Webinar Logistics

Call-in Info for US and Canada:
U.S. & Canada: 1.866.740.1260
Access Code: 4972649#

Call-in Info for International:
Access Code: 4972649#

Please introduce yourself in the chat window. Include your name, institution, and location.

Please type in the chat window if you need assistance finding your access phone number!
Raise your hand if you have any technology problems.

Type questions or comments in the chat space here.

GLOBE International Virtual Science Symposium

2017

www.globe.gov

http://www.globe.gov/science-symposium
GLOBE International Virtual Science Symposium

2017

www.globe.gov

http://www.globe.gov/science-symposium
Overview of the Science Symposium

Julie Malmberg, PhD

malmberg@ucar.edu

Education, Outreach, and Technology Specialist
GLOBE Implementation Office
GLOBE International Virtual Science Symposium

- Online space for students to share and discuss GLOBE research with other students, scientists, GLOBE community
- Open to all GLOBE students K-16
  - Rubrics by grade level
### 2016 International Virtual Science Fair Metrics

**Student Reports:**

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of Entries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>0</td>
</tr>
<tr>
<td>Asia and the Pacific</td>
<td>22</td>
</tr>
<tr>
<td>Europe and Eurasia</td>
<td>10</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>7</td>
</tr>
<tr>
<td>Near East and North Africa</td>
<td>44</td>
</tr>
<tr>
<td>North America</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>105</strong></td>
</tr>
</tbody>
</table>
2016 International Virtual Science Fair

U.S. -

Title: The Effect of Land Use on Water Quality
School: St. Francis Xavier Catholic School
Location: Gettysburg, Pennsylvania
Teacher: Amy Woods

Title: How does Asphalt Affect Soil Temperature
School: Roswell Kent Middle School
Location: Akron, Ohio
Teacher: Steve Frantz

International -

Title: Seasons and Climatic Factors Affecting Dengue Cases in Muang Nakhon Si Thammarat, Thailand
School: Princess Chulabhorn Nakornsritammarat
Location: Nakon, Srithammarat, Thailand
Teacher: Kanokrat Singnui

Title: Determining the Presence of heavy metals in the air by using GLOBE protocols for aerosols, conductivity and pH
School: Prirodoslovna i graficka skola
Location: Rijeka, Croatia
Teachers: Marina Pavlič and Irena Sabo
New for 2017!

• Open to K-16
• New optional badge (Exploring STEM Careers)
• Later due date (03 April 2017)
Merit Based Student Research Badge

- Students earn points
- No limit to projects that earn top ranking

Optional Badges

- Possible for students to earn up to 3 out of 6 additional badges
- Students describe how each badge was earned in their report document
• **Collaboration:** Team members and their roles, student contributions, advantages of collaboration

• **Community Impact:** Describes how a local issue led to the research question and what impact the students have on their community

• **Connection to a STEM Professional:** Collaboration with a STEM professional and how it enhanced the student research

• **Engineering Solution:** An engineering solution to a real world problem based on student research

• **Exploring STEM Careers:** Understanding how student research relates to STEM careers

• **Interscholastic Connection:** Describes interscholastic or international collaboration and how it benefits the research
Drawing

• Earn 4 star Student Research Badge AND at least two optional badges → entered into a drawing

• Projects drawn will receive funds to help offset the cost of attendance at the 21st GLOBE Annual Meeting

• 4 projects will be drawn: 2 international ($2,000 each), 2 US ($1,000 each)
How to Enter

- Entries include:
  - Abstract
  - Research Report
  - Narrative on each badge completed
  - Presentation
    - Narrated Power Point
    - Video
    - Scientific Poster
  - Photo Releases

