.50	0.44
60.00	4.80	6.00	0.48
65.00	5.20	6.50	0.52
70.00	5.60	7.00	0.56
75.00	6.00	7.50	0.60
80.00	6.40	8.00	0.64
85.00	6.80	8.50	0.68
90.00	7.20	9.00	0.72
95.00	7.60	9.50	0.76
100.00	8.00	10.00	0.80
105.00	8.40	10.50	0.84
110.00	8.80	11.00	0.88
115.00	9.20	11.50	0.92
120.00	9.60	12.00	0.96
125.00	10.00	12.50	1.00
130.00	10.40	13.00	1.04
135.00	10.80	13.50	1.08
140.00	11.20	14.00	1.12
145.00	11.60	14.50	1.16
150.00	12.00	15.00	1.20
155.00	12.40	15.50	1.24
160.00	12.80	16.00	1.28
165.00	13.20	16.50	1.32
170.00	13.60	17.00	1.36
175.00	14.00	17.50	1.40
180.00	14.40	18.00	1.44
185.00	14.80	18.50	1.48
190.00	15.20	19.00	1.52
195.00	15.60	19.50	1.56
200.00	16.00	20.00	1.60
205.00	16.40	20.50	1.64
210.00	16.80	21.00	1.68
215.00	17.20	21.50	1.72
220.00	17.60	22.00	1.76
225.00	18.00	22.50	1.80
230.00	18.40	23.00	1.84
235.00	18.80	23.50	1.88
240.00	19.20	24.00	1.92
245.00	19.60	24.50	1.96
250.00	20.00	25.00	2.00
255.00	20.40	25.50	2.04
260.00	20.80	26.00	2.08
265.00	21.20	26.50	2.12
270.00	21.60	27.00	2.16
275.00	22.00	27.50	2.20
280.00	22.40	28.00	2.24
285.00	22.80	28.50	2.28
290.00	23.20	29.00	2.32
295.00	23.60	29.50	2.36
300.00	24.00	30.00	2.40
305.00	24.40	30.50	2.44
310.00	24.80	31.00	2.48
315.00	25.20	31.50	2.52
320.00	25.60	32.00	2.56
325.00	26.00	32.50	2.60
330.00	26.40	33.00	2.64
335.00	26.80	33.50	2.68
340.00	27.20	34.00	2.72
345.00	27.60	34.50	2.76
350.00	28.00	35.00	2.80
355.00	28.40	35.50	2.84
360.00	28.80	36.00	2.88
365.00	29.20	36.50	2.92
370.00	29.60	37.00	2.96
375.00	30.00	37.50	3.00
380.00	30.40	38.00	3.04
385.00	30.80	38.50	3.08
390.00	31.20	39.00	3.12
395.00	31.60	39.50	3.16
400.00	32.00	40.00	3.20
405.00	32.40	40.50	3.24
410.00	32.80	41.00	3.28
415.00	33.20	41.50	3.32
420.00	33.60	42.00	3.36
425.00	34.00	42.50	3.40
430.00	34.40	43.00	3.44
435.00	34.80	43.50	3.48
440.00	35.20	44.00	3.52
445.00	35.60	44.50	3.56
450.00	36.00	45.00	3.60
455.00	36.40	45.50	3.64
460.00	36.80	46.00	3.68
465.00	37.20	46.50	3.72
470.00	37.60	47.00	3.76
475.00	38.00	47.50	3.80
480.00	38.40	48.00	3.84
485.00	38.80	48.50	3.88
490.00	39.20	49.00	3.92
495.00	39.60	49.50	3.96
500.00	40.00	50.00	4.00

©2016 Statewide Sales Tax Commission. This document is the property of the State of New York. It is loaned to you for your information only. It is not to be reproduced or distributed without the express written permission of the Statewide Sales Tax Commission.



SOME PEOPLE SAY
I HAVE A BAD ATTITUDE
I say Screw Them



**DRINK
COFFEE**

Do Stupid
Things
Faster
with More
Energy





KITCHEN
Be Sure to
Mind Your
EAT TOG
Always Than

GRO
Other
SL



ATHLETICS

Gently Down the Stream

FAIR & FAMOUS: The women's rowing team practices before dawn on the Genesee River on a mid-October morning. The team, coached by John Gaskin, had its start as a club sport 35 years ago. It became a varsity sport in 2009 and finished second in the Liberty League last year.

PHOTOGRAPH BY ADAM FENSTER





EASTMAN SCHOOL OF MUSIC

Kilbourn Convocation

WIND OF CHANGE: George Sakakeeny, a highly regarded bassoonist who joined the faculty of the Eastman School of Music this fall, helped dedicate the newly renovated Kilbourn Hall. Sakakeeny, accompanied by pianist Irina Lupines, performed during Eastman's convocation ceremony at the start of the school year. PHOTOGRAPH BY ADAM FENSTER

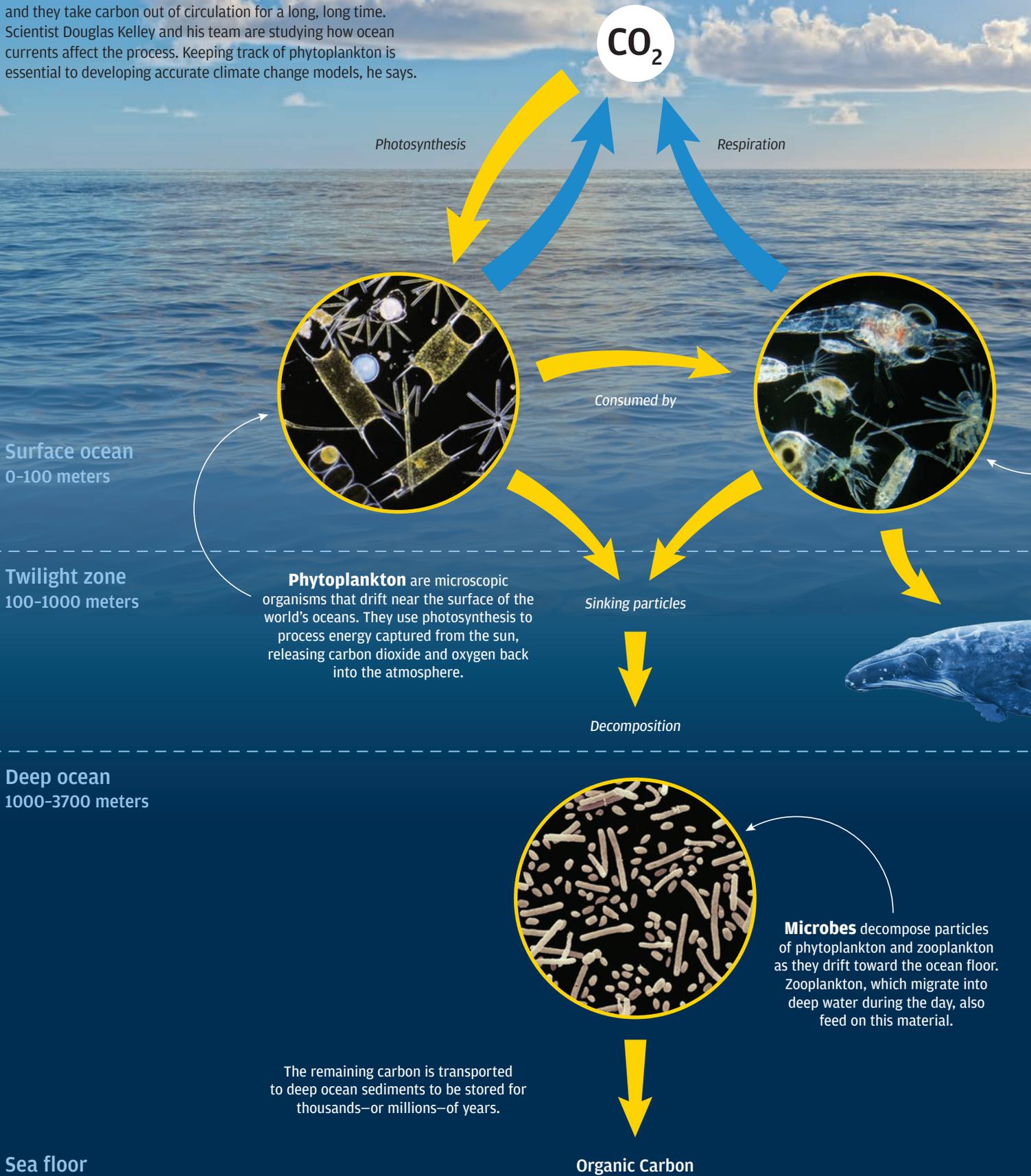


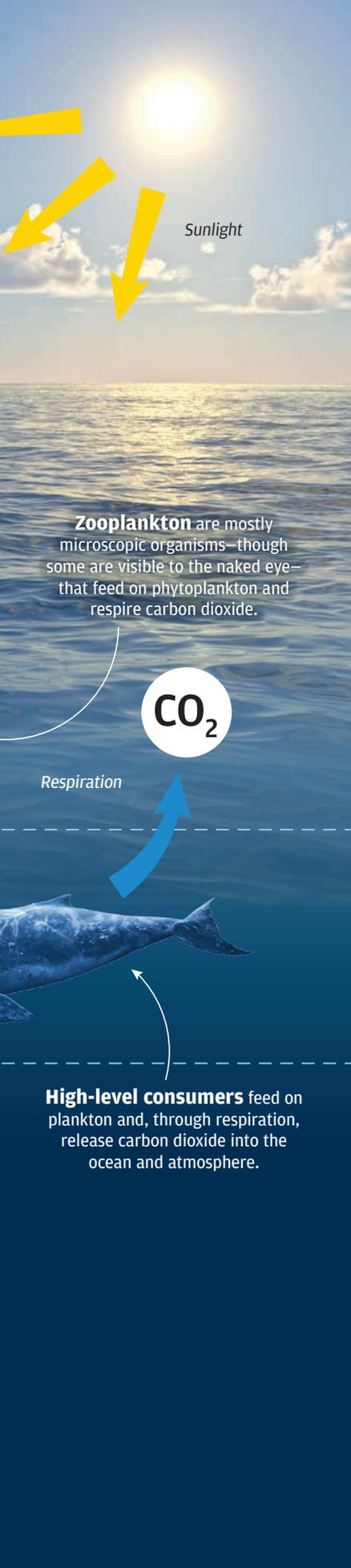
STEINWAY & SONS



Going Deep

Tiny phytoplankton are one of the planet's largest carbon sinks, and they take carbon out of circulation for a long, long time. Scientist Douglas Kelley and his team are studying how ocean currents affect the process. Keeping track of phytoplankton is essential to developing accurate climate change models, he says.





Sunlight

Zooplankton are mostly microscopic organisms—though some are visible to the naked eye—that feed on phytoplankton and respire carbon dioxide.

CO₂

Respiration

High-level consumers feed on plankton and, through respiration, release carbon dioxide into the ocean and atmosphere.

Learn

The Mysteries of Fluid Dynamics

Scientist and engineer Douglas Kelley goes with the flow.

Watch the cream pour into your coffee, cloudily curling and swirling through the darkness.

It's a more enigmatic process than you might think.

"Fluid mixing, and fluid dynamics generally, is a great example of how common, everyday things can really be subtle and intricate and complicated," says Douglas Kelley, an assistant professor of mechanical engineering.

He calls fluid mixing "devilishly difficult to predict, control, and understand." But he's working to make sense of it, through his research on the space and time dynamics of fluid flows and the materials that mix within them. In some cases—notably, in his work on ocean currents and phytoplankton—his interest is purely scientific. For other work, he puts on what he calls his "engineer's hat" and pursues applications, as in his work on fluid flow in liquid batteries, an emerging technology that could transform the electric grid.

While the foundations of fluid mixing research—basic thermodynamics and the conservation of energy, momentum, and mass—have been understood for a century and a half, fundamental questions remain.

Kelley teaches his graduate students how to derive the equations that underpin the science. "But the math is beautiful in that you can't solve it, and all of these surprises come out," he says. "And that's why it's 'devilishly difficult.' Nobody can solve this stuff straight up. Instead, we do experiments. And sometimes we get really surprised."

In their mixing laboratory in Hopeman Engineering Building, he and his team are investigating phytoplankton, microscopic marine plants that perform photosynthesis as they float in the ocean. They're at the base of nearly every marine food chain.

And the tiny organisms play a pivotal role beyond the ocean's buffet. They're also one of the earth's largest carbon sinks. When trees decay, the carbon dioxide they absorbed returns to the atmosphere. But when phytoplankton die, they sink to the bottom of the ocean—and the carbon dioxide they captured is taken out of circulation for about 10,000 years, the time it takes for the ocean to turn over.

"If you want to make accurate climate models, it's really important to keep track of where that carbon dioxide is going," Kelley says.

To help do that, he and his students carry out chemical reactions in the lab that model the replication of phytoplankton in the tumult of marine currents. They've found that the fate of phytoplankton in the ocean is much like that of a flame. If you blow gently on a lit match, you can make the flame grow. But blow too hard and you extinguish it.

"We've found a very similar phenomenon in our reactive mixing experiments," he says. When the team models a gentle fluid flow, that encourages phytoplankton growth. But a fast flow dilutes things so quickly that it kills off phytoplankton growth. "So there's a 'blowout' threshold," he says. The research has just been published in *Physics Review Letters*, a top journal in the field.

Kelley's winding educational and career path has cultivated his capacity to think as both a scientist and an engineer. An electrical engineering major as an undergraduate, he earned a doctorate in physics and then completed postdoctoral work, first in a mechanical engineering department and then in a materials science department. "And now I teach mechanical engineering,

but I don't have any mechanical engineering degree," he says. He calls Rochester's mechanical engineering department science focused. "So for somebody like me, who has straddled science and engineering, it's a great place to be."

He brings an engineer's mind to his work on liquid metal batteries, a technology that's being designed for grid-scale energy storage by a start-up company called Ambri, based in Cambridge, Massachusetts. The present electrical grid has almost no capacity to store electricity. Energy that's not being used during the relatively cool nights and mornings of a hot summer, for example, can't be saved for blisteringly hot afternoons, when air conditioners are running at full capacity.

But liquid batteries—just about four inches in size individually, but stacked together in groups the size of shipping containers to support the grid—are able to store a lot of energy and deliver it quickly. Using his fluid flow expertise, Kelley is investigating how battery performance and efficiency can be enhanced, and how the fluid mixing inside the batteries can be gauged to know, for instance, how a battery will perform at a certain temperature after it has been charged and discharged a certain number of times.

At a fundamental level, there are many commonalities between his oceanic and battery projects, he says—none more so, perhaps, than their unpredictability.

"You try to anticipate as many of the surprises as you can" if you're working as an engineer and "want to do practical things and control stuff," he says. "But then you can put on your scientist's hat, too—and just enjoy the surprises."

—Kathleen McGarvey

HUMANITIES CENTER

Mother Nature's Son

Explorer and scientist Alexander von Humboldt created the modern idea of nature, says author Andrea Wulf.

There are more places in the world named after Prussian explorer and naturalist Alexander von Humboldt than anyone else. Rivers, waterfalls, glaciers, mountains, lakes, bays, counties, and towns across the globe carry his name. The state of Nevada was nearly the state of Humboldt.

Yet he's almost forgotten, especially in the English-speaking world.

That's because his influence on our view of nature is so fundamental that we can hardly perceive it, argues Andrea Wulf, author of *The Invention of Nature: Alexander von Humboldt's New World* (Knopf, 2016). She spoke about the book in a public lecture in October. Her talk was part of the Humanities Center Lecture Series, focused this year on the environment.

Humboldt, who lived from 1769 to 1859, was once a household name, the most famous scientist of his day. The centenary of his birth was celebrated across the world. He was a tireless adventurer and astute scientific observer who, Wulf contends, invented the modern idea of nature: a global web of life in which humankind is only one piece among many.

"Humboldt was not known for a single fact or a discovery but for his worldview," she writes. "His vision of nature has passed into our consciousness as if by osmosis. It is almost as though his ideas have become so manifest that the man behind them has disappeared."

He was the first to suggest human-induced climate change. Wulf calls him the unacknowledged "founding father" of current-day environmentalism, who influenced such pivotal figures as John Muir, George Perkins Marsh, and Rachel Carson. And he drew the veneration not only of scientists like Charles Darwin—who called him "the greatest scientific traveller who ever lived"—but authors, artists, politicians, and poets. Among his admirers were Thomas Jefferson, Johann Goethe, William Wordsworth, Samuel Taylor Coleridge, Ralph Waldo Emerson, Edgar Allan Poe, Walt Whitman, and Henry David Thoreau.

"He's a scientist who's obsessed with



WORLD-WIDE WEB: Alexander von Humboldt's 1806 expedition to Mount Chimborazo in Ecuador helped form his vision of nature as a "living whole." When he sailed home from Latin America, he carried a sketch of Chimborazo, a drawing whose ideas "would change the way future generations perceived the natural world," Wulf writes.

hard scientific data, but at the same time he is saying we need to use our imaginations," says Wulf. "We will only protect what we love—he's driven by a sense of wonder."

She describes him as "one of the last polymaths," whose scientific work was shaped by his conviction that human experience of the natural world was not just a rational pursuit but also a sensory and

emotional one. For him, science and the arts were inextricable.

Ironically, Humboldt was writing his masterwork, *Cosmos*—published in five volumes between 1845 and 1862—just at the time that science was becoming professionalized. He began the book in 1834, the year that the term "scientist" was first used.

As he wrote *Cosmos*, he struggled with the burgeoning body of specialized scientific work. "He sees how it exponentially increases everywhere," Wulf says. He would write to scientific experts, asking them to check over his drafts—but by the end of his life, there was no way any one person could remain atop all the science being produced.



Historian and writer Wulf is the author of five books, including *The Brother Gardeners: A Generation of Gentleman Naturalists and the Birth of an Obsession* (Vintage, 2010), winner of the American Horticultural Society's Book Award in 2010, and *Founding Gardeners: The Revolutionary Generation, Nature, and the Shaping of the American Nation* (Vintage, 2012), a *New York Times* best seller.

To write her newest book, she retraced some of Humboldt's journeys. "He wasn't a cerebral scholar," she says. "He was brazenly adventurous." In following his footsteps, especially in South America, she realized "how much he was pushing his body to his limits."

Fueling his travels was a love of nature that he sought to ignite in others. "At a time when other scientists were searching for universal laws, Humboldt wrote that nature had to be experienced through feelings," she writes.

That her book is shelved among biographies in bookstores makes Wulf quizzical.

"For me, it's never been a biography of Humboldt," she says. "It was always a biography of how we think about nature."  —KATHLEEN MCGARVEY



HUMANITIES DIRECTOR: Historian Rubin will head center.

Rubin Leads Humanities Center

A noted scholar of American history, Joan Shelley Rubin, has been appointed director of the Humanities Center. Rubin is the Dexter Perkins Professor in History and served as interim director from the center's creation in spring 2015. She'll hold the title of Ani and Mark Gabrellian Director of the Humanities Center.

Rubin says that her work with the center flows naturally out of research to which she has long been devoted. "I'm a historian of the dissemination of the humanities, fundamentally," she says. An American cultural and intellectual historian, Rubin is the author of *The Making of Middle-brow Culture* (University of North Carolina Press, 1992) and *Songs of Ourselves: The History of Poetry in America* (Harvard University Press, 2007), among other projects.

The Gabrellian Directorship is named in recognition of the support of University Trustee Ani Gabrellian '84 and her husband, Mark Gabrellian '79. In addition to the directorship, the couple established the annual Hagop and Artemis Nazerian Lectures, named for Ani Gabrellian's parents and held by the center.

The center, which has a new home in Rush Rhees Library, supports multidisciplinary engagement with literature, history, the arts, and philosophies of cultures past and present in order to foster educated, contributing global citizens. Rubin joined the University in 1995 and specializes in 19th- and 20th-century American history and the history of the book. She serves as the history department's director of graduate studies and also directs the American Studies Program, an initiative she helped found in 2011. Collaboration and exchange are at the heart of the center's efforts to enhance the study of the humanities at Rochester and strengthen ties to related disciplines. But Rubin said that she will also make sure that "the lone scholar, the isolating work of reading a text closely yourself," is also supported.

And she aspires to a wide reach.

"I want our center to touch the life of every University of Rochester undergraduate," she said. "It's a lofty goal but an important one because I firmly believe that an appreciation for the humanities and an understanding of human culture are central to what it means to be an educated citizen."

—Kathleen McGarvey

For more information on the Humanities Center, visit <http://www.sas.rochester.edu/humanities/>.



Ask the Archivist: 'What's the History of This Hat?'

A question for Melissa Mead, the John M. and Barbara Keil University Archivist and Rochester Collections Librarian.

My father, Hiram J. Neun, attended the University, as did his five sisters, two cousins, and my mother. My dad kept a yellow and green hat that he always said was his freshman beanie. Can you tell me if that is true? —Mary Ellen Neun Parry '63, Belle Mead, New Jersey

The story behind freshman caps knits together 66 years of student traditions and some colorful etymology.

The first mention of organized cap-wearing at the University appears in a 1900 issue of the *Campus* (it would become the *Campus-Times* in 1955): "A large number of the Sophomore Class are wearing class caps. Some of the Seniors are doing the same, and the Freshman [sic] are likely to have a class cap soon."

