

FALL  
2012

# ACHIEVEMENTS

National Newsletter of ARCS® Foundation



Achievement Rewards for College Scientists

# President's Message

Dear ARCS® Foundation Members,

Welcome to the new school year and while I'm sure you have all been working very hard over the summer months, I believe it is still appropriate to send you a "Back to School" message – a message about **Celebrations, Congratulations, Challenges and Choices** applicable to both your local Chapter and our entire national organization.

First of all,

- Let's Celebrate that in **2011-12 we collectively distributed 528 scholar awards totaling \$4,117,488.**
- Let's Celebrate that cumulatively we have **made 14,188 awards totaling \$82,828,057** since our founding in 1958.
- Let's Celebrate that we have advanced science in America through the support **we have given to 8,343 scholars** over these decades.

Congratulations to the 1,559 women of ARCS Foundation, our boards and advisory committees whose leadership and hard work make these successes possible. Congratulations to our 54 university partners and the 552 approved departments and programs and all the people in them with whom we collectively work and who make it possible for us to be effective in achieving our mission. And Congratulations to our scholars – those young Americans judged by our university partners to be most capable of innovation, to be those most likely to make a difference in science, engineering and medical research.



As we begin a new year and celebrate past accomplishments, however, we also must acknowledge that tremendous Challenges lie ahead. There is an ever growing need to develop effective interventions in STEM education at every point in the pipeline from K-12 through higher education. ARCS Foundation's targeted focus on providing support to undergraduate and graduate science education is increasingly critical. In their 2010 report, *The Path Forward*, the Council of Graduate Schools and Educational Testing Service make a strong case for the continued and growing need for support to higher education, specifically to graduate education as follows:

*Our competitiveness in the global economy hinges on our ability to produce sufficient numbers of graduate-degree holders.... One of our greatest resources is our human talent, and as a nation we must invest in educating more of our population at the graduate level to ensure our capacity to innovate and to secure our intellectual leadership into the future.*

The ARCS Foundation model has

Contents

News from National

P3

Chapter News

P5

Scholar Spotlights

P9

Sponsor Profiles

P11

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P12

Members in the news

P14

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a proven record of success over a long period of time in addressing the issue of America's dwindling leadership in science and technology. We are uniquely situated to have even greater impact on the strengthening of America's science and technology infrastructure for the 21st century. In meeting this continuing Challenge, however, we need to be prepared to be increasingly agile, thoughtful and strategic in our Choices of the strategies that will be most effective in achieving our mission.

In his new book, *Strategic IQ*, Harvard Business School Professor of Management Practice, John R. Wells, explains why making choices that adapt to changing circumstances isn't only smart, it's also a matter of survival. Dr. Wells refers specifically to the corporate sector, but his ideas are applicable to non-profit organizations as well when he states:

*...successful organizations have a pretty clear strategy, but they are not satisfied with it. They are*

*always trying to improve it and look for alternative ways of playing the game. So it's an issue of not being satisfied and also being creative. On the structural side, they have very adaptive organizations, and on the people side, strategic intelligence is distributed throughout the organization. So they typically have structures that support such adaptive behavior, they seek out people who are open to change, and then they encourage them to change continuously.*

At the national level of ARCS Foundation, we are beginning to work on a new Long Range Plan. You may be engaged in similar conversations within your Chapters. Regardless of the decisions you and I ultimately make throughout these processes in terms of how most effectively to reach our goals, our Choices as to what to do and how to do it should ALWAYS be the result of open discussion, tolerance for honest debate and encouragement of out of the box thinking. Statements such as "we

tried that" or "that's not how we do things" or "that's not who we are" should NEVER be part of our lexicon. With apologies to Robert Frost, it may be that the road less traveled or not ever traveled will be the most advantageous in getting us to our destination -- or not. In any case, whatever road we take should always be a real Choice, not just the result of our being in a rut or because we fear the untried or because a particular route might be personally uncomfortable.

The women of Los Angeles who founded ARCS Foundation in 1958 were remarkably out of the ordinary in their thinking and actions for their time and their environment. We, like them, must keep our eyes on the mission and we must not shrink from exercising equal leadership, courage and imagination in determining how that mission can be accomplished most effectively in this time and place.

Warm regards,

Jeanne B. Berdik  
National President

# News from national

## 2012 National Annual Meeting: A Successful Celebration of Learning

The invitation to the 2012 ARCS Foundation National Annual Meeting (NAM) in Denver boldly asked the members of the ARCS Foundation family and their friends to come to Denver to “celebrate and learn” together. And we did just that! The Denver NAM drew representatives from all 17 ARCS Foundation Chapters, spouses, guests, members being honored with the prestigious ARCS Light award, and leaders in the science, medical research and engineering communities.



