

## EarthScope Education and Outreach Structure

### Recommendations from EarthScope Education and Outreach Subcommittee (EEOSC)

January 12, 2010

The EarthScope Education and Outreach (E&O) Program has gone through several transitions since it was initiated in 2004 via an award to the EarthScope Facilities Office. That award was transferred to IRIS in 2007 after NSF closed the Facility Office. Shortly afterward the first EarthScope National Office (ESNO) award, which included a significant E&O component, was granted to Oregon State University (OSU). The original EarthScope E&O award has now been completed and the OSU ESNO will conclude later this year. The EEOSC is in the process of reviewing the successes and challenges of the EarthScope E&O program, including the establishment of long-term funding for EarthScope E&O. At this time, however, we would like to make the following two recommendations relating to the next ESNO.

#### 1. *E&O Coordinator*

**We recommend that, with the announcement for the next National Office, a full time (1.0 FTE) “EarthScope Education and Outreach Coordinator” be supported.** The chief duties of the E&O Coordinator would be to:

- 1) Track E&O activities across the EarthScope program, address high priority items, and identify future needs;
- 2) Work with the EarthScope Webmaster to develop and maintain the EarthScope E&O web pages;
- 3) Establish E&O networks to increase efficiency and visibility of individual efforts;
- 4) Recruit and help develop E&O activities to meet EarthScope priorities from across the geoscience community by seeking out synergies and partnerships among the stakeholders;
- 5) Enable and encourage participation in EarthScope E&O activities by the larger geoscience community;
- 6) Take advantage of all opportunities to highlight EarthScope’s broader impacts to national and international audiences via a variety of scientific and popular media;
- 7) Work closely with the E&O programs based at the EarthScope facilities;
- 8) Initiate projects consistent with the EarthScope Education and Outreach Implementation Plan and/or projects proposed by the EEOSC.

The 2007 EarthScope Education and Outreach Implementation Plan outlines ways that a variety of scientific and lay audiences can learn about and benefit from EarthScope observations and discoveries ([http://www.earthscope.org/es\\_doc/eno/ES\\_E&O\\_Impl\\_Plan\\_2\\_07.pdf](http://www.earthscope.org/es_doc/eno/ES_E&O_Impl_Plan_2_07.pdf)). Five goals for EarthScope Education and Outreach are highlighted in the plan:

1. Create a high-profile public identity for EarthScope that emphasizes the integrated nature of the scientific discoveries and the importance of EarthScope research initiatives.
2. Establish a sense of ownership among scientific, professional, and educational communities and the public so that a diverse group of individuals and organizations can and will make contributions to EarthScope.
3. Promote science literacy and understanding of EarthScope among all audiences through informal education venues.
4. Advance formal Earth science education by promoting inquiry-based classroom investigations that focus on understanding Earth and the interdisciplinary nature of EarthScope.
5. Foster use of EarthScope data, discoveries, and new technology in resolving challenging problems and improving our quality of life.

Under the current structure, most EarthScope Education and Outreach (E&O) is directed and carried out by a combined effort of the EarthScope National Office (ESNO), EarthScope facilities, investigators with EarthScope E&O grants, and individual scientists and their students. This results in some excellent education and outreach that incorporate EarthScope observations and science results and involves a variety of individuals and organizations, and meets the five Implementation Plan goals to varying degrees. However, the E&O subcommittee has on several occasions identified E&O activities or initiatives that could significantly further the EarthScope E&O goals, but which are difficult to implement within the current system. For example, organizations have approached EarthScope to help create products

that can be shown in venues such as National Geographic and the Discovery Channel. The obvious person to facilitate such opportunities is the EarthScope E&O Manager. But in the current configuration of ESNO, the E&O Manager is funded at only the 0.3 FTE level. This funding supports some specific activities, including managing the EarthScope Speaker Series, organizing and staffing the EarthScope booth at GSA and AGU, writing and editing E&O materials for EarthScope and its partners, and planning and delivering workshops for informal educators. At this level of funding, it is not feasible for the E&O Manager to act on a significant number of E&O opportunities or to coordinate thoroughly the activities of other groups.

With the current structure, it is hard to be anything but reactive. We need a structure, including resources and personnel, whereby EarthScope will be proactive. The EarthScope E&O head should have the background, time, and resources to generate opportunities and collaborations without depending on others to come to EarthScope. He/she could also assist in identifying areas in need of support, such as curricular development, teacher training, and faculty professional development. As ideas arise, it would be the responsibility of the EarthScope E&O head to identify someone to perform specific E&O tasks, if not directly then by encouraging proposals. This recommended structure would continue the positive collaboration amongst the ESNO, facilities, scientists, and educators, but with better-defined and more thorough coordination of efforts.