There is no further mention of caps until May 1904, when the newspaper reports that the freshmen at Syracuse University "buried with appropriate ceremony a little green cap, indicative of their first year in college."

The fact that student publications at colleges and universities reported each other's campus news is important: any number of fads and rituals (school colors and caps included) were spread this way.

The Class of 1908 is credited with starting Rochester's tradition of freshman class caps (theirs were the "regulation gray Eton cap with green button"). Rather than bury the caps, they threw them on a bonfire at the end of the term in June 1905.



GREEN BEAN: Hiram Neun '33 handed down a knitted beanie (above) to his daughter; the Class of 1935 (top) keeps warm before Rush Rhees Library in green-and-yellow Frosh caps.

Why green, when orange was chosen as Syracuse's official color in 1890, and Rochester selected dandelion yellow in 1893? According to the *Oxford English Dictionary*, "green" began to denote immaturity in the 14th century. First-years were more than just green—"The Pea-Green Freshman" is found in the 1903 publication *Some Songs We Sing at Rochester*. Dartmouth still has "pea greens," to complement its school color.

Rochester student handbooks cite caps as a freshman requirement between 1905 and 1937, and the caps also served an interclass-rivalry hazing purpose: sophomores set traditions for the freshmen, and for a time entrepreneurially sold the hats as a fundraising engine. Sophomores also made the rules for when hats could be officially

doffed—either by a specified date or if the freshmen won the annual Flag Rush.

Hiram Neun enrolled with the Class of 1933, but the group photograph in the *Interpres* shows the class headgear to be the Eton caps. "For exorbitant sums we were allowed to purchase very unbecoming green hats, which promptly shrunk several sizes after the first rain," reported Robert Metzdorf '33, '39 (PhD) on the "Class History" page.

Although your father withdrew for health reasons after his freshman year, he was readmitted with the Class of 1935: his knitted cap (the student handbook calls it a "toque") looks very like those worn by the freshmen of 1935—green with a yellow stripe, topped with a matching pom-pom.

World War II saw the suspension of many traditions, but by 1949 caps were back, and both men and women continued to wear them until 1967.

The earliest frosh cap preserved in the archives belonged to Julius Kuhnert, Class of 1914. Made of felted wool, it's green with a yellow button on the top. By 1934, the colors had changed to blue and yellow.

Cap, toque, beanie, or bucket? The archives welcomes any hat thrown in its ring: Jane Speyer Weber '66, '67 (MA) and Peter Tyor '66 graciously donated a yellow-and-blue beanie and a blue-and-yellow bucket-style hat, respectively, at Meliora Weekend 2016.

Need History?

Do you have a question about University history? Email it to rochrev@rochester.edu. Please put "Ask the Archivist" in the subject line.

Q&A

Strange Science

When the makers of the new Marvel movie *Doctor Strange* needed some scientific guidance, they turned to Rochester physicist Adam Frank.

Interview by Peter Iglinski

As you would expect, Adam Frank, a professor of physics and astronomy, has a pretty good handle on the laws of physics in this universe. But what happens when the universe under discussion is fictional? And the beings who populate that universe have super powers?

The makers of the latest Marvel blockbuster, *Doctor Strange*, wanted the fantasy film to have scientific substance. For help, they turned to Frank, who was a science consultant on the film.

mystical master fighting against the forces of evil.

If Strange becomes a sorcerer, why do the filmmakers need a science consultant? Aren't magic and science incompatible?

The interesting thing about the Marvel movies is that they've built a consistent and coherent universe with laws of physics.

They are, of course, not our laws of physics. So when you've got this science-y universe and a character who's all about sorcery and magic, how do you bring that character

neurons are just atoms, so everything can be reduced to the lowest level of structure. But we don't really have a science of consciousness.

I'm a lapsed reductionist. I went into science because I was a reductionist, and as time has gone on, I think there's more that needs to be accounted for. The philosopher David Chalmers wrote a very influential paper in the 1990s called "On the Hard Problem of Consciousness." His perspective was that the vividness of internal experience—the fact that you're present, that there is a present for you in

the world—can't be explained just by atoms. You may need to explain it by some new thing, something else in the universe to explain it.

And I thought that opened up possibilities for the narrative. Now, suddenly, Strange is tapping into this "something else" that is what consciousness is.

Do you regret any of the compromises the movie makes with science—or, at least, our universe's science?

The one place in the movie where I winced a bit was then they used the word "soul." The Ancient One pushes Strange's soul out of his body, and there's a moment of astral projection

I don't really believe in souls. The awesome part for me is I get to tell people about, in Chalmers's words, "the hard problem of consciousness."

My job as a science communicator is to get people to think about how science works. But philosophy is just as important to me in getting people to think about this fundamental question, what is the nature of consciousness? How does consciousness express itself in the material world? What does that tell us about the material world and the world of consciousness? When I do that, I can go home and be happy. 

Adapted and edited from a University podcast at [Rochester.edu/newscenter/doctor-strange-science](https://rochester.edu/newscenter/doctor-strange-science).



SCIENCE? Frank helped address a "particular difficulty with *Doctor Strange*" (played by Benedict Cumberbatch): the source of his powers in Marvel's "science-y universe."

Who is Doctor Strange?

Stephen Strange is a brilliant but arrogant neurosurgeon who loses the use of his hands, at least to conduct surgery, because of a car accident. He looks for some way to heal his hands, and goes through all kinds of surgeries. He ends up in Tibet as a last resort, in front of the Ancient One, a mystical master. She opens him up to the fact that there's more to life, and to the world, than his reductionist way of looking at things. He becomes her disciple and trains to become a sorcerer, an occult

into the universe—Marvel's cinematic science of the universe—in a way that's coherent, but that doesn't damage the character? How do you account for Strange's powers? Where do they come from? I was brought in to help answer those questions.

What solution did you propose?

My take on this was to look at consciousness, rather than to try to explain his powers using neuroscience. In philosophy there is the mind-body problem: what is the relationship between the neurons that are in your brain and the experience of consciousness itself?

There's a reductionist view that says anything, whatever your feelings, love or joy, they're really just neurons, and those

President Seligman Responds to Report from Campuswide Security Commission

President and CEO Joel Seligman has adopted a set of recommendations from a campuswide Security Commission, including a recommendation that a limited number of officers in the University's Department of Public Safety who are assigned to the Medical Center be armed.

In accepting the recommendations, Seligman, the G. Robert Witmer, Jr. University Professor, also announced the establishment of a Public Safety Review Board, whose members will

provide an independent review of the department. The inaugural chair of the board is Francis Price '74, '75S (MBA), a member of the University's Board of Trustees.

"Safety of all those on our campus is the most important consideration in making these decisions," Seligman said in an October email to the University community. He reiterated that while the University as a whole remains a "very safe campus," there have been incidents, particularly in the Emergency

Department at the Medical Center, in which "the potential of unacceptable violence to our employees, patients, and visitors" has threatened campus safety.

According to the recommendations, a total of 42 officers out of 180 members of the Department of Public Safety would be armed. Those officers will be authorized only after receiving psychological screening and training, and their patrols would be limited to the Medical Center.

No officers will be armed for

routine assignments on the River Campus, at the Eastman School of Music, or outside the Medical Center. The recommendations are the result of a nine-month process that included research, review, benchmarking, and discussion among both campus and noncampus constituencies. The commission was chaired by Holly Crawford, senior vice president and CFO.

To read the president's announcement, visit Rochester.edu/president/memos/2016.



TOP TEACHERS: Professors Beth Jörgensen, Amy Lerner, and Bradley Nilsson received this year's Goergen Awards for Excellence in Undergraduate Teaching in Arts, Sciences & Engineering.

Trio of Longtime Professors Honored for Teaching Excellence

Three longtime faculty members are recipients of the 2016 Goergen Awards for Excellence in Undergraduate Teaching. They were honored at an October ceremony.

Beth Jörgensen, a professor of Spanish; Amy Lerner, an associate professor of biomedical

engineering; and Bradley Nilsson, an associate professor of chemistry, are this year's honorees. They were nominated by their department chairs and chosen by a committee of deans: Richard Feldman, dean of the College; Gloria Culver, dean of the School

of Arts & Sciences; and Wendi Heinzelman, dean of the Hajim School of Engineering & Applied Sciences.

The awards were established in 1997 by University Trustee Robert Goergen '60 and his wife, Pamela.

All University Campuses Will Be Smoke-Free

Beginning next July, all University campuses and locations will be tobacco-free both inside and outside of buildings.

The decision to become completely tobacco-free—including cigarettes and e-cigarettes, cigars, pipes, vape pens, and smokeless tobacco—comes after a University working group concluded that a tobacco-free campus is in keeping with being an academic and medical institution that promotes health and wellness, and one that's welcoming to all.

The University enacted its first smoking ban inside of campus buildings in 1993. The Medical Center became smoke-free indoors and out in 2006.

Free tobacco cessation programs and resources will be promoted to University community members. In recognition of the challenge of overcoming tobacco addiction, a small number of smoking outposts will be established on the River Campus, following a model adopted by the Medical Center when it made the change.



LAB MATES: Thomas Howard, assistant professor of electrical and computer engineering (center), introduces Upward Bound students Sharell Williams and Raul Santiago to his robotics lab.

Federal Grants Recognize University's Programs

The University has received federal funding to expand the reach of its programs that engage underrepresented minority, low-income, and first-generation students in science and engineering.

With a \$300,000 grant from the National Science Foundation, the University will demonstrate how faculty involvement in

its Upward Bound precollege program is a model for three other institutions in upstate New York—and perhaps nationwide. The funding is part of a new NSF program known as INCLUDES.

Another \$380,000 NSF grant will allow underrepresented engineering students from other institutions to do summer research at Rochester, in a program that

closely mirrors one that has prepared many of the University's own engineering students for graduate school.

Beth Olivares, the University's dean for diversity and executive director of the Kearns Center for Leadership and Diversity in Arts, Sciences & Engineering, is the principal investigator for both grants.

Rochester Hosts Entrepreneurship Educators

Entrepreneurship experts from more than 220 American universities, as well as representatives from Australia, Brazil, Mexico, Sweden, Spain, and the United Kingdom, gathered in Rochester to exchange ideas about entrepreneurship education this fall.

The University partnered with Rochester Institute of Technology to host the Global Consortium of Entrepreneurship Centers.

Administered by the premier academic organization for the nation's university-based centers for entrepreneurship, the conference allows universities to network, benchmark, and explore how best to promote entrepreneurship education and new venture creation.

Featuring more than 200 panelists at 50 plenary sessions, workshops, breakout discussions, and keynote speeches, the conference is sponsored by the Ewing Marion Kauffman Foundation.

Surgeons Perform 200th Heart Transplant

A 48-year-old father received a second chance on life as cardiac surgeons at Strong Memorial Hospital reached a medical milestone. In August, Stephen Waite Jr. of Oswego, New York, became the program's 200th heart transplant patient.

Transplant surgeons Juan Lehoux, surgical director of the Program in Heart Failure and Transplantation, and Sunil Prasad, performed the six-hour life-saving procedure.

Since performing its first transplant in February 2001, the Medical Center has become the only comprehensive heart transplant center in upstate New York, serving patients from northern New York to Pennsylvania.



FRESH FACES

Meet the Newest Admissions Counselors

The Office of Admissions introduced its newest group of counselors this fall. "It was exciting to see this group of candidates emerge," says Jonathan Burdick, dean of College Admission and vice provost for enrollment initiatives. "While they have important differences in perspective—something we need more than ever around the admissions committee table—there was also a synergy of interests that these millennial employees have. Interest in reforming, rethinking, and helping the University grow and change in dimensions that match the future of the country and rigorous higher education." Clockwise from far left are Sarah Gerin '12, Lisa Anthony, Tarik Cristen '16, Robert De Leon, Kayon Ellis '16, and Maeve Willis '14.

Can One Protein Help Slow the Aging Process?

Biologists, geneticists, and other scientists who study the cellular processes of aging have long focused on a gene known as sirtuin 6 (*SIRT6*)—so much so that it's been identified as a “longevity gene.”

SIRT6 helps repair DNA that's been damaged as a result of normal chemical processes in cells. But so far, investigators have been unable to determine what triggers the gene.

Rochester biologists Vera Gorbunova and Andrei Seluanov say they've discovered a clue: a protein that appears to play a

role in activating *SIRT6*, setting in motion a cascade of molecular activity to repair damaged DNA.

To find out what activates *SIRT6*, the researchers alternately applied chemical inhibitors to human skin cells to determine which proteins were essential in getting the gene to repair broken DNA strands. They discovered that one protein was involved in activating the gene in response to oxidative stress—c-Jun N-terminal kinase, or JNK. When JNK was inhibited, *SIRT6* was not activated, and the broken strands of DNA were not repaired efficiently.

The study, published in the journal *Cell Reports*, is the latest by Gorbunova and Seluanov to shed light on the molecular mechanisms that drive the aging process. While more research and clinical work need to be done, such studies might allow pharmaceutical researchers to one day design drugs that activate *SIRT6* in ways that reduce molecular damage.

“These drugs may be used to protect our genomes from damage, and could ultimately prevent cancer and extend healthy lifespan,” says Seluanov.

—Peter Iglinski

Treatment Possible for Rare Form of Muscular Dystrophy

The findings of a new Rochester study could pave the way for the first U.S.-approved treatment for Duchenne muscular dystrophy.

A condition found almost exclusively in boys, Duchenne muscular dystrophy is characterized by muscle weakness that rapidly leads to significant disability and ultimately affects other areas, including the heart and muscles responsible for breathing. An estimated 28,000 people in the United States are affected by the disease, which is often fatal by the time a patient reaches the late teens.

“Duchenne muscular dystrophy patients have limited treatment options and a desperate need for effective therapies,” says Medical Center neurologist Robert Griggs. He's the lead author of a study showing that a corticosteroid known as deflazacort is a safe and effective treatment to combat the disease's progression. The study is published in the journal *Neurology*.

Approved for use in Europe and elsewhere, deflazacort has never been through the approval process of the U.S. Food and Drug Administration (FDA). Although the drug was the subject of a clinical trial in the United States in the mid-1990s, soon after the trial was completed, the company sponsoring the research lost interest and the study results were never published.

At the urging of patients and families, Griggs—a professor of neurology, medicine, pathology and laboratory medicine, and pediatrics—and others have spent years trying to get access to the original study. The new data is their effort to recreate it.

Two new drug applications based on the study are now before the FDA.

—Mark Michaud



MIND AND BODY: Psychological factors play a role in physical frailty, according to a new Rochester study.

Helping the Frail Elderly Means Looking Beyond Physical Ailments

A new study published in the *Journals of Gerontology* suggests that the physical frailty experienced by about one in 10 people over age 65 is influenced by psychosocial factors, including chronic stress, socioeconomic status, and how much control they believe they have over their own lives.

Christopher Mooney '10M

(MPH), '16W (PhD) and collaborators from the Warner School of Education and the Medical Center found that chronic stress is associated with feeling less control—and that, in turn, is associated with greater physical frailty. Similar results were found for the effects of poverty, and the findings were the same across age,

gender and racial subgroups.

The results, says Mooney, have important implications for interventions aimed at making people less frail and improving the health of those at risk of frailty. The study is one of the first to investigate the effects of chronic stressors on physical frailty.

—Theresa Danylak

Progress toward a New Flu Vaccine

A rare mutation in a protein encoded by an influenza virus may be useful in developing a new live vaccine, according to Medical Center researchers.

The mutation weakens the flu virus by rendering the flu-encoded protein, called Non-Structural 1, or NS-1, defunct. The flu virus needs the encoded protein to prevent the immune system from alerting the host cell that it has been infected. Inhibiting the immune system affords the virus time to multiply and spread before the system can mount an attack.

Most people have healthy immune responses and would quickly and easily fend off a weakened mutant strain of flu. But a tiny percentage of people have an immune system defect that allows the mutant virus to replicate.

David Topham, the Marie Curran Wilson and Joseph Chamberlain Wilson Professor of Microbiology and Immunology, and Marta Lopez de Diego, research assistant professor of microbiology and immunology, say the NS-1 mutation has been found in just 0.03 percent of all flu strains reported in a national database. The pair isolated the mutated virus from a nasal swab of a single flu sufferer who happened to be among the small

percentage of people with inadequate immune responses.

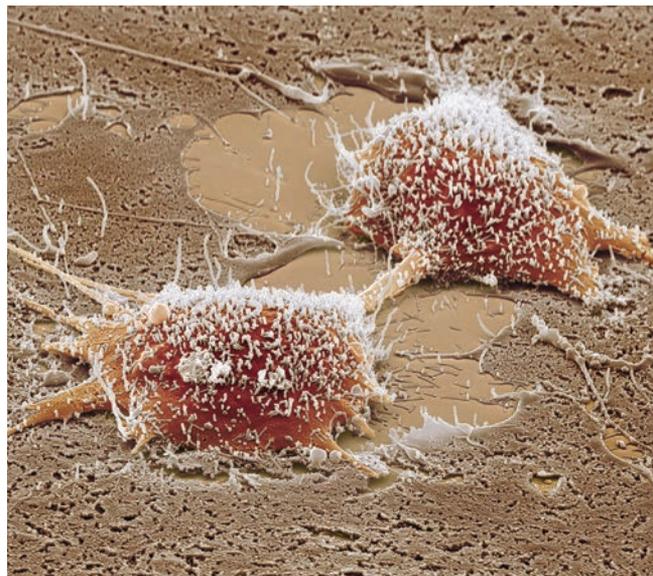
Now that they have isolated the virus, Topham and Diego hope that the naturally occurring attenuated virus can be used to create a new live flu vaccine. A new live vaccine would be particularly advantageous, as the Centers for Disease Control and Prevention stopped recommending use of the live attenuate flu vaccine FluMist earlier this year. Several studies found that the pain-free nasal spray, which was used in about one-third of young children in the U.S., offered no protection to that especially vulnerable population.

The study, published online in the *Journal of Virology*, also highlights the importance of flu virus surveillance—research in how the flu is changing, what flu mutations are circulating in humans and animals, and how those mutations affect virus function. Until recently, researchers believed that proteins like NS1 did not change much from strain to strain, or from season to season. But Topham's study and others like it show that NS1 mutations occur naturally, and can affect the protein's ability to suppress immunity. Monitoring for such mutations in nature could lead to more effective vaccines.

—Susanne Pallo



PAINFUL: A popular nasal spray has been shown to be ineffective against the flu. Rochester scientists are helping fill the treatment void.



GLUTAMINE GLUTTONS: Cancer cells devour glutamine in order to replicate. They do it by fermenting sugar, according to a new study.

Looking at Cell Metabolism, Finding Clues to Cancer

Cancer cells have their own unique ways of reproducing, involving a shrewd metabolic reprogramming that has been observed in virtually all types of cancer, but not in normal cells. In an article published in *Cell Reports*, Medical Center scientists show for the first time how cancer-causing mutations control and alter the way cancer cells biosynthesize and replicate.

The discovery is the result of a collaboration between the laboratories of Joshua Munger, associate professor of biochemistry and biophysics, and Hucky Land, the Robert and Dorothy Markin Professor and chair of biomedical genetics and director of research at the Wilmot Cancer Institute.

“Every tissue or cell type in the body has different metabolic needs. But as cells become cancerous their metabolism shifts in ways that are very different from normal cells,” Munger says. Identifying those differences is critical to developing treatments.

It's been known for decades that cancer cells siphon glucose from the bloodstream at alarming rates. But cancer's sugar addiction is only one part of the story. While sugar is the primary

source of fuel for biosynthesis of normal cells, cancer cells switch from burning to fermenting sugar—a process that Land and Munger say is driven by cancer-causing mutations.

They also discovered that sugar fermentation in cancer cells facilitates their consumption of glutamine. Glutamine is abundantly available in the bloodstream, and cancer cells take in large amounts of it to support cell division.

“Our paper demonstrates that cancer cells, but not normal cells, depend on this link between sugar fermentation and glutamine consumption,” Land says. “This suggests a novel way that we might be able to intervene with treatment.”

Bradley Smith, a scientific staff member in the Land lab, led the experiments, which were conducted with colon cancer cells. Preclinical data show that by blocking enzymes that are specific to colon cancer cell metabolism, tumor growth is slowed or stopped.

“Is it possible to apply this to other cancers? That's our next question,” Munger says. “We're testing how this could be broadly applied in the clinic.” —Leslie Orr



ATHLETICS HISTORY

Milestone Meet

Rochester's 1991 national cross country champions celebrate 25th anniversary.

By Dennis O'Donnell

As late summer arrived in 1991, expectations were running high for the Yellow-jacket cross country program.

During the previous four seasons, Rochester had been a dominating presence in New York: four straight state titles, three NCAA regional championships, and four consecutive Top 10 finishes at the NCAA championship meet.

The team had come tantalizingly close to winning a national title, finishing third in 1988, seventh in 1989, and fourth in 1990.

They had come so close, in fact, that captain Joseph Mello III '92 had begun the



RETURNING CHAMPIONS: Members of the 1991 cross country team were special guests during Meliora Weekend, where several events marked the 25th anniversary of their national championship season. Returning for the ceremonies were (front row) Dave Boutillier, Jim Dunlop, Joe Mello, Christian Reed, Tony Kerr, Don Dalrymple; (middle row) coach Timothy Hale, Tim Voloshen, Dan Goldstein, Mark Gage, Dave Sullo, Bryan Goetsch; (back row) Mike Accardi, Willie Houghton, Ray Lawson, and Craig McMurtry.



