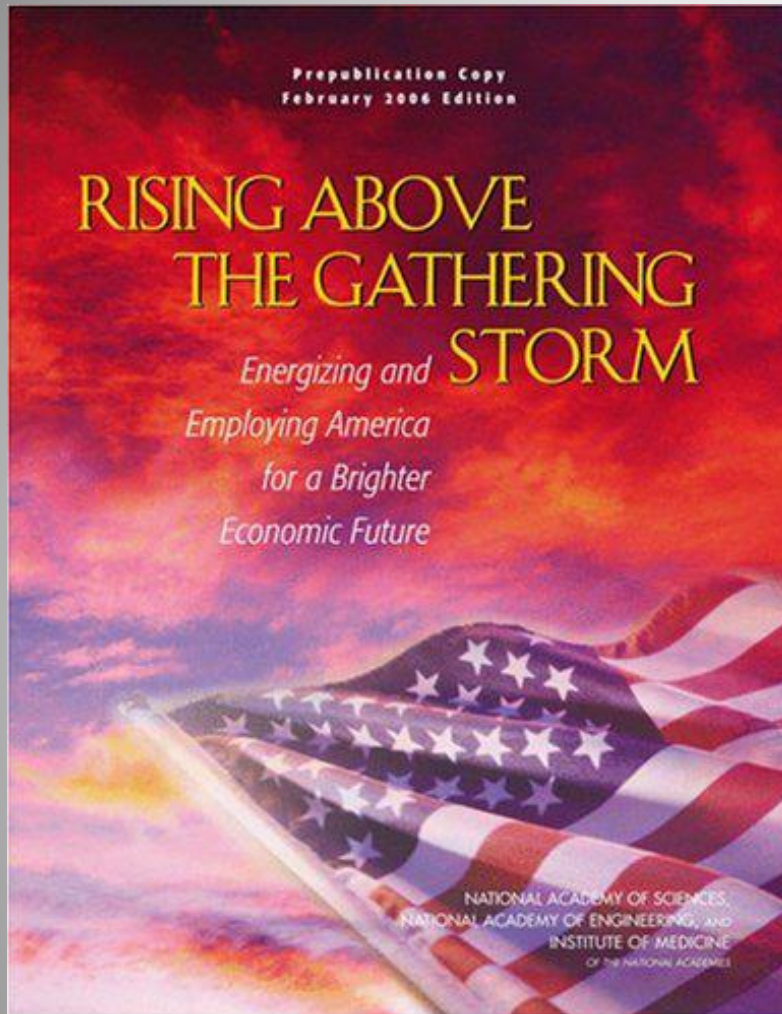


Building on Successful Undergraduate Research Programs to Create a Gateway to Science Careers for Underrepresented Students

