Have You Thought About Doing a Science Fair Project? Here’s How!

By Nora Siewiorek
Coordinator of Special Awards for PJAS Region 7

Did you especially enjoy a lab that you did in science class? Did you observe something, want to learn more about how it works and then form an experiment to see if you were correct? If you are a student in the 7th to 12th grade, then the next logical step would be to do a science fair project, and enter a local science fair called the Pennsylvania Junior Academy of Science (PJAS). It’s not as difficult as you might think!

What is PJAS?

PJAS is a statewide nonprofit organization of junior and senior high school students designed to stimulate and promote interest in science among its members through the development of research projects and investigations. The state of Pennsylvania is separated into 12 regions for PJAS. If you live in either Allegheny or Westmoreland county, then you are part of Region 7. The Region 7 competition is held at one of the local high schools in the greater Pittsburgh area. At the local Region 7 meet, about 1,000 middle and high school students participate. Students who live in counties other than Westmoreland and Allegheny can go to the website at http://www.pjasix.org/state/ to find out more about their local regional competition. Once you visit the website, look for “contact PJAS” and find your county’s region.

If your project receives a high enough score, you are eligible to participate in the state PJAS meet, which is held in mid-May. The last few years it has been held at the Pennsylvania State University, main campus in University Park.

PJAS is not a “traditional” science fair

PJAS is not the typical science fair format that usually comes to mind; students are not competing against each other. Each student is “scored” against a grading rubric. Students are divided into units, based on project category and grade level. There are typically about 10-15 students in each unit. Student participant gives a 10 minute oral presentation, with only the aid of overhead transparencies (you can’t bring your entire experimental setup!). It is great experience in practicing oral speaking skills! There are a two to four judges in each section who ask the presenter questions for up to five minutes. Judges are teachers and professionals from local industry and universities. After all the presentations, the judges score each project out of 25 points, and a score translates into a first, second or third “award.” Any student who receives a first award is eligible to attend the PJAS state meeting.

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C-MITES NEWS

C-MITES News is published by the Carnegie Mellon Institute for Talented Elementary and Secondary Students. C-MITES sponsors a talent search for 3rd-6th graders as well as summer and weekend programs for K-9th graders throughout Pennsylvania.

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The Student Page

Have you written a short story or poem you would like to share with other C-MITES students? Do you have a favorite puzzle or brain teaser you would like our readers to try to solve? Here's your chance! In each issue of the C-MITES NEWS, we will have a section called “The Student Page” that will be devoted exclusively to C-MITES students.

We are looking for original work by our students, including, but not limited to, poetry, short stories, mind benders, brain teasers or puzzles. To be considered for the next issue of the C-MITES NEWS, submissions must reach our office by October 1, 2009. Submissions are best sent in a Word document or in the body of an email. Emails of your work should be sent to Ray Budd at budd@andrew.cmu.edu.

Any work submitted is subject to the approval of the editor and must include contact information for the person submitting the work. We reserve the right to reject any submissions that are inappropriate for our readers.

Thank You for Your Support!

C-MITES would like to thank the following people and organizations for making donations to C-MITES:
- Grable Foundation
- The MacGinnitie-Flaviano Family
- Dr. Bernard N. Meisner
- The Pellegrini Family
- The Ritter Family
- Evan Stephenson

Thank you!

Thanks to the Summer Program Host Sites!

C-MITES would like to extend a sincere thanks to all of the following sites that served as Summer Program locations:
- Aquinas Academy, Greensburg
- The Campus School of Carlow University, Oakland
- Carnegie Mellon University, Oakland
- Copper Beech Elementary School, Abington
- Edgeworth Elementary School, Sewickley
- The Ellis School, Oakland
- Forest Hills High School, Sidman
- Grace Baptist Church, Monroeville
- Indian Valley Middle School, Harleysville
- Learning Enrichment Center, Warren
- Linntown Elementary School, Lewisburg
- Marshall Middle School, Wexford
- Seton La-Salle High School, Mt. Lebanon
- Trinity East Elementary School, Washington
- Wexford Elementary School, Wexford
- Winchester Thurston School, Oakland

We really appreciate the support!

Cyber Schools

Commonwealth Connections Academy is a virtual tuition-free, fully accredited public education program for students in kindergarten through 12th grade. Delivered directly into the home, the program provides a quality curriculum and exceptional state-certified teachers to families seeking a flexible but structured alternative.