CHAMPIONS! The Yellowjackets won the cross country national championship in 1991, capping off a stretch in the late 1980s and early 1990s when the team finished among the top 10 in the country five years in a row.

season by predicting big things for the talented and experienced team. But he had seen firsthand how challenging it could be to win it all.

"It takes talent and hard work to get the opportunity to fight for that spot," Mello says, "but the difference between first and fourth at the highest levels is razor thin, and you need a break."

After a season of winning nearly every meet on their schedule, the Yellowjackets realized that the finishing order of the NCAA championship meet had turned into a cliffhanger.

As finishers crossed the line, race officials tore a slip of paper from each runner's jersey and used that information to sort the results. The racers were given a piece of paper that noted their finishing order.



ATHLETICS & RECREATION

Hall of Fame Inducts Class of 2016

FAMED FACES: The 2016 inductees to the University's Athletics Hall of Fame are (back row) Everett Phillips (track and cross country coach); Joseph Sebastianelli '85 (football); Jason Walker '96 (soccer); Tim Voloshen '96, '00 (MS) (cross country); Adrian Smalls '88 (basketball); (front row) John Dunnigan '68 (football); Barbara Bliss Mahnke '86 (swimming); Karen Kreutziger Colombe '01 (lacrosse); and Andrew Milne '91 (football).

But the results wouldn't be official until the NCAA extracted the information for all 185 runners.

"Right after the race, we were very worried," says Ray Lawson '92.

Coach Tim Hale, accompanied by former Yellowjacket runners Dick Keil '83 and Tom Tuori '87, had scrambled to tabulate results, but Hale wasn't sure he had more than a rough sense of how Rochester had done.

Adding to the team's anxiety, Chris Rizzo '93 had collapsed in the finish chute and had to be treated for heat exhaustion.

Mello and others began to doubt whether they had the title. "I remember finishing and starting to count informal scores and thinking we just missed again. The unofficial scores looked like we finished second or worse."

In the final tally, Rochester had edged out three-time defending national champion Wisconsin-Oshkosh and pushed ahead of surprise challenger North Central of Illinois to claim the top spot.

The margin of victory was the closest in what was then the 19-year history of the national meet. Rochester finished with 139 points, eight ahead of North Central and 11 more than Wisconsin-Oshkosh.

Three Yellowjackets—Jim Dunlop '92, Dave Boutillier '92, and Mello—earned All-America honors. Dunlop was the national

individual runner-up. Mello was 10th overall, and Boutillier was 17th. Joining them at the finish line were Anthony Kerr '93 in 44th and Lawson in 67th.

It was the first national title for Rochester in cross country, a milestone that was recognized during Meliora Weekend in October. Among those honored was Hale, who says the team understood the expectations placed on them but also knew that they couldn't take anything for granted.

"We enjoyed the respect that coaches across the country had for us, but we also knew the last day of the season would be the final say," he says.

For Mello, "On that day, I felt the pressure go. I felt we finally carried that baton across the line, a process that started years before I ever showed up on campus. I have never forgotten the role we played, and the road those before us paved that gave us that opportunity."

Mello says he's proud to have been part of something "greater than I could have ever imagined," the culmination of years of hard work, dedication, sacrifice, and training. But he also recognizes the luck, timing, and fortune that were in the right place at the right time—"with the right people." 

Dennis O'Donnell is director of communications for the Department of Athletics and Recreation.



AN EVER BETTER TOMORROW: Singing “The Genesee” are Ed Hajim '58, University trustee and board chairman emeritus; Cathy Minehan '68, cochair of *The Meliora Challenge*; Joel Seligman, University president and CEO; Delores Conway, professor at the Simon Business School; Brenda Tremblay, WXXI-FM radio host and emcee for the event; Bob Witmer '59, University trustee and board chair emeritus; Tom Farrell '88, '90W (MS), senior vice president for University advancement; Danny Wegman, chairman of the Board of Trustees; and Crystal Colon '17, an English major and student leader from Perth Amboy, New Jersey.



Momentous Meliora!

Meliora Weekend brings alumni, faculty, students, and family together to celebrate their connections to Rochester.

FIRE PLACE: Steven Broida '18, a member of Strong Jugglers, demonstrates his skills during the group's annual show.



CONVERSATIONS ON RACE: (left) Vice President and University Dean Paul Burgett '68E, '76E (PhD) talks to filmmaker Ken Burns about race in America at the Presidential Symposium. Burns's grandfather, Robert Kyle Burns Jr., was a member of the University faculty from 1928 to 1939. Burns and Burgett also spoke with WXXI-FM public radio's Evan Dawson. To listen, visit wxxinews.org/post/connections-filmmaker-ken-burns-race-america.

Meliora Weekend



EVER BETTER SELFIE: (above) Twin sisters Mary '19 (left) and Sarah Ogunji '19, from the Bronx, were among the many students and visitors who paused to admire, pose against, and even climb upon the temporary installation of the University motto that graced the Eastman Quadrangle for the duration of Meliora Weekend.

MORNING JOE: MSNBC hosts Joe Scarborough (immediate right) and Mika Brzezinski deliver a morning keynote address—a lively discussion about electoral politics, the rise in political vitriol, and the decline of bipartisanship.





STAR ENTERTAINERS: *Daily Show* host Trevor Noah (top) entertains a packed Palestra; multiplatinum singer and songwriter Ben Folds (above), whose past collaborations include work with the University's own *Midnight Ramblers* and the *YellowJackets*, performs a free outdoor concert.

MEL TALKS: Benjamin Meyerhoff '96 (left), celebrating his 20th reunion, presents "Please Forgive Me If I Don't Stand Up," his perspectives on trauma recovery, perseverance, and augmented life with paralysis. MEL Talks is an annual series of presentations exploring research, ideas, and culture.

Meliora Weekend



RAISING THEIR VOICES: Kimberly Rouse '17 (center), an audio and music engineering major from Philadelphia, and the other members of the coed a cappella group After Hours perform at the A Cappella Jam, held at the Palestra.

MILLER'S COURT: Arthur Miller '56 moderates the annual Miller's Court panel, this year focusing on "The Next President, the Supreme Court, and You." Panelists included (left to right) Jason Altabet '17, the first student to ever participate in a Miller's Court panel and the current president of the Rochester chapter of Mock Trial; Lew Kaplan '66, U.S. district judge for the Southern District of New York; David Primo, the Ani and Mark Gabrellian Professor and an associate professor of political science and business administration; Robert McNamara, senior attorney with the Institute for Justice; Jennifer Farmer '99, managing director of communications for the PICO National Network; and University President and CEO Joel Seligman.





MUSICAL MOMENTS: Provost and Senior Vice President for Research Rob Clark (top) performs with his band, Don't Know Jack, at the dedication of the Edmund A. Hajim Science & Engineering Quadrangle; students in the Eastman Saxophone Project (above) were among the performers at the *The Meliora Challenge* celebration dinner.

UNIVERSITY ICON: University Trustee and Board Chairman Emeritus Ed Hajim '58, his wife, Barbara, and their children and grandchildren pose with a new statue of Hajim on the Edmund A. Hajim Science & Engineering Quadrangle. The statue, by sculptor Marc Mellon, was dedicated during Meliora Weekend.

Connecting a Community

A fundraising campaign is about forging connections as much as it is about raising money.

Interview by Kathleen McGarvey

When *The Meliora Challenge* comprehensive campaign ended in June, five years after its public launch, the University had raised more than \$1.373 billion, exceeding the \$1.2 billion goal.

More than 200,000 donors and 7,300 volunteers took part. The campaign has brought more than 100 new endowed professorships, more than 400 new scholarships and fellowships, and more than \$129 million for new and improved facilities and infrastructure.

The Medical Center led a nearly \$700 million campaign for *The Meliora Challenge*, a major portion of which provided for the new Golisano Children's Hospital, an eight-story space dedicated to healing the 74,000 children across the region who rely on the University for care each year.

Tom Farrell '88, '90W (MS), senior vice president for University advancement, says that he's grateful for the outpouring of generosity—and that the funds the campaign raised are crucial for the Uni-

One of the great things that came out of this campaign is our memorable mission statement: Learn, Discover, Heal, Create—and Make the World Ever Better. It's a pretty remarkable distillation of what great American research universities are all about.

versity to carry out its many functions. But he calls the role that the campaign has played in rallying people to reconnect with Rochester and its mission even more essential. Those relationships are the real key to making the University “ever better,” he says.

From his base in the Larry and Cindy Bloch Alumni and Advancement Center, Farrell has led the advancement program since 2014. A Rochester native, he was vice president for alumni relations and development at the University of Chicago before becoming chief development officer for the University of Illinois and president and CEO of the University of Illinois Foundation. He also served in leadership roles at the University of Pennsylvania and Dartmouth. His more than 25 years of advancement experience began in 1990, when he worked in the reunion and regional development program at Rochester.

What's the value of campaigns?

They're very effective tools for forming a vision and a set of priorities for an institution's future. They bring the people who care about a place together around objectives and ideas that they connect with and want to participate in.

So campaigns are also an exercise in clarification?

Absolutely. One of the great things that came out of this campaign is our memorable mission statement: Learn, Discover, Heal, Create—and Make the World Ever Better. It's a pretty remarkable distillation of what great American research universities like Rochester are all about.

What does it mean to “support” a university? Is that fundamentally about money?

No, it's not at all. We want to build a much stronger culture of ownership around the future of the University. And that ownership might be giving a gift, but it might also be advocacy, or volunteering, or giving career support to our students, or providing feedback, or participating in an event. And it involves all our stakeholders—not just alumni, but also students, faculty, staff, and friends.

Here's what I mean by ownership: if I look up at the ceiling in my house and I see a leak, I'll be agitated and concerned. I'll call a contractor. I'll get it fixed right away. But if I'm in a hotel room and I see a leak in the ceiling, I'll think, wow, they've got a leak in their ceiling. I might tell the manager, but probably wouldn't.

We're trying to develop the same culture of ownership for people who are connected to the University, and to do it in a way that's based in our mission and that will help support our mission as we go forward.

What encourages that sense of connection for people?

Communication. Expectation setting. Shared values. I think people significantly misinterpret any university's interest in contributions, in this sense: are we interested in people participating and continuing to be active members of this community? Yes, we are. Are we interested in people—alumni and others—making large donations to support our mission, donations without which we can't carry out the mission? Yes, we are. Should people who can't give \$1,000 or \$10,000 or \$1 million or \$10 million feel like their \$50 gift doesn't mean anything? Absolutely not.

Giving a \$50 gift to your university, in my view, is saying, yes, I still believe. I'm making a vote that indicates that I'm still connected to you. The University made a difference in my life, and I'm willing to make a tangible statement in recognition of that by giving you \$50, or \$10. It's not about the money. It's about raising your hand and saying, I still believe in the University and I'm willing to participate in this way.

It's not the only way of participating. We're hoping that people will be advocates, go to events, read *Rochester Review*, stay in touch with their friends, give information, and say good things about the U of R when they're asked about it.

The opposite of love isn't hate—it's indifference. We don't want an indifferent community. We want a connected community, and we want to make the connections we have already even stronger.

Has that been happening?

I think it has. We hit all of our major goals. We raised a much greater amount of money than we had previously. We were able to develop our volunteer culture. We were able to revamp our communications and regional and geographic event activity. We were able to connect



with our faculty and staff in ways that we never had before.

A lot of this has to be considered in the context of Joel Seligman's presidency. It's important for people to remember that the campaign has coincided with Joel's presidency, and with a dramatic growth and improvement in so many different aspects of the University's activities.

You can see the effect of that vision if you look at the physical infrastructure, at the quality of our faculty and students, at the improvement in our financial position, at the growth of our endowment, and at the growth in many program areas—including, very importantly, the Medical Center.

Everyone came together around a mission-based vision to make the place better. And through the campaign, we sought all the revenue sources we could to drive that. We persevered through the recession. And it came together.

ONGOING MISSION: The fundraising campaign that concluded in June was “a means, not an end. It was always about the mission, not the money,” says Tom Farrell '88, '90W (MS), senior vice president for University advancement.

research grants and other funding, and limited but critically important support from the state. And it includes philanthropy.

But philanthropy can't happen outside of a genuine commitment to engaging, over long periods of time, with our external communities. Without that commitment, it just doesn't work. And the U of R in the past wasn't always deeply committed to seeking those connections. That's an idea that has been banished from this institution's mind-set.

Joel's been the chief communicator of that message, but it's also something that everybody here is committed to—not just the Advancement office, but also the deans, the provost, the faculty, the board, our volunteer leaders, our donors, and our supporters. We hope all our alumni, parents, and friends will feel that, too. **R**

How far does the money raised go toward meeting the University's expenses?

It's a heck of a lot of money. But it's important to compare those dollars to the size of the institution—29,000 total employees, a \$3.2 billion total budget, annual outlays of over \$100 million a year in financial aid to undergraduates, and \$900 million-plus in capital project improvements over the same time period. If you look at total institutional expenditures over the life of the campaign, it's over \$32 billion—and the campaign raised \$1.37 billion.

We've benefited from tremendous generosity. Philanthropy is a defining aspect of American higher education, but philanthropy and the endowment, on an annual basis, generate less than 10 percent of our revenues. If you look at our peer institutions, it would be more like a third. So we still have a ways to go. And if you look at the fact that Stanford University last year raised over \$1.2 billion dollars in cash in one year, you start to recognize that, from a competitive point of view, we're just beginning.

Now what?

We're spending the year going around the country and the globe to thank people for what they've done. We owe special thanks to our Rochester community. The Greater Rochester area donated 41 percent of the campaign total. That's truly significant and it speaks, in part, to the vital role of our Medical Center in this community.

At the same time, we're also grateful to the people around the globe who've participated. The University is important nationally and internationally, and the gifts that made up 59 percent of our campaign total are a demonstration of that. We want to protect against the campaign being viewed as episodic. A campaign is a means, not an end. It was always about the mission, not the money.

Even as we're expressing our gratitude, we're also continuing to try to raise funds to support the mission and the priorities of the University. That's how American higher education works. There's a partnership that finances American higher education, and it includes many different resource streams—including students and families, the endowment and institutional support, federal

Poet Jennifer Grotz reflects on place, inspiration, and the ‘vocabulary’ she found in a baroque French monastery.

Opening a Window

By Kathleen McGarvey

After finishing her second book, *The Needle* (Houghton Mifflin, 2011), poet and literary translator Jennifer Grotz went to the Monastère de Saorge in the French Alps. Completing the book had given her a “clean slate,” she says. “My idea was just to see if poems came. But I was going to work on translations. I wasn’t putting pressure on myself.”

The poems came.

Grotz’s newest book, *Window Left Open* (Graywolf Press, 2016), draws on her visits to the monastery over several summers. “I was so inspired by it, and that’s partly why I kept going back,” she says. “It was like the monastery became a kind of vocabulary for me.”

Franciscans occupied the 17th-century baroque monastery, located between Nice and Turin, until 1988, when it became a writers’ retreat. “They’d thought about making it into a hotel, but it was too spare,” says Grotz, a professor of English. “These were tiny monks’ cells. It’s a mattress on a wooden plank, a desk, a window.”

But for Grotz, that sparseness was liberating—even, she says, “ecstatic.”

Being at the monastery is like stepping out of the modern world: there’s no access to the Internet or



MOUNTAIN TIME: Tucked into the French Alps, the Monastère de Saorge is now a writers’ retreat. Grotz says its sparseness was liberating: “my days were long and free, and my attention span was so intensified by that freedom.”





cell phones. There's hardly electricity, or even much in the way of plumbing. Although there's enough space to house about 20 people, Grotz was never there with more than a handful of others, if even that.

"When I'd first arrive, I'd go through withdrawal, dying to check my email or get a cell phone. But after a day or two, that edge wears off. And then I felt this incredible freedom—the days were so long and free, and my attention span was so intensified by that freedom." A single day at the monastery was as productive as three days of her life back home, she says.

And the poems she wrote were unusual for her.

"When I first came back and showed drafts to my friends, they kept calling them my 'psychedelic' poems, because they're so steeped in the sensory world. There's actually nothing psychedelic about them at all. What I did was describe what was literally outside my window or in the garden."

Her book is about that openness to experience. She writes in her title piece, "Window Left Open":

*All you have to do is open the window
to let the night in: then moths
effervesce in a stream
toward the lamp ...*

The book is divided into two parts. The darker first half is urban, quotidian, and wintry.

But the second is suffused with life in a "perpetual summer," she says, like her experience of the monastery, which is available to writers only in the warm months.

"Initially, I thought I was writing two books. I didn't see how the two went together at all," she says.

But she began to see parallels to William Blake's *Songs of Innocence and of Experience*. She realized that her two sets of poems were "complementary, and the 'songs of innocence'—the monastery poems—were much more powerful if they were juxtaposed with the 'songs of experience.' But I flipped the order.

"It's more honest to my experience. You enter the middle time of your life, and you see the radical imperfections of society, and of modern life—that's the first half of the book. And then somehow going to the monastery soothed that and opened up a kind of optimism and beauty. It was restorative.

"There's something approaching wisdom or acceptance that being in the monastery—that pared-down existence—allowed. And that became very interesting to me, the sense of being able to convert experience back into a sort of innocence."

Grotz says her time in France has changed her as a writer. She's always been interested in imagery, in painting the physical world with words and "not just living in my head," she says. "But there I was taught such a lesson in looking, and it has made my poems more sense-drenched. I have an appetite for that now in all my poems. It developed some impulse in me."

It's an impulse she tries to pass on to her students. She asks them to describe the things they see.

"It sounds so obvious, but you'd be surprised how difficult that is. Our students are so brilliant, but they don't really give themselves permission to just describe the world.

"They think they're supposed to be philosophizing or doing something much more heady. They intellectualize even when they're supposed to be seeing. And so that's something I teach them about—looking, without your brain filtering it."

You could say she's helping them to open a window. 

All poems are reprinted with permission from Window Left Open, by Jennifer Grotz; Graywolf Press, 2016.



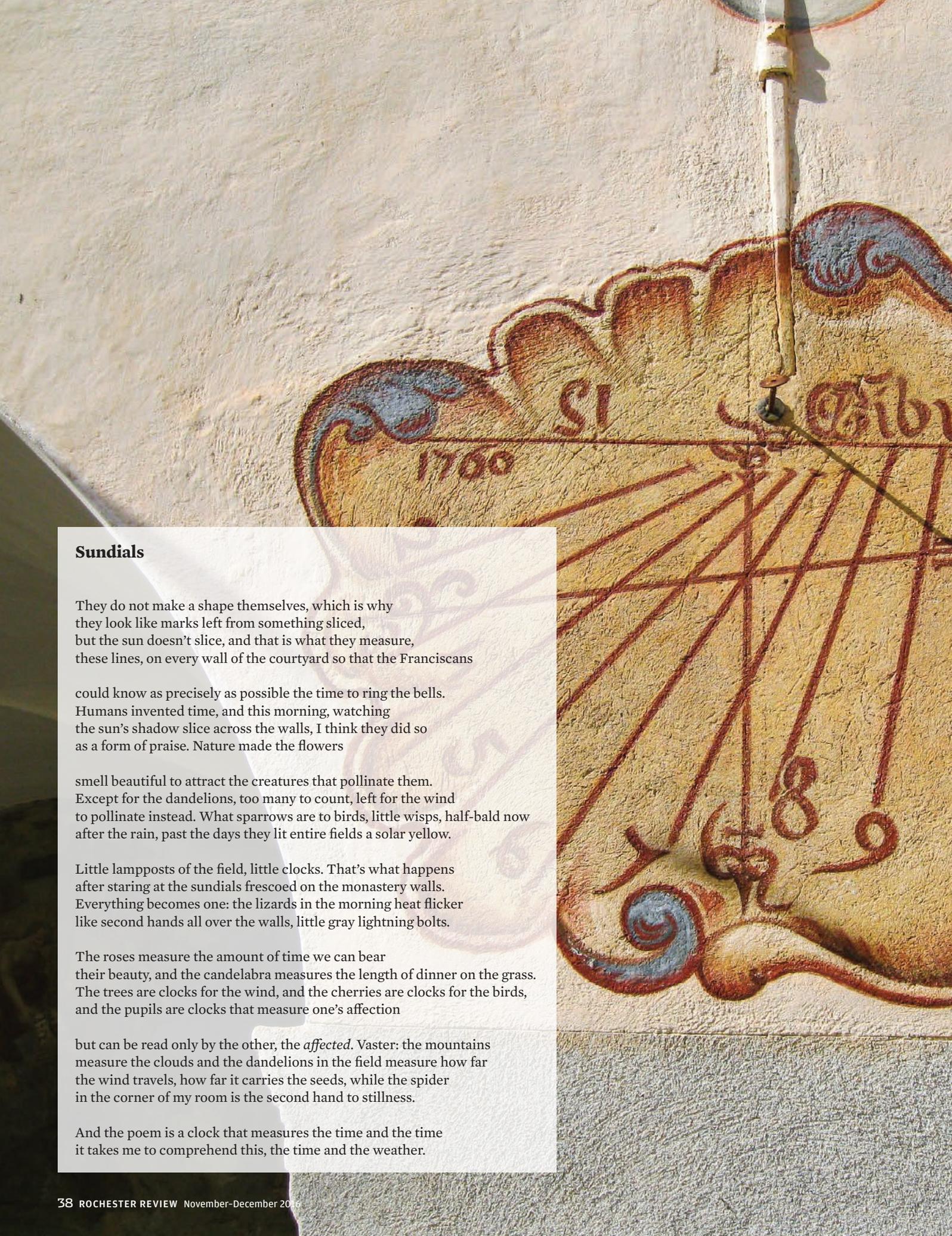


Apricots

I judged them very carefully, as though I'd been given the charge to determine which are good or bad, and they were all good, even the slightly overripe ones with bruises had a bitter ferment that only brightened the scent. And the too-young ones, firm and slightly sour, not yet softened by the sun. And the ripe ones, that felt like biting into my own flesh, slightly carnivorous.