**Don Lovett and Janet Morrison
The College of New Jersey**

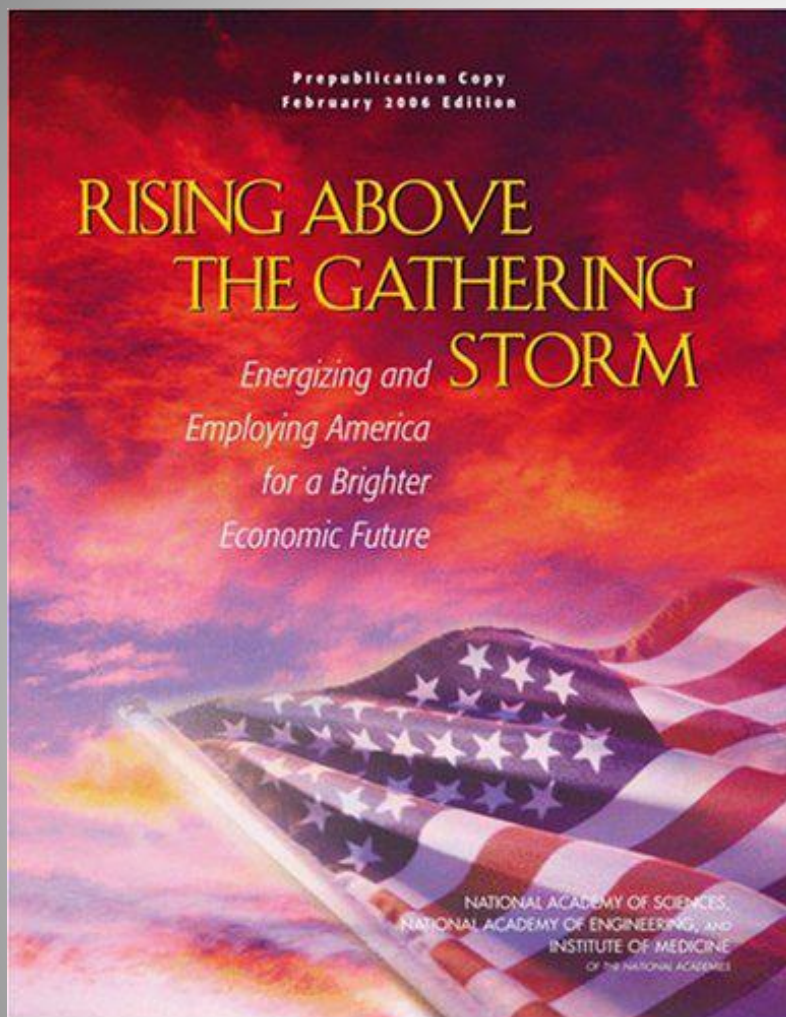


The College of New Jersey