**Determining the presence of heavy metals in the air by using GLOBE protocols for aerosols, conductivity and pH**

**Organization:** Prirodoslovna i graficka skola, Prirodoslovna i graficka skola

**Student(s):** Dino Bešić, Sarah Budgan

**Grade Level:** Secondary (9-12)

**GLOBE Teacher:** Marina Pavlić, Irena Sabo

**Contributors:**

**Presentation:** View Document

**Optional Badges:** Engineering Solution

**Date Submitted:** 03/11/2016

**View Research Report**

Aerosols are solid or liquid particles or both, suspended in air with diameters between about 0.002 μm to about 100 μm. Aerosol particles vary greatly in size, source and chemical composition. Some of the components are heavy metals, which can be measured by GLOBE protocols. We used the method of moist sedimentation to acquire a sample of air in Bakar, and then analysed it with GLOBE protocols. We were inspired to use this methods when the citizens of Bakar invited us to see the big black blot in the middle of The Bakar Bay and the black particles in their homes. As we collaborated with them investigating the sea, soil and the bottom of the sea in our previous projects, we determined that the pollution was comming from the air. We decided to investigate the quantity of suspended particles (aerosols) in the air and determine their chemical composition. Analysing the sample's we concluded that the sample with heavy metals had higher pH and conductivity levels than normal. By tracking the aerosols, air temperature and rainfall our data showed that the aerosols are highest when temperature and rainfall levels were low. This method's could help more GLOBE researchers to study heavy metals in air.

**General News/Events Topics:** Virtual Science Fair

**Return to Student Research Report Listing**

**Comments**

1. I really enjoyed reading your abstract, sounds interesting and educative. Your Abstract does not exceed 200 words. And contains The problems, Questions, Objectives, conclusion and recommendation.

2. Your explanation under research question does not identified your Research question.
How to Enter

• Updated upload tool available online early 2017
**Student Research Reports**

* Required fields

**School / Organization**  
Select

**GLOBE Teacher**  
Select

**Student(s)**

**Additional Contributors**

**Grade Level**

Lower Primary (K-2)

**Report Title**

**Report Description**

**Report Date**

mm/dd/yyyy

**Abstract or Summary**

**Upload Research Report**  
Select a new file  
Browse...  
No file selected

**Upload Report Thumbnail Image**  
Select a new file

**Thumbnail Alt Tag**

**Type of Student Research Report**

- Standard Research Report
- International Virtual Science Fair Report

**Presentation**

Link to Video URL

**Optional Badges**

- Collaboration
- Community Impact
- Connection to a Scientist
- Interscholastic Connection
- Engineering Solution

**Photo Releases**

Select a new file  
Browse...  
No file selected

Submit Report  
Cancel

Note: Reports are subject to review before being posted on the website.
Presentations

Important to communicate science!

- Poster
- Narrated PowerPoint (or similar)
- Video
Nitrates Concentration of the Cove River Biome During a Six Month Period

Abstract
The Cove River biome consists of a seven-kilometer river and a 15.38-acre riparian zone. Several studies have indicated that the Cove River biome is a wetland ecosystem that supports a diverse array of plant and animal species. This study focuses on determining the nitrate concentration in the Cove River during a six-month period. The goal of this study was to determine if there is a positive relationship between nitrate concentration and the health of the Cove River biome. This study was conducted during a period of six months from October 2011 to March 2012. The study was conducted by monitoring the nitrate concentration in the Cove River at various locations throughout the study period. The results of the study indicated that the nitrate concentration in the Cove River was relatively low, with an average concentration of 0.5 mg/L. However, there was a significant increase in nitrate concentration during the winter months, which may be due to the increased use of fertilizers in the surrounding areas. Overall, the study concluded that the Cove River biome is in good health and that the nitrate concentration is not a significant factor in the overall health of the biome.

Problem Statement
This project is being conducted to test the effect of nitrates on the health of the Cove River. The project was conducted during a period of six months from October 2011 to March 2012. The project is being conducted to determine the extent to which nitrate concentrations affect the health of the Cove River.

Hypothesis: If the nitrate levels in the water exceed the standards permissible by the EPA, the Cove River is polluted and steps must be taken to prevent long-term consequences.

Method/Procedure
1. Collect a water sample in the bucket from the predetermined location of the Cove River.
2. Use the Sunset Probe to measure the dissolved oxygen level and temperature of the water sample immediately after collecting it. The water should not be left unattended by exposure to sunlight.
3. Record the dissolved oxygen level and temperature of the water sample.
4. Bring the sample back to the lab to test with water pH and nitrate levels using the SAFETY Aquatic Pharmacological Testing Kit. Follow the instructions attached to the testing kit.
5. Record water pH and nitrate levels.
6. Dispose of chemical waste appropriately.

