



Afterschool Innovations in Brief

Focusing on Middle School Age Youth

Providing Multiple Benefits to Middle School Students
Middle School and Science, Technology, Engineering and Math (STEM)
Key to Health and Wellness for Pre-teens and Teens
Supporting Career and College Pathways for Middle School Age Youth

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Afterschool Innovations in Brief: Engaging Middle School Youth



Middle school is widely recognized as a pivotal time for young people. Afterschool programs are a proven strategy for putting young people on the path to success; however, far too many middle school youth do not have access to high quality programs after school. MetLife Foundation is pleased to join the Afterschool Alliance in recognizing and sharing exemplary models of afterschool programs that work with middle school youth and help them catch up, keep up and get ahead in school and life.

--Dennis White, president and CEO of MetLife Foundation

The middle school years are a crucial juncture in young people's lives during which they go through several important developmental changes and form behaviors that will greatly affect their future. Students in grades 6-8 face unfamiliar experiences under a newfound independence that can lead them toward a life filled with either achievement or tribulation. Fortunately, many middle schoolers are establishing paths leading toward success with the help of proven, effective afterschool programs. The 1.4 million children in grades 6-8 who benefit from afterschool programs show their immense impact on academic and social development. However, millions of other middle schoolers have no afterschool programs available to them. Right now, more than 3.7 million middle school children are unsupervised after the school day ends, while another 3 million children would attend an afterschool program if one were available to them. The supply of these beneficial programs is not meeting the demand.

Afterschool programs for middle school students are a prime example of the multiple benefits youth of all ages can gain through learning experiences outside the classroom. Whether through supplying middle schoolers with homework help, science learning, opportunities for recreation or paths to higher education, the potential impact of afterschool programs goes far beyond the widely recognized benefit of providing safe, supervised environments in the hours after school. Despite the effectiveness of these programs, the economy and limited funding have forced local communities to make difficult choices about how to use afterschool resources, often leaving middle school youth with few options.

Our nation needs to expand afterschool programming so that it is available to every child who needs it, especially those in the critical middle grades. The best way to realize growth is to educate leaders, funders, media and the public about the many benefits afterschool programs offer. This compendium pulls together both research and promising programs that demonstrate the wide range of outcomes affected by afterschool, illustrating how afterschool programs help middle school youth, families and communities.

With support from MetLife Foundation, the Afterschool Alliance is proud to present this series of four Issue Briefs examining critical issues facing middle school youth, schools and communities, and the vital role afterschool programs play in addressing these issues. The four briefs address: the multiple benefits of afterschool for middle school youth; Science, Technology, Math and Engineering (STEM); health and wellness for pre-teens and teens; and pathways to higher education and careers. Each brief combines relevant statistics, comments from experts and community leaders and examples of outstanding afterschool programs.

Through a competitive awards process that identified highly effective and lesser-known programs and models, six afterschool programs nationwide were named 2010 MetLife Foundation Afterschool Innovators. In addition to being highlighted in one of the four briefs, each of the MetLife Foundation Afterschool Innovators received a \$5,000 award to sustain and expand their work.

Below is a brief summary of each of the four Issue Briefs and a description of the six MetLife Foundation Afterschool Innovators. The full text of each brief is included in this compendium and can also be found on the Afterschool Alliance website: <http://www.afterschoolalliance.org/researchIssueBriefs.cfm>

Afterschool: Providing Multiple Benefits for Middle School Students

Students in middle school face unique challenges as they transition from elementary school to high school. Some youth feel ready for more independence and autonomy, while others still desire the structured and nurturing environment found in elementary school. Regardless of where a young person may be developmentally, these years are critical for keeping them engaged in school. Most students are too young to work, yet feel that afterschool programs are designed for younger children and are unwilling to participate. But middle school youth still need a safe place to have fun and learn. Afterschool programs can offer multiple benefits to help middle schoolers navigate the adolescent years, thereby preparing them for success in high school, college and beyond.

“We use visual arts, music, dance, theater arts and the written word to engage our students in creative pursuits, academic learning, violence prevention and community service. Our program has increased the students’ in-school attendance and significantly improved their academic achievement.”

**Jim Pugliese, Director of LeAP
Afterschool at CIS 22**

- **The Learning Through an Expanded Arts Program, Inc. (LeAP)** at the Jordan L. Mott School CIS 22 in the Bronx, New York serves economically disadvantaged and culturally underserved middle school youth, providing afterschool arts-based instruction, community service activities, tutoring and mentoring. The program uses all genres of art as well as the written word to engage students in creative pursuits, academic success and creative

development. The program builds students' art skills, increases their involvement and attendance in school, builds confidence and creativity, prevents violence in school and out and helps students forge positive relationships with peers and adult role-models. Since LeAP's inception in 2005, CIS 22 has gone from one of the worst schools in the Bronx to one of New York City's best, with dramatic improvements in school attendance rates and Math and English/Language Arts test scores.

- **Cypress Hills/East New York (CHENY) Beacon** afterschool program at Intermediate School 302 in Brooklyn, New York engages middle school students in a multipronged path to leadership development. In addition to homework assistance, arts and sports programming and snacks, participants register for one of three service groups. In Heirs 2 the Community, students design and implement a series of three to four service projects in the community. The Intergenerational Services Program engages youth in service to local seniors, while Leaders-in-Training offers middle school youth the opportunity to play leadership roles with younger children. All participants who successfully complete their service group are then eligible for the counselor-in-training program in the high school. Middle schoolers participating in the CHENY Beacon have seen social gains such as increased independence, confidence and community engagement.

Middle School and Science, Technology, Engineering and Math (STEM)

The information economy of the twenty-first century is creating more jobs that require not only a college education, but also at least some expertise in the fields of science, technology, engineering and math, collectively known as STEM. In order to

"It's so important that our nation's youth gain a solid... interest in science, technology, engineering and math if we are going to raise a generation that can compete in the global marketplace and become engaged citizens. We are proud to be part of the national movement to make sure that girls have every opportunity... to learn more about these disciplines and develop a lifelong interest in them."

Dr. Connie Chow, Executive Director of The Science Club for Girls

stay competitive in the global marketplace and provide our children with the best opportunity to succeed, we must get more students on the STEM path. Combining STEM learning with afterschool programming offers middle school students a fun, challenging, hands-on introduction to the skills they will need in high school, college and the workplace. STEM afterschool programs for middle school youth give students time to develop an interest in STEM and inspire them to learn.

- At **The Bridge Project** in Denver, Colorado, middle school students learn about renewable energy through hands-on science experiments and then make short films explaining how different types of renewable energy work and the benefits of sustainable living. The science curriculum on renewable

energy, including the experiments, is provided by the National Renewable Energy Laboratory. Students enjoy hands-on experiments, such as building a solar oven and wind turbine, which help them understand how renewable energy operates. For the technology component, students work with state-of-the-art movie-making and editing equipment to create a film which is shared with the wider community. This program allows students to learn about science and technology and gives them a tangible outcome that can be shared with others. A rigorous evaluation shows that participants have increased school attendance, improved grades and increased graduation rates. Students also show significant improvements in school engagement, family support and parental support for education and behavioral expectations at school.

The Science Club for Girls and C.E.L.L.S. in Cambridge, Massachusetts seeks to increase the science literacy and self-confidence of girls. Middle school students participate in hands-on science clubs in 6th and 7th grades, and in the C.E.L.L.S. (Career Exploration, Leadership and Life Skills) program in the second semester of 7th and 8th grade. The curricula encompass a range of STEM topics including astronomy, astronautics, climate change and oceans. These interdisciplinary curricula stress hands-on learning, and culminate in a final, collaborative project. Girls are exposed to a variety of STEM fields and the real-world applications of principles and tools related to these fields. The clubs are guided by undergraduate, graduate, and professional women in STEM, who serve as role models, mentors and sources of information on STEM careers. Internal outcomes evaluations find that participants have a more positive attitude towards science, are more confident in themselves as science students and are more aware of careers in STEM.

Afterschool: The Key to Health and Wellness for Pre-teens and Teens

As middle school students gain independence, they often phase out of organized sports or other active interests. Many of these students don't have other opportunities to engage in regular physical activity, especially if they are unsupervised after school. Additionally, children are more autonomous in their dietary decisions, leaving them susceptible to ill-advised food choices. Furthermore, many of these youth are also engaging in cigarette smoking, alcohol drinking and other unhealthy behaviors for the first time. Afterschool programs provide a place for middle school youth to stay physically active, while also learning to make positive nutritional and lifestyle

“Too many of our young people are adopting sedentary lifestyles and bad eating habits which will haunt them the rest of their lives. Our students are gaining a lifelong appreciation of physical fitness, an active lifestyle and healthy eating habits.”

Cynthia Le Monds - CEO, San Antonio Youth Centers

choices.

- The **San Antonio Youth Centers (SAYC)** consist of nine afterschool programs in Texas that utilize funding from the federal and state-supported Carol M. White Physical Education Program to implement a physical education and youth development curriculum. The centers seek to promote healthy lifestyles, improve academic achievement and foster and develop positive youth self-esteem. Middle schoolers at SAYC participate in at least 45 minutes of structured daily physical activities that are both fun and vigorous, including karate, swimming, cheerleading and rock-climbing. Additionally, SAYC educate youth about the dangers of smoking, alcohol and drugs to support healthy decision making. They also offer weekly family Boot Camp sessions to cultivate parental involvement and help ensure that healthy living extends into the home. Students participating in SAYC have shown significant reductions in Body Mass Index and success on statewide standardized tests.

Afterschool: Supporting Career and College Pathways for Middle School Age Youth

Afterschool programs offer a key opportunity to expose students to higher education and career path options and to teach them skills that can unlock doors to future career prospects. During the afterschool hours, there is time for apprenticeships, guest speakers, college mentoring and project-based activities that are not always available during a school day focused on the core curriculum. Afterschool programs better prepare middle school youth for high school, college and careers, while also keeping them on track and engaged in school.

- The **Junior ACE Program** in Sacramento, California teaches middle school students about green design and introduces them to careers in the architectural design and construction industries. Students take part in a variety of architecture and engineering classes after school on topics including alternative energy, green plumbing and green land use and design. The goal of Junior Ace is to engage children in the middle school years so that they can go on to participate in the ACE Mentoring high school program and later be prepared for careers in architecture, construction and engineering.

