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**UPCOMING EVENTS**

|             |  |
|-------------|--|
| May 9       | Annual Meeting and Luncheon                    |
| May 30      | NAM Conference                                 |
| June 6      | Old/New Board Meeting                          |
| November 14 | Scholar Awards Luncheon Ritz-Carlton, Downtown |

### Cutting Edge Research Center Resides at Georgia Tech

On a rainy February 16<sup>th</sup>, Dr. John McDonald, Director of Georgia Tech's Integrated Cancer Research Center, shed light on the innovative approaches to cancer research taking place on the Tech campus. As part of the Atlanta ARCS chapter's education program, Dr. McDonald delivered an overview of the Center and highlighted three novel projects they are spearheading.

Unlike medical models that rely on traditional hospital sciences, Dr. McDonald's team brings together the best minds from the disciplines of Bio-Medicine, Chemistry, Biology, Nano Technology, Computational Science, and Mechanical and Electrical Engineering to create new ways to diagnose, treat and possibly cure cancer.

Additionally, unlike most cancer research centers, Georgia Tech's Center is privately funded by individuals and foundations. Dr. McDonald likened his program to a "start-up" in cancer research. They seek seed money with the hope that the discoveries will be commercial winners in the near future. With success, they hope to attract more venture capital, investors and ultimately public research money.

To illustrate the multi-functional approach they use, Dr. McDonald discussed three examples of

their work. His first illustration highlighted work on diagnosing ovarian cancer by combining the disciplines of Chemistry, Cancer Biology and Computational Science. In early findings, using sera from test and control groups, they are able to differentiate between healthy cells and those from ovarian cancer patients with almost 100% accuracy. According to Dr.



**Dr. John McDonald**

McDonald, this procedure is promising for early detection, especially among those with high risk for ovarian cancer, a difficult disease to detect.

The second example presented illustrated the benefits of integrating the fields of Nano Mechanics and Chemistry. Dr. McDonald pointed out that *metastasis*, or untrammelled cell growth, is the problem with cancer. After Stage 1, there is a tendency for the cancer cells to spread to other organs and body parts, even after the tumors have been removed. Using high powered magnets, in a procedure much like dialysis, the Tech team has been able

to 'draw out' floating cancer cells in mice infected with carcinogens. In one study, the team has increased the life span by 50% among cancerous mice exposed to this treatment. Dr. McDonald is optimistic that this invention will find investors willing to take the process to market.

The final example illustrated the value of combining Biology and Computer Science and applying it at the cellular level. An accepted method for treating cancer cells is to use chemotherapy or radiation to kill all rapidly growing cells. The Tech team is developing a highly sophisticated system to target only those cells that are cancerous with a drug scheme designed to attack them specifically. This treatment would be followed by a 'tracking' system to re-adjust the drug treatment as the cancer cells mutate. Already this approach has shown positive results.

Dr. McDonald entertained questions and then led attendees through his laboratory where ARCS members interacted with student and faculty researchers and viewed their work sites. At the end of the session, ARCS members were awed by the remarkable work being done at Georgia Tech and appreciated Penny Seawell and Sara Jean Burke for organizing this most enlightening educational event.

## From the President's Desk

As the year comes to an end, I want to thank all the members for their participation in our wonderful organization. I'm especially grateful to Board members for all of their work. They continue to ensure that our Chapter runs smoothly. We've worked together for our common goal: the pursuit of excellence in science and technology.

According to Thomas Starzi, M.D., Ph.D. at the University of Pittsburgh School of Medicine, "What you are doing and the funds you are providing are extremely important to the advancement of science. One ARCS Foundation dollar is worth 10 dollars in other major national science research grants because it is designed specifically for innovation."

In February, I attended the ARCS National Board meeting in Phoenix. It's really beneficial to be with representatives from other chap-

ters. We have much to share and we learn from one another. Every chapter throughout the country is currently involved in learning how to effectively use our new website. We all agree that there's a lot to learn!

