Worcester Area Middle School Students  
Summer 2013  
Science, Technology, and Engineering Program Guide  
(For information about possible scholarships, see last page)

Innovations in Bioengineering - WPI
Science is the key to bringing innovative solutions to great societal problems. Experience the excitement of working with an undergraduate research team on a bioengineering project that will improve people's health and well-being. You will also participate in creativity and innovation workshops led by faculty from the WPI School of Business.
Dates: June 24 - 28  
Time: 9 am-4 pm  
Cost: FREE, Sponsored by grant from NSF (includes lunches)  
Audience: girls, entering grades 8-9  
Application Deadline: April 30  
Essay and Letter of recommendation required  
http://www.wpi.edu/academics/k12/summer.html

Tower Hill Botanical Garden Junior Horticultural Volunteer
A volunteer leadership opportunity for teens interested in gardening, the outdoors, and working as mentors with children.
FREE  
Contact: The Education Coordinator 508-869-6111, x 120 or email: apilch@towerhillbg.org  
Web: www.towerhillbg.org

Mass Audubon - Painting With Your Digital Camera
Explore nature through the lens of a camera. Learn the basics of photography while learning about nature. We will hike and explore the sanctuary all the while seeking out interesting subjects for our photo show. Participants will need to bring their own digital camera for this week. Price includes materials fee.
Qualifying Students: Ages 8 & 9 yr. olds  
Dates: June 24 - 28, July 29 - Aug. 2  
Time: 9 am - 3:30 pm  
Cost: $210.00 Members / $310.00 Nonmembers  
Applications accepted for scholarship  
Contact: lcarlin@massaudubon.org  
Location: Broad Meadow Brook  
Web: http://www.massaudubon.org/Nature_Connection/Sanctuaries/Broad_Meadow/camp.php

EcoTarium Summer Discovery Camps
Fill your summer with science and nature investigations. explorations and adventures are on the agenda at the EcoTarium's popular Summer Discovery Camp for children ages 5-14, one of the longest-running summer day camps in the United States. Campers are divided into five age groups: Tadpoles (5-6), Eagle Eyes (7-8), Explorers (9-10), Investigators (11-12) and Counselors-in-Training (13-14). Each group explores the week's theme with age-appropriate activities and fun.
Time: 9 am - 4 pm  
Cost with Registration Before May 1: $265.00 Members / $300.00 Non-members  
Cost as of May 1: $285.00 Members / $320.00 Non-members  
Contact: 508-929-2703  
Web: http://ecotarium.org/activities/summercamp/

Prepared by the
EcoTarium Summer Discovery Camps

- **Animal Keeper: Care & Feeding**
  Dates: July 1 - July 5, 2013.
  Do you love caring for animals? Are you curious about what hedgehogs and turtles eat for dinner? Have you ever wondered what it's like to be a zookeeper? During this week-long session, you'll learn about the habitats and diets of animals in the wild and then gain hands-on experience by helping to prepare food and maintain the enclosures of live animals at the EcoTarium.

- **Gizmos and Gadgets Camp**
  Dates: July 8 - July 12, 2013
  July 29 - August 2, 2013
  Do you love to take things apart and see how they're made? From circuitry to rocketry, solar panels to simple robotics, this camp explores the variety of ways toys and tools work. You'll explore gizmos and gadgets with lots of hands-on engineering activities and then get up close and personal with the laws of physics as you travel down the zipline on our Tree Canopy Walkway.

- **Eco Adventure: Tracking & Foraging**
  Dates: July 15 - July 19
  Increase your comfort in the outdoors and your understanding of our ecosystem in this week packed with adventure! Put your video games aside and experience a little of what it’s like to live in the wilderness. Learn how to track animals, fish with a spear (mock only), make maps, forage for useful plants, create effective camouflage, "read" the landscape, hide and "sneak," and letter box for fun. Take a treetop safari on the Tree Canopy Walkway and explore how scientists live and do research at the top of the forest. Explorers (ages 9-10) and Investigators (ages 11-12) will also experience tree climbing with ropes and harnesses. On two days, Adventure Camp travels by school bus to the EcoTarium’s 320-acre field site in Rutland, Massachusetts for a full day of outdoor exploration.

