

Washington University and GRC Team Up To Inspire And Nurture Young Engineers And Scientists—Especially Girls!

Women are dramatically underrepresented in careers involving engineering, mathematics or the sciences. Gifted Resource Council has stepped up to the challenge—and done so, as usual, years before the rest of the nation noticed the crisis.

A recent report released by the National Academies—Advisors to the Nation on Science, Engineering and Medicine pointed out that women made up only 3 percent of America’s scientific and technical workers forty years ago, “but by 2003 they accounted for nearly one-fifth.”

That’s progress, but it’s not nearly good enough.

For 23 years GRC has offered an impressive variety of stimulating, hands-on enrichment opportunities in math and science (and many other subjects) for students in grades preK-8, including Saturday Learning Labs throughout the school year, Summer Academies and Academic Challenge Cup.

Six years ago GRC teamed up with some highly motivated and talented Washington University faculty to launch a unique course designed to help middle school students—especially girls—learn more about engineering as both a science and a profession.

“Today’s pre-teen and teenage girls have little inkling that women can become engineers,” said Ruth Okamoto, D.Sc., assistant professor of mechanical engineering at Washington University. “My goal is to get girls—and boys—interested in engineering in middle school.”

Dr. Okamoto, Shelly Sakiyama-Elbert, Ph.D., assistant professor of biomedical engineering, and other members of the engineering faculty invite GRC students to special Learning Lab classes held in their Washington University labs. The objective—besides having fun, interacting with other very talented students, and learning more than they ever thought they could—is to expose young people, especially girls, to the different facets of engineering. “Our goal is to plant the seed for choosing engineering as a profession,” said Dr. Okamoto.



Shelly Sakiyama-Elbert and a “Moving & Shaking” student observe the movement of the iRobot ATRV-JR.

Girls are at a serious disadvantage for finding careers in engineering, mathematics and the sciences—not because of their talent, which often excels—but because of a culture

that restricts their vision and opportunities.

“I didn’t really know what engineers do until college, so I think the GRC program is a great opportunity to get kids, especially girls, excited about engineering and to help them learn what different types of engineers do,” said Sakiyama-Elbert.

This fall 19 highly talented girls—and boys—are working alongside Washington University engineering professors in their laboratories in Jolley Hall in the unique GRC course “Moving & Shaking: An Introduction to Engineering.” These middle school students will learn basic engineering principles while working on everything from

Dialogue with the Director

The refrain is familiar: “My child is bored in school. The teacher doesn’t seem able to challenge him. Now he’s starting to ‘act up’ in class. I guess I need to find some extra enrichment for him outside of school. Someone told me GRC might be able to help.”

So the telephone conversation with a concerned Mom or Dad begins. And these are not infrequent calls. We at the GRC office talk to MANY parents during the course of a typical week. Parents and grandparents often find us in their search for something to turn their child around, or rather yet, to turn their child on to the thrill of learning.

As I continue the conversation and ask questions, it is usually not a surprise that the child for whom this desperate call is made is overwhelmingly a boy, often in Kindergarten or first grade. But what does catch my attention is the number of times that the parent explains further: “My daughter never had these problems. She always did well in school. She never needed extra help.”

And then I begin to wonder – where are the girls? Do they truly ‘fit in’ so much better that we don’t even recognize their gifts? Because they can sit still for longer periods of time at a younger age, do we assume that their needs are being met? That their gifted attributes are being nurtured or challenged?

Why is it that GRC’s science and math classes are attended by seven boys to every three girls? Why are there so few girls in Jr. Science Searchers as Kindergarteners? Where are the girls in Space Academy?

I struggle with these questions because I want the girls and their giftedness to be recognized just as much as the boys. I want their lives to be enriched, their minds to be expanded and their experiences to be broadened.

I know that Gifted Resource Council provides the perfect place for girls to be encouraged and accepted when they ‘just love science’. Opportunities abound for girls to excel in math and science and to feel good about it! We can be proud

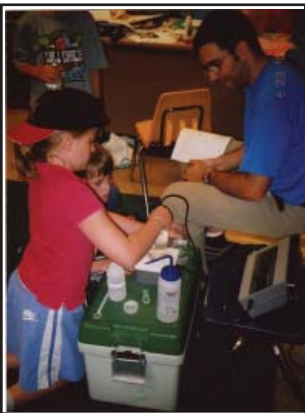
to congratulate girls and boys for a perfect score in an Equations competition. GRC classes are a safe place to learn from mistakes as well as triumphs.

