Resources

General

Expanding Underrepresented Minority Participation: America's Science and Technology Talent at the Crossroads – this report by the National Academy of Sciences focuses on the critical lack of minorities in STEM-related careers and offers concrete ways to address this issue. Available at _http://www.nap.edu/catalog.php?record_id=12984_.

Learning Science in Informal Environments: People, Places, and Pursuits – an invaluable guide from the National Research Council for program and exhibit designers, evaluators, and staff of science-rich informal learning institutions and community-based organizations, scientists interested in educational outreach, federal science agency education staff, and K-12 science educators. Contributors have experience in a range of settings – museums, afterschool programs, science and technology centers, media enterprises, aquariums, zoos, state parks, and botanical gardens. Available at _http://www.nap.edu/catalog.php?record_id=12190_.

Promising Practices in Positive Youth Development with Immigrants and Refugees – immigrant and refugee youth benefit from community-based and afterschool programs for many of the same reasons as their non-immigrant counterparts. However, their unique strengths and needs are important for programs to consider when targeting these youth. Based on an analysis of over 60 programs, this article provides seven principles of effective positive youth development programs, as well as "promising practices" from across the country. Available at _http://www.tpronline.org/article.cfm/PYD_with_Immigrants_and_Refugees_.

Surrounded by Science: Learning Science in Informal Environments – based on the National Research Council study, Learning Science in _Informal Environments: People, Places, and Pursuits_, this book is a tool that provides case studies, illustrative examples, and probing questions for practitioners – making valuable research accessible to those working in informal science: educators, museum professionals, university faculty, youth leaders, media specialists, publishers, broadcast journalists, and many others. Available at _http://www.nap.edu/catalog.php?record_id=12614_.

What Works for African American Children and Adolescents: Lessons from Experimental Evaluations of Programs and Interventions – a Child Trends brief reviews rigorous evaluations of out-of-school programs serving African American children to identify programs that work, as well as those that do not, and the intervention strategies that contribute to program success. Available at _http://www.childtrends.org/Files/Child_Trends-2011_02_01_RB_WW4AAChildren.pdf_.

What Works for Latino/Hispanic Children and Adolescents: Lessons from Experimental Evaluations of Programs and Interventions – a Child Trends brief reviews rigorous evaluations of out-of-school programs serving Latino children to identify programs that work, as well as those that do not, and the intervention strategies that contribute to program success. Available at _http://www.childtrends.org/Files/Child_Trends-2011_02_01_RB_WW4LatinoChildren.pdf_.
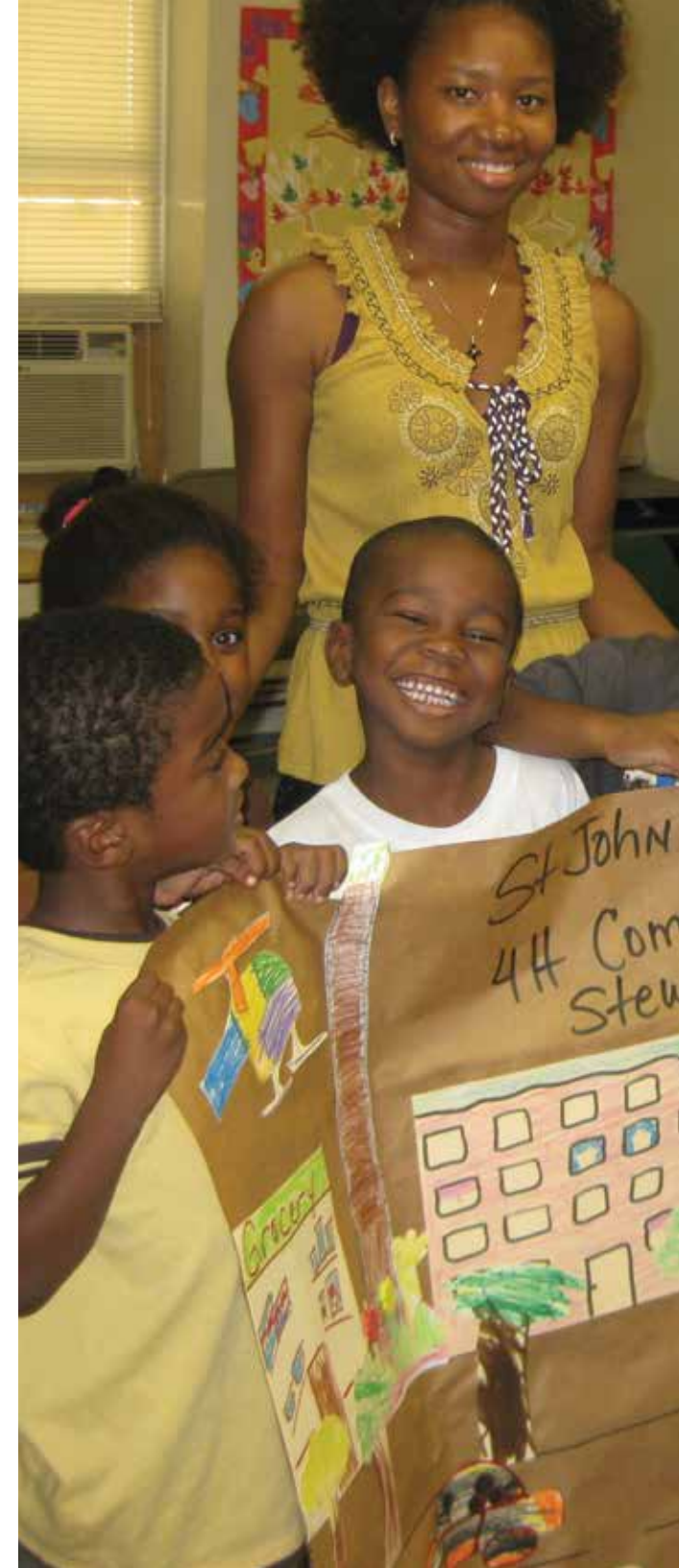
4-H SCIENCE CORE PRINCIPLES AND PROGRAM DESIGN