To learn more about Commonwealth Connections Academy: http://www.connectionsacademy.com or call 800-481-6227.

The Pennsylvania Cyber Charter School is a public school with no tuition where students are taught from home through instruction provided via the internet and a computer. At PA Cyber all students are given a state-of-the-art laptop computer, an Internet connection, and textbooks to take real-time classes via the Internet with certified teachers, as well as lessons that are designed to move at the student's own pace.

For more information about the Pennsylvania Cyber Charter School, call 1-888-PACYBER or visit http://www.pacyber.org/.

C-MITES parents and students: We'd love to hear about your experiences with cyber schooling! Would you be interested in sharing your story with other C-MITES families through our newsletter? Please email us at cmites@cmu.edu!
I recently had the opportunity to speak with C-MITES program coordinator, Pam Piskurich, who manages the C-MITES Summer Program and the Carnegie Mellon Weekend Workshops. Pam was in an especially good mood because the Pittsburgh Penguins had just taken home the Stanley Cup.

ESR: When did you first become involved with the C-MITES Program?
PP: Before I came to C-MITES in July of 1997, I taught in the Fox Chapel School District. I majored in secondary math education at Duquesne University, because I really enjoy math and working with kids.

ESR: How has your teaching background influenced your work at C-MITES? What special skills do you bring to the job of program coordinator?
PP: As a teacher, I learned a lot about what my students liked and disliked in math class. As the program coordinator, I am able to incorporate those ideas into C-MITES classes. Kids like to experiment with math concepts. I think students pick up concepts faster and retain them longer when they are actually doing activities. They learn best by doing and, sometimes, making mistakes along the way. We apply this hands-on approach to all of our classes. That’s what makes C-MITES classes so challenging and fun.

I am a very organized person, and I am also good at multi-tasking. Those are important skills for this job, where I have multiple programs going on at the same time.

ESR: You have taught several C-MITES Weekend Workshop classes, including Robot Race Cars, Robotics Programming and Design, Robots are a Girl’s Best Friend and Math Models. Which class was your favorite and why?
PP: While I liked teaching all of them, I enjoyed Robotics Programming and Design the most, because the course is designed for older students, and those students never cease to amaze me with their thoughts and ideas!

ESR: You are a Girl’s Best Friend and Math Models. Which class was your favorite and why?
PP: While I liked teaching all of them, I enjoyed Robotics Programming and Design the most, because the course is designed for older students, and those students never cease to amaze me with their thoughts and ideas!

ESR: As you know, the C-MITES Summer Program is competitive, especially the robotics and computer science classes. This year, 105 students applied for 25 spots in the Programming Using Alice class at Carnegie Mellon. What advice do you have for families applying to the program?
PP: The most important piece of advice I have for parents is to take time to carefully read and complete the summer program application. Prospective students are rated by a selection committee, which looks over the teacher recommendation and C-MITES EXPLORE scores and then the committee carefully considers the material about school and extracurricular activities provided on the actual application. It is important to be specific and concise, listing the names of awards and activities. Well-rounded, active students receive higher scores!

Students who have previously participated in the summer program also receive a higher rating, so if a student does not receive her first choice, we encourage her to list several choices. By taking a class, she will have a better chance of getting into her first-choice class next year.

Sometimes I am disappointed by the lack of effort that went into completing an application, resulting in a lower ranking that prevents a straight-A student from getting into his or her first-choice class. Unlike the Weekend Workshops, the summer program is not first-come, first-served. The deadline for the summer program is a postmark deadline listed on the application, so please take the time to sit down with your child and fill out the application together to make sure pertinent information is not overlooked.

ESR: What do you think is unique about the C-MITES program?
PP: The kids look forward to seeing each other at camp, and it is fun to watch these relationships evolve over the years. These kids are stars at their individual schools but at C-MITES they have the rare opportunity to interact with other stars. They fit in, learn how to work together and form genuine friendships.

ESR: What is the most enjoyable part of your job?
PP: The kids! Whether I am teaching or working at the C-MITES registration table, I really enjoy talking with and listening to them all!

ESR: What activities do you enjoy when you are away from the office?
PP: I love being outdoors. Gardening, fishing and vacationing with family at our camp and at the beach are all activities I enjoy. During the winter months, I enjoy watching football and hockey and hanging out with friends. I also enjoy sudoku and crossword puzzles.

