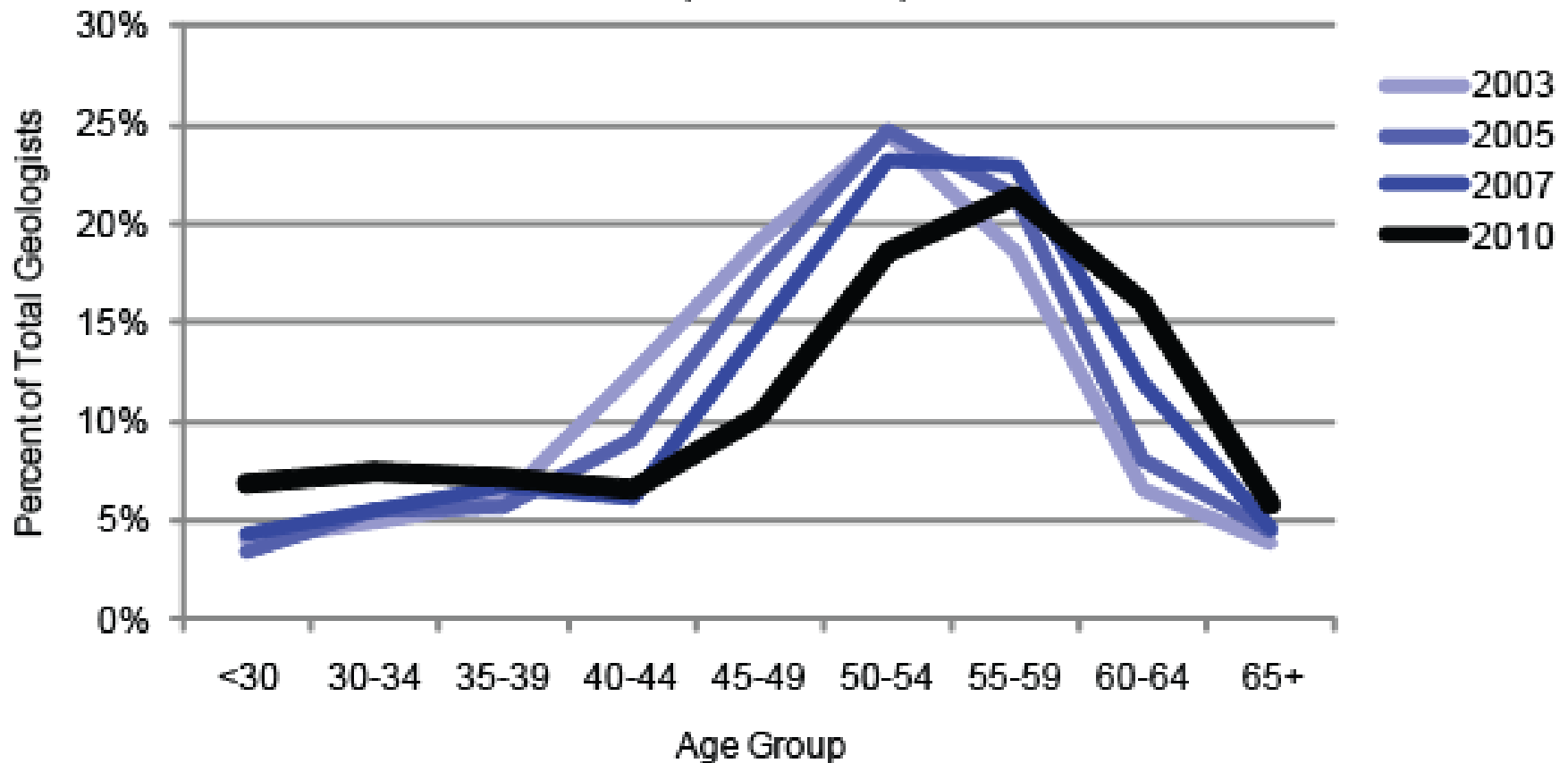


Experiences in Improving Student Engagement in Professional Societies and Taking the Next Step

Christopher Keane, Leila Gonzales, Heather Houlton
American Geosciences Institute
8 December 2011

