

Great Science for Girls



Great Science for Girls, a five-year initiative of the Educational Equity Center at AED, with funding from the National Science Foundation.

Great Science for Girls: Extension Services for Gender Equity in Science through After-School Programs (GSG) works with intermediaries to build the capacity of after-school centers to deliver evidence-based programs that will broaden and sustain girls' interest and persistent in STEM. Intermediaries are organizations that provide training and technical assistance to networks of afterschool centers in their regions.

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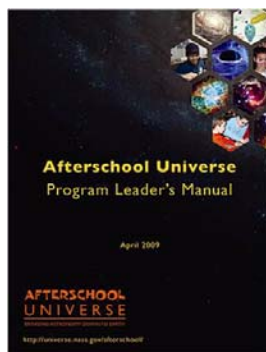
Join Our Mailing List!

HOLD THE DATES

OCTOBER 8, 2009 & JANUARY 14, 2010

Don't miss the new quarterly all-site webinars for intermediary partners. Join us from 1—2 p.m. EST to share your ideas and hear about what your colleagues are doing.

INTRODUCING AFTERSCHOOL UNIVERSE – GSG'S NEWEST EVIDENCE-BASED CURRICULUM



We are delighted to welcome *Afterschool Universe: Bringing Astronomy Down To Earth* as a GSG Curriculum Partner. *Afterschool Universe* was developed and funded by NASA, which worked closely with one of GSG's intermediary partners, the DC Children and Youth Investment Trust Corporation, during both the development and testing phases. The program is targeted to middle-school students and explores astronomy concepts through engaging hands on activities that take students on a journey through the Universe beyond the solar system. *Afterschool Universe* is appropriate for a variety of settings (astronomy days, summer camps, or year-long afterschool programming), with co-ed or girls-only groups. For more information, visit www.edequity.org/gsg/curriculum/afterschool-universe.

INTRODUCING YAEL BAT-CHAVA



We are pleased to introduce Yael Bat-Chava, Ph.D., from Comprehensive Research & Evaluation Services, our new GSG external evaluator. Yael was previously at the New York City Department of Youth and Community Development, specializing in evaluation of afterschool programs. She comes with extensive experience in quantitative and qualitative evaluation techniques, developing logic models, and assessing technical assistance and youth worker training programs. If you have any questions about the evaluation or data collection efforts, please contact Yael at: yael.bat.chava@gmail.com, 917-697-9886.

GSG UPDATE

In its first three years, GSG has successfully partnered with ten intermediaries, reaching a total of 140 afterschool programs, with 5,719 children and youth participants, 3,256 of whom are girls. Seventy-six (76) percent of the participants are between the ages of 8-11; 89% are students of color, with Latino and African-American students comprising the largest segments (50% and 34% respectively); and 83% are from families with low income.

Webinar

In March 2009, GSG held a webinar highlighting four of the evidence-based curricula that have proven to impact girls' interest and engagement in science learning. There were 87 participants, representing 32 states, from museums and science centers, departments of education, community centers, and organizations such as Girl Scouts, Girls Inc., and United Way. Presenters included Dale McCreedy from the Franklin Institute Science Museum for *Girls at the Center*, Lisa Regalla for *SciGirls*, Linda Kekelis for *Techbridge*, and Maryann Stimmer from the Educational Equity Center at AED for *After-School Science PLUS*. Based on participants' questions, a Q&A handout was created and posted on the GSG website. For the webcast and Q/A handout, go to www.edquity.org/gsg/about/webcasts.

Reunion

In May 2009, GSG held its first on-line "virtual" reunion for participating intermediaries. Its purpose was to share work from the sites, welcome new intermediaries into the GSG community, learn about the latest evidence-based curriculum, and to revisit and re-energize the vision for community outreach around girls and STEM. Dale McCreedy, Director of Gender and Family Learning Programs at the Franklin Institute, gave an exciting keynote presentation underscoring the importance of gender equity in STEM, and Anita Krishnamurthi, Leader of Education and Public Outreach at the NASA Goddard Space Flight Center, introduced *Afterschool Universe*, the exciting new middle-school addition to curricula GSG offerings. Sharing from the field included pictures on GSG in action at the sites, reports from several intermediaries including Rebekah Lin from TASI, Karen Polk from the San Francisco School District, and Karen Thompson from the STRIVE program in Connecticut. The reunion ended with a call to action to keep GSG growing and to extend into the community for role models, mentors, possible job shadowing, and media coverage.