ESR: Where do you find such wonderful C-MITES teachers?
PP: I feel blessed to have such a wonderful teaching staff. They are excited about their subject matter and really enjoy sharing that excitement with the C-MITES students. Most of our instructors teach in local public and private schools.

ESR: Thanks for talking with me today, Pam. I am sure our C-MITES families have enjoyed the opportunity to learn more about you.
PP: You’re welcome, Elizabeth. Way to go Pens!
A Science Fair Project ...

Continued from page 1

The PJAS region 7 meeting is a day long event. There is a morning and an afternoon session, with an award ceremony after each. The morning session is mostly high school students, and the middle school students typically present in the afternoon session. At the awards ceremony the students’ names and award levels are announced by unit. Special awards are also presented during each award ceremony. Special awards are sponsored by local industry, professional societies and universities and are given to students whose projects are in certain research areas and that achieve a high score.

How do I enter?

Schools and individuals must register for PJAS. The cost of a school registration is $40. Two copies of the school registration form are due at the beginning of October. In the middle of November, student registration, abstract and protocols are due to the Region 7 director (mailed in). These forms can be found on the Region 7 website at http://pjasregion7.com. The student registration fee is $5 per student, and is paid by one check per school (no individual checks, please). Proof sheets, which list your project title, school, etc., are due in mid-December.

Since PJAS is an organization of volunteers, we are always in need of qualified judges and technicians. Because of this, each school must provide at least one judge for the regional meet. Either the project sponsor or a degreed scientist, who may be one of the student’s parents, must submit a judge’s registration form by the end of December. Technicians are typically other interested students who did not do a science project, but are interested in learning more about other students’ projects. Technicians operate timers to make sure all student presentations are less than the allocated 10 minutes. Each school must provide one technician for every eight participants, and the technician registration forms are due at the beginning of January. The first Saturday in February is always the date of the Region 7 meeting.

Learn more about how to do a science fair project

There are many resources on how to pick a science fair topic and complete a project. A quick internet search generates good websites, some of which are listed below. Your local library or bookstore will also have some books on these topics.

http://www.sciencebuddies.org/
http://faculty.washington.edu/chudler/fair.html

The PJAS region 7 website has more details about the competition, due dates, and a step by step how-to guide on completing a PJAS project: http://pjasregion7.com

Another Opportunity for Your Science Project

There is a second science fair in the region called the Pittsburgh Regional Science and Engineering Fair (PRSEF). PRSEF is a “traditional” science fair. Students prepare a display board with information about their projects, and have short discussions with the science fair judges who review their projects. In each category students compete for first, second and third place and honorable mention (for grades 6th-12th). For more information, please visit: www.scitechfestival.org/mainfs.asp. PRSEF is March 26-27, 2010.

Davidson Fellow Scholarships

Davidson Institute Seeks Extraordinary Achievers to Receive $50,000, $25,000, and $10,000 Scholarships

The Davidson Institute for Talent Development is offering high achieving young people across the country the opportunity to be named as 2009 Davidson Fellows, an honor accompanied by a $50,000, $25,000 or $10,000 scholarship in recognition of a significant piece of work in Science, Technology, Mathematics, Music, Literature, Philosophy or Outside the Box.

To be eligible, applicants must be under the age of 18 as of Oct. 1, 2010, and a U.S. citizen or permanent U.S. resident residing in the United States. There is no minimum age for eligibility. The deadline to apply is March 3, 2010. Applicants must submit an original piece of work recognized by experts in the field as significant and it must have the potential to make a positive contribution to society. The scholarship must be used at an accredited institute of learning. For more information on the Davidson Fellows scholarship, or to download an application, please visit www.DavidsonFellows.org.
C-MITES in the Summer

As C-MITES students return to their local schools this fall most of them can't wait to tell their friends all about their summer vacations. Some of them will have the C-MITES Summer Program experiences to share with their friends and teachers. The one- and two-week summer classes were offered throughout Pennsylvania for academically talented students. C-MITES courses offered students a hands-on approach to math, science, and the humanities.


