

NORTH JERSEY REGIONAL SCIENCE FAIR

A nonprofit, volunteer organization

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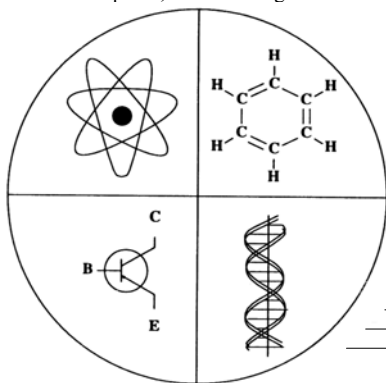
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NJRSF Home Page: www.NJRSF.org

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NJRSF Judging Schedule

22nd Annual North Jersey Regional Science Fair

Rutgers, the State University of New Jersey, College Avenue Campus, New Brunswick

Friday, March 4

Please arrive by 6:30 p.m.

6:30-7:00 p.m.	Judges' briefing. Refreshments provided.
7:00-9:30 p.m.	Category judging, students at projects.
9:30-10:30 p.m.	Judges' conference for project evaluations and rankings.

Saturday, March 5

Please arrive by 8:30 a.m.

8:30-9:00 a.m.	Judges' briefing. Continental Breakfast provided.
9:00 a.m. - Noon	Judging for special awards and symposium finalists. Students at projects.
10:30-10:45 a.m.	Break for judges and students.
Noon-1:00 p.m.	Judges' conference for project rankings. (Lunch for ISEF Panel provided).
1:00-4:00 p.m.	ISEF Finalist Symposium in auditorium. Open to public.
1:00-6:00 p.m.	Exhibits open to public.
6:30-8:00 p.m.	Awards ceremony in auditorium, open to public.

In the event you need to CANCEL your judging assignment, please send a message to Lenore Neigeborn at neigebor@rci.rutgers.edu or leave a message at (732) 317-1254.

In case of a WEATHER EMERGENCY call 973-360-8663 for a recorded message.

Directions to the College Avenue Gym and Rutgers Student Center, Rutgers College, College Avenue Campus, New Brunswick

From New Jersey Turnpike (north or south)

Turn off at Exit 9. After toll booths bear to the right; follow signs for "Route 18 North - New Brunswick." Proceed along Route 18 North past exit for "Route 27" and take the exit marked "George Street-Rutgers University" (approximately 2.6 miles from Turnpike - **NOTE: there are two George Street Exits - this is the *second* one). At the top of the exit ramp bear left onto George Street. Make the first right onto Seminary Place. At the end of Seminary Place make a right onto College Avenue. The Rutgers Student Center and College Avenue Gym are on the left after four blocks. Parking is available in Lots #26 and 30 behind both buildings.

From Garden State Parkway Southbound - Coming from northern New Jersey

Turn off at Exit 129 for the New Jersey Turnpike and head south. Follow directions to campus from Route 18 North, below.

