# THINKING DIFFERENTLY ABOUT GEOSCIENCE CAREERS

Heather R. Houlton, American Geosciences Institute





#### Who is AGI? www.americangeosciences.org

 Non-profit federation of over 50 geoscientific professional societies

- Founded in 1948
- Represent over 250,000 geoscientists

#### • Main purpose

- Provide information services
- Strengthen geoscience education
- Promote geoscience literacy and public awareness

#### Focus Areas

- Education & Outreach
- Communications
- Workforce Development
- Geoscience Policy
- Environmental Affairs



# **My Career Pathway**



### **Thinking about your Career Pathway**

• Question 1:

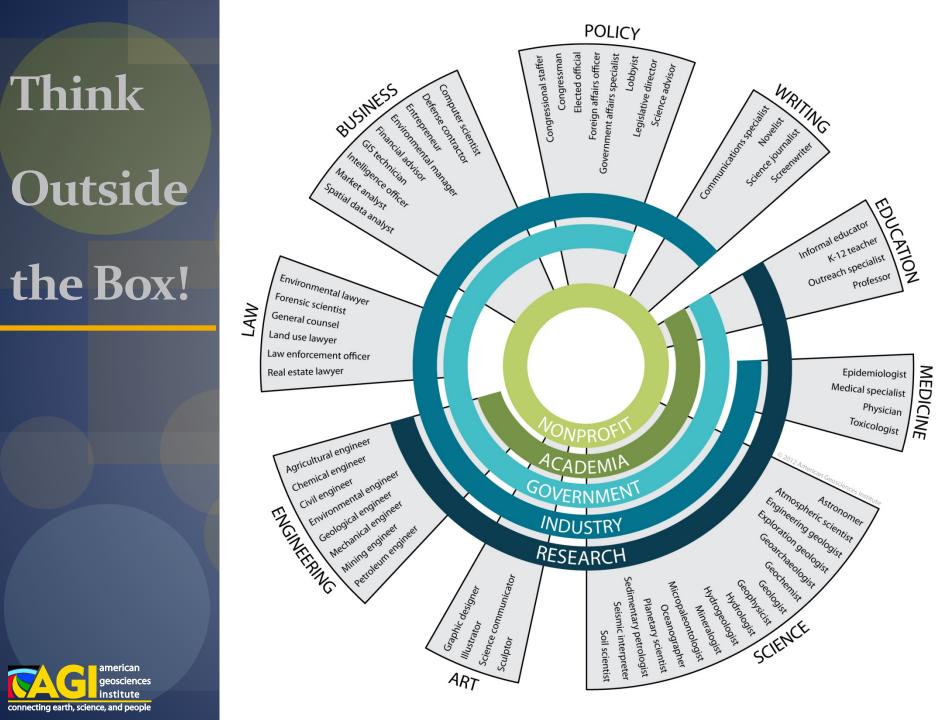
• What geoscience careers do you know about?

• Question 2:

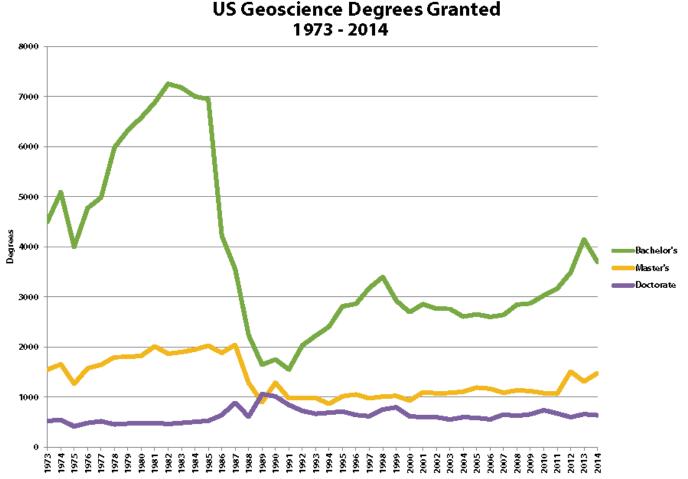
What geo subjects are you interested in?
Skills?

Question 3:
 What are your other interests outside of geo?
 Skills?





