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14. ABSTRACT For the 2009-2010 reporting period, the Northeast Sustainable Energy Association (NESEA) maintained participation in two areas: teacher trainings and area coordination, and exceeded record participation levels at the Northeast Championship. Despite an extended waiting period for AEOP Bridge funding confirmation, NESEA was able to resume program activities in Spring 2010 and was fully prepared for the Northeast Championship which occurs annually in June. Through the aid of experienced Junior Solar Sprint Area and State Coordinators, NESEA					
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Report Title

JUNIOR SOLAR SPRINT: SECURING STUDENTS' ENTHUSIASM FOR SCIENCE AND ENGINEERING

ABSTRACT

For the 2009-2010 reporting period, the Northeast Sustainable Energy Association (NESEA) maintained participation in two areas: teacher trainings and area coordination, and exceeded record participation levels at the Northeast Championship. Despite an extended waiting period for AEOP Bridge funding confirmation, NESEA was able to resume program activities in Spring 2010 and was fully prepared for the Northeast Championship which occurs annually in June. Through the aid of experienced Junior Solar Sprint Area and State Coordinators, NESEA continues to lessen its carbon footprint while increasing teacher workshop offerings. Of the eight workshops performed during the grant period, coordinators led five. In 2011 we anticipate a sustained increase in coordinator-led workshops. In addition, coordinators continue to work together more and reach out to other organizations. They support a sense of program cohesiveness while maintaining their autonomy and programmatic creative license. Also, the Northeast Championship again experienced record numbers of participating teams despite a second year of rainy weather and need to race indoors. Overall, the program continues to be a success and is a testament to teachers' and students' continuing interest in the engineering process and applications of solar energy.

List of papers submitted or published that acknowledge ARO support during this reporting period. List the papers, including journal references, in the following categories:

(a) Papers published in peer-reviewed journals (N/A for none)

Number of Papers published in peer-reviewed journals: 0.00

(b) Papers published in non-peer-reviewed journals or in conference proceedings (N/A for none)

Number of Papers published in non peer-reviewed journals: 0.00

(c) Presentations

Number of Presentations: 0.00

Non Peer-Reviewed Conference Proceeding publications (other than abstracts):

Number of Non Peer-Reviewed Conference Proceeding publications (other than abstracts): 0

Peer-Reviewed Conference Proceeding publications (other than abstracts):

Number of Peer-Reviewed Conference Proceeding publications (other than abstracts): 0

(d) Manuscripts

Number of Manuscripts: 0.00

Patents Submitted

Patents Awarded

Graduate Students

<u>NAME</u>	<u>PERCENT SUPPORTED</u>
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FTE Equivalent:

Total Number:

Names of Post Doctorates

<u>NAME</u>	<u>PERCENT SUPPORTED</u>
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FTE Equivalent:

Total Number:

Names of Faculty Supported

<u>NAME</u>	<u>PERCENT SUPPORTED</u>
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FTE Equivalent:

Total Number:

Names of Under Graduate students supported

<u>NAME</u>	<u>PERCENT SUPPORTED</u>
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FTE Equivalent:

Total Number:

Student Metrics

This section only applies to graduating undergraduates supported by this agreement in this reporting period

The number of undergraduates funded by this agreement who graduated during this period: 0.00

The number of undergraduates funded by this agreement who graduated during this period with a degree in science, mathematics, engineering, or technology fields:..... 0.00

The number of undergraduates funded by your agreement who graduated during this period and will continue to pursue a graduate or Ph.D. degree in science, mathematics, engineering, or technology fields:..... 0.00

Number of graduating undergraduates who achieved a 3.5 GPA to 4.0 (4.0 max scale):..... 0.00

Number of graduating undergraduates funded by a DoD funded Center of Excellence grant for Education, Research and Engineering:..... 0.00

The number of undergraduates funded by your agreement who graduated during this period and intend to work for the Department of Defense 0.00

The number of undergraduates funded by your agreement who graduated during this period and will receive scholarships or fellowships for further studies in science, mathematics, engineering or technology fields: 0.00

Names of Personnel receiving masters degrees

<u>NAME</u>

Total Number:

Names of personnel receiving PhDs

<u>NAME</u>

Total Number:

Names of other research staff

<u>NAME</u>

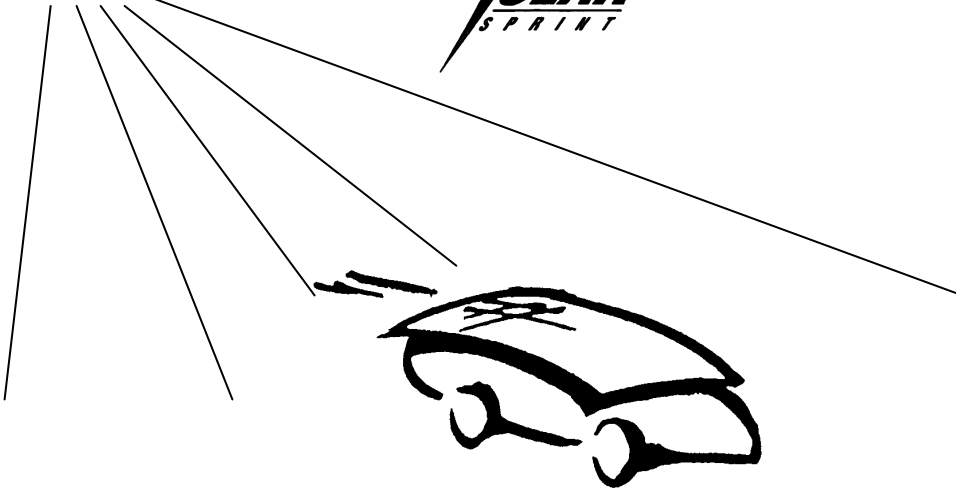
<u>PERCENT SUPPORTED</u>

FTE Equivalent:

Total Number:

Sub Contractors (DD882)

Inventions (DD882)



SECURING STUDENTS'
ENTHUSIASM FOR
SCIENCE AND ENGINEERING

Annual Report to the US Army

2009-2010

Junior Solar Sprint Annual Report To The United States Army

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- JSS Report in NESEA's Annual FY2010 Report
- NESEA K-12 Education ad appearing in fall 2010 Northeast Sun and Building Energy Conference Brochure.

The Northeast Sustainable Energy Association (NESEA) is a 501(C) 3 organization. Our mission is to advance the adoption of sustainable energy practices within the built environment.

Junior Solar Sprint

Securing Students'

Enthusiasm for Science and Engineering

A desire to learn science, engineering, and mathematics is what drives the Junior Solar Sprint program...



Reporting Period Summary

For the 2009-2010 reporting period, the Northeast Sustainable Energy Association (NESEA) maintained participation in two areas: teacher trainings and area coordination, and exceeded record participation levels at the Northeast Championship. Despite an extended waiting period for AEOP Bridge funding confirmation, NESEA was able to resume program activities in Spring 2010 and was fully prepared for the Northeast Championship which occurs annually in June. Through the aid of experienced Junior Solar Sprint Area and State Coordinators, NESEA continues to lessen its carbon footprint while increasing teacher workshop offerings. Of the eight workshops performed during the grant period, coordinators led five. In 2011 we anticipate a sustained increase in coordinator-led workshops. In addition, coordinators continue to work together more and reach out to other organizations. They support a sense of program cohesiveness while maintaining their autonomy and programmatic creative license. Also, the Northeast Championship again experienced record numbers of participating teams despite a second year of rainy weather and need to race indoors. Overall, the program continues to be a success and is a testament to teachers' and students' continuing interest in the engineering process and applications of solar energy.

Program Description

The Junior Solar Sprint Program (JSS) is recognized nationwide as an innovative way to inspire middle school students to study in the STEM fields (Science, Technology, Engineering, and Mathematics). Through a combination of hands-on experimentation and targeted instruction, student teams design and build model solar cars. In the process, students tackle issues in engineering and build knowledge and skills in several diverse areas, such as: scientific inquiry; properties of materials; photovoltaic cells; forces and motion; electricity and magnetism; ratios and geometry, and craftsmanship.



JSS works to promote a "readiness for responsibility". In teaching the engineering process, students learn not what to think, but how to creatively solve a challenge placed

before them; a key skill in a rapidly changing world. JSS not only teaches students science and technology skills and concepts, it also builds enthusiasm for science, engineering, and mathematics in students at an age when many children are forming their impressions of what they want to be. It is critical that the United States offers effective, high quality science and engineering programs and expands the number of US students interested in science and engineering in order to protect America's security in the 21st century—something that is an ongoing challenge for US schools. In recent years legislation has been passed to support STEM programs, but funding remains a constant issue. Science scores are relatively unchanged (data only available up to 2005) which can possibly be attributed to scholastic focus on Mathematics and English Language Arts, though trends are increasing towards STEM scholastic integration. Progress is occurring and national math scores are up from 2007 (The Nation's Report Card, 2009).



In agreement with the 2007 Education Commission of the States Report, the Junior Solar Sprint Program (JSS) strives to inspire critical thinking by identifying current scientific and technological issues using the challenge to build a model solar electric car as the catalyst for learning. It is NESEA's goal, that through engaging programs such as Junior Solar Sprint, students will enhance their proficiency in STEM fields to maximize their creativity "in a world increasingly dependent on technological advances for prosperity and security." (Kyle Zinth, Education Commission of the States, July 2008)

The Northeast Junior Solar Sprint program, funded by the US Army since 2001 and coordinated by the Northeast Sustainable Energy Association, offers the strongest regional Junior Solar Sprint program in the country. With leadership and financial support from the US Army, NESEA continues to reach out to students, through their teachers, mentors, and area coordinators. The different levels of competition, from school to area event to championship, foster sustained engagement and depth of learning. Teachers appreciate seeing the increased interest and aptitude in math, science, and technical understanding. Parents love the new confidence, teamwork, and perseverance in their children. And students love the challenge, the team spirit, and the fun to be had in such a creative process and collaborative experience.

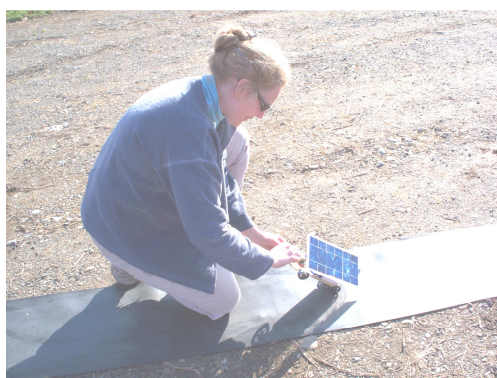
"The Junior Solar Sprint program allows students to explore scientific concepts and technologies that can help our country address issues of global climate change, reduce air and water pollution, and reduce our dependence on foreign sources of fuel. It our sincerest hope that programs such as JSS provide opportunities for these students to become informed and pro-active citizens, infused with a team-spirit approach to face the challenges that lie ahead with dignity and resourcefulness."

~ Arianna Alexandra Grindrod, NESEA Education Director

2009-2010 Program Accomplishments

Professional Development Workshops

NESEA led Junior Solar Sprint educator training workshops entitled; “Build a Model Solar Car: the Junior Solar Sprint Experience.” Eight workshops were carried out in NESEA’s service territory during this bridge funding period of January 2010 – September 2010. (See complete workshop list in the Appendix.) Though AEOP funding was not confirmed until April 2010, NESEA was able to perform workshop offerings, in part through our successful redistribution of workshop facilitators. Trained JSS Area and State Coordinators now perform teacher workshops in addition to NESEA staff. As mentioned in last year’s report, in prior years, only NESEA staff facilitated JSS workshops.



During the bridge grant period of the past seven months, 172 teachers and non-formal educators were trained. In the workshops, educators received instruction, tips for success, and curriculum materials to facilitate an effective program. They participated in hands-on building time so that they could truly understand the basics in how to build a car that would be sturdy, speedy, and drive straight. The basic JSS car kit continues to be provided through the generous donation of Pitsco, who has provided kit materials for teacher workshops for several years.

“The best part was the opportunity to work on the project. Using the provided materials to build the solar car simplified the explanation.”
- Science Teacher, New York, NY

NESEA continues to strive to expand the Junior Solar Sprint program into new geographic areas and new schools. For a second year in a row Maryland has shown growing interest in the program. Committed to nurturing the program in the areas that show the most interest, NESEA provided two workshops in Maryland, one coordinated by a joint effort between the Electric Vehicle Association of Greater D.C. and the Potomac Region Solar Energy Association and the second one by a these organizations and the Materials Engineer/Lethality Division Technical Coordinator Lethality Division/WMRD US Army Research Laboratory based in Aberdeen, MD.

“I liked experiencing a new way to teach engineering in a way that is applicable to my classes.” 6th Grade Science Teacher, Aberdeen, MD

In addition to working with classroom teachers, NESEA continues to collaborate with non-formal educators and graduate school students as Area Event Coordinators and

workshop hosts, such as Dartmouth's Thayer School of Engineering, the Harris Center for Conservation in New Hampshire, Buffalo Museum of Science in New York, Apeiron Institute for Sustainable Living on Rhode Island, and Solar One in New York City.

In conjunction with a service contract with the New York State Energy and Research Development Authority (NYSERDA), NESEA has been reaching out in New York State to the area Boards of Cooperative Educational Services (BOCES), the Science Teachers Association of New York State (STANYS) and the New York State Technology Education Association (NYSTEA) to cross promote NESEA programs in New York State, particularly Junior Solar Sprint and Solar Sails New York. Through all of these collaborations NESEA expands its ability to target other individuals, groups, and institutions beyond the schools to after-school enrichment clubs, home-school groups, scout troops, and camp programs.

Junior Solar Sprint, as NESEA runs it, has inspired me and thousands of teachers who read about it in our newsletter. We've started our own activities that teach engineering, science, and technology, alongside society, history, and civics, such as our newest "Green Dollhouse Challenge," our solar cooking classes and workshops, and our newest project, "Energy Haiku".
– Shawn Reeves, EnergyTeachers.org

By the Numbers, Attendees

During the 2009-2010 academic year, and into the 2010-2011 school year (September only), NESEA-led workshops were conducted in the following locations:

Science Leadership Academy, Philadelphia, PA, 2/20/10
Buffalo Museum of Science, Buffalo, NY, 3/3/10
Apeiron Center for Sustainable Living, Coventry, RI, 3/14/10
Potomac Overlook Regional Park, Arlington, VA, 3/20/10
Ried Middle School, Pittsfield, MA, 4/1/10
Solar One, NYC, NY, 8/18/10
Nassau BOCES Education Center, Garden City, NY, 8/19/10
Higher Education & Conference Center (HEAT), Aberdeen, MD, 9/14/10

A ninth workshop was scheduled for September 21st in Greenfield, MA but due to low timely pre-registration, the workshop has been rescheduled to October, pending AEOP funding confirmation.

Additionally, two area coordinators, Maine Energy Education Program and TransOptions, carried out JSS workshops without NESEA support. These workshops were facilitated in Spring 2010 and held at the following locations.

Owls Head Transportation Museum, Rockland, ME
Holbrook Middle School, Holden, ME
TransOptions, Cedar Knolls, NJ
TransOptions, Cedar Knolls, NJ

172 participants registered for workshops facilitated between March 2010 – September 2010 through NESEA or an area coordinator. 86 Institutions are listed below as being represented at NESEA-led training workshops.