They had been elegant in the tree, tiny coquettes blushing more and more until I picked them, then they were minimalist and matte-colored in wooden bowls, so barely furred one couldn't help but clothe them, enclose them with your hand, caress each one thoroughly before taking a bite, exploring the handsome freckles left from some minor blight.

Now I stand under the tree and pluck them one after the other. Each one tastes different, like a mind having erratic thoughts. Going into the trance halfway between eating and thinking, the thought of an apricot, the apricot of a thought, whose goodness occurs over time, so that some had been better earlier, others soon would become correct, I mean ripe.



Sundials

They do not make a shape themselves, which is why they look like marks left from something sliced, but the sun doesn't slice, and that is what they measure, these lines, on every wall of the courtyard so that the Franciscans

could know as precisely as possible the time to ring the bells. Humans invented time, and this morning, watching the sun's shadow slice across the walls, I think they did so as a form of praise. Nature made the flowers

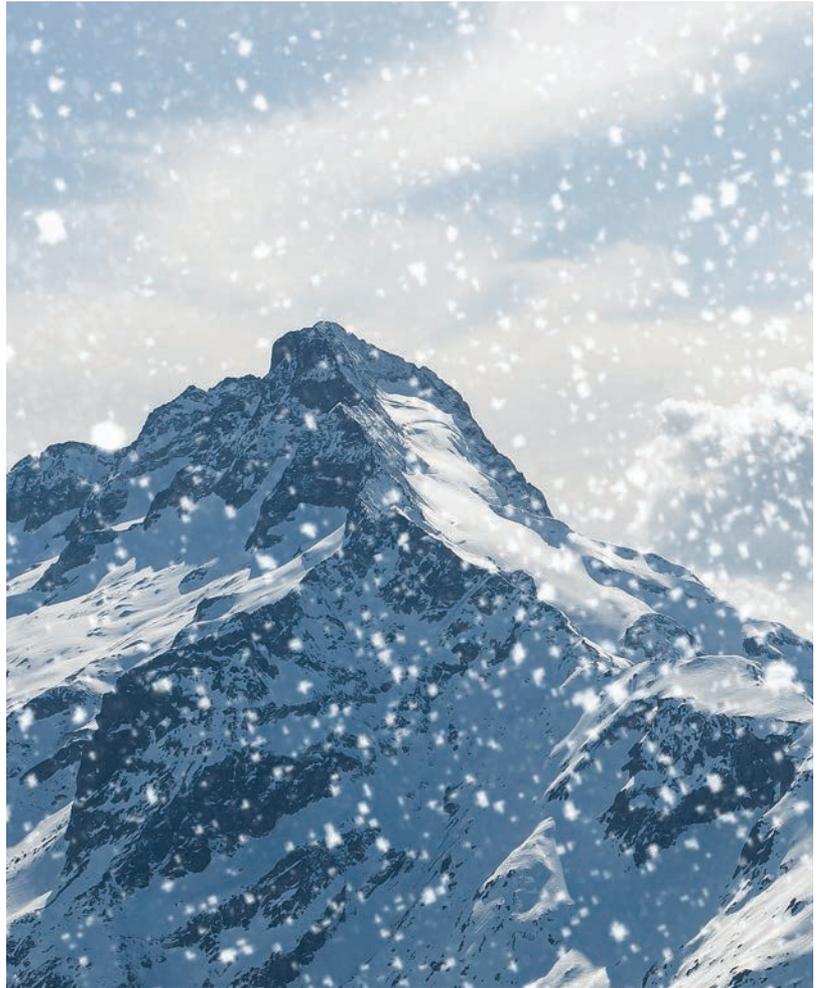
smell beautiful to attract the creatures that pollinate them. Except for the dandelions, too many to count, left for the wind to pollinate instead. What sparrows are to birds, little wisps, half-bald now after the rain, past the days they lit entire fields a solar yellow.

Little lampposts of the field, little clocks. That's what happens after staring at the sundials frescoed on the monastery walls. Everything becomes one: the lizards in the morning heat flicker like second hands all over the walls, little gray lightning bolts.

The roses measure the amount of time we can bear their beauty, and the candelabra measures the length of dinner on the grass. The trees are clocks for the wind, and the cherries are clocks for the birds, and the pupils are clocks that measure one's affection

but can be read only by the other, the *affected*. Vaster: the mountains measure the clouds and the dandelions in the field measure how far the wind travels, how far it carries the seeds, while the spider in the corner of my room is the second hand to stillness.

And the poem is a clock that measures the time and the time it takes me to comprehend this, the time and the weather.



Snowflakes

Yesterday they were denticulate as dandelion greens, they
locked together in spokes and fell so weightlessly

I thought of best friends holding hands.
And then of mating hawks that soar into the air to link their claws

and somersault down, separating just before they touch the ground.
Sometimes the snowflakes glitter, it's more like tinkling

than snow, it never strikes, and I want to be struck, that is
I want to know what to do. I begin enthusiastically,

I go in a hurry, I fall pell-mell down a hill, like a ball of yarn's
unraveling trajectory—down and away but also surprising ricochets

that only after seem foretold. Yesterday I took a walk because
I wanted to be struck, and what happened was

an accident: a downy clump floated precisely in my eye.
The lashes clutched it close, melting it against the eye's hot surface.

And like the woman talking to herself in an empty church
eventually realizes she is praying, I walked home with eyes that melted snow.

Lake Effect

Sailing on the Great Lakes, environmental science students take part in a first-of-its-kind study on a potent greenhouse gas.

By Karen McCally '02 (PhD)

Early last spring, John Kessler invited five undergraduate students and a master's degree candidate on a research venture of the type usually conducted by advanced scientists.

An associate professor of earth and environmental sciences, Kessler introduced the students in his course Research in Biogeochemistry to some intriguing questions about methane. It's long been known that methane is a potent greenhouse gas. It's also generally accepted as fact among oceanographers and limnologists (the scientists who study inland waters) that freshwater bodies are significant natural sources of methane to the atmosphere. Yet, Kessler notes, there's a paucity of data on the Great Lakes, collectively the largest liquid freshwater environment on the planet.

The questions Kessler has are many, and the answers have implications for the global effort to understand climate change. How much methane is being emitted from the Great Lakes? Where is it coming from? How much of it gets transferred to the atmosphere? And how does climate change itself influence the dynamics of further methane production, release, and emission?

Over the summer, the team embarked on explorations of Lake Ontario and Lake Superior. Kessler, whose lab has also collected data on Lake Michigan, plans his study to encompass all five Great Lakes. The team has already unearthed some surprises. "We're already really excited by the data that we see," he says. "What has surprised us is how variable methane emissions are."

Early in September, the group traveled on Lake Ontario, up and back from a marina in Hamlin, New York, north to within sight of the Canadian shoreline. The group members made consistent measurements of methane concentrations all along the route. They expected levels to be high, and they were. In fact, says Kessler, "about a third to a half of the transect across the lake was much higher in methane concentration than I would have ever expected."



UNDERCURRENTS: Freshwater bodies such as Lake Ontario are major natural sources of methane. Last summer, a professor and six students set out onto the lake to take some measurements. They conducted similar research on Lake Superior in October, as part of a study they hope will encompass all five Great Lakes.

The Great Lakes—A Methane Storehouse?

It's generally accepted that freshwater bodies are significant natural sources of methane to the atmosphere. Yet documentary evidence is surprisingly scant for the Great Lakes, which are the largest liquid freshwater environment on the planet. A much more efficient heat trapper than carbon dioxide, methane is widely considered the second most important greenhouse gas among those who study global climate change. It "accounts for a substantial fraction of the man-made warming in the atmosphere that we're experiencing right now," says John Kessler, an associate professor of earth and environmental sciences. Kessler is leading an effort to map and measure methane in the Great Lakes.

LAKE SUPERIOR

Surface elevation: 600 feet

Area: 31,700 square miles

Average/maximum depth: 483/1,333 feet

Volume: 2,900 cubic miles

Kessler and his students spent a week in October aboard a National Science Foundation research vessel collecting data on Lake Superior, the largest and deepest of the Great Lakes.

LAKE MICHIGAN

Surface elevation: 577 feet

Area: 22,300 square miles

Average/maximum depth: 279/925 feet

Volume: 1,180 cubic miles

LAKE HURON

Surface elevation: 577 feet

Area: 23,000 square miles

Average/maximum depth: 195/748 feet

Volume: 850 cubic miles

Duluth

Milwaukee

Chicago

Why study methane in the Great Lakes?

Oceans, which have been studied extensively, are relatively minor sources of methane in the atmosphere. Fresh water environments are significant sources, and, according to Kessler, there's been surprisingly little research on the Great Lakes, which collectively form the largest body of liquid fresh water on the planet—an estimated six quadrillion gallons.

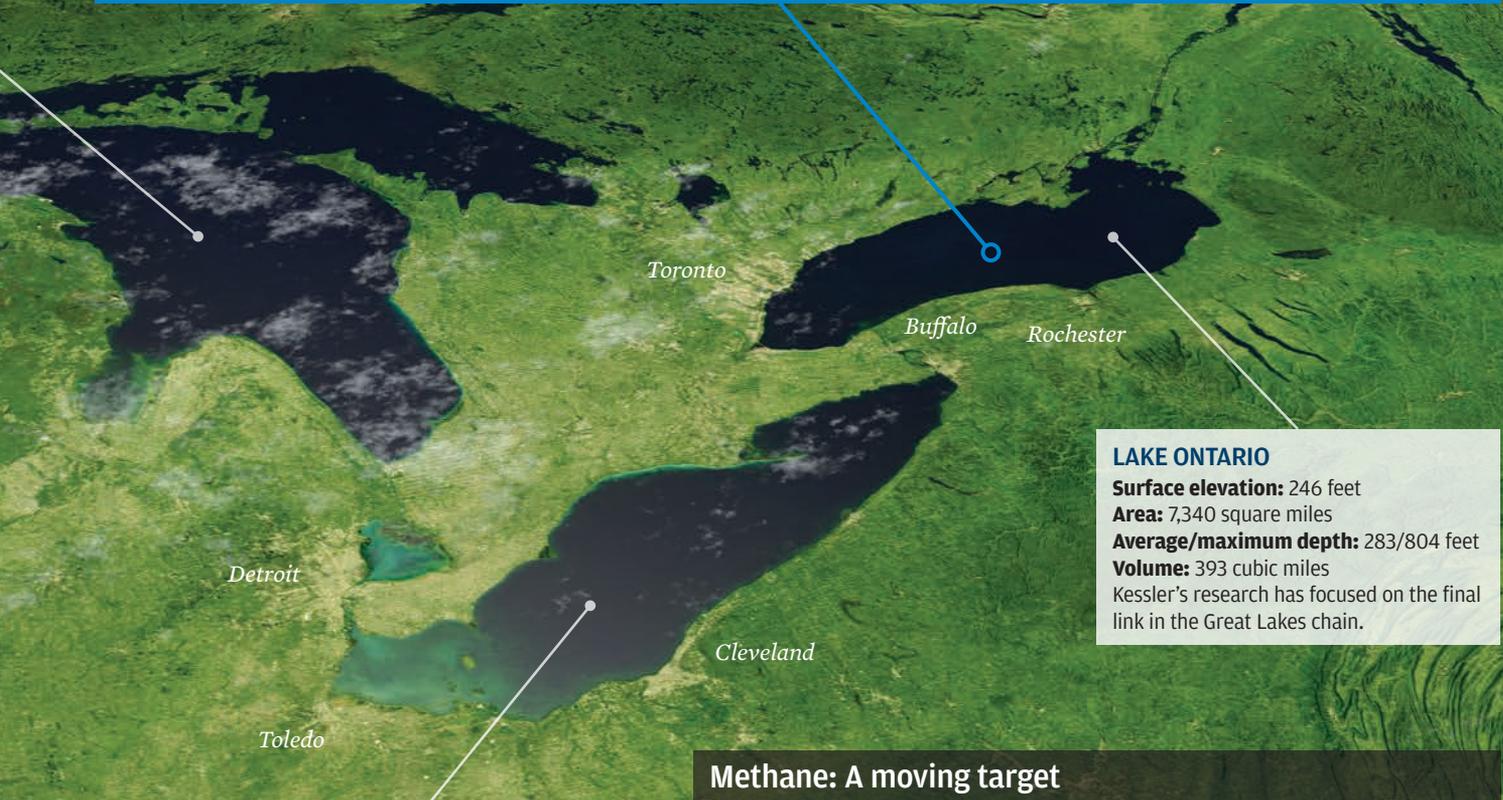
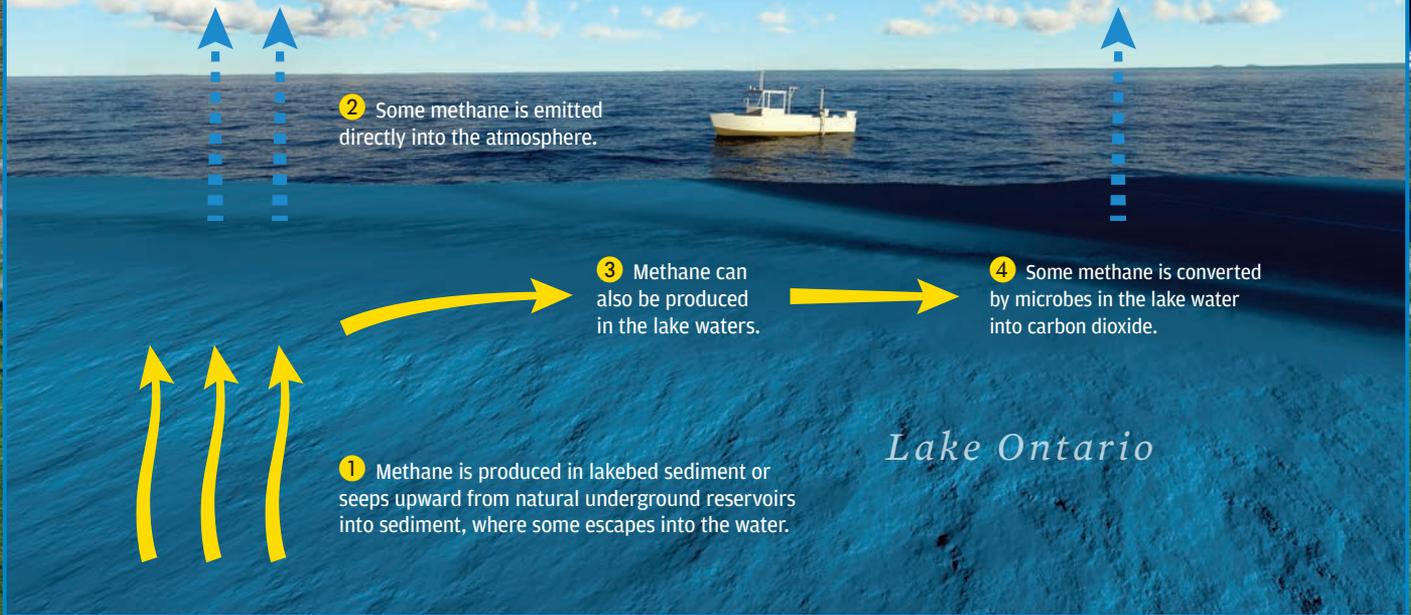
What do we want to know about methane?

Says Kessler: "Number one: we want to be able to map how much methane is out there. What are its fluxes, its emission rates to the atmosphere? What's the distribution across all of the Great Lakes?"

The second goal is to understand its sources. Kessler says there's a "traditional view" that methane is produced in oxygen-free environments, such as deep in the sediment at the bottom of lakes and oceans. But scientists have recently found that methane can be produced in lakes and oceans where oxygen is abundant. "That process is not well understood," he says. Among his goals is "trying to figure out how this specific environment is producing methane."

Follow the Methane

Naturally occurring methane gas is released from sediments on the floor of the Great Lakes or produced in the overlying waters. It can be emitted directly into the atmosphere or consumed by microbes and converted to carbon dioxide. Both methane and carbon dioxide are greenhouse gases.



LAKE ONTARIO
Surface elevation: 246 feet
Area: 7,340 square miles
Average/maximum depth: 283/804 feet
Volume: 393 cubic miles
 Kessler's research has focused on the final link in the Great Lakes chain.

LAKE ERIE
Surface elevation: 571 feet
Area: 9,910 square miles
Average/maximum depth: 62/210 feet
Volume: 116 cubic miles
 Studies similar to Kessler's have measured methane in the shallowest of the Great Lakes, including methane released from leaking underwater natural gas wells.

Methane: A moving target
 Although Kessler and his team are focused on methane, they won't be considering it in isolation. The key to climate change is in the interaction of gases with one another, and the dynamics of that interaction are in constant flux. Certain processes add to the atmospheric concentration of greenhouse gases; other processes work to remove them. Many of those dynamics are not well understood.
 "I think that one of the things that motivates a lot of us to do this research is [to get] a better predictive understanding of how the planet functions," Kessler says. That entails answering some complex questions. As the planet warms, or as it gets wetter or drier, how will those changes affect the future interactions among gases? Will natural emissions change? If so, how?

Meet the Team

John Kessler

Associate Professor of Earth and Environmental Sciences

John Kessler's principal interest is the dynamics of methane in oceans. He joined Rochester's faculty in 2012 from Texas A&M University, where he had conducted headline-grabbing research on the aftereffects of the Deep Water Horizon oil spill in the Gulf of Mexico.



The spill, he said, provided him "a natural laboratory" to answer some basic questions, such as, "What happens when a large release of methane is emitted to the ocean. Where

does it go? What is its ultimate fate?" He discovered that within months of the spill, methane levels had returned to pre-disaster levels as rapidly reproducing microorganisms devoured more than 200,000 metric tons of the gas.

Kessler cautions against the hope that nature may have provided humans with a microscopic cleaning staff. "These organisms eat incredibly quickly," he says. "It can have some adverse effects on the environment, like the removal of oxygen from the waters, and potentially, an acidification effect as well."

The research he and his group of mostly undergraduates are conducting this year is an initial phase of what he hopes will be an extensive investigation. They'll be measuring the concentrations of methane in each of the Great Lakes at varying points in space and time. That data, he says, will lead to some hypotheses to address larger unknowns about the source of the methane and the dynamics of its release and impacts.

Widely recognized on the River Campus as an inspiring teacher, Kessler won the Goergen Award for Excellence in Undergraduate Teaching in 2015.



Amy Eisenstadt '16
Brooklyn, New York
BS, geological sciences;
pursuing MS degree



Benjamin Riddell-Young '18
Slingerlands, New York
Major: environmental science



Sawyer Johnson '16
Los Angeles
Major: environmental science



Nicola Wiseman '18
Waterford, Connecticut
Major: environmental science



Colin McCormack '16
Randolph, New Jersey
Major: environmental science



Eric Yarmoff '16, '17 (T5)
Maisons Laffitte, France
Major: geological sciences

But when the team repeated that same journey about a month later, much of that methane was gone. The levels were "only a quarter to a third of what they were," he says. "What's causing those massive changes, we don't know."

The course began last spring semester, as the students each developed individual research plans in which they would examine some aspect of methane cycling in the Great Lakes and nearby waterways. They prepared formal research proposals, outlining hypotheses and experiments as if they were applying for a National Science Foundation grant. At the end of the semester, the students conducted mock panel reviews.

They also worked together to develop their own equipment to take measurements. The traditional method is to collect vials of water and bring them back to the lab for analysis. The students did some of this, but as Kessler says, "the problem with doing it that way is that there are really only so many vials that we can fill up in a day and physically bring back to the lab."

They developed a means of vacuum gas extraction in which water is pumped continuously through a gas-permeable membrane, while a vacuum removes dissolved gases from the water stream. The extracted gases are then pumped into a spectrometer where they can be analyzed in real time. They used that equipment, as well as traditional methods, to collect and analyze data.

Over the summer, not everything went as they had hoped. The group had to cancel a few of their excursions. It was unusually hot and dry throughout July and August—except on many of the days Kessler planned trips. "I was joking that I could single-handedly end the drought in western New York just by scheduling more of our trips on Lake Ontario," he quips, referring to the



EXTRA MEASURES: Eisenstadt prepares a water sample from Lake Ontario to be transported to a lab for analysis.



PRIME PUMP: Kessler's team designed instrumentation (above) that Eisenstadt, Riddell-Young, and Kessler (left) used last summer to provide continuous measurements of methane levels in Lake Ontario. Kessler was awarded a National Science Foundation grant that enabled the group to test the equipment on Lake Superior in the fall.

excessive rain and winds that befell the region on several of the days the students were to collect data.

