

5-5-1995

NEWS AND NOTES 1995, VOL.5, NO.27

The Rockefeller University

Follow this and additional works at: http://digitalcommons.rockefeller.edu/news_and_notes_1995

Recommended Citation

The Rockefeller University, "NEWS AND NOTES 1995, VOL.5, NO.27" (1995). *News And Notes 1995*. Book 13.
http://digitalcommons.rockefeller.edu/news_and_notes_1995/13

This Book is brought to you for free and open access by the The Rockefeller University News and Notes at Digital Commons @ RU. It has been accepted for inclusion in News And Notes 1995 by an authorized administrator of Digital Commons @ RU. For more information, please contact mcsweej@mail.rockefeller.edu.

news & notes

May 5, 1995 Volume 5, Number 27

The Rockefeller University

Concerts showcase new and established talent for 37th year



The Guarneri Quartet performs in this season's final evening concert Wed., May 10, and returns next year for the 32nd time.

The 1995-1996 season of The Rockefeller University Concerts will once again offer members of the university an opportunity to enjoy solo recitals and chamber music from both internationally renowned musicians and those on the road to fame. The series' 37th season begins Thurs., Sept. 28 at 8:00 P.M. in Caspary Auditorium.

Associate Professor George Reeke, who has helped select the musicians for the past six years, is eagerly anticipating the performances. Of the new artists, Reeke said, "Each brings unusual artistry to their musical specialties, all of which represent areas in which many talented newcomers are competing for the attention of the public."

The first two concerts in the series will take place Thursday evenings; the rest will be held on Wednesdays. The following concerts are planned for the 1995-96 season:

• **Thurs., Sept. 28, 1995**
Shanghai Quartet. Winner of the

1987 Chicago Discovery Competition, this string quartet makes its Rockefeller debut this year.

• **Thurs., Oct. 26, 1995**
Camerata Bern. The chamber ensemble returns with oboist Heinz Holliger and violinist Thomas Zehetmair.

• **Nov. 15, 1995**
Daniel Smith with Michael Rabinowitz and jazz combo. Jazz appears in the series for the first time since 1991; Smith will also perform classical bassoon works.

• **Jan. 17, 1996**
William De Rosa. De Rosa, another newcomer to the series, performs on a cello crafted by Domenico Montagnana in the 1700s.

• **Feb. 14, 1996**
Dmitri Ratser. Ratser, a Russian pianist, performs in his New York debut.

• **Mar. 6, 1996**
New York Philharmonic Ensembles. Players from the New York Philharmonic will present chamber works.

• **Apr. 10, 1996**
Susan von Reichenbach. A soprano, von Reichenbach's operatic roles range from Iphegenie to Tosca.

• **May 8, 1996**
The Guarneri String Quartet. The popular quartet makes its 32nd appearance in the series.

There will be no increase in the subscription price this year—the price for the entire series of eight concerts will again be \$125. Members of the Rockefeller community who subscribe before July 31 receive a 10 percent discount. A

Friday lectures for two weeks:

Biochemist to discuss telomeres today

Elizabeth Blackburn, professor and chair of the Department of Microbiology and Immunology at the University of California, San Francisco (U.C.S.F.), will discuss "Telomeres and Telomerases" at the Friday lecture today (May 5).

Much of Blackburn's research focuses on the structure of telomeres, complexes of specialized proteins and repetitive DNA sequences that cap the ends of linear chromosomes. Telomeres are required to protect chromosome ends and are necessary for their replication. The repetitive DNA at telomeres is synthesized by telomerase, an RNA-dependent DNA polymerase that was discovered by Blackburn in 1985. Using telomerase to manipulate the DNA sequence of telomeres *in vivo*, Blackburn has obtained novel insights into the structure and regulation of telomeres in *Tetrahymena* and yeast.

"The work of Liz Blackburn and her colleagues on *Tetrahymena* telomeres provides a very good illustration of the importance of basic cell biology to biomedical research," said Associate Professor Titia de Lange, who introduces Blackburn today. "One of her most striking findings is the discovery of telomerase, an enzyme that has recently attracted attention for its possible involvement in tumorigenesis."

