

# **What the Numbers Tell Us**

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**Roman Czujko  
Director, Statistical Research Center  
American Institute of Physics**

# **Acknowledgements**

## **Data Sources**

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## **SRC Staff**

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# **General Trends in High School and The Transition to 4 Year Colleges**

# Likelihood of Earning a Bachelor's Degree and Mathematics Scores in Senior Year of H.S.

| Standardized Math<br>Test Scores, 1992<br>(in deciles) | Earned a Bachelor's or more<br>within the next 8 years<br>% |
|--|---|
| =====  | =====   |
| Highest  | 79  |
| 9 <sup>th</sup>  | 63  |
| 8 <sup>th</sup>  | 47  |
| 7 <sup>th</sup>  | 40  |
| 6 <sup>th</sup>  | 32  |
| 5 <sup>th</sup>  | 20  |
| 4 <sup>th</sup>  | 17  |
| 3 <sup>rd</sup>  | 11  |
| 2 <sup>nd</sup>  | 4   |
| Lowest   | 2   |
| Overall  | 32  |

Source: SRC analyzed data collected by National Center for Education Statistics

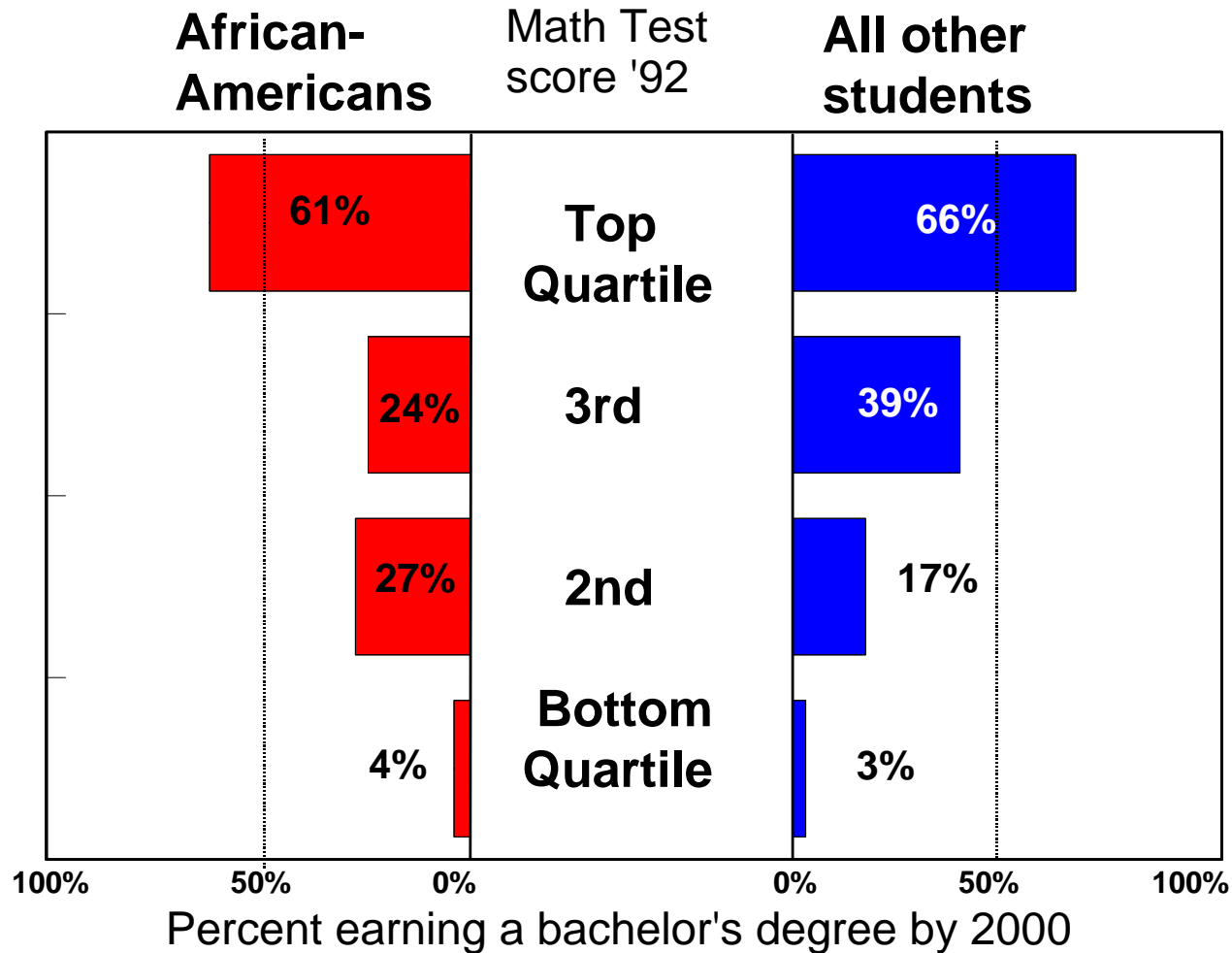
# How African Americans performed on Math Test during senior year in high school