“Interests fostered in middle school can often set young people on a path to a lucrative and exciting career. By exposing our students to the educational and career possibilities that exist in architecture, construction and engineering, we are helping them develop skills and have experiences that can help them succeed in life.”

Stephanie Davi-Ercolini, Director of Regional Programs for Junior ACE

These four Issue Briefs examine just a few of the ways afterschool programs support middle school students and their families. Highlighting best practices and showcasing some of the many exemplary afterschool programs build a powerful

case that afterschool is vital for successful youth, strong communities and healthy families.

The Afterschool Alliance is a nonprofit public awareness and advocacy organization working to ensure that all children and youth have access to quality afterschool programs. More information is available at www.afterschoolalliance.org.

MetLife Foundation was established by MetLife in 1976 to carry on its longstanding tradition of corporate contributions and community involvement. In youth development, MetLife funds initiatives that promote mentoring and provide safe places and constructive activities, particularly during out-of-school time. For more information about the Foundation visit www.metlife.org.



Issue Brief No. 41

June 2010

Afterschool: Providing Multiple Benefits to Middle School Students

The Afterschool Alliance, in partnership with MetLife Foundation, is proud to present the first in a series of four issue briefs examining critical issues facing middle school youth and the vital role afterschool programs play in addressing these issues. These issue briefs feature: the multiple benefits of afterschool for middle school youth; STEM; pathways to higher education and careers; and health and wellness for pre-teens and teens. They examine just a few of the ways afterschool programs support middle school youth, families and communities.

Afterschool programs across the country provide critically needed services to our nation's children and families; however, many afterschool providers find it difficult to serve youth once they enter middle school. Young adolescents offer afterschool providers a special set of challenges which they must overcome in order to attract and retain participants. For example, young adolescents are more autonomous, busier, better able and more likely to articulate specific needs, and less appeased by activities designed for a general audience. While youth in grades six through eight can clearly benefit from participation in afterschool, programs must recognize the needs of these youth and employ innovative strategies to attract and keep them engaged.

Middle School Youth Have Specific Needs

Developmental diversity is the central characteristic of early adolescence. Because of the wide variations in "normal" growth rates during puberty, there may be a six-to-eight-year span in physical development among any group of young adolescents of the same chronological age.ⁱ This translates to a wide range of challenges, skills and needs – all within the same age group.ⁱⁱ Needs specific to this age group include:ⁱⁱⁱ

- **Physical activity:** Young teens need time to stretch, wiggle and exercise their rapidly growing bodies. They also need downtime to relax.
- **Competence and Achievement:** Because young teens are extraordinarily self-conscious about their changing selves, they hunger for chances to do something well and prove themselves. They need to know that what they do is valued by others whom they respect.
- **Self-Definition:** Young adolescents need chances to consider what it means to become an adult and to belong to a particular ethnic or cultural group. They need opportunities to explore their widening world so they can begin to consider themselves as participants in society.
- **Creative Expression:** Opportunities to creatively express thoughts, feelings, interests and abilities help young teens understand and accept themselves. Performing and being exposed to drama, literature and musical works of others help them see that people before them have experienced similar thoughts and emotions. Middle school youth can also creatively express themselves through sports, different art mediums and other hands-on activities.

- **Positive Social Interactions with Peers and Adults:** Parents and families remain primary sources of values and affection. Peers offer support, companionship and criticism. In addition, adults other than parents have an effect on the lives of young adolescents who are eager to understand the possibilities of adulthood. Young adolescents need relationships with adults who are willing to share their own experiences, views, values and feelings. These adults also encourage young adolescents to develop positive peer relationships.
- **Structure and Clear Limits:** Young adolescents live in a society of rules, and they want to know and understand their own limits within that system. Clear expectations are crucial to unsure, self-critical young people. Their search for security in a world of conflicting demands is helped by explicit boundaries that define the areas in which they may legitimately explore. They differ from younger children though, in that they are increasingly capable of participating with adults in framing their own rules and limits.
- **Meaningful Participation:** Youth need to participate in activities that shape their lives. Successful events are planned with, not for, young adolescents. As they develop a mature appearance and more sophisticated social and intellectual skills, they want opportunities to use their new talents. By learning that their actions can affect the world around them, they gain a sense of responsibility. Adults can help young adolescents see themselves as citizens by providing opportunities for them to make meaningful contributions to their programs and their communities. Adults need to adapt responsibilities to the short-term attention spans of early adolescents and to select varied tasks that enlist diverse interests and abilities.

Middle School Youth and Their Families Need Afterschool

Most families with children in the U.S. today need some type of afterschool services. The parents of 28 million children work outside the home. Despite this need, the demand for quality afterschool programs is far from being met. Nearly 4 million middle school youth (grades six through eight) are unsupervised afterschool.^{iv} The conventional wisdom is that by the time children reach middle school, they are old enough to take care of themselves and adult supervision is not as critical as it was when they were in elementary school. However, if left to their own devices, these young adolescents might not make the best use of the free time they have after school. In spite of the autonomy they may be given, middle school age youth need guidance and adult supervision to help keep them safe, engaged in school, and on the path to success in life.

Despite Clear Rewards, Barriers to Participation Exist

Typically, young children participate in afterschool programs for the enrichment opportunities as well as to satisfy their family's child care needs while parents are at work. However, although young adolescents need mentoring, enrichment and guidance in a positive social environment, participation in afterschool programs declines when children transition from elementary school to middle school.^v

Common barriers to afterschool participation by middle school youth include:

- *Disinterest/ Boredom:* Twenty-five percent of older youth afterschool participants drop out of their programs within two months citing disinterest in the activities.^{vi}
- *The "Relax" Factor:* Sixty-five percent of afterschool nonparticipants say that they prefer to simply hang out afterschool rather than extend their learning day.^{vii}

- *Family Responsibilities:* Twenty percent of youth not currently participating in an afterschool program report that family responsibilities prevent them from attending afterschool programs.^{viii}
- *Transportation:* Many youth face difficulties in finding transportation to and from afterschool facilities. Forty-nine percent of parents of afterschool nonparticipants say that transportation is the main reason their child does not participate in afterschool programs.^{ix}
- *Financial Constraints:* The resources for afterschool programs for older youth simply do not exist in many communities.^x

Fortunately, many programs overcome these hurdles and for those that do, the potential impact goes far beyond the widely recognized benefit of providing safe, supervised environments in the hours after school. Below we highlight a few of the ways that afterschool benefits middle school students along with a program that is successfully meeting the needs of middle schoolers.

In addition to facing more demanding academics, middle school youth are dealing with the challenge of meeting social and emotional benchmarks as they transition from elementary to middle and middle to high school. Afterschool programs can provide an avenue for helping students successfully navigate these challenges while building skills necessary toward success in the community and in school.^{xi}

- **The Learning Through an Expanded Arts Program, Inc. (LeAP)** at the Jordan L. Mott School CIS 22 in the Bronx, New York serves economically disadvantaged and culturally underserved middle school youth, providing afterschool arts-based instruction, community service activities, tutoring, and mentoring. The program uses all genres of art as well as the written word to engage students in creative pursuits, academic success and creative development. The program builds students' art skills; increases their involvement and attendance in school; builds confidence and creativity; prevents violence in school and out; and helps students forge positive relationships with peers and adult role-models.

Using the LeAP model of incorporating hands-on, arts-based approaches to teaching, and extending the standard curriculum, has definitely made a positive impact on student achievement.
 – **Jim Pugliese – Director, LeAP Afterschool at 22**

Afterschool programs can incorporate leadership opportunities while supporting young adolescents in academics and in their social/emotional development.

- **Cypress Hills/East New York (CHENY) Beacon** afterschool program at Intermediate School 302 in Brooklyn, New York engages middle school students in a multipronged path to leadership development. In addition to homework assistance, arts and sports programming and snacks, participants register for one of three service groups. In Heirs 2 the Community, students design and implement a series of three to four service projects in the community. Intergenerational Services Program engages youth in service to local seniors. Leaders-in-Training offers middle school youth the opportunity to play leadership roles with younger children. All participants who successfully complete their service groups are then eligible for the counselor-in-training program in the high school.

As middle school youth gain more independence, it is important for them to learn to make responsible choices for themselves and their community.

- **America SCORES** in Chicago, Illinois offers middle school students soccer, leadership and healthy lifestyle training, literacy/creative writing workshops; and service learning activities. The varied components of the program reinforce and rely on each other – active participation in all aspects of the program is expected and required in order to be part of the soccer team. The “poet-athletes” learn to make healthy choices, and learn firsthand their power to impact their community.

I have seen students go from being very shy, but once they start the program become different people. If the students aren't doing well in class they now have a motivation to stay on the team.

– **Coach Dean, America SCORES**

Successful afterschool programs for middle school youth actively engage and empower youth – allowing them to choose which activities to participate in, and how to take advantage of available resources.

Being a parent of a participant of SNBC activities, I see first hand the positive effects the programs, activities and staff have had on my son. SNBC is a true Sunset District gem!
– **Terry Gutierrez, Parent**

- **The Sunset Neighborhood Beacon Center’s (SNBC) Afterschool Program** in San Francisco, California provides social and academic supports. Each day, students engage in project-based learning activities (“clubs”) as well as recreation and service learning. Youth in the program choose which club to join. Examples of clubs include newsletter and movie making, cartoon and anime, urban music, peer resources and leadership, urban dance, and flash animation. Clubs integrate the most up-to-date audio, video and computing technology as well as promote community engagement and leadership

opportunities for maximum youth interest and motivation.

Afterschool programs can offer critically needed supports during a time of transitions in a young adolescent’s life.

- **ZONE 3** in Doraville, Georgia, outside of Atlanta, reaches out to middle school minority youth from low-income families who are at risk for becoming involved in criminal and/or dangerous behavior in an area known for gang activity. The program aims to not only to decrease exposure to gang activity, but also to increase academic achievement, consciousness of community issues, knowledge of career and life choice potentials and knowledge of human and civil rights. Youth are provided a safe space to receive tutoring and homework assistance, and engage in community service, field trips and enrichment activities.

Afterschool programs can offer young adolescents the opportunity to design their own programs and choose enriching activities that allow them to have fun, learn, and give them ownership of their out of school time in a safe and supervised environment.