Blackburn received a Ph.D. from the University of Cambridge in 1975, where she studied with Frederick Sanger. From 1975 to 1977 she was a postdoctoral fellow in Joseph Gall's laboratory at Yale University, studying chromosome

and telomere DNA structure in *Tetrahymena*. After a brief stay at U.C.S.F. as a postdoctoral fellow, Blackburn joined the U.C., Berkeley faculty as an assistant professor in 1978. She became professor in 1986, and in 1990 returned to U.C.S.F. as professor in the Department of Microbiology and Immunology, Biochemistry, and Biophysics. She was named department chair in 1993.

Blackburn has received many awards and honors. She is a fellow of the American Academy of Arts and Sciences and the Royal Society of London. A foreign associate of the National Academy of Sciences, she received the Academy's Award in Molecular Biology in 1990.

The lecture will be held at 3:45 P.M. in Caspary Auditorium and preceded by tea at 3:15 P.M. in Abby Aldrich Rockefeller Lounge. All are welcome.



Elizabeth Blackburn lectures on telomeres and telomerases today (May 5).

Molecular biologist lectures on NF- κ B next week

Thomas Maniatis, professor of biochemistry and molecular biology at Harvard University, will discuss "Regulating the Activities of the Transcription Factor NF- κ B" at the Friday lecture next week (May 12).

Maniatis studies how genes are turned on in response to extracellular signals. This work has led to the discovery of a virus-inducible transcriptional enhancer sequence. Analysis of this sequence has revealed a complex organization in

which a number of distinct transcriptional factors and a single architectural protein bind. One of these transcriptional activators is NF- κ B; studies in Maniatis's lab have revealed that NF- κ B is activated by a mechanism that involves the specific degradation of an inhibitor protein, a process found to involve the ubiquitin—proteasome pathway.

"Tom is one of the pioneers in

2 Royal fellow

2 Careers in science

3 Return of
invasive strep

See **Concerts**, page 2

See **Maniatis**, page 4

University hosts forum to recruit research assistants

Twenty-five seniors from renowned colleges and universities are attending the Personnel Office's Minority Scientific Research Career Forum today (May 5) to learn more about Rockefeller's opportunities for research assistants.

"Aimed at increasing the numbers of women and minorities in scientific research, this program alerts career services offices at undergraduate institutions of Rockefeller's commitment to affirmative action and equal employment opportunity," said Theresa Smiling, affirmative action coordinator, who implemented the program this year with employment specialists Michelle Goodwin and Kerry Harvey.

Over the past months, the three have traveled throughout the northeast to schools such as Harvard, Yale, Brown, and Duke, as well as such local schools as Columbia, Barnard College, and New York University. Their mission is to extol Rockefeller to students in one-on-one interviews and at regional jobs fairs. "The better our outreach, the more we can diversify our work force by having qualified people available to interview for research assistant positions here," said Eileen Holleran, associate director of personnel and affirmative action officer.



Theresa Smiling, affirmative action coordinator (center), and employment specialists Kerry Harvey (left) and Michelle Goodwin implemented this year's minority career forum.

affirmative action officer.

The number of job candidates attending the career forum this year has doubled since it was last held in 1993. After arriving on campus at 10:00 A.M., the undergraduates will be greeted by a panel of postdocs and research associates, including Lynne Claye, Vanya Quinones-Jenab, and Jonathan Williams, who will discuss their positions and research conducted at Rockefeller. Said Claye, "I hope that communicating my experiences as a scientist to these students may give them a vision for what they can do."

Students will then be given a tour of the library, followed by

individual tours of labs led by research associates. Participating labs include the Friedman, Hemmati-Brivanlou, Lederberg, and Steinman labs.

At lunchtime, Kathy Barker, an assistant professor, and Elizabeth de Oliveira e Silva, a research associate, will talk about their careers as women in science. Throughout the day, students will get a chance to "embrace the community," said Smiling, concluding with a tour of Rockefeller's scenic campus.

"The bulk of our research assistant hiring is during the summer," said Goodwin and Harvey. "We hope for several successful placements."

Fellowship application deadline approaches

Nominations for internal fellowships for the 1995-96 academic year will be reviewed in June by the Faculty Committee for Fellowship Review. Each laboratory may submit one candidate for each of these awards. An individual may apply for more than one award, but only one candidate per laboratory may apply for a given award. The deadline for completed applications is Fri., May 19.