## Standardized Scores on Math Test

| All Students        | African American Students |
|---------------------|---------------------------|
|                     | %                         |
| Top 25%             | 8                         |
| 2 <sup>nd</sup> 25% | 20                        |
| 3 <sup>rd</sup> 25% | 28                        |
| Bottom 25%          | 44                        |

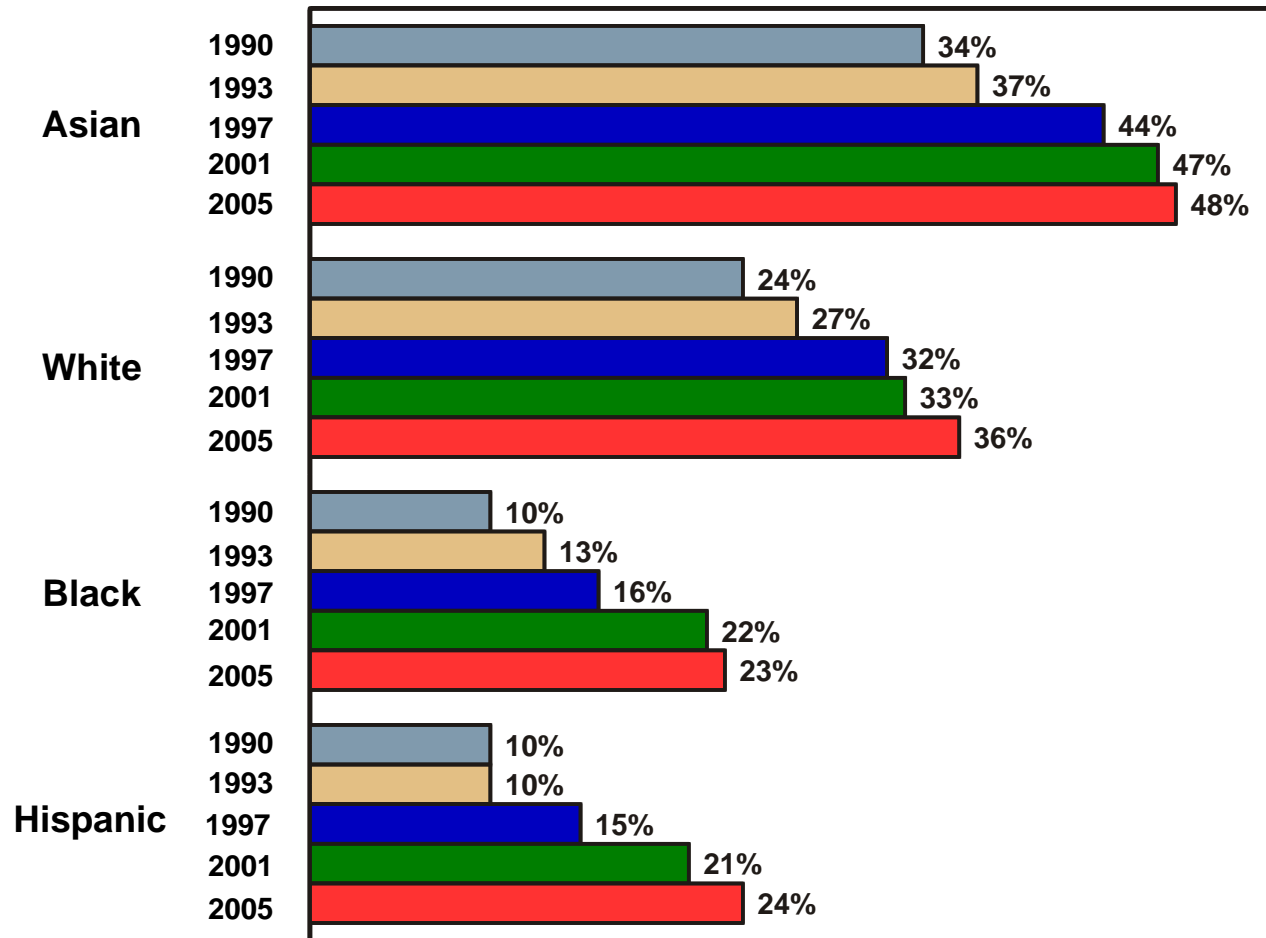
Source: SRC analyzed data collected by National Center for Education Statistics