The celebration began with a warm welcome by the Lt. Governor of Colorado, Joseph Garcia

An exquisite reception was underwritten by Lockheed Martin Corporation at the Governor’s Mansion. This superb venue would have

been hard to beat but certainly Thursday’s agenda which included focused workshops, our ARCS Light Award Luncheon featuring a former ARCS Scholar as a special guest speaker and, later in the day, the behind the scenes tours and dinner in the atrium of the Denver Museum of Science, met both the celebrating and learning challenge. Friday’s program, held at the amazingly expansive University of Colorado’s Anschutz Medical Campus (pictured below) included a fascinating panel discussion and keynote remarks exploring the frontiers of bio-medical technology.



Additional learning opportunities in human simulation, bioengineering, regenerative medicine and cutting edge pediatric health care were offered in late afternoon tours. Featured speakers were all experts in their respective fields and were superb at both translation and inspiration for the benefit and enjoyment of all attendees.

Presenters included:

- **James Crocker**, Vice President and General Manager for Sensing & Exploration Systems at the Lockheed Martin Space Systems Company, has led some of the world’s most important projects in astronomy and astrophysics.
- **Christopher M. Yakacki**, PhD, an ARCS Scholar at the University of Colorado at Boulder where his research focused on the development of shape-memory polymers-polymers that can change their shape for biomedical applications, subsequently co-founded Med-Shape Solutions, Inc. (now Med-Shape, Inc.), a university-based start-up company focused on commercializing novel, shape-memory medical devices.
- **Joseph K. Alexander, Jr.**, Chair of the ARCS Foundation Science and Engineering Advisory Committee and a Senior Program Officer with the National Academies Space Studies Board, moderated Thursday’s panel discussion.
- **Andrew Thorburn**, PhD, Professor in the University of Colorado School of Medicine Departments of Molecular Biology and Pharmacology and the Grohne Endowed Chair in Cancer Research and Deputy Director of the University of Colorado Cancer Center, focuses on the regulation of apoptosis and other forms of cell death as they relate to the development of cancer and the response of cancer cells to therapy.
- **Robin Shandas**, PhD, Professor, University of Colorado Denver College of Engineering and Applied Science, Professor of Pediatrics (Cardiology) and Surgery in the University of Colorado School of Medicine, and Chair of the Department of Bioengineering, has a long history of developing novel methods for translational bioengineering



2012 ARCS Lights Luncheon

and has an emerging research program in next-generation medical polymers, including shape memory polymers for minimally invasive medical devices.

- **Richard C. Duke**, PhD, Associate Professor of Medicine and Immunology at the University of Colorado School of Medicine and the Founder and Chief Scientific Officer of the Colorado Institute for Drug, Device and Diagnostic Development, is a biomedical researcher, inventor, biotechnology executive, and entrepreneur with nearly twenty years of experience in building, financing, and managing start-up biotechnology companies based on inventions made in Colorado's non-profit research institutions.

- **Charles Dinarello**, MD, Professor of Medicine and Immunology at the University of Colorado School of Medicine, Division of Infectious Diseases, is noted for his role in developing improved treatments for inflammatory disorders and autoimmune diseases. His work in isolating and cloning interleukin-1 resulted in clinical advances applied

to adult and juvenile rheumatoid arthritis, Crohn's Disease, cancer, diabetes, and heart disease. And there was more!!

Throughout all the speeches, tours, workshops, luncheons and dinners, ARCS Foundation members and guests learned and celebrated learning, celebrated being together and the camaraderie of a shared mission and shared accomplishments, and had FUN!

## Lockheed Martin Collaboration Spotlited on Capitol Hill

On August 1st, Dr. Ray O. Johnson, Lockheed Martin Corporation Senior VP and Chief Technology Officer testified before the U.S. House Subcommittee on Research and Science Education. Dr. Johnson is a prestigious spokesman for STEM education, K-12 through advanced university degrees. On behalf of Lockheed Martin, Dr. Johnson is a recognized and respected advocate of the mission of ARCS Foundation, and engages with the organization at both the Chapter and National levels.

Lockheed Martin participated in a congressional hearing on August 1, 2012 before the U.S. House Subcommittee on Research and Science Education to discuss the company's work with U.S. universities. Representing the company was Dr. Ray O. Johnson, Senior Vice President and Chief Technology Officer.

The subcommittee held the hearing to gain perspective from business leaders on corporate partnerships with academia and the ways that the federal government can help drive innovation and job creation.