From Garden State Parkway Northbound - Coming from southern New Jersey

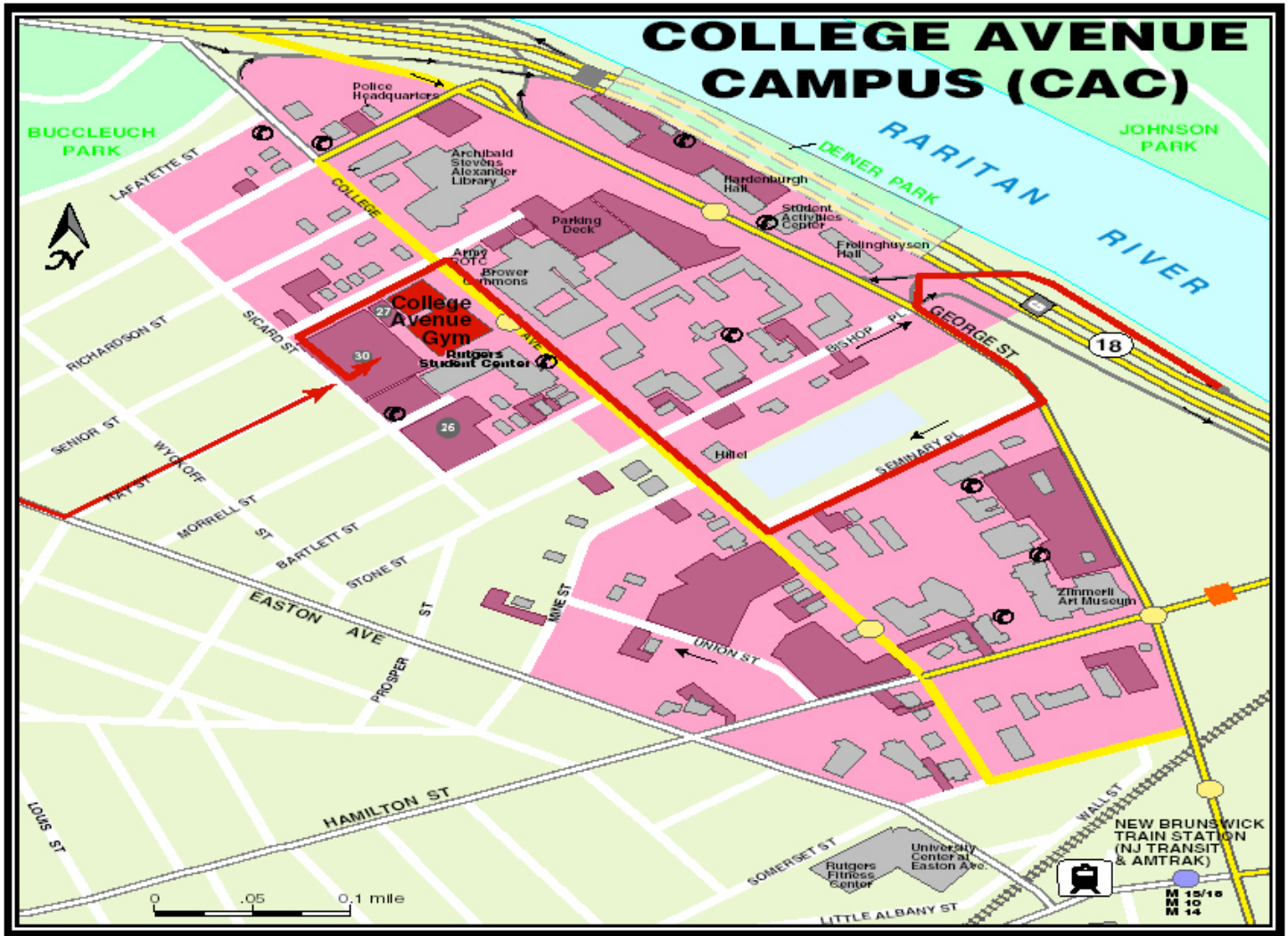
Turn off at Exit 105 and follow signs for Route 18 North. After approximately 24 miles you will pass the entrance for the New Jersey Turnpike and continue on Route 18 North. Proceed along Route 18 North past exit for "Route 27" and take the exit marked "George Street-Rutgers University" (approximately 2.6 miles from Turnpike - **NOTE: there are two George Street Exits - this is the *second* one). At the top of the exit ramp bear left onto George Street. Make the first right onto Seminary Place. At the end of Seminary Place make a right onto College Avenue. The Rutgers Student Center and College Avenue Gym are on the left after four blocks. Parking is available in Lots #26 and 30 behind both buildings.

From Route 1 (North or South)

Turn off at exit marked "Route 18 North-New Brunswick" Proceed along Route 18 North past exit for "Route 27" and take the exit marked "George Street-Rutgers University" (approximately 2.6 miles from Turnpike - **NOTE: there are two George Street Exits - this is the *second* one). At the top of the exit ramp bear left onto George Street. Make the first right onto Seminary Place. At the end of Seminary Place make a right onto College Avenue. The Rutgers Student Center and College Avenue Gym are on the left after four blocks. Parking is available in Lots #26 and 30 behind both buildings.