# Likelihood of earning a bachelor's degree by 2000, African-Americans compared to all others.



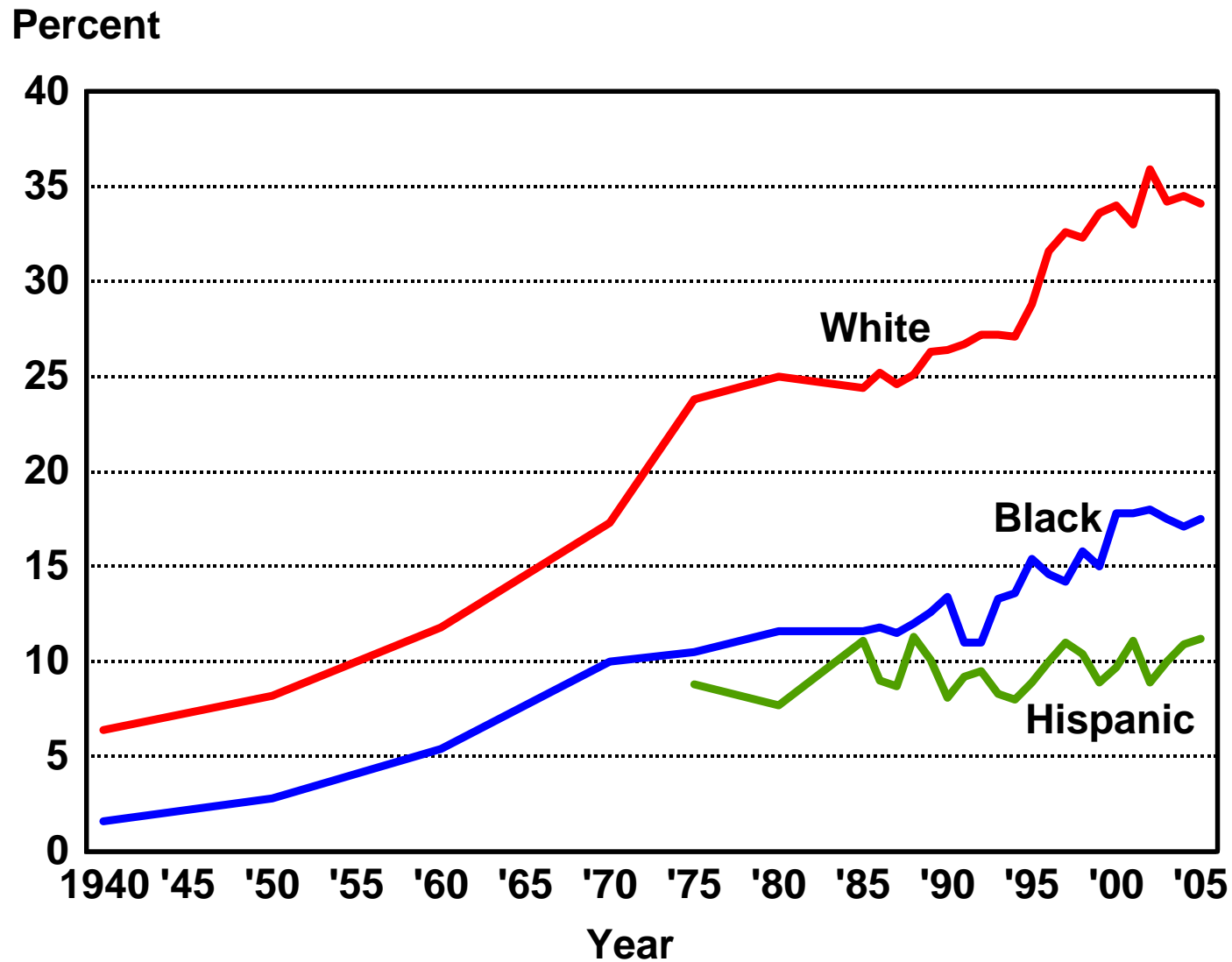
Source: NCES National Education Longitudinal Survey 1988, compiled by AIP Statistical Research Center