<u>School</u>	<u>City</u>	<u>State</u>
Dupont Park	Washington	DC
Living Classrooms of the National Capital Region	Washington	DC
United States Army	Washington	DC
AmeriCorps Cape Cod & Barnstable County Resource Development	Barnstable	MA
Math and Science Academy	Greenfield	MA
AmeriCorps Cape Code & Barnstable County Resource Development	Pocasset	MA
Frontier Regional School District	South Deerfield	MA
Aberdeen High School-Science/Math Academy	Aberdeen	MD
Aberdeen Middle School	Aberdeen	MD
Hall's Cross Roads Elementary School	Aberdeen	MD
US Army Research Laboratory, Lethality Division/WMRD	Aberdeen	MD
Hickory Environmental Education Center	Accident	MD
APG LIONS Co-OP Homeschool	Bel Air	MD
Bel Air High School	Bel Air	MD
Southampton Middle School	Bel Air	MD
Bohemia Manor High School	Chesapeake City	MD
Arl S&E	Churchville	MD
4-H	Derwood	MD
Edgewood Middle School	Edgewood	MD
Elkton High School	Elkton	MD
Elkton Middle School	Elkton	MD
Havre de Grace Middle School	Havre de Grace	MD
Old Mill High School	Millersville	MD
Potomac Region Solar Energy Association (PRSEA)	Pasadena	MD
Deer Park Middle Magnet	Randallstown	MD
Walter Reed Army Institute of Research	Silver Spring	MD
Smith Middle School (currently at Hartford Community College)	Troy	MI
Newark Boys Chorus School	Newark	NJ
Baldwin Middle School	Baldwin	NY
P.S. 305 Dr. Peter Ray School	Brooklyn	NY
Buffalo Museum of Science	Buffalo	NY
Commack School District	Commack	NY
Holy Family Regional School	Commack	NY
Immaculate Conception School	East Aurora	NY
Creative Arts Program of East Meadow (CAPE)	East Meadow	NY
McVey Elementary School	East Meadow	NY
P.J. Gelinas Jr. High School	East Setauket	NY
Farmingdale High School	Farmingdale	NY

Nassau BOCES	Garden City	NY
Glen Cove High School	Glen Cove	NY
Great Neck North Middle School	Great Neck	NY
Woodmere Middle School	Hewlett	NY
Hauppauge Middle School	Hauppauge	NY
Islip High School	Islip	NY
Islip Middle School	Islip	NY
The Summit school	Jamaica Estates	NY
Jericho Middle School	Jericho	NY
St. Andrew's Country Day School	Kenmore	NY
William Cullen Bryant High School	Long Island	NY
Menands School	Menands	NY
Manhattan Center for Science and Mathematics	New York	NY
Project Extra Program (Housed at Oceanside School 6)	New York	NY
PS 126/Mat	New York	NY
Psi 26/Mat	New York	NY
Ocean Side School	Oceanside	NY
Roosevelt Children's Academy	Roosevelt	NY
Paul J. Gelinas Jr. High School	Setauket	NY
St. Clare School	Staten Island	NY
St. Thomas School	West Hempstead	NY
W.T. Clarke High School	Westbury	NY
Western Suffolk BOCES	WheatleyHeights	NY
Brooklyn Free School		NY
The Manhattan Free School		NY
Home School	Chester	PA
Schwenksville Elementary	Collegeville	PA
Danville Area Middle School	Danville	PA
Home School	King of Prussia	PA
Adaire School	Philadelphia	PA
General George A. McCall School	Philadelphia	PA
Girard College Middle School	Philadelphia	PA
Overbrook Educational Center	Philadelphia	PA
Penn Alexander	Philadelphia	PA
Science Leadership Academy	Philadelphia	PA
Springside School	Philadelphia	PA
St. Cyprian Catholic School	Philadelphia	PA
South Hills School of Business & Tech	State College	PA
Home School	Trooper	PA
St. Laurence	Upper Darby	PA
Home School	Wayne	PA
Stetson Middle School	West Chester	PA
HomeSchool	Coventry	RI

Scituate MS	N. Scituate	RI
Apeiron	Providence	RI
Westerly Middle School	Westerly	RI
Homeschool	Woonsocket	RI
Northern Virginia Gifted		VA

Note: Several home-schooling parents and other community mentors also participated at workshops that are not listed as they are not affiliated with a particular institution. Individuals who did not list a school or organization are also not included on this list. Additionally, not all participants from non-NESEA staff workshops are captured; e.g. 45 participants from the MEEP, TransOptions, and JSS Buffalo workshops are not included. If workshop registration was done through a conference and/or other organization, NESEA is not always able to obtain teacher information.

NESEA recognizes that the Junior Solar Sprint Program has a broader reach than we are able to capture in this document. Given an average of 23 students per classroom, with some very small after school clubs, and some middle school science specialists teaching around 100, NESEA estimates that educators trained with US Army support have engaged over 100,000 students since 2001 and will continue to engage more than 20,000 students annually as long as additional trained teachers are added to the total. What we can document are the schools represented at the area races and Northeast Championship and the institutions represented by the educators who attend NESEA-led training workshops. There are workshops that occur at teacher conferences within NESEA's district that are not presented by NESEA staff or area coordinators. There are also teachers who participate at a class level but to do participate beyond that. NESEA is unsure how to capture these numbers.

By the Numbers, Workshop Evaluations (see Appendix for tallies)

NESEA requests all facilitators to encourage participation in filling out the survey/evaluation at the conclusion of the workshop. This year, only NESEA staff, Apeiron, and ARL staff managed to collect workshop evaluations from workshop participants. Of the five workshops reporting, the majority of teachers reporting represent Science Teachers, with the strongest majority, followed by Elementary Teachers and then Technology Education Teachers. As would be expected for a program designed for middle school aged students, the majority of teachers attending workshops represent 5-8 grades. High school teachers were also represented as many utilize the program for high school mentorship of middle school students or run the program without participation in the formal event network. Intriguingly, elementary teachers also participated. Additional follow up would be needed to ascertain as to why K-4th grades would be interested in JSS.

Program implementation is, by far, facilitated through the formal classroom, the majority reporting work in public schools at 50%, followed by private schools at 16%.

Direct email, at 36% and word-of-mouth, at 28% continue to be listed as the best forms of contact. Frustratingly, though direct email appears to be the strongest form of contact, the NESEA Education Department E-newsletter, which now comes out quarterly, has a

relatively small percentage of openings. In the fall 2010 E-News, emailed on September 8, 2010, of the 3567 sent (2612 released), only 516 have been opened. There were 6 unique clicks to events where workshops are listed (an additional 13 to the Greenfield JSS workshop) and 2 to the USAEOP website. The prior e-news for summer 2010, released on June 1, had 380 opens of 2630 recipients (1780 released); 8 unique clicks to Junior Solar Sprint, 4 to USAEOP, and 3 to the JSS 2009 Championship video.

NESEA direct-mailed 7181 postcards (see sample in Appendix) requesting update of contact information to all educators within NESEA's database who live or work within NESEA's 10-state district. Upon next fiscal funding from AEOP, NESEA can mail out to educators outside the NESEA service territory in the outlying areas such as Maryland and District of Columbia; many of whom participate in Junior Solar Sprint.

It is our hope that educators, as directed, will email their information, thereby providing updated email contact information so that "Direct Email" can reach more teachers who are interested in NESEA programs.

With so much email traffic there is concern that this change to digital, though more environmentally sound and timely, may get lost as educators become more inundated with emails. Time will tell.

Demographics (see JSS Workshop Evaluation Summary in Appendix for more details)

According to the workshop evaluations, for teachers reporting, participating classes broke out in following demographics:

- Suburban 49%

- Rural 19%

- Urban 31%.

Ethnic/Race identification is as follows:

- Caucasian 32%

- African American/Black 20 %

- Hispanic or Latino 21%

- Asian or Pacific Islander 17%

- American Indian 8 %

- "Other" 3%

To ascertain representation of disadvantaged schools, NESEA asked, "What is the percentage of students receiving free or reduced lunches?" Many of the educators responding, stated "N/A" which may mean they did not know or they are non-formal educators and do not deal with lunch. Teachers reporting that their students do receive a free or reduced price lunch varied in percentages depending on the workshop site, though the total across the board is approximately 12%.

Teachers reported that their class sizes ranged mainly between 20- 29 students per class, up from last year's average of 15-25.

Effectiveness of Workshop (see JSS Workshop Evaluation Summary in Appendix for further details)

NESEA continues to strive to maintain an effective presentation and hands-on learning experience. The majority of teachers responding to the evaluation are very pleased with the program and the facilitation of the workshop. Their favorite part of the workshop was the “hands-on” component, including “building the car”. Of those reporting, most agreed that they were “comfortable” to “very comfortable” running JSS program for students and would probably facilitate the program in the same year they were taught. Though many left this question blank, suggestion for improvement included: “more time”, “add more cars to look at”, provide more opportunities to exchange ideas in and outside of workshop, include more materials and solar panels for all participants, and “explore environmental science aspects”.

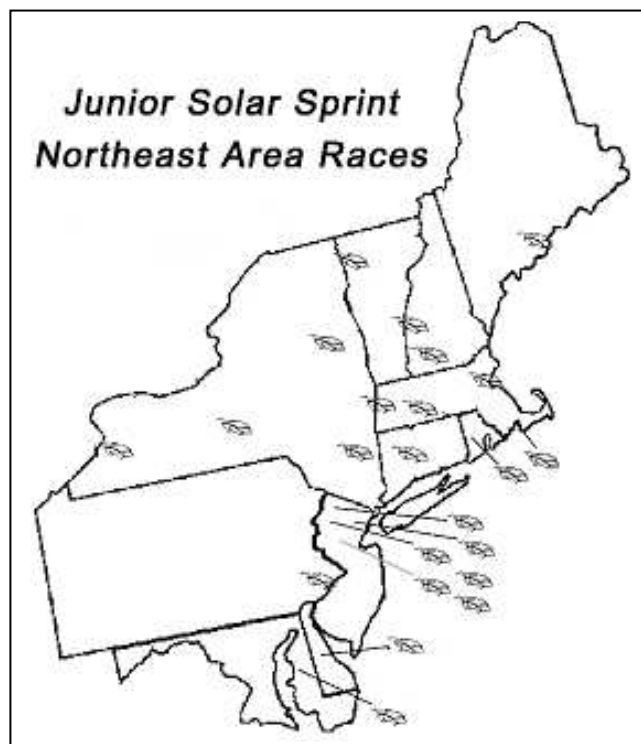
“I enjoyed the hands on experience. It gave me the opportunity to create a sample so that can work with my students.” Middle School Technology Education Teacher, Aberdeen, MD, September 2010

“The presenter was very patient and helpful throughout. It was a pleasure to be part of this experience [and I appreciated] her willingness to answer questions and address concerns. Made the time very productive.” Environmental Educator, NYC, August 2010

Area Events

This year NESEA worked with area coordinators organizing a total of 21 events; one New York Area Coordinator did not organize an event as there was only one school for Lower Hudson. However, we picked up a new area event in western Pennsylvania; the North Allegheny Regional. New York City and Long Island were not ready this year to organize an area race; however, Solar One and Nassau BOCES hope to in 2011. All participating coordinators were offered pass through funds of up to \$500.00 each from the US Army grant to support their races. NESEA provided invitations for top performing student teams from area events to come to the annual Northeast JSS Championship organized and run by NESEA. The number of invitations is based on a few factors:

- Number of teams expected at the



area-state event

- Distance from the Championship
- Balance of participants at the Championship
- Status of event – start-up or established

Across the Northeast, in addition to students that enter the area and state competitions, NESEA staff hear that some students participate at the classroom level but do not enter area competitions. NESEA and Area-State Coordinators recognize there are challenges to participation in the area races, such as transportation, outreach, and school coordination. It is NESEA's hope that as the Area-State coordinators continue to develop and strengthen, they will have the resources and understanding how to reach schools that are not participating at the area level race.

Support for Area Races

For the 2009-2010 grant period, NESEA provided a pass-through US Army subsidy to sixteen coordinators who requested funding support. Five coordinators did not request funding support.

US Army funds directly supported these Area Programs by enabling them to purchase:

- Motors, solar panels, and other parts for low income students or schools new to the program
- Commemorative T-shirts
- Trophies and other student awards
- Track materials
- Signs and other race-day resources
- Publicity

Area Races receiving funding this year:

Connecticut State

Delaware State

Greater D.C. Area (District of Columbia & Maryland)

Maine State

Berkshire Area, MA

Cape & Islands, MA

Central-West Area, MA

Keene-Monadnock, NH

Upper CT River Valley, NH

Bergen County, NJ

Inter-County Regional, NJ

Buffalo Area, NY

Southern Finger Lakes Region, NY

Philadelphia Area, PA

Rhode Island State

Northern Area, VT



Upper Connecticut River Valley Event



Maine's winning cars head to NE Championship

By the Numbers (See Area Races in Appendix for number of teams and students)

At the time of writing this report, 14 of the 21 coordinators submitted their numbers. NESEA would surmise that approximately the same number of schools participate year to year. Thus far we have a tally of 134 schools participating in area races though we know there is many more than that.

Beginning in 2009, NESEA began requesting more information from area coordinators. Though they are under no obligation to do so as they are autonomous institutions and individual teachers volunteering their time, and NESEA provides minimum funding (up to \$500 for their race) to them, coordinators do their best to meet NESEA's requests.

<u>Race</u>	<u>Schools 2010</u>	<u>Schools 2009</u>
Connecticut State		5
Connecticut, Fairfield County		3
Delaware State	10	9
Greater DC Area: District of Columbia/Maryland	5	3
Maine State	13	20
Massachusetts, Berkshire Area	7	7
Massachusetts, Cape & Islands Area		8
Massachusetts, Central/West Area	9	7
Massachusetts, Eastern Area		13
New Hampshire, Keene-Monadnock Area	6	5
New Hampshire, Upper Valley Area	6	?
New Jersey Bergen County Area		3
New Jersey Inter-County	42	48
New York, Buffalo Area:	7	10
New York, Lower Hudson:	0	1
New York, NYSTEA students:		3
New York, Southern Finger Lakes Area:	4	2
Pennsylvania, Philadelphia Area	17	17
Pennsylvania North Allegheny Regional		0
Rhode Island State	8	17
Vermont, Northern Area	1	2
TOTALS	2010: 134+	2009: 183

Publicity

As NESEA produces similar media exposure year after year, it was determined in 2009 to cut spending on a media contractor, saving NESEA \$4,500 to put towards other program expenses, \$2,000 of which went to Wave Multimedia in 2009 and 2010 to document the Northeast Championships. This is the last year that video documentation is included in the budget.

NESEA creates in-house press releases regarding the event and runs pre- and post-event press releases. Please see Appendix for sample press releases and news articles.

The Junior Solar Sprint promotional videos are posted on the NESEA website, the AEOP website and on YouTube. The 2010 Northeast Championship video is now available as well. A hard copy has been mailed to Program Specialist Ashley Wade at the U.S. Army Educational Outreach Program. Below are the links to all the promotional videos.

<http://www.nesea.org/k-12/juniorsolarsprint/modelsolarracecarteacherresources/>
http://www.usaeop.com/videos/JSS/Junior_Solar_Sprints_2009.html
<http://www.youtube.com/watch?v=egWYCtUZhTA>
<http://www.youtube.com/watch?v=ZhnRtfgqvBE>
<http://www.vimeo.com/14849218>

It would be our estimate, given the track record of past reports that the program's media coverage reached between six to nine million print readers throughout the northeast. (See sample post Championship press release in the Appendix.) Additionally, a large percentage of articles were published on-line and, although the number of readership impressions for on-line articles is not available, it would be significant given the number of individuals who read their news online.

At the request of AEOP, NESEA has gone digital, the bi-annual *JSS Northeast Regional News*; NESEA's print newsletter is no more. In its place is a quarterly e-newsletter which is currently emailed to over 3,000 teachers and non-formal educators who have expressed interest and/or participated in JSS training workshops and/or other NESEA education programs. With an e-newsletter it is our intention to more effectively cross promote NESEA education programs and programs of organizations we collaborate with. Sponsored programs list the sponsor or grantor with a link to their website. (See PDFs in Appendix of last two e-newsletters.)