During his testimony, Dr. Johnson shared Lockheed Martin's plans to invest around \$20 million in university research and development in 2012. He discussed how the company is concentrating its efforts in fewer and larger partnerships across several strategic areas, including cyber security, energy, healthcare, logistics and sustainment, and nanotechnology and advanced materials.

Dr. Johnson also discussed the need for the federal government to restore a permanent research and development tax credit to help spur corporate investments in U.S. universities. He also addressed the important roles of businesses and the government to help students realize their potential through science, technology, engineering, and math education.

In addition, he stressed that Lockheed Martin works with universities on talent acquisition. The company is a large employer of entry-level talent with over 75 percent of the company's required skill sets being technical in nature. The skills most in demand are computer science, systems engineering, and electrical, computer, mechanical, and aerospace engineering.

# Chapter news

## ARCS Foundation Chicago Welcomes University of Illinois, Urbana-Champaign

ARCS Foundation Chicago Chapter is proud to add the University of Illinois at Urbana-Champaign (UIUC) as a new recipient institution. Since its founding in 1867 as one of the original “land grant” colleges, UIUC has been committed to excellence in research, teaching, and public engagement.

Adding UIUC to the schools already on the ARCS Foundation Chicago roster will enhance and give greater breadth of scientific research possibilities, expanding the already strong research capabilities available to the Chicago Chapter.

Beginning with the fall semester, 2012, the following five graduate students will be the first ARCS Scholars from UIUC:

**Michael Dorothy**, Aerospace Engineering  
**Michelle A. Duenes**, Entomology  
**Mitchell J. Minarick**, Agricultural & Biological Engineering  
**Nicholas L. Neager**, Entomology  
**Sarah M. Potts**, Crop Sciences

First called Illinois Industrial University in 1867, UIUC was renamed the University of Illinois in 1885. From this early beginning, UIUC became a powerhouse in

both undergraduate and graduate education, particularly noted for its talented and highly respected faculty – many of whom have been recognized for exceptional scholarship, membership in professional associations, foundations, and organizations, and recipients of such prizes as the Nobel Prize, the Crafoord Prize in Biosciences, and the National Medal of Science.

A few facts about UIUC:

- Is rated #25 out of the top 50 research universities in the world identified in a report by the National Research Council, June, 2012.
- Spent UIUC spent \$563,710,000 on research and development in science and engineering in 2009.
- Has an enrollment of 32,000 undergraduate and nearly 11,000 graduate and professional students.
- Ranks among the top ten U.S. universities in number of earned doctorates awarded annually.
- Attracted international students from 115 countries in 2011 and is #2 in the most recent ranking of largest number of international students.
- Supports one of the largest public university libraries in the world.
- Is one of the most “disability friendly” U.S. campuses.
- At 425,000+, has one of the largest alumni organizations in the United States.



## UIUC Chancellor Phyllis Wise to be Honored

ARCS Foundation has always encouraged collaboration with our academic partners. Phyllis Wise, Chancellor of University of Illinois at Urbana-Champaign (UIUC) and Vice President of the University of Illinois and strong supporter of ARCS Foundation, exemplifies this collaborative effort. Dr. Wise established a strong relationship with Jacque Doane and other members of ARCS Foundation Seattle Chapter, while working as Interim President at the University of Washington. This relationship with ARCS Foundation was instrumental in having UIUC become an ARCS foundation recipient school.

Chancellor Wise has firsthand experience with ARCS Foundation having worked with ARCS Scholars in her own labs. She was able to observe the tremendous impact and benefit of ARCS awards on the lives and work of her students. Chancellor Wise is an impressive “can-do” leader, and ARCS Foundation Chicago is honoring her as Person of the Year at the Scholar Award Luncheon on October 25, 2012, where she will also be featured as the keynote speaker.

## ARCS Foundation Tampa Bay Tours Center for Advanced Medical Learning and Simulation

**L**earning And Simulation  
Over 80 ARCS Foundation Members and guests toured the Center for Advanced Medical Learning and Simulation in Tampa on July 26, 2012. Paul Ayres and Nikki LeClair of CAMLS led the tours of the innovative state of the art facility (pictured below) that is leading the nation in teaching and learning patient centered care with the latest equipment.

**Linda Seefeldt**, President of ARCS Foundation Tampa Bay, welcomed the group with an overview of the history of how ARCS Foundation started over 50 years ago, and has given over \$82 Million in over 14,000 ARCS Scholar Awards to advance science in America. In the new chapter in Florida, we

have sponsored four ARCS Scholars at University of South Florida in the Cancer Biology Ph.D. Program in the College of Arts and Sciences, and in the Graduate Program in the College of Marine Science.

