

**Outreach Activities to Bring Native Americans into
NOAA Scientific Fields
A Strategic Necessity**

- Geographic Distribution of Western Indian Reservations
- Mineral Rights.....Specifically Water

How do you design national implementation and service plans

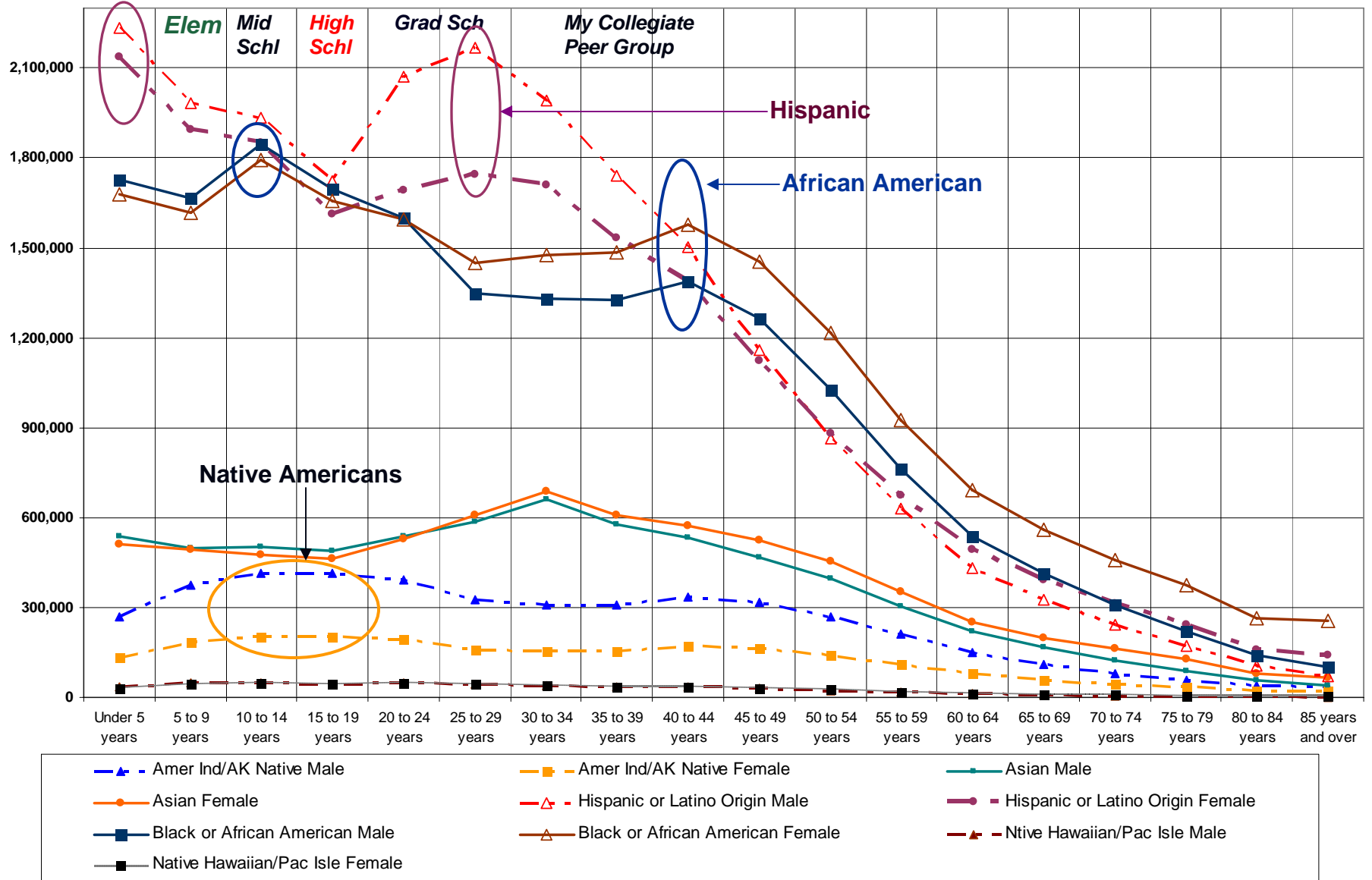
(i.e. NOAA Water Resources Initiative)

without active stakeholders who trust you ?

What Opportunities Do We Have to Develop Future Scientists In Our Current Grade School and Middle School Populations

Why we need outreach programs now

2004 Minority Population Projection By Ethnicity and Age Group- Ethnicity Alone or in Combination



Annual Estimates of the Population by Age and Ethnic Groups for the United States: April 1, 2000 to July 1, 2004 (NC-EST2004-04-XXXX)

Attaining the credentials for that next step....