From Route 287 (North or South)

Turn off at Exit 9 (Formerly Exit 5) " River Road, Bound Brook, Highland Park". Proceed east on River Road toward Highland Park (if you're coming from 287 South, bear right at the top of the exit ramp; turn left if you're coming off 287 North).until you reach the fifth traffic light (approximately 3.4 miles) at the intersection of River Road, Metlars Lane and Route 18 (The number of lights can be tricky because they're very close together at some points.). Turn right onto Route 18 and cross the Raritan River on the John Lynch Memorial Bridge. Stay in the right lane and take the first exit which is marked "George Street - Rutgers University, New Brunswick, Route 27." At the traffic light at the top of the exit ramp turn right onto Huntington Street, then turn left at the first traffic light onto College Avenue. Proceed approximately three blocks, and the Rutgers Student Center and College Avenue Gym are on your right. Parking is available in Lots #26 and 30 behind both buildings.



Directions to Judges' Room

Judges should park in Lot #26 or 30 behind the College Avenue Gym and Rutgers Student Center. The judges' room is in the "Red Lion Café" inside the Rutgers Student Center. From the parking lot, proceed to the front of the building. Go in the front door and down the stairs to the lowest level. The "Red Lion Café" is on the right as you come down the stairs.

ISEF Judging Guidelines and Evaluation Criteria

The criteria and questions below are used by the Grand Awards Judges of the Intel ISEF and is suggested as a guide for your category judging. Scientific Thought and Engineering Goals are separated into IIa. and IIb. to be used appropriately by category. There are also added questions for team projects.

I. Creative Ability (Individual - 30, Team - 25)

1. Does the project show creative ability and originality in the questions asked?
 - the approach to solving the problem?, the analysis of the data?, the interpretation of the data?
 - the use of equipment?, the construction or design of new equipment?
2. Creative research should support an investigation and help answer a question in an original way.
3. A creative contribution promotes an efficient and reliable method for solving a problem. When evaluating projects, it is important to distinguish between gadgeteering and ingenuity.

II a. Scientific Thought (Individual - 30, Team - 25)

If an engineering project, the more appropriate questions are those found in IIb. Engineering Goals.

1. Is the problem stated clearly and unambiguously?
2. Was the problem sufficiently limited to allow plausible approach? Good scientists can identify important problems capable of solutions.
3. Was there a procedural plan for obtaining a solution?
4. Are the variables clearly recognized and defined?
5. If controls were necessary, did the student recognize their need and were they correctly used?
6. Are there adequate data to support the conclusions?
7. Does the finalist or team recognize the data's limitations?
8. Does the finalist/team understand the project's ties to related research?
9. Does the finalist/team have an idea of what further research is warranted?
10. Did the finalist/team cite scientific literature, or only popular literature (i.e., local newspapers, Reader's Digest).

II b. Engineering Goals (Individual - 30, Team -25)

1. Does the project have a clear objective?
2. Is the objective relevant to the potential user's needs?
3. Is the solution workable? acceptable to the potential user? economically feasible?
4. Could the solution be utilized successfully in design or construction of an end product?
5. Is the solution a significant improvement over previous alternatives?
6. Has the solution been tested for performance under the conditions of use?

III. Thoroughness (Individual - 15, Team - 12)

1. Was the purpose carried out to completion within the scope of the original intent?
2. How completely was the problem covered?
3. Are the conclusions based on a single experiment or replication?
4. How complete are the project notes?
5. Is the finalist/team aware of other approaches or theories?
6. How much time did the finalist or team spend on the project?
7. Is the finalist/team familiar with scientific literature in the studied field?

IV. Skill (Individual - 15, Team - 12)

1. Does the finalist/team have the required laboratory, computation, observational and design skills to obtain supporting data?
2. Where was the project performed? (i.e., home, school laboratory, university laboratory) Did the student or team receive assistance from parents, teachers, scientists or engineers?
3. Was the project completed under adult supervision, or did the student/team work largely alone?
4. Where did the equipment come from? Was it built independently by the finalist or team? Was it obtained on loan? Was it part of a laboratory where the finalist or team worked?

V. Clarity (Individual - 10, Team - 10)

1. How clearly does the finalist discuss his/her project and explain the purpose, procedure, and conclusions? Watch out for memorized speeches that reflect little understanding of principles.
2. Does the written material reflect the finalist's or team's understanding of the research?
3. Are the important phases of the project presented in an orderly manner?
4. How clearly is the data presented?
5. How clearly are the results presented?
6. How well does the project display explain the project?
7. Was the presentation done in a forthright manner, without tricks or gadgets?
8. Did the finalist/team perform all the project work, or did someone help?