- **Eco Adventure: Wilderness Living**
  Dates: July 22 - July 26
  Increase your comfort in the outdoors and build practical skills in this week packed with adventure! Create an outdoor home base, while learning camp making and shelter building skills. Help construct a primitive leaf debris hut, designed to keep hikers warm and dry at night if they don’t have a tent -- then try it out for size and warmth. With base camp established, craft primitive tools, learn how to make twine, and experiment with rope work and knots. Take a treetop safari on the Tree Canopy Walkway and explore how scientists live and do research at the top of the forest. Explorers (ages 9-10) and Investigators (ages 11-12) will also experience tree climbing with ropes and harnesses. On two days, Adventure Camp travels by school bus to the EcoTarium’s 320-acre field site in Rutland, Massachusetts for a full day of outdoor exploration.
**Toys & Training**

Dates: August 5 - August 9

A popsicle for an otter? Training time for a lizard? A play house for a boa constrictor? For most animals, living in captivity is much different from living out in the wild. Come find out what zookeepers do to make sure the critters in their care are happy and healthy. You’ll go behind the scenes to watch animal training by our wildlife staff and then build puzzles and treats to engage our resident animals.

**Counselor-in-training Program: Ages 13-14**

Available for each camp session. This camp program is designed for young teens interested in learning and teaching science and nature topics. Teens learn team-building activities and build their leadership skills, discovering firsthand what it’s like to be a camp counselor. Counselors-in-training (CITs) learn to apply teaching skills while participating in their own science and nature exploration. On Fridays, CITs enjoy a special field trip to a destination related to that week’s theme.

**Junior Counselor Programs for Older Teens**

Teens ages 15-16 with an interest in animals, astronomy, nature and science. Responsible individuals who can commit to a minimum of two weeks of camp and attend camp leadership training. Adventurous people who would like to have an important role in a camp community. Teens who are considering careers in science, nature studies, museum work or education. Earn community service hours for graduation, honor society requirements or college applications (this is a volunteer opportunity with weekly stipend). Learn more about science and nature. Develop your leadership abilities. Gain hands-on experience working with children. To apply for a Junior Counselor position, please download and complete the Junior Counselor Application. For more information, please contact Lisa at (508) 929-2756 or at llevine@ecotarium.org

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**Mass Academy - Intellect Quest**

A Summer Program for kids who need an Intellectual Challenge

Intellect Quest is a fun and challenging program designed to stimulate the inquisitive minds of bright, motivated students. Designed for students (grades 5-8) throughout the area, this experience requires cooperation, organization, and innovation.

Under the supervision of our summer director and alongside Mass Academy students, participants work in a hands-on environment within the disciplines of math, science, and technology.

**Dates:**
- July 8 -12, Division 1, must be entering grades 7 or 8 as of September 2013
- July 15-19, Division 2, must be entering grades 5 or 6 as of September 2013.

**Cost:** $325.00, a non-refundable deposit of $100.00 is required with a completed application.

Sessions are limited, based on first come, first served.

Camp is held at the Mass Academy of Math and Science, 85 Prescott Street, Worcester, MA.

Each session runs Monday - Friday from 9:00 am to 3:00 pm, with a morning drop off at 8:30 if needed.
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**WPI - Women in Science - Girls entering grades 5-7**
Have you ever wondered where a career in science can take you? Here’s your chance to explore exciting pathways in engineering, medicine, math, and science. Each day you’ll delve into a variety of topics through group work and small workshops presented by female role models, including WPI faculty, graduate students, and guest industry professionals.
**Dates:** July 15-July 19  
**Time:** 9 am-4 pm  
**Cost:** $365 (includes lunches)  
http://www.wpi.edu/academics/k12/summer.html

**Mass Audubon - Exploring**
Each day we will travel to a different Mass Audubon Sanctuary and spend time learning about the unique features that it has to offer. Team building, birding, animal identification, hiking and more will be included. This is a field trip-based
**Qualifying Students:** Ages 10 - 14  
**Dates:** August 5 - 9  
**Time:** 9 am - 4 pm  
**Cost:** $385.00 Members / $485.00 Nonmembers  
**Applications accepted for scholarship**  
Contact: lcarlin@massaudubon.org  
Web: http://www.massaudubon.org/Nature_Connection/Sanctuaries/Broad_Meadow/camp.php