4-H Science Program Design – 4-H Science Checklist

4-H Science 101 – this training guide provides four hours of activities that will help introduce your staff and participants to the development, delivery, and assessment of 4-H Science programs. Available at *http://www.4-h.org/resource-library/professional-development-learning/science-training-guides-resources/*.

4-H Science Professional Development Toolkit – an online set of resources and training activities to be used by youth development professionals and volunteers to prepare them to support 4-H Science programs. Includes the 4-H Science Checklist, 4-H Science Competencies, and Experiential and Inquiry-Based Learning Methods in 4-H Science. Available at *http://www.4-h.org/resource-library/professional-development-learning/science-training-guides-resources/*.

Inquiry Based Learning Approaches

4-H Science Professional Development Toolkit – an online set of resources and training activities to be used by youth development professionals and volunteers to prepare them to support their 4-H Science programs. Includes a section on *Experiential and Inquiry-Based Methods in 4-H Science and Inquiry–Theory to Practice*. Available at *http://www.4-h.org/resource-library/professional-development-learning/science-training-guides-resources/*.

Exploratorium's Institute for Inquiry® – workshops and facilitator guides (free downloads) for those providing professional development in the pedagogy and practice of science inquiry. Available at *http://www.exploratorium.edu/ifi/workshops/index.html*. Introductory information on science inquiry is available at *http://www.exploratorium.edu/ifi/about/philosophy.html* - including free downloads of *What is Inquiry, Pathways to Learning, Inquiry Structure, and Inquiry Descriptions*.

NPASS2 – National Partnerships for After School Science – includes best practices for afterschool science for science project leaders along with many other informal science education resources and professional development tools for OST. NPASS2 is led by the Center for Science Education at EDC. Available at *http://npass2.edc.org/*.

Providing Youth Authentic Opportunities to Practice and Share 4-H Science Abilities

4-H Science 101 – this training guide provides four hours of activities that will help introduce your staff and participants to the development, delivery, and assessment of 4-H Science programs. Available at *http://www.4-h.org/resource-library/professional-development-learning/science-training-guides-resources/*.

4-H Service Learning Curriculum – includes curriculum information, additional resources, and a link to purchase the three-book service-learning series. Available at *http://new.4-hcurriculum.org/projects/servicelearning/*.