# Percent of Students in Each Racial Group Taking Physics



# **Representation of Minorities among Bachelor's**

# Persons Aged 25 to 29 Years Who Have Completed 4 Years or more years of College by Race, 1940-2005



# Bachelors Degrees Awarded by Race and Sex, 1994-2004

|                          |               | 2004<br>N      |
|--------------------------|---------------|----------------|
| <b>American Indian</b>   | <b>Female</b> | <b>6,035</b>   |
|                          | <b>Male</b>   | <b>3,986</b>   |
| <b>Asian American</b>    | <b>Female</b> | <b>47,907</b>  |
|                          | <b>Male</b>   | <b>38,836</b>  |
| <b>Hispanic American</b> | <b>Female</b> | <b>65,403</b>  |
|                          | <b>Male</b>   | <b>40,985</b>  |
| <b>African American</b>  | <b>Female</b> | <b>82,475</b>  |
|                          | <b>Male</b>   | <b>41,161</b>  |
| <b>White</b>             | <b>Female</b> | <b>549,254</b> |
|                          | <b>Male</b>   | <b>418,670</b> |

Source: SRC analyzed data collected by National Center for Education Statistics

## Bachelors Degrees Awarded by Race and Sex, 1994-2004

|                   |        | 2004    | 1994-2004 |
|-------------------|--------|---------|-----------|
|                   |        | N       | %         |
| American Indian   | Female | 6,035   | 72        |
|                   | Male   | 3,986   | 56        |
| Asian American    | Female | 47,907  | 70        |
|                   | Male   | 38,836  | 47        |
| Hispanic American | Female | 65,403  | 78        |
|                   | Male   | 40,985  | 58        |
| African American  | Female | 82,475  | 58        |
|                   | Male   | 41,161  | 37        |
| White             | Female | 549,254 | 10        |
|                   | Male   | 418,670 | 0         |

Source: SRC analyzed data collected by National Center for Education Statistics

## Bachelor's Degrees Awarded in Selected Fields by Race, Class of 2004

|                             | African<br>American % | Hispanic<br>American % | Total<br>Number  |
|-----------------------------|-----------------------|------------------------|------------------|
| Computer<br>Science         | 12                    | 6                      | 59,488           |
| Psychology                  | 11                    | 8                      | 82,098           |
| Business &<br>Management    | 11                    | 7                      | 307,149          |
| Chemistry                   | 8                     | 7                      | 9,300            |
| Biological<br>Sciences      | 8                     | 6                      | 61,509           |
| Mathematics &<br>Statistics | 6                     | 5                      | 13,327           |
| Engineering                 | 6                     | 6                      | 77,949           |
| Education                   | 6                     | 5                      | 106,278          |
| Physics                     | 4                     | 4                      | 4,140            |
| Geosciences                 | 2                     | 4                      | 3,916            |
| <b>TOTAL</b>                | <b>9</b>              | <b>7</b>               | <b>1,399,542</b> |

Engineering includes Engineering Technologies.

Source: NSF WebCASPAR database. Compiled by AIP Statistical Research Center.

## Number of Universities by Number of African American Bachelors Awarded in Physics and Geoscience over Last 5 Years

| Bachelors<br>5-Year Total | Number of Universities |             |
|---------------------------|------------------------|-------------|
|                           | Physics                | Geosciences |
| None                      | 521                    | 312         |
| One                       | 135                    | 93          |
| 2 to 5                    | 83                     | 44          |
| 6 or more                 | 28                     | 9           |
| <b>Total Universities</b> | <b>767</b>             | <b>458</b>  |

Note: Many universities have more than one bachelor's granting department in the geosciences. The above data reflect the total number of bachelor's degrees awarded by all departments at a single university.