Nine Revson/Winston postdoctoral fellowships are available. The fellowships award \$25,000 annually. Candidates, who may be in any field, should be early in their careers at Rockefeller awaiting other funding sources, or postdoctoral fellows who need support for an extra year to complete projects. Renewals will be awarded only under special circumstances.

The C.H. Li Memorial Scholar Fund provides annual support of \$30,000 for a visiting scholar from the People's Republic of China or Taiwan conducting basic research in the chemistry and biology of the hormones of the pituitary gland and its target organs. This award is renewable.

The Bristol-Myers Squibb

Postdoctoral Fellowship in Basic Neurosciences awards \$30,000 annually for a period of three years. The Merck Postdoctoral Fellowship awards \$30,000 annually for a period of three years, and preference will be given to candidates working in the fields of biochemistry and molecular biology.

The King of Thailand Biomedical Fellowship awards \$30,000 annually to a Thai national for up to three years. Candidates may be at any career level, but the investigator is required to continue his or her research in Thailand after the fellowship period ends.

Heads of laboratories should submit the following to Olivia Buckley, Box 164, by Fri., May 19: a recommendation letter on behalf of the candidate; an application letter from the candidate, including a description of the proposed research project; relevant information about the candidate's current funding; and a copy of the candidate's curriculum vitae.

Restrictions apply to the various awards. For further information, contact Buckley, x8697, or Gillian Malone, x7430.

Concerts

(continued from page 1)

reduced series price of \$50 is available to graduate students and postdoctoral fellows of the tri-institutional community; Rockefeller students and postdocs can purchase a subscription for \$45 before July 31. Tickets to individual performances are only available the day of the concert, and only if seating is available.

A new policy for preconcert buffet reservations has been inaugurated this year. A reservation request form for the buffet will be mailed to subscribers with their tickets. There will be no advance or phone reservations. Members of the Rockefeller University community will be given preference or both the series subscriptions and buffet reservations on a first come, first served basis.

The ticket exchange policy remains the same this year. Subscribers who cannot attend a particular concert can apply their unused ticket to a subsequent concert. Complete information will be mailed to the campus community early next month.

Burley elected to Royal Society

Stephen K. Burley, Rockefeller professor and Howard Hughes Medical Institute investigator, was recently elected a fellow of the Academy of Sciences of the Royal Society of Canada.

A Rhodes scholar, Burley received a B.Sc. in physics from the University of Western Ontario in 1980, a D.Phil. in molecular biophysics from the University of Oxford in 1983, and an M.D. from Harvard Medical School in 1987. He came to Rockefeller in December 1990 as an assistant professor and head of laboratory. In 1993 he was promoted to associate professor, and in 1994, to professor. Burley has been affiliated with the Howard Hughes Medical Institute since 1990.

Founded in 1882, the Society has 1500 fellows in three separate academies. A maximum of 30 people are offered fellowship each year.



Professor Stephen Burley is a fellow of the Royal Society of Canada.

News&Notes is published each Friday throughout the academic year by The Rockefeller University, 1230 York Avenue, New York, NY 10021. Phone: 212-327-8967.

Torsten Wiesel, President
Ingrid Reed,
Vice President for Public Affairs and Corporate Secretary

Kay Locitzer, Editor
Joseph Bonner, Assistant Editor
Heather Leahy, Design
Robert Reichert, Photography
Media Resource Service Center, Processing

Ideas and submissions can be sent interoffice (Box 68), by electronic mail (newsno), or by fax (212-327-7876).

The Rockefeller University is an equal opportunity/affirmative action employer.



Rockefeller scientists pursue mysteries of 'flesh-eating' bug

by Susan Blum

Just about a year ago, British tabloid readers awoke to headlines blaring "Killer Bug Ate My Face" and "Eaten Alive." Behind the hype were stories of infections with a serious and sometimes deadly invasive form of *Streptococcus A*. Soon there were headlines in America, too, as reports of infections flared up fast and then disappeared, only to reappear last month with stories of two New Yorkers who died from strep-related disease.

