

# ARCS-Pittsburgh Newsletter

## Achievement Rewards for College Scientists

[www.arcsfoundation.org/pittsburgh](http://www.arcsfoundation.org/pittsburgh)

Summer 2013

### ARCS Pittsburgh celebrates milestones: one decade, \$1 million!

Since its inception in 2003, ARCS Pittsburgh has raised more than a million dollars to support US doctoral students in science, engineering and technology at Carnegie Mellon University, the University of Pittsburgh and The Pennsylvania State University.

To mark its first million dollars, as well as its first ten years

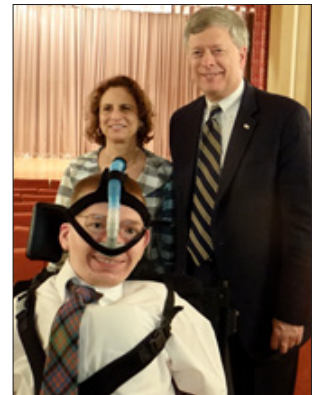


Our current and former chapter presidents (L to R): Beth Wainwright, Sue Harter, Jeanne Berdik, Carol Stockman, Missy Unkovic.

of existence, ARCS Pittsburgh hosted a celebratory reception June 6 at the Frick Art and Historical Center in Point Breeze. Pitt Chancellor

Mark Nordenberg was on hand, as was ARCS Pittsburgh charter member **Maureen Cohon**, wife of CMU's outgoing president **Jared Cohon**, and of course, ARCS Pittsburgh founder **Jeanne Berdik**.

Event planners **Bev Elliott**, **Millie Ryan** and **Kathy Testoni** ensured that attendees enjoyed drinks and tasty hors d'oeuvres, while President Missy Unkovic spelled out our glowing accomplishments. Raising \$1,172,500 is a large milestone to celebrate in a small group of women who have worked together for only ten years. Reception proceeds will fund the **Maureen and Jerry Cohon ARCS Scholar Award**.



ARCS CMU scholar Andrew DeYoung, CMU's Maureen Cohon and Pitt Chancellor Mark Nordenberg

#### Advancing Science in America®

ARCS Foundation advances science and technology in the United States by providing financial awards to academically outstanding U.S. citizens studying to complete degrees in science, engineering and medical research. The Pittsburgh Chapter has the additional focus of increasing the number of doctoral scholars pursuing advanced scientific study and research in the Western Pennsylvania region.

#### The Pittsburgh Chapter

Chartered in 2003, the Pittsburgh Chapter is one of the newest of 17 nationwide ARCS chapters. In a short time, the Chapter has already pledged more than a million dollars to its three partner universities: Carnegie Mellon University, the University of Pittsburgh and Penn State University.



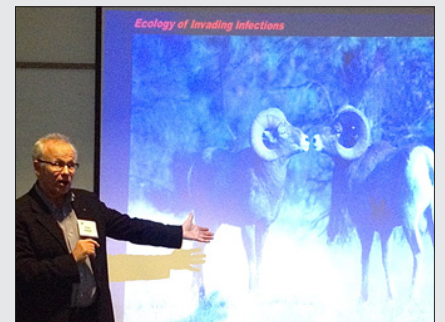
### Lively ARCS crowd enjoys Penn State visit

For April, **Sue Breedlove** organized a visit to Penn State University, where ARCS members and donors could visit to learn about the Interdisciplinary Graduate Program in Ecology. After a reception with drinks and tasty hors d'oeuvres, ARCS President **Missy Unkovic** opened the program, and **Dr. David Eissenstat**, department chair, welcomed attendees.

Faculty and students then talked about cutting-edge research on some of the most pressing questions facing humanity today: Is it possible to stop the spread of infectious diseases? Can we restore ecosystems degraded by human use? How will global climate change affect human life and our environment? Kudos to Penn State and **Sue Breedlove** for a day well spent.



Donors and scholars (above) gather after Dr. Peter Hudson's talk on eco-health.