- **Teen Recreation Activities Program (TRAP)** in Dubois, Wyoming provides enrichment programming for middle school youth every day after school and during the summer. DuBois is a small rural community with limited available services and only 190 school aged youth. TRAP is a direct result of focus group meetings made up of middle school youth who designed the afterschool program. Activities include a young entrepreneurs program, STEM programs, and mentoring. Because of the limited resources available to the community, TRAP provides these youth with critical experiences and support that they would not otherwise have.

Conclusion

Middle school youth have a unique set of social, emotional and academic needs, and afterschool successfully weaves these together, using enriching and engaging activities to support the whole child. Afterschool offers multiple benefits to these young adolescents, but only if the barriers to participation are removed, and youth are given the opportunity to meaningfully participate.

ⁱ North Carolina Area Health Education Centers Program: Health Careers and Minority Workforce Development Council (1996). *Guide for Working with Adolescents. Preceptor/Mentor Handbook*. Chapel Hill.

ⁱⁱ Kerewsky, W. and Lefstein, L.M. (1982). “Young Adolescents and Their Communities: A Shared Responsibility.” Carboro. University of North Carolina Press.

ⁱⁱⁱ North Carolina Area Health Education Centers Program: Health Careers and Minority Workforce Development Council (1996). *Guide for Working with Adolescents. Preceptor/Mentor Handbook*. Chapel Hill.

^{iv} Afterschool Alliance (2010) *America After 3PM*. Washington, D.C.

^v Lauver, S., Little, P.M.D., & Weiss, H.B. (July 2004). Moving beyond the barriers: Attracting and sustaining youth participation in out-of-school time programs. *Harvard Family Research Project*, 6. Retrieved March 21, 2009 from www.gse.harvard.edu/hfrp/projects/afterschool/resources/issuebrief6.html.

^{vi} U.S. Department of Education. (2003). *When schools stay open late: The national evaluation of the 21st Century Community Learning Centers program*. Washington, DC: Author. Available at www.ed.gov/pubs/21cent/firstyear/index.html.

^{vii} Lauver, S., Little, P.M.D., & Weiss, H.B. (July 2004). Moving beyond the barriers: Attracting and sustaining youth participation in out-of-school time programs. *Harvard Family Research Project*, 6. Retrieved June 9, 2010, from www.gse.harvard.edu/hfrp/projects/afterschool/resources/issuebrief6.html.

^{viii} Ibid.

^{ix} Lauver, S., Little, P.M.D., & Weiss, H.B. (July 2004). Moving beyond the barriers: Attracting and sustaining youth participation in out-of-school time programs. *Harvard Family Research Project*, 6. Retrieved June 9, 2010 from www.gse.harvard.edu/hfrp/projects/afterschool/resources/issuebrief6.html.

^x Afterschool Alliance (2009). *Leveraging Out-of-School Learning to Boost High School Success: A Proposed Federal Investment*. Washington, D.C.

^{xi} Jones, W. “Motivating Middle School Students to Attend Afterschool Programs”. SEDL Letter, April 2008 *Making the Most of Afterschool*. Retrieved on January 28, 2010 from www.sedl.org/pubs/sedl-letter/v20n01/motivating.html.



Issue Brief No. 44

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Afterschool: Middle School and Science, Technology, Engineering and Math (STEM)

The Afterschool Alliance, in partnership with MetLife Foundation, is proud to present the second in a series of four issue briefs examining critical issues facing middle school youth and the vital role afterschool programs play in addressing these issues. These issue briefs feature: the multiple benefits of afterschool for middle school youth; STEM; pathways to higher education and careers; and health and wellness for preteens and teens. They examine just a few of the ways afterschool programs support middle school youth, families and communities.

The 21st Century's information economy has been creating more jobs that require not only a college education but also a fair amount of expertise in the fields of science, technology, engineering and math – collectively known as STEM. Science and technology underpin nearly every aspect of our society, making STEM skills necessary for all students, regardless of whether or not they eventually pursue careers in STEM. We need a STEM-literate citizenry to make informed decisions about energy sources, health care, transportation, communication, and even food development and nutrition.

The last several decades have seen the industrial- and manufacturing-based economy shift to a service economy fueled by information, knowledge and innovation. According to the U.S. Bureau of Labor Statistics, between 1996 and 2006, the United States lost three million manufacturing jobs. In that same timeframe, 17 million service sector jobs were created, specifically in the areas of health care, education, environment, security and energy.^{i,ii} From 2008 – 2018, many of the fastest-growing jobs in the service sector are and will be STEM-related, high-end occupations that include doctors, nurses, health technicians and engineers.ⁱⁱⁱ Industries projected to have the most employment growth are in scientific, technical and management consulting; computer systems design; and employment services.^{iv}

In order to help prepare youth for these careers, we need to think about STEM learning opportunities beyond the traditional school day. Afterschool programs are currently serving more than 1.3 million middle school students, with many programs providing engaging STEM content. Combining STEM learning with afterschool programming offers middle school students a fun, challenging, hands-on introduction to the skills they will need in high school, college and the workplace. This issue brief highlights afterschool programs that incorporate STEM activities, giving middle school students time to develop an interest in STEM and inspiring them to learn.

STEM Learning is a Critical Component of a 21st Century Education

To become the innovators, scientists, technologists and engineers of the future, youth must be exposed to and master STEM skills. There is a growing body of research suggesting Americans are falling behind in math and science education. U.S. students rank 25th in math and 21st in science skills internationally, according to a recent Organization for Economic Co-operation and Development report. Additionally, the 2007 ACT College Readiness Report states that only 43 percent of graduating seniors are ready for college math, and only 27 percent are ready for college science.^v Further, only 32 percent of U.S. college undergraduates are graduating with a bachelor's degree in science or engineering. Because of this, the U.S. faces a critical shortage of students and young adults pursuing science and technology majors and careers.^{vi}

Middle school is a “make or break” time for many young adolescents academically. In addition to facing more demanding academics, middle school youth are dealing with the challenge of meeting social and emotional benchmarks as they transition from elementary school to middle school and then high school. During this transition, middle school youth experience fluctuating emotions and motivation levels, and are exposed to new situations and experiences. Peer pressure, academic demands, exposure to new social environments, and physical changes are added distractions to an already new and sometimes overwhelming time in their lives. It is during middle school that many youth, especially girls, turn away from math and science. Once their young minds stop progressing in these subjects, it is difficult to catch up with peers later on.^{vii} It is therefore critical that these youth are adequately exposed to quality STEM programming before

The public is open to many different strategies for improving STEM education, and they're enthusiastic about the overall goal, but much more has to be done to help them understand what's needed for kids in their local schools to have a world-class science and math education. The problem is particularly acute in science. Many parents don't realize the importance of starting children in science early on. Many think it can easily wait until high school.
--**Jean Johnson, director of Education Insights at Public Agenda**

they reach high school.

Afterschool is the Perfect Platform to Build STEM Learning in Middle School

An article in Education Week, “Science by Stealth,” summed up the role of afterschool in STEM learning: “...afterschool programs offer an ideal setting for nurturing the potential scientist in every student, as well ...as reinforcing the science taught during the school hours. Compared to the school day, these programs’ smaller groups, longer time slots, and less formal settings provide opportunities for young people to visit museums, study neighborhood environments, cultivate gardens, perform laboratory experiments and have their love of discovery awakened in countless other ways.”^{viii} Further, a number of studies show that STEM learning during the school day is necessary, but not enough to support lifelong STEM literacy.^{ix} It is not surprising that 75 percent of Nobel Prize winners in the sciences report that their passion for science was first sparked in non-school environments.^x

“I got interested in science from a very early age; my parents took me to the American Museum of Natural History in New York when I was about 8, and they read out loud to me and my sister from biographies of Darwin and Galileo. Nothing in school at that age was nearly as interesting as the adventures I began to imagine doing science.”

--**John C. Mather, Astrophysicist and Winner of the Nobel Prize in Physics 2006**

The case for including STEM learning in afterschool is strong.^{xi}

- Supporting the STEM pipeline: Afterschool programs can play a key role in increasing the number of students following STEM academic and career paths at a time when the nation's economy is becoming increasingly dependent on a STEM-literate workforce.
- Fostering diversity: Enrollment, especially of youth from populations historically underrepresented in STEM fields, is dramatically increasing in afterschool programs.
- Generating awareness of the value of afterschool: There is increasing awareness of the importance of non-school learning experiences in generating interest, engagement, and capacity to know and do science, but we still have a long way to go. For STEM truly to thrive in the afterschool space, we need widespread recognition of the value of afterschool in contributing to STEM interest and learning.
- Responding to expectations from afterschool funders: Many supporters of afterschool programs are increasingly asking for evidence of academic achievement. STEM activities have the potential to support academic growth while being engaging and entertaining.

Beyond the big picture case for including STEM in afterschool, there are program-level benefits to providing STEM programming to middle school youth in the afterschool space. Program-level benefits include:^{xii}

- Engaging, hands-on curricula tailor-made for middle school youth in afterschool programs are available.
- Connecting with STEM professionals as mentors and volunteers to work with students and provide exposure to STEM careers.
- Involving community-based organizations and foundations to supplement learning and further engage students.
- Providing opportunities for students to work collaboratively and include student-directed subject matter.
- Offering experiential learning activities that require youth to plan, investigate and communicate.
- Creating strong linkages to the school day by engaging and inspiring youth, keeping them on the STEM path during the regular school day, and preparing them for high school STEM learning and beyond.

Multiple evaluations of STEM programming in afterschool show clear benefits for middle school youth:

- Participants have increased school attendance, improved grades, and raised graduation rates. Students also show significant improvements in school engagement, family support and parental support for education and behavioral expectations at school. (See **The Bridge Project**)
- Participants have a more positive attitude towards science, are more confident in themselves as science students and students in general and are more aware of careers in STEM. (See **The Science Club for Girls and C.E.L.L.S.**)
- Participants have higher rates of high school graduation and college attendance. Thirty-five percent of all female participants in one STEM program who graduated from high school went on to major in science in college. (See **Project Exploration/Sisters 4 Science**)
- Participants continue to pursue STEM-related topics in high school and beyond, and feel prepared for professional careers in STEM-related fields. (See **Woodcraft Rangers**)

Afterschool STEM programming offers middle school youth experiences with collaboration and innovation, while also learning about the relevant issues of the day. Youth also have the opportunity to combine subject areas and skills, making projects challenging, multi-dimensional and fun.