Branding GSG

We hope everyone is enjoying wearing the GSG T-shirts that are given out in conjunction with the Professional Development Institutes. We're happy to tell you that now GSG posters are on the way. The posters will let people know that your agency or center is part of the GSG national initiative to bring more girls into Twenty-First Century STEM-related jobs and careers. So please display your posters in prominent spots and wear those T-shirts proudly!



WELCOME TO NEW INTERMEDIARIES

Two intermediary organizations successfully launched new Great Science for Girls initiatives over the summer.

Martinsville Henry County (MHC) After 3 Martinsville, Virginia

www.ph.vcc.edu

A Professional Development Institute, held in August at the Virginia Museum of Natural History, launched the GSG initiative in Martinsville. MHC After 3 is incorporating GSG at seven afterschool programs for middle-school students this fall (see action photos of girls exploring Oobleck). Program Coordinator Shanna Francisco-King reports:



“We are incredibly fortunate to have amazing partners who help us provide high quality, professionally mentored programming. One such partner is the Virginia Museum of Natural History (VMNH). A founding partner of MHC After 3, the museum hosts academic enrichment programming in science and math to all of our students. Robin Jensen, our museum outreach educator, does an incredible job of working together with site staff to facilitate Great Science for Girls and to increase access to STEM fields to our middle-school participants. We are excited to be a part of Great Science for Girls and look forward to

seeing our community’s youth take advantage of opportunities to strengthen their STEM skills visualize themselves as successful STEM professionals.”

Partners in Out-of-School Time (POST) Charlotte, North Carolina

www.postcarolinas.org/

POST kicked off GSG with a Professional Development Institute in August. Program Coordinator Kate Shem reports on their fall activities:



“Charlotte is excited to launch Great Science for Girls in 11 afterschool sites this fall! We had a very successful GSG Institute, and our site coordinators are looking forward to bringing the *After-School Science PLUS* curriculum to their students. Great Science for Girls is part of a larger program operated by Partners in Out-of-School Time called Leaf & STEM, an initiative to expand the opportunities for youth to explore the outdoors using Science, Technology, Engineering, and Math. To learn more about Leaf & STEM, visit our website.”

NEW FROM THE FIELD

Alternatives, Hampton, Virginia

Alternatives, Inc. continues its successful utilization of high school students as peer facilitators in its programs in Hampton and Newport News. Student recruitment and support comes through partner organizations and Hampton’s active civic engagement and youth leadership efforts. Over the summer, they reached 85 girls in seven schools with an adapted GSG curriculum in collaboration with local parks and recreation centers. www.altinc.org

Chicago Area Project (CAP), Chicago, Illinois

CAP organized a number of summer programs in Chicago that involved adapted *After-School Science PLUS* and other fun activities. On May 13th Joy Hernandez conducted a workshop where she was able to distribute “science goodie bags” with dish detergent, magnifying glasses, and materials for the AS+ Bubble Science, Mystery Bottle, and Oobleck activities. Joy also included copies of resources from the local library. Rosa Nodelle from the McCormick Tribune YMCA in Chicago went beyond the curriculum and included activities for growing plants, shared activities from the Museum of Science and industry, and secured museum passes for sites that participated in an evaluation of the activities.

www.chicagoareaproject.org

The Consultation Center, New Haven, Connecticut

The Youth Development Training and Resource Center/The Consultation Center received a \$7,000 Community Action Grant from the American Association for University Women (AAUW) for “Reducing the Opportunity Gap for Girls in Science.” This one-year grant will provide technical assistance and on-site support to sites in Waterbury and New Haven. The Neighborhood Youth Center in Waterbury serves urban youth and will incorporate *After-School Science PLUS* into their afterschool program. A GSG workshop for staff from across the state was held on September 26th at the Education Connection in Litchfield. More than 16 sites will participate in GSG this year under the direction of Tracey Lay. Karen Thompson, New Britain YWCA Strive Program for Girls, continues to attend professional development trainings held at TASC in New York City to bring the information back to Connecticut.

www.theconsultationcenter.org/ydtrc

DC Children & Youth Investment Trust Corporation, Washington, D.C.