Source: SRC analyzed data collected by National Center for Education Statistics

# African American Bachelor's in Physics

Universities that awarded the largest number of bachelor's over last five years

## African American

### 5-Year Totals

|     |   |
|-----|---|
| 61  | Xavier University (LA)  |
| 34  | Benedict College (SC)   |
| 34  | Dillard University (LA)   |
| 23  | Southern University A&M (LA)  |
| 22  | Lincoln University (PA)   |
| 20  | Alabama Agricultural & Mechanical University (AL)   |
| 20  | Spelman College   |
| 19  | Hampton University (VA)   |
| 19  | Florida A&M   |
| 18  | Norfolk State University (VA)   |
| 17  | Morehouse University (GA)   |
| 780 | Total Number of African American physics bachelor's from all degree granting departments: 2000, 2001, 2002, 2003 & 2004 |

Source: AIP Statistical Research Center compiled from data collected by NCES

# African American Bachelor's in the Geosciences

Universities that awarded the largest number of bachelor's over last five years

## African American 5-Year Totals

|     |   |
|-----|---|
| 59  | Hampton University  |
| 16  | Savannah State University   |
| 11  | United States Naval Academy   |
| 10  | North Carolina State University at Raleigh  |
| 9   | Jackson State University  |
| 8   | Mississippi State University  |
| 8   | University of Oklahoma at Norman  |
| 7   | CUNY City College   |
| 7   | Penn State University   |
| 6   | University of New Orleans   |
| 353 | Total Number of African American geoscience bachelor's from all degree granting departments: 2000, 2001, 2002, 2003, & 2004 |

Source: AIP Statistical Research Center compiled from data collected by NCES

# Hispanic American Bachelor's in Physics

Universities that awarded the largest number of bachelor's over last five years

## Hispanic American 5-Year Totals

|     |  |
|-----|--|
| 50  | U of Puerto Rico, Humacao  |
| 36  | U of Puerto Rico, Mayaguez   |
| 22  | U of Texas, Austin   |
| 20  | Massachusetts Institute of Technology  |
| 15  | Harvard University   |
| 15  | Texas State University, San Marcos   |
| 14  | U of Texas, El Paso  |
| 13  | U of Puerto Rico, Rio Piedras  |
| 783 | Total Number of Hispanic American physics bachelor's from all degree granting departments: 2000, 2001, 2002, 2003 & 2004 |

Source: AIP Statistical Research Center compiled from data collected by NCES

# Hispanic American Bachelor's in the Geosciences

Universities that awarded the largest number of bachelor's over last five years

## Hispanic American 5-Year Totals

|     |  |
|-----|--|
| 65  | U of Puerto Rico, Mayaguez   |
| 27  | United States Naval Academy  |
| 19  | Texas A&M University   |
| 18  | U of Texas, El Paso  |
| 12  | Stanford University  |
| 12  | U of California, Los Angeles   |
| 12  | U of Texas, Austin   |
| 10  | Florida State University   |
| 10  | Humboldt State University  |
| 668 | Total Number of Hispanic American geoscience bachelor's from all degree granting departments: 2000, 2001, 2002, 2003, & 2004 |

Source: AIP Statistical Research Center compiled from data collected by NCES

# Representation of Minorities among PhDs

# US Citizens Who Earned PhDs In 2004 by Race and Ethnicity

## Number

|        |                      |
|--------|----------------------|
| 26,431 | All US Citizens      |
| 20,745 | White US Citizens    |
| 1,869  | Black US Citizens    |
| 1,449  | Asian US Citizens    |
| 1,177  | Hispanic US Citizens |
| 129    | Native Americans     |

Source: National Science Foundation

# **PhDs Awarded in U.S. over 32 Years**

## **1973 through 2004**

**37,660 Total Physics PhDs over 32 Years**

**488 Hispanic American PhD Physicists**

**291 African American PhD Physicists**

**22,600 Total Geoscience PhDs over 32 Years**

**324 Hispanic American PhD Geoscientists**

**142 African American PhD Geoscientists**

**Source: AIP Statistical Research Center compiled data from NSF.**

# African American PhDs in Physics

Universities that awarded the largest number of PhDs from 1973 through 2004

**African American  
totals over 32 years**

|            |  |
|------------|--|
| <b>26</b>  | <b>Stanford University</b>   |
| <b>25</b>  | <b>Howard University</b>   |
| <b>21</b>  | <b>Massachusetts Institute of Technology</b>   |
| <b>13</b>  | <b>Hampton University</b>  |
| <b>10</b>  | <b>University of Michigan – Ann Arbor</b>  |
| <b>10</b>  | <b>Alabama A&amp;M University</b>  |
| <b>8</b>   | <b>Georgia Institute of Technology</b>   |
| <b>7</b>   | <b>University of California – Berkeley</b>   |
| <b>6</b>   | <b>Florida State University</b>  |
| <b>6</b>   | <b>Kent State University</b>   |
| <b>6</b>   | <b>University of California – Los Angeles</b>  |
| <b>291</b> | <b>Total number of African American physicists<br/>from all PhD-granting departments</b> |