**Pittsburgh Chapter  
Board of Directors  
2012-2013**

- Missy Unkovic, President**  
**Fran Abraham**  
**Barbara Andrews**  
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**Maureen Cohon, Esq.**  
**Maren Cooke**  
**Ann Fromm**  
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**Ruth Garfunkel**  
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**Cristy Gookin**  
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**Debbi Linhart**  
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**Pam Meadowcroft**  
**Karen Meck**  
**Arlene Sokolow**  
**Carol Stockman**  
**Jan Wagner**  
**Janet Wood**  
**Lise Woodard**

**Communications  
Committee Co-Chairs  
2012-13**

Chair: Ann Fromm  
 Co-Chair: Julia Gleason  
 Debbie Scully, Susan  
 Moreland and Carol Heppner

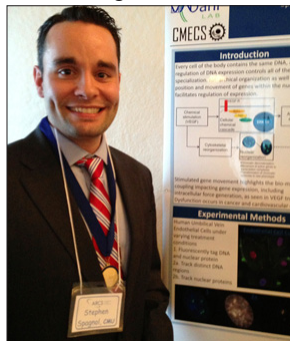
*Special thanks to  
 Debbie Meyers and CMU for layout,  
 printing and mailing this newsletter.*



**Applause, applause, applause at  
the 2013 Scholar Showcase event**

After a short cocktail reception at the 20th Century Club in Oakland last April, third-year ARCS scholars displayed posters of their work, explained their scientific research and answered questions posed by interested members and their guests.

Keynote speaker **Dr. Jeanne M. VanBriesen**, professor in civil engineering at Carnegie Mellon University and an ARCS alumna from Northwestern University, then gave a fascinating talk about her own work.



*Third-year CMU ARCS Scholar  
Stephen Spagnol*

Science and the passion for scientific education, she said, have always driven her. An excellent



*Missy Unkovic socializes with Dr. VanBriesen and Cecile Springer*

speaker, Dr. VanBriesen described her research, which focuses specifically on natural water systems and the detection of biological agents in drinking water.

ARCS Foundation exists to support scientists like Jeanne. Perhaps a young scholar now presenting a poster will return as keynote speaker for a future Scholar Showcase. Kudos to **Karen Meck** and **Ruth Garfunkel** for their work on this year's Scholar Showcase.

**ARCS Pittsburgh says fond farewell to CMU's  
Jared Cohon as he steps down as president**



**Jared L. Cohon** has delivered many compelling lectures to ARCS Pittsburgh members. On July 1, after a

16-year tenure at the helm as CMU president, he will step down to return to lecture in the classroom.

We have greatly appreciated his command of facts, his personable demeanor and his vision for the future of scientific education.

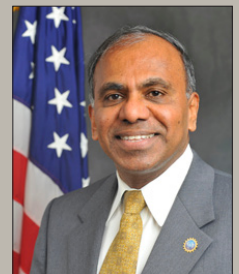
We also appreciate our scholars at CMU. ARCS Pittsburgh currently supports 15 scholars at CMU, each

with a three-year \$15,000 award for academic excellence in the sciences.

Dr. Cohon's wife, **Maureen Cohon**, served as a charter member of ARCS Pittsburgh and has been a terrific supporter throughout our ten-year existence.

**Dr. Subra Suresh**, director of the National Science Foundation, will succeed Dr. Cohon as CMU's president.

We look forward to working with Dr. Suresh and continuing our relationship with Jerry.



## Charlotte Beukema wins prestigious “ARCS Light” Award

After receiving the 2012-2013 ARCS Light award, which recognizes stellar service and outstanding personal leadership to our chapter, **Charlotte Beukema** said, “I totally, totally believe in the mission. It’s wonderful to support our young science scholars.”

**Kathy Testoni** opened her beautiful home in Chatham’s campus to host the annual meeting this past April 14.

A charter member of ARCS Pittsburgh, Charlotte served on the program committee for eight years, ultimately becoming its chair, and served on the nominating committee in 2011-2012. Charlotte and her husband, Henry, share sponsorship of their second scholar award that begins this year.

“Charlotte also helped with special events,” added Carol Heppner, herself a former ARCS Light award winner. “She did a lot for the scholar award dinners when we highlight our scholars.”

Now active in the Shadyside Presbyterian Church, Charlotte graduated from Penn State University with a bachelor of science degree and worked at Kaufmann’s Department Store for 30 years, ultimately becoming

divisional vice president. She enjoys Ikebana flower arranging and has served as president of the Perennial Garden Club.