Indicators of Pollution as Compared to Nitrate Levels

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Water Temperature (°C)</td>
<td>20.2</td>
<td>14.5</td>
<td>9.2</td>
<td>7.0</td>
<td>1.1</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Water pH</td>
<td>6.5</td>
<td>6.3</td>
<td>7.1</td>
<td>7.1</td>
<td>7.4</td>
<td>6.8</td>
<td></td>
</tr>
<tr>
<td>Dissolved Oxygen (mg/L)</td>
<td>N/A</td>
<td>2.5</td>
<td>12.8</td>
<td>8.5</td>
<td>9.0</td>
<td>7.4</td>
<td>7.0</td>
</tr>
<tr>
<td>Nitrates (ppm)</td>
<td>N/A</td>
<td>5.0</td>
<td>2.5</td>
<td>0.0</td>
<td>5.0</td>
<td>3.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Recent Precipitation:
Yes; Heavy Rainfall on Previous Night
Yes; Constant Rainfall Throughout the Week
No
Yes; Snow on Previous Night
Yes; Rainfall on the Previous Night & Morning
Yes; Constant Rainfall Throughout the Week

Conclusions
The purpose of this experiment was to determine if the water quality of Cove River was affected by the amount of nitrates in the water. Analysis of nitrates shows that:

- The water quality was high and good for public use, though it is mostly used for research and educational purposes, such as the GLOBE Program and archaeological studies.
- The Cove River is home to several animals, including some large trees that produce high amounts of canopy cover and plant life, which is sustained by the soil. This experiment is being performed to determine the nitrate concentration in the Cove River as to weather there is a positive relationship between nitrate concentration and the health of the Cove River biome.
- The data collected from water samples of the Cove River was determined to demonstrate the temperature of the river with the water temperature, the nitrate levels, and the dissolved oxygen levels of the river. The data shows that the Cove River has nitrate levels that do not exceed the maximum permissible limits set by the Environmental Protection Agency (EPA), which is 10 mg/L or less. However, the dissolved oxygen and nitrate levels are at safe testing states. Overall, the data shows that the Cove River has nitrate levels that do not exceed the maximum permissible limits set by the Environmental Protection Agency (EPA), which is 10 mg/L or less. However, the dissolved oxygen and nitrate levels are at safe testing states.

Future Directions
This experiment can be improved by testing multiple areas of Cove River and obtaining several samples from each area. Testing several areas of the river would produce a variety of results, thereby increasing the reliability of the experiment. Furthermore, more frequent testing would enhance the data presented, providing more information to determine what causes a change in nitrate levels. It would also be beneficial to include a more detailed examination of each seasonal establishment near the testing location. If the nitrate levels are significantly high, it would be easier to identify the sources of any pollution.

Further experimentation extending outside the Cove River itself could be conducted to understand the factors that affect the levels of nitrate in the water. For instance, there could be an additional focus on nitrate levels in major air pollutants. More detailed examination of each seasonal establishment near the testing location could enhance the data presented, providing more information to determine what causes a change in nitrate levels.

References
http://www.epa.gov/region1/aboutwaste/airquality/waterquality/covewater.html

Acknowledgements
We would like to thank Professor Scott Odum and Mr. Kevin Obrien for their assistance, support, and encouragement.
Resources (available on the website)

• Mentor scientists
• The Scientific Process
• How to Create a Student Research Report
• Guide to Asking Questions
• Webinars – new ones this fall as well as archived
• GLOBE student reports and virtual conferences
• What else?
2017 GLOBE International Virtual Science Symposium

The GLOBE Program is pleased to announce the 2017 GLOBE International Virtual Science Symposium for students around the world. With GLOBE, students learn the practices of science through hands-on investigations in their own communities, sparking their curiosity and interest in science. This often leads to inquiries that help solve real-world problems and further understanding of our global environment. Now it’s time for your students to show the world what they’ve learned!

Notice the name change? Read the Frequently Asked Questions (FAQs) to see why!

Keep checking back to this page to see more news and instructions!