Nonetheless, their efforts paid off. They'd begun with a small budget: a \$10,000 Pump Primer grant from Arts, Sciences & Engineering, and some additional monies from the Elizabeth Wright Dunbar fund, which supports the Department of Earth and Environmental Sciences. Based on the seed data the group collected last summer and the instrument prototypes they developed, the National Science Foundation awarded Kessler a two-year grant that enabled them to spend a week in October collecting data on Lake Superior in a state-of-the-art, fully staffed NSF research vessel.

Nicola Wiseman '18, an environmental science major from Waterford, Connecticut, says the voyage was galvanizing. "The crew of the ship was wonderful. We accomplished a lot in terms of data collection, so we're all thrilled," she says.

The students divided into day and night shifts, taking surface methane samples every hour while their continuous gas extraction equipment ran without interruption. The fully equipped vessel made it possible for them to conduct some quick data analyses and prepare the data for a full analysis back in Kessler's lab. Wiseman is looking forward to that process, as well as to continuing the research for the long haul.

"I'm hoping to continue my involvement in this research even after the class has ended," she says, noting that the NSF grant also funds

a second trip to Lake Superior, and potentially other Great Lakes, this coming summer. "This trip really made me realize that doing research is what I want to do for the rest of my life, and I'm incredibly excited to see where we go from here."

Eric Yarmoff '17, an environmental science major who was born in Princeton, New Jersey, and raised in France, says the course is teaching him a great deal not only about science, but also about the life of a scientist conducting field research.

"I've learned plenty about the geochemical methane cycle and the processes influencing it," he says. "But more importantly, I've learned quite a bit about the research process itself: securing funding, planning trips, organizing teams for research excursions, and how to be flexible in the face of unpredictable situations."

Kessler revels in surprise and uncertainty, and delights in furthering a similar spirit of adventure among his students. For this group, that spirit seems to have come naturally.

"The success of an endeavor like this largely hinges on the quality of the students," he says. On Lake Superior, the group hit some rough weather—the kind that can knock scientists out for hours at a time.

"Everybody got seasick," Kessler says. "But we kept working, and it was awesome." 

Includes additional reporting by Peter Iglinski, Jim Mandelaro, and Matthew Mann.



A 'Geeky, Frazzled' Star of Screen

Dena Tyler '94 ditched her plans for a medical career and took a shot as an actress. It's working out.

By Karen McCally '02 (PhD)

In the past several years, **Dena Tyler '94** has been showing up in some high-profile television series. In 2005, she appeared in multiple episodes of *Law & Order*. From 2011 to 2015, she popped up on the hit shows *30 Rock*, *Orange Is the New Black*, and *Homeland*. This fall, she played a key role in the pilot of the new CBS drama *Bull*.

"I love playing characters that are raw and fiercely committed to their charges," says Tyler, adding that she has a "goofy" side, too.

Those traits describe *Bull*'s Liberty Davis to a T: a "geeky, somewhat frazzled" attorney, Tyler says, hired by Jason Bull (Michael Weatherly), a psychologist who runs a trial consulting firm. Earnest and intense, Liberty stumbles alongside her more graceful colleagues, juggling multiple briefcases, navigating precariously in her high heels. But in a pair of dramatic courtroom scenes, Tyler shows her to be a hero.

In both *Homeland* and *Orange Is the New Black*, Tyler played medical personnel. Those roles, too, were fitting. A native of Syracuse, she arrived at Rochester with

IN CHARACTER: Tyler (above, right) is about to launch closing arguments as an attorney in the CBS series *Bull*. She minored in dramatic arts at Rochester.

the intention of becoming a physician. She majored in neuroscience, and fed her love of the stage with a minor in dramatic arts. In the spring of her senior year, she played the role of Carol Cutrere in the theater program's production of Tennessee Williams's *Orpheus Descending*.

After college, she decided to delay medical school, performing locally at venues including Geva Theatre, and working at the University's Strong Memorial Hospital as a respiratory therapist. On her actress's profile, Tyler lists her familiarity with medical terminology and neuroscience right along with her facility in Cockney, Irish, and New York accents.

Her professional career took off in 1999 when she was introduced to the Actors Studio in New York City. She steadily landed leads in off-Broadway productions before turning her focus to television.

In 2017, she'll appear in the pilot of a new HBO series, *The Deuce*. The brainchild of David Simon, creator of *The Wire*, and novelist George Pelecanos, *The Deuce* is the fictional story of two brothers caught up in New York's porn industry in the 1970s.

Tyler is also a coach at MN Acting Studio in Manhattan, where she teaches a workshop called TV Audition Bookcamp. She says that being yourself—even on a difficult day—can work to your advantage.

SNAPSHOT

Dena Tyler '94

At Todd Theater: Carol Cutrere in *Orpheus Descending*, spring 1994.

Last role in Rochester: Edna St. Vincent Millay, in *Take Up the Song*, Geva Theatre.

Law & Order (NBC): Multiple appearances from 2005 to 2008. "I was the go-to girl for the bereaved widow," Tyler says.

30 Rock (NBC): Stephanie, "a jilted, chain-smoking ex-wife," says Tyler. Season 5, "I Heart Connecticut."

Louie (FX): Bianca, a New Age cult leader. Season 5, "Pot Luck."

Orange Is the New Black (Netflix): Miss Rosa's chemo nurse. Season 2, "Appropriately Sized Pots."

Homeland (Showtime): Surgical nurse. Season 5, "Our Man in Damascus."

Bull (CBS): Liberty Davis, a "geeky, frazzled" attorney. Pilot, "The Necklace."

"My audition for Liberty was long delayed, and by the time I went in, I had underarm stains down to my waist and my stomach was eating my back," she says. "I thought, well, I'm going to use it. So I flashed my sweaty pits and belched in my audition. That says geeky, somewhat frazzled, to me." 📺

Denying Extremists a Powerful Tool

Hany Farid '88 has developed a means to root out terrorist propaganda online. But will companies like Google and Facebook use it?

By David Silverberg

Hany Farid '88 wants to clean up the Internet. The chair of Dartmouth's computer science department, he's a leader in the field of digital forensics. In the past several years, he has played a lead role in creating programs to identify and root out two of the worst online scourges: child pornography and extremist political content.

"Digital forensics is an exciting field, especially since you can have an impact on the real world," says Farid, "When you look around, you see how wide the net is spreading. But with that comes new challenges and problems."

His hallmark project is PhotoDNA, a program he created in partnership with Microsoft Research in 2008. PhotoDNA detects child pornography as the images are posted online. It works by matching new content posted on social media outlets to millions of pornographic images of children collected and maintained by the National Center for Missing and Exploited Children.

Now Farid is taking the same model of PhotoDNA and doubling down: he wants to find and root out extremist content that supports real-world violence and terrorism.

"If we want to really prevent extremist content from getting online in the first place, we need to develop a technology to process billions of images and videos daily," he says.

Farid has created such a technology. It works by establishing a central database of extremist content and distributing unique fingerprints of each photo, video, and audio file to the platforms that want to filter this content. If a Twitter user, for example, uploads a video showing an execution of a soldier, this system would recognize that content as violating the outlet's terms of service and the account would be automatically quarantined. An investigation would determine whether the quarantine was appropriate or a "false positive." Law enforcement could be called in, when necessary, to further investigate the user's account.

Farid has partnered with the Counter Extremism Project, a nonprofit organization led by former officials from the Department of State and Homeland Security. He says the technology's adoption should

be a "no-brainer" for social media outlets. But so far, the project has faced resistance from the leaders of Facebook, Twitter, and other outlets who argue that identifying extremist content is more difficult, presenting more gray areas, than child pornography. In a February 2016 blog post, Twitter laid out its official position: "As many experts and other companies have noted, there is no 'magic algorithm' for identifying terrorist content on the Internet, so global online platforms are forced to make challenging judgment calls based on very limited information and guidance."

Farid disputes that argument. "Companies should take responsibility for the misuse of their platforms, from trafficking

Farid is not alone in his criticism of social media companies. Last August, a panel in the British Parliament issued a report charging that Facebook, Twitter, and Google are not doing enough to prevent their networks from becoming recruitment tools for extremist groups.

Steve Burgess, president of the digital forensics firm Burgess Consulting and Forensics, admires Farid's dedication to projects that, according to Burgess, aren't common in the field. "It's great that such a tool has come into existence," he says of Farid's antiterrorism technology.

After studying computer science and applied mathematics at Rochester, Farid earned a PhD in computer science from



DIGITAL DETECTIVE: Farid and a Dartmouth student compare photographic and computer-generated images. In addition to his work combatting online child pornography and political extremists, Farid is founder and chief technology officer of a photo authentication service, Fourandsix Technologies.

of underage prostitutes, to selling illegal weapons, to promoting and radicalizing extremists who then commit heinous crimes," he says.

Media outlets including the *Wall Street Journal*, *Atlantic* magazine, and the PBS *NewsHour* have called on Farid in pieces or segments exploring the debate. Although concerns about privacy are widespread,

the University of Pennsylvania and was a postdoctoral fellow at MIT. These days, he stays busy even beyond his commitment to teaching and research. In 2014, he co-founded the photo authentication service Fourandsix Technologies, where he remains as chief technology officer.

Enmeshed in the seedy underground of extremist online propaganda, Farid says he appreciates the chance to get away from it all. He lives with his wife, Emily, on several acres of land in Vermont. He takes his mind off technology by cutting wood to prepare for harsh winters and, he adds, "bumbling through the woods on my tractor.

"At the end of the day, I'm definitely away from screens." 

Let's Talk about Our Hair

Revelations from *Hair: A Human History*, by Yale dermatologist, pathologist, and hair follicle expert Kurt Stenn '65M (MD).

By Karen McCally '02 (PhD)

Talking about our hair: it's rarely considered a weighty conversation.

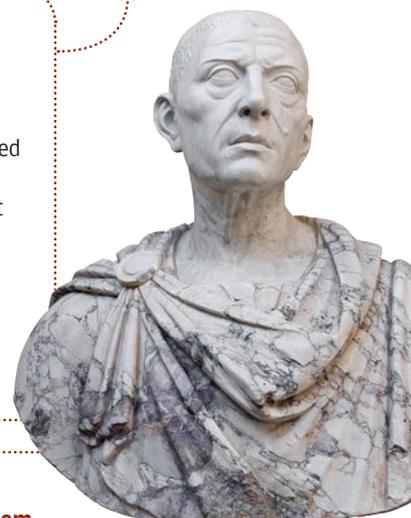
Yet hair is a fascinating subject. **Kurt Stenn** '65M (MD) has devoted his career to studying its biology—as director of skin biology for Johnson & Johnson, professor of pathology and dermatology at Yale School of Medicine, and chief scientific officer for a biotech company devoted to hair follicle regeneration.

In the past 10 years, he's broadened his study of hair to take on its cultural role. Incorporating the observations of anthropologists, stylists, and wigmakers in addition to scientists, *Hair: A Human History* gives hair an overdue treatment. Here are some highlights.



The loss of body hair among hominids was a necessary precondition to human evolution.

Darwin argued that human ancestors began to lose their fur because male hominids preferred hair-scarce females. Expert opinion is now coalescing around the view that fur loss occurred due to other types of evolutionary advantages. Three simultaneous events—the loss of body hair, the development of sweat glands, and the growth of the hominid brain to a recognizably human form—appear to have been interdependent. Exposed skin and sweat glands facilitated body temperature control, aiding foraging in the heat. Brain tissue, which is highly sensitive to elevated temperatures, thrived in new ways as hominids began to lose their fur.



Men have worried about male pattern baldness for thousands of years. Julius Caesar was among them.

According to Roman historian Suetonius, writing in the year 121 A.D., Caesar's "baldness was a disfigurement that troubled him greatly, since he found that it was often the subject of the gibes of his detractors. Because of it, he used to comb forward his scanty locks from the crown of his head." Egyptian papyrus scripts going back 4,000 years show evidence of a similar anxiety among powerful men.



The red-and-white-striped barber's pole is a visual remnant of the bloodletting practiced by medieval barber-surgeons.

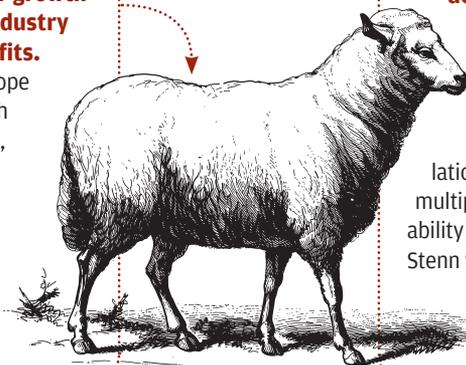
In medieval Europe, the medicine man and the barber were one and the same, and called barber-surgeons. During the practice of bloodletting, a barber-surgeon lanced a vessel in the arm, collected blood in a basin, and wrapped the arm with white bandages. "During this procedure," Stenn writes, "the patient gritted his teeth and gripped a pole. When not in use, the pole rested, with a clean white bandage twisted about it, in front of the shop as a sign of services rendered."

From the 16th century until the end of Imperial China, it was a mainstream belief among Chinese philosophers that a person's degree of civilization was inversely related to his amount of body hair.

It stood to reason: primitive animals had dense fur, while Chinese men and women alike had relatively scant body hair. "When the bearded and generally hairy Europeans arrived on their shores in the 16th and 17th centuries, the Chinese were confused and reluctant to accept them as equals," Stenn writes.

Most early scientific research into hair growth was initiated by leaders in the wool industry seeking increased production and profits.

Sheep farmers and wool merchants in Europe and Australia established multiple research foundations in the 19th and 20th centuries, providing funding for anatomists, pathologists, biologists, and physical chemists to conduct hair research that would suggest how sheep could produce more and better wool. The research that came out of the efforts established the foundation of most of what we know about hair today.



In the last decade, scientists have begun studying the hair follicle as a model of tissue regeneration—a process that could be harnessed to repair or re-form damaged organs.

The hair follicle stimulates the growth, shedding, and regeneration of hair shafts in a predictable cycle. With the exception of the uterus, which sheds and rebuilds its lining every month, "no other mature adult human organs cycle, form, cast off, and re-form," Stenn writes.

The barbershop quartet originated in the black American barber shop, where men sang spirituals, ballads, and other popular songs as they waited.

The barbershop was, and is, a neighborhood gathering place in many African-American communities. In the late 19th century, black barbershops were not only places for grooming, but also for political meetings and discussions, casual socializing, sharing gossip, and even impromptu music making. A practice of spontaneous singing grew into "a codified tradition," Stenn writes. Dressed in striped jackets and pants, and singing in four-part harmony, the a cappella groups "called themselves 'barbershop quartets,' and popularized such songs as 'Shine On, Harvest Moon,' 'Sweet Adeline,' and 'We Are Poor Little Lambs That Have Gone Astray.'"



In multiple studies, patterns of hair growth on the head correlate to patterns in brain development.

Studies of people of European descent have found a strong correlation between cowlicks (or hair whorls) that run clockwise, and right-handedness. Among those with counterclockwise cowlicks, there is no correlation with handedness. In addition, "children with multiple or intersecting whorls show a higher probability of having underlying brain malformations," Stenn writes. Scientists don't have a solid explanation for the correlation, but many embryologists suspect it's due to the common antecedent of skin and brain cells.

Biologists have classified human hair into eight groups. All eight types can be found among all the world's populations.

Early 20th-century Western anthropologists believed that hair types correlated with geographic origin and fell into three groups: straight, black hair in Asians; tightly curled hair in Africans; and smooth, wavy hair in Europeans. In fact, a broad range of hair characteristics can be found among populations around the globe. Modern biologists have identified eight hair types based on curve diameter, a curl index, and the number of waves. They argue that hair type, rather than ethnic origin, is the best guide to treatment, whether in a medical facility or a salon.

Class Notes



CLASS PICTURE: Members of the Class of 1966—both from the College and the School of Nursing—were honored at the annual Medallion Ceremony marking their 50th reunion at Meliora Weekend.

College

ARTS, SCIENCES & ENGINEERING

1941 Elizabeth Fisher Scharffenberger died in June. “She was proud of her association with the University,” her son, Dallas, writes. Elizabeth graduated with Highest Distinction in Fine Arts. Her prize-winning essay, “The Civic and Ecclesiastical Architecture of the Genesee Country, 1785-1850”—which consists of three bound volumes and more than 500 plates—is housed in the River Campus’s Art Library. Elizabeth also donated to Rare Books and Special Collections her correspondence with elderly residents of Monroe and surrounding counties who shared information and photographs of 18th- and early 19th-century town church buildings. After graduation, Elizabeth earned a master’s degree from Columbia, and in 1951, married William Scharffenberger. Elizabeth and William raised two children and remained married for 61 years, until William’s death in 2012. Elizabeth worked for multiple organizations, including the American Field Service

and the Grace Church School in Manhattan.

1953 John Schottmiller won the Legacy Award from the School of Nursing. (See “Honoring Alumni and Friends,” page 56.)

1956 Donald Schaet writes that **Harold (Hall) Galloway** died in July. “Hall was my brother in DKE. We went through NROTC together. The day of graduation, we both became 2nd lieutenants in the Marine Corps. Hall stood next to me at my wedding along with my brother, my cousin, Paul, and my best high school friend, Brad.” After a medical discharge from the Marines, Hall went to law school. He served 40 years on the bench, first as a Rochester City Court judge, and then as an elected New York State Supreme Court justice for the Seventh Judicial District. Hall remained a justice until he reached the mandatory retirement age of 76. Hall’s wife, Jo-Anne, worked as a court reporter. They had two children and four grandchildren.

1957 Dick Leger writes: “Three Alpha Delta Phi brothers from the



1957 Leger

Class of 1957 enjoyed visits this summer in the San Francisco Bay Area. These Alpha Deltas are still traveling to visit with each other after 63 years of friendship.” Dick and his wife, Dianne, live in San Rafael. In June, they welcomed **Bob Mumford** and his fiancée, Christine, traveling from Darnestown, Maryland. In July, they welcomed **Jeff Oshlag** and his wife, Becky, from Batavia, New York. Dick adds: “Bob is a renowned photographer (you can order his gorgeous book, *The Exquisite Birds of Ecuador*,

on Amazon), but lo and behold, neither he nor I took pictures together. Jeff and I did far better.” From left to right are Jeff, Becky, and Dick.

1960 Terrence (Terry) Willcox writes that he and **Elaine Burpee Willcox** ‘61N met up with **Sydne Weiner** ‘65 “just coincidentally” on a two-week tour of Croatia. “It was wonderful that we had an opportunity to recall our time and experiences as undergraduates at the U of R.” Terry sends a picture of himself,

Elaine (left), and Sydne in the walled city of Dubrovnik.

1964 Donna Lake Wright and her husband, Ken, have published a book together: *Suddenly Alone: A Practical Guide to Prepare Yourself and Your Loved Ones for When You Are Suddenly Alone* (Authorhouse). Donna writes: "I found the notebook that my stepfather prepared so helpful when I was the executrix of his and my mother's estate, that Ken and I wanted to share our experiences with others so that they can put together a personal operating manual that can assist their family and heirs."

1965 Ronald Epp has published a book, *Creating Acadia National Park: The Biography of George Bucknam Dorr* (Friends of Acadia). He's a library and archival consultant and the former director of Southern New Hampshire University's Shapiro Library. . . . **Sydne Weiner** (see '60). . . . **Mark Weinstein '69M (MD)** won the Humanitarian Award from the School of Medicine and Dentistry. (See "Honoring Alumni and Friends," page 56.)

1966 Marc Holzer has been given the title Distinguished University Professor at Rutgers University. In 2006, Marc became the founding dean of the School of Public Affairs and Administration at Rutgers, and held that position until last June.

1970 Ed Riess writes that he's "still working as a 71-year-old electrical engineer" in the space division of L-3/Cincinnati Electronics, "the company that recruited me to Cincinnati in 1972." He adds: "I'm a research member of the International Association for Near Death Studies and have studied this field for over 40 years. About one year ago, I made a manuscript available as a

book to be sold through Amazon.com." The book, published by Ed as an e-book, is called *Implications and Applications of the Near Death Experience*.

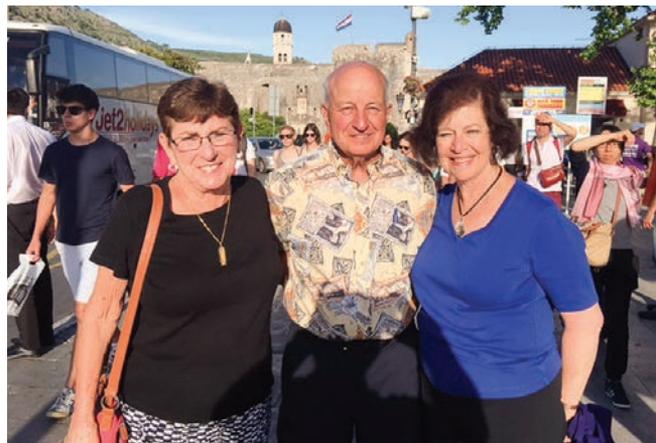
1973 Janet Reizenstein Carpmán has coauthored *Design That Cares: Planning Health Facilities for Patients and Visitors, Third Edition* (Jossey-Bass). Janet is an architectural sociologist specializing in wayfinding, helping design or adapt complex facilities such as hospitals and large public institutions to be easily navigable. She's a partner at Carpmán Grant Associates.