**Rosemary Brehm**, Vice President Fund Development, shared the goals of ARCS Foundation here in Florida in our effort to invest in the economic development of the region. Currently, we are seeking 20 Business Partners/Strategic Alliances; 20+ New Members; and \$60,000 to sponsor four ARCS Scholars locally over three years.

**Laura Blackwell**, Vice President – Communications, was named the ARCS Light in 2012, setting up all ARCS Communications, website and systems since the founding of the chapter in Tampa Bay.

**Elaine Smalling** invited members ARCS Foundation Team on November 3, 2012 for the Cure on Wheels Bike Ride to benefit Cancer Research and Patients. All proceeds raised by ARCS Foundation Team will go to fund a Cure on Wheels

ARCS Scholar.

**Heidi Toomey**, one of the Initial ARCS Scholars, spoke of her research in Marine Science, and her appreciation to ARCS Foundation for supporting her advance studies of the water qualities.

**Pat Johnson**, Vice President/President Elect and Donna Killoren coordinated and organized the event, with help from many members.

## Phoenix Chapter Meeting Features Arizona State Professor Carol Johnston



L to R: Anne Kunkel, Professor Carol Johnston, and Carol Craig

**A**rizona State University Professor and Director of Nutrition Program Carol Johnston addressed ARCS Foundation Phoenix Chapter Annual Meeting. Dr. Johnston's presentation, "Women's Health and the Role of Functional Foods with Medicinal Properties", was educational, informative and most enlightening to ARCS Foundation members in attendance. A lively question and answer session followed Dr. Johnston's presentation.



Paul Ayres leads a tour of the CAMLS Center for Advanced Medical Learning and Simulation

## San Diego Chapter: Prolific Inventor Unafraid to Fail or be Challenged

Excerpted from an article originally published in the *San Diego Tribune News* April 17, 2012

Segway, the self-balancing human transporter; iBOT, the all terrain electric wheelchair; Sling-shot, an engine system for simultaneously generating power and purifying water. What do they all have in common? All were invented by the legendary and prolific Dean Kamen.

What Kamen has accomplished is unbelievable. He holds more than 440 U.S. and foreign patents. While still in college, he invented the first wearable drug infusion pump. But the accomplishment for which he is most proud is starting FIRST — For Inspiration and Recognition of Science and Technology— which is best known for running an annual robotics competition that has involved more than 1 million students from more than 50 countries.

Kamen was in San Diego recently to accept the **Scientist of the Year award from the San Diego Chapter of ARCS Foundation** — Achievement Rewards for College Scientists. His message at the event is important for all entrepreneurs: Don't be afraid to fail, and focus on solving big problems.

*I only work on projects that I believe will improve life for a bunch of people. I get up every morning, work hard and fail a lot,*

said Kamen, a thin, wiry 61-year-old who was wearing his trademark jeans and denim shirt. In his honor, many of the dinner guests were dressed in similar attire.

*Many kids have never met a scientist. We need superheroes and role models in science and technology, so 21 years ago I said let's turn science and technology into fun, like a varsity sport, since we're competing against MTV and the Super Bowl,*

said Kamen as he talked about the formation of FIRST. This year, the competition will award more than \$15 million in scholarships to winners. The annual championship is set for April 25-28 in St. Louis



after a series of local and regional events.

The San Diego scholars are working on a diverse range of research that has the potential to lead to the development of new drugs to treat diseases such as breast cancer and Alzheimer's, faster smartphones, and advancements in the production of biofuels and other renewable energies. Crystal Moran Gutierrez, who is studying for a doctorate at the Scripps Research Institute, is researching protein folding, such as implicated in Parkinson's disease. By understanding what causes the proteins to misfold, the next step could be

development of a viable treatment.

As a graduate student who works in a lab, Gutierrez receives an annual stipend of \$28,000 from Scripps and \$5,000 from ARCS Foundation.

*The extra money allows me to live a little more comfortably so that I can go home to a quiet place," she said. "I want my research to do something good for humanity, and I know people who have Parkinson's. Science is hard with a long-term payoff, and as a graduate student I've learned you have to enjoy the everyday process of working in the lab.*

For Megan Jennings, the \$7,500 ARCS Foundation stipend meant that she could work part-time (instead of full-time) while studying for her doctorate in ecology in a joint program between San Diego State University and University of California Davis.