**Mass Audubon - Teen Adventure Program**
Explore the wilds of Worcester County and beyond! This off-site adventure week features biking, canoeing on the Blackstone River and hiking Mt. Wachusett. We’ll finish the week by exploring and camping at Wildwood, Mass Audubon’s residential camp.
**Qualifying Students:** Ages 12 - 14  
**Dates:** July 8 - 12  
**Time:** 9 am - 5 pm  
**Cost:** $385.00 Members / $485.00 Nonmembers  
**Applications accepted for scholarship**  
Contact: lcarlin@massaudubon.org  
Web: http://www.massaudubon.org/Nature_Connection/Sanctuaries/Broad_Meadow/camp.php

**WPI - Junior Robotics Challenge**
Master the fundamentals of designing, building, and programming autonomous robots. Using the LEGO® MINDSTORMS® platform, you’ll work as part of a team to construct your own robot that will face off against others in a friendly competition on the final day.
**Dates:** July 8 - 12, Entering grades 4-6  
**Dates:** July 15 - 19, Entering grades 6-8  
**Time:** 9 am - 4 pm  
**Cost:** $475 (includes lunches)  
http://www.wpi.edu/academics/k12/summer.html

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**WPI – Launch**
This learning and research opportunity is for students entering freshman and sophomore years of high school. You’ll spend your days focusing on current problems and challenges in the fields of biology, chemistry/biochemistry, computer science, interactive media and game development, or robotics. Along with faculty, current WPI students, and classmates, you will use state-of-the-art experimental, analytical, and computer technology to complete projects and assemble your findings.

**Dates:** August 5 - 9  
**Time:** 9 am - 4 pm  
**Cost:** $495 (includes lunches)  
**Audience:** entering grades 9-10  
http://www.wpi.edu/academics/k12/summer.html

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**WPI – Physicspalooza**
Are you interested in the solar system, electricity and magnetism, or optical illusions? Are you ready to broaden your understanding as you stretch your imagination? WPI invites you to spend a week exploring the wonders of physics through dynamic demonstrations and hands-on activities.

**Dates:** July 29 - August 2  
**Time:** 9 am - 4 pm  
**Cost:** $565 (includes lunches)  
**Audience:** entering grades 6-8  
http://www.wpi.edu/academics/k12/summer.html

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**WPI – Intro to Computer-Aided Design**
Jump into the world of computer-aided design (CAD) to learn how engineers, designers, and architects craft computer models of real parts and systems. You will join in interactive discussions and demonstrations, visit the WPI machine shop and explore rapid prototyping, and even design and build a component of your own.

**Dates:** August 5 - 9  
**Time:** 9 am - 3 pm  
**Cost:** $565 (includes lunches)  
**Audience:** entering grades 9-12  
http://www.wpi.edu/academics/k12/summer.html

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**WPI – Engineering Technology**
Work in WPI’s state-of-the-art laboratories and machine shop as you learn about advanced automation techniques. You’ll work hands-on with various pieces of equipment, emphasizing safe manufacturing practices, to design and build components that will come together as a functional assembly by the end of the week.

**Dates:** August 5 - 9  
**Time:** 9 am - 4 pm  
**Cost:** $565 (includes lunches)  
**Audience:** entering grades 7-8  
http://www.wpi.edu/academics/k12/summer.html

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[Image: CENTRAL MA STEM NETWORK]
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WPI - Crime Scene Science
A crime has been committed, and it’s up to you to solve it! As part of the CSI team on the scene, you will collect evidence, interrogate witnesses, and process the evidence in real labs. The pressure is on as you spend the week exploring this crime from beginning to end. Can you figure out whodunit? And can you prove it?
Dates: Session 1: July 22 - 26
Dates: Session 2: July 29 - August 2
Time: 9 am - 4 pm
Cost: $565 (includes lunches)
Audience: entering grades 6-8
http://www.wpi.edu/academics/k12/summer.html