Past JSS newsletters will continue to be posted as a PDF on the NESEA website.
<http://www.nesea.org/k-12/juniorsolarsprint/modelsolarracecarteacherresources/>

NESEA continues to maintain a web site on the Junior Solar Sprint Program (JSS) that provides logistical information on how to become involved in the Northeast JSS program, links to current educational resources available to teachers, and direct e-mail and web access to helpful individuals, organizations, and resources. "Sponsored by the U.S. Army Educational Outreach Program" appears on all publications as a way of demonstrating our gratitude for US Army's enduring support.

<http://www.nesea.org/k-12/juniorsolarsprint/>

A 2010 Photo gallery of the Northeast Championship is also available on the NESEA website. Not only did we have our own photographers, but David Kamm, Photographer for the U.S. Army Natick Soldier Research, Development and Engineering Center, also provided a link to photos he took.

<http://www.nesea.org/k-12/juniorsolarsprint/2010photogallery/>

Additional Program Support

Once again, NESEA received over \$4,000 of in-kind donations from Pitsco in the form of educational model solar car kits. These kits were given to JSS workshops participants as part of the hands-on solar car building activity.

Each year NESEA requests prize donations from nationally acclaimed educational kit manufacturers. This year Championship prize donations totaling \$1,163 were received from Fuel Cell Store, Kid Wind, and Solar Made (formerly Solar World). All three businesses have been annual supporters.



Teacher Training Workshop, RI

At the February 2010, Industry Day, U.S. Army officials described how the programs with AEOP were to change with a winning bid going to most effective and efficient consortium. It was also announced that programs of AEOP are directed to not seek additional funding outside of Army funding. It is unclear how this will ultimately affect Junior Solar Sprint in the Northeast. NESEA is hoping that these in-kind donations will still be acceptable as there is no additional budget for \$4,000 for JSS kits for teachers to practice with nor \$1,000 dedicated to Championship prizes. Additionally, to meet the new budget restrictions, funding to the area-state coordinators had to be cut for the next fiscal cycle. NESEA is not sure how they will fare without race stipends to help cover their costs. Several have told NESEA staff that they rely on that \$500.

JSS Northeast Championship

The Northeast JSS Championship continues to increase participation from 109 teams registered in 2008 to 125 registered teams in 2009 to capacity at 130 in 2010, Comprised of 334 students from across the northeastern states, from Maine to the District of Columbia, this event was by far the largest JSS Championship NESEA has experienced. In future years, to maintain quality and keep the event running smooth and timely, NESEA will limit the number of participating teams to no more 125. This number appears to work best in both outdoor and indoor scenarios. As more area races come on line, NESEA will renegotiate how many teams per area race can attend. NESEA always experiences a few on-site registrations, which we state is not an option during pre-registration. However, if student teams show up, we do have an unwritten policy not to turn them away.



2010 Northeast Championship Winners

This year's Championship (see Championship Handout in Appendix) was again held indoors at the High School of Commerce in Springfield, Massachusetts due to rain.

Despite the rain, 120 student teams arrived, excited and major “hiccup” we had never experienced before; the truck with almost all our supplies, except registration, was two hours late. To occupy the “troops”, luckily we had a new interactive exhibit this year that was on time; the Mobile Discovery Center courtesy of the National Science Center. Also making an appearance, was the Franklin County Technical School with their full scale model solar car, “Sunsetter”.



“Sunsetter”



CT State took home the Champions and several other trophies.

Teams raced on battery packs consisting of two AA-batteries, equivalent to a 3-volt solar panel. In addition to competing for awards in Speed, which uses a double elimination process to determine winners, student teams also competed for three design awards: Craftsmanship, Innovation, and Technical Merit. (Score sheet samples and other testing procedures have been made available in prior Annual Reports.) Additionally, awards were also given for Best Re-Use of Materials, for best re-use of recycled and recyclable materials in car construction; Kid's Choice, for most impressive car among competing students; Artistic Merit Award, for

the most clever and visually appealing solar car; and Team Spirit Award for best demonstration of collaborative effort among team members and team pride. (See list of this year's winners in Appendix.)

For a second year in a row, in addition to our other expert judges, a U.S. Army officer participated as a volunteer judge. Though invited in the past, NESEA suspects that Army participation is due greatly to efforts from AEOP in identifying and soliciting appropriate volunteers. CSM Earl Allen of the U.S. Army Natick Soldier Research, Development and Engineering Center served as a judge and presented awards at the winners' ceremony.



NESEA staff has received feedback again from Area-State Coordinators and from attending teachers and parents that some of their students, though invited and wanting to attend the Northeast Championship are unable to due to financial constraints. Local sponsorship is the best option in helping teams in need participate at the regional level.

In an effort for our funders to better understand what is involved in organizing this major event, NESEA has included the Junior Solar Sprint Championship Planner Outline in the Appendix of this report. The eleven page document provides an organized list of the numerous areas of planning and consideration that are involved before, during and after the Championship event to make it a success.

By the Numbers

334 students from Maine to Washington, D.C. registered to participate in the Northeast Championship. Here is a breakdown how many teams were registered from each state:

Connecticut: 13	Delaware: 0	Pennsylvania: 14
Maine: 17	Massachusetts: 25	Maryland: 0
New Hampshire: 6	New Jersey: 28	New York: 7
Rhode Island: 16	Vermont: 1	Washington, D.C.: 3

= 130 teams registered

130 teams registered for the 2010 Northeast Junior Solar Sprint Championship up from 125 teams registering in 2009, 74 schools were represented. 75 in 2009.

School Name	City	State
Amity Regional Middle School	Bethany	CT
Kelly Middle School	Norwich	CT
Sacred Heart School	New Britain	CT
Slade Middle School	New Britain	CT
Cloonan Middle School	Stamford	CT
Howard University Middle School	Washington	DC
Meadowbrook Elementary School	Weston	MA
John W. McCormack	Dorchester	MA
Chenery Middle School	Belmont	MA
Noble and Greenough School	Dedham	MA
Rising Tide Charter School	Plymouth	MA
Reid Middle School	Pittsfield	MA
Powder Mill Middle School	Southwick	MA
STEM Middle Academy	Springfield	MA
Herberg Middle School	Pittsfield	MA
Robert J Coelho Middle School	Attleboro	MA
Richmond Consolidated	Richmond	MA
Matacheese Middle School	W. Yarmouth	MA
Fitchburg Arts Academy	Fitchburg	MA
Middle School of the Kennebunks	Kennebunk	ME
Lincolnville Central School	Lincolnville	ME
Elm Street School	Mechanic Falls	ME
Noble Middle School	Berwick	ME
Marshwood Great Works	South Berwick	ME
Waterville Junior High	Waterville	ME
Connors-Emerson	Bar Harbor	ME
Auburn Middle School	Auburn	ME
Crossroads Academy	Lyme	NH
Lyme School	Lyme	NH
Jaffrey Rindge Middle School	Jaffrey	NH
South Meadow School	Peterborough	NH
South Meadow	Peterborough	NH
Kittatinny Regional High School	Newton	NJ
Lincoln Park Middle School	Lincoln Park	NJ
Harding Township School	New Vernon	NJ
Ridge and Valley Charter School	Blairstown	NJ

Green Hills School	Grendell	NJ
Mount Arlington Public School	Mount Arlington	NJ
Canfield Avenue Elementary	Minehill	NJ
St. Joseph School	Mendham	NJ
Randolph Middle School	Randolph	NJ
McKeown	Newton	NJ
Great Meadows Middle School	Great Meadows	NJ
Sussex Christian School	Sussex	NJ
Sussex Middle School	Sussex	NJ
Ridgedale Middle School	Florham	NJ
Belvidere	Belvidere	NJ
Briarcliff Middle School	Mountain Lakes	NJ
Halsted Middle School	Newton	NJ
Thomas Jefferson	Rockway	NJ
3 Stooges Club	Ringwood	NJ
Long Pond School	Newton	NJ
Canandaigua Middle School	CDGA	NY
Dewitt Middle School	Ithaca	NY
Boynton Middle School	Ithaca	NY
Mill Middle School	Williamsville	NY
Schwenksville Elementary	Schwenksville	PA
Skippack Elementary School	Collegeville	PA
Perkiomen Valley Middle School	Zieglerville	PA
West		
Schwenksville Elementary School	Schwenksville	PA
South Elementary School	Trappe	PA
Perkiomen Valley-South Elementary	Collegeville	PA
A. S. Jenks School	Philadelphia	PA
St. Catherine Of Siena	Horsham	PA
Evergreen Elementary School	Collegeville	PA
Montgomery School	Chester Springs	PA
Perkiomen Valley Middle School	Collegeville	PA
East		
Cedarbrook Middle School	Wyncote	PA
Westerly Middle School	Westerly	RI
Fessenden Homeschool	Coventry	RI
Homeschool	Pawtucket	RI
Scituate Middle School	N. Scituate	RI
The Compass School	Kingston	RI
Weathersfield School	Ascutney	VT

Demographics (see Championship Survey in Appendix)

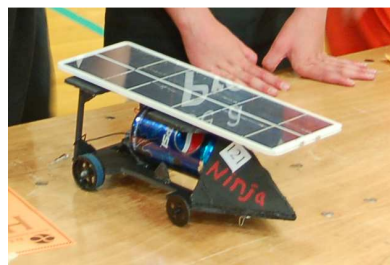
Included in NESEA's pre-registration packets to all event coordinators and available on site at the Championship were demographic surveys. Parents of the team members were asked to complete these surveys to assist NESEA in better understanding who participates in the Championship.

Of the 130 registered teams, only 41 team members or their parents responded to our demographic survey. Of those polled, participation shows to be split fairly equally among genders; the majority of students participating identify as White/Caucasian, with slightly more living in a suburban area over a rural area. Most families appear to range somewhere between the lower middle – middle class with regard to income with a majority not needing free or reduced fee lunches at school. Approximately 65% of those polled have parents who practice some form of science, engineering or advanced math in their line of work. Students stated they are more likely to consider energy efficiency and renewable energy options as a result of participating in this program.

In Conclusion

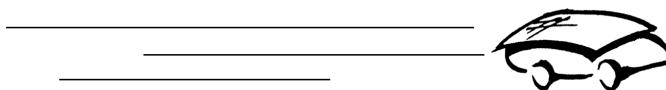
The Junior Solar Sprint Program (JSS) has experienced another successful year. NESEA continues to be able to facilitate more teacher training workshops with the help of area coordinators; participation at the Northeast Championship continues to grow each year, and our Area-State Coordinators have become more involved in the decisions of the program. Group camaraderie is solid.

An area of improvement for this program is to study and implement best practices in social media use. What will get teachers to open their emails regarding professional development opportunities, particularly as they relate to this program? What will bring more traffic to the NESEA K-12 education Facebook Page? Should there be a dedicated Northeast Junior Solar Sprint Facebook page? Who would the audience be?



JSS continues to inspire youth to engage in STEM activities which lead to a more knowledgeable, practiced generation who embraces the importance of the engineering process and innovative technologies. Meanwhile, while they are still kids in middle school, let us give them the time and space to dream and design and create “really cool” solar electric cars, for this is the fodder for supporting systems based on renewable energy and sustainable practices.

The Northeast Sustainable Energy Association and its Junior Solar Sprint Coordinators appreciate the support of the United States Army and we hope that in doing our part, through the Junior Solar Sprint Program, we can help to secure, through peaceful means, the national security of our energy independence.



Appendix

Junior Solar Sprint Workshops, 2010 Bridge Funding Period

Region	Date	Location	Partner/site	Host City	State	Facilitator	Attendees
1 Philadelphia	2/20/10	Science Leadership Academy	PSEA	Philadelphia	PA	Joe Bruno	20
2 Buffalo	3/3/10	Buffalo Museum of Science	JSS Buffalo	Buffalo	NY	Carl Berger & Charli	5
3 Rhode Island	3/13/10	Apeiron Center for Sustainable Living	Aperion Institute	Coventry	RI	Elisabeth Bux	25
4 Greater DC	3/20/10	Potomac Overlook Regional Park	PRSEA & EVA/DC	Arlington	VA	Charlie Garlow	8
5 Berkshire	4/1/10	Reid Middle School	CET	Pittsfield	MA	Susan Reyes	13
6 New York City	8/18/10	Solar One	Solar One	NYC	NY	Susan Reyes	11
7 Long Island	8/19/10	Nassau BOCES Education Center	Nassau BOCES	Garden City	NY	Susan Reyes	19
8 Maryland	9/14/10	Higher Education & Conference Center	ARL	Aberdeen	MD	Charlie Garlow	26
9 Western MA	9/21/10	NESEA*	NESEA	Greenfield	MA	Susan Reyes	5
							<u>132</u>

Workshops performed by Area-State Coordinators in addition to NESEA contract with AEOP

Region	Date	Location	Partner/site	Host City	State	Facilitator	Attendees
1 Maine	3/13/10	Owls Head Transportation Museum	MEEP	Rockland	ME	Peter Zack	10
2 Maine	5/3/10	Holbrook Middle School	MEEP	Holden	ME	Peter Zack	6
3 NJ		TransOptions	TransOptions	Cedar Knolls	NJ	Joseph Caravella	12
4 NJ		TransOptions	TransOptions	Cedar Knolls	NJ	Joseph Caravella	12
							<u>40</u>

TOTAL PARTICIPANTS 172

* Needed to be rescheduled to October due to low preregistration.

**“WHO DARES TO TEACH MUST
NEVER CEASE TO LEARN.”**

- JOHN COTTON DANA



NESEA K-12 EDUCATION

NORTHEAST SUSTAINABLE ENERGY ASSOCIATION



LEARN ABOUT TEACHING ENERGY
EFFICIENCY AND RENEWABLE
ENERGY THE EASY WAY - IN
YOUR IN-BOX!

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HAS GONE DIGITAL

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Outdoor and Environmental Education

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- [Select Programs](#)
- [Does Your District Participate?](#)
- [Professional Development & Consulting](#)
- [Location & Contact Info](#)
- [Meeting the NYS Standards](#)
- [Forms](#)
- [Resource Links](#)
- [News, Events Announcements](#)
- [Advisory Groups](#)
- [Comments from Teachers, Parents and Kids](#)
- [Resources for Participating Teachers](#)
- [Resources for Naturalists](#)
- [No Child Left Inside !](#)
- [Become a Fan on Facebook!](#)

Professional Development and Consulting

A variety of sessions are offered each season to teachers and administrators who like to "learn by doing." Among the opportunities typically offered are: using a compass, understanding GPS, exploring the geology of Long Island, climbing a 32-foot wall, canoeing in Lloyd Harbor, dredging off a fishing boat, and exploring one of the natural habitats of Long Island. These professional development sessions prepare teachers for future outdoor teaching experiences with their students, including the development of field/lab activities and pre/post trip lessons that meet academic goals and state standards.



You may sign up for the sessions offered or we can create a program at a convenient time and location to fit your goals and the size of your group. For "My Learning Plan" districts, please also check postings on that site.

Current offerings and scheduling for 2010-11 Register through My Learning Plan or [click here to download the registration forms](#)

- ; [Energy](#)
- ; [Using the Outdoors for Learning](#)
- ; [Marine Biology](#)
- ; [Earth Science](#)
- ; [Ecology/ Living Environment](#)
- ; [Teambuilding](#)
- ; [Fourth and Fifth Grade Test Prep](#)
- ; [JASON Project and Immersion Curricula Programs](#)

Get Energy Smart!