### **The Breakdown: Workforce Trends**



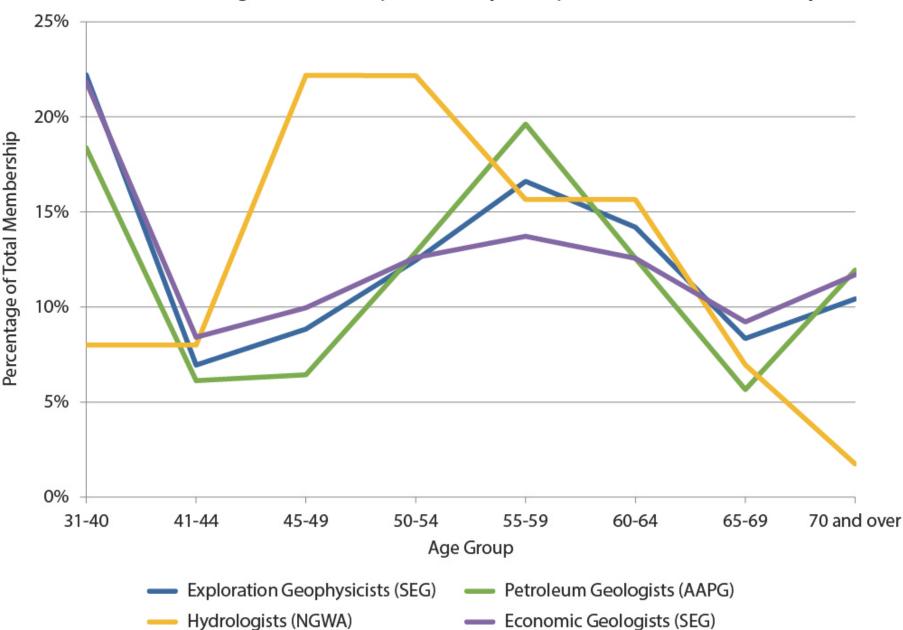
Attrition, Growth and Replacement in the next 10 years in the U.S.

297,000 geoscience jobs exist today (BLS)

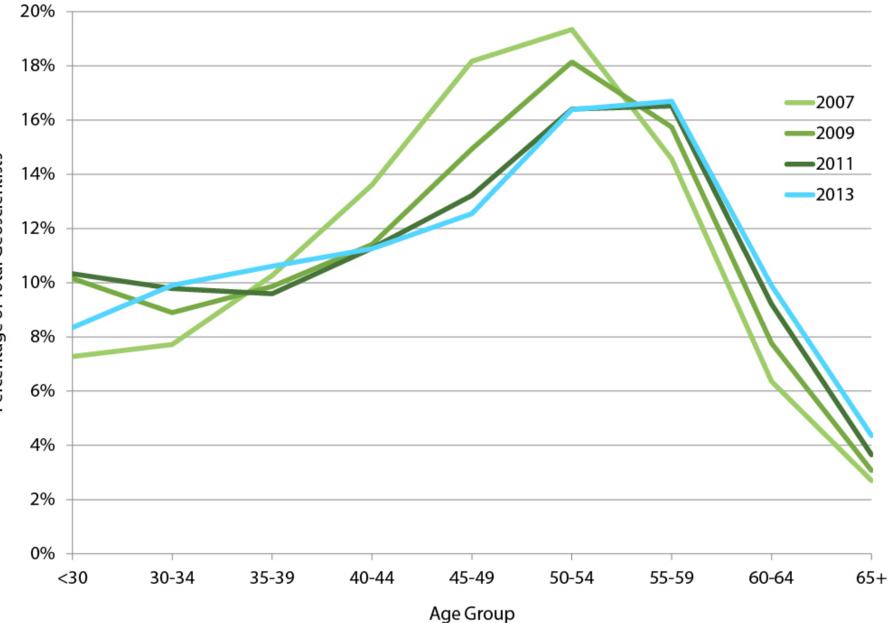
143,000 geoscientists expected to retire by 2022 (AGI) 43,000 geoscience job growth by 2022 (BLS) **16,000 new MS/PhD + 35,000 BS/BA graduates** (AGI) Equals 51,000 total new graduates (with BS, MS and PhD)