Holding her beautiful bouquet of lilies, alstroemeria and peonies like a baby, Charlotte said she was honored to receive the award.

“And I like the perks of being an ARCS member,” she added. “It’s exciting to go behind the scenes to places like Google, the Tissue Engineering Center, and the prosthetics research center in Bakery Square. I’m still very passionate about ARCS.”

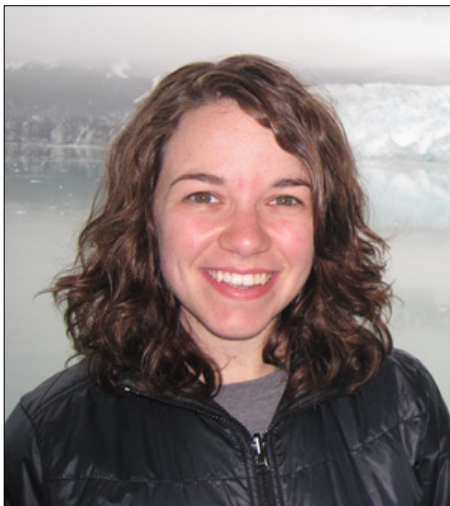


ARCS Light Awardee Charlotte Beukema

## Katie Harris studies viruses, knits, runs and bakes bread

As a Purdue undergraduate, Katie Harris remembers she had two choices for graduate school: the University of Michigan and the University of Pittsburgh.

“Both were good programs with good medical schools and I agonized



Third-Year Pitt Scholar Katie Harris

about it,” she said. “One day I said to a friend, ‘I wish someone would send me an email and tell me what to do.’”

When she got home that night, she found an email from Dr. John Horn at Pitt, offering her an ARCS scholarship.

“It’s a silly story,” Katie says now. “But it didn’t hurt!”

Currently a doctoral student in Molecular Virology through Pitt’s School of Medicine, Katie studies enteroviruses, a class of virus with fecal/oral transmission routes.

Polio is an enterovirus, like the virus that causes hand-foot-and-mouth disease. She specializes in the immune response to these viruses in the gut.

“I do experiments,” Katie says. “We culture human gut cells and grow them, asking ‘What happens to the immune response during virus

infection? How do the cells respond if we take away a certain protein?’”

To do her research, Katie wears gloves to retrieve the cells that are usually kept in the freezer. The freezers are minus 80 degrees Celsius; they thaw the cells under biological containment shields.

Special air flow systems keep particles from exiting their shields and keep the whole field sterile.

When she’s not studying, Katie enjoys spending time with friends, running -- including finishing the 10K Pittsburgh Great Race -- and baking big crusty loaves of whole wheat bread and making pizza dough. She even knits scarves and socks.

ARCS Pittsburgh members are glad the email about her scholarship arrived just at the right time to bring Katie here.

## Farewell to our third-year scholars at CMU, Pitt and PSU

*We wish them continued success as they complete their studies and look forward to staying in touch with them.*

### Carnegie Mellon University Scholar Alumni

#### ANDREW DeYOUNG

Pittsburgh Chapter Award 2010-13  
B.S., Chemistry, Carnegie Mellon University, 2010  
Mellon College of Science, Chemistry Department  
**Research interest:** physical chemistry

#### MICHAEL McCANN

The Roy and Susie Dorrence Award 2010-13  
B.S., Biomedical Engineering, University of Michigan, 2010  
Carnegie Institute of Technology, Biomedical Engineering Department  
**Research interest:** computational neural engineering

#### MANYA SLEEPER

The Thomas W. and Carol K. Henderson Family Fund of the Pittsburgh Foundation Award 2010-13  
B.A., Computer Science, Dartmouth College, 2008  
School of Computer Science, Department of Computer Science (ISR- computation, organizations, and society)  
**Research interest:** usable security and privacy

#### STEPHEN SPAGNOL

PPG Industries Award 2010-13  
B.S., Chemical Engineering, Pennsylvania State University, 2010  
Carnegie Institute of Technology, Chemical Engineering Department  
**Research interest:** genome-scale metabolic modeling and engineering

