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### Fostering the Development of Conservation Leadership at Minority-Serving Institutions

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## Fostering the Development of Conservation Leadership at Minority-Serving Institutions

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### Background

Between 1996 and 2006, non-white Hispanic, African American, and Native American/Alaska Native students (collectively called "underrepresented students" [URS]) made up only 7% of students graduating with a conservation or conservation-related degree (National Science Foundation [NSF] 2008), despite the fact that in 2000 non-white Hispanics, African Americans, and Native Americans/Alaska Natives made up 27% of the U.S. population (U.S. Census Bureau 2002a, 2002b, 2002c). In comparison, the fields of sociology, education, math, and computer and information sciences graduated more than twice as many URS for the period 1996–2006. White non-Hispanic students earned 90% of all conservation-related degrees from 1996 to 2006 (NSF 2008). Although no longer a matter of legal concern, for URS the effects of educational discrimination are still felt at all educational levels. When URS begin school, many enter into the science, technology, engineering, and mathematics pipeline: a system of training that begins in primary school and ends with the graduated qualified working scientist (Hanson et al. 1996). For a variety of reasons, a high percentage of URS egress, or "leak," from the science, technology, engineering, and mathematics pipeline (Anderson and Kim 2006) before completing their training. These reasons can include academic tracking (the specific process of separating students along specific curricular paths like college-bound or vocational training; Gilbert and Yerrick 2001), lack of academic preparedness, academic isolation, and social isolation. The capacity challenge in the conservation workforce thus can be attributed to a combination of historical, educational, social, and financial barriers that URS face in becoming professional conservation scientists (Aikenhead 1997; Nettles and Millett 1999; Burdman 2005).

### The Capacity Challenge

What are the barriers that URS face to becoming conservation science professionals? Historical barriers rooted in the separate but equal policies of the past continue to have lasting negative effects on URS (National Center for Public Policy Research 2006). There is also the historical reality, however, that many people of color enter the environmental arena with a focus on human relationships to the environment, as in the environmental justice movement, rather than with a focus on transcendental ideations of wilderness, wildlife, and recreation (Taylor 2002). It is therefore only recent that some URS are coming into the physical environmental sciences in addition to their work in the social and activist aspects of environmental issues. The legacy effects of educational discrimination as constructed through de facto and statutory separate but equal policies in addition to the modern educational problems of tracking, academic isolation, and lack of rigorous college preparation are persistent educational barriers that URS face as well (Kao and Thompson 2003; Burris and Welner 2005; Anderson and Kim 2006). The social isolation that URS undergraduates report on campuses across the country and the lack of culturally competent mentorship that many URS experience in their science training continues to be a sufficient enough barrier to prevent URS students from continuing science studies (Alexander et al. 1997; Haring 1999; Watkins and Gayle 2005). Additionally, not unlike many non-URS, financial barriers such as an aversion to take on loans and a burdensome number of work hours per week set up additional and costly educational barriers (Burdman 2005; Perez and Gong 2005; Anderson and Kim 2006).

### Preliminary Results of a Minority-Serving Institution Faculty Needs Survey

In October 2008, the Enhancing Diversity in Conservation Science Initiative (DI), a project of the Center for Biodiversity and Conservation (CBC) at the American Museum of Natural History, asked faculty members from minority-serving institutions (MSIs) throughout the United States to gauge their impressions of diversity in conservation biology at their respective institutions and to identify their interest in the DI's proposed activities. The majority of the respondents were professors who classified their colleges as Hispanic-serving institutions followed by those who identified with historically black colleges. Forty-one percent of the faculty believed that it was unlikely to expect more than 10% of their students to enter careers in the field of conservation. Many of the respondents replied that there was great need to enhance their current syllabi with active teaching and active learning strategies. Of the number of activities, workshops, and resources proposed for implementation, great interest was expressed in attending a

workshop designed to foster the development of leaders in conservation and conservation-related fields at MSIs. More than half of the respondents agreed that tomorrow's successful conservation leaders should possess the ability to use an interdisciplinary approach to problem solving, cross-cultural learning and team-building skills, and program management strategies.