Come share in the hands-on learning and fun!

- **Energy Trilogy:**
Dates for 2010-11 to be announced soon (8:30 A. M. to 3 P.M. ; geared for Grades 6-8)
Energy – we all depend upon it every day, but what are the consequences for the global community's growing demand for it? This interactive workshop will highlight the Energy Trilogy – how *economics*, *efficiency* and the *environment* relate to the energy challenges before us. Don't miss this exciting opportunity to introduce your students to the impacts of their energy use and explore actions we can take to make a difference.

Special Note: this workshop to be held at the Town of Hempstead's Lido Beach facility and will include a tour of their new Hydrogen Energy Plant and solar and wind-powered clam nursery!

For Registration information , please check My Learning Plan

- **Junior Solar Sprint Model Solar Car Workshop**
August 19, 2010; 9:30 AM - 12:30 PM

Learn about Junior Solar Sprint, a highly engaging and successful program where kids design, build and compete with model solar electric cars. Your young engineers will deepen their understanding about solar energy, math, physical science and craftsmanship. Educators and mentors experienced



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The program code (CoSer) for all Outdoor Ed programs is 401.

thelearningnet



JASON in New York



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*Adobe Acrobat Reader is required for PDF files.



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[Login or Join.](#)



with the Junior Solar Sprint are welcome, too - come learn new tips and share!

Student teams can enter their cars in local design and race competitions with selected participants invited to an annual northeast championship run by the Northeast Sustainable Energy Association (NESEA). At the workshop you will receive:

- A basic model solar car kit with a battery pack (panel not included)
- JSS educator resources including lesson plans and area event information
- Professional development certificate showing hours attending workshop.
- Try your hand at building your own mini solar car.

NOTE: If 15+ people attend the workshop, a regulation size solar panel will be raffled off!

The Northeast Junior Solar Sprint program is funded by the Army Education Outreach Project AEOP.

For more information on the Junior Solar Sprint Program and to register for a workshop in your area visit

www.nesea.org/k-12/juniorsolarsprint Be sure to check out links to the Photo Galleries and download a registration form from the listing on the Educator's Calendar for Professional Development form, or register directly to sreyes@nesea.org, providing your full name, street address with zip code, title, school or organization, home phone, cell phone and email. You should receive confirmation and directions by email. Registration is required and a wait list will be created if the workshop fills.

NOTE: this workshop has been posted on My Learning Plan BUT you must also register through NESEA as well

[Top of page](#)

Using the Outdoors for Learning



Growing Up Wild: The newest curriculum from Project Wild for young children: Dates TBA

Project Wild Aquatic Dates TBA

[Top of page](#)

Marine Biology:

- **Ever Changing Estuaries - October 8, 2010:** This workshop includes instruction in basic canoe safety and technique followed by an exploration of Lloyd Harbor from Caumsett State Historic Park. We will learn standard water sampling techniques, collect and identify common organisms and take a closer look at the wonderful world of plankton. **Cost: \$85**



- **Long Islands Dynamic Barrier Beaches at Jones Beach – October 19, 2010:** This workshop will be a comparative beach study of the bay and ocean ecosystems. Participants will experience hands on activities and develop an understanding of these important habitats. The morning session will begin at the Boat Basin near the Coast Guard Station. Participants need to bring a bag lunch. **Cost: \$85**



- **Oceanography Concepts and Classroom Lab Activities- February 9, 2011:** The workshop will begin with a presentation to review basic concepts in oceanography. Teachers will also experience hands-on labs to demonstrate temperature's affect on water density, salinity, erosion of rocks, shore-lines, shells, deposition of eroded materials and mapping the sea floor and tidal rise and fall. The program is held at our Caumsett Environmental Center. **Cost: \$85**

Junior Solar Sprint Educator Workshops Evaluation Summary 2010

1. How did you hear of this workshop?	Reporting	% of Toal Reporting
Direct Email	27	36%
Forwarded Email	1	1%
Newspaper	1	1%
School Newsletter	4	5%
NESEA Website	9	12%
Word-of-mouth	21	28%
Other	12	16%
	75	

2A. Description that best describes you		
Science Teacher (M.S., H.S., College)	26	35%
Tech. Ed Teacher	9	12%
Elementary Teacher	14	19%
Administrator	1	1%
Environmental Educator	6	8%
Parent	6	8%
Other (Scout leader, Etc)	4	5%
Other: Elem. Sch. Teach. in training	8	11%
Masters Student ED-SEE	0	0%
	74	

2B. Description of the context you plan to impliment JSS		
Public School	41	50%
Charter School	2	2%
Private School	13	16%
Youth Organization	2	2%
Environmental Ed Center or Museum	4	5%
Home School	8	10%
Other	1	1%
Other: Teacher Ed. Program (1)	0	0%
Other: STEP	0	0%
Parochial School	0	0%
After school program	11	13%
	82	

3. How you would best describe your educational institution/site?		
Rural	13	19%
Suburban	33	49%
Urban	21	31%
	67	

4. Please list the approximate percentage of ethnicities represented in your class	1-15%	20-25%	30-39%	40-49%	50-59%	60-69%	70-79%	80-89%	90-100%	TOTAL %
White/Caucasian	9%	3%	3%	10%	3%	5%	10%	16%	40%	32%
African American/Black	75%	8%	19%	6%	11%	0%	0%	0%	8%	20%
Hispanic or latino	67%	13%	10%	0%	5%	5%	0%	0%	0%	21%
Asian or Pacific Islander	84%	16%	0%	0%	0%	0%	0%	0%	0%	17%
American Indian	14%	0%	0%	0%	0%	0%	0%	0%	0%	8%
Other	5%	0%	0%	0%	0%	0%	0%	0%	0%	3%

5. Percentage of free or reduced lunches your students receive, if aplicable?	1-15%	20-25%	30-39%	40-49%	50-59%	60-69%	70-79%	80-89%	90-100%	TOTAL %
	18	5	3	7	1	2	4	1	7	12%

Of the 75 repoding 27 did not answer this question

6. What grade(s) do you work with/teach	
K	10
1	11
2	11
3	11
4	15
5	19
6	34
7	30
8	32
9	11
10	15
11	15
12	14
College	2
All	2

Junior Solar Sprint Workshop Evaluations
Tabulations on Totals for 2009 - 2010

7. What is your Class Size or average class size this year

1-9	4	6%
10-19	18	27%
20-29	40	60%
30-39	5	7%
40+	0	0%
	<u>67</u>	

8a. What subjects do you teach?

All	16
Science	30
Technology	13
Engineering	8
Math	6
Environmental Studies	8
Other:	3
Did not respond:	5

9. Please check the topics you would like to learn more about to teach youth

General Energy Education	22	7%
Solar Energy	43	13%
Wind Power	38	11%
Hydropower	26	8%
Hydrogen Fuel / Fuel Cells	23	7%
Alternative Fuels	26	8%
Problem Solving Energy Issues	16	5%
Global Warming	17	5%
Energy Conservation	22	7%
Energy Efficient Appliances	20	6%
Energy Efficient Cars	17	5%
Energy Efficient Buildings	21	6%
Changing Behavior to Conserve Energy	23	7%
All	<u>20</u>	6%
	<u>334</u>	

10. How well did the "Sprint" workshop enable you to help students build a car?

Poorly = 1	0	0%
2	0	0%
3	7	11%
4	32	48%
Very Well = 5	<u>27</u>	41%
	<u>66</u>	

11. How comfortable are you now in running a "Sprint" education project at your school?

Uncomfortable = 1	0	0%
2	2	3%
3	25	37%
4	26	38%
Very Comfortable = 5	<u>15</u>	22%
	<u>68</u>	

12. To what extent do you think this project would help you meet state education standards?

Poorly = 1	0	0%
2	0	0%
3	0	0%
4	23	43%
Very Well = 5	<u>30</u>	57%
	<u>53</u>	

13a. Please rate the presenter on how well he or she: Communicated clearly

Poorly = 1	0	0%
2	0	0%
3	0	0%
4	12	18%
Very Well = 5	<u>54</u>	82%
	<u>66</u>	

13b. Please rate the presenter on how well he or she: was prepared & organized

Poorly = 1	0	0%
2	0	0%
3	0	0%
4	11	18%
Very Well = 5	<u>51</u>	82%
	<u>62</u>	

13c. Please rate the presenter on how well he or she: was knowledgeable about the subject

Poorly = 1	0	0%
2	0	0%
3	0	0%
4	12	18%
Very Well = 5	<u>54</u>	82%
	<u>66</u>	

13d. Please rate the presenter on how well he or she: gave an effective presentation

Poorly = 1	0	0%
2	0	0%
3	0	0%
4	11	18%
Very Well = 5	<u>51</u>	82%
	<u>62</u>	

Junior Solar Sprint Workshop Evaluations
Tabulations on Totals for 2009 - 2010

14. What did you like best about the workshop?

Building the car	31	40%
Hands-on experience	28	36%
small class size	11	14%
Racing the cars	5	6%
Useful information	2	3%
	<u>77</u>	

15. What would you suggest to improve the workshop?

"Nothing" or left question blank	25
Add more cars to look at	2
More opportunities to exchange ideas in and out of class	4
Give each table an extra pack/materials to build	2
More event planning tips	5
More materials to bring to class	2
List of tools needed for building	1
Curriculum inserts or more time on curriculum	2
More time	8
Solar panels for all participants	1
Explore environmental science aspects	1
Break up lecture	1
Watch video of competition	1

16. When do you intend to implement a model solar car education program?

This Year	48
Next Year	15
Other or left blank	7

Note: Though encouraged to, not all participants filled out evaluations.

Note: Workshop evaluations were not received from NJ, PA, ME, Greater DC (VA).

2010 JSS Area Races

	Event Date	# of Schools	# of Teams Registered	# of Students
CONNECTICUT				
Connecticut State Race	5-Jun			
Fairfield County Race	22-May			
DELAWARE				
Delaware State Race	12-May	10	20	74
DISTRICT OF COLUMBIA				
Greater DC - Maryland Area Race	21-May	5	72	150
MAINE				
Maine State Race	5-Jun	13	57	155
MASSACHUSETTS				
Berkshire Area Race	5-Jun	7	38	83
Cape & Islands Area Race	5-Jun			
Central-Western MA Area Race	5-Jun	9	43	111
Eastern MA Area Race	15-May			
NEW HAMPSHIRE				
Keene - Monadnock Regional Area Race	2-Jun	6	59	120
Upper Connecticut River Valley Area Race	28-May	6	58	126
NEW JERSEY				
Bergan County Area Race	4-Jun			
Inter-County Finals	2-Jun	42	742	2543
NEW YORK				
Buffalo Area Race	8-May	7	37	
New York State Technology Student Association				
Southern Finger Lakes Area Race	22-May	4	27	47
PENNSYLVANIA				
Greater Philadelphia Area Race	22-May	17	93	310
North Allegheny Regional	12-Mar			
RHODE ISLAND				
Rhode Island State Race	5-Jun	8	38	75
VERMONT				
Northern Vermont	5-Jun	1	16	25
		134	1284	3794

Junior Solar Sprint Model Solar Electric Car EVENT PLANNER OUTLINE

Susan Reyes, Northeast Junior Solar Sprint Coordinator

9.15.10

INTRODUCTION

A. Overview

The Event Planner is based on over 12 years that the Northeast Sustainable Energy Association (NESEA) has organized the Northeast Championship Junior Solar Sprint (JSS) model solar electric car event for middle school youth.

This outline demonstrates the breadth and depth of what goes into a successful Junior Solar Sprint event.

B. Funding

Current: Grantor: US Army Educational Outreach Program

Past: Sponsors: US Department of Energy; Toyota Foundation; US Army

C. JSS Program

An exciting, top notch Northeast Championship rests on the foundation of a high quality program throughout the northeastern US. At the championship, participation of highly qualified teams with well designed cars comes about through an invitation-only system via local area events supported by NESEA, together with extensive and skillful teacher involvement throughout the region.

TIME LINE

The Northeast Championship has traditionally been held the 2nd Sunday of June.

A. July-January (6-12 months advance)

B. January- March (3-6 months advance)

C. March - May (<3months advance)

D. May-June (2-3 weeks final preparations)

E. June-Aug (post event)

EVENT SITES

A. Outdoor primary site

B. Rain site

C. Site visits & analysis

1. Directions & road conditions
2. Equipment on-site (eg: cords, cord covers, tables, chairs, PA, etc.)
3. Electricity
4. EMTs

5. Janitorial services through the day and what is covered
6. Janitorial services post-event
7. Lay out & traffic flow
8. Opening time for set up and breakdown end time
9. Parking – reserved spots, management, etc.
10. Recycling arrangements
11. Restrooms
12. Security
13. Set up assistance (tables, chairs, etc.)
14. Site entry options for exhibitors – time of day, size of vehicle
15. Track surface analysis
16. Waste management – during and after event

D. Permits – road closing, food, etc. as needed

E. Contracts & Fees

AREA EVENTS

A. Subsidies for Area Coordinators –January-April

B. Area event dates & contacts– post on-line & distribute

C. Invitations to Championship & pre-registration materials

1. Determination of numbers of invitations per event
2. Area Coordinator invitation letter
3. Team leader and parent letter
4. Photo release form
5. Sample press release
6. Invitation & pre-registration form
7. Event day schedule
8. Directions
9. Area accommodations and visitor suggestions
10. Folder assembly
11. Mailing schedule

D. Banner loans to area event coordinators

FOOD & CATERING

A. Food vendors for families and fans

B. Caterer for participants

1. Contracts
2. Tickets
3. Monitoring

C. Ice cream for solar cooler

Ice cream arrangements

D. Water

1. Options
2. For volunteers
3. For participants

SITE MATERIALS & SYSTEMS

A. Early preparation checklist:

1. Rental reservations and arrangements:
 - Large tent rental and set up/breakdown agreement
 - Tables & chairs
 - Truck
 - Helium tank
 - Radios
 - Public address (p.a.) System
 - Portable toilets
2. Custom orders:
 - Trophies & special medallions
 - Tee Shirts
 - Other custom materials (hats, etc.)
3. Tag materials by system or station
4. Evaluate systems and stations for improvements or changes

B. Materials - whole site:

1. "Site deck"
 - Overview of tents, tables, chairs per station/area
 - Helium balloons
 - Pennants
 - Barricades
 - Scaffolding
 - Banners
 - Power cords
 - PA system and bull horn
2. Station/area Supplies
 - Evaluation & updated systems procedures
 - Acquiring/creating materials
 - Organizing and labeling
3. Signs
 - Site signs
 - Station
 - Exhibitor

C. Materials by site station & flow:

1. Registration
2. Inspection
3. Repair table
 - Tools
 - Loan program
 - First aid supplies

4. Heat assignments
5. Photo ID
6. Judges tables
7. NESEA table region:
 - Information & sales
 - Participation certificate & kids vote packet
 - Tee shirt table
8. Trophy & award tables
9. Race track region:
 - Barricades and tape
 - Banners & scaffolding
 - Surface
 - Start line
 - Finish line
 - Video camera
 - Batteries & battery packs
 - Race board
 - Announcer
 - Statistician & race master
 - Design Judging Grid
10. Scoring
 - Computer & Excel Program
11. Volunteer station
 - Food
 - Water
 - Sunscreen
 - Cooling fans
12. NESEA Solar ice cream cooler exhibit
 - History and human resources
 - Solar cooler set up and operation
 - Ordering ice cream or drinks
 - Storage arrangements
 - Transportation
 - Trailer registration status
13. Other NESEA exhibits
 - Tents, tables & chairs
 - Electric cords
 - Solar oven
 - K'NEX display
14. Material support for exhibitors
 - "Outside the box" student exhibit needs
 - General exhibitor lending protocol
 - Tents, tables & chairs
 - Electric cords

