We will need the title or, at least, topic of your presentation (talk OR poster) by July 29

We will need the actual talk to put onto the shared PC BEFORE August 2 –
Posters should be 36 x 48 to comply with formats for other conferences such as the National Conf. on Undergraduate Research and the American Physical Society.

We will need from each of you: one sentence, research report, experience report, abstract

We must list EVERY undergraduate student's project/program of research for the National Science Foundation (yes, even those who were not supported directly by the REU grant!) so please look at the templates below from previous years. PLEASE include the sentence along with your report and abstract and include your name in the title of all files.

Sample sentence:

Stephen Thorndike class of '03 at Alfred University, studied capture theory of solar system dust particles in resonances with Prof. Alice Quillen. He plans to apply to graduate school for astrophysics.

Guidelines for Participant Reports

Research Experiences in Astronomy, Optics and Physics for Undergraduates
University of Rochester

REU student reports have three main purposes, as follows:
(1) to provide a record of the scientific work done by the student;
(2) to give feedback on the student's overall experience, for use in internal, on-going evaluation of the program; and
(3) to provide descriptive and evaluative material for use in reporting to the program sponsor, the National Science Foundation.

Your report should address two general areas: (1) your research work, and (2) your overall experience in the program as two separate documents, including the research environment, seminars, administrative issues (housing, pay, etc.), and any other aspects of the program which affected you. Total should be about 2 pages (single-spaced). Reports are due on or before the last day of the program. Please email them to connie@pas.rochester.edu; include **your name in the title of every document attached.**

1. Research

Describe (in about 1 page) the research in which you have been involved this summer. Give most attention to your particular research objectives, activities, and findings, while relating these if you can to the research of your group as a whole and to larger scientific problems. In addition, please respond to the following questions, as they apply to your work.

- Was the project, as originally planned, completed? If problems were encountered that affected the outcome of your project, please explain.
- Do you hope or intend to author or co-author an article for publication in a scientific journal? Indicate where in the writing/publication process you are -- from still finishing research to starting to write to ready to submit. Give the title of your paper, if one exists.
- Do you hope or intend to make a presentation of your work at a student research conference or a general scientific meeting, next spring?

2. Experience in the REU program – this will ONLY be read by the program admin and director

guidelines for content:

(a) Overall experience in the program (suggested topics below)

- Overall, how well did the REU program meet your expectations?
- In what ways have you benefited from the REU program?
- How has this program affected your interest in research as an aspect of your career?
- Would you recommend this particular REU program to someone else? Why or why not?
- How could we make the program better from your perspective? You may wish to read and put specific comments in the following sections on program administration, research experience, seminars, and other program features.

(b) Program administration (suggested topics below)

- Program administration refers to the structure supporting the research experience: interactions with the program directors and administrative assistant; housing arrangements; reimbursements and paychecks; communications about seminars and other program features; and so on.
- How well did the program administration support your research experience here at Rochester?
- If you encountered problems pertinent to the program's administration, please describe them.
- If you have suggestions as to how we could run the program better, please include them

(c) Research experience

- How did working on this research project and/or in this research group enhance your learning?
- How could your experience working on this research project and/or in this research group have been improved, if at all?
- Would you choose to work in this group again? Would you recommend working in this group to someone else? Why or why not (to both questions)?

(d) Meetings (suggested topics below)

- How did the weekly seminars enhance your experience here at Rochester?
- Which seminar(s) stands out positively in your mind? Which stands out negatively?
- How could the weekly seminars have been improved? Are there particular topics we should include or eliminate?

(e) Social activities and other program features (suggested topics below)

- Did your research group have any social activities (informal get-togethers), regularly scheduled or otherwise? Did you take part in these? Please describe these briefly.
- Did you get together with other REU students for social activities? How were these initiated or arranged? What kinds of things have you done or are you planning?
- Please comment on opportunities for social interaction in the REU program.

We welcome your comments on any aspect of the program not covered above.

In addition to your end-of-summer reports, we request that you give us a written abstract of your work this summer. This is a somewhat more formal, more concise description of your work, including a description of the problem, methods used, and results obtained, as appropriate to the project. Abstracts are an important feature of scientific work. Please submit your abstract by email to Connie.

The abstract also fills several functions: it paves the way for you to submit the abstract to an APS spring meeting, for example, and it provides a record which we will use in reporting to the NSF. We may post the abstracts on our REU website, so they also will show other students who are looking for REU programs next winter the kind of projects that undergraduate students have done here.

Your adviser may have examples of abstracts to give you an idea of how to compose your own. A good site for sample abstracts is the Rochester Symposium for Physics Students (RSPS) that is held in April for students from the NY/NW Penn. region. See the site:

http://www.pas.rochester.edu/news-events/rsps/2016/index.html

The **abstracts are included in the proceedings** for this past year's meeting.

NOTE: Published abstracts or papers that result from research funded by the Physics NSF-REU grant should include the following line: "This project was supported in part by NSF award PHY-1460352." A few of the students included in our program are also funded from other sources that should also be acknowledged. If you know your position was funded in part by the physics NSF-REU award, you should include this line. If you are not sure, you can check with your adviser or with Connie.

Your reports and abstracts should be submitted to Connie Jones BEFORE you leave and in electronic form if possible with your name in each file name. Thank you!

BELOW ARE A COUPLE OF SAMPLES FROM PREVIOUS YEARS… include title **and** authors!

Mike Dunham
Summer 2002 REU Program
University of Rochester
Near-Infrared Astronomy Lab
Abstract

Image Processing and Analysis Applied to Young Stellar Cluster S-140N

Michael Dunham, Professor Judy Pipher, University of Rochester

We conducted a near-infrared JHK-band study of the young stellar cluster S-140N, located at RA=22h17m51.10s and DEC=63d17m50.00s. The data was taken in October 1999 using the 48-inch (1.2m) telescope at the Whipple Observatory in Mt. Hopkins, Arizona, using the STELIRcam infrared detector. The image processing, consisting of linearity correction, flat fielding, sky-subtracting, co-adding, mosaicing, and bad pixel detection/elimination were all performed using the Interactive Data Language (IDL), with programs developed by a University of Rochester graduate student. Standard stars observed throughout the night were used for magnitude calibration and airmass correction, which is were variation in the data was noticed. At this point, the variation has not yet been explained, and we will continue working on this project in the fall with the hope of explaining and then correcting for the variation, and then analyzing the cluster in much more detail.

Garrett Mason
8 August 2002

Abstract for Summer REU Program at University of Rochester

Identifying Collisions as Possible Candidates for Forming a Quark-Gluon Plasma. Garrett Mason, Colgate University, Steve Manly, Inkyu Park, and Josh Hamblen, University of Rochester.
With the recent completion of RHIC (Relativistic Heavy Ion Collider) at Brookhaven National Laboratory, beams of gold ions are accelerated to energies of 200 GeV per nucleon pair and then collided. At these energies, various theories predict that a quark-gluon plasma (QGP)—a transitional state of matter where quarks are free and not "confined" within fermions—will be produced. In particular, some theories predict that the number of particles containing the strange quark will be significantly different for QGP vs. non-QGP collisions. By constructing a mathematical tool (known as the K/pi Discriminator) to track the kaon-to-pion ratio of collisions, we will be able to identify those collisions that are more likely to form a QGP. This project was supported by NSF Grant No. PHY 9987413.