A look at our national Science and Engineering
academic degree statistics to develop Native
American scientific leaders

Statistics and Graphics

2004 National Science Foundation Women and Minorities in
Science and Engineering

GS 1340 Meteorologist- OPM Requirements

Basic Requirements:

Degree: meteorology, atmospheric science, or other natural science major that included:

At least 24 semester (36 quarter) hours of credit in meteorology/atmospheric science including a minimum of...

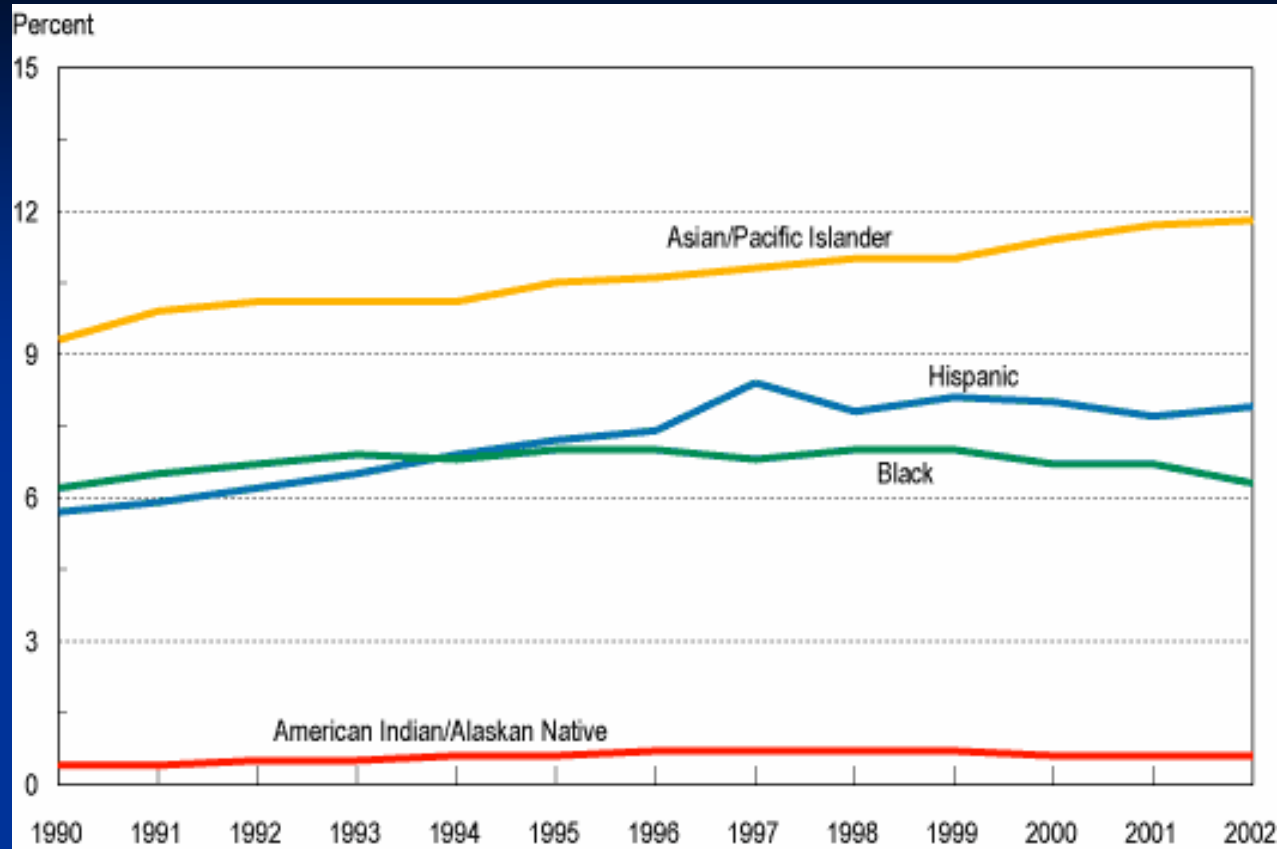
GS 1350 Hydrologist- OPM Requirements

Basic Requirements:

Degree: physical or natural science, or engineering that included at least 30 semester hours in any combination of courses in hydrology, the physical sciences, geophysics, chemistry, engineering science, soils, mathematics, aquatic biology, atmospheric science, meteorology, geology, oceanography, or the management or conservation of water resources.

The course work must have included at least 6 semester hours in calculus (including both differential and integral calculus), and at least 6 semester hours in physics. Calculus and physics, as described above, are requirements for all grade levels.

Minority undergraduate engineering students, by race/ethnicity: 1990–2002



Minorities account for an increasing proportion of undergraduate engineering enrollment. The percentage of undergraduate engineering students who are white decreased from 76 percent in 1990 to 68 percent in 2002.

