

## **Some thoughts about the challenges of E&O for COCONet**

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Effective education and outreach is crucial to the success of COCONet relative to the broader society that exists beyond the primary investigators' laboratories. The environment for E&O in a circum-Caribbean science project is complex. Multiple sovereign nations exist in the footprint of the COCONet project. Several languages are spoken in these nations. Politics, culture and history connects (or divides) these countries, often in ways that might be unclear to outsiders. Styles of formal and informal education are highly variable among circum-Caribbean nations. Students' access to information ranges from high-speed internet access to oral instruction with few printed resources. The E&O challenges facing any circum-Caribbean scientific project are daunting. Despite the challenges, the consequences of ignorance in the face of significant geological hazards (e.g., earthquakes, eruptions, hurricanes, landslides & debris flows, floods) are unacceptable. Risk can be reduced by public policy and sound engineering based on scientific knowledge of the sort that COCONet will generate and make freely available.

I envision E&O activities broadly, recognizing that no scientific project is ever likely to be funded sufficiently to address all of the related E&O needs. Two broad sets of activities involve (1) the education needed to support the science mission of the project, and (2) the E&O efforts needed to synthesize and transmit science results to the public.

COCONet starts with a core group of scientists whose training, experience and collaborative skills enable them to design and implement GPS networks that generate useful information. (This group communicates with each other through the scientific literature and personal interactions of the sort facilitated by UNAVCO.) An immediate E&O need is to identify scientist-collaborators in circum-Caribbean nations, and provide for their effective peer-to-peer training when necessary. These individuals and their associates can then become primary resources in the process of educating policy makers in their respective nations, so that their work with COCONet might be facilitated. Short well-produced video briefings, available on the web and featuring information that is materially relevant to particular regions if not to individual countries, might be useful in working with political leaders or their staffs. Beyond the GPS geodesy specialists are a larger group of non-specialist scientists and university science faculty members who would use the data if they knew how. COCONet-related E&O efforts might facilitate their learning through web resources, short courses, workshops or pedagogical texts written at an appropriate level. People who are not geodesists are likely to constitute a significant group of routine end-users of COCONet GPS data.

Transmitting scientific results to the non-scientist public is always a challenge, regardless of the country or language involved. We need to tailor both the message and the medium through which the message is transmitted to the audience. This is known as receiver-based communication. Who do we want (or need) to reach, and how can we reach them efficiently and effectively? How can we facilitate development of a coordinated but distributed (non-centralized) E&O process that reaches the various target groups (school children at all levels, the press, interested adults, teachers, public-policy developers, government officials, civil engineering community, etc.) of each circum-Caribbean nation, utilizing leadership arising locally from each nation's science community? How can we facilitate the development of efficient and effective pipelines from the science community through information processors (e.g., E&O professionals, web-resource authors, science journalists, educational media creators, science teachers, general teachers and journalists) to the public?