VI. Teamwork (Team Projects only- 16)

1. Are the tasks and contributions of each team member clearly outlined?
2. Was each team member fully involved with the project, and is each member familiar with all aspects?
Does the final work reflect the coordinated efforts of all team members?

Project Number: _____

Creative Ability (30 points maximum)

Does the project show creative ability and originality in

1. selection of the project?
 2. the approach to solving the problem?
 3. analysis of the data ?
 4. interpretation of the data?
 5. the use of equipment or the construction or design of new equipment?
- _____

Scientific Thought and Engineering Goals (30 points maximum)

1. Does the project have a clear objective?
 2. Was there a procedural plan for obtaining a solution?
 3. Are the variables clearly recognized and defined?
 4. Are there adequate data to support the conclusions?
 5. Are the engineering solutions practical and are they significant improvements over previous alternatives?
 6. Does the student have an idea of what further research is warranted?
- _____

Thoroughness (15 points maximum)

1. How completely was the problem covered?
 2. Are the conclusions based on a single experiment or replication?
 3. Is the student/team aware of other approaches or theories?
- _____

Skill (15 points maximum)

1. Does the student/team have the required laboratory, computation, observational and design skills to carry out the project?
 2. Was the project done under adult supervision, or did the student/team work largely alone?
 3. Where did the equipment come from? (i.e. built independently, obtained on loan, or part of a laboratory where the student/team worked)
- _____

Clarity (10 points maximum)

1. How clearly can the student explain the project's purpose, procedure, and conclusions?
 2. Are the data and results presented clearly?
 3. How well does the project display explain itself?
- _____

Total Score : _____

Notes:

NJRSF AWARDS – 2005

ISEF Trip Award	<p>An all expense paid trip to the International Science and Engineering Fair to be held in Phoenix, Arizona on May 8-14, 2005. Prize includes air fair, hotel, fair registration, and local expenses for student and advisor. Student also receives a plaque, certificate and a ribbon. Awarded for the two most outstanding projects in the fair in each division.</p>
ISEF Trip – Alternate	<p>A chance to attend ISEF if the trip winner is unable to attend. Prize includes an award certificate, ribbon and a book by Dr. Arno Penzias. Awarded to the students whose projects are judged third and fourth overall in each division.</p>
ISEF Symposium Finalist	<p>A chance to participate in the Finalist Symposium of the NJRSF. Prize includes an award certificate and a one-year subscription to Scientific American. Awarded to the students under final consideration for the ISEF trip awards in each division.</p>
NJIT Academic Fellowship	<p>Two 4-year academic fellowships, for \$1,000 per year, one in Engineering and one in either Math or Physics, conditional on normal admission procedures. This fellowship will be granted in addition to any other merit-based aid the student may have qualified for. Awarded to two Junior students submitting the project judges worthy by the NJIT faculty judges.</p>
NJIT Fellowship – Alternate	<p>A chance to accept the 4-year academic fellowship if the winners are unable to do so. Awarded to four Junior students submitting the project judges worthy by the NJIT faculty judges.</p>
NJIT Summer Research Academy	<p>Nomination to the NJIT Summer Research Academy for one summer to take up to six credits of college credit courses. Awarded to 2 Sophomore or Junior students judged worthy by the NJIT faculty judges.</p>
NJIT Summer Research Academy - Alternate	<p>A chance to attend the NJIT Summer Research Academy if the winner is unable to do so. Awarded to 2 Sophomore or Junior students judged worthy by the NJIT faculty judges.</p>
ECOES Summer Program	<p>Nomination to the <u>E</u>xploring <u>C</u>areer <u>O</u>ptions in <u>E</u>ngineering and <u>S</u>cience program at Stevens Institute of Technology. Awarded to 2 outstanding Junior or Sophomore students, excluding ISEF winners.</p>
ECOES Summer Program Alternate	<p>Alternate nomination to the <u>ECOES</u> program if the winners are unable to attend. Awarded to 2 Junior or Sophomore students, excluding ISEF winners.</p>
Partners in Science Research Award	<p>Nomination to the Partners in Science summer research program administered by the Liberty Science Center. Awarded to 4 Junior students submitting outstanding projects and demonstrating a high commitment to research. ISEF winners are excluded from this award.</p>