The Asian/Pacific Islander share of engineering enrollment generally increased between 1990 and 2002.

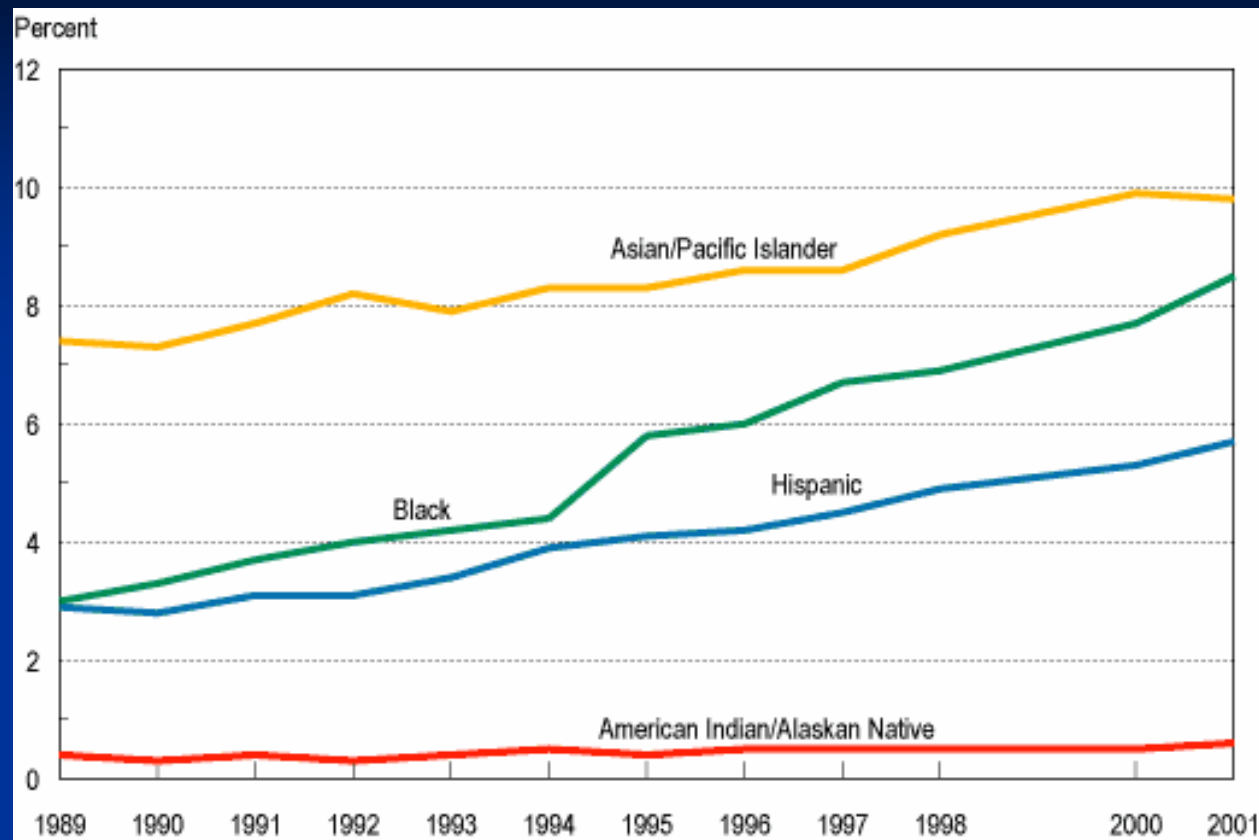
The Black, Hispanic, and American Indian/Alaskan Native share of engineering enrollment also increased, although there has been little growth or some decline since the late 1990s.

2001 Bachelor Degrees Awarded- A Look at Native Americans

2001	All US Citiz/ Perm Res	White	Asian/Pac Isl.	Black	Hispanic	Amer. Ind/ AK Native
Atmospheric Sciences	454	395	14	2	15	5
Earth Sciences	3,288	2,888	64	52	130	29
Ocean Sciences	177	153	8	2	12	1
Computer Sciences	39,792	24,491	6,326	4,291	2,354	271
Mathematics	11,029	8,173	916	808	625	51
Electrical Engineering	16,529	9,891	3,522	1,082	1,302	56
Civil Engineering	8,537	6,615	521	329	742	65

Table C. Bachelor's Degrees Awarded In 2001 Classified By Ethnicity

Minority share of S&E master's degrees awarded to U.S. citizens and permanent residents, by race/ethnicity: 1989–2001

