



NOAO Educational Outreach

Staffing, Grants, and Supplements

Suzanne Jacoby

This is the time of year when managers review the previous year and forecast the future. Newsletter readers may be interested to know how Educational Outreach at NOAO is funded. There are currently 5.2 full-time-equivalent (FTE) employees in the group, up from the original half-time employee in 1995. Of these 5.2 FTEs, 2.83 are supported by core NSF/NOAO funding and 2.37 are funded by external grants, which include our RBSE grant from the NSF Education and Human Resources Directorate, supplemental funding from NSF/Astronomy to support Project ASTRO-Tucson, a NASA IDEAS grant, and NASA E/PO supplements to NOAO-affiliated research grants.

With nearly half the group funded outside the core program, obtaining ongoing funding is always a priority. Recent efforts are described below.

- Funding has been received through a supplement to Robin Ciardullo's NASA LTSA grant to develop Kitt Peak Visitor Center materials and NOAO public Web pages illustrating "The Origins and Properties of Intracluster Stars." This is a five-year grant, with a \$10K supplement for E/PO expected each year. During the first year, Web pages, hands-on demonstrations, and a StarDate/Universe radio program (through McDonald Observatory) will be developed.
- Two additional E/PO supplements have been submitted with NASA research proposals involving NOAO staff: "A Public Web Interface for Exploring Multiwavelength Surveys," Arjun Dey, PI, in response to NRA 00-OSS-01, and "Student Interns Investigating Limiting Performance of Candidate NGST Near-IR Arrays," K. Michael Merrill, PI, in response to NRA 00-OSS-03. We're waiting to hear on the success of both these proposals.
- A preliminary proposal was submitted to the NSF Education and Human Resources Directorate to build on the RBSE Teacher Enhancement program and fund its continued development for the next five years. A full proposal has been encouraged and is due in October.

How to Contact Educational Outreach

The Web
Questions

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Project ASTRO–Tucson Seeking Astronomers and Teachers, Locally and Nationwide

Ginny Beal



Project ASTRO is an exciting program that links professional and amateur astronomers with educators to enhance the teaching of astronomy and increase students' interest in science. Led by NOAO, Project ASTRO–Tucson is recruiting for its fifth annual workshop, which will take place 13–14 October 2000 in Tucson.

A few slots at this workshop are being reserved for astronomers from outside the Tucson area who wish to attend, possibly with a teacher they would like to work with as a Project ASTRO partner. If this interests you, please contact Ginny Beal, Senior Program Coordinator, for details as soon as possible.

Focused Nature Study, will facilitate parts of the workshop. The two-day workshop will also include observation on Kitt Peak with the Visitor Center 16" telescope and presentations by Tohono O'odham storyteller Danny Lopez, all within the context of observing and understanding the Moon.

Gina Rester-Zodrow and Joni Chancer, authors of *Moon Journals: Art, Writing and Inquiry through*

How to Get Information on Project ASTRO

The Web	http://www.noao.edu/outreach/astro/
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Fourth Annual RBSE Workshop Under Way

Suzanne Jacoby



The integration of education and research is a powerful paradigm for improving science education, bringing the excitement of discovery and the discipline of scientific inquiry effectively to the classroom. The NOAO Teacher Enhancement Program, The Use of Astronomy in Research-Based Science

continued

Education (RBSE), is a four-week workshop for middle and high school teachers who are interested in incorporating astronomy research within their science classes. As we go to press, this year's sixteen RBSE participants are observing on Kitt Peak as the fourth annual workshop unfolds.

Independent evaluation of the RBSE program tells us that the teacher-participants made statistically significant gains in 15 of the 18 Internet and image processing skills they were taught. Classroom data obtained from teachers indicated all had adopted several "best practices" strategies advocated by science education reform as a result of their participation in RBSE. Best practice strategies include students working on long-term projects, students engaging in out-of-class activities, using computers as a tool for data display and analysis, teachers using student logs or concept maps for assessment, and greater use of the Internet and computers in general. RBSE teacher-participants also used fewer traditional practices, which research shows are less effective if overly used, including: lecture as a mode of instruction and students completing worksheets.

As RBSE matures, it has achieved a high level of visibility with professional astronomers and the media. This recognition has been instrumental in

RBSE participants successfully obtaining funding on their own. In one RBSE program, teachers and their students have so far discovered 73 novae in the Andromeda galaxy and presented their results at the January 2000 meeting of the AAS. The *Philadelphia Inquirer* ran a story about a local classroom's involvement in this effort; the June issue of *Sky & Telescope* featured a story about RBSE participant Tom Gehringer and his students' work.

Professional astronomers are needed to serve as mentors to RBSE teachers in their local area, working with the teachers as they implement the program in their classrooms. This may be the opportunity you've been looking for to make a contribution to science education reform. A list of RBSE 2000 participants and their schools was included in the March 2000 newsletter (*NOAO Newsletter*, No. 61). Please contact Suzanne Jacoby or Travis Rector (contact information below) if you are interested.

Since our funding for RBSE winds down in the spring of 2001, we are working now to develop another proposal that would allow us to continue the best elements of the program for another five years. We intend to have RBSE reach a larger numbers of teachers and to support more novice teachers in their efforts to integrate research and inquiry into their classrooms.

How to Get Information on RBSE	
The Web	http://www.noao.edu/outreach/rbse/
Questions	sjacoby@noao.edu or trector@noao.edu Suzanne Jacoby, (520-318-8364) or Travis Rector (520-318-8256)
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Research Experiences for Undergraduates and Teachers



Eight KPNO REU students, five NSO–Tucson REU students, and four teachers (funded through a supplement to the REU grants from the National Science Foundation) have arrived in Tucson and settled into their summer research experiences. The REU/RET program includes observing opportunities on Kitt Peak telescopes, a lecture series, and working closely with a mentor on the scientific staff.



How to Get Information on REU

<i>The Web</i>	<i>http://www.noao.edu/reu</i>
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