

# Careers in Biomedical Research and Health Sciences

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# What is Biomedical Research?

- Any systematic investigation designed to develop or contribute to knowledge
- In the area of biological, medical and related sciences



# When Should College Careers be Talked About to Students?

- In elementary school you should be choosing potential colleges or you are behind!!!
- What you want to do is not as important as recognizing the importance of doing something
- School is the time to determine
  - What you like to do (Love to do)
  - What you do well
  - How you can make a positive contribution to the world
  - How to position yourself to make this happen



# The Nation's Roadmap to Improving Health

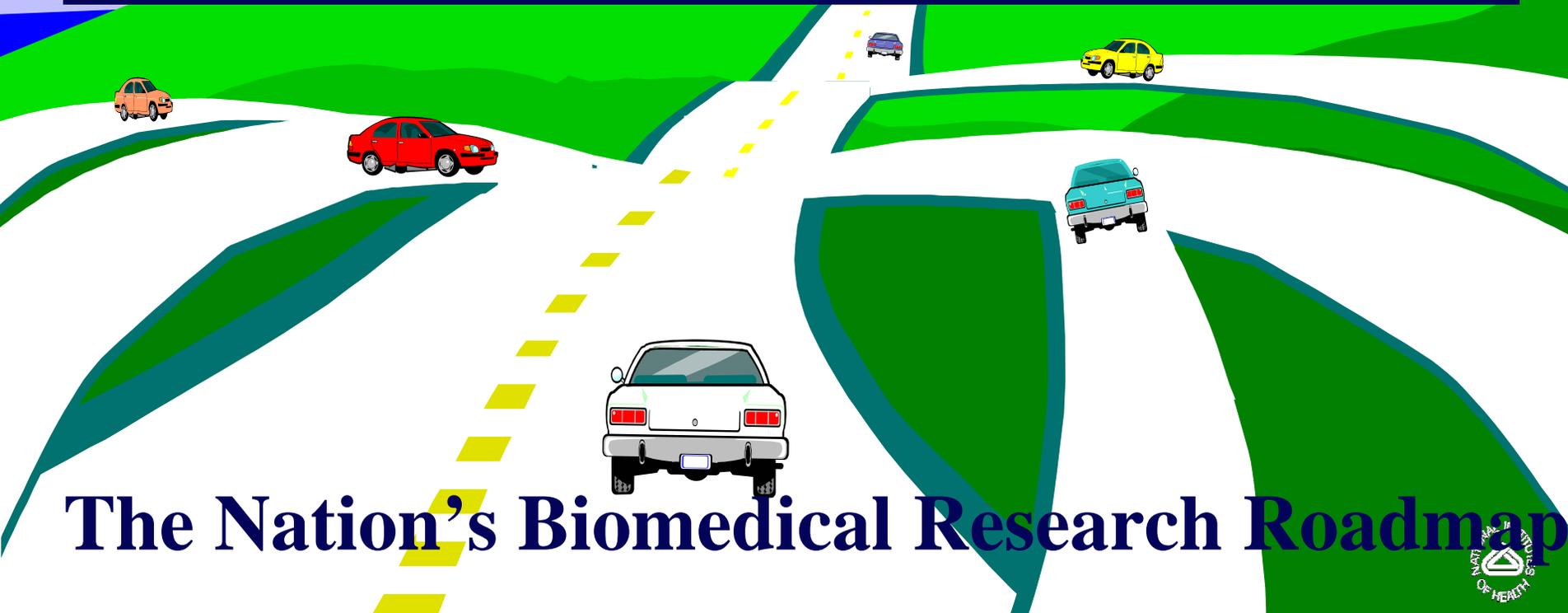


## **Overarching Goals of Healthy People 2010**

1. Increase quality and years of healthy life
2. Eliminate health disparities

# The National Institute of Health (NIH) Roadmap

To Identify the Critical Roadblocks and Knowledge Gaps That Constrain Rapid Advances in Biomedical Research Progress