We also recognize, however, that a group responding to the ESNO announcement will propose—and indeed will be expected to propose—new outreach activities (e.g., training, content development, workshops) that would require effort by the E&O Coordinator. *We recommend that the ESNO announcement limit the effort of the E&O Coordinator for this type of activity to 30%.* It is also likely that the proposed organization for ESNO may include the support for multiple E&O personnel. The intent of this recommendation is not to limit the possible structure or activities of ESNO, but to advocate for increased support (to the stated level of 1.0 FTE) for the position of EarthScope E&O Coordinator within the ESNO. The total effort within the present ESNO for E&O is approximately 1.0 FTE (Manager 0.3 FTE; Post-doc 0.5 FTE; Office Support 0.2 FTE), with much of the effort by the support to the E&O Manager and staff focused on ongoing community outreach activities like the EarthScope Newsletter (*InSites*), booth, Speaker Series, and workshops. We conclude that the *total* E&O effort under these new recommendations (E&O Coordinator plus support) should be substantially more than 1.0 FTE. The efficacy of any proposed E&O structure will, of course, be assessed through the normal review process.

Our recommendation includes providing sufficient funding to the new ESNO to lead a national E&O effort. The initial EarthScope E&O award included a full time E&O manager plus access to support staff, and funding for workshops, publications, and outreach via professional meetings and other venues, with an annual budget of nearly \$375,000. This amount does not include E&O activities funded separately through the facilities. Some facility funding for specific tasks remains via USArray and PBO O&M awards, but examples of long-standing and successful EarthScope E&O activities coordinated by the facilities in the past two years using EarthScope E&O funding that now have shortfalls include website updating, teacher workshops, museum display hardware, and E&O presence at regional meetings. IRIS and UNAVCO manage their E&O efforts with full-time professionals, and with the recommended E&O Coordinator, EarthScope would have a full-time E&O professional funded at the same level.

For perspective, the Job Description for the “EarthScope Education and Outreach Manager,” funded by the initial EarthScope E&O award is copied below. Desired experience for the new E/O Coordinator might include an Earth science background, public relations expertise, formal and informal education involvement, and program management experience. They would be the go-to person and coordinator for a wide range of EarthScope E&O activities, including the coordination of formal and informal education activities; work with news media; maintaining the home page and E/O component of the EarthScope website; and coordinating the EarthScope Speaker Series, booth at GSA, AGU, and other venues, and E&O Workshop schedules.

## **2. Webmaster**

**We recommend that the Webmaster for the EarthScope website be located at the next ESNO.** The ESNO maintains the EarthScope website, but the EarthScope Webmaster is currently at the UNAVCO headquarters in Boulder. While the organizations and individuals involved have tried to do an excellent job, the structure is inefficient and unbalanced. The ESNO has the responsibility for maintaining the web site but without the benefit of a web professional onsite.

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Job Description (2004) for the EarthScope Education and Outreach Manager, from the initial grant that funded the E&O position in the initial EarthScope Facility Office during the MREFC installation stage.

*An EarthScope Education and Outreach Manager (EEOM) will direct the EarthScope E&O Program. The EEOM will:*

- a) Be selected via a national search. The search committee will comprise representatives nominated by the EarthScope Facility Executive Committee (EFEC), the EarthScope Facility Director (ESFD), the EarthScope Science and Education Advisory Committee (ESEC), and the NSF/GEO Program Director for Diversity and Education. All search committee members will be subject to final approval by the NSF EarthScope Program Director (ESPD). The final selection of the EEOM will be made by the ESFD, subject to approval by the ESPD.*
- b) Be housed at and supported by the EarthScope Facility Office.*
- c) Coordinate education and outreach activities for the entire EarthScope Program. In particular, the EEOM will:*
  - Facilitate connections and coordination of E&O efforts for funded EarthScope projects.*
  - Identify highlights for incorporation into appropriate news and review items, fact sheets, non-technical components of the Web site, and press releases.*
  - Work with other Geoscience organizations and programs as well as Geoscience and Engineering initiatives related to education and outreach.*
  - Disseminate information about the EarthScope experiment to educational and scientific organizations outside the traditional earth science community.*
  - Identify and disseminate resources and information regarding best educational practices to EarthScope scientists and others in the geoscience community at large.*
  - Be responsible for documentation of EarthScope E&O impacts, and assist in the development of tools and metrics to capture demographic information.*
  - Represent EarthScope Science and E&O to the education community and to federal agencies, institutions, and professional societies.*
  - Promote diversity in the Earth Sciences.*
  - Develop a process for identifying and prioritizing EarthScope content for inclusion in DLESE and other national science digital library initiatives.*
  - Assist curriculum developers, who are selected by the EEOM, incorporate EarthScope research into inquiry-based learning resources consistent with national educational standards.*

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