**Source:** AIP Statistical Research Center compiled data from NSF

# African American PhDs in the Geosciences

Universities that awarded the largest number of PhDs from 1973 through 2004

## African American Totals over 32 years

|     |   |
|-----|---|
| 8   | University of Michigan – Ann Arbor  |
| 7   | Jackson State University  |
| 6   | University of Texas - Dallas  |
| 5   | University of California – Los Angeles  |
| 5   | University of South Carolina  |
| 4   | University of Texas – El Paso   |
| 4   | University of Washington  |
| 4   | Georgia Institute of Technology   |
| 4   | Harvard University  |
| 4   | Texas Southern University   |
| 142 | Total number of African American geoscientists from all PhD-granting departments including environmental sciences |

Source: AIP Statistical Research Center compiled data from NSF

# Hispanic American PhDs in Physics

Universities that awarded the largest number of PhDs from 1973 through 2004

**Hispanic American  
totals over 32 years**

|            |   |
|------------|---|
| <b>17</b>  | <b>Massachusetts Institute of Technology</b>  |
| <b>16</b>  | <b>Stanford University</b>  |
| <b>16</b>  | <b>U of Texas - Austin</b>  |
| <b>15</b>  | <b>U of California - Berkeley</b>   |
| <b>14</b>  | <b>U of Maryland</b>  |
| <b>14</b>  | <b>Penn State University</b>  |
| <b>14</b>  | <b>U of Arizona</b>   |
| <b>11</b>  | <b>U of California - Davis</b>  |
| <b>11</b>  | <b>U of California - Los Angeles</b>  |
| <b>11</b>  | <b>U of Illinois - Champaign</b>  |
| <b>11</b>  | <b>U of Wisconsin - Madison</b>   |
| <b>488</b> | <b>Total number of Hispanic American physicists<br/>from all PhD-granting departments</b> |

Source: AIP Statistical Research Center compiled data from NSF

# Hispanic American PhDs in the Geosciences

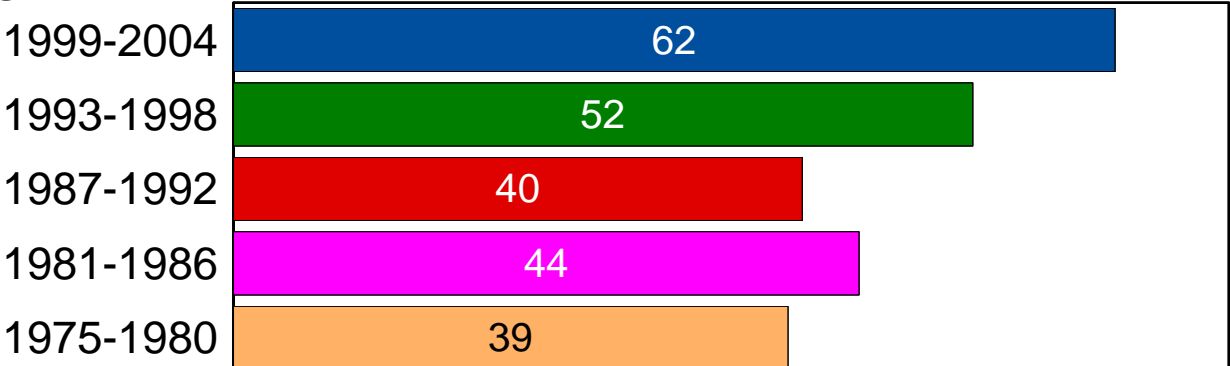
Universities that awarded the largest number of PhDs from 1973 through 2004

