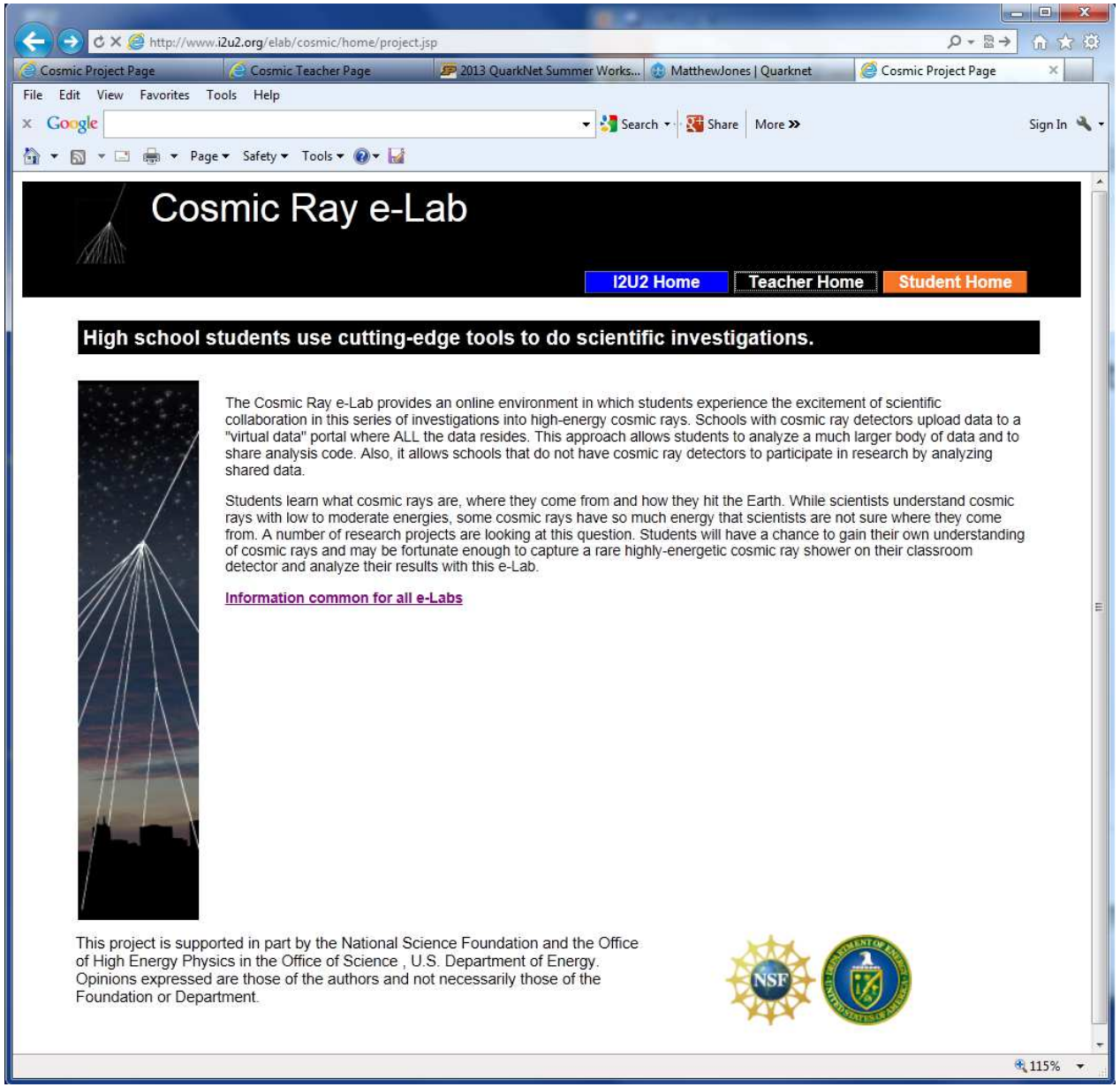
Making Posters with E-lab

- E-lab is an on-line tool for analyzing data recorded using the cosmic ray detector or from other experiments (CMS, LIGO)
- You can upload data, analyze it and document what you learned by making “posters”
- These can be shared with other QuarkNet centers around the world
- This is a very easy and useful way to document your work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Safety
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High school students use cutting-edge tools to do scientific investigations.
The Cosmic Ray e-Lab provides an online environment in which students experience the excitement of scientific collaboration in this series of investigations into high-energy cosmic rays. Schools with cosmic ray detectors upload data to a "virtual data" portal where ALL the data resides. This approach allows students to analyze a much larger body of data and to share analysis code. Also, it allows schools that do not have cosmic ray detectors to participate in research by analyzing shared data.
Students learn what cosmic rays are, where they come from and how they hit the Earth. While scientists understand cosmic rays with low to moderate energies, some cosmic rays have so much energy that scientists are not sure where they come from. A number of research projects are looking at this question. Students will have a chance to gain their own understanding of cosmic rays and may be fortunate enough to capture a rare highly-energetic cosmic ray shower on their classroom detector and analyze their results with this e-Lab.