Overview:

The 2017 GLOBE International Virtual Science Symposium takes place online, and K-16 students from any GLOBE country may participate. GLOBE students use the GLOBE data they entered into the database and should collaborate with scientists, including STEM (science, technology, engineering, and math) professionals who are part of the GLOBE International STEM Network (GISN). This is a great opportunity for students to practice the skills they’ve learned through their involvement in The GLOBE Program and apply them to address real-world problems. It can be hard work, but the excitement that comes with discovery and new insights makes it worthwhile.

Every project that is submitted will be hosted on the Student Research Reports section and students will receive virtual badges to reward them for their work. There is no limit to the number of entries per student or per school and there is no limit to the number of students per project.

View past projects in the 2016 GLOBE International Virtual Science Fair.

Webinar announcement:

"2017 GLOBE International Virtual Science Symposium Informational Webinar"

Dr. Julie Malmberg of the GLOBE Implementation Office and Matt Silberglitt of WestEd will host an informational webinar on 19 October 2016 at 10:00 am MT/12:00 pm ET. (Click here to convert to your timezone.) The webinar will cover the instructions, badges, rubrics, and guidelines for the science symposium. Click here to register for the webinar.
http://globe.gov/science-symposium

GLOBE International Virtual Science Symposium Instructions - 2017

How and What to Submit:

Each student project should include the following components and should be submitted via the Virtual Science Symposium Report Tool. Make sure to have all the items prepared when accessing the tool.

1. Abstract or Summary: A 200 word or less description of the research project.
2. Research Report: The complete research report as .PDF or .DOCV.DOC. If including more than one language, make sure the report is just one file. Elements of the Research Report are described in the rubrics.
3. Badge Description: For any of the optional badges (you may select up to three), include a short summary of how each badge has been completed.
4. Presentation: Either the link to an uploaded video hosted on an online video sharing site (YouTube, Vimeo, TeacherTube, etc.) or the presentation poster. Whether presented as a video, a narrated PowerPoint, or as a poster, the presentation should describe the student research. Videos should be 10 minutes or less.
5. Thumbnail Image: An image to be displayed with the student report.
6. Photo Release Forms: All individuals who appear in photos or video must send in a photo release. Save all the photo releases into one file.

Scoring:

Information about scoring is provided on the Rubrics page. All projects will be scored by a team of judges from the GLOBE International STEM Professionals Network.

Every student project will receive a virtual Student Research Badge. Scored projects will receive between one and four stars on the Student Research Badge, with a 4-star research badge representing superior projects. Additionally, students have the option to complete up to three additional badges including collaboration, community impact, connection to a STEM professional, engineering solution, exploring STEM careers, and interschoolastic connection.

Please note that if students choose to submit a report in a language that is not English, it will be shared with the community via the Virtual Science Symposium webpages, but it will not be scored. Only reports in English will be scored by the team of judges. However, students are encouraged to submit their reports in English and their first language (as one document).

Awards:

All students who submit a project will receive a virtual Student Research Badge and up to three additional badges (out of six choices total). These badges can be displayed on GLOBE School Profile Pages, shared via Social Media, or printed out and shared with the students.
GLOBE International Virtual Science Symposium Resources - 2017

Below are resources to help in the completion of your student research report. If you need any additional resources, please contact the Community Support Team at help@globe.gov.

Previous Virtual Conferences

- 2012
- 2013
- 2016

Creating a Research Project

- Steps in the Scientific Process
- Worksheet to Evaluate Possible Research Questions
- How to Create a Student Research Report
- Sample Research Report
- Purdue Online Writing Lab Research and Citation Resources

Tips for preparing a presentation:

- Webinar - Scientist Skills: Presenting your Results
- Ten Secrets to Giving a Good Scientific Talk
- Poster Template PowerPoint | PDF (note: this includes the high school and undergraduate elements, modify as needed for middle school and primary school)

Data Resources:

- Setting Up Your Data Site
- Entering Measurement Data
- Retrieve and Visualize Your Data
- Advanced Data Access Tool

Webinars

Upcoming:

- 19 October 2016 at 14:00 UTC (10:00 a.m. MT/12:00 p.m. ET): 2017 GLOBE International Virtual Science Symposium Informational Webinar (registration)
- TBD: An In-Depth Look at the Badges
- TBD: K-4 Research Projects

