X. LOOKING AHEAD

Working Groups were asked to address key issues raised at the Conference, to assess realistic implementation of strategies, to determine the investments and commitments needed for implementation, and to distribute responsibilities among academia, the public and private sectors, in order to maximize success.

From the Working Groups were developed a list of concerns and recommendations which are presented in the next section.

Members of academia and NOAA Line Office personnel co-facilitated the working groups:

National Marine Fisheries Service (NMFS) Working Group: Dr. Bradford Brown, NMFS, and Dr. Matthew Gilligan, Savannah State University;

Office of Oceanic and Atmospheric Research (OAR) Working Group: Ms. Ann Georgilas, OAR, and Dr. Livingston Marshall, Morgan State University;

National Weather Service (NWS) Working Group: Mr. Jose Garcia, NWS, and Dr. Paul Croft, Jackson State University;

National Environmental Satellite, Data, and Information Service (NESDIS) Working Group: Mr. Benjamin Watkins, NESDIS, and Dr. Abdul Mohamed, Jackson State University; and

Office of Finance and Administration (OFA) Working Group: Mr. Robert Stockman, OFA, and Dr. Mark Hardy, Jackson State University.

Concerns and Recommendations

Before listing the concerns and recommendations, it is deeply important to note that all the Working Groups acknowledged the tremendous effort NOAA has made in establishing programs, partnerships, and initiatives to increase and sustain diversity in the oceanic and atmospheric sciences. This said, it is clear from the concerns and recommendations that NOAA has not yet done an adequate job of making this information available.

Concerns

The concerns are listed in order of magnitude.

- **THE NEED FOR CLEARER COMMUNICATION**
  The need for greater and clearer communication kept coming up throughout the Conference. One panelist expressed his dismay that with all the programs NOAA had available to students, very few of the students present at the Conference knew about them. Greater communication was called for to publicize the activities of NOAA and its Line Offices so that the larger public knows what these agencies do. It was also called for in creating more effective partnerships between MSIs, private industry, and the government. Finally, more

communication is needed at the legislative level, to convince Congress that these programs deserve to be funded. This concern, the need for greater communication, was expressed more frequently than any other in the Conference. It remains a real obstacle for increasing and improving diversity, as this is the third Conference and the call for greater communication has been made at each one. There have been improvements—a central NOAA web page for diversity and an increased feeling among students that their mentors were communicating well—but there is much work to be done.

- **THE NEED FOR MORE MSI INITIATIVE**
  MSIs and HBCUs need to take a greater initiative in establishing partnerships, understanding business arrangements, and developing science majors. MSIs need to objectively assess their strengths and weaknesses, market their advantages, and seek partnerships that will produce mutual benefits.

- **THE NEED FOR PARTNERING SUPPORT**
  Many participants talked about the difficulties of establishing partnerships. The most frustrating partnership experiences were those that had been developed through a single contact person. If that contact person left, the entire project fell apart. Several Conference participants advocated advisory councils for partnerships so that the long-term interests of the collaborative work would be promoted, regardless of individual commitment, and incorporated within the structure of the host partner.

- **THE NEED FOR FACULTY SUPPORT**
  Many faculty expressed frustration at being overworked, trying to put together partnerships, write proposals, do significant research, write articles, and teach class. Faculty enthusiasm for and participation in increasing and sustaining diversity must be supported. As much as is feasible, faculties could be provided opportunities by university administrations such as short-term leaves of absences to participate in faculty exchange; faculty's mentoring of disadvantaged students and involvement in outreach programs should count towards tenure; and faculty members should have support in writing grant proposals.

- **THE NEED FOR MONEY**
  "Money is nice," said one participant. And more money is nicer. With the federal budget facing more severe cutbacks than ever, several participants talked about the practical side of getting money. They advocated that the search for money be personal. Faces, real people from NOAA, from the HBCUs, from partnering industries must lobby Congress in person. In addition, most Congressional members are unaware of the deep commitments NOAA has made to education and diversity. Congressional members must see the practical workings of NOAA and must understand that the research NOAA does is enhanced by this attention to education and diversity.

- **THE NEED FOR STUDENT SUPPORT**
  This area has seen improvement since the first Expanding Opportunities Conference. Participants spoke more of retention with an eye to very practical concerns. For instance, internships are valuable to students, but little accommodation is made for housing or for travel

costs to and/or from the internship location. Without a secure way of finding affordable, short term, housing, many students must turn down opportunities. Likewise, minority students often have needs that are not acknowledged or addressed by program directors.

- **THE NEED FOR OUTREACH**
  Outreach needs to happen at all levels – community, pre-school to post-graduate, internationally, and among scientific disciplines. Outreach that emphasizes collaboration, communication, and cultural awareness forms the basis for ethical work—work that supports not just the diversity of people, but their well being as well, work that increases knowledge while respecting land and culture.

Recommendations

FOR BOTH NOAA AND MSIs

Work to ensure the new NOAA-MSI Partnership succeeds.

FOR NOAA

- Create a centralized list-serve to disseminate information about opportunities by email. This should be connected to the central NOAA web site, so students can sign onto the list-serve by clicking a button.
- Review the information it currently sends out by flier, making sure it is visually appealing.
- Send information to Biology Departments for consideration by biology students even if the university has no Department of Marine Sciences.
- Designate a key person or persons from each Line Office to be the contact person for MSIs.
- Identify a way to contact MSIs to announce important information. Each Line Office should have a contact person at each MSI, and a list-serve for these contact people to advertise appropriate programs.
- Send NOAA representatives to MSIs on a regular basis to establish personal contact.
- Release some of the OAR (Office of Oceanic and Atmospheric Research) funding directly to MSIs so that they can partner with JIs.
- Develop a clear and visible public presence to increase awareness as to what NOAA and its Line Offices do.
- Hold some meetings of funding agencies at MSIs so experts can give talks at the school following the meeting.

- Get students interested in the sciences at an early age by conducting extensive outreach to Minority Schools, K-12, Middle and High Schools.

- Include teachers at all levels in outreach programs, to increase their knowledge.

FOR MSIs

- Establish, if at all possible, a Marine Biology or/and Coastal Management Program.

- Increase networking and partnering with other MSIs.

- Become savvy about understanding the business side of creating and maintaining partnerships.

- Ask, where appropriate, their Business Schools to guide them in writing effective proposals.

- Tap public involvement by creating alliances with the public, private, federal, state, local and academic sectors.

- Identify key contact people in NOAA.

- Monitor projects for grant proposals from SG and NURP.

- Create a central data bank of minority students in the sciences, current and graduates. This data bank can be used by students to seek housing for internships, to find out information about life in new areas, and to learn about post-graduate experiences.

- Establish adult education courses in the sciences as a way of increasing public support for new programs.