*My research focuses on how to better manage the land and design our network of open spaces," she said. "As San Diego becomes more developed, we want to maintain places where animals will survive and thrive.*

Kamen energized the audience, calling on them to be brave and bold because what the U.S. needs is young people thrilled by science, math, technology and engineering. As the brilliant, young ARCS scholars filed out, we were more optimistic about the country's future. They had heard one of the best and brightest, a new kind of American hero, and he had called on them to join him.

*Neil Senturia and Barbara Bry, serial entrepreneurs who invest in early-stage technology companies, write this weekly column about entrepreneurship in San Diego.*

## Utah Natural History Museum A Fun and Informational Event

On March 2, 2012, the ARCS Foundation Utah Chapter was given an in-depth tour of the Natural History Museum of Utah by Executive Director, Sarah George. The Museum is now located in a stunning new building situated in the foothills of the Rocky Mountains, overlooking Salt Lake City and inspired by the diverse landscape of Utah.

The \$103 million Rio Tinto Center, funded by a public and private partnership, is deeply rooted in place and infused with multiple features that embrace both traditional and new media techniques – a new Museum that sets a new standard for a Natural History Museum of the 21st Century.

Ronald Dunn and his son, David Dunn who were the structural engineers for this unique, highly complex building, described structural elements of the building. The

tour also included a back-stage tour of the areas where collections are stored and research is done.

Nine dedicated, thematic exhibition galleries explore the Sky, Native Voices, Life, Land, First Peoples, Lake (Great Salt Lake), Past Worlds, Our Backyard and Utah's Futures. Each gallery draws from several scientific disciplines and collections as well as from the humanities.

### ARCS Foundation Pittsburgh Chapter Reaches the Million Dollar Mark

ARCS Foundation Pittsburgh has surpassed the milestone to award a total of over one million dollars to western Pennsylvania scholars!

Last February, ARCS Foundation-Pittsburgh notified their three university partners: Carnegie Mellon University, University of Pittsburgh, and Penn State University that they would fund ten new students for three years beginning with the academic year 2012-2013, making

a total of thirty two ARCS Scholars.

Five of the new students will be at Carnegie Mellon University, four at University of Pittsburgh, and one at Penn State University. Each of the ten students will receive \$5,000 per year or \$15,000 over the three-year period. When this new commitment of \$150,000 (ten students times \$15,000) is added to all previous commitments and awards, the total is \$1,027,500.

Adding to the excitement at achieving the million-dollar milestone is that 2013 is the tenth anniversary of ARCS Foundation Pittsburgh Chapter, as it was founded in May of 2003. Bev Elliott, Millie Ryan, and Kathy Testoni have agreed to chair a committee to celebrate these two achievements next spring.

Each and every Pittsburgh ARCS Foundation member deserves congratulations for attaining the million-dollar mark within ten years. Every donation made and every hour of volunteer time given over the ten-year history contributed to the achievement of this milestone.



ARCS Foundation Utah Chapter members were particularly enthused about Salt Lake Valley/Great Salt Lake hydrologic display.

# Scholar Spotlights

## ARCS Scholar Named Morehouse Valedictorian



ARCS Scholar **Jamaji Nwanaji-Enwerem** was named valedictorian of the Morehouse College Class of 2012.

A two-year ARCS Scholar from Concord, North Carolina, Jamaji graduated with a 4.0 GPA and a degree in Biology. He will attend Harvard Medical School to pursue an MD/PhD.

*I aspire to become a professor and researcher. I whole-heartedly believe that research is the fuel that allows medicine to advance and I want to be on the cutting-edge of medicine. Moreover, I have always felt an innate responsibility to give back and help others. I feel that teaching is my way of fulfilling that desire.*

Jamaji spent last summer in Philadelphia working at Merck & Co. in the department of bone biology,

providing research support. The summer of 2010 he was named a Wake Forest University Translational Sciences Institute Scholar and conducted research in the emergency medicine department. The summer of 2009 was spent at Duke University as a Summer Research Opportunities Intern conducting research on two candidate genes for Hereditary Hemorrhagic Telangiectasia.

*From a very early age, my parents taught me the value of hard work and focus and these lessons have set the tone for my whole life, including my time at Morehouse,*

Jamaji said. He added that the support from ARCS Foundation encouraged him to continue working hard and gave him the motivation to help others.

Jamaji is the eldest son of Sir Pamaji Nwanaji-Enwerem, a computer programmer, and Lady Chioma Mwanji-Enwerem, a registered nurse. His younger brother will enter the University of North Carolina this fall as one of 52 Morehead-Cain Scholars, one of the oldest and most prestigious merit scholarship programs in the United States.