Net deficit of over 135,000 geoscientists by 2022





Geoscience Age Distribution by Membership Society without Student Memberships

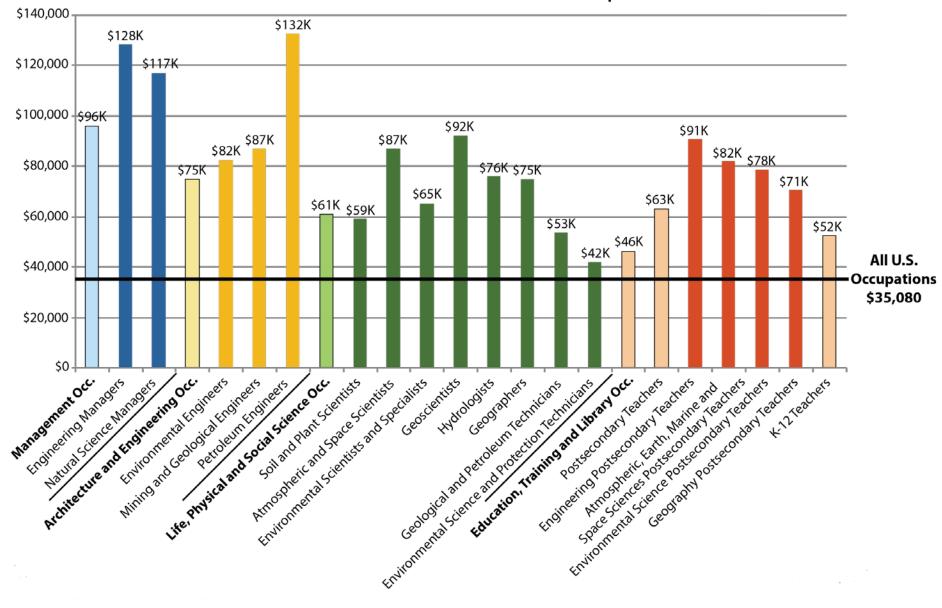


Age Distribution of Geoscientists Employed in the Federal Government

Percentage of Total Geoscientists

## **The Breakdown: Workforce Trends**

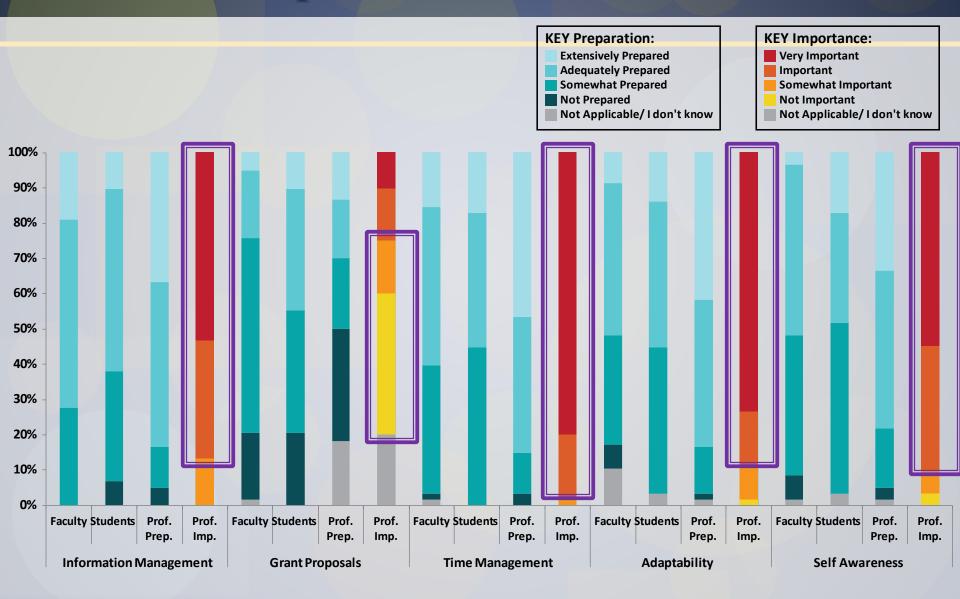
2013 Median Annual Salaries for Geoscience-Related Occupations