Information common for all e-Labs
This project is supported in part by the National Science Foundation and the Office of High Energy Physics in the Office of Science , U.S. Department of Energy. Opinions expressed are those of the authors and not necessarily those of the Foundation or Department.
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Project Map | Library | Upload | Data | Posters | Site Map | Assessment

New Poster | Edit Posters | View Posters | Delete Poster | View Plots | Upload

Home: Join a national collaboration of high school students to study cosmic rays.

News Alert

All Cosmic Ray Muon Detector owners
Please start now; include these commands with all data-taking:
ST 2 5
TL
SA 1
This will embed status lines in the raw data needed to "bless" your data.
Send concerns to: HELPDESK.
Use this Cosmic Ray e-Lab URL: www.i2u2.org/elab/cosmic

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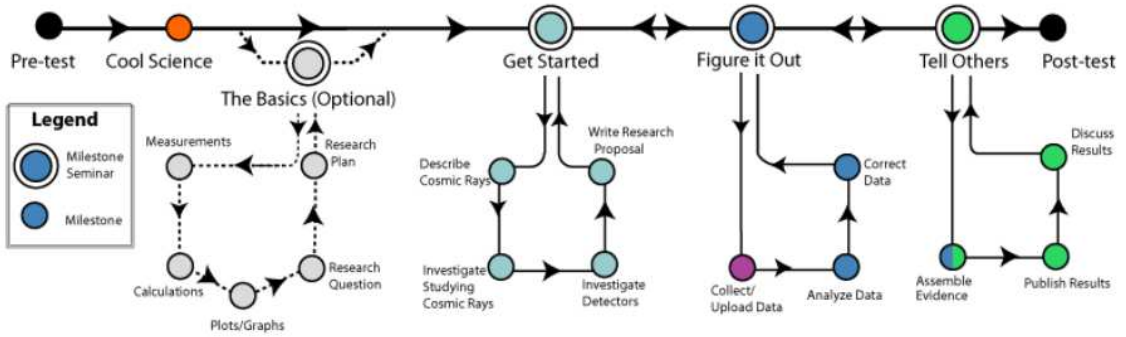
Project Map: To navigate the Cosmic Ray e-Lab, follow the path; complete the milestones. Hover over each hot spot to preview; click to open. Along the main line are milestone seminars, opportunities to check how your work is going. Project milestones are on the four branch lines.



Milestones (text version)

Your team may use the milestones above, or your teacher may have other plans. Make sure you know how to record your progress, keep