*Editor's Note: Jamaji held the Kathy and Dennis Berry ARCS Scholar Award for two consecutive years. This article appeared in the summer 2012 edition of ARCS Foundation Atlanta's newsletter. "ARChiveS".*

## Portland ARCS Scholars Receive Prestigious NSF Fellowships



ARCS Scholars, **Jeannie Hunnicutt**, The Lila G. Miller Scholar Award recipient, **Danielle Robinson**, the Richardson Scholar, and **Jeremy Glynn**, Portland ARCS Foundation Chapter Scholar, recently received the prestigious National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) Fellowships.

Danielle, a first-year scholar, and Jeannie, a second-year scholar, both in the Neuroscience Graduate Program, and Jeremy a first-year scholar in the Biomedical Engineering Program in the School of Medicine became 2012 GRFP fellows. This brings the total number of NSF Grants for Portland Chapter ARCS Scholars to four.

Last year, Christopher Vaaga, the Cyndy and Edward Maletis Scholar, also received a GRFP. Christopher is a second-year student in the Neuroscience Graduate Program. The NSF GRFP recognizes and supports outstanding graduate students who are pursuing research-based master's and doctoral degrees in fields within NSF's mission.

The GRFP provides three years of support for the graduate education of individuals who have demonstrated their potential for significant achievements in science and engineering research.

## Atlanta ARCS Scholar Named Goldwater Fellow



ARCS Scholar Zollie White is the first Morehouse student to be selected as a Barry Goldwater Fellow. The Barry M. Goldwater Scholarship and Excellence in Education Program was established by Congress in 1986 to honor Senator Barry M. Goldwater, who served his country for 56 years as a soldier and statesman, including 30 years of service in the United States Senate.

## Scholar Coty Jen Excels at University of Minnesota

Coty Jen is a second-year graduate student in the Mechanical Engineering Department at the University of Minnesota-Twin Cities. In 2010, she finished her bachelor of science in chemical engineering at Columbia University. During her time in New York City, she developed a love for world cuisines, Broadway musicals, operas,

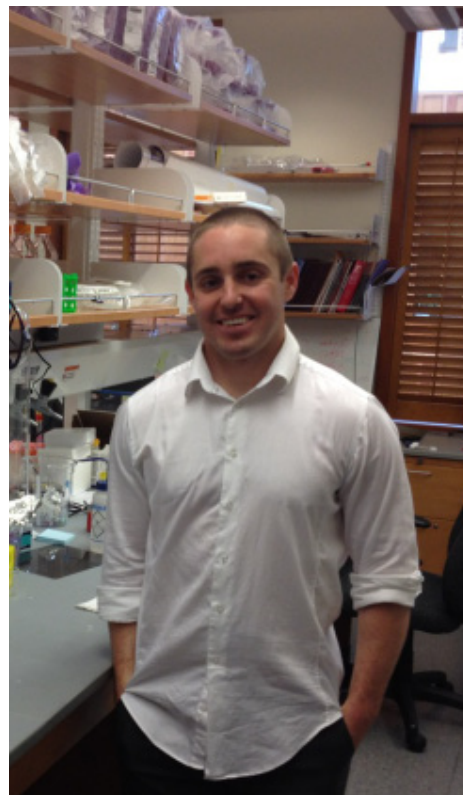
symphonies, plays, museums, and chocolates. Her interests expanded to include canoeing, hiking, and fishing during her short year in Minneapolis. Coty spends the rest of her free time reading books, traveling around the world, and cooking.



Coty's research background primarily focuses on atmospheric aerosols and their implications on climate change. Her undergraduate research was done in Professor V. Faye McNeill's group where they investigated the organic reactions taking place inside atmospheric aerosols. Her graduate research is being performed under the guidance of Professor Peter McMurry. She is studying the mechanisms of how aerosols are created in the atmosphere, a process known as nucleation.

## Pittsburgh ARCS Scholar Andy Rape Receives Prestigious Award

Andy Rape, the recipient of the Carol and Richard Heppner ARCS award from 2008 to 2011, received the 2012 Graduate Research Award at Carnegie Mellon University's commencement for his outstanding research on the regulation of cellular traction forces.



Andy, who finished his PhD in only three and a half years, is now a postdoctoral fellow at the University of California Berkeley.

While he was at CMU for his PhD in the Biomedical Engineering Department, Andy co-authored six scientific articles. He worked with Dr. Yu-li Wang on developing a novel micropatterning method for soft hydrogels, researched the interplay between cell shape, motility and traction forces, and investigated the regulation of traction forces in microtubules.

The title of his thesis was *Regulation and Function of Cellular Traction Forces*. The Pittsburgh Chapter is proud of Andy and wish him well in his new work at Berkeley.