The Nation's Biomedical Research Roadmap



# What Common Biomedical Careers Can Improve the Nation's Health

1. Science
2. Biology
3. Math
4. Physics
5. Chemistry
6. Engineering
7. Computer Science
8. Others

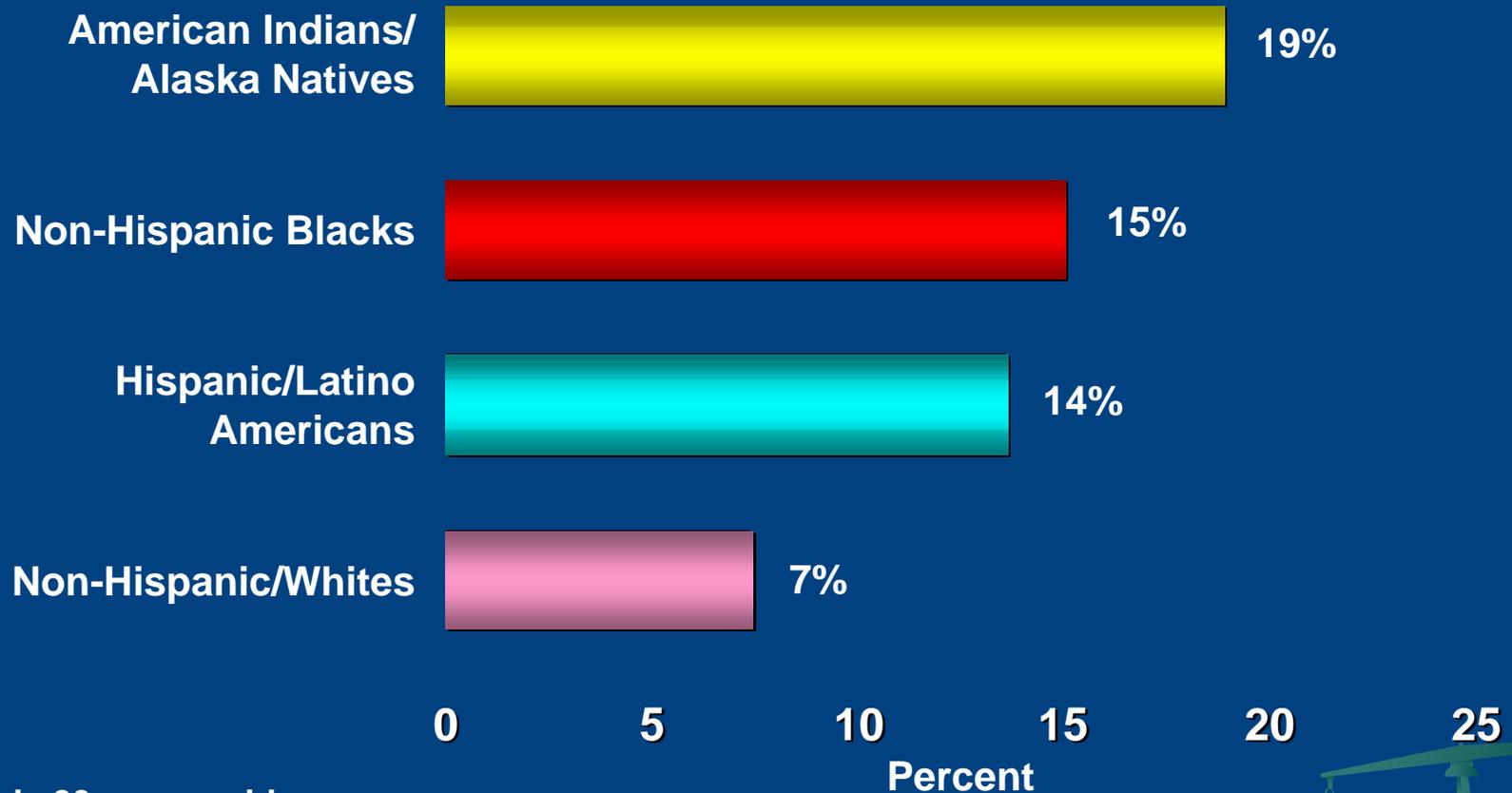


# How Can Diverse Biomedical Careers Improve the Nation's Health?

1. Science
  2. Biology
  3. Math
  4. Physics
  5. Chemistry
  6. Engineering
  7. Computer Science
  8. Others
- **Scientist/researcher**
  - **Health Care**
    - Doctor, Physician Assistant, Nurse
    - Hospital CEO, CFO
  - **Pharmaceutical**
    - Researcher, designing studies, regulatory,
    - CEO, CFO
  - **Health policy**
  - **Educator**
  - **Others**



# Age-Adjusted Prevalence of Diabetes\* by Race/Ethnicity in the US



\* In people 20+ years old.

1997-1999 National Health Interview Survey and 1988-1994 National Health and Nutrition Examination Survey (NHANES) estimates projected to year 2000. 1998 outpatient database of the Indian Health Service.

CDC. National Diabetes Fact Sheet. 2002.



# Example: Some of The Needs for Improving Diabetes Care

- The genetics of diabetes
- Protein signals that are involved in diabetes
- Pancreas transplantation
- Diabetes prevention & education (e.g. Diet, activity)
- Diabetes care (self care, home monitoring)
- Health policy, access to and quality of healthcare
- New Technology
  - electronic records to
  - new tests for early detection of complications
  - Mathematical models for reducing costs
  - Painless needles, portable insulin pumps



# Need for Diversity

- America is becoming more diverse, but its medical schools & researchers are not...
  - 1 in 4 Americans are Black, Hispanic, or Native American
- For example, in medical schools minorities make up
  - 1 in 10 medical students
  - 1 in 100 full professors



# Importance of Diversity

- Physicians from diverse backgrounds are more likely to provide medical care to underserved populations
- Physicians from diverse backgrounds might bring special cultural awareness or research sensitivity to a research team or the practice of medicine



When you have exhausted all  
possibilities,

Remember this...you haven't.

- Author Unknown