## Hispanic American Totals over 32 years

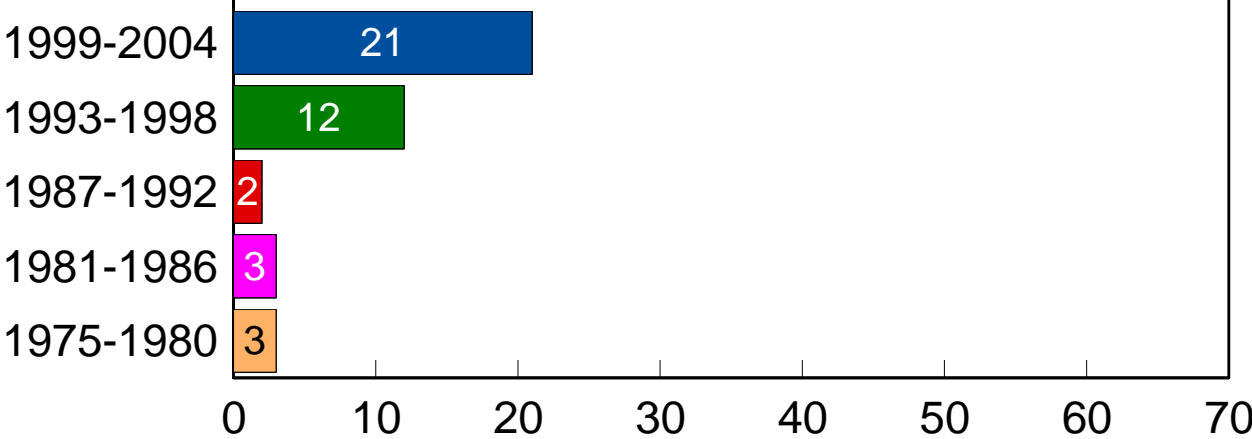
|     |  |
|-----|--|
| 18  | U of Puerto Rico - Mayaguez  |
| 14  | Texas A&M  |
| 14  | U of Arizona   |
| 13  | U of California - Santa Cruz   |
| 12  | U of California - San Diego  |
| 11  | University of Texas – El Paso  |
| 11  | Stanford University  |
| 9   | U of Colorado – Boulder  |
| 9   | Massachusetts Institute of Technology  |
| 9   | U of Miami   |
| 8   | U of California, Berkeley  |
| 8   | U of Michigan  |
| 324 | Total number of Hispanic American geoscientists from all PhD-granting departments including environmental sciences |