Yes, I want girls, as well as boys, to learn the scientific principles that may encourage them to one day find a cure for cancer – just as I want boys, as well as girls, to ponder the historical significance of ancient Rome or Greece. I want ALL children to be inspired to greatness and to be encouraged to ‘reach for the stars’...

Susan C. Flesch



Sue Flesch, GRC executive director



ECO Academy students perform water testing experiments.



Two Space Academy cadets are intently working on their planetary mobiles.

GRC Alum Reflects On Benefits Of GRC Experiences

David German, now a junior at Swarthmore College majoring in both Engineering and Computer Science, spent last summer in Houston as a software engineering intern working on the International Space Station's command and control systems. "It doesn't seem so long ago that I looked forward to Space Academy summers and perfecting (or so I thought) a model rocket for launch," he said. "It turns out that my most vivid memories are of the doing, not the finishing. As I now know, engineering, like most worthwhile endeavors, is not a product but a process."

German returned to GRC as a volunteer teaching assistant with Ancient Academy in 2001 because "after eight years of Summer Academies, I didn't want GRC just to disappear from my life." He also believes strongly in the value GRC courses have for students. "My GRC experiences certainly figured in my decision to study engineering."



*David German,
GRC Alum*

Benefits of the GRC Experience

"GRC gave me early experience in dialogue, consensus-building and independent teamwork," German said. "Each summer, exposure to so many bright peers with good ideas provided a refresher lesson in humility. Though sometimes painful, this was certainly the greatest immediate benefit."

"Summer Academies also bolstered my comfort with outside-the-box problem solving," he said. "Thanks at least in part to GRC, I was willing to challenge assumptions, trust my intuition, and explore unconventional ideas throughout the school year. I was comfortable with the reality that all solutions are tradeoffs, and fear of failure didn't deter me from exploration."

"I met my best friend—now studying Symbolic Systems at Stanford—13 years ago at GRC," he added.

What Parents Should Know About GRC

"Any kid, no matter how successful he or she may be in school, will get something out of GRC: the intellectual challenge of a Summer Academy is not like schoolwork," he said. "GRC students apply their intelligence and creativity to real problems in an open-ended fashion. My happiest GRC memories include drawing plans for eco-friendly cities and for bases on Saturn's moons, arguing with other Saxon nobles about how best to meet the Norman invasion, sitting on a mock zoning committee, and building a Gothic cathedral out of foam."

Bill Moore Valued, Advanced GRC

Bill Moore served on the GRC Board of Directors and Advisory Board from 1995 until his death at age 78 on August 1, 2006. He was an active, involved Board member who cared passionately about GRC's mission and the gifted children it serves.

After a successful career as a financial planner, he "retired to a life filled with volunteering, lunching with friends, and supporting his favorite school, Christian Brothers College High School," said his daughter Kate Moore. "A neighbor suggested my father consider GRC, and soon after my father was on board. Not only did he serve on the Board, but he also enticed his wife and children to help with the fundraisers and other events. My father saw the value of what GRC offered to area children and spoke with pride about the services provided and the people involved."

Bill was very involved with GRC phonathons. "He was passionate enough about GRC to even address envelopes on the evening of the phonathon two years ago," said Sue Flesch, GRC's Executive Director. "He also volunteered virtually his entire family when GRC had several Family Fun Nights at CBC during the 90's."

GRC Board member Sandy Kalin remembers him fondly. "What a pleasure it was to have served on a Board with a gentleman of Bill's caliber," she said. "His ability to look to the future for young people was refreshing."



Bill Moore, former member GRC Board of Directors

In addition to his work for GRC, Bill also "volunteered as a tutor with OASIS and made a special effort to connect with his 'children' such as looking for books that captured their interest and preparing lessons to help them learn. He became very involved at Seniorville, a TV program geared towards the senior population, and he always had an eye out for the next interview and next topic," comments Kate.

"My father gave back to the community both with his time and by tapping into his large network of friends and associates," says Kate Moore.

"GRC is very fortunate to have benefited from the generosity of spirit and remarkable commitment of this man," said Flesch, who remembers Bill Moore with great fondness and thankfulness.



Ancient Academy scholars model their creative historic costumes.

Academy Americana student presents at a summer assembly.



Creative Convention participants smile proudly over their accomplishment!