Archived:

- Teacher Webinar: Conducting Field Investigations
- Teacher Webinar: Writing Research Questions
- Teacher Webinar: Analyzing GLOBE Data
- Teacher Webinar: Writing Conclusions using the CER Framework
- Putting It All Together - the Science Fair Poster (Communication)
Frequently Asked Questions - 2017 GLOBE International Virtual Science Symposium

Q. Why did the name change from a science fair?
A. A science symposium is a place for researchers to present and discuss their work. In order to reflect the overarching goal of students sharing their GLOBE research, we thought a science symposium better represented this event than a science fair.

Q. Can I submit my project in a language that is not English?
A. Yes! However, it will not be scored. We are only able to score projects submitted in English.

Q. Can I use Google Translate or another translating program to translate my project?
A. Yes, the judges will then be able to score your project. However, keep in mind that Google Translate often makes mistakes. If possible, have someone familiar with English read over the translation.

Q. I'm a science, technology, engineering, or math (STEM) professional. How can I be involved?
A. If you are part of the GLOBE International STEM professionals Network (GiSN), we would love for you to help score the projects. If not, think about applying to be part of the network! If you are interested in scoring or mentoring projects, fill out the interest form (coming soon!). If you are interested in being part of the GiSN, send an email to help@globe.gov.

Q. What if the scientist or other STEM professional I want to work with is not part of the GLOBE International STEM professionals Network (GiSN)?
A. That's fine! But, encourage the scientist or STEM professional to join the GiSN.

Q. I teach 1st grade. Can my students also submit a project?
A. Yes! We have customized the scoring rubrics by grade level. Younger students will be scored differently than older students.

Q. How do the badges work?
A. All students who submit a project will receive a virtual Student Research Badge. Scored projects will receive between 1 and 4 stars. Additionally, students can elect to be scored for five more optional badges. These badges, which are described in the rubrics, are collaboration, community impact, connection to a local or network scientist, international connection, and engineering solutions.

Q. Can I still get a badge if my project is not in English?
A. Yes! All student projects will receive a Student Research Badge, however only scored projects (those in English) will...
GSN Interest Form: 2017 GLOBE International Virtual Science Symposium

The 2017 GLOBE International Virtual Science Symposium will showcase student research projects from around the world. Student projects are due on 03 April 2017 and judging will take place 23 - 29 April 2017.

There are two volunteer opportunities for GSN members to be involved with this exciting event. First, you can volunteer to work as a research mentor for student groups. While volunteering does not guarantee that you will be contacted, groups are looking for mentors. Second, you can volunteer to help judge the student projects in 2017. If you are interested in working as a mentor and judging, feel free to check both boxes.

We appreciate your interest in helping with the Science Symposium! If you have any questions, please contact help@globes.gov or see the Science Symposium webpage at http://www.globes.gov/news-events/globe-events/virtual-conferences/2017-international-virtual-science-symposium

Your Name

Your answer
Mentors

Looking for a mentoring scientist? These scientists have volunteered to help! Are you a scientist and want to mentor students? Fill out the form on our Scientist Participation page.

Africa | Asia & Pacific | Europe & Eurasia | Latin America & Caribbean | Near East & North Africa | North America

Africa Region

Charles Mwangi, Nairobi, Kenya, maina.charles AT gmail.com, Atmosphere, Hydrosphere, Engineering, English

LAWANI Yliass Destin, Cotonou, Benin Republic, yliass AT gmail.com, Atmosphere, Biosphere, Hydrosphere, Pedosphere, Climate changes, French, English (writing)

Ayodeji Awodugb, Ogbomoso, Oyo State, Nigeria, aoawodugba AT lautech.edu.ng, Pedosphere, Soil, English

Asia and Pacific Region

Dr. Sunita Bai, Bhubaneswar, India, sunitabal2009 AT gmail.com, Atmosphere, Hydrosphere, Pedosphere, Pesticide analysis, Physical Organic Chemistry, Micellar catalysis, Pesticide analysis, Soil analysis, Wine analysis, English