It's time to think about new members for our Chapter. We are close to our limit of 115 Active Members but there are a few openings as some members have elected to be Associate members. Applications must be submitted by June 30. As always, we look for members who want to be active in this terrific organization - members just like you! Susan McGonigle, VP-Membership, is spearheading new member outreach and can answer any questions you may have.

"Science in the Rockies" is the theme for this year's ARCS National Annual Meeting to be held May 30-June 2 in Denver. It

promises to be a special treat for all. We will visit the Colorado Governor's Mansion, the Denver Museum of Nature and Science and the Anschutz Medical Center. Check your emails for your invitation. I encourage you to attend.

I'm looking forward to seeing you at our Annual Spring Meeting and Luncheon!

-Kay



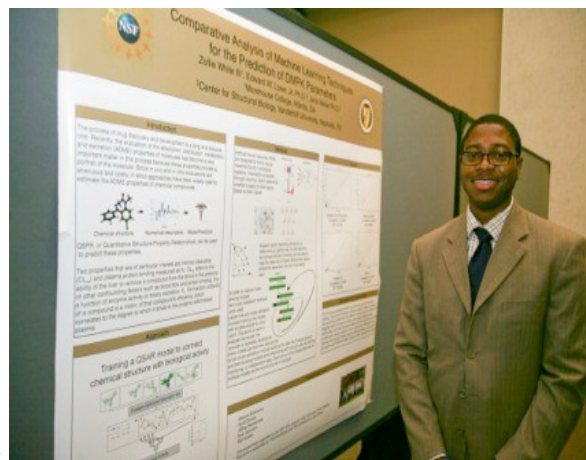
President Kay Weiss



## Morehouse College ARCS Scholar Named Barry Goldwater Fellow

Our own 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 U.S. Senate.

The purpose of the Foundation is to provide a continuing source of highly qualified scientists, mathematicians, and engineers by awarding scholarships to undergraduate college students pursuing careers in these fields. This year they have awarded 292 scholarships for the 2012-2013 academic year.



Scholar Zollie White

## Seven Ways to Support ARCS Foundation

*"The ARCS Foundation scholar] award money makes a tremendous difference in my training as a scientist in the field of biomedical science. I am very grateful for the opportunities your funding has offered me."*

-Current University of Georgia Scholar-

Atlanta Chapter members can be proud of the impact ARCS Foundation Scholar Awards are having on the lives of our impressive scholars. Our hard work and generosity go a long way toward removing some of the financial stress budding scientists, engineers and medical researchers endure as they pursue their degrees. Be assured, our scholars are spending their discretionary funds wisely and creatively.

The Funds Development Committee has brain-stormed ideas for creative ways for us to **give** to our Scholar Awards Fund. We know that half of our dues go into the Fund, but we rely on members to make additional contributions to support scholars. Here are several ways that you can support young scientists:



**Round up your dues payments:** A number of members round up their annual dues, e.g., from \$600 to \$1,000 or \$2,000. Two new members rounded up their partial first-year dues of \$300 significantly!



**Issue or respond to a "challenge":** One member has pledged \$2,500 a year for 3 years to co-sponsor a Morehouse scholar. She is asking other members to match her pledge. Such awards will bear both members' names. Please let me know if you are interested.



**Honor a friend:** Celebrate a member's birthday, anniversary or other significant occasion by making a donation in her name—the perfect gift for a dedicated member. We'll notify her of your gracious gesture.



**Give in memory of a member or special ARCS Foundation friend:** Memorial gifts are a special way to honor the contributions that departed members or friends have made to ARCS Foundation.



**Add ARCS Foundation, Atlanta Chapter, as a beneficiary in your will:** Including ARCS Foundation in your will is a way to make a significant gift to the Scholar Awards Fund or our Endowment.



**Show your support on a special occasion:** Instead of providing favors to guests at a party or reception, give a donation to the ARCS Scholar Awards Fund, and let your guests know. One of our dedicated members made a special donation to the ARCS Foundation in lieu of favors at her daughter's wedding reception.