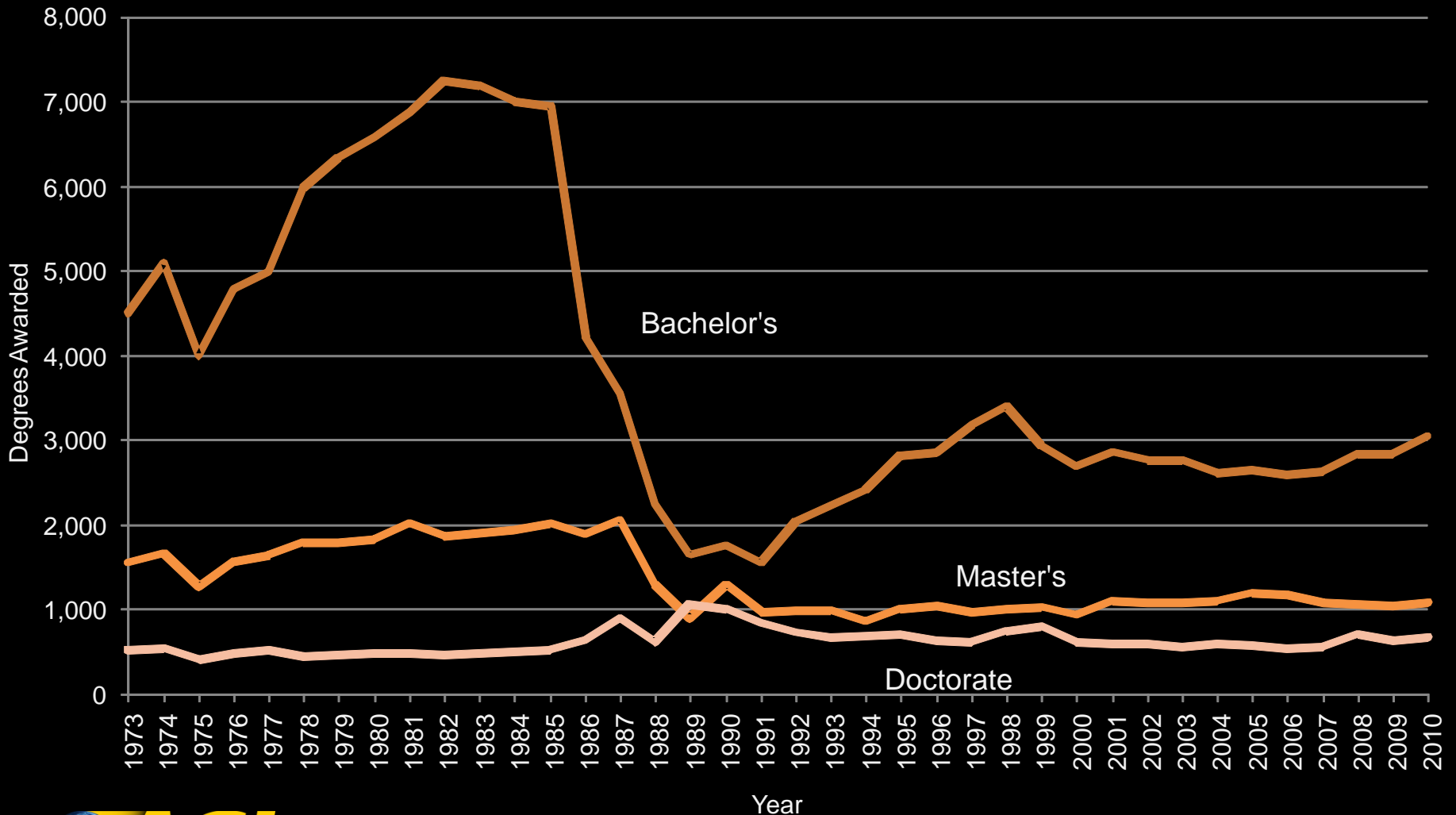
Age Distribution of Geologists in the U.S. Government (2003-2010)



Source: AGI Geoscience Workforce Program. Data derived from the Office of Personnel Management fedscope database.

US Geoscience Degrees Awarded

1973-2010



Attrition, Replacement, and Growth in the next 10 years in the U.S.

- **125,000** geoscientists expected to **retire**
- **72,000** geoscience job **growth** by 2021 (BLS)
- **15,000** total **new graduates** over the next 10 years
- **Or 45,000** total **new graduates** if you hire **B.S. level**
- **Net deficit** of over **150,000** by 2021

Options for **Filling the Gap**

- **Decrease** student **attrition**
- **Expand** domestic **capacity**
- **Import** talent
 - This isn't Information Technology....
- **Substitution** with non-geoscientists
- **Efficiencies**
 - Wide open opportunity for innovations and entrepreneurial efforts.
 - 3% p.a. efficiency increases currently.

2050?!?!?

- **Today's middle school student** will be the person **in your seat in 2050**
- There is **little** you can do today to change the system **to fundamentally change** their path
- **Real change** will affect the workforce of the **22nd Century**
- The U.S. will be **majority minority**. Will the geosciences **get it right?**