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# Sponsor profiles

## Lockheed Martin at the Forefront of Innovation

Over the past 100 years, Lockheed Martin Corporation has been at the forefront of innovation, producing numerous scientific and engineering breakthroughs. This leading global security and aerospace company has been involved in everything from the planes and seaplanes that Glenn L. Martin and the two brothers—Allan and Malcolm Lockheed—developed in 1912 to the famed “Skunk Works®” research and development organization, to recent missions to Jupiter and Mars. The aviator, Amelia Earhart, flew the company’s planes. The Polaris ballistic missile and the U-2 and the SR-71 Cold War aircraft were company programs; and its engineers developed and built the Space Shuttle’s external tanks, the “jet-packs” used by shuttle astronauts, and the Hubble Space Telescope. These highlights, though, are just a few of Lockheed Martin’s groundbreaking contributions over the years.

Lockheed Martin’s visions have been brought to life by its dedicated corps of scientists and engineers. The recruitment and hiring of technical skills continues to be a critical strategy to the company’s success. In turn, the corporation and its employees are proactively

passing forward an innovative spirit by sponsoring community-outreach and educational programs related to the Science, Technology, Engineering, and Math (STEM) disciplines and forming industry-academia partnerships. The company donates \$24 million annually to philanthropic causes - 50% of these contributions are for STEM outreach activities that reach students ranging from kindergarten to graduate school.

Some of the educational programs supported include the National Math and Science Initiative, the USA Science and Engineering Festival, and the National Flight Academy.

Lockheed Martin has been a generous donor to the ARCS

Foundation for many years at the National and Chapter levels. The company has supported ARCS scholars, events, and related systems (including the upgrade of the ARCS National website). Lockheed Martin and its predecessor companies have contributed to the Metro Washington Chapter (MWC) for decades, including the initial \$10,000 donation by George Bunker (President of Martin Co.) to establish the Scholar Awards Endowment for MWC in 1986. Additionally, the corporation supports ARCS scholars and Chapter events in Colorado, Georgia and California. ARCS values its partnership with Lockheed Martin and looks forward to many more decades of collaboration to advance science in America.



### A Letter from Ronnie Martin, Chair of ARCS National Information Strategies Committee

Dear ARCS Foundation Members, On this one year anniversary of the new ARCS Foundation website, I would like to provide a small example of how this capability is making our ARCS Foundation Chapters more efficient. Recently, Mary Snitch was able to arrange a tour of the Lockheed Martin Facilities just outside of Atlanta for 40 lucky ARCS Foundation members and guests. In the past, this would have been announced via an email and then the organizers would have to wait for email responses or phone calls, collect those responses in a folder or make notes on a piece of paper (i.e., use whatever the preferred tracking method was at the time), keeping count so that when 40 people had signed up future respondents would be notified that the tour was full. It could be worse – we could have been waiting for snail mail...

Let me tell you how this was handled using the website:

We set up an event that allowed online registration and then sent an email to members announcing the event. The email included a link entitled "Register Now" that took members directly to the form to complete their registration. When the form was completed, organizers were automatically notified that another person had registered. When the maximum number of participants was reached, members who attempted to sign up received a message with instructions for being placed on a waiting list.

Atlanta's members did not hesitate to use this new approach to doing business – in fact, over half of the slots for the tour were filled in the first day.

Although organizers received emails notifying them of each registration, these were really just warm fuzzies – there was no need to act on them. All registration details were maintained within the website for easy access and review. No need for the organizers to count and double count and wait and wonder what type of turn out to expect. Thanks to the website, they could employ their talents in more productive ways! In future newsletters, I hope to provide additional examples of the ARCS Foundation website at work.

-Ronnie Martin

When ARCS Foundation members from all Chapters gathered in Washington, DC for the 2010 National Annual Meeting, they attended a workshop on the proposed concept of a state-of-the-art 21st Century National Website. The expert presenters, Lynda Birkelbach (Chicago) and Jenny Edstrom (Minneapolis) offered a description of the technical benefits and greater efficiencies in business operations that the new website could potentially bring to all Chapters and the National Board. However, in June of 2010 work had not even begun on identifying budget requirements or potential vendors who would develop and manage the new website.

That presentation was so compelling to all attendees, that with enthusiastic approval of the National Board the concept was launched. Just eight months later, the National Board approved the largest project ever envisioned in our history and development of the National Website – named Project Mercury – was set in motion.

