



# **Governor's Iowa High School Water Summit and Scholarship Program**

**November 8, 2007**

**State Capitol  
Des Moines, Iowa**

## **SCHOLARSHIP OPPORTUNITY**

### **Iowa Junior and Senior High School Students**

The Governor's Iowa High School Water Summit provides an opportunity for Iowa junior and senior high school students to explore environmental issues and careers while competing for \$10,000 in college scholarships.

**Please share this information with interested counselors, teachers and students.**

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## Steering Committee

|   |  |
|---|--|
| Shelli Grapp<br>Iowa Association of Water Agencies<br>Cedar Rapids Water Department | Dave Riley<br>University of Iowa – Center for Health Effects of<br>Environmental Contamination (CHEEC)   |
| Kaylene Carney<br>U.S. Geological Survey  | Lynn Laws<br>Iowa Environmental Council  |
| Mindy Wiggins<br>Iowa Rural Water Association                                       | Joy Harris<br>Iowa Department of Public Health   |
| Marcy Seavey<br>Iowa Academy of Science<br>Project WET                              | Barb Gigar<br>Iowa Department of Natural Resources-Aquatic<br>Education, Projects WILD and Learning Tree |
| Becky Schwiete<br>Iowa Department of Natural Resources                              | Iowa State University – Extension  |

## Mission Statement

The mission of the Governor's Iowa High School Water Summit is to provide an opportunity for students to gain the knowledge and understanding necessary to preserve and protect Iowa's water resources for today and into the future.

## Goals

- Increase student awareness of and challenges to improving and protecting Iowa's water resources
- Promote the stewardship responsibilities of all Iowa citizens in improving and protecting Iowa's water resources
- Increase student knowledge and awareness of the interrelationship of water to all living things
- Further develop students' skills in the areas of research, objective reasoning, problem solving, decision making, and communication - both oral and written
- Increase student knowledge and awareness of the local, county, and state regulatory structures and processes (i.e., how a bill becomes a law).
- Provide scholarships to students with an interest in improving and protecting Iowa's water resources

## Scholarships

\$10,000 in college scholarships will be awarded to the top ten ranking students as follows:

|                              |         |
|------------------------------|---------|
| First Place                  | \$3,500 |
| Second Place                 | \$2,000 |
| Third Place                  | \$1,000 |
| Honorable Mention (7 awards) | \$ 500  |

## Getting Started

Each student interested in participating in the Governor's Iowa High School Water Summit must complete and submit the enclosed application form. **The application is due by 5:00 PM Friday, June 8, 2007.** Applications may be hand delivered, faxed or mailed to Shelli Grapp at the Cedar Rapids Water Department, 1111 Shaver Road NE, Cedar Rapids, IA, 52402; fax: 319-286-5911. Students will be notified via e-mail upon receipt of their application. The notification will include an electronic copy of this booklet.

# Competition Format

Three scenarios are included in this booklet. Students must select *one* scenario as the basis for both their paper and presentation, then research and prepare their paper over the summer months. Only one paper per student will be accepted. A resource guide is included that may be useful in researching various topics. Students should answer all questions associated with their scenario.

Few issues surrounding water quality are black and white. Students should consider a variety of options and opinions as they develop proposed solutions that are environmentally, socially, scientifically and economically viable. For example, visit with people in the community, participate in local water quality projects, or listen to speakers in your area. Most importantly, students should take this opportunity to learn more about their water resources and have fun doing it.

Each student must submit their research paper, making sure that it meets all format specifications and deadlines included in this booklet. Papers will be read and scored by a panel of judges, based on criteria set forth in this booklet. **Papers are to be submitted electronically to Shelli Grapp at s.grapp@cedar-rapids.org, no later than 5:00 PM, September 28, 2007.**

The authors of the 100 highest scoring papers meeting all specified requirements and deadlines **will be notified by October 19, 2007, and asked to attend the Summit on November 8, 2007**, to make oral presentations of their research to a panel of judges. All presentations must meet the criteria outlined in this booklet.

Each student's paper and presentation will be scored independently. The two scores will be weighted equally and combined to determine the final student rankings. **Scholarships totaling \$10,000 will be awarded to the ten highest ranked students.** Scores and comments of the judges will be sent to each student following the competition.