**Who needs more hostess gifts?** In your invitations to your holiday parties, suggest guests bring a donation for ARCS Foundation instead of buying you a hostess gift. Provide gift envelopes at the door in a discrete location.

ARCS Foundation is a special organization that brings unique support and encouragement to students pursuing a science education. According to Dr. Donald Stein of Emory School of Medicine, "ARCS Foundation remains one of the true and consistent friends of all fields of science, supporting and encouraging students to pursue research and teaching careers. Very few institutions address this need, so it is an important, much needed champion of science education." Please be creative in your giving and help support science in America.

Linda Kay McGowan, Funds Development Chair



## Kudos Go to 2012 ARCS Light Debbie Liss

Debbie Liss could put the energizer bunny to shame. Debbie joined ARCS in 1995 and immediately got involved. She chaired the chapter's trip to Santa Fe, New Mexico and, after taking on numerous responsibilities, was elected President in 1999. As President, she was involved with the chapter's trip to San Francisco and initiated the Century Scholar Fund. This effort encourages members to contribute at least \$1000 and join with other members to sponsor scholars. A skilled communicator herself, Deborah prompted the chapter to include individuals' photos in the directory to promote relationship building among members.



Susie Deyo and Debbie Liss

Debbie has remained active locally and nationally. She currently chairs the Speakers' Bureau and the Endowment Series, a fundraising endeavor for building the chapter's endowment fund. Debbie has been a member of the National Board serving as Public Relations chair, Vice President of Communications and member of the Advisory Board. She was instrumental in updating of the ARCS logo.

ARCS is not the only organization that benefits from Debbie's talents and enthusiasm. She serves on the Board of the Justice Center of Atlanta and has served on the boards of Visiting Nurse and the Komen Foundation. She has chaired the Visiting Nurse Hospice Gala, the Atlanta Symphony Ball and the Big Splash, a fundraiser for the Marcus Autism Center. She is currently co-chairing Project Gift with 2011 ARCS Light, Susie Deyo. In her "spare" time, Debbie's a mediator in the Georgia Court system.

The Atlanta ARCS Foundation Chapter has many enthusiastic members, but Debbie stands out as one person who has ignited those around her to do more and give more. She has fresh ideas and a unique ability to generate positivity for the projects she undertakes. Congratulations to Debbie Liss, 2012 ARCS Light honoree!

## Science Corner Science Corner



### The "Bear" Facts

A synthetic version of bear bile has a yet-unexplored potential to treat the ravaging effects of diseases that can cause loss of vision, like retinitis pigmentosa (RP), AMD and glaucoma. Bear bile has been used in Asia for more than 3,000 years to treat visual disorders and is still used in eye drops in traditional Asian medicine today. In study results published in the December 29, 2007 issue of *Molecular Vision*, Emory University researchers found that systemic injection of synthetic tauroursodeoxycholic acid (TUDCA), a primary component of bear bile, prevented retinal cell death and preserved the function and structure in photoreceptor cells in two different mouse models of retinal degeneration. Photoreceptor cells are the rods and cones in the retina that convert light into electrical impulses that go to the brain. Evidence indicates that synthetic formulations of bear bile are medically efficacious and inexpensive.

The study was conducted by principal investigator Jeffrey Boatright, other researchers at Emory, the Atlanta VA Medical Center, the University of Minnesota, and the University of Lisbon.

Source: Emory University



**ANNUAL MEETING and LUNCHEON**  
**MAY 9**  
**10:00—2:00**  
**Piedmont Driving Club**  
**EDUCATION GURU TO KEYNOTE**

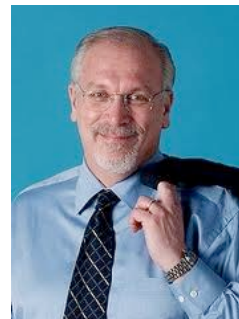
The ARCS Atlanta Chapter Annual Meeting and Luncheon will be held on May 9, from 10:00 – 2:00 at the Piedmont Driving Club. Our guest speaker is Richard DeMillo, Distinguished Professor of Computing and Professor of Management at Georgia Institute of Technology, who will speak on his book, [Abelard to Apple: the Fate of American Colleges and Universities](#).