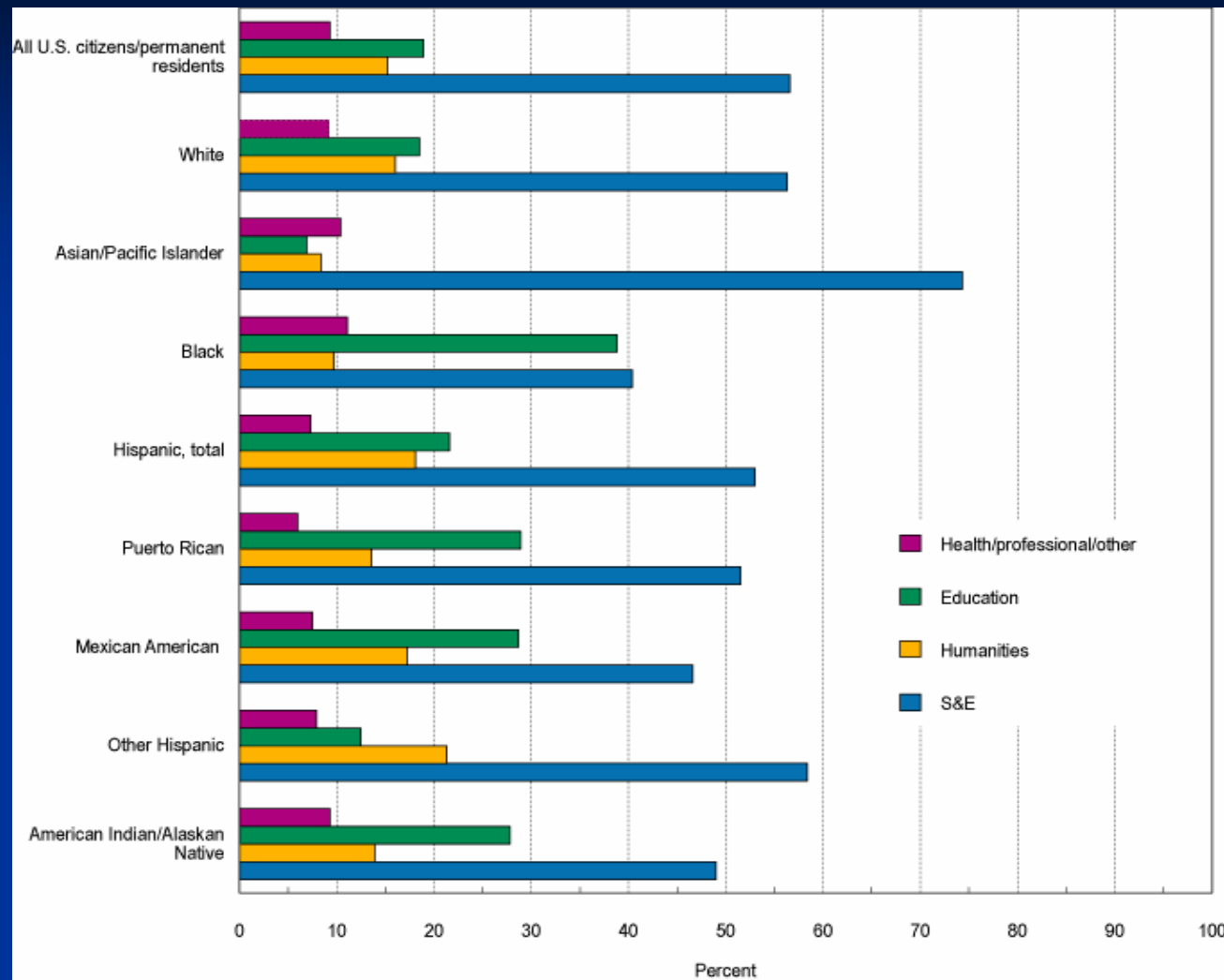


The percentages of S&E master's degrees earned by Asians/Pacific Islanders, blacks, Hispanics, and American Indians/Alaskan Natives increased during the 1990s.

The number of S&E master's degrees awarded increased for all minority groups and for white females during the 1990s.

The number of S&E master's degrees earned by white males decreased during the decade.

Field distribution of S&E and non-S&E doctoral degrees awarded to U.S. citizens and permanent residents, by race/ethnicity: 2001



*** You need to examine the data in Table F6 of NSF Women and Minorities in S&EFor Native Americans/ Alaska Natives, the last doctorate awarded in atmospheric sciences was in 1996, 1998 was the last year for one in oceanography, and only one degree was awarded from 1999-2001 in computer science

Collaborative Activities and Outreach with Chickasaw Nation of Oklahoma

National Weather Center Partners Cross Collaboration

Chickasaw Nation College and Career Day and Johnson-O'Malley State Conference :

Students and Educators

“I did not know weather was a career”

Water Resources and Hydrometeorological Science and Technology to aid Chickasaw Nation communities of south-central Oklahoma

Interesting Political and Stakeholder Issues with a Sovereign Nation