WPI - Music Technology
From the invention of Kevlar to the first solar-powered heating system for homes, inspirational women have combined your love of music and computers in this weeklong program focused on interactive music systems. Under the guidance of a music professor who is also a composer and classical guitarist, you will learn how to use computers to enhance the recording, composition, analysis, and performance of music!
Dates: July 22 - 26
Time: 9 am - 4 pm
Cost: $675 (includes lunch)
Audience: entering grades 6-8
http://www.wpi.edu/academics/k12/summer.html

WPI - Leadership Academy for Young Women
From the invention of Kevlar to the first solar-powered heating system for homes, inspirational women have changed our world. The Leadership Academy will help you to follow in their footsteps by developing your leadership, presentation, and project management skills through fun activities like mock political campaigns and performance art. Learn from strong, female leaders and engage in hands-on learning as you build confidence and creativity. A variety of evening events and activities ensure your experience showcases all that the WPI campus has to offer.
Dates: July 21 - 26
Cost: $895 (includes meals and housing)
Audience: girls, entering grades 8-10
Application Deadline: May 15*
http://www.wpi.edu/academics/k12/summer.html

WPI - Advanced Robotics
LEGO® MINDSTORMS® and beyond! Do you already know Robotics basics? Are you ready for a real challenge? Put your knowledge of LEGO® MINDSTORMS® to the test and take it to the next level as you spend a week with WPI robotics faculty and students exploring robotic construction, programming, and competition.
Dates: July 28 - August 2
Cost: $895 (includes meals and housing)
Audience: entering grades 6-8
Application Deadline: May 15*
http://www.wpi.edu/academics/k12/summer.html
Essay required

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**WPI - Horizons in Life Science - Girls entering grade 7**

Is a career in the life sciences on your horizon? It may be if you are interested in studying living organisms and translating your discoveries into products that will improve our health, environment, and society! Our faculty will guide you through hands-on laboratory workshops, visits with female scientists, and discussion about the history of women in science. Outside the classroom, you'll be treated to a variety of fun evening events that showcase the WPI experience.

**Dates:** July 21 – 26

**Cost:** $895 (includes meals and housing)

**Audience:** girls, entering grades 9-10

http://www.wpi.edu/academics/k12/summer.html

**WPI - Camp Reach - 2 week overnight camp - Girls entering grade 7**

Awarded the Presidential Award for Excellence in STEM Mentoring.

Camp Reach brings together a group of inquisitive girls the summer before their 7th-grade year, empowering them with two weeks of discovery and hands-on engineering to change the way the world works. Emphasizing the social context of engineering design—you will work in teams with a community "customer" to create a plan for solving a real problem. Camp Reach keeps the connection with participants through follow-up programs during the school year.

**Dates:** July 21 - August 2

**Cost:** $1,295 (includes meals and housing) - Financial Aid is available - to request consideration via email to summer@wpi.edu.

**Audience:** Girls, entering grade 7

**Application Deadline:** April 15*  
http://www.wpi.edu/academics/k12/summer.html

**WPI SPORTS CAMPS AND CLINICS**

Join us for our 36th year of Summer Sports Camps!

This summer WPI will offer sports camps for boys and girls ages 7-18 depending on the camp. Programs will be offered June - August and will feature basketball, baseball, rowing, and soccer. Come to WPI to learn new skills, enhance your athletic abilities, meet new friends and have fun!

You will work in small groups getting expert coaching from WPI's Youth Coaches.

**Dates depend on camp - Summer 2013:** June - August

**Cost:** depends on camp, see our full listing of Sports Camps.  
http://www.wpi.edu/academics/k12/summer.html

**SCHOLARSHIPS**

**MASS AUDUBON** - Scholarships are available on a needs based, limited and distributed on a first-come, first served basis. Call, e-mail or drop by to request an application form. 508-753-6087 x13 or bmbrookcamp@massaudubon.org.

**WPI** - As for scholarships, we do have some partial scholarships available. If a student is interested in a scholarship, he/she would need to request consideration via email to summer@wpi.edu.

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[Central MA STEM Network]