Dr. DeMillo has authored over 100 articles, books, and patents. He has previously held academic positions at Purdue University, the University of Wisconsin, and the University of Padua. He directed the Computer and Computation Research Division of the National Science Foundation and was Hewlett-Packard's first Chief Technology Officer.

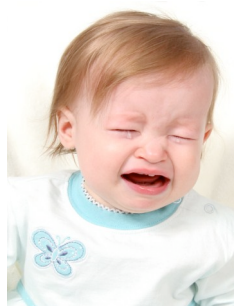
According to Dr. DeMillo, the vast majority of American college students attend approximately two thousand private and public institutions that might be described as "The Middle." These are reputable educational institutions, but not considered equal to the elite echelon of the Ivy League and other prestigious schools. Dr. DeMillo's predication for these colleges and universities in the Middle is: If you do not change, you are heading for irrelevance and marginalization.

In [Abelard to Apple](#), Dr. DeMillo argues that these institutions, clinging precariously to a centuries-old model of higher education, are ignoring the social, historical, and economic forces at work in today's world. In the age of iTunes, open source software, and for-profit online universities, there

are new rules for higher education.



*Please join us for what promises to be a fascinating session. Advance reservations are required. The cost is \$35 by check only and reservations are non-refundable. Please call or email Leslie Petter for more information.  
 678-429-2262,  
[lesliepet@aol.com](mailto:lesliepet@aol.com)*



# Science Corner

## Science Corner



### 'S's to Soothe a Crying Baby

Even our "perfect" babies or grandbabies can throw a tantrum. Researchers have found that by following **the five 'S's**, irate infants can be soothed.

- The first step is to **swaddle** the baby in an oversized blanket.
- Next make **sshing** sounds to the ear and
- Place the infant on his/her **stomach**.
- Next, very gently **sway** the infant with your hand and
- Provide a pacifier or clean pinkie for the baby to **suck**.

Researchers hypothesize that these actions might simulate intrauterine life and provide comfort to the little howler.

Source: NPR



## ARCS Scholar Discourses on Little Known Science

Twenty years ago, Garrett Smith was an ARCS Scholar at the University of California, Davis. Today he is an Associate Professor of Geography at Kennesaw State University and in January 2012 he was the featured speaker at the ARCS Foundation Atlanta Chapter's winter meeting. Dr. Smith credits the ARCS Foundation for his academic success. In his brief presentation, Dr. Smith enlightened attendees about two very different avenues of his scholarly pursuit.

A stint in the Peace Corps sent young Garrett Smith to Togo, Africa where he became fascinated with local eating customs. As a graduate student he returned to Burkina Faso (Burkina) to study how a country with one of the lowest GDP per capita figures in the world (\$1,200) can be sustained. The cuisine of Burkina, typical of many African customs, is based on staple goods of sorghum, millet, rice, maize, peanuts, potatoes, beans, yams and okra. He found that the local tribes also gathered and ate indigenous plants and nuts that resulted in unexpected nutritional value. For example, Dr. Smith documented that the local people used leaves from the Baobab tree, not a common food source, in stews. This proved to be a rich source for beta keratin.

Dr. Smith further pointed out that much of Africa is nutritionally destitute due to poor land use practices, lack of infrastructure and public policy that



**Dr. Garrett Smith  
and President Kay Weiss**

keeps food prices very low. However, his work in Africa led to Dr. Smith's lifelong academic devotion to Cultural Geography, the study of the interaction of culture and landscape. Another focus of Dr. Smith's work is looking at the intersection of geography and religion. His 'laboratory' is the Monastery of the Holy Spirit, a Trappist Monastery founded in 1944, in Conyers, Georgia. The monastery has an extremely rich natural diversity with more than 10 species of trees, 330 species of wildflowers, 200 different birds and 89 kinds of butterflies.