- At **The Bridge Project** in Denver, Colorado, middle school students learn about renewable energy through hands-on science experiments and then make short films explaining how different types of renewable energy work and about the benefits of sustainable living. The science curriculum on renewable energy, including the experiments, is provided by the National Renewable Energy Laboratory. Students enjoy hands-on experiments, like building a solar oven and wind turbine, which help them understand how renewable energy operates. For the technology component, students work with state-of-the-art movie-making and editing equipment to create a film, which is then shared with the wider community. This program allows students to learn about science and technology and gives them a tangible outcome that can be shared with others. A rigorous evaluation process shows that participants have increased school attendance, improved grades and increased graduation rates. Students also show significant improvements in school engagement, family support and parental support for education and behavioral expectations at school.

Offering STEM in afterschool allows groups of middle school youth who are typically underrepresented in the sciences to participate in and get excited about STEM, encouraging them to pursue a science education and consider a career in science.

- **The Science Club for Girls and C.E.L.L.S.** in Cambridge, Massachusetts seeks to increase the science literacy and self-confidence of girls. Middle school students participate in hands-on science clubs in 6th and 7th grades, and in the C.E.L.L.S. (Career Exploration, Leadership and Life Skills) program in the

second semester of 7th and 8th grade. The curricula encompass a range of STEM topics including astronomy, astronautics, climate change and oceans. These interdisciplinary curricula stress hands-on learning, and culminate in a final, collaborative project. Girls are exposed to a variety of STEM fields and the real-world applications of principles and tools related to these fields. The clubs are guided by undergraduate, graduate, and professional women in STEM, who serve as role models, mentors and sources of information on STEM careers. Internal outcomes evaluations find that participants have a more positive attitude towards science, are more confident in themselves as science students, and are more aware of careers in STEM.

When I think of a group of girls getting together, I don't think of it as productive—it's just getting together to be girls. But [in Science Club] everyone's there, helping each other, supporting each other—and at the end, something comes out of it.
--Louisa Irele, 19, a Science Club alumna

- **Project Exploration/Sisters 4 Science (S4S)** in Chicago, Illinois is a nonprofit science education organization that works to ensure communities traditionally overlooked by science education—particularly minority youth and girls—have access to personalized experiences with science and scientists. Their afterschool program includes hands-on activities, authentic fieldwork, leadership development and the chance to develop long-term relationships. The program merges research-based best practices for both youth development and science education into a model that gets middle school youth interested in science, keeps them interested, and builds their capacity to pursue science. Participants in the program have higher rates of high school graduation and college attendance than their non-participating peers. Further, 35 percent of all female participants who graduate from high school go on to major in science.

- *We get to learn new things that wouldn't come to you every day.*
 - *I feel that I am more interested in science because of S4S.*
 - *It's just girls and we can do things cooperatively together.*
 - *Having time away from my family and learning about science.*
 - *We get to answer questions and ask questions and we really learn stuff we didn't even know.*
- Sisters4Science participants on being asked what is the best part of being in S4S (Jafri 2007)**

Afterschool can employ a wide range of strategies for engaging youth in STEM learning. Because of the flexible nature of afterschool, STEM learning can be readily incorporated into appealing curricula, allowing middle school youth to get excited about STEM.

- **Woodcraft Rangers** in Los Angeles, California makes STEM education relevant and captivating for young people who would otherwise have little or no access to STEM activities. Participants are exposed to cutting-edge STEM activity options (using state-of-the-art technology) that motivate them not only to pursue post-secondary education, but also prepare them for vocational pursuits. The key to Woodcraft Rangers' success with middle school youth is its innovative approach to sparking students' imaginations so that they become and remain involved over time. Rather than relying on a static menu of activities, Woodcraft Rangers

afterschool STEM club themes are wide-ranging and selected by students, giving them ownership and increasing their engagement. Multifaceted evaluations find that participants show improvement in school attendance, academic achievement and behavior. The overarching goal of the program is to motivate youth to pursue related STEM topics in high school and beyond, and to prepare them for professional careers in STEM-related fields. Outcomes for participants consistently reflect these goals, with over 70 percent of participants achieving expected benefits.

Barriers Exist to Providing STEM in Afterschool

Despite robust data that show the benefits of high-quality STEM programming in afterschool for middle school youth, considerable barriers exist. High-quality STEM programming in afterschool includes the following components:^{xiii}

- Priority on STEM, materials and access to expertise
- Appropriate staff levels of STEM knowledge, pedagogy and relevance
- Hands-on, inquiry based learning opportunities
- Regularly scheduled STEM activities that encourage consistent attendance

For a wide variety of reasons, many programs lack the ability to provide these essentials in their STEM activities. These reasons include:

- **Capacity:** Many programs offer only limited opportunities for participants to engage in high-quality STEM learning opportunities. There may be issues with how often STEM is offered, the quality of the materials available, or appropriate staff development. Program leaders say they would like support from families, schools and communities to help them increase the quality and quantity of STEM activities.^{xiv}
- **Commitment:** Many providers are reluctant to tackle STEM due to lack of staff buy-in, comfort with science content and availability of training and materials. Programs must invest in materials and quality training to implement the curriculum, which requires resources that may already be scarce.^{xv}
- **Sustainability strategies:** To ensure continued growth and long-term sustainability of afterschool STEM, programs must be intentional about identifying public and private funding. Programs need to become aware of funding sources beyond traditional afterschool funding streams such as 21st CCLC. Public funding can be found in federal government agencies such as NASA, NIH, NOAA and NSF. Private funds can be obtained from STEM-focused businesses, including technology, engineering and telecommunication companies that often look to invest in local youth programs. Local and national foundations with a focus on STEM, youth development or workforce development are also potential funders.
- **Partnerships:** Strong partnerships are a hallmark of afterschool programs, but many of the typical afterschool partners do not bring the STEM expertise that is necessary for a high quality STEM learning experience. STEM programs must develop partnerships with organizations and personnel who bring scientific and technical content expertise. Museums, science centers, universities and teaching hospitals can provide programming assistance, mentoring opportunities and materials to make STEM learning in afterschool vibrant and relevant.^{xvi}
- **Perception:** Finally, for those outside of the afterschool community, the afterschool space is not currently seen as a vital partner in STEM learning. Consequently, policies are not in place to encourage and enhance participation and engagement of the afterschool sector in national STEM education initiatives.

Conclusion

STEM literacy is critical to the future success of the U.S. in a rapidly changing global marketplace. Engaging middle school youth in STEM learning after school teaches them the relevance of science in daily life, offers engaging hands-on curricula, presents a space to apply the concepts they are learning during the school day, and provides a safe place to experiment with science without fear of academic failure.

STEM learning is widespread in afterschool and currently engaging millions of children. However, the potential to do even more and reach more children with compelling programs is enormous. Many programs are not yet prepared to deliver the high-quality STEM programs that can inspire our middle school youth to be lifelong STEM learners, but could do so with additional support. The good news is that many programs contain the necessary elements of training, curriculum and structure to attain strong and engaging STEM programming if adequately supported. Strategic policy, funding, technical assistance/training and strong community partnerships are critical to grow and strengthen these programs that will in turn create an engaged and STEM-literate middle school youth population.^{xvii}

ⁱ U.S. Bureau of Labor Statistics (2007). *Table 1. Employment by major industry sector, 1996, 2006, and projected 2016*. Washington, D.C. Retrieved August 30, 2010, from <http://data.bls.gov/cgi-bin/print.pl/news.release/ecopro.t01.htm>.

ⁱⁱ Phillips, J. (May 2008). *Worried about layoffs? Here are 5 jobs immune to recession*. The Indianapolis Star. Indianapolis, IN.

ⁱⁱⁱ Council on Competitiveness (April 2008). *Thrive. The Skills Imperative*. Washington, D.C.

^{iv} U.S. Bureau of Labor Statistics (2009). *Employment Projections 2008 – 2018*.

Washington, D.C. Retrieved August 30, 2010, from <http://www.bls.gov/news.release/pdf/ecopro.pdf>.

^v Public Agenda (June 2010) *Are We Beginning to See the Light?* Retrieved on August 2, 2010 <http://www.PublicAgenda.org>.

^{vi} Kahler, J. and Valentine, N. (2010). *Stemming the Gap*. Afterschool Today Volume 1 (2).

^{vii} McConville, C. (March 10, 2010). *Astronaut, others stress importance of math, science*. Boston Herald.

^{viii} Friedman, L.N., Quinn, J. (February 26, 2006). *Science by Stealth*. Education Week.

^{ix} Dierking, L. *Linking After-School Programs and STEM Learning: A View from another Window*. Oregon State University.

^x Friedman, L. & Quinn, S. (2006). *It's never too early: promoting college prep in middle school after school programs*. The Evaluation Exchange. Volume XII (1), p.7, 37.

^{xi} Chi, B., Freeman, J., Lee, S. (2008). *Science in After-School Market Research Study*. Coalition for Science After School. Final report to the S.D. Bechtel, Jr. Foundation.

^{xii} Youth Community Connections (2008). *Research Brief: Building STEM Knowledge and Skills Afterschool*.

^{xiii} Freeman, J., Dorph, R., & Chi, B.S. (2009). *Strengthening After-school STEM Staff Development: A final report of the Noyce Foundation*. Coalition for Science After School. Lawrence Hall of Science. University of California, Berkeley.

^{xiv} Ibid.

^{xv} CBASS (May 2010). *Frontiers in Urban Science Exploration Resource Guide*. Strategies to advance informal science education in after-school. New York, NY.

^{xvi} Ibid.

^{xvii} Noam, G., et. al. (2010). *Are Quality Science Learning Opportunities Typical of Typical After-School Settings?* Paper presented at the 2010 AERA Symposium on STEM Learning in Out-of-School Settings, Denver, Colorado, May 3.



Issue Brief No. 45

November 2010

Afterschool: Key to Health and Wellness for Pre-teens and Teens

The Afterschool Alliance, in partnership with MetLife Foundation, is proud to present the third in a series of four issue briefs examining critical issues facing middle school youth and the vital role afterschool programs play in addressing these issues. These issue briefs feature: the multiple benefits of afterschool for middle school youth; STEM; health and wellness for pre-teens and teens; and pathways to higher education and careers. They examine just a few of the ways afterschool programs support middle school youth, families and communities.