#### JASON TSAY

Catalyst/Pittsburgh Chapter Award 2010-11, 2013  
B.E., Computer Engineering, University of Texas at Austin, 2009  
School of Computer Science, Department of Computer Science (ISR- software engineering)  
**Research interest:** software architecture and pervasive computing



### University of Pittsburgh Scholar Alumni

*University of Pittsburgh School of Medicine, Interdisciplinary Biomedical Graduate Program*

#### ANNY CACERES

Joy-Linhart Award 2010-13  
B.S., Pharmacology and Toxicology, SUNY at Buffalo, 2010  
School of Medicine, Interdisciplinary Biomedical Program  
**Research interest:** Pathology and treatment of overactive bladder; interstitial cystitis/painful bladder syndrome and chronic pain in general

#### KATHARINE HARRIS

The Beukema-Carrow-Wainwright Award 2010-13  
B.S., Microbiology, Purdue University, 2010  
School of Medicine, Interdisciplinary Biomedical Program  
**Research interest:** Host pathogen interaction in microbiology

#### MEGAN JAMIOLKOWSKI

Westinghouse Electric Company Award 2010-13  
B.S., Biomedical Engineering, The Catholic University of America, 2010  
Swanson School of Engineering, Department of Bioengineering  
**Research interest:** Cardiovascular system biocompatibility with a focus on platelet activation



#### TYLER TARR

Pittsburgh Chapter Award 2010-13  
B.S., Neuroscience, University of Pittsburgh, 2010  
School of Medicine, Center for Neuroscience  
**Research interest:** Presynaptic nicotine acetylcholine receptors at the neuromuscular junction

## For Penn State's Denise Finney, everything's coming up canola

In addition to being a third-year ARCS scholar, Denise Finney is also a minister's wife, mother of a little girl named Helena and owner of a dog named "Brownie," an Australian Shepherd with no brown on him.

Living outside State College near her husband's church, she and her husband juggle school and work with day care and pre-school for Helena three days a week.

"My ARCS money has been so helpful with day care," Denise says. "But I've also used it for research expenses, specifically to go to a lab in Maryland to learn a new technique for soil analysis. It has improved my research here at Penn State."

Denise's research involves the environment, especially food.

"Food production is essential to human life and combines my interest in the environment with my desire to help people," she says.

She came to Penn State in part because it's a land grant university. "The land grant system began in the US in the late 1800s," she explains, "when the government decided that every state needed an educational institution to prepare farmers and to conduct research to improve agricultural production."

Denise's specific piece of that research is in corn – corn, and the crops called "cover crops" grown before the corn is planted.

"You never want bare soil," Denise says. "So we use 'cover crops' to cover and enrich the soil first, especially providing the right amount



*Denise Finney, PSU 3rd year ARCS scholar, stands with a soil probe in her field of canola, a cover crop.*

of nitrogen. We need nitrogen to grow crops. But if we apply too much, we lose it and cause pollution. Where's the balance? We try to use ecological processes, not chemical fertilizers, to keep the right amount of nitrogen in the soil for the corn."

As a cover crop planted before corn, Denise has used canola, hairy vetch, red clover, rye and forage radish.

"Forage radish is a hundred times larger than popular garden radish," Denise says. "We plant it in the fall to soak up extra nutrients. Our corn didn't take up all the nitrogen, so the radish does, and nitrogen isn't lost to the environment where it's dangerous. Excess nitrogen has contributed to a dead zone in the Chesapeake Bay, so reducing nitrogen loss is a high priority for farmers in this area."

In two years, Denise will be finished with her doctoral studies at Penn State. She hopes to teach and do research at a smaller liberal arts college, exposing undergraduates to science.

"I love teaching," Denise concludes, "especially the challenges of food production and agriculture."

## Penn State Scholar Alumni

### WHITNEY COYLE

The Bennett-Coppersmith-Palmer Award 2010-13

B.S., Music, Murray State University, 2009

B.S., Mathematics, Murray State University, 2009

Acoustics

**Research interest:** acoustics

### DENISE M. FINNEY

The Maureen Emily Ryan Award 2010-13

Ecology, Department of Biology

**Research interest:** ecology

PENNSTATE



### MEREDITH HANLON

Pittsburgh Chapter Award 2010-13

B.S., Biochemistry, Allegheny College, 2009

Plant Biology, Department of Biology

**Research interest:** plant biology

## A Letter from our President, Missy Unkovic

Dear ARCS Foundation—Pittsburgh Chapter Members,

I had the very good fortune this past year to meet three amazing ARCS Scholar Alums living in the western Pennsylvania area. All three are impressive scientists doing interesting and important work.