There were 11 different classes on the CMU campus. For four weeks students were seen programming robots to follow lines, navigate through mazes and even follow the students around the classroom. The green engineers were busy developing designs to improve our environment while the Dollars and Sense class was shaping their financial futures! The science students were seen sifting through clay and dirt attempting to identify all the rocks and minerals they uncovered. Tessellations were found on display in the Informal Geometry class, while the Solar System Astronomy students searched through the telescope to locate the morning moon high above Flagstaff Hill. The Roaming Ancient Rome students donned their togas and designed shields and archways. The Programming Using Alice students in the Wean Hall computer cluster created outstanding computer games and stories!

There were 31 classes at 16 different sites during the program. Twenty-five were in Allegheny County and six were in other counties. In June there were 17 classes and in July there were 14 classes. Fifteen math classes, 15 science classes and 1 humanities class were offered and enjoyed by the 524 students who participated. Thanks to those students who shared a part of their summer in the C-MITES program and to the teachers who made it possible!

Teacher Feature

The teacher featured in this issue of the C-MITES Newsletter began her teaching with the program in the summer of 2005. Mrs. Patty Perine began as an assistant for several of our C-MITES classes. She helped in the Harry Potter's Science Adventure, Cooking with Math, Structures, and Informal Geometry classes. Now, four years later, Mrs. Perine has taught a variety of science courses and made them enjoyable for all of the students who participated!

The summer courses that Mrs. Perine has taught over the years include Human Anatomy 101, You Make Me Sick: Immunology, Human Body and Solve a Murder Mystery. In her Human Anatomy course students start an internship at a medical clinic, but before they start they must finish all the course work in the area of their specialty. They discover interesting facts about the skeletal, muscular, respiratory and circulatory systems. In the Immunology class they learn about viruses and bacteria and study the remarkable defenses the body has against illness. In the Solve a Murder Mystery class, CSI Perine has students become crime scene investigators. They act as detectives learning what it takes to become a forensics expert. Activities include fingerprinting, DNA analysis, hair identification and evidence collection. Their skills are put to the test of solving a “crime” that occurs in her classroom.

Students who have taken Patty’s courses have commented on how much they were able to learn and how fun it was learning! Teachers who have worked with Patty want to work with her again, because she is so wonderful!

Mrs. Perine is a teacher in the Pine–Richland School District, certified in elementary education with a masters in reading and has a certification in chiropractic technology. When she is not busy teaching during the school year and in the C-MITES summer programs she lives with her husband, Bob, and their 3 children, Abriella (1½ years old) and the twins Derek and Tyler. Patty is truly an outstanding C-MITES teacher, and we are very thankful (and lucky) to have her as an instructor in our program.

Save the Date:

PAGE Conference
Exploring New Worlds in Gifted Education
April 22 - 24, 2010
Mars, PA
Lovely Day
By Jessica Kang, a seventh-grade student in the Wilson School District

It’s a lovely day,
Because in the murky bay
The fish have three eyes.
The twelve foot monsters are flies.
What used to be
A clean and healthy
World is now gone.
All those years,
Just littering here and there.
Look what we’ve done,
And it’s just begun.
We’re lucky to even see living things
You see everything is going extinct.
Too late to change,
We can’t rearrange
What the earth has become.
I sent this letter from the future
Hoping this can all change.
Don’t sit at your computer,
Plant a tree or go green,
Because it’s a lovely day.

White
by Rachael Lombardo, a nine-year old student at Primos Elementary School

White is a robe
a book
a daisy petal

Absence is white just before
you turn out the light
on a dark, dark night

White is a whisper
a tinkle of a bell
on a day of a wedding
where a bride might be wearing a white wedding veil

White is a dress on the bride to be
a dazzling light on the ocean sea

Though I am young
I still always guess
White is the color of loveliness.

Jasmine Garden
by Christopher Lombardo, a thirteen-year old student at Drexel Hill Middle School

It was a hard life on the Great Plains, ten miles from Kansas City - cold winters, hot summers, and an unrelenting sun. The Darwin family had lived there over forty years. Grandma Tara, Mom, Dad, and the kids, Jesse, a fifteen-year-old with dark hair and similarly colored eyes, and Jasmine, the thirteen-year-old daughter. They were farmers by trade, using the earth to get what they needed. It seemed unbelievable that the earth would turn against them and wreak havoc on their very own family.