With a growing number of school hours devoted to increased instructional time and physical education programs being scaled back in many schools, the afterschool hours are becoming increasingly crucial to ensuring the healthy development of our nation's youth. Additionally, with students spending the majority of their waking hours and consuming the majority of their meals out of school, afterschool and summer learning programs present a unique opportunity to promote healthful eating and living habits. Middle schoolers in particular, who are often fueled by their desire to find a place where they belong and are at risk of making decisions that negatively affect their overall health, can benefit greatly from the lessons on nutrition and the increased opportunities for physical activity that afterschool programs can provide. Middle school programs across the country offer youth a mix of academic and physical enrichment that promotes positive physical, emotional and social development. By offering sports programs, teaching children about healthy food choices, supplying mentors to steer teens and pre-teens away from drugs, smoking and alcohol, and displaying other innovative ways to promote healthy lifestyles among adolescents, afterschool programs are leading the way toward healthier lifestyles for America's middle schoolers.

There is Work to Be Done to Promote a Healthier Generation of Teens and Pre-Teens

There are innumerable health issues facing middle school students. The childhood obesity crisis continues to worsen in the U.S., with an estimated one in six children (16 percent) from ages 10 to 17 considered to be obese.ⁱ Type 2 diabetes, once known as "adult-onset diabetes", is now becoming more common among adolescents, especially in minority communities.ⁱⁱ Additionally, overweight children are more likely to be the target of taunting and teasing in school, a serious risk to mental health, leading to lower self-confidence and a higher risk of depression.ⁱⁱⁱ Middle school is also a time of increased independence, and with it comes the risks of poor decision-making, which can be reflected in poor food choices and in drug or alcohol use. In addition, there are many recent developments that have led to the increased health dangers to pre-teens and teens:

- Until recently, physical education classes in schools could be relied on to engage children in a half hour or more of daily physical exercise and/or health class. Yet with the advent

of the *No Child Left Behind Act*, an increased focus on testing has turned physical education into a luxury that many schools cannot afford. Similarly, recess has been reduced or eliminated in schools across the country in favor of more math and language arts learning time.^{iv}

- One study found that in 2006 only 7.9 percent of middle schools provided students daily physical education during the school year.^v
- Research shows that time spent engaged in outdoor activities correlates with increased fitness in children, yet children have turned to the TV remote, computer mouse and video game controller more often than outdoor recreation to occupy their down time.^{vi}
- According to the Centers for Disease Control, 61.5 percent of children do not participate in any organized physical activity outside of school hours.^{vii}
- The quality of children's diets has similarly been a detriment to their health, with fast food consumption tripling in the past 30 years,^{viii} children's daily food intake rising gradually over the past quarter-century,^{ix} and only 8 percent of vegetables consumed by children being dark green or orange. Instead, fried potatoes make up about 46 percent of total vegetable consumption^x.

The Future for Health and Wellness in Afterschool Looks Bright

Afterschool programs for middle schoolers that focus on positive physical, as well as academic, outcomes are an invaluable resource for alleviating the health crisis facing teens and pre-teens.

The afterschool time allows schools and community organizations to reinforce nutritious food choices and encourage involvement in physical fitness activities. With more than 1.4 million middle school children currently participating in afterschool programs and an astounding 3.1 million more middle schoolers interested in getting involved, afterschool has powerful potential to impact the fitness and nutrition of a large portion of our nation's middle school youth.^{xi} Afterschool programs can be a particularly valuable resource to middle schoolers' health because they:

Our vision has always been of children being fit, healthy and ready to learn. It wasn't enough to hope this would happen. We've had to work hard to become more intentional in everything we do. It has made a huge difference!
– **Normandie Nigh – Executive Director, A World Fit for Kids!**

- Serve children most at risk for being overweight, including minorities and those from lower socio-economic status families.
- Occur during a time of the day that many children would otherwise be sedentary and not likely to participate in physical activity.
- Provide meals and snacks that can serve as nutritious examples.
- Provide staff who understand children's needs and can promote healthy eating and active lifestyles.^{xii}
- Provide an opportunity for young people to interact with role models displaying healthy eating habits and leading healthy lifestyles.

Research shows that programs that utilize the afterschool space as a site for enjoying physical activity and learning about healthy lifestyles can improve student health outcomes.

- A study measuring the health and social benefits of afterschool programs found that controlling for baseline obesity, poverty status, and race and ethnicity, the prevalence of obesity was significantly lower for afterschool program participants (21 percent) compared to nonparticipants. (33 percent).^{xiii}
- A report by the U.S. Department of Education found that 10-16 year olds who have a relationship with a mentor are 46 percent less likely to start using drugs and 27 percent less likely to start drinking alcohol.^{xiv}
- Active adolescents are more likely than their sedentary peers to use contraception during sexual intercourse and delay the initiation of first sexual intercourse.^{xv}
- A recent evaluation of afterschool programs in California displayed that youth reached federally-recommended levels of moderate to vigorous physical activity levels for an average of 24.4 minutes daily when they participated in structured activities and received only 13 minutes through unstructured activities.^{xvi}
- A study reported in the Journal of Adolescence found that youth whose summer arrangements involved regular participation in organized activities showed significantly lower risk for obesity than other youth. This was most evident during early adolescence – the middle school years. Youth whose regular summer arrangement was primarily parent care without organized activity participation showed the greatest risk for obesity.^{xvii}

Despite Benefits, Barriers to Implementing Health and Wellness in Afterschool Are Prevalent

While afterschool programs offer countless health benefits to middle school youth, incorporating a focus on fitness and well-being presents some challenges to providers.

- Physical activity is often not perceived as an essential need, especially when limited time and resources force a comparison of physical activity to the academic needs of students.
- High staff turnover limits programs' ability to train staff to provide high-quality physical activity.
- Federal reimbursement rates for afterschool snacks do not adequately cover the cost of increasing the servings of fruits and vegetables and other nutrient-rich foods.
- There is inadequate funding for staffing, professional development and equipment.
- There is limited space available to support physical activity, as sports leagues typically rent out fields, limiting access by afterschool programs.
- Girls are typically not interested in traditional physical activity programming.^{xviii}
- For many programs, there is a lack of shared-use or joint-use agreements between schools and community-based organizations running programs, leaving much of the funding and resources that schools enjoy, such as equipment and access to kitchens or playing fields, untapped by afterschool partners.

We can help children improve their eating preferences and become more active, but we can't make a lasting difference without the support of their parents, our schools and our communities.
 – **Cathie Mostovoy – CEO, Woodcraft Rangers**

Solutions Exist to Overcome Barriers and Encourage Stronger, Healthier and Smarter Middle Schoolers after School

Programs across the country are implementing innovative strategies to include health and wellness education in afterschool offerings. Here are just a few examples of ways that afterschool programs can promote healthy living and better prepare a generation of middle schoolers.

Afterschool programs encourage youth to monitor their nutrition and physical activity habits on a continuous basis and encourage improvement. In addition, they can integrate interactive nutrition education and physical fitness learning through activities such as taste testing, planting vegetable gardens, analyzing food commercials, preparing healthy snacks, measuring fat content in typically consumed foods or visiting a local recreation facility.

*The **Youth Succeeding Under Pressure (YSUP)** program at the New Britain-Berlin YMCA in Connecticut is a leadership development program structured around both academic learning and social engagement for middle school students. Along with a focus on strengthening children’s motivation to learn and graduate from high school, the YSUP program promotes the importance of healthy living and seeks to fortify participants’ self-esteem and deepen their personal values. The YSUP program includes a host of activities geared toward promoting healthy lifestyles, such as ‘Media Smart,’ which educates students on how to eat healthy and avoid succumbing to the marketing of low-quality foods. The YMCA facility also offers youth access to a climbing center, pool, wellness center, basketball courts and racquetball courts to support physical fitness and stronger participation in wellness activities.*

Afterschool programs can involve the entire family to ensure that the nutrition and fitness lessons learned after school are implemented in the home.

*The **San Antonio Youth Centers (SAYC)**, consist of nine afterschool programs in Texas that utilize funding from the federal and state-supported Carol M. White Physical Education Program to implement a physical education and youth development curriculum. The centers seek to promote healthy lifestyles, improve academic achievement, and foster and develop*

Too many of our young people are adopting sedentary lifestyles and bad eating habits which will haunt them the rest of their lives. Our students are gaining a lifelong appreciation of physical fitness, an active lifestyle and healthy eating habits.

– Cynthia Le Monds – CEO, San Antonio Youth Centers

positive youth self-esteem. Middle schoolers at SAYC participate in at least 45 minutes of structured daily physical activities that are both fun and vigorous, including karate, swimming, cheerleading and rock-climbing. Additionally, SAYC educate youth about the dangers of smoking, alcohol and drugs to support healthy decision making. They also offer weekly family Boot Camp sessions to cultivate parental involvement and help ensure that healthy living extends into the home.

Afterschool programs increase partnerships between schools, local governments, community-based organizations, and local businesses to enhance physical activity offerings after school.

*Middle school participants at the **Ed Snider Youth Hockey Foundation (ESYHF)** in Philadelphia, Pennsylvania enjoy a host of positive youth development outcomes that stem from one basic hook: playing hockey. Developed by former Philadelphia Flyers and 76ers owner Ed Snider, ESYHF programs are targeted to youth from inner-city neighborhoods, who otherwise would not have an opportunity to participate in an afterschool program. In addition to on-the-ice physical development, the program also promotes increased school attendance rates, provides homework help and offers a Life Skills Curriculum which encourages healthy habits and smart choices.*

We look to use hockey as a hook to bring other things into their lives so they can grow up and become responsible citizens, and if we develop responsible hockey players - that's the whipped cream on the ice cream.
– **Jim Britt – Vice President, Ed Snider Youth Hockey Foundation**

Afterschool programs promote healthy eating by offering healthy meals and snacks – particularly through participation in the federal afterschool snack and supper programs.^{xix} They also combine physical development with academic and social gains that encourage overall health in participants, especially among students who would otherwise be uninterested in fitness activities.

