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Evaluation of the IRIS Education & Outreach Program

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Executive Summary

This report evaluates the Education & Outreach (E&O) Program within IRIS—the Incorporated Research Institutions for Seismology. The principal finding based upon an independent five-month review is that E&O is a very well administered, creatively constructed, and highly effective Program. E&O supports a balance of effective activities that have positive near-term reach and impact on the quality of education and public understanding of science. These are complemented by other activities that have both near and long-term reach and eventual impact on the scientific discipline of seismology and its future workforce. The Program's activities strongly support the overall mission of the parent agency. The near term activities: museum displays, Website, and lectureships, reach the appropriate audiences, are efficiently implemented, and are maintained as well as can be expected on a very limited budget. The long term activities: internships, sabbaticals, workshops, and posters, have effective reach to the targeted audiences, are efficiently operated, and show signs of early adoption that promise very high positive outcomes.

Among specific activities, the IRIS Internship Program is exemplary of the excellence of the programs supported by the Consortium. The Internship Program has grown in response to the interest of students and the support of the community. The program content has been improved in response to the comments of students and hosts. It has a spectacular rate of success in encouraging college students to engage in graduate study in geosciences. This program is not just a success for IRIS, it could serve as an example for any scientific internship program.

The teacher training workshops are also highly successful and warmly welcomed by the education community. The materials that are conveyed in a short time are state-of-the-art, are not "watered-down" in content; and they offer hands-on experiences for teachers. The participants are nearly uniform in their high praise of the activity. IRIS's investment in this activity is leveraging the work of many other scientific

agencies and institutes, and the materials produced are shared with other science-based public outreach groups.

The museum displays created by IRIS are among the most popular attractions in the museums and centers in which they are placed. They are visually very attractive and appealing. The information content in the displays is high for the space allotted, and the continual updating of the information in near-real-time adds to the appeal. IRIS staff has put a great deal of thought into making the museum displays efficacious, and this shows in the success that the displays have *in situ*. IRIS has little control over the maintenance of the equipment once it is placed in the museum, and this factor may need attention, since the museum displays need maintenance, but IRIS is not in a position to take on this job. This gap may need some discussion at the Board level.

The Seismographs in Schools program is likewise a very successful and creatively-conceived program. The seismographs are inexpensive and yet they have a broad and long-term reach into education. The program is very well administered, and among the teachers and schools that support it, is very popular. The program has a few more disconnects between the design and the implementation than does the museum displays in that the maintenance of the program requires both equipment repair and teacher training. This increases the chances that the program will not be as effective as programs where IRIS has more control over all the features of the program.

Other programs supported by IRIS are highly creative and implemented at a very low cost for the benefits being offered to the public, to education, and to the professional community. The lectureships offer state-of-the-art science to the general public and to students in a highly effective way. Webcasting or podcasting these lectures may also widen their reach. The DBIS program gets science out to the general public in an exciting and interesting way at low cost. Sabbaticals in Seismology Program has potential to reach scientists and students with experimental

opportunities. All of these activities have individual merit and are very well designed and implemented.

When viewed against the practices of other earth science and science outreach agencies, IRIS stands out as putting into place the best practices in the field in evaluation. The staff continually seeks and receives input from Program participants and from the scientific community. The programs are creative and high quality. The evaluation plans and practices are outstanding in their design, practice, and input to the formation and re-formation of program elements. IRIS staff makes a serious commitment to the public trust in their efforts to meet all the goals set out for the E&O program.