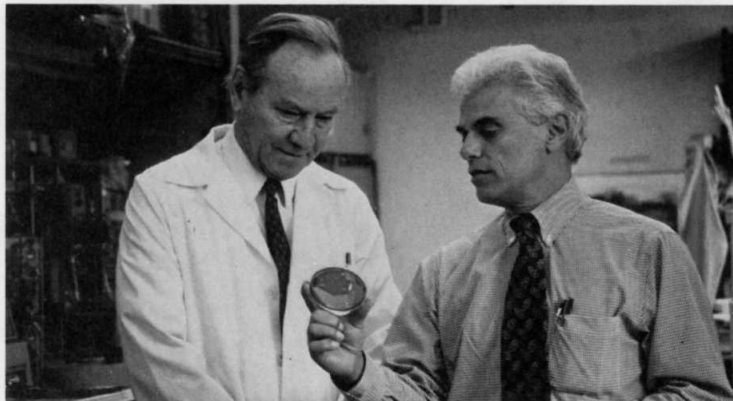
Though reports in the media have been sporadic, researchers have known for at least a decade that invasive strep A, which may wax and wane in long biological cycles, is making a comeback. Researchers in the labs of Vincent Fischetti and John Zabriskie, both experts in strep, are following the pathogen's path and pursuing ways to protect against it.

Strep A explained

Some strep A strains normally infect the throat; a smaller subset typically infects the skin. Zabriskie explained that the frightening invasive infections are due to a very few throat strains that for some reason sometimes do infect the skin, and "just go to town once they get underneath it." The microorganisms can cause a generalized tissue inflammation called cellulitis, or can destroy large regions of flesh and muscle which must sometimes be removed to save the victim's life. The infections often occur after only the smallest of injuries—a nick with a razor or a skin irritation—and progress rapidly, usually over the course of just a few days. The invasive strep strains can also get into the bloodstream and cause toxic shock, or move from the throat into the lung, as occurred in the infection that killed Muppeteer Jim Henson.

According to Zabriskie, invasive strep has been around since at least 1924, when a surgeon in China authored the first published report of tissue-destroying infections. Though the Federal Centers for Disease Control (C.D.C.) no longer makes strep reporting mandatory, a small survey on invasive group A strep conducted from 1989 to 1991 showed that about 15,000 cases had occurred each year. Of these, 80 percent were cellulitis, 10 percent were toxic-shock syndrome, and 10 percent were the flesh- and muscle-eating disease.

Fischetti, who has been acting as a consultant for studies of invasive strep, said, "I talked to my C.D.C. contact just recently, and he report-



Streptococcal research has a long tradition at Rockefeller. Work in the labs of two strep researchers, Associate Professor John Zabriskie (left) and Professor Vincent Fischetti, is exploring the strains of invasive strep A which have recently made a comeback.

ed they're now seeing a lot more strains all up and down the east coast than they saw in the early '90s." Exactly how much of the increase is due to better reporting and how much to a real rise in incidence is not known for sure. Required reporting of all strep cases would make the trends easier to track, and the C.D.C. may soon reinstitute such reporting procedures. But even then, problems with surveillance would persist, for there is still no known biological marker that clearly distinguishes invasive strep A strains from all the rest.

Hunting for markers

Though markers haven't yet been found, it's not for lack of looking, and the Zabriskie lab is among those on the trail of incriminating characteristics. Their involvement began around 1989, when Richard Roberts, an infectious disease specialist at Cornell University Medical College, consulted with Zabriskie about strains taken from his patients, among them Jim Henson. Other physicians and scientists followed suit, and postdoc Jason Bannan has been working with the 20 or so strains the lab has amassed in an attempt to tease out some distinguishing features in the invasive strains.

He first looked for signs of unusual proteases, protein-chomping enzymes that might explain the extensive tissue and muscle destruction seen in the invasive disease. He found none. Bannan then looked for unusual toxins that might be involved in the toxic shock syndrome. Again, none turned up. Other labs have similarly been left empty handed, with nary a clue as to what makes this microorganism so dangerous.

Bannan speculated, "It could be that the bacterium is not producing

anything terribly unusual, but rather is simply producing more of it than normal because the bacterium is in a different environment"—that is, under the skin or in the bloodstream, rather than in the throat. This "upregulation" might affect factors within certain individuals, or hosts, that lead to the development of the disease. Experiments to test this hypothesis will soon get under way in the lab.

Should host factors prove important, then variations among individual hosts might help explain a puzzle about the disease: Though strep A is quite communicable, family members or caretakers of persons infected with invasive strep A rarely become sick themselves. Thus, said Fischetti, it is likely that "some predisposing characteristic of the host, in combination with characteristics of the organism, makes only certain people susceptible."