Europe and Eurasia Region

Latin America and Caribbean Region

Ana B. Prieto, Junín de los Andes, Neuquén, Argentina, anabeatrizprieto AT gmail.com, Atmosphere, Biosphere, Hydrosphere, Pedosphere, Science Education- STEM, Spanish, English

Claudia Caro, Coimbra, Portugal, ccaro AT gmail.com, Biosphere- Ecology, English, Spanish, Portuguese

Virginia Aguilar, San José, Costa Rica, virginia.aguilar AT fod.ac.cr, Hydrosphere, Hydrology and Oceanography, Spanish

Javier Sabas Francarico, Buenos Aires, Argentina, francarico AT stmary.edu.ar, Atmosphere, Hydrosphere, Spanish
Timeline

- Entries accepted starting in early 2017 (look for announcements)
- Projects Due: 03 April 2017
- Scoring & Comment Period: 23-29 April 2017
- Badges Announced: 15 May 2017
- Live Drawing: 15 May 2017
- GLOBE Annual Meeting: July/August 2017
Rubrics

Matt Silberglitt
Senior Research Associate
WestEd STEM Program
<table>
<thead>
<tr>
<th>★★★★</th>
<th>★★★</th>
<th>★★</th>
<th>★</th>
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</thead>
</table>
| - Report contains all of the criteria listed below and makes clear connections among them.  
- The report is well organized, neat and well presented.  
- The writing is clear and concise.  
- The report contains the five elements required for acceptance, clearly labeled.  
- Members of the project team respond to judges’ comments with additional insights gained. | - Report contains all of the elements and most of the criteria listed below and makes clear connections among them.  
- The report is well organized, neat and well presented.  
- The writing is clear.  
- The report contains the five elements required for acceptance, clearly labeled. | - Report contains most of the criteria listed below.  
- The report is well organized.  
- The report contains the five elements required for acceptance, clearly labeled. | - Report contains the five elements required for acceptance, clearly labeled. (1, 2, 3, 5 & 8) | - Report submitted, but does not contain all five elements required for acceptance. |
### ADDITIONAL BADGES (UP TO 6—OPTIONAL)

<p>| | | | | | |</p>
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<tbody>
<tr>
<td>All team members are listed, along with clearly defined roles, how these roles support one another, and descriptions of each student’s contribution. The descriptions clearly indicate the advantages of the collaboration.</td>
<td>The report clearly describes how a local issue led to the research questions and makes connections between local and global impacts.</td>
<td>The report clearly describes collaboration with a scientist that enhanced the research methods, contributed to improved precision, and supported more sophisticated analyses and interpretations of results.</td>
<td>The report describes a carefully planned interscholastic or international collaboration that describes rationales for data collection in different regions and the advantages of comparing results.</td>
<td>The report describes an engineering solution to a real-world problem, based on student-generated sources of evidence, and describes the potential impact of the solution on the environment.</td>
<td>The report describes how the project is related to a STEM career or profession, including the ways the data gathered, skills gained, and results might be used.</td>
</tr>
</tbody>
</table>
Project elements for HS and Undergrad (bold=required)

1. Title
2. Abstract or Summary
3. Research Question(s)
4. Introduction and review of the literature
5. Research Methods
6. Results
7. Discussion
8. Conclusion
9. Bibliography/Citations
Project elements for 6–8 (bold=required)

1. Title
2. Abstract or Summary
3. Research Question(s)
4. Introduction
5. Research Methods
6. Results
7. Discussion
8. Conclusion
9. Bibliography/Citations
Project elements for 3–5 (bold=required)

1. Title
2. Summary
3. Research Question(s)
4. Introduction
5. Research Methods
6. Results
7. Discussion
8. Conclusion
9. Bibliography/Citations
Project elements for K–2 (bold=required)

1. Title
2. Summary
3. Research Question(s)
4. Introduction
5. Research Methods
6. Results
7. Discussion
8. Conclusion
Find info Online

http://www.globe.gov/science-symposium

GLOBE.gov → News & Events → Meetings & Symposia → Virtual Science Symposia

Stay tuned for future webinars on K-4 projects and a more in-depth look into the badges
Questions? Comments?

malmberg@ucar.edu