## Building Conservation Leadership

In addition to the survey, ongoing conversations between CBC staff and MSI faculty members have revealed a number of insights on conservation leadership. The CBC has come to understand that the goal within the conservation community should be not only to increase the number of URS in conservation but also to foster the development of conservation leadership among URS so that they can in turn participate in shaping the future of the field. Manolis et al. (2009) described two types of conservation leadership: research (in which we include teaching as a form of educational research) and integrating conservation (here we also include ecology) science into policy, management, and society-at-large. In our discussions on conservation leadership with MSI school administrators and MSI faculty working inside schools of environmental and ecology studies, faculty and administrators have expressed various leadership perspectives. The perspectives break out into three overarching themes:

1. Changing curricula is the way to begin bringing awareness to university administration about ecology and conservation leadership.
2. Curriculum change can also be an effective way to begin to build conservation leadership among students.
3. Some schools still lack a tradition or culture of environmental sustainability, despite extensive conservation and ecology curricula.

Despite what may be a lack of a tradition or culture of environmental sustainability, MSIs can play an especially critical role in conservation leadership within teaching and research. Because leadership involves cultivating and targeting diversity as a priority (Claremont et al. 2005; Manolis et al. 2009), a practice in which MSIs have been engaged in as a mission, MSIs are in the unique position of having been on the cutting edge of these areas of leadership for decades. For example MSIs have offered URS various leadership opportunities (Raines 1998), as well as an opportunity for URS to respond to community needs. Furthermore, MSIs offer a place for URS to be part of empowering communities (Pavel et al. 2001).

## A Model for Leadership Development

Our hypothesis at the CBC is that conservation leadership at MSIs can increase the representation of students from underrepresented groups if we work to leverage the experience shown by MSIs in the areas of academic preparation, social integration, and financial support for URS with the experience shown by conservation organizations in the areas of cutting-edge research, leading cooperative efforts between conserva-

tion institutions, and professional development for the conservation community. Recognizing the need to increase diversity in the field, the CBC has initiated the enhancing diversity in conservation science initiative. The DI's current efforts are dedicated to various aspects of relationship building with MSIs, the recruitment and retention of URS in conservation science, as well as inspiring, developing, and supporting tomorrow's emerging conservation leaders. Our model is to generate interest in and provide professional development for MSI faculty in the areas of education research and active pedagogical methods as well as to develop a conservation science teaching community. Moreover, this model is supported by collaboration across institutions to maintain the sense of community praxis that scientific teaching and active teaching require. Ultimately, the DI aims to reach into the areas of student support through culturally competent mentoring, access to research opportunities, and access to financial support.

## Summary

Leadership of any kind requires a similar set of skills. Some of those skills include the following:

1. Acquiring and assessing core leadership skills and competencies
2. Communicating and bringing attention to a specific ecological or conservation problem
3. Managing time, projects, people, and resources effectively
4. Bringing diverse people, talents, and views to bear on the issues
5. Assessing progress regularly and changing course when appropriate

Though cultural competencies can mediate the style of leadership used by individuals or institutions, there is likely a great deal of leadership variety at the interpersonal level between, say, colleagues and students, more so than between institutions. If the conservation community builds on the strength of these variations of leadership, it is likely to find a greater number of supporters for any number of important conservation efforts, a more informed conservation constituency, and ultimately a more diverse conservation workforce.

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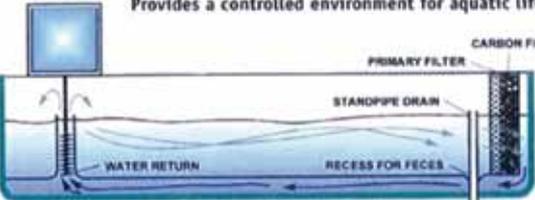
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