Prevention and cure

Thankfully, all strep A strains, including invasive ones, can still be treated with antibiotic therapy. But Fischetti cautions that "it's just a matter of time" until strep A develops resistance to antibiotics. Once that happens, he says, "we'll have a very serious problem on our hands." (He points out that serious problems already exist in developing countries, where noninvasive strep A often goes untreated with antibiotics, and strep throat develops into debilitating rheumatic fever in one percent of school-aged children.)

A vaccine against many different strains of strep could thus combat a number of critical current and potential health problems, and researchers at Rockefeller are pursuing various vaccine development strategies.

Fischetti and his colleagues are working on an oral vaccine based

on their longstanding studies of the bacterium's surface "M protein." About a decade ago, Fischetti and co-workers discovered an M protein region that is shared among at least 31 strep A serotypes, including those which cause invasive disease and rheumatic fever. Using this region they developed two different types of oral vaccines that in mice elicited a mucosal response, the sort that can block the strep A bacterium from colonizing the throat. More recently, the team discovered another M protein region, required for firmly attaching the M protein to the bacterial wall. In collaboration with Gianni Pozzi, now of the University of Sienna, they spliced both these M protein regions into the genome of a harmless bacterium that normally inhabits the human teeth and gums. When introduced into the oral cavity of mice, the organisms take up residence and induce an effective mucosal response to the recombinant M protein. Clinical trials of this live vaccine are due to start soon. If all goes well, Fischetti predicts that a cheap and effective oral strep vaccine might be available for humans in seven or eight years.

Zabriskie and his colleagues are working on a different strategy for vaccine development, based not on a protein but on the carbohydrate that makes up almost 50 percent of a strep A's cell wall. The researchers have found that human serum contains antibodies to the terminal region of this carbohydrate, capable of orchestrating an immune response against several different strains of Group A strep. Preliminary experiments indicate that the antibodies can passively and actively protect mice against a direct challenge with Group A strep, though Zabriskie stresses that much more work is needed to confirm these early results.

Until a vaccine is available, invasive strep A can best be combated through good sense and good hygiene. Said Fischetti, "If you get a nick or a cut, wash it thoroughly and keep it clean." After that, said Zabriskie, "Should unusual swelling or pain develop, or it starts looking hot and tender, or the inflammation spreads, contact your doctor at once." But both scientists stress that infection with invasive strep A is very rare. "The right combination of factors have to come together in order for you to get this disease," said Fischetti. "Your chances of winning the lottery are probably better."

Potpourri

Tri-Institutional Noon Recital
Emanuele Segre, classical guitar, will perform works by Sylvius Weiss, M. Giuliani, Villa Lobos, and Albeniz at the Tri-Institutional Noon Recital today (May 5). The concert, to be held at noon in Caspary Auditorium, is free. All are welcome.

Friday film

White (France, 1994), directed by Krzysztof Kieslowski, will be shown today (May 5) at 8:00 P.M. in Caspary Auditorium. The film, in French with English subtitles, is free; all are welcome.

Azalea festival

The Annual Azalea Festival will be held Sat., May 6 and Sun., May 7 at the university from noon to 4:00 P.M. Guides from the New York Botanical Garden will give tours at 1:00, 2:00, and 3:00 P.M. each day. There will be a lecture at 2:15 P.M. each day. Admission is free and all are welcome.

Clinical Research Seminars

Associate Professor John Zabriskie will discuss "Phagocytic and Protective Properties of Group A Streptococcal Carbohydrate Antibodies" at the Clinical Research Seminar Wed., May 10 at noon. Jonathan Smith, assistant professor in the Breslow lab, will speak on "Apolipoprotein E: Role in Atherosclerosis and Alzheimer's Disease" Wed., May 17. The seminars are held at noon in Nurses Residence 110B.

Book sale

A book sale to benefit the Rockefeller University Children's School will be held Tues., May 9 from 8:30 A.M. to 3:30 P.M. in the Tower lobby.

Conservation society lecture

Michael Soule will discuss "Nature: Fact or Fiction" at the Centennial Lecture Series of the Wildlife

Carol Fendle



Tyler Cutforth, a former postdoctoral fellow in the Gaul lab, shows *Drosophila* mutants to Elena Titakis (left) and Molly Catchen during last week's Take Our Daughters to Work Day.