*The main goal of the **School Health Interdisciplinary Program (SHIP)** in Gainesville, Florida is to combat childhood obesity through a combination of middle school-focused physical fitness, nutrition and science-and-math-related educational activities. In addition to teaching children about the water cycle and food pyramid, time is also dedicated to an array of active outdoor pursuits, such as endurance running, aerobics and energetic games that reinforce healthy eating habits. Utilizing local community-based organizations and undergraduate and graduate student volunteers from the University of Florida, the program also offers ninety minutes of weekly mentoring opportunities for students at two middle schools and a host of other beneficial health education activities.*

Conclusion

While it's clear that there are barriers to supporting healthy nutrition and physical activity in afterschool, there are many programs that have been able to overcome those barriers and are succeeding in helping our nation raise a healthier generation of middle school students. There is a wealth of resources for programs looking to provide health and wellness after school, including:

- The **Healthy Out of School Time (HOST) Coalition**, led by the National Institute on Out-of-School Time at Wellesley College, is currently working on recommendations for healthy eating and activity in afterschool programs. The organization has compiled a list of voluntary standards and guidelines, including those from several states, the National Child Care Information and Technical Assistance Center, and others, that are excellent resources for programs.
- The **Department of Health and Human Services' *Promoting Physical Activity and Healthy Nutrition in Afterschool Settings*** publication is a useful resource that includes strategies for enacting health and nutrition guidelines and standards.

- The *Quaker Chewy Get Active: Be Healthy Afterschool Toolkit*, developed by the **Afterschool Alliance and Quaker® Oats** offers creative, easy-to-implement ideas for incorporating health and wellness into afterschool programs, including lesson plans, activities and games in addition to a comprehensive set of health-related resources that programs can access.
- The **First Lady's *Let's Move*** campaign has recognized the value and importance of afterschool programs, and many of the recommendations put forward in the *White House Task Force on Childhood Obesity Report to the President* echo the current efforts and initiative of the afterschool field. The *Let's Move* website includes a variety of action steps that can be used by afterschool programs and families.
- The **Alliance for a Healthier Generation** has an excellent [page of tips](#), ideas and success stories aimed at before-school and afterschool providers that address both physical activity and nutrition and snacks.
- **Action for Healthy Kids** and the **National Football League** developed *ReCharge! Energizing After-School*, a fun-for-kids curriculum designed to teach students about good nutrition and engage them in physical activity. *ReCharge!* is a complete, easy-to-use kit with lesson plans, equipment ideas, information for families and more.

In addition, policies that encourage shared-use or joint-use agreements, widespread adoption of guidelines and standards and funding for staff training and equipment will help afterschool programs effectively promote a healthy childhood for all middle school students. With an established track record, afterschool and summer learning programs should not be underestimated as potential ‘game changers’ in promoting wellness among young people.

ⁱ Bethell, C., et al. (2010). National, state, and local disparities in childhood obesity. *Health Affairs*, 29(3): 347-356.

ⁱⁱ Institute of Medicine of the National Academies (2005). Preventing childhood obesity: Health in the balance. National Academy Press, Washington, DC.

ⁱⁱⁱ Eisenberg, M. E. et al. (2003). Association of weight-based teasing and emotional well-being among adolescents. *Archives of Pediatrics and Adolescent Medicine*, 157, 733-738.

^{iv} Fletcher, A. (2010). Changing lives, saving lives: A step-by-step guide to developing exemplary practices in healthy eating, physical activity and food security in afterschool programs. Healthy Behaviors Initiative. Retrieved from, <http://www.ccscenter.org/afterschool/Step-By-Step%20Guide>.

^v Burgeson, C.R. et. al. (2007). Physical education and physical activity: Results from the School Health Policies and Programs Study 2006. *Journal of School Health*: 77(8), 435-468.

^{vi} Sallis, J., et al. (2003). Environmental interventions for eating and physical activity: A randomized controlled trial in middle schools. *American Journal of Preventative Medicines*; 24(3).

^{vii} Centers for Disease Control and Prevention (2002). Physical activity levels among children aged 9-13 years. *Mortality and Morbidity Weekly Report*: 52(33), 785-788.

^{viii} Frazao, E. ed. (1999). America's eating habits: Changes and consequences. U.S. Department of Agriculture. Retrieved from, <http://www.ers.usda.gov/Publications/AIB750/>.

^{ix} The Afterschool Investments Project (2006). Promoting physical activity and healthy nutrition in afterschool settings: Strategies for program leaders and policy makers. U.S. Department of Health and Human Services.

^x Science Daily (2009). Inadequate fruit and vegetable consumption found amongst U.S. children. *Journal of the American Dietetic Association*. Retrieved from, <http://www.sciencedaily.com/releases/2009/03/090302183254.htm>

^{xi} Afterschool Alliance (2009). America After 3PM. Retrieved from, <http://www.afterschoolalliance.org/AA3PM.cfm>

^{xii} The Afterschool Investments Project (2006). Promoting physical activity and healthy nutrition in afterschool settings: Strategies for program leaders and policy makers. U.S. Department of Health and Human Services.

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- ^{xiii} Mahoney, J. L. & Heather, L. (2005). Afterschool program participation and the development of child obesity and peer acceptance. *Applied Developmental Science*: 9(4), 202-215.
- ^{xiv} Riley, R., Peterson, T., Kanter, A. Moreno, G., & Goode, W. (2000). Afterschool programs: Keeping kids safe and smart. U.S. Department of Education.
- ^{xv} Miller, K.E., Sabo, D.F., Farrell, M.P., Barnes, G.M., & Melnick, M.J. (1998). The Women's Sports Foundation report: Sport and teen pregnancy. Women's Sports Foundation.
- ^{xvi} CANFit, Partnership for Public Health/Public Health Institute, Samuels & Associates (2009). Promoting healthier afterschool environments: Opportunities and challenges. The California Endowment.
- ^{xvii} Mahoney, J. L. (2010). Adolescent summer care arrangements and risk for obesity the following school year. *Journal of Adolescence*.
- ^{xviii} CANFit (2009). Expanding opportunities for after school physical activity. Retrieved from, <http://canfit.org/pdf/CANFITExpandingASOpportunities.pdf>
- ^{xix} Fletcher, A. (2010). Changing lives, saving lives: A step-by-step guide to developing exemplary practices in healthy eating, physical activity and food security in afterschool programs. Healthy Behaviors Initiative. Retrieved from, <http://www.cscenter.org/afterschool/Step-By-Step%20Guide>.



Issue Brief No. 46

January 2011

Afterschool: Supporting Career and College Pathways for Middle School Age Youth

The Afterschool Alliance, in partnership with MetLife Foundation, is proud to present the fourth in a series of four Issue Briefs examining critical issues facing middle school youth and the vital role afterschool programs play in addressing these issues. These Issue Briefs explore: the multiple benefits of afterschool for middle school youth; science, technology, engineering and math (STEM); pathways to higher education and careers; and health and wellness for preteens and teens. They examine just a few of the ways afterschool programs support middle school youth, families and communities.

In February 2009, during an address to Congress, President Obama urged every American to pursue at least one year of postsecondary education, ascertaining that, “In a global economy where the most valuable skill you can sell is your knowledge, a good education is no longer just a pathway to opportunity – it is a prerequisite.”ⁱ Postsecondary opportunities, including college and trade schools, can open up numerous avenues to success for today’s youth. However, many youth are missing out on the chance to accrue additional knowledge, and without it, they may be left struggling to find work in an increasingly competitive job market. In light of recent economic struggles, a postsecondary degree has become more of a necessity for those looking to find a job that pays a sustainable wage. Society has recognized the importance of a college education. A 2010 PDK-Gallup poll found that 75 percent of Americans believe that a college education is an absolute necessity for success in today’s world.ⁱⁱ Americans understand that more education means greater readiness for the future, but thousands of students continue to drop out of school each day while job competition rises. It is therefore imperative that we convey the importance of higher education and career readiness to youth early on, so that they understand the importance of staying on the path to high school graduation and postsecondary success.

Higher Education and Better Job Prospects

There are numerous benefits that come with additional education after high school. Higher education can provide more economic flexibility, better job prospects and improve overall health. Studies have consistently shown that education level is directly proportional to higher salaries and improved quality of life:

- The unemployment rate for individuals with at least a bachelor’s degree is consistently about half the unemployment rate for high school graduates. In 2009, when approximately 10 percent of those with only a high school diploma were unemployed, less than 5 percent of those with at least a bachelor’s degree were without jobs.ⁱⁱⁱ
- In 2007, the median annual earnings of young adults with a bachelor’s degree were \$45,000, while the median earnings for those with an associate’s degree were \$35,000. Comparatively, those with only a high school education received just \$29,000 and those without a high school diploma received \$23,000.^{iv}
- Four year graduates earn approximately a million dollars more over their lifetime compared to those with only a high school diploma.^v

- Individuals with higher levels of education are more likely to be very satisfied with their jobs.^{vi}
- It has been estimated that by 2014, nearly three quarters of the highest growth industries will require some form of postsecondary education.^{vii}
- The higher a person’s level of education, the more likely they are to report being in good health, regardless of income.^{viii}

Participation in higher education is clearly connected to real world gains. It is important to make this connection for middle school students so they understand that the hard work they put in during class and after school can lead to real world rewards in the future.

The Dangers of Straying Off Path

Unfortunately, many students start off on the wrong path, leading to a chain of detrimental choices that put them at a disadvantage once they enter the job market. More than nine in ten parents believe that their child will attend college,^{ix} but there is a strong disconnect between reality and parent’s beliefs. Only 41 percent of 18 to 24 year olds were enrolled in college in 2009,^x and more than 7,000 U.S. students drop out of high school each day.^{xi} It has even been estimated that today’s youth may be the first generation less likely to receive a post-secondary degree than their parents.^{xii} According to the National Center for Public Policy and higher Education, for every 100 ninth graders:

- 68 graduate from high school on time;
- 40 immediately enroll in college; and
- 18 graduate from college on time^{xiii}

“This year has given me the power and knowledge I need to be able to concentrate and be a leader... and being a leader is an expectation I need for the school of my choice.”

Toni Glover, 7th Grade Participant in SquashSmarts

The statistics on poor postsecondary matriculation rates and their effect on student’s future job prospects are not encouraging. Forty-two percent of those with only high school diplomas have been rated as deficient in their overall preparation levels by employers (compared to just 9 percent of 4-year college graduates). Additionally, a strong majority of employers report that high school graduate workforce entrants are deficient in written communications, work ethic and critical thinking, all of which those with college diplomas scored significantly better on.^{xiv} The importance of college and postsecondary training cannot be over stated. It is imperative that middle school youth see their connection to real world success early on so that they stay on track to graduation, higher education and a fruitful life.

