

AWARDS

Two types of awards will be given. One will be based on competitive judging results from invited distinguished judges. Each entry will be judged four times by four different judges for fairness and equity. First place, second place, third place, and honorable mention awards will be presented.

In addition, the Senior Division (10th through 12th grade) First Place Grand Award winner will receive an all expense-paid trip with an accompanying adult to compete at the International Science and Engineering Fair to be held in Pittsburgh, Pennsylvania from May 10-15, 2015. The second type of award is given by special judges from several organizations. In the 2013 Dutchess County Regional Science Fair, 160 special awards and certificates with cash value of more than \$4200 were presented by the following organizations:

- A. Page and Associates Award (New in 2004)
- American Association of University Women
- American Chemical Society — Mid-Hudson Section
- American Meteorological Society
- American Psychological Association (New in 2004)
- American Statistical Association — Mid-Hudson Valley Chapter
- ASM Materials Education Foundation
- Association for Women Geoscientists
- Broadcom Masters Nominee (New in 2011)
- Cary Institute of Ecosystem Studies
- Central Hudson Gas & Electric Corp.
- Clearwater Sloop Environmental Awards (Renewed in 2010)
- Dru Rood Memorial Award (New in 2010)
- Dutchess County Dental Society
- Emily O'Neill Effective Display Award (New in 2010)
- Environmental Defense Fund
- George E. Banta Awards (New in 2010)
- Htoo Science Award
- IBM Spectrum (Renewed in 2012)
- Institute of Electrical & Electronics Engineers
- Jerry Lieberman Memorial Award
- John Cwiklik Memorial Award (New in 2005)
- Laya Varanasi Effective Display Award (New in 2013)
- Lowell Butler Memorial Award (New in 2005)
- Mei Ling Chan Memorial Award (New in 2009)
- MHV Microelectronics Packaging Society (New in 2006)
- Mid-Hudson Astronomical Society
- Mid-Hudson Computer User Group
- Mid-Hudson Photography Club (New in 2006)
- Mid-Hudson Valley Gem and Mineral Society
- Mu Alpha Theta
- National Association of Biology Teachers
- National Oceanic and Atmospheric Administration (New in 2006)
- NYS Society of Professional Engineers

- Poughkeepsie Farm Project (New in 2006)
- Poughkeepsie Lodge 266 F & AM Award (New in 2007)
- Poughkeepsie-Arlington Rotary Club
- Rachel Perfecto Effective Display Award (New in 2013)
- Rebecca and David Idell Effective Display Award (New in 2013)
- Rita Brannen Science Award (New in 2013)
- Robert Bird, M.D. Memorial Award
- Robert Considine Memorial Award (New in 2005)
- Robert Verkuil Effective Display Award (New in 2013)
- Sigma XI, The Scientific Research Society
- Society of Hispanic Professional Engineers — MHV Chapter (New in 2006)
- Society of Manufacturing Engineers
- Society of Plastics Engineers
- Society of Women Engineers
- TEG Credit Union Awards (New in 2008)
- Tonya Jackson Science Award (New in 2013)
- Union College Science Award
- United States Air Force
- United States Metric Association
- United States Navy & Marine Corps
- United States Public Health Service
- United States Stockholm Junior Water Prize (Renewed in 2013)
- Vassar Brothers Institute
- WIC Watershed Award (New in 2014)
- Yale Science & Engineering Association

ORGANIZATION AND SUPPORT

The Dutchess County Regional Science Fair is a non-profit organization composed of more than 200 volunteers (non-paid personnel) in the community who are interested in enhancing the personal (organization and communication) skills and scientific and engineering skills of students gained through research, experimentation and presentation. It is one of the longest running science fairs in the country and is the first regional science fair in New York state.

It is dependent on many local organizations (listed in the awards section) for judging and presenting special awards as well as the following organizations which provided financial support for operating the 2014 fair. Dutchess Community College also contributed by waiving the rental fees for exhibit space and facilities for 2015. *Registration fees account for only 25% of the operating expenses.*

- IBM Corporation
- Society of Plastics Engineers — Mid-Hudson Section
- Vassar Brothers Institute
- CH Energy Group, Inc.
- MHV Microelectronics Packaging Society

- Karen Markeloff
- Absolute Auction & Realty, Inc.
- Dutchess County Dental Society
- American Chemical Society - Mid-Hudson Section
- Sigma Xi - The Scientific Research Society
- American Statistical Association — Mid-Hudson Chapter
- Handel Foundation
- Shaheda Azher, MD
- A. Page & Associates
- Marshall & Sterling
- Bottini Fuel
- Poughkeepsie-Arlington Rotary Club
- Mr. and Mrs. Lou Lewis
- Union College

SCIENCE REVIEW COMMITTEE

Science Review Committee is responsible for assuring that all students comply with the rules of the International Science and Engineering Fair in performing their experiments.

Harry Bird, P.E., *CHAIRMAN*, Telephone: (845) 462-1454
Nicole Devincenzi, Science Teacher
Stephen Friedland, M.D.