# Number of African-Americans who earned PhDs in Physics over the last 30 academic years, 1975-2004.

## Males



## Females

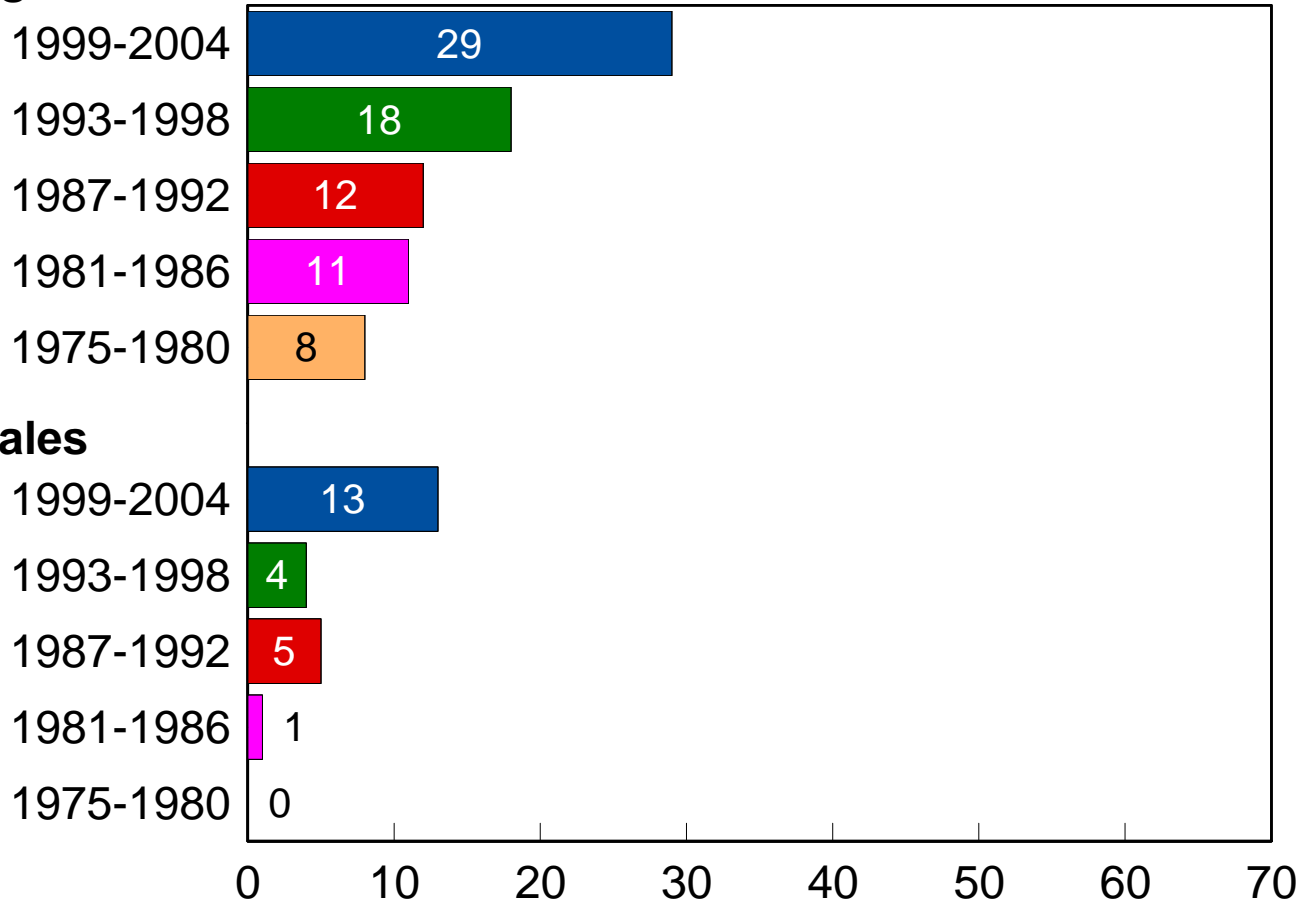


Number of PhDs

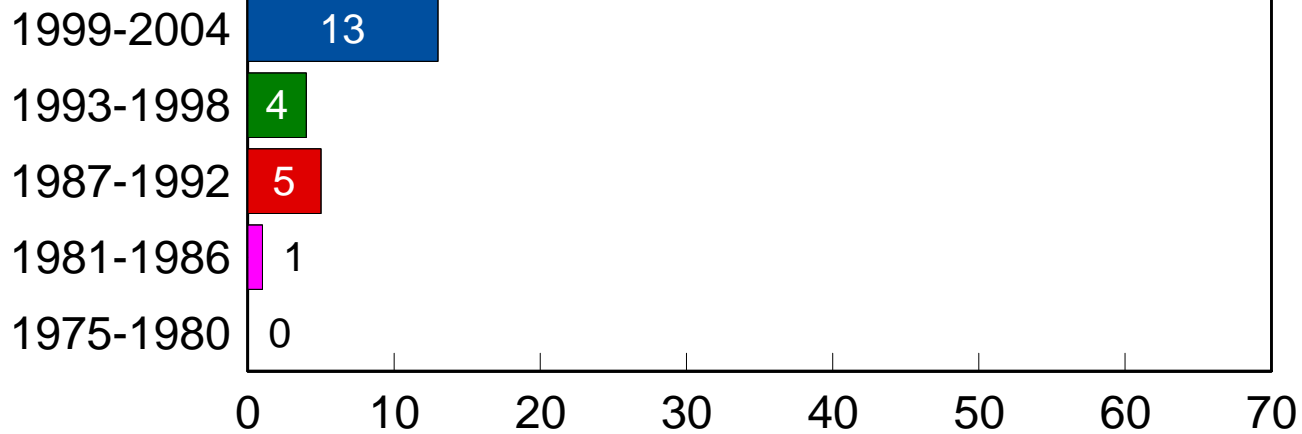
AIP Statistical Research Center compiled from data collected by the National Science Foundation.

# Number of African-Americans who earned PhDs in Geoscience over the last 30 academic years, 1975-2004.

## Males



## Females



Number of PhDs

AIP Statistical Research Center compiled from data collected by the National Science Foundation.

**Thank You**