Making Geoscience **Graduates Professional**

Increase Society Participation

Frame their future in application, not discipline

Explore new Organizational Paradigms

Improve access to Professional learning

Expand to audiences seeking a profession

Increase Society Participation

AGI's Career Welcome Packet. Provides 5 free student memberships

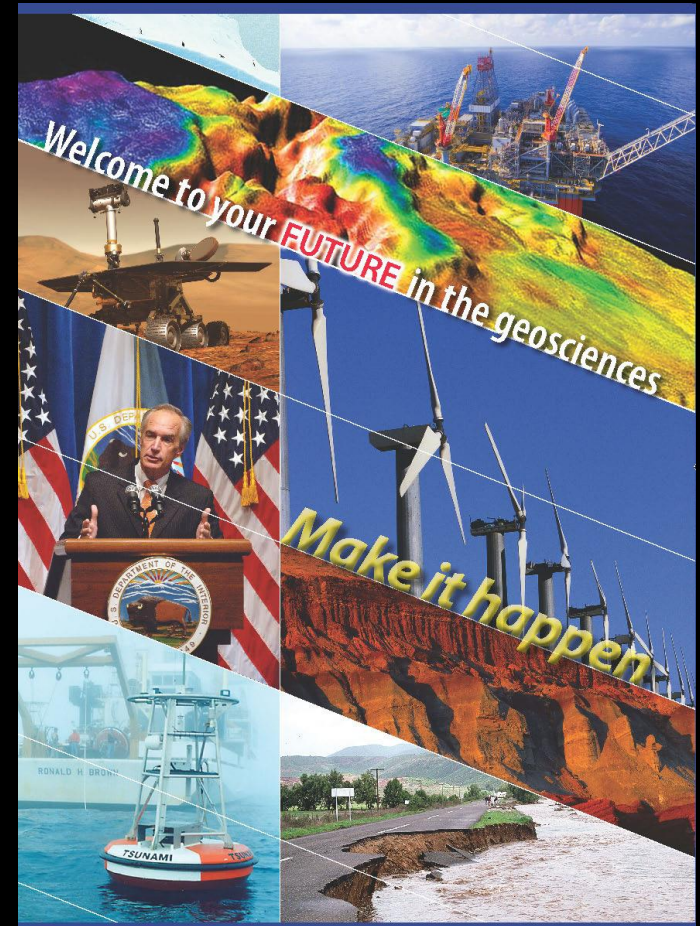
Take up of free memberships has been **less than 5%**

Distributed to over 800 geoscience departments

Designed as a tool for **faculty-student engagement.**

Faculty aren't doing the 1:1

Faculty don't value student society activity until late graduate school



Frame the career in social application

The **geosciences describe** careers in terms of **subdisciplines**... Geochemistry, Paleontology, Geophysics, etc...

Prospective **students** don't care – they **frame their choices** on envisioning **what they will do** and how it will **make a difference!**

AGI's **new career brochure focuses on impact**, not subdisciplines



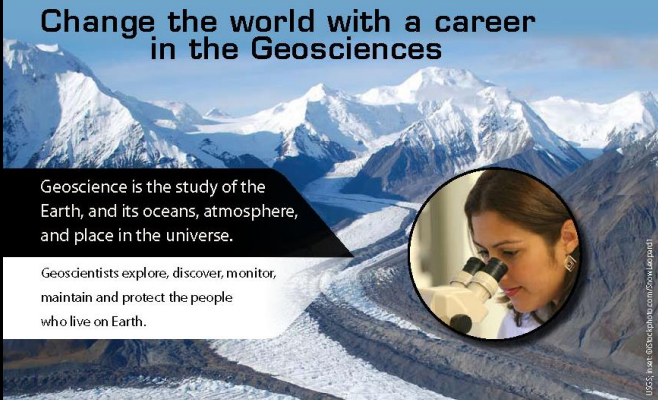
DISCOVER your potential

PROTECT Society

CAREERS that change the **WORLD**

EXPLORE the Earth

The brochure cover features a woman with her arms crossed on books, a city skyline, a volcano, a globe, and a person climbing a mountain.



Change the world with a career in the Geosciences

Geoscience is the study of the Earth, and its oceans, atmosphere, and place in the universe.

Geoscientists explore, discover, monitor, maintain and protect the people who live on Earth.

The page features a background of snow-capped mountains and a circular inset of a woman using a microscope.

Exploring new Organizational Paradigms

The **Society** of today is built on a **Victorian era construct** for interaction. **Much** of the knowledge exchange and interpersonal interaction is **still valid**

Geosciences have lacked student/youth societies traditionally. Today it has two unique groups – **YES and APECS** which are meeting the next generation's needs through **a new networked paradigm**.

AGI is working to bridge the new and the old



Access to Professional Learning

New Graduates Aren't Equipped for Life outside of the Academy

Consistent **deficiencies of new graduates** are: **limited field experience, poor mathematics skills, and lack of exposure to professional issues.**

AGI and AIPG are launching GOL (Geoscience Online Learning Initiative) to fill that gap for students and new graduates. Topics will include:

Ethics

Professional communications

Business processes

Fiduciary responsibility

Regulatory compliance

Work-safety culture

Big-picture framing of geoscience issues

Increase the number of job-seeking students

Only **15%** of degree-seeking students are “traditional”

Most are seeking a pathway to work

Most are **non-traditional** because of **social or economic constraints** – and many of those do their degree online

Increase access to a **job-oriented** pool with an attractive professional discipline, and **make it all accessible**.

The next big **entrepreneurial opportunity** for a geoscience department....

Impacts and Potential

- Need to improve faculty valuation of **student society participation**
- **Sell** the science through its **application**
- **Embrace new organizational approaches** like YES and APECS
- **Enable professional development** of students
- Geo degrees that **tap the 85%**