Partners in Science Research Award - Alternate	Alternate nomination to the Partners in Science summer research program. Awarded to 6 Junior students submitting outstanding projects and demonstrating a high commitment to research. ISEF winners are excluded from this award.
New Jersey Water Environmental Association Award	A cash award of \$500 and a plaque. Awarded to one Junior or Senior student who displays an outstanding water quantity or quality project as chosen by the NJWEA judge.
John Robinson Pierce Memorial Award for Independent Research	A cash award of \$250 and a plaque. Awarded in recognition of outstanding individual effort without substantive or formal technical assistance from professional scientists or scientific organizations.
First Place Category Award	A U.S. Savings bond, a 1 st place ribbon and an award certificate. Awarded to the best projects in each category of the NJRSF.
Second Place Category Award	A U.S. Savings bond, a 2 nd place ribbon, an award certificate and a subscription to Science News. Awarded to the projects ranked second in each category of the NJRSF.
Third Place Category Award	A U.S. Savings bond, a 3 rd place ribbon, and an award certificate. Awarded to the projects ranked third in each category of the NJRSF.
Honorable Mention Category Award	An honorable mention ribbon and an award certificate. Awarded to meritorious projects in each category of the NJRSF.
Special Computing Awards	<i>Grand Prize:</i> A \$200.00 U.S. Savings bond. Awarded to an outstanding project judged best in either hardware or software categories of computer engineering. <i>First Place:</i> A \$100.00 U.S. Savings bond. Awarded to the project judged first in demonstrating excellence in the design of computer hardware or software. <i>Second Place:</i> A \$75.00 U.S. Savings bond. Awarded to the project judged second in demonstrating excellence in the design of computer hardware or software. <i>Third Place:</i> A \$50.00 U.S. Savings bond. Awarded to the project judged third in demonstrating excellence in the design of computer hardware or software.
American Chemical Society Awards	<i>First Place:</i> \$250.00 cash. <i>Second Place:</i> \$150.00 cash <i>Third Place:</i> \$100.00 cash Awarded to projects that display excellence in the application of chemistry to solve a problem.
Rutgers Presidential Award	\$200 cash award Awarded to two outstanding Life Science projects in each division.
Columbia Alumni Association Award	\$75.00 cash award. Awarded to the first place projects in the Engineering and Computer Science categories.
Field Ecology Award	A \$200 U.S. Savings bond. Awarded to an outstanding Biology, Ecology or Environmental Science project utilizing data collected in the field rather than the laboratory.

Princeton Plasma Physics Laboratory Award	A plaque and certificate. Awarded to 6 outstanding projects in energy research as selected by PPPL judges.
Theobald Smith Society Microbiology Award	A certificate. Awarded to 3 outstanding projects related to microbiology.
NJMS Award – New Jersey Medical School Award	\$75.00 cash award. Awarded to an outstanding project showing achievement in Biomedical Research.
David S. Young Memorial Award	\$200 cash. Awarded in recognition of excellence in the area of Physics and/or Electrical Engineering.
New Jersey Forum for Academicians, Scientists and Technologists	\$100 cash and a Certificate of Recognition. Awarded to a project in the area of medicine and health that exhibits originality and careful experimental design.
Statistics Award	<i>First Place:</i> \$200.00 U.S. Savings bond. Awarded to a project deemed outstanding in the use of probability and statistics in the analysis of experimental data. <i>Second Place:</i> \$150.00 in U.S. Savings bonds. Awarded to a project judged second in the use of probability and statistics in the analysis of experimental data. <i>Third Place:</i> \$75.00 U.S. Savings bond. Awarded to a project judged third in the use of probability and statistics in the analysis of experimental data. <i>Honorable Mention:</i> Certificate. Awarded to a project judged honorable in the use of probability and statistics in the analysis of experimental data.
Meteorology Award	Certificate of Outstanding Achievement. Awarded to 2 students in each division who exhibit outstanding projects in the field of meteorology.
American Psychological Award	Certificate of Award. Awarded to one student in each division for outstanding research psychology in Behavioral or Social Science.
ASM International Foundation Award	Certificate of Recognition and a Medallion. Awarded to one student in each division recognizing the most outstanding materials engineering project.
U. S. Air Force Awards	An Award Certificate, a Techfolio containing a Franklin Spelling Ace/Thesaurus, a pen/pencil set, and a medallion. Four awards as chosen by the Air Force judges.
U.S. Army Awards	<i>Outstanding Project:</i> A certificate of Achievement, an Army Science logo t-shirt and the Army bronze medallion. Awarded to the most outstanding Army category winner. <i>First Place:</i> A certificate of Achievement and an Army Science logo t-shirt. Awarded to the projects judged best in category by the Army judges. <i>Second Place:</i> Certificates of Achievement. Awarded to projects recognized for excellence by the Army judges.
U. S. Navy/ Marine Award	A Certificate of Achievement and an educational recognition award valued at \$50. Awarded to three students.