4-H There's No New Water! Curriculum Page – includes information and additional resources on service-learning and Youth-Adult Partnerships. Available at *http://www.4-h.org/resource-library/curriculum/4-h-theres-no-new-water/service-learning/*.

Citizen Scientist Opportunities – the following websites are representative of the increasing opportunities for youth and others to participate as citizen scientists – recording and sharing data with the greater scientific community. A database of Citizen Scientist opportunities, searchable by subject, is available at _http://science-forcitizens.net/_.

> **Community Collaborative Rain, Hail and Snow Network -** _http://cocorahs.org/_.
>
> **Cornell Lab of Ornithology -** _http://www.birds.cornell.edu/citsci/_.
>
> **NASA Science -** _http://science.nasa.gov/citizen-scientists/_.
>
> **Project BudBurst -** _http://www.neoninc.org/budburst/index.php_.

National Service-Learning Clearinghouse – a wealth of information and resources on service-learning and exemplary service-learning programs. Includes professional development (conferences and webinars) and grant opportunities. Available at _http://www.servicelearning.org/_. A site designed for youth is available at _http://www.servicelearning.org/youthsite_.

School Gardening: Best Practices – a guide developed as part of the Louisiana 4-H Seeds of Service School Gardening Program with suggested practices for starting and maintaining youth gardening programs. Available at _http://www.ext.colostate.edu/4_h/school-garden.pdf_.

Training Others to Deliver High Quality Science Programming

4-H Science 101 – this training guide provides four hours of activities that will help introduce your staff and participants to the development, delivery and assessment of 4-H Science programs. Available at _http://www.4-h.org/resource-library/professional-development-learning/science-training-guides-resources/_.

4-H Science Professional Development Toolkit – an online set of resources and training activities to be used by youth development professionals and volunteers to prepare them to support their 4-H Science programs. Includes sections on the 4-H Science Checklist, 4-H Science Competencies, Experiential and Inquiry-Based Learning Methods in 4-H Science, Recruiting and Developing 4-H Science Content Rich Volunteers, Recruiting and Developing Traditional Volunteers in 4-H Science, Tools and Resources for 4-H Science Professional Development, and Communities of Practice. Available at _http://www.4-h.org/resource-library/professional-development-learning/science-training-guides-resources/_.

Afterschool Training Toolkit – research-based practices, sample lessons, video examples, and resources to support academic enrichment in afterschool settings. Available at _http://www.sedl.org/afterschool/toolkits/index.html_.

Guide to Professional Development of Out-of-School Science Activity Leaders – the tools provided here describe a model for how to engage OST leaders in professional develoment around STEM activities for youth. It describes OST programming where science is complementary to what happens in school, and the activities and projects used with youth are accessible to most program leaders. Available at _http://ltd.edc.org/resource-library/guide-professional-development-out-school-activity-leaders_.

NPASS2 – National Partnerships for After School Science – includes best practices for afterschool science for science project leaders along with many other informal science education resources and professional development tools for OST. NPASS2 is led by the Center for Science Education at EDC. Available at _http://npass2.edc.org/_. The

NPASS2 Afterschool Site Observation Form and a Science Trainer Reflection Form are available at _http://npass2. edc.org/forms-and-tools-data-collection-and-feedback_.

PARTNERSHIPS, RESOURCE DEVELOPMENT, PROGRAM GROWTH AND SUSTAINABILITY

Partnering with Afterschool Providers

21st Century Community Learning Centers – this program, through the Department of Education, supports the creation of community learning centers that provide academic enrichment opportunities during non-school hours for children, particularly students who attend high-poverty and low-performing schools. The program helps students meet state and local student standards in core academic subjects. For more information, including current grantees in your state, visit _http://www2.ed.gov/programs/21stcclc/index.html_.

Afterschool Alliance STEM Resources – the Afterschool Alliance is the nation's leading voice for afterschool and is dedicated to raising awareness of the importance of afterschool programs and advocating for more afterschool investments. The Afterschool Alliance works with policymakers across the country. Today the Afterschool Alliance boasts more than 25,000 afterschool program partners and their publications reach more than 65,000 individuals every month. STEM info and resources are available at _http://afterschoolalliance.org/ STEM.cfm_.