Mark Your Calendar

November 29, 2006 – Annual GRC Phonathon

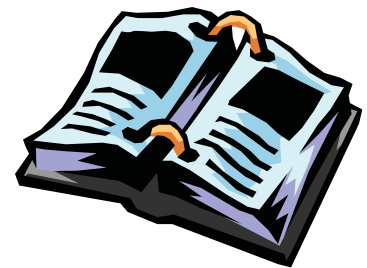
January 5, 8 & 9, 2007 – Academic Challenge Cup's Creative Convention at Washington University's Wohl Center. Parenting classes will be offered.

January 27, 2007 – Summer Opportunities Fair at John Burroughs School, 755 South Price Rd.

February 3-March 10, 2007 (Six Saturdays) – Winter Learning Lab at Wydown Middle School, 6500 Wydown Blvd. Parenting Classes will be offered.

March 13-16, 2007 – Academic Challenge Cup's LinguiSHTIK and Equations Competitions at Washington University's Wohl Center. Parenting classes will be offered.

Call GRC at 314-962-5920 for more information on any of these events.



How can we protect our child from online abuse?

By Dennis O'Brien

One positive byproduct of the exposure of Florida Rep. Mark Foley's appalling use of the Internet to prey on House pages is that parents have become somewhat more aware of the possibility of online abuse. However, according to the experts, they are not nearly as aware as they should be.

While many reading this column may believe that their children are too young to be concerned about Internet abuse, we at GRC believe that prevention is the best way to protect our children—especially because gifted children often explore new challenges before their age-mates and may be more tech savvy than their parents.

So the first step is to acknowledge to yourself that the dangers are real and probably more serious than you realize. Unsupervised access to the Internet frequently puts children at risk for sexual abuse and bullying. Here are some facts provided by Sergeant Joe Laramie of the Glendale Police Department.

Laramie heads the Missouri Internet Crimes Against Children Task Force, one of 46 such federally funded task forces. In addition to law enforcement, the task forces are heavily involved in prevention efforts through school-based workshops for both children and their parents.

One of every 11 children is harassed by a sexual predator online, and half of these victims are phoned, asked to meet or receive mail from a predator who learned who they are and where they live.

One of every five children is sexually solicited online – 95,000 in Missouri each year.

Girls ages 12 to 15 are most vulnerable. Children this age tend to be secretive, curious about sex, eager for attention and affection, largely unaware of the risks and feel invulnerable.

"The most disturbing thing of all may be that only 25 percent of the children who are victimized online tell their parents about it. The others try to go it alone," said Laramie.

Here are some suggestions based on my conversations with Laramie.

- Communicate with your child. "The best way to help protect your children is by being involved and talking to them," Laramie said. "Positive parent-child communication is the key. Make sure you stay connected."

- Supervise your child's online contacts just as carefully as you do any of your child's other social activities. Establish guidelines and know who communicates with your child.

- Keep the computer in a common room, not your child's bedroom. Children are much less likely to engage in risky behavior if they realize someone can easily discover it. This may be especially important for parents of gifted children because of their driving curiosity and, quite often, extraordinary ability to utilize technology.

- Impress upon your child the importance of telling you when something online feels uncomfortable.

Stay calm when something happens. Explain that it is not your child's fault and that it happens to many teens.

- Visit www.netsmartz.org with your child and review its guidelines about Internet safety. Watch and discuss the videos of real-life children who have been victims of Internet exploitation.

- Set rules and post them by the computer. Children should never give out personal information—even what school they attend. They should never visit pornographic Web sites, open e-mails from strangers, visit chat rooms or blog. Instant messaging should be restricted only to known friends.

"All chat rooms are dangerous, and chat rooms designed for teens are the most dangerous," Laramie said. "That's exactly where predators go first."

In a demonstration starting with an anonymous screen name in a chat room, it took only twenty minutes to learn the girl's real name, phone number, address, her school and the names of all her family members. The demonstration used only the sources readily available to anyone online.

"Over the last 10 months teen blogs like facebook.com, myspace.com and xanga.com have replaced chat rooms as the most dangerous places for teens online," he said. "They readily give predators a wealth of information about children, including their interests, activities, emotional life and their friends."

- Explain that people may not be who they say they are. "I know too many cases of adult predators pretending to be teens. Kids are far too trusting," said Laramie.

- Be careful about the consequences you set for a child who deliberately violates your rules for safety.