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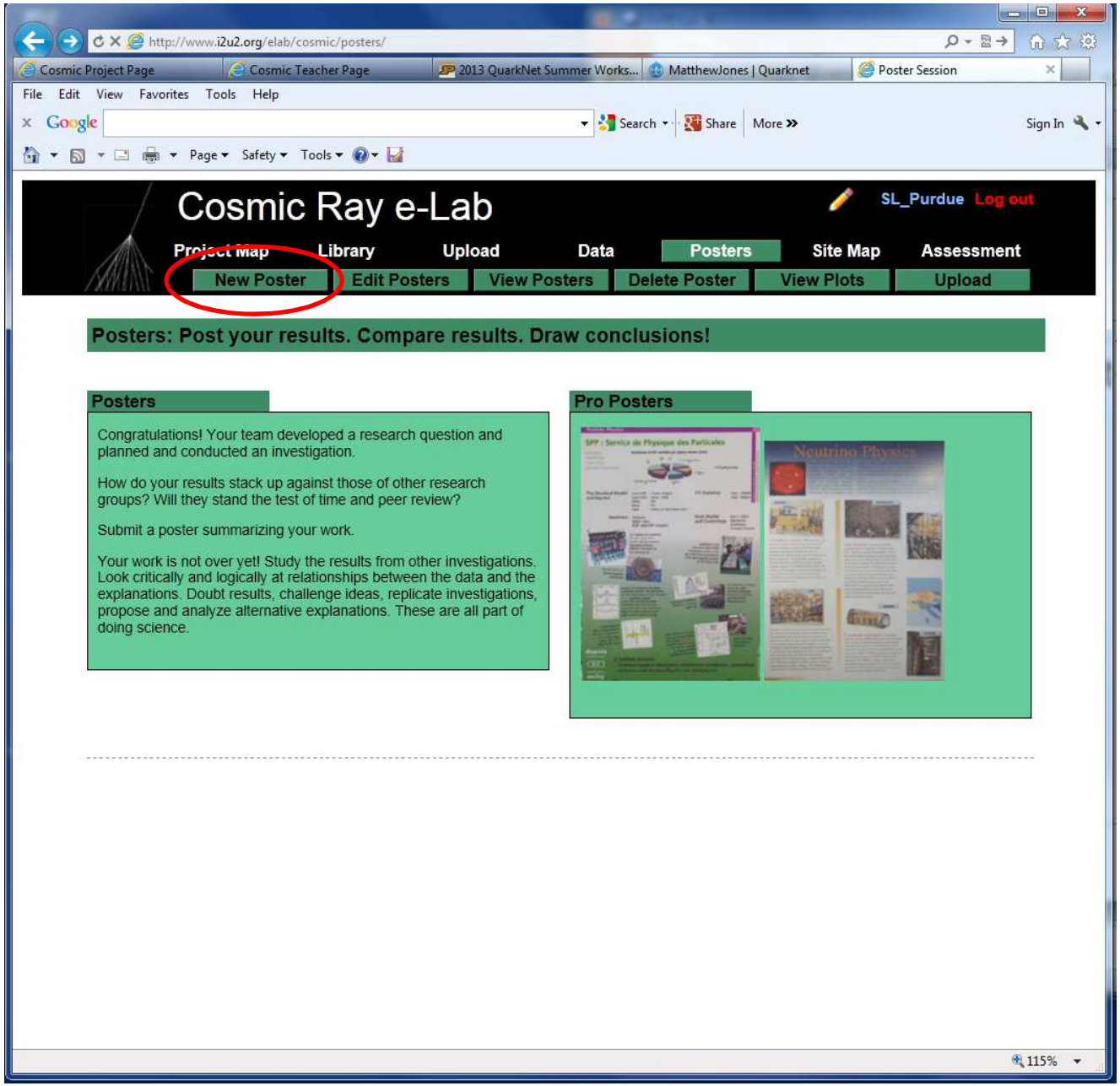
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Site Map
Assessment
New Poster
Edit Posters
View Posters
Delete Poster
View Plots
Upload
Posters: Post your results. Compare results. Draw conclusions!
Posters
Congratulations! Your team developed a research question and planned and conducted an investigation.
How do your results stack up against those of other research groups? Will they stand the test of time and peer review?
Submit a poster summarizing your work.
Your work is not over yet! Study the results from other investigations. Look critically and logically at relationships between the data and the explanations. Doubt results, challenge ideas, replicate investigations, propose and analyze alternative explanations. These are all part of doing science.
Pro Posters
Neutrino Physics
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Making Posters

- Just fill in the following information:
  - Title, authors
  - Abstract
  - Introduction
  - Procedure
  - Results
  - Conclusions
  - Bibliography
- Upload graphics for figures
  - Provide captions

Making Posters

- There are lots of posters to look at
  - Some are good examples, others not so good.
- It's a lot like a science fair
- We should try it out using the data we recorded yesterday:
  - Graph of time difference vs height
  - Muon lifetime fit
  - Rates measured in the balloon

  http://www.physics.purdue.edu/~mjones/quarknet/2013/balloon_rates.gif