D. Materials storage and identification

HUMAN RESOURCES

A. Event planner/assistant role, training and supervision

B. Volunteer solicitation and volunteer roles

1. Overview of needed volunteers
2. Experienced volunteers
3. Types of roles
4. Shifts for volunteers
5. Roles for children
6. Volunteer advertisement

C. Stipend Positions

1. Photographers
2. Interns
3. Special projects (e.g. videography & interviews)

D. Exhibitors

1. Types of exhibits
2. Solicitation
3. Approval

E. Color guard

1. Junior ROTC
2. Timing & protocol
3. National Anthem

F. Temporary help

1. Office assistance
2. General help
3. Truck loading

G. NESEA office coordination

1. Coordination meetings
2. Roles
 - Education department
 - NESEA booth
 - NESEA Q & A

OFFICE WORK & REGISTRATION

A. Office materials

1. Paper/printable labels for various print outs
2. Folders for registration packets & volunteers
3. Calligraphy pens
4. Supply packets for volunteers
5. Money & money boxes for sales

B. Registration data entry

1. Protocol
2. Data output formats

C. Certificates

D. Code sheet

E. Final volunteer check list

F. Team check lists

G. Team reference lists

1. By code
2. By car number

H. Individual participant names check list

I. Cell phone list

J. Announcer board label

K. Car numbers

L. Heat sheets

M. Team leaders

N. Badges & ribbons

1. Volunteer
2. Exhibitor
3. Student

O. Lunch tickets

PROMOTION & PUBLICITY

A. Area events

B. Championship event

C. Winners

CHAMPIONSHIP EVENT DAY

A. Rain site procedures

1. Making the call – who, when and how
2. Critical contacts
 - Education department communication
 - Weather station
 - Outdoor site
 - Indoor site
 - Tent rental
 - Food service
 - EMTs

B. Participant's event day

Overview of order of events

8:00-10:00am Registration

8:00-11:30am Inspection; Repairs; Design judging; Photos; Heat assignments; Participant certificates; Tee shirts; Lunch tickets; Exhibits

12:00-12:45pm Lunch; Kid's Choice voting; Design judging grid;

Exhibits

12:45-2:45pm Semi-finals and finals racing; Exhibits

3:00pm Award ceremony

C. Awards

1. Award announcer sheet
2. Prizes
3. Set up and protocol for award announcement

D. Volunteer and staff role flow

1. Overview of volunteer role flow:
 - 4:00am – Complete: Weather review and rain site call
 - 6:00am – Begin: Set – truck unloading; tents, tables & chairs; p.a. system; race board; site decoration; banners; balloons; all stations
 - 7:30am – Ready or near ready: site lay-out & barricades/crowd control registrars; repair booth; design judges; inspectors; announcers and p.a. system; statisticians/heat assigners; score keepers; photo identification booth; NESEA booth – tee shirts, certificates, lunch tickets, voting tickets; most exhibits; breakfast food set-up
 - 9:45am – Ready: track set-up and track team; design grid; race board & team; finish line camera & team; trophy and award table
 - 11:00am – Ready: lunch food set up; solar cooler & ice cream
 - 12:00pm – Ready: Design judges for grid
 - 2:00pm – Ready: Scorekeeper scores completed; Kids choice tallied; special awards mostly done; award ceremony set up
 - 3:00pm – Ready: Champion & award winners & prizes selected; award announcer; track break-down and clean up crew
 - 4:00pm – Begin: Truck loading; final pick up
 - 5:30pm – Begin: Truck unloading; storage begins; publicity/news releases; photo processing
 - 7:00pm - Volunteer appreciation
2. Prioritized actions
 - a. Early volunteer arrival meeting & role assignments
 - b. Radio coordination
 - c. Truck unloading
 - d. “Site deck” priorities
 1. Priority PARTICIPANT ENTRY AREA
 - a. Ice cream cooler – filled, plugged in & locked
 - b. Tents Tables & Chairs to locations
 - c. Registration
 - d. Inspection
 - e. Heat Assignments
 2. JUDGING AREA
 - a. Judges
 - b. Scorekeeping
 3. REPAIR TABLES
 4. DEFINE & LAY OUT TRACK AREA
 5. BANNERS - LARGE
 6. ANNOUNCER AREA/PODIUM
 7. TROPHIES

- 8. BALLOONS
- 9. RACE BOARD
- 10. FLAGS & PENNANTS
- 11. NESEA BOOTH
- 12. JUDGING GRID
- 13. FOOD SERVICE
- e. Volunteers & staff to stations to assume roles
 - 1. Registration side
 - 2. Track side
- f. Exhibits set up and coordination
- g. Track set up completion
 - 1. Surface
 - 2. Lanes
 - 3. Battery tables
 - 4. Start line
 - 5. Finish line & camera
 - 6. Statisticians
- h. Track & race crew coordination
- i. Judging grid guards
- j. Judging and scoring coordination
- k. Award ceremony set up
- l. Site clean up & reloading
- m. Equipment return

E. Volunteer Roles and Systems Summary

- 1. Announcers
 - a. Executive Director's welcome and sponsor thanks
 - b. Education department introductions
 - c. Event announcer
 - d. Award announcer
- 2. Battery team
- 3. Exhibit team
- 4. Food service monitors
- 5. General help
- 6. Heat assigners
- 7. Judges - Design
- 8. Judges - Inspection
- 9. Judges - Finish line
- 10. Judges - Special award
- 11. Judging Coordinators
- 12. Judges grid set-up
- 13. NESEA booth team & roles
- 14. Parking managers
- 15. Photographers
- 16. Race board managers
- 17. Recycling coordinator

18. Registrars
19. Repair table managers
20. Site set up and “site deck”
21. Site break-down
22. Statisticians & race managers
23. Scorekeepers
24. Solar cooler sales and education
25. Track set up team
26. Track start line team
27. Track finish line team
28. Track finish line camera crew
29. Truck drivers
30. Truck loaders
31. Truck un-loaders
32. Volunteer booth manager

F. Troubleshooting

1. Volunteer No-Shows
2. Truck & Materials Delivery Issues

POST EVENT

A. Post-event (event day)

1. Break down
2. Unloading at NESEA
3. Post event gathering
4. Press releases for winners
5. Web site updates
6. Photographer coordination

B. Post-event (short term)

1. Debriefing & suggestions
2. Volunteer appreciation certificates
3. Photo Management
4. Photo file management

C. Post-event (long-term)

1. Debriefing
2. Station and systems re-evaluation
3. Planner updates
4. Materials reorganization
5. Volunteer appreciation dinner

APPENDIX

I. HUMAN RESOURCES CONTACTS

A. Area Event

B. General Contacts:

1. Site
2. Vendors & Suppliers
3. Services

C. Volunteer (including Statistician, Race Manager & Judges) Contacts

D. Exhibitor Contacts

E. Color Guard Contacts

F. Award Donor Contacts

G. Funder Contacts

II. SKILLED VOLUNTEER PACKET MATERIALS – HOW TO's

A. Announcements – General

B. Announcements - Award

C. Batteries

D. Exhibit management

E. Heat assignments

F. Judging- Design

Wheel and guidance

Power train

Solar collection

Innovation

Craftsmanship

G. Judging - Inspection

H. Judging - Finish line

I. Judging - Special awards

Kids' choice tally

Artistic merit

Best re-use of materials

Team spirit

Sportsmanship

J. Judge's Coordination

K. Judging grid set-up

L. NESEA booth, sales and information center

M. Parking managers

N. Photographers

O. Race board managers

P. Recycling coordinator

Q. Registrars

R. Repair table managers

S. Site set up and "site dec"

Banner scaffold

Tents, tables & chairs

T. Statisticians & race management

U. Scorekeepers

V. Solar cooler sales and education

- W. Track set up**
- X. Track start line team**
- Y. Track finish line team**
- Z. Track finish line camera crew**
- III. VOLUNTEER/STAFF EVENT FLOW PRIORITIES**
- IV. VOLUNTEER/STAFF EVENT FLOW POSTER**
- IV. PRE-REGISTRATION PACKET MATERIALS**
- V. SITE MAPS**
 - A. Main site**
 - B. Rain site**
- VI. SITE MATERIALS LISTS**
- VII. REGISTRATION DATA PRINT-OUTS**
- VIII. REGISTRATION PACKET MATERIALS**
- VIII. AWARD MATERIALS**
- IX. PLANNER'S BOX CONTENTS**

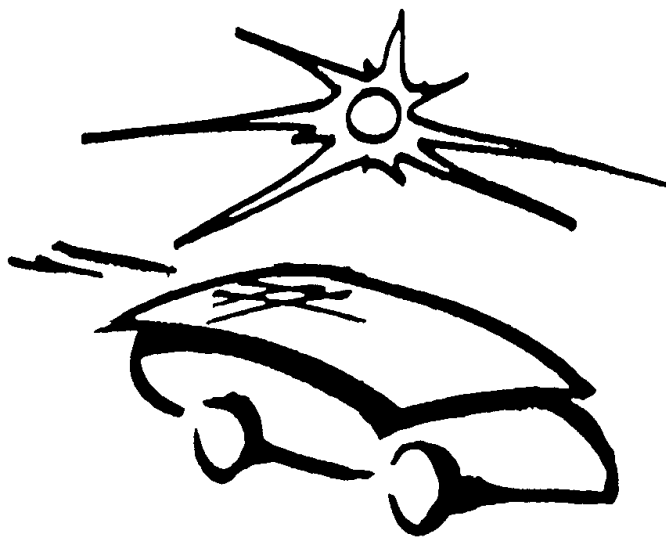


NESEA

Northeast Sustainable Energy Association



Northeast Regional Championship 2010



Springfield, MA ◦ June 13th, 2010

Program Organizer: Northeast Sustainable Energy Association

Title Sponsor: US Army Educational Outreach Program

WELCOME TO THE 2010 JUNIOR SOLAR SPRINT NORTHEAST CHAMPIONSHIP!

Congratulations to all teams on your performances at area races!

Bergen County, NJ • Berkshire-Hudson Area (MA/NY) • Buffalo, NY • Cape & Islands, MA Connecticut State • Delaware State • Eastern MA • Fairfield County, CT • Keene-Monadnock Area, NH • Maine State Maryland-Washington D.C. Area • New Jersey Inter-County • Northern Allegheny, PA • Northern Vermont • Philadelphia Area, PA • Rhode Island State • Southern Finger Lakes, NY • Upper Connecticut River Valley, NH/VT • West-Central MA

NESEA wishes the best of luck to all teams participating in 13th annual JSS Northeast Championship!

Special thanks to all students, teachers, student mentors, parents, area coordinators, and many dedicated volunteers for making the 2010 JSS program another grand success!

What is the Junior Solar Sprint?

A lot of fun – just watch! A model of the future – student teams building solar electric cars running on a renewable energy source! A way to learn concepts – such as an efficient use of energy, solar power, friction, mechanical advantage, acceleration, team work, fair play, craftsmanship, environmental studies, and the principles and practices of engineering design.

Schedule of Events (actual times may change):

8:00 – 9:00	Registration
8:00 – 10:00	Inspection & heat assignments.
By 11:30	Pick up T-shirts, packet with Kids' Choice voting ticket, certificate & lunch coupons
8:00 – 11:30	Vehicle design judging
10:00 – 2:45	Races: Elimination races 10:15 – 12:15; Final races 12:45 – 2:45
12:00 – 12:45	Lunch break (actual time may vary depending on races)
3:00 – 3:30	Awards ceremony
Ongoing	Renewable energy & science displays/vehicles

Awards: Twelve teams win 1st, 2nd, and 3rd in: *Speed*, *Technical Merit*, *Innovation* and *Craftsmanship*. The best overall car is *Grand Champion*. Additional awards include: *Kids' Choice*, *Best Re-use of Materials*, *Artistic Merit*, *Sportsmanship*, *Team Spirit* and **new this year**, *Best Payload Compartment*.

Prize Donors:



KidWind

<http://www.kidwind.com>



Fuel Cell Store

<http://www.fuelcellstore.com>



SolarMade

<http://www.solarmade.com>

Visit these online stores for quality hands-on S.T.E.M educational materials and resources in renewable energy technologies!

Exhibitors*: Army Educational Outreach Program – Youth Science & Engineering Programs; Bart's Homemade & NESEA Solar Ice Cream Cooler; Franklin County Technical School Solar Car Team with the Sunsetter; Greenfield Solar Store; Massachusetts Institute of Technology Solar Electric Vehicle Team with Eleanor; Shawn Reeves, EnergyTeachers.org; Rick Cadwell, National Science Center Discovery Van; and the High School of Commerce JROTC Color Guard: Cadet Captain Paul Winsphere, Cadet Sergeant First Class Luis Ortiz, Cadet Staff Sergeant Luz Ortiz & Cadet Sergeant First Class Josue Pizzaro

*Our apologies and **sincerest thanks** to any we missed!

Staff & Volunteers*

NESEA Executive Director:

Jennifer Marrapese

NESEA Education Director:

Arianna Alexsandra Grindrod

NESEA JSS Event & Program Coordinator:

Susan Reyes, Science Educator

NESEA JSS Event Planning Assistant:

Rayna M. Heldt

Race Manager/Statistician: Phillippe Rigolaud

Start Line Manager: Peter Zack

Repair Table: Pete Ouilette, Beth Ouilette

Announcer: Galen Knowles

NESEA Table: Jessica Van Steensburg

Photographers: John Green, Clay Turnbull

Videographer: Steve Unkles, Wave Multimedia

Interviewer: Marcy Gregoire, UnderTheArtTree

Judges: James Clark, *Innovation*; Mary Taft, *Wheel & Guidance*; Jeremy Galvagni, *Power Train*; Joyce Palmer Fortune, *Solar Collection*; Nat Fortune, *Craftsmanship*; Command Sergeant Major Earl Allen, *Specifications*; Carlos Reyes, *Finish & Specifications*; Keshov Sharma, *Finish & Specifications*; Satchel Douglas, *Finish*; Nancy Hazard, *Specifications*; Wenda Luff, *Specifications*; Gail Burrington, *Specifications*; Matt Belouin, *Finish*

And More Volunteers: Jeff Bechard, Sherry Belouin, Karl Belouin, Mary Biddle, Khalil Boosahda, Sara Campbell, Carolyn Campbell, Nick Cogswell, Alex Fortune, Matt Fortune, Bill Gallant, Taryn Harriman, Grace Jacobson, David Knowles, Steve Kurkowski, Chris Martin, Jim Motavalli, Delia Motavalli, Kim Pinkham, Kim Rinard, Joseph Saladino, Marie Silver, Andrea Simmons-Worthen, Matt Sirum, Jeff Skelskie, Mark Skinder, Ambrose Spencer, Todd Weed, Bryan Worthen and Maggie Zack

Additional Thanks To: Mary Morisi, Springfield Museums Events Coordinator and Roger Bunce, Security, for their work enabling us to use the beautiful Quadrangle site; Bob Mulcahey and his staff at High School of Commerce for supplying us with a perfect rain site; the great staff & cooks at Elegant Affairs; Paul Redeker Rental Co.; Ashley Wade of AEOP, John Woodward and the Franklin County Community Service Volunteers, Franklin County Technical School: John Carey, Nick Cogswell, Bill Gallant, Joe Gamache, Joseph Saladino and Todd Weed. Also, many thanks to the FCTS students for their help in loading the truck.

*Our apologies and **sincerest thanks** to any we missed!