Jesse looked out the doorway of their little house to wave his parents good-bye as they left for Kansas City. After a moment, all he could see was the grass waving, all he could hear were the larks singing, all he felt was the gentle breeze as it curled in eddies around the house.

“Peaceful, isn’t it,” a voice said. Jesse turned to meet the bright blue eyes of his sister Jasmine. She flicked her long blond hair over her shoulder and laughed. “Come in Jesse. We have to clean out the fireplace, scrub the table, clean the stove, and wash the dishes.” She saw Jesse’s face get even gloomier with every chore. “Cheer up Sourface,” she said jokingly. “I was just kidding!” Jesse glared at her for a minute, laughed and went inside.

Jasmine crept around the corner of the house to her own little garden. She felt the cool petals of the ten white jasmine flowers planted there. Jasmine had bought the seeds cheaply in Kansas City over a year ago. She had tended the ten flowers lovingly and not one of them had started to wilt. Sometimes at night she would sleep among them and stare up at the stars, outlined clearly against the prairie sky.

The sun was setting, the moon rising, in the never-ending cycle of night and day. Jesse stared out of the skylight in his loft bedroom at the pale pockmarked orb of the moon. The night was perfect but for how long?

Jesse was awakened by a sinister, threatening rumble. He rolled over to gain a more comfortable spot and was knocked head over heels by a huge jolt. He realized that something was terribly wrong. He scrambled down the loft ladder. As soon as he got down, the very earth seemed to break apart. Jesse stumbled to the bedroom door, or what he thought was the bedroom door and opened it.

Jasmine saw Jesse open the door, and saw him basically disappear in the choking dust. She ran to help him and was enveloped in the dust. She felt the cloth of Jesse’s shirt and grabbed it tightly. Jesse heard a cracking sound, and then a splintering sound as the house imploded. After a minute the dust fell and Jasmine stared at the ruins of what, five minutes before, had been a creaky, rickety, but, nonetheless, stable house. That was not all that caught her attention. Amid the shattered timbers and the ruins of their rock chimney stood a tiny shoot of the last jasmine: the one with little specks of yellow amid the white. Jasmine slowly smiled through her tears. Time would indeed heal all.

Later, when their parents returned, they restored their home and grew crops in the earth, but the memory of the terrible earthquake remained in their minds. Jasmine also never forgot the hope she felt when she saw the tiny jasmine flower among the wreckage. It truly was, all in itself, a jasmine garden.
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Order your C-MITES apparel today!

Order your very own tie-dye C-MITES t-shirt, sweatshirt and/or backpack and be the envy of all your friends! Simply fill out the order form and return it to our office with your check made payable to “Carnegie Mellon University.”

* The C-MITES tie-dye t-shirt has the “C-MITES Carnegie Mellon” logo. Cost is $17.
* The C-MITES sweatshirts are forest green. They have a hood and zipper and feature the Carnegie Mellon C-MITES logo. Cost is $27.
* The C-MITES backpack is a black string backpack with a red and white C-MITES logo. Cost is $17.
* Proceeds from these sales go to the C-MITES scholarship fund.

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_____ adult size S     _____ adult size XL

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Dear Friend of C-MITES:

As you may know, C-MITES is funded by grants, gifts, and income received from course tuition. Although approximately 85% of our income is derived from tuition, we still depend on grants and gifts to pay for our ongoing office expenses and for scholarships.

If you would like to make a donation to C-MITES, please complete and return the form to the right. You may wish to ask your employer whether they would match your contribution. Any amount would be gratefully appreciated. Please indicate whether or not you would like your name published as a donor in the next issue of our newsletter. Your contribution is tax-deductible, and you will receive a letter from Carnegie Mellon University acknowledging your gift.

Thank you again for supporting C-MITES!

Sincerely,

Ann Lupkowski Shoplik               Pamela J. Piskurich
C-MITES Director                      Program Coordinator

Raymond T. Budd   Barbara J. Dunn
Web Designer   C-MITES Program Assistant

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Thank You!

“I just wanted to take a moment and thank you for helping to provide an opportunity for my daughter to participate in the C-MITES summer program. She had an exceptional learning experience, and a lot of fun. You provided scholarship funds to facilitate her enrollment, and my husband and I would like to say thank you. Without your assistance, the tuition for the class would have been very difficult for us. Thank you again.”

~ a C-MITES Parent