Conservation Society Mon., May 8 at 6:00 P.M. in Caspary Auditorium. A limited number of complementary tickets is available to the university community. For information and reservations, contact the Office of Public Affairs, x8967.

Silent auction

Donations are needed for a silent auction to benefit the Children's School and Infant-Toddler Center. Gently used clothing, objets d'art, and unwanted spring cleaning treasures should be dropped off in the Children's School by Mon., May 22. Contact Barbara Tiddens, x7470, for assistance with larger items.

The auction will be held Thurs., June 8 from 5:00 to 8:00 P.M. on the 17th floor of Tower Building. Admission is \$5 per adult, and free babysitting will be available.

Mother's Day bake sale

A bake sale to benefit the Rockefeller University Children's School will be held in the Tower lobby Fri., May 12 from 8:30 A.M. to 3:30 P.M.

Lecture

Nobel laureate George Olah, professor of chemistry and director of the Loker Hydrocarbon Research Institute at the University of Southern California, will discuss

"Oil, Gas and Hydrocarbons in Modern Society: Challenges and Solutions" Mon., May 15 at 8:00 P.M. in Caspary Auditorium. Admission is free. Reservations are required and can be made by calling 850-6910.

Cottage deposit deadline

Deposits for cottages must be submitted to the Housing Office, third floor Scholars Residence, by Fri., May 15.

Cardiovascular conference

The university will host a cardiovascular colloquium, sponsored by Bristol-Myers Squibb Pharmaceutical Research Institute, Wed., May 24. Five lectures will be featured:

- "Novel Gene Therapy Strategies for Cardiovascular and Kidney Diseases," by Victor J. Dzau;
- "Insulin Resistance, Diabetogenes and the Cause of Type II Diabetes," by C. Ronald Kahn;
- "Atherosclerosis—A Protective Response Gone Awry," by Russell Ross;
- "Hypertrophic Cardiomyopathy: From Man to Mouse," by Christine Edry Seidman; and
- "Atherogenesis and the Many Faces of Oxidatively Modified LDL," by Daniel Steinberg.

The colloquium will begin at 8:30 A.M. in Caspary Auditorium. For more information, contact Betty Gualfetti at (609) 252-5646, or by fax at (609) 252-6562.

Barbecue

The Faculty and Students Club will hold its 10th annual barbecue—rain or shine—Fri., June 9 at 5:30 P.M. Tickets \$12 in advance (\$14 at the door) are on sale now in the club, and in the Purchasing Office, Plaza A5. Contact Angie Dohnert, x8201, for more information.

Retirement

Barbara Sutphin, health information technician at the Hospital,

Maniatis

(continued from page 1)

the use of molecular biological techniques to dissect complex control regions in eukaryotic genes," said Professor Robert Roeder, who is hosting the lecture. "His work on the β -interferon gene has provided a beautiful description, of quite general relevance, of the functional interplay between ubiquitous and inducible transcription factors."

Maniatis received a Ph.D. from Vanderbilt University in 1971. He began his affiliation with Harvard as a postdoctoral fellow that year. After a year as a postdoctoral fellow at the Medical Research Council of Molecular Biology in Cambridge, England, he returned to Harvard as a research associate in 1974. He became an assistant professor in 1975. Maniatis joined the faculty of the California Institute of Technology as an associate professor in 1977, and was promoted to professor in 1979. Maniatis has been professor of biochemistry and molecular biology since 1981, serving as department head from 1985 to 1988.

Maniatis is a member of the National Academy of Sciences, and is a fellow of the American Academy of Arts and Sciences, the American Association for the Advancement of Science, and the American Academy of Microbiology.

The lecture will be held at 3:45 P.M. in Caspary Auditorium and preceded by tea at 3:15 P.M. in Abby Aldrich Rockefeller Lounge.

retired last week after more than 42 years at the university.

Sushi

Tower Café now offers take-out sushi boxes, prepared fresh daily, for \$3.00 to \$3.50 per box.

News&Notes schedule

News&Notes will not be published next week.



Emanuele Segre performs classical guitar at the noon recital today (May 5).

Joseph Bonner



Graduate fellow Elizabeth Campbell (center) shows streptococcal strains to Paul Bischoff (left) and Jane Gerard, two high school science teachers who attended a Science Outreach workshop this week.