Coalition for Science After School – the Coalition is a strategic alliance of individuals and organizations from STEM education, youth development, and programs held outside of school time. Their mission is to coordinate and mobilize community stakeholders to strengthen and expand opportunities that engage young people in afterschool science. A directory of members, and several resources are available at _http://www.afterschoolscience. org/_.

Frontiers in Urban Science Exploration Resource Guide – a resource guide offering strategies to advance science education in afterschool programs. Available at _http://www.tascorp.org/content/document/detail/3040/_.

Harvard Family Research Project OST Resources and Tools – since 1983, the Harvard Family Research Project (HFRP) has helped stakeholders develop and evaluate strategies to promote the well being of children, youth, families, and their communities. Out-of-school time programming is one of three focus areas, and a wealth of OST resources and tools are available at _http://www.hfrp.org/out-of-school-time_.

NPASS2 – National Partnerships for After School Science – includes best practices for afterschool science for science project leaders along with many other informal science education resources and professional development tools for OST. NPASS2 is led by the Center for Science Education at EDC. Available at _http://npass2.edc.org/_.

Science in Afterschool Literature Review – a review of afterschool science education practices (including inquiry and project based learning) and afterschool science programs developed for The National Partnership for Quality Afterschool Learning. Available at: _http://www.sedl.org/afterschool/toolkits/science/pdf/SERVE%20Science%20 in%20Afterschool%20Review.pdf_.

Partnering with Summer Program Providers

Building Quality in Summer Learning Programs: Approaches and Recommendations – identifies the different settings in which summer programs for disadvantaged youth most commonly take place – schools, parks and recreation departments, community- and faith-based organizations, and child-care programs – and examines the limitations and opportunities presented by each in building better programming. Available at _http://www. wallacefoundation.org/KnowledgeCenter/KnowledgeTopics/CurrentAreasofFocus/Out-Of-SchoolLearning/Documents/Building-Quality-in-Summer-Learning-Programs.pdf_.

Effective and Promising Summer Learning Programs and Approaches for Economically-Disadvantaged Children and Youth – summarizes findings from an extensive literature review that was conducted to identify the most promising models and approaches for meeting the needs of low-income children, youth, and families during the summer months. Available at _http://www.wallacefoundation.org/knowledge-center/summer-and-extended-learning-time/summer-learning/Documents/Effective-and-Promising-Summer-Learning-Programs.pdf_.

National Summer Learning Association – the National Summer Learning Association serves as a network hub for thousands of summer learning program providers and stakeholders across the country, providing tools, resources, and expertise to improve program quality, generate support, and increase youth access and participation. The association offers professional development, quality assessment and evaluation, and best practices dissemination. Available at _http://www.summerlearning.org/_.

Partnering with City Government and City Parks and Recreation

National Recreation and Park Association - NRPA is the leading advocacy organization dedicated to the advancement of public parks and recreation opportunities, http://www.nrpa.org/. National and state affiliates of NRPA are available at _http://www.nrpa.org/stateassociations/_.

National League of Cities' Institute for Youth, Education and Families - includes information on their afterschool and youth development initiatives. The Institute, a special entity within the National League of Cities (NLC), helps municipal leaders take action on behalf of the children, youth, and families in their communities. Available at _http://www.nlc.org/iyef/_. Several relevant publications may be found at _http://www.nlc.org/find-city-solutions/iyef/afterschool_ (under tools and resources tab) and _http://www.nlc.org/find-city-solutions/iyef/youth-civic-engagement_ (under tools and resources tab).

Partnering with Colleges and Universities and Campus-Based Scientists

Educational Opportunity Fund (EOF) – The New Jersey EOF is one of the nation's most comprehensive and successful state-supported efforts to provide access to higher education for economically and educationally disadvantaged students. The EOF assists low-income residents who are capable and motivated but lack adequate preparation for college study. Helping students succeed and graduate, the EOF supports a wide array of campus-based outreach and support services at institutions. Available at _http://www.nj.gov/highereducation/EOF/_.

Partnering with Science Centers and Museums

Association of Science-Technology Centers – an organization of science centers and museums dedicated to furthering public engagement with science among increasingly diverse audiences. For informal learning publications and professional development opportunities, or to find a science center near you, visit http://www.astc.org/index.htm. For information specific to youth involvement in science centers, see *http://www.astc.org/resource/youth/index.htm*.