1975 Merilee Karr, a science journalist, published an article in *Metroscape*, a magazine for urban planners, public health leaders, and elected officials. The article, "Is Housing Making People Sick?," explores "the science and politics of how indoor air became so much more polluted than outdoor air." Merilee includes links to her writings on her blog, *True Science: Stories about the Health of People, Systems, and Societies*, at Merileedeborahkarr.com.

1976 Jill Sarnoff Riola lives in Orlando, Florida. She writes: "I am a shareholder with the national law firm of Carlton Fields, where I was head of the firm's intellectual property and technology group for seven years. I have been recognized as a Florida Super Lawyer in intellectual property and by the *World Trademark Review 1000* as one of the 'world's leading trademark professionals.' I am also the national chair of the Jewish National Fund's Lawyers for Israel program."

1983 Katherine Chaurette '84 (MS) has joined the Boston office of the New England law firm Verrill Dana as counsel in the health care practice group. Previously, Katherine was vice president of legal and head of health law at the pharmaceutical company Sanofi-US.

1984 Bob Glowacky '85M (MS) writes: "Rocky joined my family and me for a trip to Iceland. It was an amazing week filled with hiking, horseback riding, volcano climbing, whale watching, and white-water rafting." The family posed for a picture in front of Sólheimajökull Glacier on Iceland's southern coast. Pictured with Rocky from left to right are Bob's daughter, Alexandra,



1960 Willcox



1984 Glowacky



1995 Kerr



1995 Spivak

his wife, Janney, his son, Will, and Bob. . . . **Michael Paradise** has been named executive vice president and general counsel of Steven Madden Ltd., a footwear, accessories, and apparel company in Long Island City, New York. Previously, he was a senior partner at the New York City law firm McLaughlin & Stern.

1987 Jeffrey '91M (MD) and **Carolyn Palko Stone** won the Wilder Award from the School of Medicine and Dentistry. (See "Honoring Alumni and Friends," page 56.)

1994 Craig Patrick has released an EP under the name of his solo studio recording project, *Giants of Diving*. The self-titled EP includes five tracks of what Craig calls "guitar-driven, synth-tinged, multi-hyphenated, power-pop." . . . **Dennis Tucker**, publisher at the numismatic specialty press Whitman Publishing, writes that eight of his authors won awards in the 2016 Numismatic Literary Guild writing competition.

1995 Robert Kerr sends a photo of Collier—"my third child, second

Abbreviations

- E** Eastman School of Music
- M** School of Medicine and Dentistry
- N** School of Nursing
- S** Simon Business School
- W** Warner School of Education
- Mas** Master's degree
- RC** River Campus
- Res** Medical Center residency
- Flw** Postdoctoral fellowship
- Pdc** Postdoctoral certificate



2006 Bromfield and Kaye



2011 Dragnich and Welles



2006 Levin



2011 Rosati and Wilson



2008 Paret



2012 Bagley and O'Leary



2010 Colon and Kaushik



2012 Flynn

son"—born in July. . . **Andy and Jill Robinson Spivak** write that they welcomed a third child, Kate Irene, in December 2015 (see photo, page 51). "Kate joins big brother Ray, 5, and big sister Claire, 7, all potential future U of R grads!"

2001 Mahima Patnaik has joined the Cleveland office of the investment banking firm Brown Gibbons Lang & Co. as an associate.

2002 Scott Verbridge is an assistant professor at Virginia Tech-Wake Forest School of Biomedical Engineering and Sciences, and the coeditor of *Microfluidic Methods for Molecular Biology* (Springer).

2006 Dan Bromfield and Eliza Kaye '09 were married in October 2015 in Tucson, Arizona. Pictured are (back row, left to right) **Meredith Lepore, Michelle Potash Brody, Matt Bonaccorso** '05, '07S (MBA), **Alex Brody** '05, **Sam Frommer, Joel Webb, and Naomi Weinstock**; (front row, left to right) **Sarah Rogers Fischler** '09, **Emily Stone** '09, **Nora Larson** '09, **Russell Wyner, Calley Beckwith** '09, Eliza, and Dan. . . **Allison Levin** mar-

ried Matthew Fisher in July at the Renaissance Hotel in West Harrison, New York. Pictured are: (back row) **Brian Goldhagen** '05, **Renata Schloss** '05, Matthew, **Danielle Benally**; (front row) **Rebecca Kanter** '05, Allison, and **Will Fullwood**.

2008 Emily Paret posed with several Rochester classmates at her wedding last July. Pictured from left to right are **Jonathan Lax** '06, **Jennifer Balaban Lax, Dan Strauss** '09, Emily, **Samantha Lewis, and Matthew Starr** '09.

2009 Eliza Kaye (see '06).

2010 Shobha Kaushik and Hector Colon were married in June in Westchester County, New York. They met during their sophomore year. Pictured are (back row, left to right) **Linda Clough** '11, **Caitlin Rioux** '11, **Eric Ottman, Kelly Sullivan, Diana Hartnett, William Crean, Patricia Dieter, Amanda Palo, Michael Kaiman** (best man), **Daniel Siegel, Miranda Uriell, Anjali Chandra** '09, **Rebecca Knauff** '11W (MS), **Dana Hilfinger** '11, **Krista Lombardo, Matt**

Corsetti '12; (front row, left to right) **Raphael Benjamin** '11, **James Corsetti** '13 (MS), **Jamal Callender, Jonathan Welt, Brad Orego, Janaque Fernando, Di Pan** '11, **Ed Cheung, Katlyn Mallory** '11 (MS), and **Dan Korstvedt**.

2011 Alex Dragnich and Andrea Welles '12 (MS) were married last May at the Inn at Longshore in Westport, Connecticut. Pictured are **Vanessa Rooney, Eli Goldfarb** '12, **Dan Barbash, Jill Kulla** '12, **Ramzi El Hassan** '10, **Patrick Abt, Tom Dieringer, Olga Karlinskaya, Conor Willis, Dana Hilfinger** '11, **Sarah Ackroyd** '16M (MD), **Amanda Gurin** '10, **Michael Feldman** '16M (MD), Andrea, Alex, **Debra Saulnier, Rebecca Knauff** '10, '11W (MS), **Matt Corsetti** '12, **Devin Denny, Travis Kroot, Kate Canny, and Brett Sternfield** '14 (MS). . . **Justin Rosati** '12 (T5) and **Jamie Wilson** '13, '14E (MA) were married last spring. Justin is a resident in pediatric neurology at Rochester's Strong Memorial Hospital and Jamie teaches music. Pictured are (front row, left to right) **Jonathan Firestone** '13, **Kate Bredbenner** '13, **Thomas Krasner** '13, **James (J.T.) Gaskill**

'13, **Andrea Sobolewski**; (back row) **Bryan Brown** '10, '15M (MD), Justin, Jamie, **Allison Eberhardt** '15, **David Bendes, and Hope Carmichael**.

2012 Jessica Bagley and Michael O'Leary were married last May in Buffalo. Jessica writes that they moved to Rochester, where Mike started his residency in orthopaedic surgery. Pictured from left to right are **Tom Dieringer** '11, **Sara Shimmel, Chris Bethmann** '13, '15W (MS), **Hallie Cohn** '09, **Scott Strenger, Jessica, Michael, Sean Savett, Jamie Bow, Priscilla Alabi, Benjamin Bovarnick, and Andrew Harris**. . . **Conor Flynn** married Ann Dillon in July at St. Louis Church in Buffalo. Pictured from left to right are **Bill Campi, Nicole Karam, Andrew Breidigam, Cailyn Nylen, Tom Norman, Andrea Morrell, Byron Saggese, Samantha Crandall** '13, **John Whiting, Conor, Ann, Conor McMahon, Meghan Liptak** '13, **Adam Brinkman, Mindy Sutton, Peter Vercillo, Christie Sreniawski, Kyle Sreniawski, and Joe Cicero**.

2013 Jamie Wilson '14E (MA) (see '11).

Is philanthropy important to you? Are you 70 ½ years old or older?

GIVE SMART

You are eligible to make a direct, tax-free gift from your IRA to a qualified charitable organization, during any tax year, that counts toward your required minimum distribution. That's a fact.

Making an IRA charitable rollover gift to the University? That's smart.

Contact the University's Office of Trusts, Estates
& Gift Planning to find out why.

Call (800) MELIORA (800-635-4672) toll free or (585) 275-8894;
e-mail giftplanning@rochester.edu or find us online at www.rochester.giftplans.org.

Consult your tax advisor about the applicability of these legal principles to your individual situation.



UNIVERSITY of ROCHESTER



1962M Sperber

Graduate

ARTS, SCIENCES & ENGINEERING

1963 Nicholas Borrelli (PhD) has published a book, *Photosensitive Glass and Glass-Ceramics* (CRC Press). A glass scientist and corporate fellow at Corning who has been at the company since 1962, Nicholas was also recognized at the 2016 International Commission on Glass's Congress of Glass with the ICG President's Award. The award recognizes "outstanding lifetime contributions to the international glass community" in areas such as "scientific discoveries, engineering developments, artistic accomplishments, leadership, and communications." Nicholas was instrumental in the development of Corning's first-generation photochromic products and has been recognized as a valued early career mentor during much of his time at Corning.

1967 Frank (PhD) and **Mei-Chu Wang Hsiao** (PhD) have published a book, *Economic Development of Taiwan: Early Experiences and the Pacific Trade Triangle* (World Scientific Publishing). Frank is a professor emeritus of economics at the University of Colorado, Boulder, and Mei-Chu is a professor emerita of economics at the University of Colorado at Denver.

1968 Frederick (Fred) Lewis (PhD), professor emeritus of chemistry at Northwestern University, won the 2016 Porter Medal, widely viewed as the highest honor in the field of photochemistry. The award, named for Nobel laureate George Porter, is presented every two years to a single scientist who, in the view of the European Photochemistry Association, the Inter-American



Sisters Celebrate

Last April, Rochester sisters of Delta Gamma (the Zeta Delta chapter) hosted a reunion in New York City to mark the approach of their 30th anniversary. More than 50 sisters from the classes of 1988 to 1995 attended, including many who helped found the chapter in the fall of 1986. They posed for a photo at Public House, near Grand Central Station, the site of a dinner that was among the highlights of the two-day event.

Pictured are:

Front row: **Jennifer Novell Miller '93**, **Colleen Farrell Deuel '93**, '01M (Res), **Leigh Schroeder Salvage '92**, **Tracey Planavsky-Belsky '92**, **Tammy Noren Metz '90**, **Ashley Sartor McNamara '90**.

Second row: **Carolyn Haberek Blanco-Losada '90**, **Jennifer Luce Sartor '91**, **Alyson Wellens Ruff '88**, **Julie Peyton Stein '91**, **Alissa Epstein Jankay '94**, **Liliana Alonzo Smith '93**, **Penny Pearson O'Neil '90**.

Third row: **Michelle Kershner Fahey '91**, **Elizabeth**

Docteur '90, '93 (MS), **Erin Gibson Allen '92**, **Kimberly Klenk Howells '95**, **Ellen Adelman Stein '94**, **Ann Ford Sherman '94**, **Mamta Shah '92**, **Nicole Kaplan '90**, **Saman Saeed Awan '92**, **Sarah Berger '92**.

Fourth row: **Janice Gillman Greenberg '90**, **Amy Ford Sherman '91**, **Rachel Adler Jaffee '92**, **Katie Keller Zimmerman '93**, **Kate Hollos '93**, **Beth Fried '88**, **Janet Ramirez Glausier '88N**, **Julie Falwell Weidener '88**, **Gerin Stevens '91**, **Sonia Gyan Pazzak '88**.

Fifth row: **Rebecca Hattman Spencer '91**, **Christine Down Mills '93**, **Nancy Van Der Ziel Lenart '93**, **Noelle Ulterino McWard '91**, **Donna Schwind Border '90N**.

Back row: **Eileen McCarthy Cakouros '90**, **Marie Habbe Cosgrove '90**, **Nadia Malik '92**, '94S (MBA), **Anne Wagner Merton '89N**, **Trish Murley '92**, **Karen McCourt '92**.

Present, but not pictured, were **Brigid Brennan '89**, **Lee Gravitz Weber '92**, and **Carol Ponzi Tarby '88**.

Photochemistry Society, and the Asian and Oceanian Photochemistry Association, has contributed the most to the field of photochemistry. The Inter-American Photochemistry Society includes a link to a biography of Fred and summary of his research on its homepage, I-aps.org.

1970 Madeline Hubbard Schmitt (MA) (See '65 School of Nursing)

1984 Katherine Chaurrette (MS) (see '83 College).

1986 Andrea Baird (MS) died in October 2015. Her sister, Dean, writes: "Andrea worked for nearly her entire career at the U.S. Department of Education, and was a prolific researcher and writer. Although her life was short, her accomplishments were many. She always spoke highly

of her time at Rochester, and was a proud alumnus."

1999 Tadeusz (Ted) Lewandowski (MA) has published *Red Bird, Red Power: The Life and Legacy of Zitkala-Ša* (University of Oklahoma Press). Ted is an associate professor in the Department of Anglophone Cultures at the University of Opole in Poland.

MILESTONES

Salyer's Century

When **Ival Salyer** '41 turns 100 this November, he'll look back upon a century of innovation knowing that he played an integral role in some of its major advances.

After earning his degree in chemistry, Salyer served in the Air Force during World War II, and later spent the bulk of his career in Dayton, Ohio, first at the Monsanto Research Corp., and then at the University of Dayton Research Institute.

He holds numerous patents, three of which were issued to him in the past decade. Salyer retired in 2001 as he was nearing 90, and pursued independent research that led to the patents for a hybrid aircraft design, a potable water production system, and a hydrogen fuel storage system.

"I was asked one time by a newspaper reporter, 'Where do all those ideas you get come from?'" said Salyer in a telephone interview from his home near Atlanta in September. "My answer was, 'I wish I knew because I would go there more often.'"

Salyer says he's proudest of his contributions to the development of the artificial heart and artificial kidney. Early attempts at both synthetic organs were composed of materials rejected by the body. Salyer led the development of a polymer material that solved that problem.

Salyer says he had "the most fun" helping develop for the National Highway Traffic Safety Administration the Minicar Research Safety Vehicles that proved in the 1970s that it was possible to build safe, small cars.

"I enjoyed instrumenting those cars, and running them down this racetrack into this concrete wall with instrumented dummies on board," Salyer says. He made two contributions to the prototype vehicles: an energy absorbing foam placed in the front of the cars (engines were in the back) that would absorb impacts from up to 60 miles per hour; and energy-absorbing bumpers. "I think it's still important today," he says of the project. The cars, which were never commercialized, included many safety features—and, he adds, "not all of those features have been incorporated in cars."

"A lot of my inventions came about as answers to problems of the day," he says. "In the course of that, you work out solutions, which become inventions."

Salyer was born in Coburn, Virginia, in the Appalachian coal country. His first automobile was one he built himself, from parts he found in a salvage yard. His family



REUNITED: Salyer and his wife, Jane, were married when Salyer returned home after a four-year tour of duty with the Air Force during World War II. Jane died in 2006.

moved a lot, and as he was nearing college age, it was clear he would need to fund his own education. He got a job at Tennessee Eastman, the chemical company George Eastman founded in the aftermath of World War I to guarantee that Eastman Kodak would always have an independent supplier of chemicals to fuel its film business. Through that job, he made his way first to the city of Rochester, and then to the University.

Salyer was married to his wife, Jane, for more than 60 years before she died in 2006. They had three children. Salyer's younger

daughter, April Bell, recalls her father "forever writing on napkins when the family was at restaurants. His mind just never quit."

She also recalls his admonitions over the years to "remember the I. O. Salyer rules for happy, healthy living."

With a little prompting from her, Salyer recites them again.

"For a long and healthy life, no drugs, no drinking, no smoking," he says. "For a happy life, faith, family, and above everything else, work that you enjoy and that you're good at." —KAREN MCCALLY '02 (PHD)

AWARDS

Honoring Alumni and Friends

University awards recognize service and achievement.

SCHOOL OF MEDICINE AND DENTISTRY

Alumni Achievement Award

Wendi Kuhnert-Tallman '95M (MS), '99M (PhD) is the associate director for laboratory sciences at the National Center for Emerging and Zoonotic Infectious Diseases at the Centers for Disease Control and Prevention. She works with partners throughout the United States and around the world to prevent illness, disability, and death from infectious diseases. She has authority over the CDC's high contamination laboratory and provides leadership for the Center's laboratory and laboratory services, spanning six divisions and 18 laboratory branches. Kuhnert-Tallman has led teams that have tackled such epidemics as the HIV-AIDS and hepatitis B and C virus, Ebola, and most recently, the Zika virus. In less than two decades, she has made significant contributions to the field of public health microbiology and biosafety at the highest national level, tracking disease outbreaks and their impact, while coordinating efforts to manage, contain, and ultimately cure diseases.



Wendi Kuhnert-Tallman



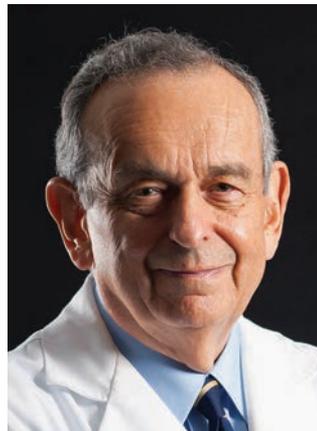
Lawrence Nazarian



Richard Aab

Alumni Service Award

Lawrence Nazarian '64M (MD), '66M (Res) is a clinical professor of pediatrics at the School of Medicine and Dentistry and a clinical teacher in the Resident Continuity Clinic at Strong Memorial Hospital. He joined the faculty as well as Rochester's Panorama Pediatric Group in 1969, after two years as a medical officer in the United States Army. He has taught at nearly every level, from first-year medical students to continuing medical education presentations for seasoned clinicians. He also served as editor-in-chief of *Pediatrics in Review*. Nazarian has been a generous supporter of the School of Medicine and Dentistry, Golisano Children's Hospital, and the James P. Wilmot Cancer Institute. He served as the giving chair for his 50th class reunion, and in 2003 was named the Gold Medal Award recipient by the School of Medicine and Dentistry.



Arthur Moss



Mark Weinstein



Madeline Hubbard Schmitt

panies: Idea Boxx, a company dedicated to designing and manufacturing products that improve productivity for businesses across industries; and Hydra Rinse, ProNatural Brands, and United Sources Sought, all of which germinated from Idea Boxx. A long-standing supporter of the University, Aab is a University trustee, a board member of the Medical Center, and served as cochair of the Medical Center's \$650 million campaign. His generous contributions to the University reflect his dedication to medical research, benefiting the School of Medicine and Dentistry, Golisano Children's Hospital, and Strong Memorial Hospital. In 2007, the Aab Cardiovascular Research Institute was named in recognition of his leadership support and commitment to the institute's mission.

Distinguished Alumnus Award

Arthur Moss '62M (Res) is the Bradford C. Berk, MD, PhD Distinguished Professor in Cardiology at the School of Medicine

and Dentistry, and the founding director of the Heart Research Follow-Up Program, a nationally distinguished research group studying sudden cardiac death. Fascinated by the genetics of heart disease, he began studying long QT syndrome, a disease that makes the heart susceptible to fatal arrhythmias, in the 1960s. He helped launch the International Long QT Syndrome Registry, one of the first gene registries for any disease in the world, and one that paved the way for genetic testing and innovative treatments for the potentially fatal condition. He is also an expert on electrical disturbances of the heart, and led research that resulted in the widespread use of the implantable cardioverter defibrillator. He is a past recipient of the School of Medicine and Dentistry Gold Medal Award, the Hutchison Medal, and the Eastman Medal.

Humanitarian Award

Mark Weinstein '65, '69M (MD) is a reconstructive plastic surgeon and the

founder of Changing Children's Lives, a nonprofit organization that serves children in developing countries who have congenital and traumatic deformities. The organization employs local doctors and medical professionals to improve their skills and expertise. Weinstein and his medical team, which has included more than 60 medical students and 50 residents from both Yale and Rochester, perform operations on week-long missions, averaging 100 surgical procedures per trip. To date, Changing Children's Lives has operated on more than 1,000 patients in such countries as Brazil, Honduras, Colombia, Thailand, China, Vietnam, and Uganda. Weinstein is a member of the Friends of Rochester Athletics Board, the School of Medicine and Dentistry 35th and 40th Reunion Committees, the School of Medicine and Dentistry Alumni Council, and has been an admissions and career services volunteer. He and his wife, Karen, are



Jeffrey and Carolyn Palko Stone

the parents of Joshua and Ellyn, both of whom are Rochester graduates.

Wildner Award

Jeffrey '87, '91M (MD) and **Carolyn Palko Stone '87** met in a freshman-year Spanish class, graduated with honors, and went on to marry at the Interfaith Chapel. Today they remain closely connected to Rochester as philanthropists and alumni volunteers. Jeffrey is an associate professor of radiology at the Mayo Clinic Florida, where he treats spine disease and performs minimally invasive spine therapies. He is also a fellow of the American College of Radiology, an honor bestowed on only 10 percent of radiologists. Carolyn has worked as a research analyst for several large utility companies and is an expert in competitive intelligence, data analysis, and market research. The Stones are members of the George Eastman Circle, the University's annual leadership giving society. They have also established two endowed funds—one at the School of Arts & Sciences and one at the School of Medicine and Dentistry—to provide need-based scholarships for undergraduate and medical students.

