

# The Role of Diversity in Higher Education: Students with Disabilities in STEM

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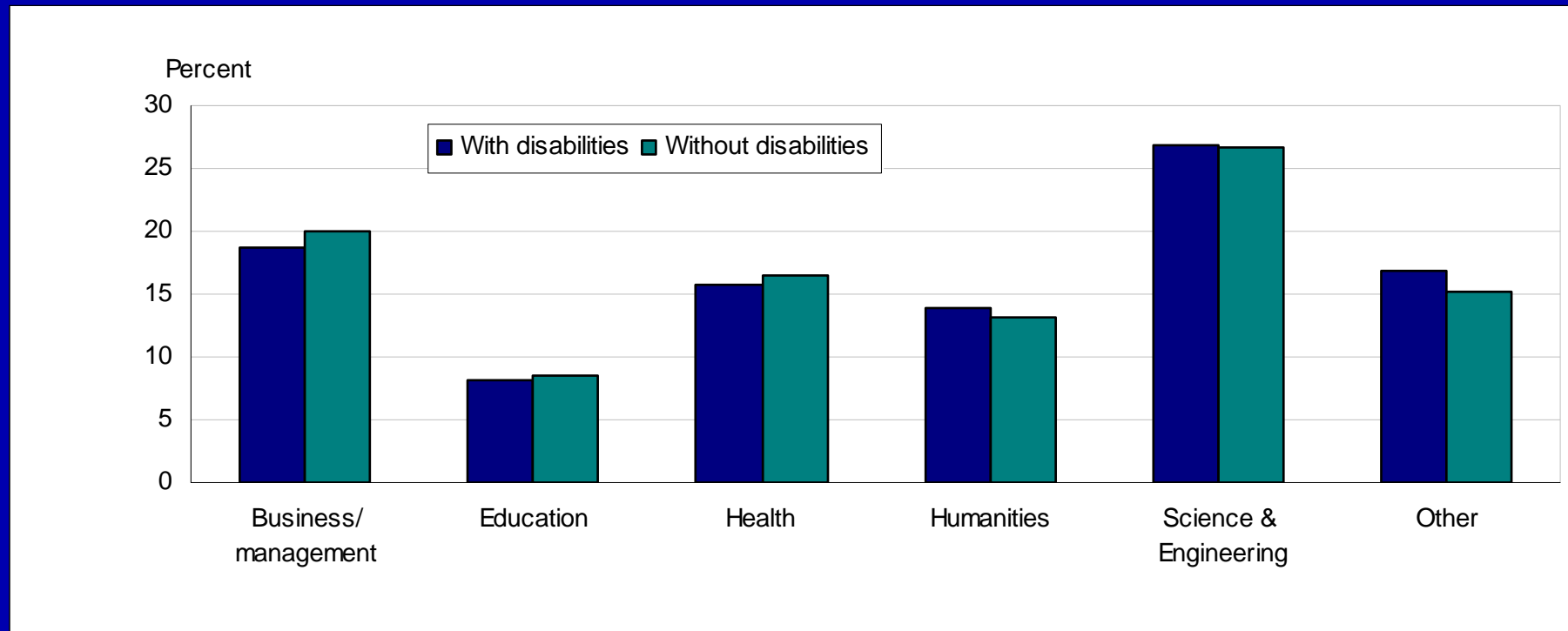
October 21, 2008