EXECUTIVE COMMITTEE

TREASURER Richard Marin

FUND RAISING.....Marcia Rood O'Neill

PUBLICITYSteven Johnson

SITE ARRANGEMENTS Dominic Schepis, IBM, Chair
Robert Martzinek; Chon Lei; Rao Varanasi, IBM

SITE OPERATIONS..... Susan S. Htoo, Esq., Chair
Marcia Rood O'Neill; Grace Diehl; Gary Levine, Esq.

REGISTRATION..... Louann Haussermann, Chair
Deborah Boyce; Jennifer Giammetteo;
Dina Zanca; Toni Scalafani

JUDGING.....Maung S. Htoo, Chair
Joseph Bettencourt, Marist College;
Michael Ellsworth, IBM; David Jemiolo, Vassar College;
Thomas Bucelot, IBM; Steve Spehalski, Central Hudson

AWARD PROCESSINGEdmund Lynch III, Chair
Robert Brickner; Jane Idell; Steven Idell;
Wesley Pfirman; Shaun Boyce;
Frank Johnson

INFORMATION PROCESSING Charles Haussermann, Chair
Dina Zanca; Deborah Boyce; Jennifer Giammetteo;
Louann Haussermann; Toni Scalafani

56TH ANNUAL Dutchess County Regional Science Fair

www.dcssciencefair.org

Falcon Hall • Dutchess Community College

Poughkeepsie, New York

MARCH 21, 2015

DEFINITION AND PURPOSE

The Dutchess County Regional Science Fair is affiliated with the International Science and Engineering Fair to be held in Pittsburgh, Pennsylvania from May 10-15, 2015.

The purpose of the fair is threefold: to stimulate in young people an active interest in science and engineering; to provide an educational experience through being exposed to the judges and other exhibits; and to give recognition to talented students for the work they have done.

It is a competition based on the quality of projects done by the students, the results of which are reported through exhibits and oral presentations.

ELIGIBILITY AND CATEGORIES

The Dutchess County Regional Science Fair is open to all qualified students from fifth through 12th grades attending any public, private, parochial or home school in Dutchess County. In order to qualify, students must be top place winners in their local science fairs.

The categories are as follows:

Biology; Chemistry; Physics; Mathematics; Computer Science; Engineering; Earth and Space Sciences; Environmental Sciences; Behavioral and Social Sciences

SCIENCE FAIR DIRECTOR

Maung S. Htoo, Ph.D., FAIC
10 Rabbit Trail Road, Poughkeepsie, NY 12603
Office Phone: (845) 473-0940
E-Mail: mhtoo@alum.rpi.edu

REGISTRATION

All official entry forms and registration fees must be received **before noon on Saturday, March 7, 2015** at the following address: *if necessary, please hand deliver to Arlington post office on Raymond Avenue, Poughkeepsie, NY*

Louann Haussermann
Registration Chairperson
Dutchess County Regional Science Fair
P.O. Box 3157 · Poughkeepsie, N.Y. 12603
Phone: 845-473-0940
E-Mail: cakelady6@juno.com

The registration fee is \$20.00 (twenty dollars) for individual projects. **Team projects will not be allowed.** Checks should be made payable to:

“Dutchess County Regional Science Fair”

Entry forms will be given to top place winners by the local science fair coordinator. Registrations by e-mail will NOT be accepted.

EXHIBITION AND JUDGING

Exhibits must be brought to and set up at Falcon Hall, Dutchess Community College, Pendell Road Poughkeepsie, New York on **Saturday, March 21, 2015 from 7:30 AM to 8:30 AM. Doors will be closed after 8:30 AM.** Exhibitors are advised to bring their own folding chairs. We provide exhibit tables only. Parking is allowed in designated parking areas. **Judging will take place from 8:45 AM to 12:30 PM.** Only exhibitors, judges and science fair personnel will be allowed in the exhibit hall during judging. The exhibitors must be present at all times during these judging hours. Use of cell phones is not permitted. All exhibitors will receive Certificates of Achievement after judging is completed at 12:30 PM. **The exhibit hall will be closed for one and a half hours until 2:00 PM for awards processing.** Exhibitors should leave their exhibits and take all their valuables with them to go eat lunch with their parents or guardians (lunch will not be served and only science fair personnel will be allowed in the exhibit hall).

PUBLIC VISITATION

Exhibitors must return promptly at 2:00 PM to their exhibits for public visitation from 2:00 PM to 3:30 PM. The science fair will be open to the public without charge.

AWARD PRESENTATION

Awards will be presented at Falcon Hall from 3:30 PM to 5:00 PM. All exhibitors are required to be present at the public visitation and awards presentation ceremony. **No exhibits can be removed until after the awards presentation.** Please leave the exhibit area as clean as it was found.