Geoscience Award	Award Certificate. Awarded to one student in each division whose project exemplifies high standards of innovativeness and scientific excellence in the geosciences.
Department of Health and Human Services Award	Award Certificate and Presentation Folder. Awarded to one outstanding project in each division for projects that creatively illustrate and expand upon the following: Regular physical activity throughout life is important for maintaining a healthy body. A healthy diet and regular physical activity are both important for maintaining a healthy weight. Tobacco use is a major risk for heart disease, stroke, lung cancer, and chronic lung diseases – all leading causes of death.
Herbert Hoover Young Engineer Award	A certificate of Merit and a Medallion. Awarded to an outstanding engineering project in each division. The project should show a good grasp of engineering fundamentals, demonstrate competence in one or more engineering disciplines, and show good communication skills by effectively explaining the project.
Intel Excellence In Computer Science Award	An Award Certificate and \$200.00 from Intel. Awarded to one student in each division for excellence in Computer Science.
International Society for Optical Engineering	An Award Certificate. Awarded to one student in each division for the best project award in the area of optical or photonic engineering.
Kodak Award	An Award Certificate and a Kodak Digital 35mm One Time Use Camera for both the student and their sponsoring teacher. Awarded to one student in each division for the best use of photographic images or digital image processing to gather data, solve a problem, or clearly explain the essence of a science project.
Life Science Award	A Certificate. Awarded to one student in each division whose project exemplifies the highest standards of innovativeness and scientific excellence in life sciences.
National Society of Professional Engineers	Award Certificate and an Innovative Engineering Award lapel pin. Awarded to one student in each division for an innovative engineering project.
Space Science Award	Certificates of Achievement. Awarded to 5 students in each division who demonstrate scientific creativity in aeronautics and space-related sciences including environmental biology, space electronics and communications, robotics, propulsion and vehicles.
Metric Award	A Certificate of Achievement. Awarded to one student in each division who makes the most extensive and correct use of the Standard International System of Units.
MU Alpha Theta Mathematics Award	Award Certificate Awarded to one student in each division for the most challenging, thorough, and creative investigating of a problem involving modern mathematics.

**International Society
for Optical Engineering**

Award Certificate.

Awarded to one student in each division for the Best Project in the area of Optical Science and Engineering for projects that apply optics or photonics principles. Additional award opportunities available.

Water Prize

An Award of Excellence.

Awarded to one student in each division for outstanding water-related projects.

**Yale Science and
Engineering Award**

An Award Certificate and Pewter Medallion.

Awarded to 2 outstanding 11th grade projects in Computer Science, Engineering, Physics or Chemistry.

**Rutgers Student
Awards**

\$25 cash award.

Awarded to unique and imaginative projects as judged by Rutgers University Undergraduate students.

**Ricoh Sustainable
Development Award**

An Award Certificate and a one-year subscription to Science News Magazine.

Awarded to two students or one team project, selected from among all the categories, whose principles and technical innovations offer the greatest potential for increasing our ability to grow environmentally friendly and socially responsible businesses.

***In vitro* Biology Award**

An Award Certificate.

Awarded to 2 outstanding 11th grade projects exhibiting outstanding effort in the areas of plant or animal *in vitro* biology or tissue culture.