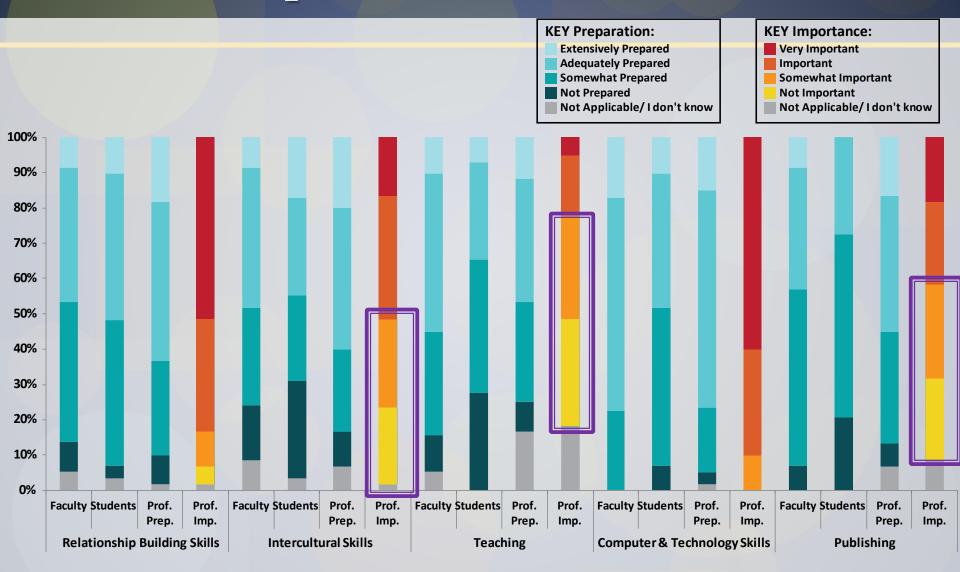
#### **Employers Seek Skilled New Hires**

- Competencies: "the capability to apply a set of skills to successfully perform tasks in a work setting."
  - www.careeronestop.org/CompetencyModel
  - Geospatial Competency Model
- Geoscience Career Master's Preparation Survey
  - AGI and AAG research study
  - Investigated preparation of Master's students
  - Compared data with non-academic professionals' insights
- Non-Technical and Technical Competencies
  - Non-technical = "Soft Skills" (anything but "soft").
  - Technical Geology skills (discussed here)
  - Technical Geography skills

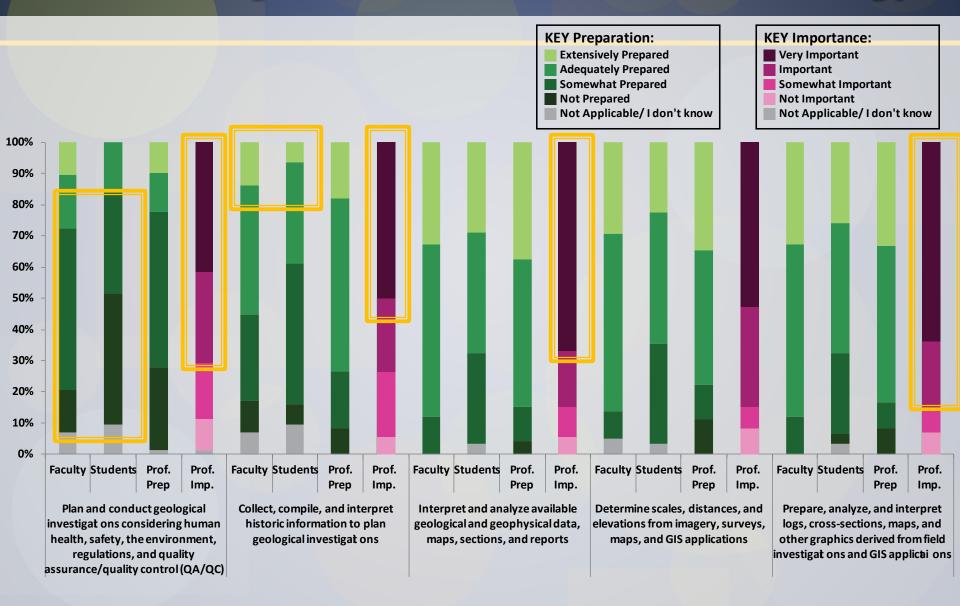
#### **More Important Non-Technical Skills**