- **Brady Hunsaker** received his PhD from Georgia Tech in Atlanta and is now at Google's Pittsburgh office. We learned at our visit to Google that Brady is helping to change the way we use computers when we shop online.
- **Jeanne VanBriesen** spent her student years in Chicago at Northwestern. She is presently a professor at CMU and leads their Water QUEST Center, working with urban water systems. Jeanne's speech at our Scholar Showcase helped us to understand a little more about water systems. Her work is so important in the Pittsburgh area where flooding from storm water overflow is a regular problem.
- Finally, **Diane Henderson** received her PhD in Oceanography from the Scripps Institution of Oceanography at the University of California in San Diego. She is now a professor of Mathematics at Penn State. Diane is using advances in mathematics to help ocean scientists further understand global ocean currents, predict Tsunamis or rogue waves, and plumb the effects of coastal engineering. I am particularly impressed that Diane left San Diego's sunny weather to settle in State College.

Our third-year students have now also become ARCS Scholar Alums. We watch them leave our ranks with mixed

feelings. On the one hand, we have grown fond of them and have enjoyed seeing their progress during their first few years of graduate school. It's hard to see them leave.

On the other hand, we are so excited by the research they are already doing, and we look forward to the careers their PhD's will bring. With fields of study ranging from Acoustics to Bioengineering to Computer Science to Ecology to Molecular Virology to Neuroscience to Plant Sciences, we can be sure that they will make their mark on the world.

They have already been honored by acceptance into top departments at excellent universities and by their ARCS awards. We are certain that these honors are only the beginning for these 12 wonderful students.

We have just recently learned the names of our new first year students. I hope that each of you will enjoy getting to know them and following their work, because that's what ARCS is all about.

We provide support to students who have already achieved much, in order to help them achieve even more by taking those final academic steps to become scientists. In return, we get to know an extraordinary group of young people whose future work will make the world a better place.

So thank you all for the time, talents and treasure that you give to ARCS. I hope you get as much enjoyment from it as I do.

*Missy Unkovic*

## Members tour world-class Phipps "green" building

*Program chair Lourdes Castellanos organized our tour in March of the Phipps Conservatory's Center for Sustainable Landscapes, an innovative model worldwide of a building that promotes greener living. The Center generates all its own energy, treats and re-uses all water captured on its site, and meets or exceeds the world's three highest green standards: the Living Building Challenge, the LEED Platinum criteria, and SITES (Sustainable Sites Initiative certification) for landscapes. Another exciting, cutting-edge perq for the ARCS Pittsburgh group!*



## Planners steer future of ARCS

In February, **Pam Meadowcroft** and **Kate Freed** organized a well-attended planning meeting at the 20th Century Club. They asked the group of members three main questions:

1. What attracted you to ARCS and what keeps you coming back?
2. What would you like ARCS to do differently?
3. How can we improve communications?

Among other answers, the consensus seemed to be that we wanted to hear more about the students, and we all appreciated event-reminder and save-the-date emails.



In April, organizers followed up with a smaller meeting at Pam Meadowcroft's house to refine and solidify future goals. In a triumph of organization, the meeting lasted exactly one hour, partly because free parking was available for only one hour.

(L) **Missy Unkovic**. (Below): **Linda Burke, Pam Meadowcroft and Janet Wood**. Photos by **Maren Cooke**.



## Great news: more dollars for more scholars!

ARCS Pittsburgh proudly announces that we are funding ten new scholars for 2013–16. Fiscally conservative, ARCS Pittsburgh funds new scholars only when we have accumulated funds to support them for the full three years. This year we have:

- 5 more at Carnegie Mellon University
- 4 more at the University of Pittsburgh
- 1 more at Penn State University

Watch the Winter Newsletter for more information and photos of our new scholars!