Middle School Pitfalls

Although high school dropout rates have declined since 1998, eight percent of 16- through 24-year-olds nationally dropped out of school in 2009, with an even greater proportion of African-American and Hispanic students failing to attain a high school diploma.^{xv} Even more alarming though is the fact that some students have been shown to fall off the track toward high school graduation and postsecondary opportunities as early as sixth grade. **Sixth graders who failed math or English/reading, attended school less than 80 percent of the time, or received an unsatisfactory behavior grade in a core course had only a 10% to 20% chance of graduating high school on time.**^{xvi} In a study of middle schoolers, less than 1 out of every 4 students with at least one of these “off-track indicators” graduated high school in five years or less.^{xvii} Although these numbers are disheartening, they display an

opportunity to intervene early and keep students on the path to graduation and careers. However, students need more rigorous instruction and support than schools alone can provide. Afterschool programs can provide the additional support to schools to ensure that middle schoolers improve achievement and become more productive students.

Afterschool: The Link to Higher Education and Career Readiness

Afterschool and summer learning programs have a proven track record of helping children avoid the pitfalls of poor academic achievement, poverty, truancy and insubordination, which can derail their futures before they begin:

- Students can realize their full potential with outside support.
 - Alumni of Citizen Schools’ 8th Grade Academy graduate on time from high school and enroll in 2- and 4-year colleges at approximately double the rate of their peers.^{xviii}
 - The Promising Afterschool Programs Study found that regular participation in high-quality afterschool programs is linked to significant gains in standardized test scores and work habits for middle school students.^{xix}
- Attendance is critical to keeping children on track.^{xx}
 - Ninth grade students who, while in middle school, participated in The After-School Corporation (TASC) funded afterschool programs had higher daily attendance and credit accumulation than matched nonparticipants.^{xxi}
- Afterschool programs can keep children engaged in learning and out of trouble.
 - Youth attending 23-40 or more days of Maryland’s After School Opportunity Fund Program showed positive gains on such measures as commitment to education and academic performance, and a reduction in delinquency and contact with the police.^{xxii}
 - One meta-analysis of afterschool programs found that they succeeded in improving youths’ feelings of self-confidence and self-esteem, school bonding and positive social behaviors, while also reducing problem behaviors, such as aggression, noncompliance and conduct problems.^{xxiii}
- Closing the achievement gap can boost graduation rates and postsecondary success.^{xxiv}
 - Researchers at Johns Hopkins University concluded that two-thirds of the achievement gap between lower- and higher-income youth results from unequal access to summer learning opportunities.^{xxv}
 - Citizen Schools reported significant improvements in achievement among high-risk students, including English learners and those with initially low standardized test scores.^{xxvi}

“To ensure that every child is a graduate, we need multiple pathways to connect rigorous academic standards to real-world learning experiences. Some of those pathways need to reach students when school is not in session. High quality programs after school, before school and during the summer make a real impact on a student’s ability to achieve.”

Tony Evers, Ph.D., Indiana State

Afterschool programs across the country are ensuring that middle school youth avoid the pitfalls on their way to high school graduation, so that they can maintain the vision of going onto higher education and eventually succeeding in a fulfilling career.

Middle School, Afterschool and the Skills to Succeed

In addition to postsecondary degrees, employers covet a new set of skills for the 21st Century worker, such as problem-solving, work/ internship experience and the ability to use technology. Afterschool can play a key role in supplying children with preparation for many different types of careers requiring these new skills. Programs that teach practical, real world knowledge can spur creativity and greater engagement in learning and exploration. When children make the connection between additional education and enjoyment, they will set goals and realize their potential as successful career-minded adults.

- The **Junior ACE Program** in Sacramento, CA teaches middle school students about green design and introduces them to careers in the architectural design and construction industries. Students take part in a variety of architecture and engineering classes after school on topics including alternative energy, green plumbing and green land use and design. The goal of Junior Ace is to engage children in the middle school years so that they can go on to participate in the ACE Mentoring high school program and later be prepared for careers in architecture, construction and engineering.

“Recently, a young man who had won a \$1,000 ACE scholarship told me he would never have gone to college if the scholarship hadn’t shown that ACE believed in him... It really demonstrated what a significant impact this program can have on young people’s lives.”

Denise Ramsey, ACE Mentor

Many afterschool programs have direct links with nearby colleges or universities which can be used as a resource to inspire youth by connecting them with role models and mentors already enrolled in college. Middle school students can grow from their relationships with young adult mentors who are already on their way to success, and can begin planning for postsecondary achievement.

- The **Lincoln Intermediate Unit Migrant Education Program** in Chambersburg, PA maintains a strong partnership with nearby Messiah College, where children from migrant farm working families, many of whom are English Language Learners with an interrupted education, are afforded the chance to connect with college mentors who have shared similar experiences. Students learn the importance of early postsecondary planning through overnights and afterschool activities at Messiah College. Mentors and students also discuss the enriching aspects of their culture and ethnicity and are given time to express themselves through art and other media platforms. Finally, the program emphasizes helping students cope with the transition from elementary school to middle school and the future transition from middle school to high school, all while continuing to prepare the students for postsecondary success.

Afterschool programs can also get middle schoolers interested in public interest issues and science. By developing a passion for promoting social justice, students understand the work and additional knowledge necessary to support issues they believe in.

- **Project PORTS** connects middle school children in Cumberland County, NJ with the local oyster population in the nearby Delaware Bay. Rutgers University created the community-based oyster habitat restoration and education program in order to expand educational opportunities and create a sustainable stewardship program, while also improving the oyster habitat. Project PORTS (Promoting Oyster Restoration Through Schools) promotes important scientific concepts,

environmental consciousness and stewardship values through hands-on inquiry-based lessons that integrate science learning with historical and social perspectives.

The afterschool space provides the opportunity to engage children in learning that they would have otherwise not have come into contact with during the regular school day. This freedom allows children to find success in an area other than the core curriculum subjects, instilling confidence that will carry on through school, postsecondary opportunities and into their future careers.

- **SquashSmarts** in Philadelphia, PA combines the sport of squash with academic tutoring and mentoring for underserved, urban youth in order to develop self-esteem through academic, athletic and personal achievement. In a community that offers little opportunity for youth to participate in extracurricular activities, SquashSmarts fills that gap by providing academic tutoring and squash instruction three days a week. Additionally, the program supports learning by recruiting volunteers for activities and one-on-one mentoring and working with schools and parents to tailor instruction to youth's specific needs. The innovative program seeks to form a team-like atmosphere where participants grow athletically, academically and personally, so that they develop into productive citizens and see the possibilities for future success.

Afterschool can also serve as a resource that youth can fall back on to guide them through the often-precarious adolescent years, so that they can become happy and healthy adults. Whether a middle school student needs help in a math class, wants to make friends or is looking to stay out of trouble, afterschool programs can help them blaze a path to higher education and career readiness, leaving distractions behind.

- **ClubGEN** in Austin, TX educates, inspires and mentors young girls to navigate through the ups and downs of adolescence and focus on a healthy track to adulthood. The afterschool program equips girls with the skills they need to confront the dangers of adolescence, such as eating disorders and juvenile crime, and utilizes mentors to increase critical thinking skills and academic performance to prepare middle school girls for college and careers. Girls are able to relate to high school volunteers, who have navigated similar experiences that they are now facing now, and understand that despite the obstacles on the way to adulthood, success can be attained.

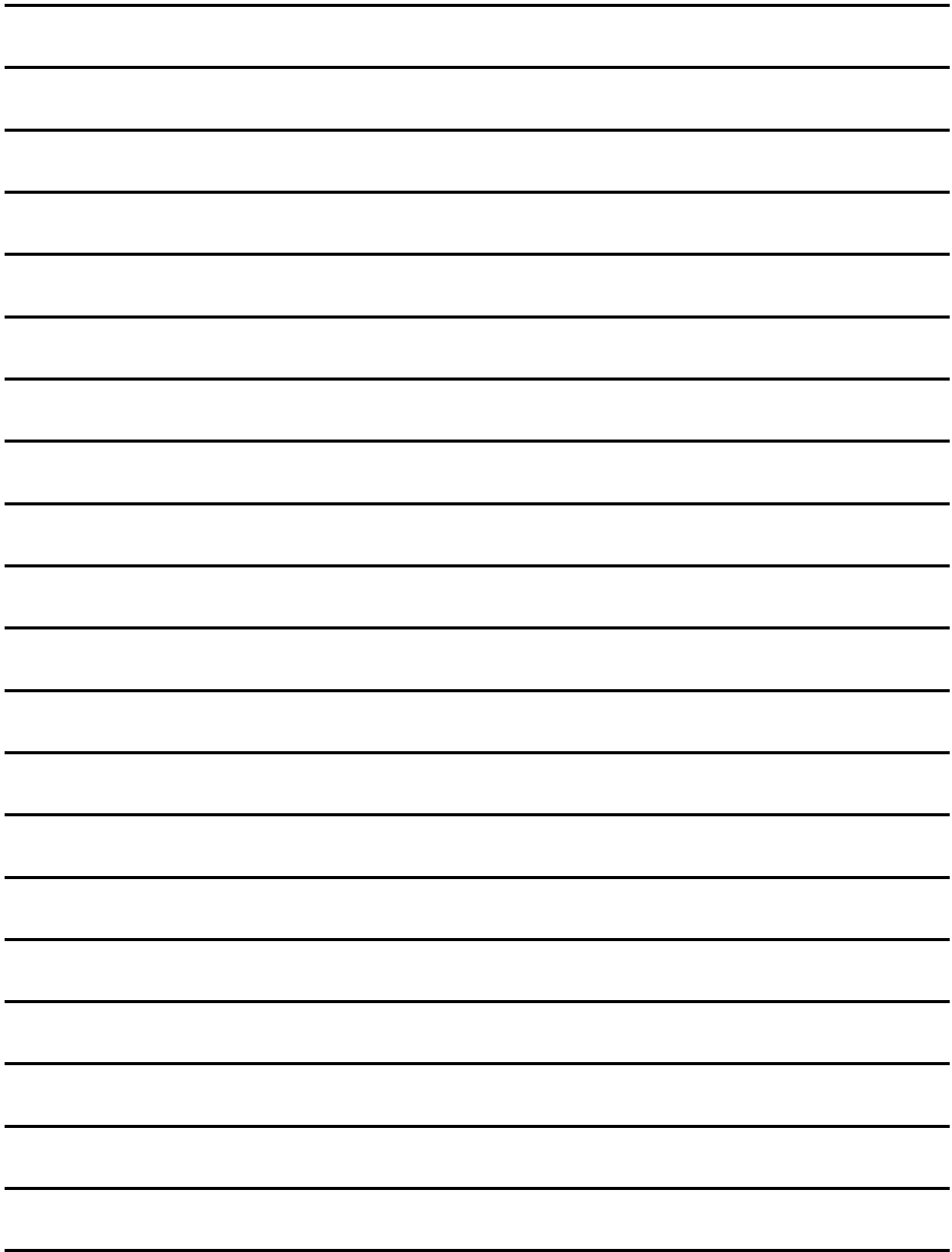
“GENaustin’s peer-lead model for their clubGEN program is two-fold. Both the middle school and high school girls can gain invaluable experience and skills that they may use to build a stronger future.”