SCHOOL OF NURSING

Dean's Medal

Madeline Hubbard Schmitt '65N, '70 (MA) is a nurse-sociologist and a national leader in advancing interprofessional collaborative practice and interprofessional education. She was a faculty member at the School of Nursing from 1972 until her retirement in 2005, at which time she held an endowed chair as professor of nursing and interprofessional education. As a Rochester faculty member, she held leadership posts in administration, teaching, and funded research. She was also coleader of an informal national interprofessional network, as well as creator and chair

of the North American Division of the *Journal of Interprofessional Care*. She was one of two U.S. members of the WHO Study Group on Interprofessional Education and Collaborative Practice, and in 2011, she chaired a national expert panel that produced *Core Competencies for Interprofessional Collaborative Practice*, a report that helped trigger a national transformation in health professions education. Her past awards include the School of Nursing Dean's Award for Excellence in Teaching, and the Distinguished Alumna Award.

Distinguished Alumna Award

Cynthia Connolly '87N (MS) is an associate professor of nursing at the University of Pennsylvania and one of four faculty directors of the Field Center for Children's Policy, Practice and Research. Her scholarly work has focused on the forces that have shaped children's health care delivery and family policy in the United States. She's the author of the award-winning book, *Saving Sickly Children: The Tuberculosis Preventorium in American Life, 1909-1970*. In 2013, she published the monograph *Well-Child Care and the Commonwealth Fund's Child Development and Preventive Care Program*, which analyzed the evolution of well-child care in the United States. Her current research traces the development, marketing, and use of pharmaceutical products for children. Supported by a Robert Wood Johnson Foundation Investigator in Health Policy Research grant and a fellowship from the National Endowment for the Humanities, her forthcoming book, *No Drug Left Behind? Children, Drug Therapy, and Pharmaceutical Policy in the United States 1933-1979*, will be published by Rutgers University Press. Connolly was awarded the J. Worth Estes Prize from the American Association for the History of Medicine in 2014, and the University of Pennsylvania's highest



Cynthia Connolly

teaching award, the Lindback Award for Distinguished Teaching, in 2015.

Legacy Award

John Schottmiller '53 is the founder and former president of RM Consulting, a quality training business serving Fortune 500 clients in the United States and Canada. Prior to launching his firm, he had a 27-year career at Xerox where, as manager of business effectiveness and quality for one of its largest divisions, he introduced the concept of Total Quality Management. While he was launching RM Consulting, he studied Russian and went on to serve on the board of an American company that sold photographic products in Russia. He also worked with Linkages of Rochester, managing the sister city relationship with Veliky Novgorod, Russia, and volunteered for the State Department, assisting Russian businesses in the Ural Mountain region. John and his wife, Anne, are members of the George Eastman Circle. They also established an endowed scholarship at the School of Nursing in memory of their daughter, Julia Anne Schottmiller-Koestner '84N, who was killed in 1990 during a visit in Prague.



John Schottmiller

2000 Lynn Arner (PhD), an associate professor of English at Brock University in Ontario, Canada, won a grant from the Social Sciences and Humanities Research Council of Canada for her project "Working Class Women in the Professoriate."

2012 Andrea Welles (MS) (see '11 College).

Eastman School of Music

1959 Katherine Hoover sends several items of news. She received the National Flute Association's Lifetime Achievement Award at the association's convention in San Diego last August; her composition *Requiem for the Innocent* was performed at Lower Manhattan's historic Trinity Church on September 21, World Peace Day; the *Requiem for the Innocent* CD was released in August by 4Tay Records; and Eastman flute professor Bonita Boyd was the soloist in a performance of Katherine's flute concerto *The Four Winds* at the Masterworks Festival in Cedarville, Ohio.

1961 John McIntosh (MM), '73 (DMA) died in April, his wife, Diane, writes. John taught organ and music theory at Western University in London for more than 30 years, and was organist and choirmaster at London's St. James Westminster Anglican Church for more than 20 years. Among the highlights of his career were performances at King's College Chapel in Cambridge as well as Paisley Abbey in Scotland.

1966 Pianist and composer **Laima Obelenis Gaizutis** has released a CD, *Simply Beautiful Collection II* (Laima Music). It includes 11 original tracks. "They crisscross from one genre to another, always with an overriding discernible romantic influence," Laima writes.

1973 John McIntosh (DMA) (see '61).

1981 Composer **Dan Locklair (DMA)** has released a CD, *Gloria* (Convivium Records). The recording consists of 14 pieces from texts that span the liturgical year. Performing on the CD are the Winchester College Chapel Choir, the Portsmouth Grammar School Chamber Choir, and the mixed voice choir Sospiri.

CLASS OF 1966

'Doors Were Suddenly Open to Me'

If **Mirga Kerbelis Bablin '66** were alive today, there's no doubt in the minds of any of her eight children: she would have wanted to celebrate the 50th anniversary of her graduation.

Mirga graduated nearly 20 years after she'd last stepped foot on campus, yet she wasn't about to miss commencement. Completing her Rochester degree altered the course of her life, and the lives of her large family. "It's a pretty inspirational story," says Mirga's youngest son, Christopher Bablin, who was not yet born at the time.

Mirga's oldest daughter, Mary Abbott, remembers graduation day. "When the time came for Mom to graduate in June of 1966, it was a big family affair with Dad, the seven kids, and Mom's parents in attendance," Mary writes in an essay entitled "A Model Mom." After morning Mass and Communion at home in Amsterdam, New



SECOND ACTS: Bablin's seven children, as well as her husband and parents, joined her at commencement, after which she launched a new career.

York, the family piled into two cars and made the three-hour drive in time for Mirga to attend a preceremony luncheon in the women's dining hall. Then the family sat in the bleachers of Fauver Stadium and watched as she walked across the makeshift platform, pregnant with Christopher, to claim her degree.

The oldest child of Lithuanian immigrants, Mirga graduated as salutatorian of her high school class in 1942. Two scholarships—one from Rochester and the other from New York State—enabled her to enroll in the College for Women that fall. Mirga kept a diary of her early months and years at school, in which she expressed the full range of emotions typical for young adults adjusting to life away from home. As Mary writes, Mirga filled its pages with stories of "sorority sisters, many handsome dates, the stresses of study, plus missing her mom, dad, and brothers."

Yet for reasons that remain a mystery to the family, Mirga would abandon the five-year nursing program in which she was enrolled, just short of graduation. In 1947, she moved back home. A year or so later, she married a veteran of World War II, Edward Bablinskas (the name was later shortened to Bablin).

Mirga spent the 1950s and early 1960s as a mother and housewife, supplementing the family income with occasional part-time work. The woman who'd been an achiever in the classroom was no less determined to excel in the home. In an autobiography she wrote for her family in 1983, she recalled that she'd raised her children "with such zeal and dedication, I wonder, now, how I did it. Aside from the routine tasks of diapers and bottles, I sewed my own clothes, slipcovers, curtains, and drapes, and became a proficient canner and outstanding cook."

Meanwhile, Edward's career floundered. He struggled in various jobs, and after she gave birth to their seventh child, Mirga decided she had to finish her degree. Borrowing money from her extended family, she took night classes in nearby Troy, transferring her credits to Rochester in time to graduate with the Class of 1966.

Christopher grew up knowing how important her achievement had been. "I like to think that I walked across that stage with my mom," he says. He doesn't believe his mother was ever satisfied with where she had left things in 1947.

"I don't think she was happy with the June Cleaver type of thing," he says. The family was also struggling. "When she got her college degree, it really changed the whole trajectory of our family."

Her children note that at the height of the feminist movement of the 1970s, Mirga combined characteristics that conventional wisdom held at odds. She was a devout Catholic and raised her children accordingly. She was conservative in her values and her politics. Yet she not only worked outside the home; she reveled in her job as a technical writer for the New York State Department of Criminal Justice.

"My mother had a very rewarding career," says Christopher. In 1973, Mirga transferred to the Department of Mental Hygiene, where she worked until 1990. She died in 2007.

"When I was growing up, my father was the one going to my parent-teacher conferences," Christopher says. He suspects she would have liked to attend more school events, but accepted that trade off. As Mirga wrote herself, her degree launched an important new chapter.

"Doors were suddenly opened to me, and I soon started to combine the best of both worlds." **6** —KAREN MCCALLY '02 (PHD)

1989 **Jim Lowe** writes: "I've been the music director and conductor of the recent Broadway revival of *Les Misérables* at the Imperial Theater. It just closed in September after two-and-a-half years and over 1,000 performances. This past season, I made my debut at San Francisco Opera, conducting *Sweeney Todd*. I also led Stewart Wallace's *Hopper's Wife* at New York City Opera and Daniel Catan's *Il Postino* at Opera Saratoga. This season I'll conduct *Candide* at the Théâtre du Capitole in Toulouse and the Opéra National de Bordeaux, and will return to the Glimmerglass Festival to conduct *Oklahoma!*"

2014 **Jamie Wilson** (MA) (see '11 College).

School of Medicine and Dentistry

1957 **Dwight Fitterer** (MD) died in July. **Sandra Beckman '57RC** writes. After completing his residency in gastroenterology at Genesee Hospital in Rochester, Dwight spent his career with Kaiser Permanente. In the late 1960s, he became physician-in-chief of the original Kaiser Hospital in South San Francisco, and later worked with architects and the Kaiser Foundation Hospital board to create the current Kaiser Hospital on El Camino Real. He remained there as physician-in-chief until his retirement in 1992.

1962 **Arthur Moss** (Res) won the Distinguished Alumnus Award from the School of Medicine and Dentistry. (See "Honoring Alumni and Friends," page 56.) . . . **Geoffrey Sperber** (MS) sends a photo of his new grandson, Ethan, "contemplating the next-generation sequence of the DNA helix." (See page 54.) Geoffrey is a professor emeritus in medicine and dentistry at the University of Alberta.

1964 **Lawrence Nazarian** (MD), '66 (Res) won the Alumni Service Award from the School of Medicine and Dentistry. (See "Honoring Alumni and Friends," page 56.)

1969 **Mark Weinstein** (MD) (see '65 College).

1985 **Bob Glowacky** (MS) (see '84 College).

1988 **Jim Musser** (MD/PhD) received the Rous-Whipple Award

from the American Society of Investigative Pathology in October. The award is named for two Nobel laureates, Peyton Rous and founding dean of the School of Medicine and Dentistry George Whipple. The award honors a scientist who has advanced the understanding of disease mechanisms. Jim is known internationally for his work on molecular mechanisms underlying severe bacterial infections. He holds the Fondren Foundation Presidential Chair of Pathology and Genomic Medicine at the Houston Methodist Hospital System and Research Institute in Texas.

1991 Jeffrey Stone (MD) (see '87 College).

1996 Andrea Cole (Pdc) is a contributing author to the book *Attachment Disturbances in Adults: Treatment for Comprehensive Repair* (W. W. Norton & Co.), edited by Daniel Brown and David Elliott.

1999 Wendi Kuhnert-Tallman (PhD) won the Alumni Achievement Award from the School of Medicine and Dentistry. (See "Honoring Alumni and Friends," page 56.)

2013 Ronan Cahill (MD) and **Jessica Henneman** '11N, '14N (MS) were married in August at Lake Wenatchee, Washington. Ronan finished his family medicine residency at Swedish Cherry Hill and began a sports medicine fellowship at Swedish Hospital. Jessica finished a Leadership Education in Adolescent Health fellowship at the University of Washington and Seattle Children's Hospital and started as an adolescent medicine provider for Seattle's Group Health Cooperative.

Send Your News!

If you have an announcement you'd like to share with your fellow alumni, please send or e-mail your personal and professional news to *Rochester Review*.

E-mail your news and digital photos to rochrev@rochester.edu. Mail news and photos to *Rochester Review*, 22 Wallis Hall, University of Rochester, P.O. Box 270044, Rochester, NY 14627-0044. To ensure timely publication of your information, keep in mind the following deadlines:

Issue	Deadline
March 2017	December 1, 2016
May 2017	February 1, 2017

TRIBUTE

Edwin Carstensen: A Pioneer in the Bioeffects of Ultrasound

Edwin Carstensen, professor emeritus of electrical engineering at Rochester, was a trailblazing researcher. His contributions to understanding the biological effects of ultrasound and extremely low frequency electric fields won him widespread acclaim during a career that spanned almost 50 years.

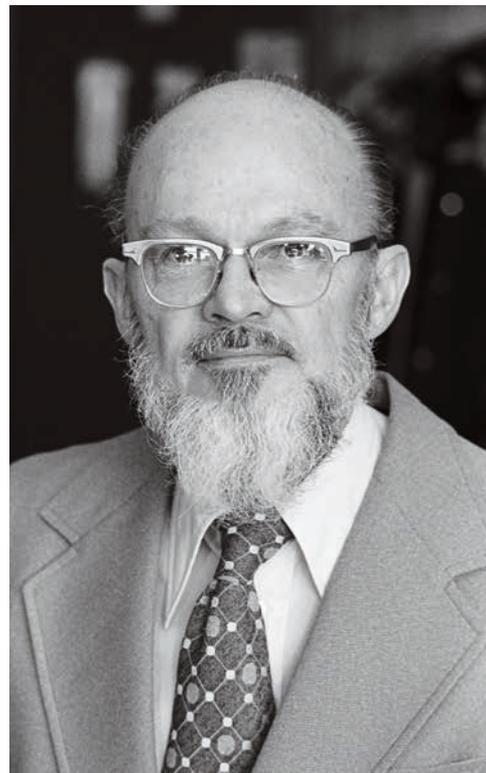
Ed died in June in Rochester, the city that had been his home since 1961. Ed arrived at the University that year, and quickly became the director of the nascent biomedical engineering program. He was awarded one of the first three NIH Training Grants in Biomedical Engineering (the other two went to counterparts at Penn and Duke). In 1986, he became the founding director of the Rochester Center for Biomedical Ultrasound, one of the largest groups of MD and PhD researchers active in medical ultrasound.

Ed came from modest roots. He grew up in rural Nebraska, where his parents, August and Opal Carstensen, ran a hardware store. His early life was centered on family, farm, school, and church. He was inspired by his father's keen, but intuitive, ability to fix radios, and this sparked his interest in science and math. Anticipating the possibility of a career in teaching, he attended Nebraska State Teacher's College, where he majored in physical science and minored in math, biological science, and music.

At the recommendation of his physics professor, however, Ed chose to pursue graduate study. After a stint at the Navy's Underwater Sound Reference Laboratory in Orlando, Ed enrolled in a PhD program at the University of Pennsylvania, where he completed his thesis on the ultrasonic properties of blood.

From his initial appointment in electrical engineering at Rochester, Ed made pioneering contributions to the understanding and development of ultrasound contrast agents, lithotripsy systems, high intensity focused ultrasound, nonlinear tissue imaging, and thresholds for tissue exposures. He won multiple awards during his career from such organizations as the Acoustical Society of America, the American Institute of Ultrasound in Medicine, and the IEEE, of which he was a life fellow. In 1987, he was elected to the National Academy of Engineering.

Ed's expertise was in high demand. Working with a committee established by the National Institutes of Health, he helped set the worldwide standards for ultrasound exposure. His landmark book, *Biological Effects of Transmission Line Fields* (1987), was widely influential in legal and government actions related to exposures to electromagnetic fields.



IN DEMAND: As a leading expert, Carstensen helped set worldwide standards for ultrasound exposure.

Ed and his wife, Pam, raised five children, including one College alumnus, Laura Carstensen '78, director of Stanford University's Center on Longevity. His family grew to include seven grandchildren and two great-grandchildren. His devotion to documenting his family's genealogy will ensure that his grandchildren are well acquainted with several thousand ancestors. His "academic descendants" are many, including Diane Dalecki, professor and chair of biomedical engineering at Rochester. Those of us who worked with Ed share a sense of profound gratitude for his encouragement, brilliant insights, and gentle, unfailingly positive guidance. 📍

—DAVID BLACKSTOCK, DIANE DALECKI, AND KEVIN PARKER

Blackstock is the E. P. Schoch Professor Emeritus of Mechanical Engineering at the University of Texas at Austin. Dalecki is chair and professor of biomedical engineering, professor of electrical and computer engineering, and director of the Center for Biomedical Ultrasound at Rochester. Parker is the William F. May Professor of Electrical and Computer Engineering, Biomedical Engineering, and Imaging Sciences, and dean emeritus of the Hajim School.

TRIBUTE

Donald (D. A.) Henderson '54M (MD): The Man Who Wiped Out Smallpox

In 1966, the World Health Organization began an ambitious campaign to eradicate smallpox. The \$300 million effort was an astonishing undertaking that many said was doomed to failure. Realizing it would be a heavy lift, the WHO director, a Brazilian, wanted an American to lead the initiative and be the “fall guy” if it failed. Donald (D. A.) Henderson '54M (MD), an epidemiologist who was leading the Centers for Disease Control's smallpox surveillance unit, was the man tapped for the role.

For more than a decade, Henderson led an army of scientists, doctors, nurses, linguists, medical technicians, soldiers, and academics. They tracked down everyone infected with the lethal disease across 50 countries. They then immunized all those within a ring of proximity to the infected, effectively shutting down the spread of the disease.

Henderson spent most of his time visiting smallpox-stricken countries, some of which were in the middle of civil wars. He was involved in seven coup d'états, and in a couple of cases, had to forge special treaties so that vaccinations could proceed. Team members were kidnapped and helicopters held for ransom. In Bangladesh, his team dodged land mines. When the Soviets shipped weak vaccines, he flew to Moscow and confronted them. Then, in 1980, the effort came to an end. The World Health Organization declared that smallpox had been eradicated.

Henderson, who died in August at the age of 87, has since been revered as the “General Eisenhower” of the war on smallpox. Conquering the disease counts as among the greatest achievements of medicine in the 20th century.

Growing up in Lakeland, Ohio, as the son of a nurse and an engineer, Henderson knew early on he wanted to be a physician. In 1947, while he was an undergraduate at Oberlin College, a smallpox outbreak in New York City stirred in him an early interest in the disease and how it could be stopped.

After that, his interest in epidemiology evolved somewhat fortuitously. In his senior year of medical school at Rochester, he competed for a prize of \$200 by entering



HERO IN PUBLIC HEALTH: Henderson received the Presidential Medal of Freedom in 2002.

a project about the 1833 cholera epidemic in upstate New York.

“To a penurious medical student, I admit the prize money was the primary motive,” he said in a 2005 interview for the journal *Epidemiology*.

The study involved plotting cases and deaths by time, age, and geographic area, estimating survival curves and attack rates—all skills he would later call upon. It not only earned him the \$200, but also helped him land a position with the CDC's Epidemic Intelligence Service.

“I applied to the CDC not because I was interested in public health or anything like that,” he said in a 2002 interview with *Rochester Medicine*. “But we all had to do military service then and I thought, ‘Well, I’ll spend two years in public health.’”

After completing his residency in internal medicine, Henderson became the CDC's chief of viral disease surveillance. In that role, he took part in the initial field introduction of the Salk polio vaccine, the oral polio vaccine, and the measles vaccine. He oversaw studies to test the simultaneous administration of multiple antigens, particularly useful in developing countries. He then began studying how to administer the smallpox vaccination using a new jet injector that could vaccinate 1,000 people per hour.

In his work for the WHO, he proposed the adoption of a bifurcated (forked) needle, which was easy to use, rapid to execute, and required one-fourth as much vaccine.

“It was one of the key factors in the success of the eradication program,” he said later.

Colleagues remember Henderson as hard-driving, uncompromising, and devoted to every mission he tackled.

“It wasn't always pleasant working for him,” Don Millar, a 32-year veteran of the CDC, told *Rochester Medicine* in 2002. “He expected the best from people, so he often got it. He could often drive people past what they thought they could do, but still have them feel wonderful at the end.”

In the late 1970s, Henderson became dean of Johns Hopkins University's Bloomberg School of Public Health. In the late 1990s, he founded a center for the study of bioterrorism at Johns Hopkins.

After the terror attacks of September 11, 2001, demand for his expertise grew, and President George W. Bush appointed him as director of the newly created Office of Public Health Preparedness.

In 2002, he received the Presidential Medal of Freedom, the nation's highest civilian honor.

Henderson maintained a strong connection to Rochester throughout his career, returning to the Medical Center multiple times to speak and attend reunions. He said he was often guided by the biosychosocial philosophy of medicine he learned as a medical student.

“[I was taught to] take time, question the patient thoroughly, listen carefully,” he said in a *Rochester Medicine* interview. “More often than you can imagine, the patient has a remarkably keen insight and understanding of his problem, and will effectively provide you the diagnosis before you do the physical examination or laboratory study. It sounds simple and obvious, but all too few people seem to understand this very simple precept that came straight from an introductory course at Rochester.” [®]

—CHRISTINE ROTH

Roth is editor of Rochester Medicine.

School of Nursing

1961 Elaine Burpee Willcox (see '60 College).

1965 Madeline Hubbard Schmitt '70RC (MA) won the Dean's Medal from the School of Nursing. (See "Honoring Alumni and Friends," page 56.)