Charleston, West Virginia

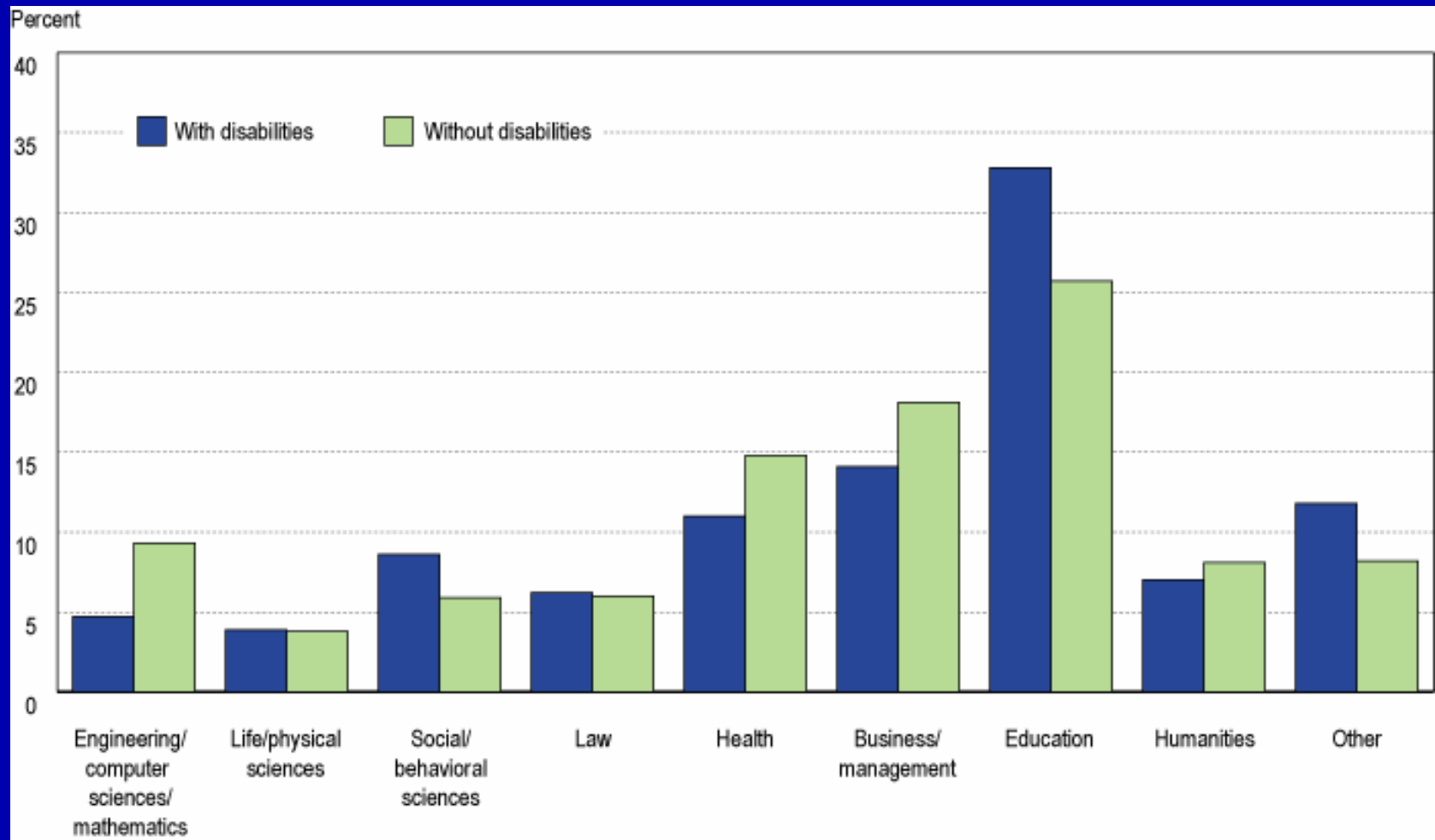


What has the picture of students with disabilities entering STEM fields in higher education looked like?

## Major field of study of undergraduates, by disability status: 2004



## Field distribution of graduate students, by disability status: 2004



# Barriers to a STEM Education

- Faculty Attitudes
  - Refusing to provide an accommodation (Student must prepare for the “real world”)
  - Encouraging student to drop class or change majors
  - Insisting on information about the disability
- Financial Aid
- Limitations of the Disability
- Accumulation of Incompletes

However, persistence, good support systems and internship opportunities can dramatically change this picture.

## Predictors of Persistence

- Intrinsic interest in STEM career
- Ability to communicate needs and identify appropriate accommodations
- Development of good coping strategies
- Access to Disability Support Services
- Relationships with mentors, professors, and peers

## ENTRY POINT!

As a result of the realization that many students with disabilities were not finding jobs in technical fields after receiving a degree, AAAS established ACCESS (NASA) in 1996 and the entire ENTRY POINT! program in 1997.

## What is ENTRY POINT!?

- A 10-12 week, paid, summer internship experience for undergraduate and graduate students with disabilities, managed by AAAS
- Competitive Job Assignments
- Mentoring
- Assistive Technology
- Opportunities for successive internships, coops, and research
- Entry into careers – via the science and engineering pipeline.

## ENTRY POINT! Partners

- NASA/ACCESS
- IBM
- Google
- NSF
- NIH
- NOAA
- CVS
- NAVAIR
- Merck
- Pfizer
- Lockheed Martin
- Procter & Gamble
- University Science Labs

## Design of a Program

- Student portfolios
- Screened applications
  - Student's field of study
  - Grades: 3.0 or better
  - Resume
  - Recommendations
- Company or agency coordinator looks for a match and offers internship

## Creating “Existence Proofs”

- 600+ placements
- 540+ individuals
- 18 pursuing or have received Ph.D.
- 65 Conversions from internships to full-time employment
- More than 300 working in STEM
- Others are still in undergraduate or graduate school