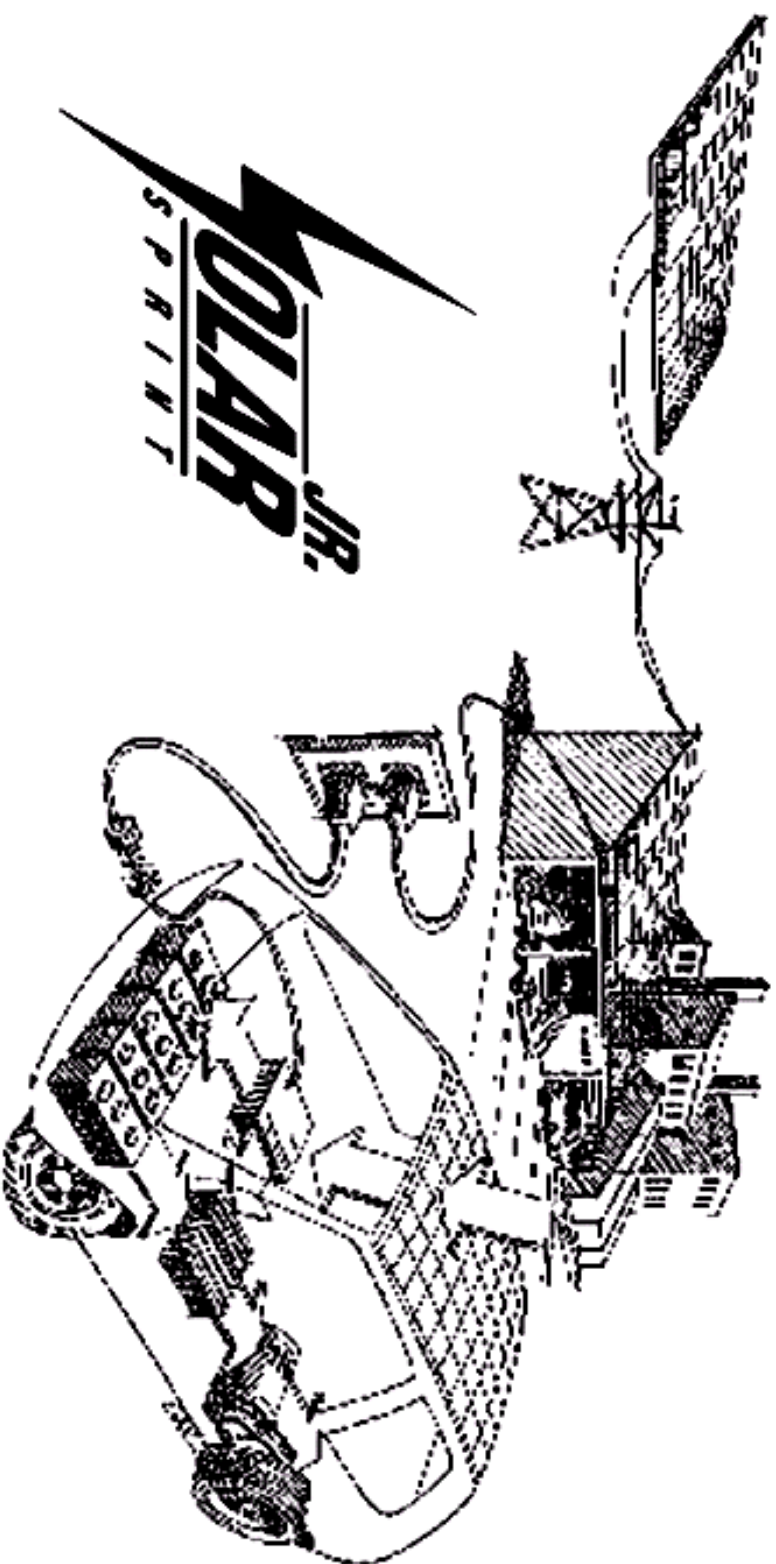
NORTHEAST SUSTAINABLE ENERGY ASSOCIATION

50 Miles Street, Suite 3, Greenfield, MA 01301
413.774.6051 <http://www.nesea.org>



**Many thanks to our sponsor –
THE US ARMY EDUCATIONAL OUTREACH PROGRAM
for their support of the Northeast Junior
Solar Sprint program**

AN ULTIMATE CLEAN TECHNOLOGY SOLUTION:
ELECTRIC CARS POWERED BY RENEWABLE ENERGY



POLAR JR.
SPRINT

A MODEL OF THE FUTURE



Junior Solar Sprint Demographics Survey

2010 Northeast Championship

41 surveys received. 130 teams registered (1-4 members per team)

1. Gender

Female	22
Male	19

2. Racial Identity

White/Caucasian	32
Black or African American	0
American Indian, Alaskan Native, Native American	0
Native Hawaiian or Pacific Islander	0
Asian	7
Other- Hispanic	2

3. Does your child identify as being Latino, Hispanic or of Spanish decent?

Yes	3
No	38

4. Does your child identify as being of Middle Eastern Decent?

Yes	1
No	40

5. Does your child have a disability?

Yes	2
No	39
Please Specify:	0
A.D.D	1
Hearing Disability	1

6. What is your household Income?

a. Family with 2 adults

Not over 16,750	2
16,750-68,000	12
68,000-137,300	10
137,300-209,250	3
209,250-373,650	3
Over 373,650	3

b. Family with 1 adult

Not over 16,750	0
16,750-68,000	3
68,000-137,300	2
137,300-209,250	0
209,250-373,650	0
Over 373,650	0

7. What is the family size in your household?

Two	1
Three	8
Four	21
Five	6
Six or more	5

8. Does your child accept free or reduced lunch at school?

Yes	14
No	27

9.How would you describe where your child lives?

Rural	15
Suburban	20
Urban	6

10.Do any adults in the household practice, teach or use science,enginerring or advanced math in their line of work?

Yes	29
No	12

11.Are you (the parent) more likely to install solar panels on your home/implement other energy efficiency as a result of your child participating in this program?

Yes	18
No	23

12. Are you (the student) more likely to consider energy efficiency and/or renewable energy options as you grow older as a result of participating in this program?

Yes	36
No	5

2010 Northeast Championship WINNERS!

Where are tomorrow's inventors, tomorrow's engineers? Where are tomorrow's technological trouble-shooters and scientists? Where are tomorrow's out of the box thinkers? RIGHT HERE TODAY!



Grand Champion: "Trooper"; Matt Murphy, Nico Fusro & Joey Bechard of Sacred Heart School in New Britain, CT. This team also won the Sportsmanship Award and first in Craftsmanship.



Speed

First Place: "Ningamobile"; Dave Morin and Caleb Anderson from The Compass School in Kingston, RI.



Second Place in Speed: "That's How It's Done"; Scott Black, Klaudio Gobo & Tom Chernati from Kittatinny Regional High School in Newton, NJ. This team also won 2nd Place in Craftsmanship.



Third Place in Speed "Bones"; Jeffery Hu from Montgomery School in Chester Springs, PA.

Technical Merit

First Place: "The Black Stallion"; Christopher Faber, William Zuidema, Chris McCaan & Garret Bahr

from Sussex Christian School in Sussex, NJ.



Second Place in Tech Merit: "The Eclipse"; Andrews Kellogg, Tristan Cain, Hannah Silter & Christopher Roy from Power Mill Middle School in Southwick, MA.



Third Place in Tech Merit: "Movie Maker"; Priya Ganesh and Kimberly Hane from Schwenksville Elementary in Schwenksville, PA. This team also won 2nd in Innovation.

Innovation

First Place: "Just Breeze"; Jessica Yanez and Nathalie Perez from Slade Middle School in New Britain, CT



2nd Place Innovation: "Movie Maker".

This team also won 3rd place in Technical Merit.



Third Place in Innovation: "That's Hot"; Klara Reisch, Katrina Haase & Nettie Adams, Westerly Middle School, Westerly, RI.

Honorable Mention for Innovation: "The Terminator"; Mitchell Wirth & Cara Priest from Mill Middle School, Williamsville, NY

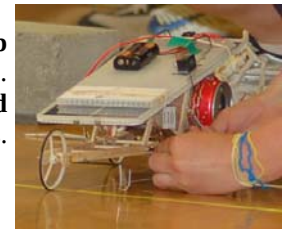


&
Honorable Mention for Innovation: "Dragster"; Team Members were Jake Adler, Steven Cheng, and Olivia Lofaro from Randolph, NJ Middle School in Randolph, NJ

Craftsmanship

First Place: "Trooper".

This is also won the **Sportsmanship Award** & are the Grand Champions.



2nd Place in Craftsmanship: "That's How It's Done". This team also won 2nd Place in Speed.

Third Place in Craftsmanship: "The Batmobile" Jailene Ortiz & Alondra Ortiz from Slade Middle School in New Britain, CT.

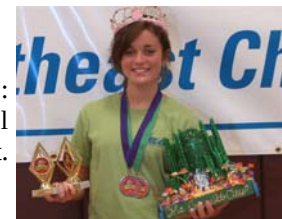
This team also won in the new category of Best Compartment.



Honorable Mention in Craftsman ship: "American Pie"; Kaila Krauser, Chris Pope, Reginald Onorati & Brandon Kamholz of St. Joseph School in Mendham, NJ.

Kids' Choice Award :

"The Emerald City"; Tess Bugay & Leann Kazawic of Green Hills School in Greendell, NJ. This team also won in Artistic Merit.



&

Kids' Choice Award : "Shell Racer"; Rebecca Hane & Anna Hansen of Perkiomen Valley Middle School West in Zeiglerville, PA. This team also one the Team Spirit Award.

Artistic Merit :"The Emerald City" Tess Bugay & Leann Kazawic of Green Hills School in Greendell, NJ. This team also won in Kids' Choice.



& Artistic Merit :"Sun Ship"; Damian Yoder & Anthony Blasi of Auburn Middle School in Auburn, ME.



Best Reuse of Materials

"Shoe*Feur";

Sally Wiener, Kirin Uzar, Victoria Tommasullo & Kayla Donatone of Ridge and Valley Charter School in Blairstown, NJ.



&

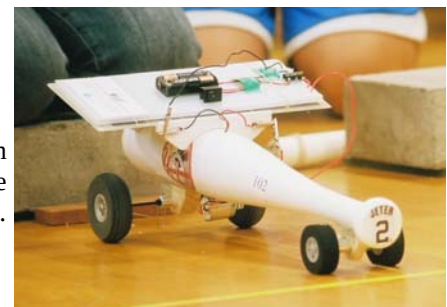
Best Reuse of Materials " Road Rocket"; Sarah Dixon & Tessa Parrish of DeWitt Middle School in Ithaca, NY



Best Compartment: "The Batmobile" Jailene Ortiz & Alondra Ortiz from Slade Middle School in New Britain, CT. This team also won third place in Craftsmanship.



Special Recognition for Catching the Judges Eyes outside the Judging Area goes to Julietter Thuluer, Olga Ponorareua & Antionette Thuluer of Slade Middle School in New Britain, CT with their car "Home Sweet Anemone".



CONGRATULATIONS TO ALL YOU WINNERS!!!

Proud Winners
from Connecticut with
their State JSS
Coordinator Jeff Bechard
(left)



"American Pie"



Team "Trooper" accepting award from
Command Sergeant Major Earl Allen



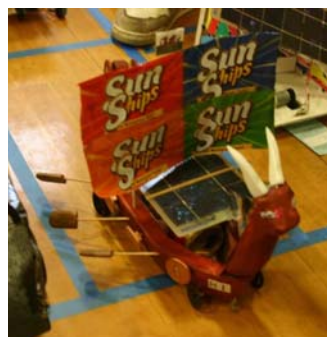
"Shell Racer" being judged.



"Trooper" & "Movie Maker" on the
starting line, ready to race.



"The Black Stallion" and
"Sun Ship" on
the Judging Grid.



Northeast Sustainable Energy Association

FOR IMMEDIATE RELEASE

June 14, 2010

Contact: Arianna Alessandra Grindrod
(413) 774-6051 ext. 21, agrindrod@nesea.org

Local Students WIN in Model Solar Car Northeast Championship

Springfield, MA—June 13, 2010— Despite the forecast of rain students flocked in record numbers to the 2010 Northeast Junior Solar Sprint Championship.

{Students} of {school} in {town, state} with {pronoun} car {car name} competed with {pronoun} model solar car at the Northeast Regional Junior Solar Sprint Championship, Sunday, June 14 in Springfield, MA and won {Championship award}. {last names} won {area award} at the {area race} Area Race earning them an invitation to attend the Northeast Championship. {team} did {pronoun} school and {pronoun} state proud!

Of the 130 registrants, 118 top-performing middle school student teams from across the Northeast, comprised of 302 students showed up under cloudy skies and entered this year's Junior Solar Sprint Championship, run by the Northeast Sustainable Energy Association (NESEA). Spirits were high even amid the need to run the races inside on battery packs.

Student teams competed for Speed and three design awards—Craftsmanship, Innovation, and Technical Merit. Additionally, awards were also given to Best Re-Use of Materials, for best re-use of recycled and recyclable materials in car construction; Kid's Choice, for most impressive car among competing students; Artistic Merit Award, for the most clever and visually appealing solar car; Team Spirit Award for best demonstration of collaborative effort among team members and team pride, Sportsmanship, for upholding the Spirit of the Sprint and maintaining grace and humility under the pressure of competition; and new this year, Best Compartment, for most ingenious and creative compartment design.

“The Junior Solar Sprint program allows students to explore STEM (Science, Technology, Engineering, Mathematics) concepts with direct real-world applications that can help our country address issues of global climate change, reduce air and water pollution, and reduce our dependence on foreign sources of fossil fuel,” remarks Arianna Alessandra Grindrod, NESEA's Education Director. “It our sincerest hope that programs such as JSS provides opportunities for these students to become informed and pro-active citizens, infused with a team-spirit approach to face the challenges that lie ahead with dignity and resourcefulness.”

Susan Reyes, Science Educator and Junior Solar Sprint Coordinator notes, “This is a highly engaging project for in or outside the classroom! Students design and build a model solar car for competition. It challenges kids to put their learning to practical use.”

Northeast Sustainable Energy Association

“Kids develop teamwork and problem solving abilities, investigate environmental issues, gain hands-on engineering skills, and use principals of science and math to get the fastest, most interesting, and best crafted vehicle possible,” Reyes said.

The Northeast Junior Solar Sprint program is sponsored by the U.S. Army Educational Outreach Program and is run by the Northeast Sustainable Energy Association (NESEA). NESEA provides workshops for educators, subsidies for area and state events, and orchestrates the Northeast Championship. Youth Sciences Program Specialist Ashley Wade of the U.S. Army Research Office, states, “I am always so very impressed with how many students NESEA can reach through JSS on such a minimal budget. Junior Solar Sprint is such a wonderful program, I'm so glad it is part of the AEOP portfolio. Seeing such enthusiastic young students, actively engaged in hands-on applications of engineering and science concepts, is truly inspiring!”

NESEA would like to publically appreciate all who helped make this year's Championship such a success! Special thanks goes out to the following companies who provided prize awards to the winners: Kid Wind, Fuel Cell Store, and Solar Made. Also much gratitude to Pitsco who donate model car kits for our teacher training workshops each year. In addition, many thanks to the students and staff at the Franklin County Technical School in Turners Falls who volunteered their time loading the equipment on to the truck and who came to the Championship with their solar car “Sun-setter”. The students were thrilled to see a true real world application in solar-electric technology. Thank you to the JROTC Color Guard from Commerce High School of Springfield for presenting the colors and to three boys who joined NESEA staff for rising up and leading the National Anthem. Thank you to the US Army Mobil Discovery Unit staff who entertained the teams while they waited for Inspection to start and to all the students and their parents and teachers for their patience – yes it was a very long day. And, a most humbling MEGA-Thanks to all our volunteers who, without their dedication, this event could not be. Mrs. Grindrod states, “Volunteers are worth their weight in gold and we cherish these men, women, and children who made time in their lives to work so diligently for the benefit of this program.”