The DC Trust used some creative strategies to continue their science programming without major funding this year. This summer they participated in the National Science Resources program and conducted magnets and motors activities with 4th and 5th graders. A partnership with local doctors who donated their time gave students the opportunity to learn about sports medicine. The doctors brought in skeletons and models of the human body and prompted lots of questions from the students. DC Trust was a pilot site for *Afterschool Universe* (GSG’s newest evidence-based curriculum) and continued conducting activities from the curriculum at four sites. www.cyitc.org

Marion County Commission on Youth (MCCOY), Indianapolis, Indiana

MCCOY reached approximately 400 students this year which included a very successful partnership with the Art with a Heart program that emphasizes art and its connection to the sciences. In addition to their after-school centers, MCCOY was also effective in bringing *Wonderwise* into a local domestic violence shelter and into more rural areas of the community. They plan to organize gender equity trainings in the coming year. www.mccoyouth.org

The After-School Corporation (TASC), New York, New York

TASC is continuing GSG at 40 sites this year and will have an all-site GSG “Re-boot” on October 14th. New features for the program this year will include a collaboration with the Hunter College FUSE (Frontiers in Urban Science Education) coordinator to bring additional science expertise to the program, and partnerships with the NY Hall of Science and the Department of Environmental Conservation to bring role models into the TASC sites. TASC continues to use *After-School Science PLUS* and *Wonderwise* to excite and engage students in science after school. Two GSG “stars” were Helena Jordan (PS 279/Committee for Hispanic Children & Families, Inc.) and Robert Nuxoll (PS 70/Sports & Arts in Schools Foundation). Helena arranged for her students to have a weekend at a science camp in upstate New York. She has more than doubled the number of students and opportunities for science experiences at her site. Robert’s site has become science-themed. Every student at his site has opportunities to experience the excitement of science through curriculum and off-site activities. This year the site attended a Community Science Night at the Franklin Institute and a visit to the Camden Aquarium. www.tascorp.org

The After School Institute (TASI), Baltimore, Maryland

Over the course of this past year, six afterschool programs participated in GSG implementing the After-School Science PLUS curriculum. Some programs worked with professors from Johns Hopkins University and submitted science projects to the 4 H Youth Expo. In August, eleven afterschool sites attended a two-day “Reboot” training, and there are now 23 sites committed to GSG for this year. TASI is also establishing a network of volunteer STEM Mentors to serve their program partners.

www.afterschoolinstitute.org



DID YOU KNOW?

- According to a new study, self-confidence instilled early by parents and teachers is more important for encouraging young girls in math and science than their initial interest?

“While interest is certainly a factor in getting older girls to study and pursue a career in these disciplines, more attention should be given to building confidence in their abilities early in their education,” says University of Wisconsin-Milwaukee Distinguished Professor Nadya Fouad, author of the study. Fouad further states that “the relationship between confidence and interest is close. If they feel they can do it, it feeds their interest.”

What helps boost girls’ confidence around math and science? Recent research points to three effective strategies:

- Teach girls that academic abilities are not innate or “fixed.” All students can improve and learn math and science.
- Expose girls to female role models who have succeeded in math and science.
- Provide specific, informative feedback on students’ work, rather than vague comments such as “good job.” Informative feedback includes praising students’ effort, identifying how a mistake in problem-solving was made, and noting how a student has improved (Huebner, 2009).

Heuber, T. (2009, September). Encouraging girls to pursue math and science. *Educational Leadership*, 67 (1). Alexandria, VA: ASCD.