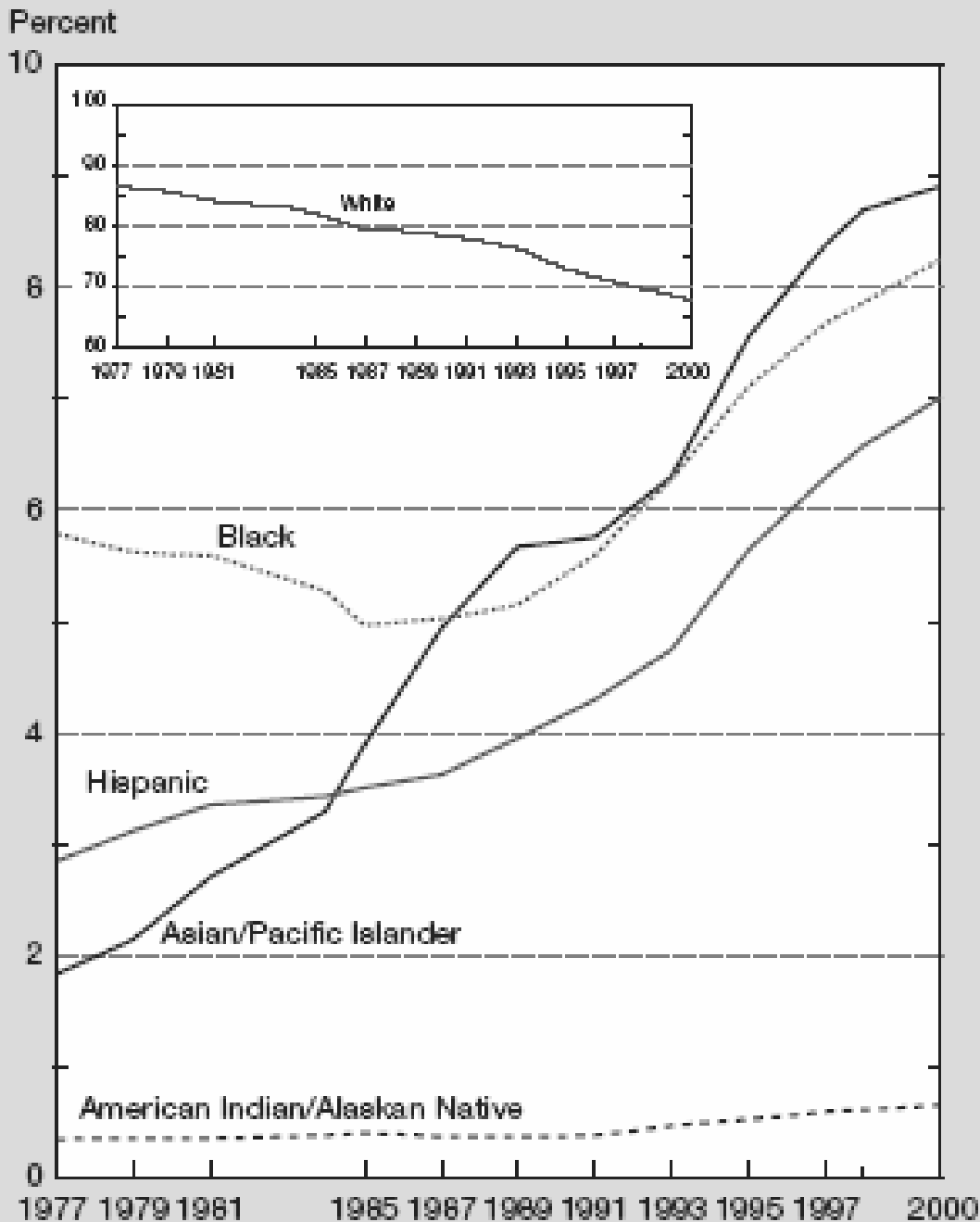
Percentage of all undergraduates receiving their degrees in natural science or engineering:

Singapore	67 %
China	50 %
France	47 %
South Korea	38 %



Percentage of all undergraduates receiving their degrees in natural science or engineering:

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France	47 %
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United States	15 %



Minority share of S&E bachelor's degrees, by race/ethnicity, 1977-2000.

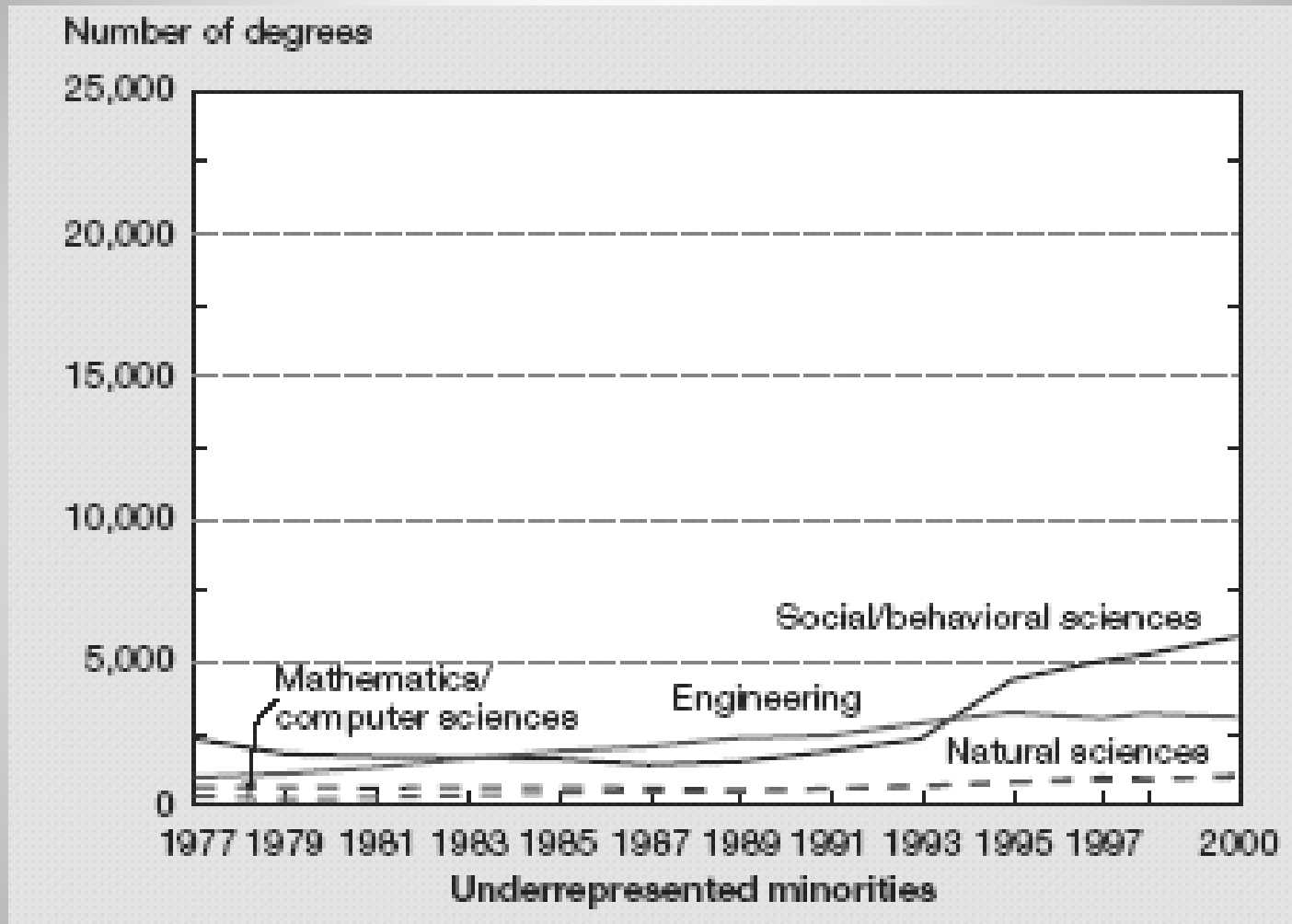
SOURCE: National Science Board. *Science and Engineering Indicators 2004*. NSB 04-01. Arlington, VA: National Science Foundation, 2004. Figure 2-13.

Degrees per 100 24-year-olds

Gender and Race/Ethnicity	All Bachelor's	Natural Science & Engineering Bachelor's
1990		
Female	30.3	2.8
Male	28.5	6.3
URM	11.0	1.6
White	32.6	4.9
2000		
Female	39.5	4.5
Male	28.4	6.8
URM	17.9	2.5
White	36.8	5.9

SOURCE: National Science Board. *Science and Engineering Indicators 2004*. NSB 04-01. Arlington, VA: National Science Foundation, 2004. Table 2-8.

Master's degree in S&E fields earned by URM, 1977-2000



SOURCE: National Science Board. *Science and Engineering Indicators 2004*. NSB 04-01. Arlington, VA: National Science Foundation, 2004. Figure 2-17.