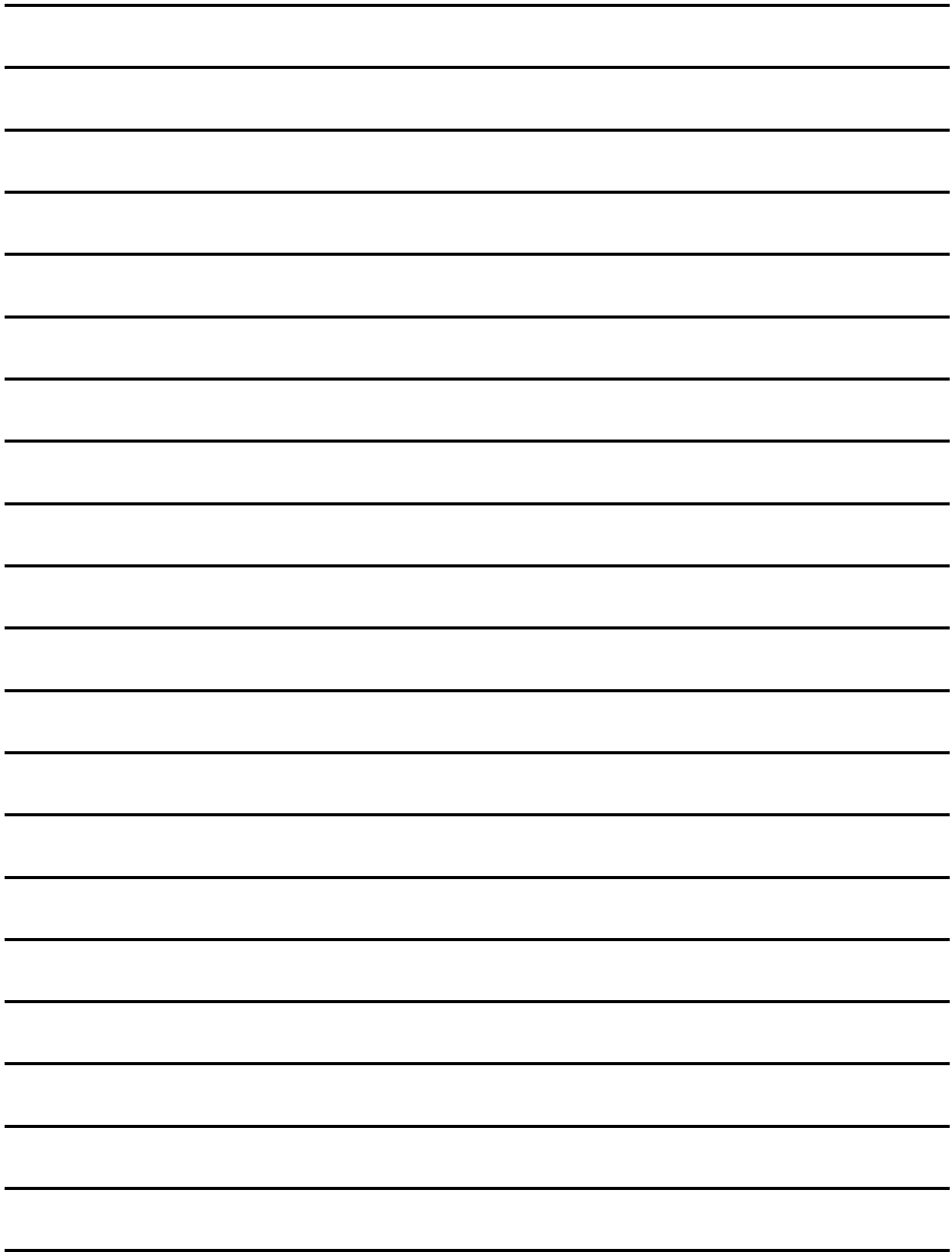
Christy Decker, clubGEN Program and Development Assistant

Conclusion

In order to ensure that middle school youth are on a path toward higher education and careers, an early introduction to the importance of continuing education past high school is necessary. The middle school years are a vital time to teach the importance of college and career readiness and the linkages to success in life. Afterschool programs offer a key opportunity to expose middle school students to higher education options and career paths and to teach them skills that can unlock doors to future career prospects. The afterschool hours offer time for apprenticeships, guest speakers and project-based activities that are not always available during a school day focused on a core curriculum. Middle school is a critical time to ensure that youth are on a clear path to a productive future, and afterschool is an essential support to help middle schoolers move ahead to success in higher education and careers.

- ⁱ Hooker, S. & Brand, B. (2009). *Success at Every Step: How 23 Programs Support Youth on the Path to College and Beyond*. Washington, D.C.: American Youth Policy Forum.
- ⁱⁱ Bushaw, W.J. & Lopez, S.J. (2010). *A Time for Change: The 42nd Annual Phi Delta Kappa/Gallup Poll of the Public's Attitudes Toward the Public Schools*. Phi Delta Kappa International.
- ⁱⁱⁱ Baum, S., Ma, J. & Payea, K. (2010). *Education Pays 2010: The Benefits of Higher Education for Individuals and Society*. College Board Advocacy & Policy Center.
- ^{iv} National Center for Education Statistics. (2007). *The Condition of Education 2007*. Washington, D.C.: US Government Printing Office. Retrieved from <http://nces.ed.gov>.
- ^v National Center for Education Statistics. (2009). *The Condition of Education 2009*. Washington, D.C.: US Government Printing Office. Retrieved from <http://nces.ed.gov>.
- ^{vi} Baum, S., Ma, J. & Payea, K. (2010). *Education Pays 2010: The Benefits of Higher Education for Individuals and Society*. College Board Advocacy & Policy Center.
- ^{vii} Osterman, P. (2008). *College for All? The Labor Market for College-Educated Workers*. Washington, D.C.: Center for American Progress.
- ^{viii} National Center for Education Statistics. (2004). *The Condition of Education 2004*. Washington, D.C.: US Government Printing Office. Retrieved from <http://nces.ed.gov>.
- ^{ix} Bushaw, W.J. & Lopez, S.J. (2010). *A Time for Change: The 42nd Annual Phi Delta Kappa/Gallup Poll of the Public's Attitudes Toward the Public Schools*. Phi Delta Kappa International.
- ^x Institute of Education Science, U.S. Department of Education. *Table 204*. Digest of Education Statistics. Retrieved from http://nces.ed.gov/programs/digest/d09/tables/dt09_204.asp.
- ^{xi} National Center for Education Statistics. (2009). *The Condition of Education 2009*. Washington, D.C.: US Government Printing Office. Retrieved from <http://nces.ed.gov>.
- ^{xii} OECD. (2006). *Education at a Glance, 2006*. Washington, D.C.: Author. Retrieved from <http://www.oecd.org/dataoecd/44/35/37376068.pdf>.
- ^{xiii} National Center for Policy and Higher Education, (2004). *Policy Alert: April 2004*. Retrieved from <http://www.highereducation.org/reports/pipeline/pipeline.pdf>.
- ^{xiv} Casner-Lotto, J., & Barrington, L. (2006). *Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce*. The Conference Board. Retrieved from http://www.conferenceboard.org/pdf_free/BED-06-Workforce.pdf.
- ^{xv} Aud, S., et. al. (2010). *The Condition of Education 2010*. National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, D.C. Retrieved from http://nces.ed.gov/programs/coe/2010/pdf/19_2010.pdf.
- ^{xvi} Balfanz, R. (2009). *Putting Middle Grades Students on the Graduation Path: A Policy and Practice Brief*. Everyone Graduates Center, Johns Hopkins University.
- ^{xvii} Ibid.
- ^{xviii} Citizen Schools. (2008). *The impact of High-Quality Afterschool Programs on Student Success*. Retrieved from <http://www.citizenschools.org/LB-National%20Stats-both%20sides.%2010.16.09%20v21.pdf>.
- ^{xix} Vandell, D., Reisner, E., & Pierce, K. (2007). *Outcomes linked to high-quality afterschool programs: Longitudinal findings from the study of promising afterschool programs*. Policy Studies Associates, Inc.
- ^{xx} Balfanz, R. (2009). *Putting Middle Grades Students on the Graduation Path: A Policy and Practice Brief*. Everyone Graduates Center, Johns Hopkins University.
- ^{xxi} Russel, C. A., Mielke, M. B., Miller, T. D., & Johnson, J. C. (2007). *After-School Programs and High School Success: Analysis of Post-Program Educational Patterns of Former Middle-Grades TASC Participants*. Policy Studies Associates, Inc.
- ^{xxii} Gottfredson, D.C., Soulé, D.A., & Cross, A. (2004). *A statewide evaluation of the Maryland After School Opportunity Fund Program*. Department of Criminology and Criminal Justice, University of Maryland.
- ^{xxiii} Durlak, J. A., & Weissberg, R. P. (2007). *The impact of after-school programs that promote personal and social skills*. CASEL. Retrieved from, <http://www.casel.org/downloads/ASP-Full.pdf>.
- ^{xxiv} Balfanz, R. (2009). *Putting Middle Grades Students on the Graduation Path: A Policy and Practice Brief*. Everyone Graduates Center, Johns Hopkins University.
- ^{xxv} Alexander, K. L., Entwisle, D. R., & Olson, L. (2007). Lasting Consequences of the Summer Learning Gap. *American Sociological Review*, 72.
- ^{xxvi} Fabiano, L., Pearson, L. M., & Williams, I. J. (2005). *Putting Students on a Pathway to Academic and Social Success: Phase III Findings of the Citizen Schools Evaluation*. Policy Studies Associates, Inc. Retrieved from <http://www.citizenschools.org/uploads/PSA%20CS%20Phase%20III%20Report.pdf>.





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