University of Wisconsin-Milwaukee (2008, September 8). Tracking the reason many girls avoid science and math. *Science Daily*. Retrieved September 17, 2009 from <http://www.sciencedaily.com/releases/2008/09/080905153807.htm>

RESEARCH ROUND-UP

Guide to Evaluating Promising Practices in Informal Science, Technology, Engineering, and Mathematics (STEM) Education for Girls

A study by Girls Scouts of the USA and Motorola identifies three ways to engage girls in science and math. These strategies, excerpted from the executive summary of this report, are:

- “Discover by Doing: Experiential activities are critical to success.
 - Encourage active, hands-on participation rather than demonstration or lecture.
 - Design activities that allow for experimentation and problem- solving.
- Make it Real: Connect activities through relevant, project-based, real-world examples.
 - Show girls how STEM disciplines are part of and related to their everyday experience.
 - Allow girls freedom to choose the curriculum themes and activities of most interest.

- Provide positive relationships with role models and mentors.
 - Use mentors to bring context to potential career choices.
 - Choose mentors from diverse backgrounds to allow girls to see others like them and different from them who are succeeding in STEM careers.”

For a summary of the report see: http://www.girlscouts.org/research/resources/guide_to_evaluating_promising_practices_in_informal_stem_education_for_girls.pdf

The full report can be found at: http://www.girlscouts.org/research/resources/evaluating_promising_practices_in_informal_stem_education_for_girls.pdf

Liston, C., Peterson, K., & Ragan, V. (2008). *Guide to evaluating promising practices in informal science, technology, engineering, and mathematics (STEM) education for girls*. New York: Girl Scouts of the USA.

RESOURCES

WEBSITES FOR GIRLS (Recently added to the GSG website resources)

Engineer Your Life

www.EngineerYourLife.org

EngineerYourLife.org features ten great reasons to become an engineer, streaming video of inspiring women engineers, descriptions of dream engineering jobs, and advice for parents, educators, and engineers on how to talk to high school girls about engineering. EngineerYourLife was developed by WGBH Boston, the National Academy of Engineering and a coalition of engineering organizations.

STEM Stories

<http://www.stemstories.org/>

STEM Stories is a collection of short videos and personal stories that showcase women’s careers in STEM (Science, Technology, Engineering and Mathematics). The site, aimed at girls in grades 4-8, challenges stereotypes about women in STEM and provides role models for young girls interested in pursuing a career in STEM. This site is based on work supported by the NSF National Science Digital Library program.

RESEARCH RESOURCES

Assessment Tools in Informal Science

www.atis.pearweb.org

A new resource designed to help practitioners, evaluators, researchers and policymakers select instruments to assess science learning and child outcomes in out-of-school programs is now available. Developed by PEAR (Program in Education, Afterschool and Resiliency), a Harvard University-McLean Hospital team led by Dr. Gil Noam created this searchable database of assessment tools for evaluating program quality and outcomes. Reviews and ratings by practitioners are included on this site.

Education Week's 2009 Spotlight on STEM in Schools

Education Week’s “[Spotlight on STEM in Schools](#)” is a compilation of articles about hot topics and innovative approaches to STEM teaching and learning. Featured articles/topics include one public school's blending of the science, technology, engineering, and math disciplines; courses on renewable energy and “green” technology; learning science through informal experiences and educational television; playing games in the classroom to strengthen students’ math skills; using unconventional textbooks and other materials to help struggling middle-grade students become “algebra-ready”; research on the qualities of effective math teaching; and experiential approaches to STEM as a curriculum.

RESOURCE FOR PRACTITIONERS

The Coalition for Science After School (CSAS) has partnered with Time Warner Cable to create a national directory of science, technology, engineering, and math (STEM) learning opportunities. This Directory will increase interest in science after school and other informal settings, as well as direct interested parents and students to the listed programs. To list your program visit:

<http://directory.scienceafterschool.org/signup/> and enter information on your organization, its programs and events. If you have any questions, contact the CSAS team at info@directory.scienceafterschool.org.

For more information, contact:

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