The National Website was launched in September 2011 and has successfully completed one year of operations. What a year this has been!! A very dedicated and resourceful team – the Information Strategies Committee, with 2012-13 Committee Chair Ronnie Martin (Atlanta) – has established training modules, created a highly-functional "help" network among Chapter Data Administrators and Content Editors, conducted online registrations at the National and Chapter level, enhanced the National Scholar Database, and projected a professional, fresh and

dynamic face of ARCS Foundation with external donors, prospective new members and new Chapters, academic institutions, and key public sector decision-makers.

While the original vision for the National Website is a reality, it will remain in a "continuous improvement" mode of operations. The website belongs to every ARCS Foundation member. For members not yet familiar with the site, this anniversary month of September is a good time to visit. The public site is at **www.arcsfoundation.org**. ARCS Foundation members can set up a personal username and password to access the member-only site.

## Phoenix Chapter Website Training Workshop

The new ARCS Foundation website is a dream come true. It is a great achievement that has united seventeen chapters while

allowing each to retain their individual identity. The website provides an exciting professional public site for our stakeholders, potential donors, and communities to view. In addition, the website provides a private site for Chapter members, scholars and the National Board to more effectively communicate and streamline their operations.

*Rather than duplication of effort with multiple databases, ARCS Foundation members now look to a single database and a single source to go for chapter data and communications.*

The Phoenix Chapter recently held a September 2012 Website Training Workshop at the annual Chapter Retreat. Diane Might, Phoenix content editor, member of the website training task force and committee, led this workshop which provided an opportunity for Board members to better understand and utilize the website via a demonstration followed by hands on training. Board members reviewed Content Creation, Content

Management, Contribution, Event Management and Contact Management. As members learned more about what the website can do for the Chapter, it was heartening to see their enthusiasm grow.

After go-live September a year ago, the Phoenix ARCS Chapter Chapter embarked on a year of shakedown. It was exciting to finally empower Board Members to be a part of the process.

Diane Might, sums it up by saying:

*It has been a great honor to serve at both the Chapter and National level in both pre and post production. My goals, as a member of the dedicated IS Committee under Ronnie Martin's inspired leadership, are to ensure continuous improvement of the website as well as to increase Chapter understanding and utilization of the website. There is a learning curve but those that of us that have carried on over the past year and a half can unequivocally see the light at the end of the tunnel!*

# ANNOUNCING 2013 ARCS Foundation National Annual Meeting

From the Depths of the Oceans to the Edge of the Universe:  
Science in Paradise

May 29 – June 1, 2013  
Honolulu, Hawaii  
Hilton Hawaiian Village, Tapa Tower

*Come and experience the Aloha Spirit in beautiful Hawaii, with tours, workshops and cutting edge science. Network with your colleagues and plan to arrive early or stay later to visit some of the unique neighbor islands. For more information contact Susan Lampe at [lampes@hawaii.rr.com](mailto:lampes@hawaii.rr.com).*

# Members in the news

## Members in the News...

The 2011-2012 year has brought visibility and accolades for Seattle Chapter members. Following are some members who have been recognized in the community and in the news:

In May, the University of Washington College of Engineering recognized ARCS Foundation Board Member **Bonnie Dunbar** with a Distinguished Service Award for her significant contributions in the field of engineering. The evening of recognition included an impressive video showing some of Bonnie's many accomplishments.

Seattle ARCS Foundation Board Member **Jennifer West Higgins** joined a group of the most highly-regarded young leaders in our region when she was recognized as one of the *Puget Sound Business Journal's* "40 Under 40." Voted on within the business community, this distinction is reserved for young leaders who are center stage in our metro area, working hard to drive the economy and demonstrating dynamic leadership.

In February, a profile of chapter member **Elizabeth Roberts** ran in the *Puget Sound Business Journal*, highlighting her entrepreneurial success in launching a line of outerwear and in penetrating both local and international markets - including a contract to outfit the Royal Danish Ballet.

In June, Seattle chapter member **Julie Tall** was the subject of a photo-filled profile in *The Seattle Times--Pacific Northwest Magazine*, focusing on her design philosophy and her approach to remodeling homes in times of transition.



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foundation  
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publication

**Jeanne B. Berdik**  
President, ARCS Foundation

**Anna Maria Matteucci**  
VP Communications  
ARCS Foundation

**Christy Burton**  
Newsletter Editor

**Contributors:**  
All ARCS Foundation Chapters

**ARCS® Foundation, Inc.**

A 501(c)3 non-profit organization  
Tax ID 23-7373079

4005 Wisconsin Avenue, NW  
P.O. Box 39105  
Washington, DC 20016-9998

Email: [newsletter@arcsfoundation.org](mailto:newsletter@arcsfoundation.org)

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

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