## Research Paper Format:

- Created as a Word® document
- Minimum 8 pages
- Maximum 10 pages
  - Page size: 8.5 by 11 inches
  - Spacing: Double spaced
  - Font: 12 point Times or Times New Roman
  - Margins: 1 inch
- Cover page (counted separately) must include:
  - Name
  - Age
  - Grade
  - School
  - Contact Information
- List of reference materials (counted separately)

**The research paper will be scored on:**

- **Relevancy to topic**
- **General knowledge of the principles and concepts explored**
- **Thoroughness**
  - Demonstrates a good understanding of the problem
  - Several solutions are explored
  - Selection of “best” solution(s) is clear and well defended
  - Information and research are well-referenced (references attached to paper)
- **How well the paper supports the decision/conclusion**
  - Accounts for all possible challenges to the solution
  - Strategies, options and solutions are identified and defined
  - The argument supporting the chosen solution is persuasive
  - Solution(s) chosen is feasible and realistic
- **Innovative ideas/solutions explored**
- **Conclusions and solutions are scientifically sound**

**Presentation Format:**

**NOTE: Only students who are notified that their paper has been selected for presentation at the summit need to prepare a presentation.**

- Limited to 5 minutes
- A poster may be used during the presentation. Posters should be lightweight for ease of portability and be no larger than 2 x 3 feet. Video or audiocassettes, computer-assisted presentations, or any other media using electricity are **not** allowed. A table and easel will be provided for display during the presentation.

**The presentation will be scored on:**

- Well organized
- Relevant to the research paper
- Demonstrates a solid understanding of the issue
- Solutions clearly stated and supported
- Conclusion clearly defined and convincing
- Presented within the allotted time period

## **Summit Schedule**

**November 8, 2007 - State Capitol Building, Des Moines, Iowa**

|              |                               |
|--------------|-------------------------------|
| 9:00-9:30AM  | Check-in                      |
| 9:30AM       | Welcome                       |
| 10:00AM      | Judging begins                |
| Noon-1:30PM  | Lunch (provided) and Exhibits |
| 1:30-3:30 PM | Guest Presentations           |
| 3:30 PM      | Scholarship Awards            |
| 4:00 PM      | Event concludes               |

## Competition Rules

1. Students must be a junior or senior at the beginning of the 2007 fall semester.
2. Substitutes will not be allowed to participate or attend the competition.
3. If necessary, the number of students from an individual school may be limited.
4. A parent, teacher, or adult advisor approved by the student's school must accompany the student to the competition. This person *may not* accompany the student during the actual judging session, but may participate in all other program activities and lunch.
5. The competition will be judged by adults respected in their profession and knowledgeable on the topics covered in the scenarios. A list of judges will be provided at the competition.
6. Neither the student nor the chaperone are to use any electronic recording or communication devices such as tape recorders, video cameras, beepers or cell phones during the competition or at any other time a program or activity of the Summit is in progress.
7. The ten students with the highest cumulative points at the end of the competition will win the scholarships.
8. Decisions of the judges are final.
9. A tie breaker will determine the winner in case of a tie.
10. Transportation and meals to and from the competition are the responsibility of the student and chaperone.
11. The student and chaperone are to conduct themselves appropriately throughout the day.
12. Application forms must be legible and received or postmarked by the deadline. All late and illegible forms will be rejected.
13. These rules are subject to change. Any and all relevant changes will be explained to all participants prior to the appropriate competition deadline.
14. Any suggestions for improvement of this event or the rules and requirements may be made to the contact person listed in the information booklet and will be considered by the steering committee.
15. Students participating as juniors may compete again the following year as a senior.
16. If a participant leaves the competition early, they will forfeit any award.
17. Plagiarism will be grounds for disqualification.

**Chew/snuff, tobacco, drugs and all alcohol are prohibited during the competition!**  
**(Rules applicable to local school code of conduct will apply.)**

# Scenarios

## Scenario One:

The state lake in your county has historically been used and enjoyed by generations of people for fishing, swimming and other recreational activities. The lake is ringed with houses and cabins. There are also several public access areas along the shores. The lake is now filling full of sediment and nutrients, causing eutrophication and leading to poor fishing and foul smelling water. Bacteria levels in the lake are also rising. Because you are a public official in this county, some residents are urging you to fix this problem.

**Research the issue and determine what you think is the best solution. Your research and paper must address the following:**

1. What are the possible causes or sources of pollution? How is the water in the lake recharged; what is its source?
2. What public health problems might this situation pose?
3. What can be done to restore the lake for its former uses? What are the various options? What are the pros and cons of each? Consider not only technologies, but also policies regulating human behavior.
4. What is the best solution for your county and why? Who pays? Support your decisions.
5. How do you develop awareness of the problem and get support for your solution?
6. What policies, laws and/or rules could protect the lake in the future?