"Forbidding a defiant child to use the computer completely may just force the child to access the Internet at a friend's house, school or library," Laramie said. "We recommend monitoring software only as a last resort. Communication and education about the risks are usually more effective."

- Make it clear you will check—and do so. Look over your child's IM buddy list. Edit it from time to time, and have your child delete any you don't know. Ask whom she is talking with. Look at the screen. Ask her to say, "Hi," from you to a friend you know.

Use the Internet Explorer's history function to check the Web sites your child recently visited.

Above all, take it seriously, and for more information or to get your child's school involved in prevention, contact Laramie at (314) 889-4282 or icacmo@earthlink.net.

Dennis O'Brien, MA, LCSW, is an experienced educator and therapist who has written educational materials for newspapers, magazines, and the Washington University School of Medicine Department of Psychiatry.

Young Engineers, continued from page 1

roving robots to satellite design or neural tissue engineering. Class size is limited to 10, with priority registration especially for girls.

Each week the students visit a different lab covering four departments and five engineering disciplines (aerospace, biomedical, computer science, environmental and mechanical). “We want them to get excited about the different types of engineering that they learn about. So if they are inspired by one lab, that’s great, and if they are inspired by every week--so much the better,” said Okamoto. “They are enthusiastic and ask lots of good questions.”

Because both women and men teach the students, “the take-home message is that both women and men can be engineers or scientists,” said Okamoto.

“Design is a critical part of engineering, and in this workshop GRC students get to experience problem-solving through design. For example, students in previous courses have learned the building design for earthquake testing or designing satellites to

survive launch stresses,” said Sakiyama-Elbert. “Hopefully, if we spark their interest at an early age, we can change some of the misconceptions about science and engineering not being for women and encourage them to take more math and science courses.”

“I think the greatest benefit of the course is getting the students, especially the girls, to interact with engineering students and faculty. It allows them to see that engineering is a career option for women, to see that there are role models for women and men in the field,” said

Sakiyama-Elbert. “This makes it easier for them to picture themselves as engineers in the future.”

This is a GRC priority. “The sooner a girl—or a boy—gets involved, the more likely she will explore her interest in mathematics, science or engineering,” said GRC’s Executive Director Susan Flesch. “That’s why we offer such a rich variety of opportunities in these areas for students of all ages, beginning with pre-kindergarten students.”



Ruth Okamoto demonstrates an experiment to girls in the engineering class in her lab at Washington University.

BECOME A MEMBER OF GIFTED RESOURCE COUNCIL

Now *you* can participate in shaping America’s future by becoming a member of **Gifted Resource Council**, a not-for-profit education agency serving bright and talented young people. Your tax-deductible contribution will enable us to improve existing programs, extend offerings and reach more children. Your membership will not only benefit gifted children, but also entitle you to receive the following:

Gifted Member: \$60

- ★ Priority registration for all programs
- ★ *FREE parenting classes* (\$160 value)
- ★ Use of GRC Library

Intelligent Friend: \$100

- ★ All of the above, *plus*
- ★ \$10 discount off two Learning Lab registrations

Sharp Sponsor: \$150

- ★ All of the above *plus*
- ★ Additional \$25 discount off a Summer Academy

Talented Patron: \$250

- ★ All of the above, *plus*
- ★ Additional \$25 discount off a Summer Academy (\$50 total)

Gifted Member Intelligent Friend Sharp Sponsor Talented Patron Brilliant Benefactor Wise Philanthropist Imaginative Institution

Brilliant Benefactor: \$500

- ★ All of the above, *plus*
- ★ One *FREE Learning Lab course or*
- ★ Learning Lab scholarship in your name at your request

Wise Philanthropist: \$1,000

- ★ All of the above, *plus*
- ★ GRC logo lapel pin
- ★ The undying gratitude of gifted children throughout the metropolitan area

Imaginative Institution: \$100

- ★ For schools and other not-for-profits

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I am also interested in helping as a volunteer. Please contact me.

Please mail check to: Gifted Resource Council, 357 Marshall Ave., Suite 6, St. Louis, MO 63119-1827

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informs the public about activities of Gifted Resource Council and about issues relevant to the development of bright and talented children and youth.

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Two students are intensely involved in their Creative Convention problem.

KSDK-TV's Sharon Stevens interviews a Space Academy cadet.



Gifted Resource Council is a not-for-profit education agency serving the greater St. Louis Metropolitan area. Its purpose is to bring together the resources of the community, the schools and parents to help bright and talented children achieve their potential.