Dear Science Educator [please forward to appropriate colleagues],

The Harvard-Smithsonian Center for Astrophysics (CfA), with funding from the National Science Foundation, is developing "From the Ground UP!"— an exciting series of investigations that use on-line telescopes to enhance the teaching of physical science at the middle and high-school levels. From the Ground UP! engages teachers and students in hands-on explorations of the Universe, using a global network of educational telescopes that can be controlled over the Internet.

The project's goals are to:
• improve the teaching and learning of basic concepts in the study of motion, light and color, heat and temperature, and size and scale;
• open new opportunities for inquiry-driven student projects;
• foster informal collaborations between students and research scientists.

Investigations will emphasize students’ ownership of images and data, practical understanding of core concepts, collaborations with peers nationwide, and publication of results on the Internet. The project is designed to enhance existing curricula and help improve classroom practice by engaging teachers and students in investigation-based activities. You can find out more about the project at this URL: http://cfa-www.harvard.edu/webscope/ (website under construction)

We Want YOU!
From the Ground UP! (FGU) is looking for highly qualified physical science teachers in grades 7 through 12 to help develop and pilot new curriculum modules during the 1999–2000 school year. Ten individuals from within commuting distance of the CfA, and five teachers nationwide, will be selected to participate in this program. Successful local applicants will come to the CfA for a one-day workshop in Fall 1999 for an introduction to the goals of the project, the use of the CfA's MicroObservatory on-line telescopes, and for an introduction to the first FGU prototype investigation modules and materials. (Participants beyond commuting distance will join an on-line introductory workshop).

FGU participants will work with each other and the project staff to develop and pilot these investigations during the 1999-2000 academic year. Local participants will form the FGU Teacher Panel, which will meet with project staff three more times during the academic year to discuss the progress of the pilot work. (Half-day Saturday morning meetings, tentatively scheduled for early December 1999, March 2000, and May 2000. National participants will communicate via email and periodic on-line chat sessions). In July 2000 a one-week summer institute will be held at the CfA for participants to work on revision of the first year's activities and development of new activities for field testing in the 2000-2001 academic year. A 2001 summer institute will be held during which FGU teachers will work on final revisions of the From the Ground Up! modules.
Participant Selection Criteria:
FGU partner teachers will be selected on (in order of importance; R = Required):
• R: school agreement to allow pilot-teaching of FGU materials during 1999 - 2001
• R: recommendations from the applicant's department head, principal, or superintendent
• R: at least three years experience and current teaching of physical science, grades 7-12
• R: adequate internet access at school for you and your students
• Evidence of creativity in developing and facilitating student-driven inquiry
• Willingness to work with project evaluation team in your classroom
• Ability to travel to CfA for 4 pilot-study update meetings and summer institutes

Participant Responsibilities
• Creative involvement in the development, writing, and revision of pilot materials
• Trial use of at least two FGU pilot modules per academic year
• Documentation of implementation in the classroom
• Attendance at Teacher Panel Meetings (local teachers) or on-line sessions (national)
• Presentation of FGU workshops at local, regional or national level (optional)

Participant Support
Each participant selected for FGU will receive:
• Priority access to 5 automated telescopes around the world
• Training materials for using telescopes
• Pilot curriculum materials for integrating on-line telescopes into your curriculum
• Authentic assessment strategies
• Access to student publication FGU web site
• Access to on-line FGU teacher peer group
• Access to scientist/student partnership opportunities
• Support materials for sharing your FGU work at local and national conferences
• Commuter mileage for meetings at CfA and a stipend for summer institutes

Application Procedure:
If you are interested in getting in on the ground floor of From the Ground UP!, send, fax, or email the attached application form and requested materials to the address below by September 10, 1999. Sorry, no materials can be returned.

Mary Dussault
From the Ground UP! Project
Harvard-Smithsonian Center for Astrophysics
60 Garden Street, MS-71
Cambridge, MA 02138
Fax: 617 496-5405
Email: mdussault@cfa.harvard.edu

Harvard-Smithsonian Center for Astrophysics
CURRICULUM DEVELOPMENT PARTNERS APPLICATION FORM
(all information confidential - for internal use only)

PART A
Applicant's Name

Home Address

City State Zip

Phone E-mail

School

School Address

City State Zip

Phone

Principal's Name

School Type (circle all that apply):

Public Private Urban Suburban Rural
Elementary Middle/Jr. High High School

Grades you currently teach (circle all that apply):

K 1 2 3 4 5 6 7 8 9 10 11 12

PART B
Please submit the following information and materials.

I. ACADEMIC AND PROFESSIONAL EXPERIENCE
   Summarize your professional background as outlined below. Limit: 3 pages

1. Current Assignment—Summarize the courses you teach, including the title and
   author(s) of any textbooks used for each course, the number of classes of each course
   that you teach during one year, and the average enrollment per class.
2. Formal Education—List institution(s), date and degree(s), majors and minors
3. Teaching experience—List school(s), assignments, and other relevant information
4. Professional activities—Provide examples that might include professional
   memberships, leadership positions, publications, presentations, research interests, etc.
5. Other related activities—Community activities, outreach programs, etc.

Harvard-Smithsonian Center for Astrophysics
II. ESSAY QUESTIONS (Limit: 1 page per question)

1. Describe your philosophy of teaching and how you incorporate student-inquiry in your classroom.

2. Explain why you are interested in From the Ground UP! and what you hope to get out of your participation in the project. What important concepts from your physical science curriculum would be best supported by this project?

3. Tell us a bit about your students who will be using From the Ground UP! materials, and how you think they could benefit from participating in this project.

4. Describe the access you and your students have to Internet-connected computers. (e.g. # of computers, location, frequency of access, ease of use, software, etc.)

III. LETTERS OF SUPPORT AND ADDITIONAL MATERIAL
(Limit: 2 or 3 letters)

1. Principal/administrator: Obtain a letter from an appropriate school official in support of your pilot-teaching From the Ground UP! activities in your science classes and giving permission for FGU staff to observe your classes during the period September 1999-June 2001.

2. Science supervisor/colleague: Obtain a letter from an individual who can describe your teaching skills and abilities. These letters can be mailed to us separately or included in sealed envelopes along with your mailed application.

3. Attach a copy of an inquiry-based activity that you created and are currently using in one or more of your physical science classes. If you are not using an activity that you created, substitute a copy of your favorite inquiry-based activity, giving its source, and describe how you use it in your classroom.

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