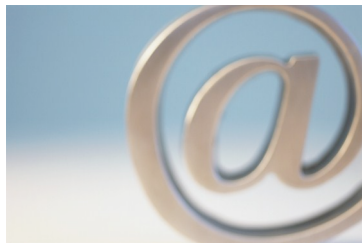
Dr. Smith touched on the monks' focus on protecting vital wetlands that filter and clean water resources and to preserving native vegetation and wild life habitat. The monastery is bounded on its western border by South River that flows out of downtown Atlanta. There are also three major streams that flow into the property that feed into a large flood plain.

Dr. Smith introduced the audience to the nascent idea of *Green Burial*. The monastery has established Georgia's first conservation cemetery. The initial phase of the all-faiths project is on 30 acres deep in the heart of a 2,000 acre forest. The project area is being ecologically restored and will be permanently protected by easement to ensure that it remains wild forever. The finished natural burial grounds will look like beautiful woods with a few gentle paths going through it. For the monks the concept is a perfect fit – natural burial and ecological restoration. For Dr. Smith it is a Cultural Geography experiment in the moment.

Dr. Smith concluded his remarks by expressing his heartfelt gratitude to the ARCS Foundation for supporting his early academic pursuits and for supporting many like him throughout the country.



**THE BAOBAB TREE**



## [arcsfoundation.org](http://arcsfoundation.org)

### *—Check It Out!*

Last fall, ARCS Foundation launched its new National Website at [arcsfoundation.org](http://arcsfoundation.org). Developing this website was the largest single initiative ever undertaken by ARCS Foundation National. The goal of this effort was to create a highly-functional, user-friendly and dynamic web presence to advocate the ARCS Foundation mission to our members, key stakeholders, and the general public.

The website developer worked hard to understand the unique needs of ARCS Foundation's National organization and all 17 Chapters. ARCS Foundation members across the country gave up significant parts of their summers working to define requirements, provide content, review progress, and perform any tasks needed to support the creation of and transition to the new website. The new [arcsfoundation.org](http://arcsfoundation.org) went live in September of 2011, just over 6 months after the contract was signed with the developer. Those who have been involved with software development understand that completing any-

thing but the most simplistic project in 6 months is unheard of – and the requirements of a National organization and 17 unique Chapters are anything but simplistic. This was truly an amazing accomplishment! In the 6 months since the new website went online, efforts have been focused on introducing the site to its varied constituencies, making sure all data has been imported properly, exploring the functionality, and working with the support contractor to fix and refine the system as needed. In actuality, the core of the new website is a multi-faceted database that supports the way National and the Chapters conduct their administrative work and record-keeping – adding/ updating contact information, planning events, sending National Board and Chapter meeting notices and mass mailings, maintaining university and scholar profiles, and on and on. As would be expected, some Chapters dove into the deep end and are working to use the website to the maximum extent possible. Others are just wiggling their toes in the water.

Going forward, the emphasis will be on educating the ARCS Foundation membership on the capabilities and effective use of the website/database. The majority of the members will only need basic end-user training. However, each Chapter will have individuals that need more extensive training to support their work on behalf of ARCS Foundation. The National Board understands that these members are on a steep learning curve. Earlier this spring, its Information Strategies Committee established a Website Training Task Force, chaired by Ronnie Martin of Atlanta. Ronnie's group will deliver its training plan at the National Annual Meeting in Denver in late May. They will also conduct a live demo/ training session at that meeting. Closer to home, Ronnie has been encouraging Atlanta Chapter members to go to the website, sign in, and wander around a bit. Hopefully, you like what you see! If you are having any problems, please email Ronnie at [ronnie@demillo.com](mailto:ronnie@demillo.com). She is eager to help!

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#### **Condolences**

We extend our sympathy to Jan Bennett and her family on the loss of her mother, Mary Louise Kesling, January 10, and to Robin King and her family on the loss of her sister, Wendy Lord, on March 10.



# Scenes from Cincinnati

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Visit us on the web  
[www.arcsfoundation.com](http://www.arcsfoundation.com)

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