1986 Fran Panzella London '91 (MS) has released a second edition of *No Time to Teach: The Essence of Patient and Family Education for Health Care Providers* (Pritchett & Hull Associates). The book won the *American Journal of Nursing* Book of the Year award in 2010.

1987 Cynthia Connolly (MS) won the Distinguished Alumnus Award from the School of Nursing. (See "Honoring Alumni and Friends," page 56.)

2011 Jessica Henneman '14 (MS) (see '13 School of Medicine and Dentistry).

Simon Business School

1979 Paul Thornton (MBA) has published a memoir, *White Man's Disease* (Book Broker Publishers), of his rise from Brooklyn's Bedford Stuyvesant neighborhood to become a corporate executive.

Warner School of Education

1977 Doreen Cocilova Manglee (MA) writes that she has retired after 44 years of teaching in the East Irondequoit Central School District near Rochester. She won an Outstanding Service Award in 2011 and a Legacy Award in 2015, both from the East Irondequoit Board of Education. She adds: "I plan to continue serving others through volunteer work within the community, but will make sure to include time for pursuing items on my 'bucket list!'"

In Memoriam

ALUMNI

Ada Rayton Neary '40,
August 2016
Robert H. Weiner '40,
June 2016

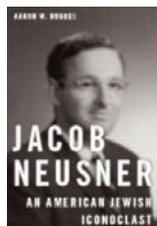
Elizabeth Fisher Scharffenberger '41, June 2016
Sylvia Gordon Weinberg '41E,
September 2016
Mary Ellen Lesch Centner '44N,
September 2016
Betty Pixley Grant '44N,
August 2016
Jean Peters Harney '45N,
August 2016
Robert G. Hobstetter '45E, '46E
(MM), September 2016
Jean Anthony Tischer '45,
September 2016
Marian Hulek Eiband '46N,
April 2015
Frances Paul De Germain '46E,
September 2016
Muriel Gundersheimer '46E,
January 2015
Helen Range Cone '47N,
September 2016
Gloria Knickerbocker Fish '47,
August 2016
Elizabeth Thom Snedeker '47N,
September 2016
Ronald A. Cox '48E,
August 2016
Marvin A. Epstein '48M (MD),
August 2016
Nancy Frick Munnings '48,
September 2016
Justine Cleary Johnston '49E,
August 2016
Patricia Lynch Zavell '49,
August 2016
Wilbur E. Ault '50,
July 2016
Barbara Smith Kracht '50,
August 2016
June Potter Durkee '51E,
August 2016
Roy C. Hannan '51,
June 2016
Esther Flora Kubler '51N,
August 2016
Norma Wendelburg '51E (MM), '70E
(PhD), July 2016
Leonard M. Goldman '52 (PhD),
August 2016
Robert E. Grochau '52,
September 2016
Barbara Hultman Hetzer '52,
July 2016
Gerald D. Heveron '52,
September 2016
Rowena Hallauer Nadig '52, '53N,
August 2016
Harry S. Stathe '52,
September 2016
Jan Lowe Evans-Tiller '53,
September 2016
Ernest R. M. Kay '53M (PhD),
December 2014
Geoffrey A. Page '53 (Flw),
April 2015
Joseph J. Warnock '53,
September 2016

Henry A. Cwalina '54,
August 2016
Donald A. Henderson '54M (MD),
August 2016
Gary E. Gray '55E,
August 2016
Christabel Linville Lauinger '55E,
August 2016
Edward C. Leibig '55,
September 2016
William D. DeWitt '56,
August 2016
Harold L. Galloway '56,
July 2016
Robert A. Ghedi '56, '63 (MA),
September 2016
Ronald M. Levinson '56,
August 2016
Susan M. Bruno '57 (MS),
September 2016
Jean Shelton Cramer '57W (Mas),
July 2016
Catherine Will Eller '57,
June 2016
Dwight W. Fitterer '57M (MD),
July 2016
Phyllis Tremaine Huskey '57N,
August 2016
Marilyn Shepard Randall '57,
August 2016
Donald M. Green '58 (PhD),
July 2016
Virginia Tyler Rockwell '58 (MS),
June 2016
Robert H. Stone '58,
July 2016
Robert H. Figler '59,
August 2016
Sally Kerr Frank '59N,
September 2016
William G. Gamble '59M (MD),
September 2016
Margaret Guinan '59W (Mas),
September 2016
Monica Wittmann Cloonan '60W
(MS), August 2016
Brenda Long Dow '61,
September 2016
Robert E. George '61M (MS),
July 2016
Joyce Holden '61N,
September 2016
Marlene Lambert Jaffe '62,
September 2016
William S. Rubenstein '62E,
August 2016
Ellen Sauer-Hill Thurber '62W,
'68W (MA), July 2016
Marilyn Maley '63W (MA),
August 2016
Marion Partridge Perkus '63,
December 2015
Donald M. Bay '64S (MS),
August 2016
Theodore A. Bick '64 (PhD),
August 2016
Martha Minster '64E,
January 2016
John D. Levonik '65,
September 2016
Steven D. Barley '66, '75W (EdD),
September 2016
Donald E. Hammer '66M (MD),
February 2016
Douglas L. Butler '67,
August 2016
Alfred M. Dietrich '68S (MBA),
September 2016
Leslie Merchant '68,
January 2016
George F. Munro '69M (PhD), '70M
(MD), July 2016
Candace Miller Kownacki '71,
September 2016
Donald F. Duval '73W (Mas),
June 2016
David C. Isele '74E (DMA),
August 2016
Pnina Szybel Klein '74W (EdD),
November 2015
Joyce Engelmann Dumm '75W
(MA), August 2016
Bruce D. McNeill '75,
September 2016
Michael J. Murray '75,
August 2016
Michael L. Tarentino '75E,
August 2016
Paul L. Eschmann '76S (MBA),
August 2016
William Gough '76M (MD),
August 2016
Gregory A. Curt '77M (MD),
July 2016
Barbara Katz-Gladstone '78N,
May 2016
Mark W. Letcher '78,
September 2016
Barbara Egbert McWilliams '78W
(MS), September 2015
Theodore P. Rounds '78E,
August 2016
Calvin S. Dupuis '79 (MS),
August 2016
John F. Hoose '79 (MS),
September 2016
Paul C. Messina '80,
March 2016
Douglas K. Reilly '80M (Flw),
March 2015
Lee R. Chabala '81M (PhD),
January 2015
Alden S. Budd '82,
September 2016
James A. Ghent '82,
August 2016
Leo R. Gardner '89 (PhD),
July 2016
Jill Ricketts '92 (PhD),
February 2015
Michael Missiras '94E (MM),
July 2016
Carla Caves '02N,
September 2016
Stephen J. Lambrinos '04, '10M
(MD), August 2016

Books

Jacob Neusner: An American Jewish Iconoclast

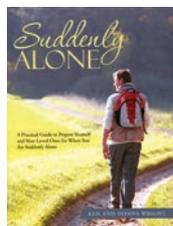
By Aaron Hughes
NYU Press, 2016



Hughes explores the life of the prolific, path-breaking, and controversial scholar of Judaism best known for helping transform Judaic studies from a cloistered endeavor of religious adherents to a field of secular, critical examination that could thrive in the university. Hughes is the Philip S. Bernstein Professor in Judaic Studies at Rochester.

Suddenly Alone: A Practical Guide to Prepare Yourself and Your Loved Ones for When You Are Suddenly Alone

By Kenneth and Donna Lake Wright '64
Authorhouse, 2016



The Wrights offer a “personal operating manual” for family members and heirs who find themselves in the role of executor of an estate. The book is based on a notebook kept by Donna’s stepfather that was “so helpful when I was the executrix of his and my mother’s estate, that Ken and I wanted to share our experiences with others,” Donna writes.

Implications and Applications of the Near Death Experience

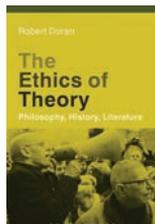
By Edward Riess '70
Edward Riess, 2015



Riess draws from his decades of research into reports of near death experiences to argue for the validity of the accounts, and their value in revealing “mankind’s true relationships with other human beings, and even with the ‘higher power.’” Riess is a member of the International Association for Near Death Studies and an electrical engineer in the space division of L-3 Cincinnati Electronics.

The Ethics of Theory: Philosophy, History, Literature

By Robert Doran
Bloomsbury, 2016



Doran assesses the ethical challenges of critical theory across the humanities and social sciences, drawing on continental philosophers and critical theorists, including Jean-Paul Sartre, Claude Lévi-Strauss, Jacques Derrida, Richard Rorty, Hayden White, Edward Said, and others. Doran is an associate professor of French and comparative literature at Rochester.

Window Left Open: Poems

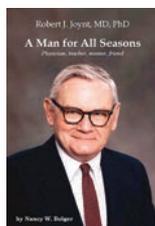
By Jennifer Grotz
Graywolf Press, 2016



Rochester English professor and literary translator Grotz presents a collection of poetry inspired by her yearly trips to a 17th-century baroque monastery that’s now a writers’ retreat near Nice, France.

A Man for All Seasons: Robert J. Joynt, MD, PhD

By Nancy Bolger
University of Rochester Press, 2016



Bolger, a writer and editor at the Medical Center, tells the life story of the influential neurologist who was the founding chair of Rochester’s Department of Neurology.

Economic Development of Taiwan: Early Experiences and the Pacific Trade Triangle

By Frank Hsiao '67 (PhD) and Mei-Chu Wang Hsiao '67 (PhD)
World Scientific Publishing, 2015

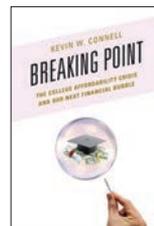


The Hsiao examine the roots of Taiwan’s economic growth since the 1970s, pointing to prewar development under Japan and postwar formation of the Pacific trade

triangle. Frank Hsiao is a professor emeritus of economics at the University of Colorado, Boulder, and Mei-Chu is a professor emerita of economics at the University of Colorado at Denver.

Breaking Point: The College Affordability Crisis and Our Next Financial Bubble

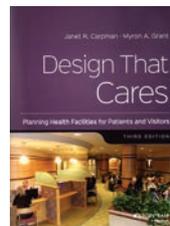
By Kevin Connell '15
Rowman & Littlefield, 2016



Connell, a student at William & Mary Law School, explores the soaring cost of higher education in the United States, identifying as contributing factors the competition among colleges and universities for amenities and prestige, as well as predatory practices in the lending industry.

Design that Cares: Planning Health Facilities for Patients and Visitors (Third Edition)

By Janet Carpmann '73 and Myron Grant
Jossey-Bass, 2016



Carpman and Grant offer an updated edition of their textbook on health facility design. The edition includes new information on topics such as site planning, architecture, interiors, product design, and graphic design, among others. The authors are partners in the architectural and design consulting firm Carpmann Grant Associates.

White Man’s Disease

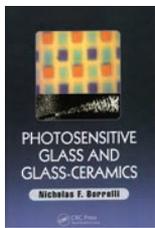
By Paul Thornton '79S (MBA)
Book Broker Publishers, 2016



In a memoir, Thornton tells the story of his rise from the Bedford-Stuyvesant neighborhood of Brooklyn in the 1960s, to his promising career at DuPont Corp., to his diagnosis with a devastating neurological illness that derailed his career and family life. Looking back at his recovery, Thornton reflects on the themes of hope and resilience.

Photosensitive Glass and Glass-Ceramics

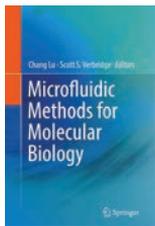
By Nicholas Borrelli '63 (PhD)
CRC Press, 2016



Borrelli, a glass scientist at Corning, explores the ways in which light interacts with photosensitive glass and glass-ceramics.

Microfluidic Methods for Molecular Biology

Edited by Chang Lu and Scott Verbridge '02
Springer, 2016



Verbridge coedits a survey of research on molecular biology assays and molecular techniques enabled or enhanced by microfluidic platforms. Verbridge is an assistant professor at

Virginia Tech–Wake Forest School of Biomedical Engineering and Sciences.

No Time to Teach: The Essence of Patient and Family Education for Health Care Providers (Second Edition)

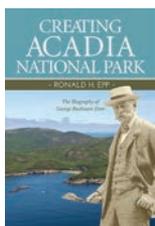
By Fran London '86N, '91N (MS)
Pritchett & Hull Associates, 2016



London offers an updated edition of her survey of research in patient education. The book won the *American Journal of Nursing* Book of the Year award in 2010. London is a health education specialist at Phoenix Children's Hospital and a widely recognized expert in patient education.

Creating Acadia National Park: The Biography of George Bucknam Dorr

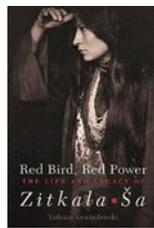
By Ronald Epp '65
Friends of Acadia, 2016



Drawing from archival materials in the United States and abroad, newly discovered and uncatalogued sources, and in-person interviews, Epp traces the story of Dorr's pioneering role as the "Father of Acadia," as well as Dorr's contributions to the American environmental movement.

Red Bird, Red Power: The Life and Legacy of Zitkala-Ša

By Tadeusz Lewandowski '99 (MA)
University of Oklahoma Press, 2016

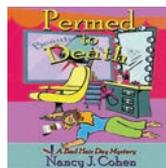


Lewandowski explores the life of Zitkala-Ša, a Sioux activist, writer, and leader of the pan-Indian movement that led to the passage of the Indian Citizenship Act in 1924. Lewandowski is a

historian and associate professor in the Department of Anglophone Cultures at the University of Opole in Poland.

Permed to Death

By Nancy Cohen '70, '70N
Nancy J. Cohen, 2016

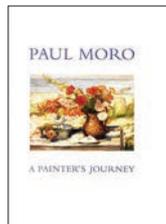


Cohen presents a reissue of the debut novel in her Bad Hair Day mystery series, revised and in audio format. Mary Ann

Jacobs narrates.

Paul Moro: A Painter's Journey

By Valerie Ann Leeds '79
Newington-Cropsey Foundation, 2016



Leeds explores the art and life of Italian-born American artist Moro as an accompaniment to the first museum retrospective devoted to his work. The exhibit is presented by the

Newington-Cropsey Foundation at their headquarters in Hastings-on-Hudson, New York.

Recordings

Re-Imagined: Schumann & Beethoven

By the Ying Quartet and Zuill Bailey
Sono Luminous, 2016



The Ying Quartet and cellist Zuill Bailey perform original arrangements of Schumann's *Cello Concerto* as well as Beethoven's *Kreutzer* Sonata (originally for violin and piano). The Ying Quartet consists of cellist David Ying '92E (DMA), violinist Janet Ying '92E, violist Phillip Ying '91E, '92E (MM), and violinist Robin Scott. The Ying siblings are faculty

members in the strings, harp, and guitar department at Eastman.

Giants of Diving

By Craig Patrick '94
Records DK, 2016



Drawing on a range of influences from REM to Steve Earle to Cheap Trick, Patrick presents a solo studio recording consisting of "guitar-driven, synth-tinged, multi-hyphenated power-pop."

Requiem for the Innocent

By Katherine Hoover '59E
4Tay Records, 2016



The composer Hoover's requiem, created in response to the terrorist attacks of September 11, 2001, is performed by the New York Virtuoso Singers, conducted by Harold Rosenbaum.

Simply Beautiful Connection II

By Laima Obelenis Gaizutis '66E
Laima Music, 2016



Pianist and composer Gaizutis performs 11 original tracks, strongly influenced by romanticism, while incorporating multiple genres.

Gloria

By Dan Locklair '81E (DMA)
Convivium Records, 2016



The composer Locklair presents 14 compositions from texts that span the liturgical year. Performing on the recording are the Winchester College Chapel Choir, the Portsmouth Grammar School Chamber Choir, and the mixed voice choir Sospiri.

Books & Recordings is a compilation of recent work by University alumni, faculty, and staff. For inclusion in an upcoming issue, send the work's title, publisher, author or performer, a brief description, and a high-resolution cover image, to *Books & Recordings*, Rochester Review, 22 Wallis Hall, P. O. Box 270044, University of Rochester, Rochester, NY 14627-0044; or by e-mail to rochrev@rochester.edu.

The Changing Museum: An Educator's Tour

Museums see their missions as evolving, says a longtime educator at New York's Museum of Modern Art.

Interview by Karen McCally '02 (PhD)

My parents were antique dealers. That really prompted my interest in the history of design and the history of architecture. And I had wonderful professors at Rochester. Rémy Saisselin was the most extraordinary 18th-century expert. I also had an internship working with Bruce Chambers, who was at the time the director of the Memorial Art Gallery. There were just three of us—talk about getting hands-on museum experience!

I've been a freelance educator at MoMA [Museum of Modern Art] since 1998. I've served in a couple of different capacities, including teaching adult education courses based on special exhibitions. We teach in our areas of expertise, and this fall, I'm teaching a class on modern interior design based on the show that opened in October at MoMA called "How Should We Live? Propositions for the Modern Interior."

I also conducted what we used to call tours. I would have a theme that I'd come up with, and I would walk a group of visitors through the gallery, talking about each of the works.

A couple of years ago, tours were replaced by what are called gallery sessions. These are interactive, hands-on experiences.

Ours take place over the course of an hour, and are based on a theme. For this fall's exhibit, I designed a gallery session called "At Home with Women Designers." I ask people to write down a few words that they would relate to the idea of "feminine," and then to write down a few words that might describe "modern." And then we go around the gallery, with the participants finding a work that they would like to discuss in relationship to the feminine and the modern.

Marianne Egger '80

Home: Brooklyn, New York
Adjunct assistant professor of art history, Fashion Institute of Technology; freelance educator, Museum of Modern Art, New York City.

A memorable class: "In a class with Professor Saisselin, there were many auditors, mostly women from the Rochester area who were interested in art and culture. They would invite us to their fabulous architect-designed homes to have class. Because we had class at their homes, we said, 'Let's have a class in ours.' We had them over to Lovejoy."

Working with the public is very challenging. At my main job, teaching at the Fashion Institute of Technology, it's like I'm preaching to the choir. At MoMA, gallery sessions are composed of totally random groups of people who just happen to be in the museum at a given time. My courses there attract people who are just interested in everything that MoMA does, and may have never studied art history, as well as young professionals who might be art collectors or interior designers.

When MoMA went from gallery tours to interactive sessions, there was a mass revolt among my colleagues. A lot of them left because they didn't want to deal with the chaos that interactive programs can bring, as opposed to the control you have when you're leading a tour. Many educators also didn't feel it was up to their scholarly level. You're not giving the public as much information in an interactive session.

I have to say I was also initially horrified with the change. Now, about a year and a half later, I think an interactive approach can work well. I would say, in general, I've come to enjoy it, because people across the board say they love it. The MoMA pays a great

deal of attention to statistical analyses of the data on different programs, and I suspect if the approach wasn't working, it would be abandoned.

There are still some drawbacks. Interactive sessions can disqualify visitors who aren't fluent in English. Sometimes these visitors just want someone to walk them through the gallery. They know enough English to pick up a little bit, or they can intuit what is being pointed to. When I've done interactive programs, I've seen people who can't speak English very well leave.

There's a general push toward the museum as a place of entertainment.

There's a sense that going to the museum should be on a level with all the other offerings in a large city, such as the theater or concerts. It's also becoming a social destination—a place to hang out, have coffee, to see and be seen. It's a real honor to work at MoMA, and enriching for me personally. But having had such a wonderful education at Rochester and at CUNY [City University of New York] Graduate Center, I think something's being lost. 



Invest in what you love

"WE'RE BOOMERS. We think we'll be around forever—but finalizing our estate gifts felt good," said Judy Ricker. Her husband, Ray, agrees. "It's a win-win for us and the University," he said. "We can provide for ourselves in retirement, then our daughter, and the school we both love."

The Rickers' charitable remainder unitrust provides income for their family before creating three named funds at the Eastman School of Music. Those endowed funds—two professorships and one scholarship—will be around forever. They acknowledge Eastman's celebrated history, and Ray and Judy's confidence in the School's future.

Judy's message to other boomers? "Get on this bus! Join us in ensuring the future of what you love most about the University."

Judith Ricker '76E, '81E (MM), '91S (MBA) is a freelance oboist, a business consultant, and former executive vice president of brand research at Market Probe. Ramon Ricker '73E (DMA) is professor emeritus of saxophone and retired senior associate dean of professional studies at the Eastman School of Music. He remains an active performer with the Rochester Philharmonic and other musical organizations. Ray and Judy are Founding Members of the Wilson Society.



IMAGINE YOUR LEGACY. PLAN TODAY TO MAKE IT HAPPEN.

To learn more about charitable remainder unitrusts and other planned giving methods, contact the Office of Trusts, Estates & Gift Planning
(800) 635-4672 • (585) 275-8894
giftplanning@rochester.edu • www.rochester.giftplans.org



UNIVERSITY of ROCHESTER

Rochester Review

22 Wallis Hall
P.O. Box 270044
Rochester, NY 14627-0044

Nonprofit
Organization
U.S. Postage
PAID
University
of Rochester

STUDENT LIFE

Building Bridges

IN FALL VIEW: A new bridge connects the renovated Frederick Douglass Building with Rush Rhees Library. Opened this fall as part of a project to turn Douglass into a student center, the walkway provides access to Evans Lam Square, a learning and research space in the library that was dedicated in October. PHOTOGRAPH BY ADAM FENSTER