Headquartered in Greenfield, MA, with a mission to advance the adoption of sustainable energy practices within the built environment, NESEA is the nation's leading regional membership organization focused on promoting the understanding, development, and adoption of energy conservation, energy efficiency, and non-polluting, renewable energy technologies and practices. Visit NESEA at <http://www.nesea.org>.

###

[PHOTOS AVAILABLE UPON REQUEST]



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Two PVSD teams light it up at Northeast Junior Sprint Championship

Published: Wednesday, June 30, 2010

By Caitlin Burns
Student Intern

More than 118 student teams from the Northeast gathered at the 2010 Northeast Junior Sprint Championship June 13 in Springfield, Mass., which put their innovation to the test to build the best model solar car.

Two local teams, "Movie Maker" by Priya Ganesh and Kimberly Hane and "Shell Racer" by Rebecca Hane and Anna Hansen, won awards. "Movie Maker" took second place for innovation and third place in technical merit, while "Shell Racer" won Kids' Choice and the Team Spirits awards.

"We had a great time [last year] and decided to do it again this year," Anna said.

"These girls really shined," said Arianna Aleksandra Grindrod, Northeast Sustainable Energy Association education director. "It's just so wonderful when kids get recognized for their hard work."

Priya and Kimberly are students at Schwenksville Elementary School, while Rebecca and Anna attend Perkiomen Valley Middle School West. Kimberly and Rebecca are sisters.

"When we were in fifth grade, we were in gifted," Rebecca said. "That's how it all got started."

In the gifted program at Schwenksville Elementary School students are encouraged to participate in the model solar car competition.

"I recommend it to everyone that has an interest in science," Kimberly said. "It's really fun."



Perkiomen Valley Middle School West students Rebecca Hane and Anna Hansen won the Kids' Choice and the Team Spirits awards at the 2010 Northeast Junior Sprint Championship June 13 in Springfield, Mass.

As part of placing at the championship, "Movie Maker" won a solar house kit and a solar flying saucer and "Shell Racer" won a mini turbine and solar boat kit.

"I definitely noticed 'Shell Racer'" Grindrod said. "They created a song in honor of their car."

In order to race in the Northeast Championship, both teams placed with their model cars in the Philadelphia Solar Energy Association's Junior Solar Sprints, which was held in May.

This year, the championship saw a record number of students performing from all over the region.



Schwenksville Elementary School's Priya Ganesh and Kimberly Hane won second place for innovation and third place in technical merit for "Movie Maker" at the 2010 Northeast Junior Sprint Championship June 13 in Springfield, Mass.

"By far the largest number of students we've had," Grindrod said. "The kids [were] troopers for staying through the end."

Unfortunately, the model solar cars had to run on battery packs since the championship had to be held inside. This was the second year in a row the championship could not be held outside.

"We had to talk at 4:30 in the morning to make the call," Grindrod said. Although it ended up only being cloudy, the cars would have needed the battery packs anyway.

For students that placed in the championship, this is the highest level competition in which they can participate. Even though the championship is only regional, there is no national event. For some, the regional race is even out of reach, since there are areas that do not have qualifying rounds. Pennsylvania is one of these states, with Philadelphia being the only area qualifying race.

"It would be great to eventually get a national championship," Grindrod said. "[And] what we're hoping is to have more from Pennsylvania."

The championship does bring together top-performing teams and the results are always creative and astounding.

"It's really fun to see what the other cars' strengths are," Anna said. While Kimberly's favorite part is racing, both Rebecca's and Anna's favorite part is designing their solar model car.

"These cars are all very innovative," Grindrod said. "It's quite incredible."

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City solar car team wins big at regional competition

Wednesday, June 23, 2010 10:26 PM EDT

By James Craven

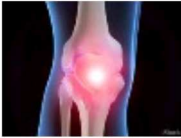
Staff Writer

NEW BRITAIN — For Matt Murphy and Joey Bechard, one of the most exciting and potentially devastating moments during the Model Solar Car Northeast Championship came when another car veered out of control and crashed into the rear of their vehicle.

“It was pretty shocking,” Joey, said, and Matt agreed.

The two boys are students at Sacred Heart School but members of the Slade Middle School Solar Car Team.

As they inspected the car after the crash, they found damages to their balsa wood frame and a carbon-fiber axle. In a flash, out came the glue and tape and they had the repairs done within an hour.



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“Luckily, right after the crash it was time for lunch,” Matt said.

Their solar car, Trooper, would go on to win the Grand Championship Honor and for their reaction to the crash, the Sportsmanship and Craftsmanship awards.

The entire team competed in the 2010 Northeast Junior Solar Sprint Championship in Springfield, Mass., June 13.

A science, technology, engineering and math activity, the competition is designed to challenge fifth through eighth grade students to work in teams to design, build and race a model solar car limited to 12 inches wide, 12 inches high and 24 inches long. The models must run using solar panels with a three-volt output and be able to carry an empty soda can as cargo.

First Place in innovation went to Jessica Yanez and Nathalie Perez for “Just Breeze;” third place in craftsmanship went to “The Batmobile” by Jailene Ortiz and Alondra Ortiz.

Other members of the Slade team were Ana Maria Osorno, Olga Pononareua, Antionette Thuluer and Nico Fusro.

A special recognition award for “Catching the judges eyes outside the judging area” was created just for Juliette and Olga’s “Home Sweet Anemone” entry which featured a model car based on the “Nemo” character from the film “Finding Nemo.”

“We just wanted to do something fun,” Juliette said of her car which featured two salt-water clown fish and a pink anemone.

Teacher and team coach Jefferey Bechard said the teams worked hard and showed their technological prowess at the competition.

“I think when kids like this take the time to try something like this competition, they make New Britain proud,” he said.

James Craven can be reached at jcraven@centralctcommunications.com or by calling (860) 225-4601, ext. 231.

Comments

Green Fields wrote on Jun 24, 2010 7:45 AM:

" CONGRATS TO THE SOLAR CAR TEAM!!! Jeff Bechard is one of the best teachers at Slade. Congrats again and great work!!! Keep working hard kids, there is a bright future ahead for you! "

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NBTAXPAYER wrote on Jun 24, 2010 2:45 PM:

" A good example of the kids that want to learn. Congratulations fo all of you for a job WELL DONE! "

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Budding engineers compete with cars

Monday, June 14, 2010

By ELIZABETH ROMÁN
eroman@repub.com

SPRINGFIELD - Using soda cans, solar panels and a variety of lightweight materials, middle school students from all over New England showcased their solar-powered cars during the Northeast Sustainable Energy Association's Junior Solar Sprint.

Arianna Grindrod, education director for the association, said there were 130 schools from across the Northeast participating in the event Sunday at the High School of Commerce.

"This is the first year that we have ever been at capacity," she said. "It's wonderful that more students are interested in participating in the event."

The sprint allows individual and group teams to create solar electric cars that run on a renewable energy source.

"This gives students an opportunity to apply solar energy to something that actually works," Grindrod said.

Only two schools from Western Massachusetts participated in the event, Powder Mill Middle School in Southwick and the Science, Technology, Engineering, and Math (STEM) Middle Academy in Springfield.

STEM students Elving L. Rosado, 13 and William A. Lalikos, 13, said they enjoy engineering and building solar models. Rosado's Black Blur featured an all-black vehicle that included foam board to keep it light, he said.

Lalikos created a solar car called Hermes Left Shoe, which featured optimal wind and ground accuracy through the use of three wheels instead of four, he said.

STEM technology teacher Janice Kibbe said the students worked very hard on creating a prototype and final version of their vehicle.

"I could help them up to the prototype stage, but then they were on their own," she said.

Kibbe said the school received a federal magnet grant to purchase materials for the cars.

Rosado, who has an interest in engineering, looked for tricks to make his car go faster.

"Besides the foam board I also used grease to make the wheels go faster," he said.

Lalikos participated in the event last year and said he enjoys preparing for the race.

"Not only do I get to learn more about engineering, but especially more about green engineering, which is great," he said.

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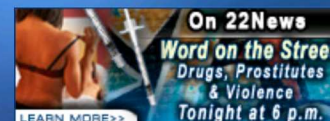
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Map

Solar car competition held in Spfld.

Students from all over the Northeast competed

Updated: Sunday, 13 Jun 2010, 6:53 PM EDT
Published : Sunday, 13 Jun 2010, 1:39 PM EDT

Shannon Halligan

SPRINGFIELD, Mass. (WWLP) - Hundreds of middle school students from across the Northeast competed in the thirteenth annual Junior Solar Sprint Model Car competition in Springfield.

Students were able to explore environmental topics such as global climate change and design pollution free model cars powered solely by the sun.

"I don't think we can rely on oil forever because it's not as renewable as the sun because the sun burns brightly and powers lots of things," said Junior Solar Sprint contestant Azarial Saser.

Top winners from 20 area state races vied for the distinction as the Grand Champion. All participants were awarded for their hard work.

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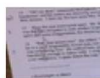
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NESEA Arianna Grindrod

From: NESEA K-12 Education Department [agrindrod@nesea.org]
Sent: Tuesday, June 01, 2010 12:18 PM
To: agrindrod@nesea.org
Subject: NESEA K-12 Summer 2010 - Renewable Activities



NORTHEAST SUSTAINABLE ENERGY ASSOCIATION

Inquiry-based, science and engineering education provides students with the tools necessary to assess and make healthy choices for themselves, their families, and their communities. The work of the K-12 Education Department is to provide opportunities that nurture the development of informed and pro-active citizens, infused with a team-spirit approach to face the challenges that lie ahead with dignity and resourcefulness.



NESEA K-12 SUMMER 2010 E-NEWS

What will you do with your students and campers this summer? Consider a Clean Energy for a Clean Environment (CECE) project! NESEA has many suggestions or create your own. Perhaps a field trip to a home or business that incorporates energy efficiency and/or renewable energy features. Find a destination site through [CECE](#), [Green Buildings Open House](#), or the [Sustainable Green Pages](#).

The [Clean Energy for a Clean Environment \(CECE\)](#) Program empowers youth and educators to explore topics in energy efficiency and renewable energy resources. Students explore the science and applications of renewable energy and can earn a Clean Green Power Champion Patch by completing hands-on projects that they then share with their school and/or community.

Sample Projects:

Sometimes all a student needs is the time and space to reflect on what he or she has learned, and to the best of his or her ability, share his or her understanding of the concepts with others. In this activity students are asked to try out their thoughts on their teachers, peers, and the community at large and to learn how to most effectively and creatively communicate their ideas and their understanding of the concepts they have learned. Please see the entire "Students as Teachers" [lesson description](#) or download the [Clean Green Power](#) unit for more information.

- **Biomimicry** Using nature as the model, have students explore renewable energy technologies and what inspirations in nature lead or are leading the way to advances in the field of renewable energy: <http://www.biomimicryinstitute.org/> E.g. Why was the

REMINDER:

Junior Solar Sprint Northeast Championship Sunday, June 13

Is your student team invited to the Championship? Do you think they have a compelling story to share about their challenges and breakthroughs in working through the JSS process? A videographer will be on hand for interviews. Contact [NESEA](#) for more information.



Contact [NESEA](#) if you are interested in volunteering at the Northeast Championship.

The JSS Process:

Students form small teams and work together to design and build functional model solar electric cars. During the

first windmill invented? What was the inspiration? Research the history of the windmill and what led to its creation. Using nature as the model, brainstorm what the windmill mimics in nature. Are there models in nature that can help make the use of wind turbines more acceptable and safer? How might we better protect birds and bats from the turbines?

- **Energy Watt?** Research concepts in energy conservation and energy efficiency. Students develop a list of criteria, based on their research, of what constitutes an energy efficient building and energy conservation measures. Students then compare their criteria list to their home by conducting an energy survey. Students make recommendations on how their home can be more energy efficient and how they and their family can conserve energy. Survey can also be conducted for the school.
- **The Pen is Mightier...** Participants write poems about sustainable energy solutions; renewable energy, energy efficiency, and energy conservation. Students plan and coordinate a school wide or public poetry reading.
- **Research a Sustainable Energy Hero** Focus on an invention or innovation in sustainable energy. What inspired the work for this invention or innovation? Write a research paper on the inventor(s) of choice such as Michael Faraday, Charles Brush, Stanford Ovshinsky, etc. Creative option for this research paper: writing and performing a play on the inventor and invention.
- **Solar Kinetic Sculpture** Once students have learned how electric circuits, solar panels, and motors work, they can play around and create some sculptures with parts that move from the power of the sun. E.g., solar fountains, solar electric toys, simple inventions

A special note to educators living/working within the service territory of Western Massachusetts Electric Company -

NESEA has been awarded a grant to continue facilitating workshops on CECE. Workshops will be 3 hours and provide hands-on training in applications in solar energy in addition to an overview of how to utilize the two units *Clean Green Power* and *Wind Wisdom* in the classroom. Contact [NESEA](#) for more information and to be a site host.

A special notice to New York educators:

Solar Sails New York Program

Through a service contract with the New York State Energy Research and Development Authority (NYSERDA), NESEA is offering free workshops: *A Solar Kit for the Classroom*; created for grades 3 -12 with a strong focus at the middle school level; and *Wind Wisdom for School Power...Naturally*, appropriate for grades K-6.

At the workshop teachers and non-formal educators will receive:

- engaging, hands-on science and engineering activities that support New York State Learning Standards and Core

process they tackle issues in the engineering process, properties of materials, forces and motion, electricity and magnetism, ratios and geometry. These young engineers deepen their understanding about solar energy, math, physical science and craftsmanship. They are then judged on the merits of their cars under such categories as Innovation, Craftsmanship, Speed, and Technical Merit. The different levels of competition, from school to area event to championship, foster sustained engagement and depth of learning. Teachers appreciate seeing the increased interest and aptitude in math, science, and technical understanding. Parents love the new confidence, teamwork, and perseverance in their children. And students love the challenge, the team spirit, and the fun to be had in such a creative process and collaborative experience. Best wishes to all the teams racing this year. NESEA looks forward to meeting the winners of the area and state races at the Northeast Championship on Sunday, June 13 at the Springfield Museum Quadrangle, Springfield, MA **Championship winners will be posted at NESEA on Monday, June, 14. [Check out the Winners!](#)**



JSS in the northeast is

- Curriculum, addressing specific performance indicators; and
- a free energy education kit and support materials for your classroom, center, or institution.

For more information on the **Solar Sails New York** program and a workshop schedule visit <http://www.nesea.org/k-12/solarsailsnewyork/>
If you would like to be a site host for your region, contact NESEA at agrindrod@nesea.org or 413-774-6051 x21.

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Wind Wisdom for School Power Naturally

Two curricular units: K-4 and 5-6

<http://www.nesea.org/k-12/solarsailsnewyork/>

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The Solar Sails New York program is sponsored by NYSERDA & the *School Power...Naturally* program.



Quote of the day: *"I would not be anywhere else but stalled in the happiness" ~ Mary Oliver*

coordinated by NESEA and sponsored by the [U.S. Army Educational Outreach Program](#).



Looking to gain a better understanding on energy efficiency practices or renewable energy technologies? Need fodder for student research projects? [The Building Energy Conference archives power point presentations](#). Learn from the experts and integrate their data into your STEM curriculum. Not sure how? [NESEA can help you design State standard aligned curriculum](#).

Needs assessment survey coming to you this fall! Help us help you. Please take the survey when it comes along. Thanks!

Find NESEA K-12 on Facebook.



Join the discussion! Start a discussion! What are your interests in renewable energy education? What are your needs? Let's help one another. Share lessons that really work. Post your challenges and accomplishments.