# Ricardo Polius

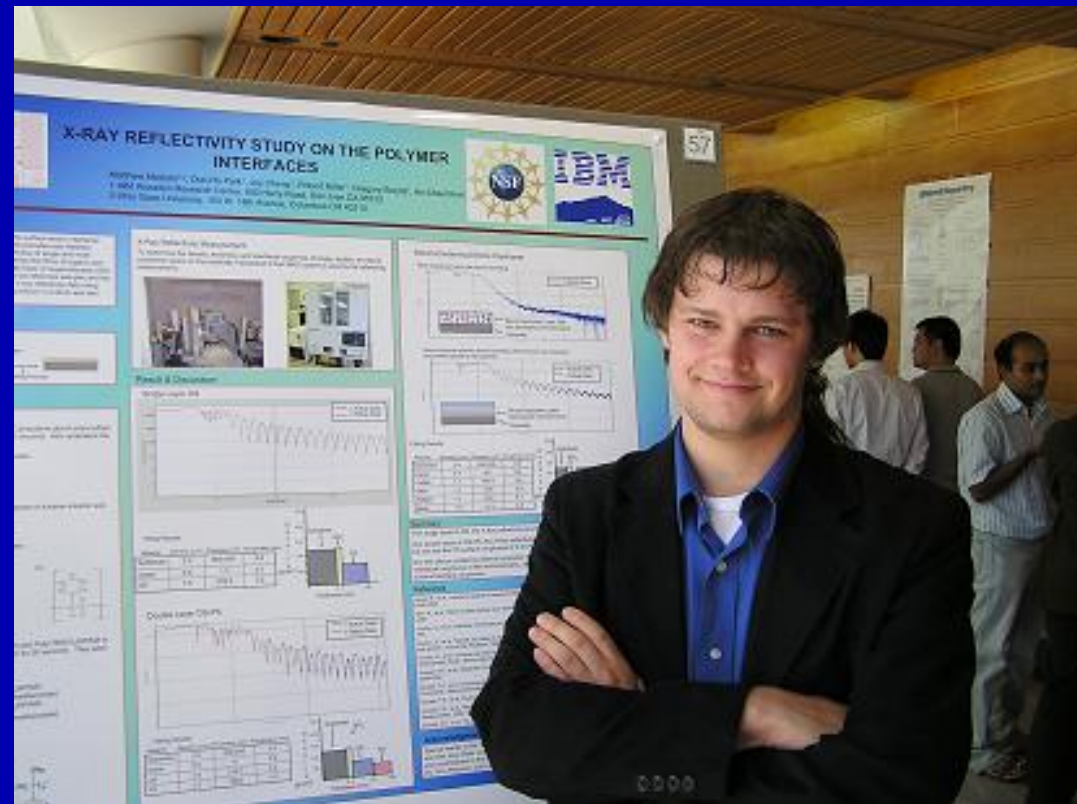
Alabama A&M  
Biotechnology  
PhD Candidate  
NASA Marshall



**Grace Bolanos**  
Milwaukee  
School of Engr.  
Software Engineering  
NASA HQ



**Matthew Meleski**  
 Ohio State U.  
 Chemistry/Biology  
 CPIMA/IBM/Stanford



**Brittany Tofinchio**  
RPI  
Biology/Management  
NOAA/NERO,  
Gloucester



Even before the Laws...

And long before ENTRY POINT!

There was a pioneer AAAS Resource:

The Directory of Scientists and Engineers with  
Disabilities

## AAAS Resource Directory

- AAAS Resource Directory, of Scientists and Engineers with Disabilities, funded by NSF/RDE, is the only listing of people with disabilities in STEM careers.
- The fourth edition will be the first electronic document that is searchable by discipline, disability, gender, and geography.
- The Directory is an important source of role models, peer reviewers, mentors, consultants, speakers, and “existence proofs” for reporters and others in the media.

## Resource Directory - Participants

• <b>Participants</b>	<b>464</b>	
• New	185	(39.9 %)
• Entry Point! Alumni	92	(19.8 %)
• Former RD Participants	187	(40.3 %)
• Male	325	(70.0 %)
• Female	139	(30.0 %)
• <b>Disability Categories</b>	<b>27</b>	
• Different Disabilities	125	

## Resource Directory – Degrees Conferred

- Doctoral/Prof. 165 (35.6 %)
- Masters 133 (28.7 %)
- Bachelors 140 (30.2 %)
- Associate/Other 26 (5.6 %)

## Resource Directory – Type of Employment

• Academic	150	(32.3 %)
• Industry	98	(21.1 %)
• Government	90	(19.4 %)
• Other	64	(13.8 %)
• Non-Profit	24	(5.2 %)
• Student/ Unemployed	38	(8.2 %)

*"Students with disabilities in engineering and science, who have had to be problem-solvers because of everyday barriers in their lives, bring incredible insight, [talent,] and creativity to their studies and careers. Employers now come to AAAS to [find] this pool of talent."*

- Virginia Stern, Director

AAAS Project on Science, Technology, and Disability  
and ENTRY POINT!

***[www.entrypoint.org](http://www.entrypoint.org)***