Designing Partnerships Between Science Centers and After-School Programs: Lessons from *Design It! Engineering in After School Programs* – this document introduces informal science educators to a new partnership model based on lessons learned during a 3-year national pilot project to support collaboration between six urban science centers and over 30 community-based afterschool programs. The collaboration tested and refined an innovative curriculum challenging children to building working models of small functional machines and toys and to practice crucial elements of the design process. Available at *http://www.eric.ed.gov/*.

State Level Practices to Support Urban Programming

Urban Extension Conference - this bi-annual conference, sponsored by the north central region, targets Cooperative Extension staff who work in urban communities. Participants build strategic partnerships, identify strategies to enhance the resource base for urban programming, capture best practices of urban Extension, and explore emerging issues. Available at *http://www.dce.k-state.edu/conf/urban-extension/*.

STAFFING, RECOGNITION, AND MARKETING

Staffing with Content Rich Volunteers

4-H Science Professional Development Toolkit – an online set of resources and training activities to be used by youth development professionals and volunteers to prepare them to support their 4-H Science programs. Includes a section on Recruiting and Developing 4-H Science Content Rich Volunteers. Available at *http://www.4-h.org/Professional-Development/Content/Science/Implementation/Recruiting-and-Developing-Volunteers/*.

Staffing with AmeriCorps Members

AmeriCorps Program – to learn more about the AmeriCorps program, current grantees (potential partners), or to apply, visit *www.americorps.gov*.

Staffing with Teenagers and Teens as Cross-Age Teachers

Creating Youth-Adult Partnerships: Training Curricula for Youth, Adults and Youth-Adult Teams – leads youth and adults new to group facilitation and to youth-adult partnerships through a 6-8 hour training that builds their capacity to work together in true collaboration. The 156-page step-by-step curriculum includes detailed scripts, activities, and evaluation materials. Available at *http://www.theinnovationcenter.org/store/87*.

Engaging Older Youth: Program and City-Level Strategies to Support Sustained Participation in Out-of-School Time – includes information on keeping youth engaged over time, developmental differences between middle school and high school programs, city-level supports to promote and sustain participation, and key findings and implications. Available at *http://www.wallacefoundation.org/KnowledgeCenter/KnowledgeTopics/CurrentAreasofFocus/Out-Of-SchoolLearning/Pages/engaging-older-youth-city-level-strategies-support-sustained-participation-out-of-school-time.aspx*.

Teens as Volunteer Leaders: Recruiting and Training Teens to Work with Younger Youth in After-School Programs – includes information on the elements of teens as volunteer leaders, teen recruitment, mentor and afterschool program recruitment, project orientation, training, recognizing program participants, and promoting 4-H afterschool. One of several 4-H Afterschool Resource Guides available at *http://www.scribd.com/doc/102794559/As-TeenVolunteers-1*.

Recognizing Youth and Showcasing Programmatic Efforts

National 4-H Recognition Model – the model, including five types of recognition and suggestions for applying the model, is available at *http://www.national4-Hheadquarters.gov/library/4h_recmo.pdf*.

Marketing and Branding 4-H Science in Urban Communities

4-H Name and Emblem – a fact sheet on the proper use of the 4-H Name and Emblem. Available at *http://www.national4-hheadquarters.gov/library/4-Hguidelines-v4-26-04.pdf*.

4-H National Youth Science Day – site includes a three-month planning timeline, customizable flyers, newspaper and web banner ads and even an NYSD graphic for your Facebook page. Get started with the 4-H National Youth Science Day event planning timeline, and a brief overview of how to make the most of the materials in the kit. Available at *http://www.4-h.org/4-h-national-youth-science-day/nysdhome.aspx*.

4-H Promotional Toolkit – an online set of resources including the 4-H Science PSA Campaign (One Million New Scientists. One Million New Ideas.™). Available at *http://www.4-h.org/resource-library/promotional-toolkits/*.

4-H Science YEAK and Implementation Study Brochures – Available at the 4-H Science Research page *http://www.4-h.org/about/youth-development-research/science-program-research/*.