RULES GOVERNING ALL EXHIBITS

1. Only one exhibit per student may be entered. Exhibit must be the work of the student in whose name it is entered. The research must be done between April 2013 and March 2014.
2. Exhibit size is limited to **30 inches deep front to back; 48 inches wide, side to side and 108 inches high, floor to top.**
3. The exhibit must be self-supporting with or without an attached base. No exhibit can be mechanically attached to table-tops.
4. If the name of the student or school appears on an exhibit, **it must be covered with masking tape during judging. Awards won at school science fairs should not be displayed.**
5. Paper or other flimsy materials used for decorative purposes are prohibited. Use of heavy cardboard is recommended.
6. Active Internet or e-mail connections are not permitted.
7. Exhibitors requiring electricity for their exhibit must make such request in the entry forms.
8. Electrical Safety:
 - Batteries with open top cells are not permitted. High voltage equipment must be shielded with a grounded metal box or cage to prevent accidental contact.
 - Large vacuum tubes or dangerous ray-generating devices must be shielded.
 - High voltage wiring, switches and metal parts must be located out of reach of observers and designed with an adequate overload safety factor.
 - Electrical circuits for 110-volt AC must have an Underwriters Laboratories approved cord of proper load carrying capacity, which is at least six feet long and equipped with a standard grounded plug.
 - All wiring must be properly insulated. Nails, tacks, or uninsulated staples must not be used to fasten wiring.
 - Bare wire and exposed knife switches may be used only on circuits of 12 volts or less; otherwise standard enclosed switches are required.
 - Electrical connections in 110-volt circuits must be soldered or fixed under approved connectors.
 - Connecting wires must be properly insulated.
9. Any exhibit producing temperatures above 100 degrees C (212 degrees F) must be adequately insulated from its surroundings.
10. The use of open flame, combustibles, flammable chemicals or liquids and hazardous substances are prohibited. Examples of hazardous substances for public display are live disease-causing organisms, microbial cultures, or fungi, caustic and acid chemicals. If your exhibit normally incorporates such materials, replace them with

harmless substitutes such as colored water, salt, sand, etc., labeled with the name of the material for which substitution has been made.

11. Combustion-fuel-operated machinery must have fuel tanks emptied and purged with carbon dioxide before being brought into exhibit building. Fuel tanks must be sealed by lock or wire.
12. Containers for water or other fluids must be water-tight and where necessary, ample drip pans for condensation must be provided.
13. Only class II and III lasers with appropriate safety measures may be displayed and operated. Class III and IV lasers may be used for display purposes only.
14. All controlled substances (drugs, chemicals, anesthetics, etc.) must be acquired and used according to existing local, state, and federal laws.
15. **All experiments involving vertebrate animals, human subjects, and recombinant DNA must conform by the rules of International Science and Engineering Fair and must be approved by the Science Review Committee before starting the experiment.** Please have your science teacher call Mr. Harry Bird (462-1365) for assistance if needed.
16. **No animals (dead or alive) or animal parts of any kind will be allowed with the project at the fair.**
17. All tools and equipment for setting up the exhibits must be supplied by the student.
18. Each exhibitor must remain with the exhibit during judging hours and is personally responsible for seeing that the exhibit remains in repair.
19. At the conclusion of the judging, the exhibitor will be responsible for removal of all chemicals, or substances that could be picked up. Specifically, any item that may be damaged by, dangerous to, or removable by the public, must be removed.
20. All exhibits are entered at the risk of the exhibitor. Neither the sponsors of the Fair nor the management can assume responsibility for any loss or damage.
21. All exhibits and exhibitors must remain through end of Fair.
22. All exhibitors must refrain from disorderly conduct, and must eat in designated areas only.

Strict adherence to the rules is required of all exhibitors. Rule violations automatically make exhibitor ineligible for awards and may cause removal of the exhibit.

All required forms for the experiment can be downloaded from the Society for Science & the Public website:

www.societyforscience.org

JUDGING CRITERIA - competitive judging

Judges will include prominent scientists, engineers, educators and professional people from the local community.

Heavy emphasis will be placed on scientific thought and creative ability as described below. An experiment should be a major part of the work wherever possible. Experimental procedure, results, discussion and conclusion must be recorded properly. The project must be done with little or no assistance from others. When necessary, the experiment must be repeated more than once to establish the validity of the results.

JUDGING CRITERIA - all individual projects

SCIENTIFIC THOUGHT..... 30 POINTS

Does the exhibit show a verification of laws, a cause and effect, or is there a presentation of models or methods which give a better understanding of scientific facts and theories?

Does it clearly demonstrate an important scientific concept?

CREATIVE ABILITY..... 30 POINTS

Creativity in the development of concepts, design, construction and application of the equipment, analysis and interpretation of data and approaches to solving the problem.

SKILLS 15 POINTS

Does the student exhibit the skills required to do all of the work necessary to obtain the data which support the project?

This includes design, laboratory, computational and observation skills. How much help was needed from others? Was the equipment built independently by the student?

THOROUGHNESS..... 15 POINTS

Does the project carry out its purposes to completion? Are the conclusions based on a single experiment or a series of replications? How complete is the notebook or recording of data?

CLARITY 10 POINTS

How clearly is the student able to describe and discuss the project? Is the speech memorized with little understanding of the principles?

Will the average person understand what is being displayed?