NESEA JSS videos

Watch the 2009 Northeast Championship Promos. [10 min.](#) & [4min](#) and the [16min documentary](#). See the original [1993 JSS video](#) Also available for DVD purchase through [NESEA](#).

The NESEA K-12 Education Department offers professional development opportunities and resources for teachers and non-formal educators, and curriculum and programs on energy efficiency and energy conservation, and on forms and applications of renewable energy. NESEA employs best practices in creating grade-specific and age-appropriate curriculum that meet state and federal academic *Learning Standards*.

Contact the K-12 Education Department!

413-774-6051 x 21 or x 27
agrindrod@nesea.org
sreyes@nesea.org

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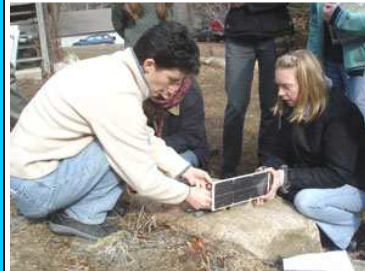
NESEA Arianna Grindrod

From: NESEA K-12 Education Department [agrindrod@nesea.org]
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To: agrindrod@nesea.org
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NORTHEAST SUSTAINABLE ENERGY ASSOCIATION

Inquiry-based, science and engineering education provides students with the tools necessary to assess and make healthy choices for themselves, their families, and their communities. The work of the K-12 Education Department is to provide opportunities that nurture the development of informed and pro-active citizens, infused with a team-spirit approach to face the challenges that lie ahead with dignity and resourcefulness.



NESEA K-12 Autumn 2010 E-NEWS

School has started and that means you are already hard at work putting on those final touches to the suite of lessons you will be facilitating with your students. NESEA is here for you to support your professional development needs and to help enrich your STEM programs and activities. We offer free [downloadable curriculum](#), teacher training workshops, and a host of experiences and resources to engage you and your students in sustainable energy practices through the STEM disciplines.

In this issue please read our sample lesson, "[Exploring Ozone](#)". Take a look at [what NESEA is up to these days](#), including putting out a presenters call for our [NEW Educators Summit](#) in March, our annual [member meeting](#), and our [Green Buildings Open House Tour](#). Also catch up on news and events from our [collaborators](#) and review our [sponsors](#), [service contracts](#) and [grants](#).

SAMPLE LESSON: Exploring Ozone
By Susan Reyes

Grade Level: 3rd -12th

Background: Ground level ozone is a major source of smog, causing poor visibility, and damaging plants and lungs. It is formed primarily when nitrogen oxides from burning fossil fuels in vehicles, factories and power plants react with volatile organic compounds in the presence of sunlight. Don't confuse the problem of ground level ozone

Educator Workshops

[Build a Model Solar Car: the JSS Experience, 9/14, 8am-12pm, Aberdeen, MD](#) (free)

[Build a Model Solar Car: the JSS Experience, 9/21, 4-7pm, Greenfield, MA](#) (free)

[Solar Tracker Design, 10/2, full day, Greenfield, MA](#) (\$75)

For an up-to-date list of workshops visit the [Educators Calender](#). Our current suite of sponsored **free** educator workshops include:

- Build a Model Solar Car: The Junior Solar Sprint Experience, hosted through the NESEA service territory.
- A Solar Kit for the Classroom throughout New York State.
- Wind Wisdom for School Power Naturally throughout New York State.
- Clean Energy for a Clean Environment, for teachers within Western MA.

NESEA also offers Energy Thinking, Clean Green Power, Solar Sense, and Wind Wisdom workshops throughout our 10-state service territory. See [description and fees](#).

with the problem of the “ozone hole,” or thinning of areas of the natural ozone layer twenty miles above us in the stratosphere that protects us from harmful ultraviolet radiation. Up high or on the ground, it’s the same molecule, O₃, but as they say at the Environmental Protection Agency (<http://airnow.gov/>), ozone is “Good Up High and Bad Nearby.”

Activity: Develop and test questions related to ozone levels in your area.

Materials: Ozone test strips; Index cards; Clear tape and glue stick

Digital camera to analyze color change and Solar irradiance meter to record sunlight

Steps:

1. Generate questions that can be answered by testing ozone levels in different areas and under different conditions. Examples:

- Are ozone levels different on sunny and cloudy days?
- Are ozone levels higher in the morning or evening?
- How does level of sunlight affect ozone level?
- Can ozone be detected anywhere inside my building?
- Are ozone levels related to humidity?
- Are ozone levels higher in certain locations (eg near roads, gas stations, dumps, furnaces or copy machines)?
- Do ozone levels change when light is passing through glass or plastic?

2. Consider all the things that could affect ozone levels and design your test so that only one factor is changing and everything else is the same –in other words, control variables well in your tests.

3. Repeat tests to see if results under the same conditions are consistent.

4. Follow instructions that come with your ozone test strips. Typically you lay the test strips out in the desired site for a given amount of time (1 hour or longer) and then compare the color change observed to a chart that provides the ozone level.

- Tip: You may be able to cut your test strip paper into smaller portions

5. Glue or back tape each test piece on a file card, where

NEW! Educators Summit at BuildingEnergy 2011 CONNECT.

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March 9, 2011

Seaport World Trade Center, Boston, MA

This NESEA signature conference has been around for 35 years and has been a way for professionals in the energy and building professions to gain professional development. This year NESEA is expanding this conference to include an [Educators' Summit](#) with opportunities to not only gain experience in energy education but also to partake in other BE classes, activities, and networking across multiple disciplines. NOT TO BE MISSED! Registration will commence in fall 2010. [Call for Presenters!](#) Proposals due September 20, 2010

NESEA Annual Member Meeting

September 25, 2010

Providence, RI

Members and prospective members are invited to hear Joachim Eble, the "German Godfather of Green", presenting SUSTAINABLE URBANISM.

Take a tour of the fabulous CHPS Providence Career & Technical Academy (PCTA), network with local exhibitors, connect with colleagues and friends.

Green Buildings Open House

Saturday, October 2

Visit local homes and businesses who have incorporated sustainable energy practices and technologies. Great field trip idea for students to show their families what they are working on in school with regard to energy efficiency and renewable energy applications.

ANNOUNCEMENTS FROM NESEA COLLABORATORS

The North American Association for Environmental Education (NAAEE) 39th Annual Conference

September 29 – October 2, 2010

Buffalo-Niagara, New York

www.naaee.org/conference

Saturday, October 2, is K-12 Teacher Focus Day at the NAAEE conference, with presentations of interest to K-

you can record the results in addition to the date, time, location, temperature, and other conditions.

6. Discuss findings in relation to how ozone is formed, make conclusions, and consider next experimental steps and recommendations for action in the community.

Resources:

- Eco Badge Kit and refill Test Card Pack
www.ecobadge.com
- With some filter paper and laboratory chemicals on hand, you could make your own test strips:
<http://science.howstuffworks.com/environmental/green-science/ozone-pollution.htm>
- Budget solar irradiance meter kit:
<http://www.microcircuitlabs.com/SIM.htm>

NESEA ANNOUNCEMENTS

Hey, what's up with NESEA?

First, we're breaking down silos and building bridges and all those other wonderful clichés about change. What they mean in our case is that we're looking at NESEA as a solar system, and BuildingEnergy program as the sun. For many people, BE is NESEA and vice versa. So part of what we are doing is reevaluating all of our programs with respect to what works well with BE: great opportunities to network with and learn from a multidisciplinary group of professionals, a "whole systems" approach to energy efficiency and renewable energy, and the opportunity to share the results of proven case studies. We're trying to add a bit more of the BE vibe to our other programs, and bringing our other programs to BE, both figuratively and literally. For example, this year we'll hold our first Educators Summit at BuildingEnergy. For years we've been offering excellent teacher training programs on energy efficiency and renewable energy, but we've not created ample opportunities for educators to network and learn from and with other NESEA professionals. This year, we'll have educators attend sessions geared toward K-12 STEM curriculum, but will also invite teachers to take in a few of the traditional BuildingEnergy sessions. We've known for years that teachers involved in our K-12 training programs are often the strongest advocates for introducing energy efficiency and renewables into our schools so NESEA sees the true value of equipping you with the tools you need for engaging STEM education with a focus on energy efficiency and renewable energy with real-world applications.

12 classroom teachers and a special teacher rate. Browse the schedule and read descriptions of presentations at <http://convention2.allacademic.com/one/naaee/naaee10/>. Pre-registration ends on September 15, 2010. Join us!



Green Teacher is a magazine that helps youth educators enhance environmental and global education inside and outside of schools. Check out their current edition at <http://www.greenteacher.com/>



The JETS TEAMS Challenge: Focusing on energy this year, TEAMS will help your students make the connection between math and science to real-world issues. Students will discover their potential for solving problems while having a fun and unique learning experience. Get involved and become a TEAMS Coach today! Registration opens in September at www.jets.org/teams.

The New England Environmental Education Association (NEEEA) Annual Conference

Cultivate, Collaborate: Designing Our Shared Future
October 21, 22, and 23, 2010 at Lake Morey Resort, Fairlee, VT

with keynote addresses by:

Peter Forbes, Center for Whole Communities; Bill McKibben, 350.org & Dana Hudson, Northeast Farm to School Coordinator

Early Bird ends Sept. 19!

<http://www.neeea.org/conference.html>



New Book! For teachers working with younger students, check out <http://cascadepass.com/> and their new book *A Clean Planet: The Solar PowerStory*.

WMECo supports CECE for a Second Year

NESEA has been awarded a grant by the Western Massachusetts Electric Company (WMECO) to continue facilitating workshops on CECE. The [Clean Energy for a Clean Environment \(CECE\)](#) program empowers youth and educators to explore topics in renewable energy resources. Students explore the science and applications of renewable energy and can earn a Clean Green Power Champion Patch by completing hands-on projects that they then share with their school and community. Workshops will be 3 hours in length and provide hands-on training in applications in solar energy in addition to an overview of how to utilize the two units *Clean Green Power* and *Wind Wisdom* in the classroom, as well as the *Solar Sense* lessons based on [A Solar Kit for the Classroom](#). Contact [NESEA](#) for more information and to be a site host. You must live and/or work within WMECo's service territory to participate.

Lydia B. Stokes Foundation invests in furthering NESEA's Educational Outreach.

NESEA received another grant from the Lydia B. Stokes Foundation to continue the marketing strategies work we started in 2006. To remain effective, the K-12 Education Department needs to maintain a presence at places teachers congregate. Even in challenging economic times, teachers and non-formal educators make it a point to attend at least one conference of interest to connect and network with other educators, find that new innovative lesson that will fit within their State Learning Standards, and obtain valuable educational resources. NESEA wants to be there for you as your energy education provider, and through this grant, we have the ability to participate at a select few conferences.

Service Contract with NYSERDA continues providing NYS Teachers with quality teacher training workshops on solar and wind energy in the classroom throughout the fall.

Dear NYS Educators, wondering when NESEA is coming to you to provide you with a free teacher training workshop on renewable energy education? Give us a call! Thanks to funding from the New York State Energy and Research Development Authority, NESEA is continuing to accept site host requests throughout New York State for [A Solar Kit for the Classroom and Wind Wisdom for School Power Naturally workshops](#).

Wind Wisdom for School Power Naturally curricular units are available for free download at <http://www.nesea.org/k->

Quote of the day: "The things we have to learn before we can do them, we learn by doing them" - Aristotle.

12/solarsailsnewyork/
and SchoolPowerNaturally.org

What do you want in an E-Newsletter?

The NESEA K-12 Education Department rolled out our first e-newsletter in Winter 2010. Our original hard copy newsletter was the JSS Northeast News. It's main focus was to serve teachers who were interested in the Junior Solar Sprint program. Our JSS sponsors, the U.S. Army Educational Outreach Program (AEOP) encouraged us to go digital in an effort to cut down on paper. We like our new format and have expanded the scope and purpose of the e-newsletter to highlight all our programs. We provide you with sample lessons, workshop dates, updates on our sponsored programs, and ways to connect and interact with one another. We are also now quarterly instead of bi-annually. Is there something you would like to see in a quarterly NESEA Educators' E-News? Do you feel you need to hear from NESEA more than seasonally? Let us know! Email agrindrod@nesea.org for your comments and suggestions.

Who Sponsors NESEA K-12 Education Programs?

Clean Energy for a Clean Environment (CECE) is sponsored locally by the Western Massachusetts Electric Company (WMECo).



**Western Massachusetts
Electric**

The Northeast Utilities System

Junior Solar Sprint (JSS) in the northeast is coordinated by NESEA and sponsored by the [U.S. Army Educational Outreach Program](#).



New York Solar Sails: Expansion of Solar and Wind Energy Education for School Power...Naturally is sponsored statewide by the [New York State Energy Research and Development Authority](#) (NYSERDA)

NYSERDA

New York State
Energy Research and
Development Authority

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Join the discussion! Start a discussion! What are your

NESEA JSS videos

Watch the 2009 Northeast Championship [16min documentary](#). See the original [1993 JSS video](#) Also

interests in renewable energy education? What are your needs? Let's help one another. Share lessons that really work. Post your challenges and accomplishments.	available on DVD through NESEA.
The NESEA K-12 Education Department offers professional development opportunities and resources for teachers and non-formal educators, and curriculum and programs on energy efficiency and energy conservation, and on forms and applications of renewable energy. NESEA employs best practices in creating grade-specific and age-appropriate curriculum that meet state and federal academic <i>Learning Standards</i>.	Contact the K-12 Education Department! 413-774-6051 x 21 or x 27 agrindrod@nesea.org sreyes@nesea.org

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JUNIOR SOLAR SPRINT



Junior Solar Sprint is much, much more than a model solar car challenge. It provides the spark and the educational foundation for the next generation of sustainable energy professionals.

Each year, NESEA trains teachers and non-formal educators how solar panels operate under a variety of circumstances and the ways in which they can be augmented or tilted to collect the sun's energy most effectively by having them design model solar electric cars. These teachers, in turn, share the information with middle school students – our future engineers, solar installers, and inventors. The program culminates with a regional championship hosted each June by NESEA in Springfield, MA.

Due to funding challenges, the 2009-2010 academic year saw a decrease in the number of teacher training workshops offered. NESEA staff and JSS Area Coordinators facilitated seven workshops in New York, Pennsylvania, Maryland, Rhode Island, Massachusetts, and Washington, D.C., training 117 teachers.

Despite being able to offer fewer professional development workshops, we had a record number of teams registered for the Northeast Championship. With 130 teams, we were at full capacity.

JSS is sponsored by the United States Army. We are also grateful to Pitsco Education, Inc., who donate solar car kits each year to support our teacher trainings.

"Junior Solar Sprint, as NESEA runs it, has inspired me and thousands of teachers who read about it in our newsletter. We've started our own activities that teach engineering, science, and technology, alongside society, history, and civics, such as our newest 'Green Dollhouse Challenge,' our solar cooking classes and workshops, and our newest project, 'Energy Haiku.'"

– Shawn Reeves, Ithaca, NY

"Each year the Junior Solar Sprint gets bigger and better. We are thrilled by the creativity and enthusiasm of so many students."

– Nancy Nylen, Center for Ecological Technology, Pittsfield, MA

"What do I value about NESEA? Definitely the networking opportunities, the ability to share good information, and continually to see the whole industry getting better together and learning from each other. It's really about sharing information and knowledge, which is critical to creating sustainability."

– Jesse Selman, Coldham & Hartman

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EDUCATION
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NORTHEAST SUSTAINABLE ENERGY ASSOCIATION

K-12 Education Department

Professional development opportunities,
curriculum, and resources for teachers and
non-formal educators on energy efficiency,
energy conservation, and on the science
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