URMs in the academic pipeline, through 2007

Table 7. All URM Groups Combined in the Academic Pipeline*

Discipline	Students				Departments 1 - 100 FY2007			
	BS2004	BS2005	PhD86-95	PhD96-05	asst	assoc	prof	all
Chemistry	17.0%	16.7%	5.3%	7.5%	6.6%	5.3%	2.7%	3.9%
Math	12.2%	13.1%	4.0%	6.1%	5.0%	4.0%	2.6%	3.3%
Computer Sci	20.7%	20.6%	2.9%	6.6%	3.6%	3.3%	2.0%	2.8%
Astronomy**	10.2%	8.6%	3.1%	4.1%	3.3%	2.1%	2.0%	2.2%
Physics	10.0%	10.3%	3.7%	5.2%	4.5%	3.0%	1.9%	2.5%
Chemical Engr	13.9%	14.7%	4.6%	7.7%	7.7%	6.3%	4.6%	5.6%
Civil Engr	14.0%	14.3%	6.3%	8.2%	9.1%	7.1%	4.3%	6.1%
Electrical Engr	16.8%	16.1%	4.3%	7.9%	3.7%	4.4%	2.8%	3.3%
Mechanical Engr	11.5%	11.5%	3.3%	3.7%	6.9%	5.0%	2.7%	4.1%
Economics	13.1%	13.1%	6.8%	8.4%	10.6%	5.9%	3.8%	5.8%
Political Science	20.0%	20.8%	11.1%	12.7%	11.3%	8.1%	4.5%	7.3%
Sociology	28.0%	28.7%	12.2%	16.4%	19.3%	13.2%	10.8%	13.5%
Psychology	21.2%	21.6%	8.3%	12.9%	11.2%	9.3%	4.0%	6.9%
Biological Sci	16.7%	16.5%	4.8%	7.8%	6.3%	5.1%	2.7%	4.1%
Earth Sciences	6.2%	6.6%	2.1%***	5.5%	5.7%	5.4%	2.4%	3.7%

*URMs were 28.0% of 2006 US population. **Top 40 departments. ***1995 data.

SOURCE: Dr. Donna J. Nelson, Christopher N. Brammer, and Heather Rhoads. "A National Analysis of Minorities in Science and Engineering Faculties at Research Universities." Diversity in Science Association and University of Oklahoma, Norman, OK. October 31, 2007.

Women in the academic pipeline, through 2007

Table 11. Women in the Academic Pipeline*

Discipline	Students				Departments 1 - 100 FY2007			
	BS2004	BS2005	PhD86-95	PhD96-05	asst	assoc	prof	all
Chemistry	51.0%	51.7%	26.3%	32.4%	21.2%	19.6%	9.7%	13.7%
Math	46.1%	44.9%	22.5%	28.7%	26.8%	18.4%	7.1%	12.9%
Computer Sci	24.7%	22.0%	19.8%	21.2%	20.0%	11.6%	10.3%	13.2%
Astronomy**	41.5%	42.4%	15.2%	22.7%	25.3%	21.6%	12.3%	15.8%
Physics	21.6%	21.1%	10.8%	14.3%	16.8%	13.4%	6.1%	9.1%
Chemical Engr	35.6%	36.7%	17.1%	23.7%	24.2%	17.6%	7.3%	12.6%
Civil Engr	24.1%	23.9%	12.7%	22.0%	24.7%	14.5%	7.1%	13.0%
Electrical Engr	14.0%	12.9%	8.6%	12.3%	15.5%	12.5%	5.7%	9.5%
Mechanical Engr	13.7%	13.2%	7.3%	8.4%	18.0%	11.9%	4.4%	8.8%
Economics	32.5%	31.5%	25.7%	30.2%	30.8%	20.3%	8.7%	16.3%
Political Science	51.1%	51.0%	32.8%	38.9%	37.0%	29.3%	17.6%	26.1%
Sociology	71.5%	70.5%	53.4%	60.8%	56.1%	45.7%	28.2%	39.8%
Psychology	77.8%	77.8%	59.1%	67.8%	48.5%	43.9%	29.5%	37.3%
Biological Sci	62.5%	62.2%	39.6%	46.3%	35.0%	30.0%	17.4%	24.4%
Earth Sciences	42.1%	41.9%	22.5%***	31.8%	28.2%	20.9%	11.3%	16.5%

*Females were 50.7% of the 2006 US population. **Top 40 departments. ***1995 data only.

SOURCE: Dr. Donna J. Nelson, Christopher N. Brammer, and Heather Rhoads. "A National Analysis of Minorities in Science and Engineering Faculties at Research Universities." Diversity in Science Association and University of Oklahoma, Norman, OK. October 31, 2007.

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Diversity in Science Association and University of Oklahoma, Norman, OK.

October 31, 2007.

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State laws prohibiting priority treatment of minorities