## Scenario Two:

You are the manager of a drinking water system in a metropolitan area, with a high water demand. Your community must rely on a river for its drinking water. It has been discovered that the river, the source of your drinking water, has three major water quality problems:

- High nitrate levels
- High bacteria levels
- Great quantities of blue-green algae

Community members are complaining about the taste and odor of their water. In addition, the Iowa Department of Natural Resources (IDNR) has notified you that your monitoring data shows these contaminants continuing to trend upward. If these trends continue, it may place the utility out of compliance (i.e. in violation of federal drinking water standards). Systems out of compliance often face heavy fines and must take corrective action immediately or risk losing their operating permit. IDNR requires your community to address these three problems to insure your utility will be in compliance within 2 years or you will lose your operating permit.

**Research the issue and determine what you think is the best solution. Your research and paper must address the following:**

1. What are the possible causes or sources of pollution? How is the water in the river recharged; what is its source?
2. What public health problems might this situation pose?
3. What can be done to reduce the levels of pollution and come into compliance? What are the various options? What are the pros and cons of each? Consider not only technologies, but also policies regulating human behavior.

4. What is the best solution for your city and why? Who pays? Support your decisions.
5. How do you develop awareness of the problem and get support for your solution?
6. What policies, laws and/or rules could protect the river in the future?

### **Scenario Three:**

You are a county supervisor and you have two unincorporated towns in your county. One of the towns is made up of mostly elderly individuals with fixed incomes. The other town is a 25-year-old housing development with two and a half acre lots. Most of the individuals in this town have high incomes.

Neither of these towns has centralized wastewater treatment systems; all homes are on individual septic systems. It has been discovered that both communities have failing septic systems that are negatively impacting a nearby, popular trout stream and the local drinking water aquifer. Both communities are using the local aquifer as their source of drinking water through private wells. Each community is approximately 2 miles outside a metropolitan area with a public drinking water system.

**Research the issue and determine what you think is the best solution. Your research and paper must address the following:**

1. How is the water in the aquifer recharged; what is its source?
2. What public health problems might this situation pose?
3. What can be done? What are the various options? What are the pros and cons of each? Consider not only technologies, but also policies regulating human behavior.
4. What is the best solution for your county and why? Who pays? Support your decisions.
5. How do you develop awareness of the problem and get support for your solution?
6. What policies, laws and/or rules could protect the aquifer in the future?
7. What are the funding options to achieve the recommended changes?

## Resource Guide

Iowa Department of Natural Resources  
[www.iowadnr.com](http://www.iowadnr.com)

Iowa Department of Public Health  
[www.idph.state.ia.us](http://www.idph.state.ia.us)

Overall Resource Link  
<http://nacdn.org/resources/links.htm>

Green Infrastructure  
<http://www.greeninfrastructure.net/>

Know Your Watershed - Lakes  
<http://www.ctic.purdue.edu/KYW/Brochures/ReflectingLakes.html>

Ecological Waste Water Treatment  
<http://www.iaenvironment.org/archivespdf/EcologicalWastewaterTreatmentReport.pdf>

Iowa Onsite Waste Water Program  
<http://www.iowadnr.com/water/septic/index.html>

Septic Systems  
<http://cfpub.epa.gov/owm/septic/home.cfm>

Storm Water Manager's Resource Center  
<http://www.stormwatercenter.net/>

EPA Watershed Information Network  
<http://www.epa.gov/win/>

Center for Watershed Protection  
<http://www.cwp.org/>

Global Change Research Program  
<http://cfpub.epa.gov/gcrp/index.cfm>

EPA-Human Health  
<http://www.epa.gov/ebtpages/humanhealth.html>

Center for Disease Control  
[www.cdc.org](http://www.cdc.org)

University of Iowa-Center for Health Effects of Environmental Contamination (CHEEC)  
<http://www.cheec.uiowa.edu/>

EPA-Office of Water  
[www.epa.gov/OW/index](http://www.epa.gov/OW/index)

US Geological Survey  
<http://www.usgs.gov/>

EPA-Data bases and Software  
[www.epa.gov/water/soft](http://www.epa.gov/water/soft)

US Department of Agriculture  
[www.usda.gov](http://www.usda.gov) or

Iowa Policy Project  
[www.iowapolicyproject.org](http://www.iowapolicyproject.org)

USDA-National Soil Tilth Laboratory  
[www.ars.usda.gov](http://www.ars.usda.gov)

Iowa State University-Extension  
<http://www.extension.iastate.edu/>

### **Other sources of information:**

Drinking water or wastewater utility  
Environmental groups

Rural water system  
Watershed groups