## ARCS Foundation and Pittsburgh Donors 2012-2013 CORPORATIONS AND FOUNDATIONS

### FULL SCHOLAR AWARDS

The BNY Mellon Charitable Foundation (II)  
Fine Foundation Award  
Thomas W. and Carol K. Henderson Family Fund of the  
Pittsburgh Foundation (II)  
PPG Industries Foundation (II)  
Westinghouse Electric Foundation (II)

### INDIVIDUAL DONORS

#### FULL SCHOLAR AWARDS

Roy and Susie Dorrance (II)  
Leslie and Hans Fleischner (IV)  
John T. Ryan III and Catharine M. Ryan in honor of their  
daughter, Maureen Emily Ryan

#### HALF AWARDS

JJeanne and Dick Berdik (III)  
Linda Beerbower Burke and Timothy F. Burke, Jr.  
Bev and Steve Elliott (II)  
Christy Gookin (II)  
Susan M. and R. Michael Harter  
Margaret P. Joy  
Deborah W. Linhart  
Mary Anne and John Paul  
Carol and Paul Stockman (III)  
Lise Woodard and John Reilly, MD

#### THIRD AWARDS

Francine Abraham (II)  
Mary Lou Bennett (II)  
Charlotte and Henry Beukema (III)  
Cynthia Carrow and James Kyper  
Mimi Barash Coppersmith (II)  
Ann Fromm  
Carol and Richard Heppner (II)  
Erika Kirwin  
Janice Leckey  
Jennifer and James Martin  
Barbara R. Palmer (II)  
Margaret V. Ragni, MD and Frederick L. Porkolab, MD  
(II)  
Millie and Gary Ryan (II)  
Kathleen M. and Louis Testoni (II)  
Elizabeth T. Wainwright (III)  
Janet Wood  
Maureen Young

*Roman numerals indicate multiple awards*

ARCS Foundation appreciates the generosity of those  
who have contributed to support our Scholars!

# Pittsburgh chapter members applaud Google tour

Fifty-three ARCS members turned out for a January 30 tour of Google's local offices in Bakery Square, site of the old Nabisco factory.

**Missy Unkovic**, ARCS Pittsburgh president, introduced Google host **Dr. Brady Hunsaker**. A former ARCS awardee at Georgia Tech, Dr. Hunsaker gave a short, yet fascinating lecture about technological complexities of online shopping. ARCS members peppered him with questions, and then Dr. Hunsaker and volunteers led members on a tour.

With similarities to other Google campuses, Pittsburgh Google boasts:

- treadmill computers
- massaging chairs
- free food
- live chickens producing fresh eggs, and a hydrophobic area for fresh herbs
- beehives for fresh honey
- a climbing net
- an interior bridge designed like the local Smithfield Bridge
- enthusiastic people talking about their work

The perks of being an ARCS Foundation member are great!



**Google's Cory Williams leads January tour of Pittsburgh's Google facilities. Dr. Brady Hunsaker converses with ARCS Foundation President Jeanne Berdik and ARCS Pittsburgh's program chair Lourdes Castellanos.**



## Mark Your Calendars: Upcoming Events You Won't Want To Miss!

*Thursday, July 11*

Al Fresco lunch, Peggy Mooney's house

*Wednesday, August 7*

Al Fresco lunch, Natalie Hoffman's house

*September 18, 2013*

Donor Appreciation Event at the University of Pittsburgh (location TBD)

*Thursday a.m., October 3*

*Thursday a.m., October 15*

Marcellus Shale site visit

*More details about each event will be forthcoming by email and post.*

## Your "Hot Tickets" Can Help Our Scholars See the 'Burgh

One goal for our scholars is to help them see what Pittsburgh has to offer and encourage them to live in our wonderful city as they continue their careers. Most students cannot afford our major league sporting events or cultural events. Now we have a way to let them take advantage of our own unused event tickets.

"I went to see the Book of Mormon at the Benedum," said Matthew Edwards, ARCS second-year scholar at CMU, "thanks to ARCS tickets."



Scholars jump at the chance for free tickets to any sports or cultural event. If you can't use your tickets, email Kathy Dee at [KathyDee28@aol.com](mailto:KathyDee28@aol.com). Or telephone Kathy at 412-243-5333. Include your telephone number and the event name and date. THANKS!