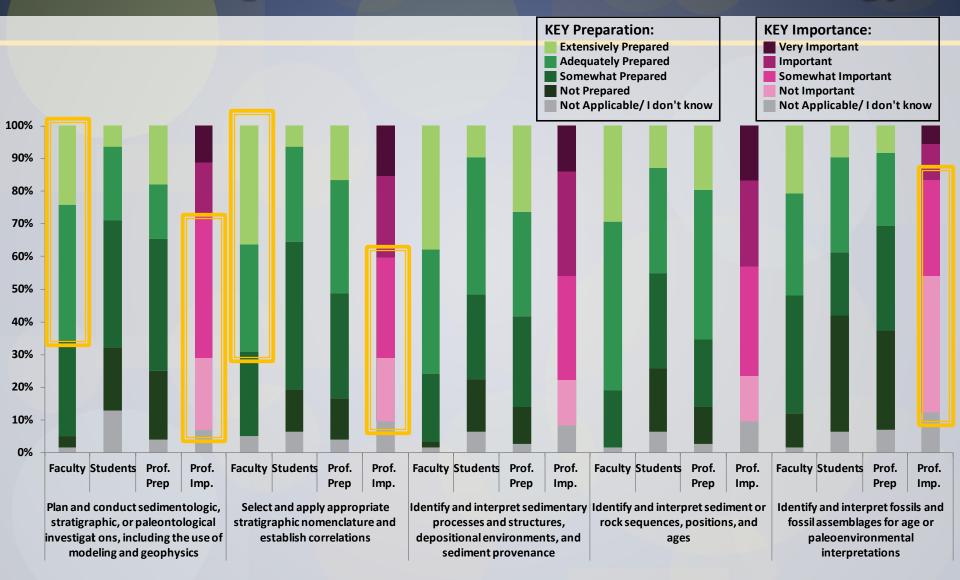
#### **Less Important Non-Technical Skills**



#### More Important Technical Skills: Geology



#### Less Important Technical Skills: Geology



### What are your skills?



"It's great to identify what [your] dream job would be, and it's great to pursue it, but don't pursue it too doggedly so that you don't see other opportunities out there ... The one thing that everyone should take away from every job they've ever had is that you learn something in anything you do: you should be developing some skill set that comes out of that. And you build on that. I learned much of my people management skills from being a bartender!"

-Vicki McConnell, Executive Director, Geological Society of America



### Networking *really is* that important.



"If students want to get into the environmental or consulting field, I would recommend that they ... find engineering and consulting firms in their area. And not necessarily look for somebody that is advertising, but just find a contact with each company, send a cover letter

and a resume, and then follow up with an email and a phone call. A lot of opportunities don't get advertised. If your resume crosses a desk, and somebody's looking to fill a position, you can get a job without having to wait for something to be advertised ... That's the networking thing: Get your qualifications out to as many people as you can [and] talk to as many people as you can." - Mike Lawless, Draper Aden Associates



### The Importance of Networking

- Job opportunities
  - Unlisted positions
  - Future positions & career prospects
- To create *more* contacts
  Exponential process
  7 degrees of separation
- To form a relationship
  Potential mentor
  - Collaborations





## **Different Types of Networking**

Informal
Conferences
Out with friends
On the street
Anywhere

 Formal Conferences Informational Interviews Networking lunches **Career fairs** 



### What is an informational interview?

- Type of formal networking situation
- Know or not know the person
- Goals:
  - Gather information
  - Get advice
  - Make a contact
  - Ultimate goal: Get a job! The trick: you can't ask for the job outright... (usually...)



#### How to Conduct a Successful Info. Interview

- Step 1: Identify who you want speak with
  The trick: Use the internet!
- Step 2: Contact them!
  - The trick: email w/cover letter and resume; ask for 15 min (coffee/phone call); be specific about days/times you're available
- Step 3: Wait patiently for their response...
   The trick: Follow-up email and a PHONE CALL!

If no response: PRACTICE AND REPEAT



### **Courting Your Contacts**

#### Informal

- Prepare an "elevator speech"
- Be enthusiastic
- Be inquisitive
- Be prepared with general questions!

#### Formal

- Come prepared!
- Do your research
- Prepare specific questions
  - Be professional
    - Cards
    - Resume
    - References



### AGI Career Resources

- Workforce Program: www.americangeosciences.org/workforce
  - Currents
  - Webinars
  - Career Resources
  - Geoscience Online Learning Initiative (GOLI)
    - http://goli.agiweb.org/
  - Workforce projects
    - Wallace scholarship: www.americangeosciences.org/workforce/harriet-evelynwallace-scholarship
    - Geoscience Career Master's Preparation Survey Report www.americangeosciences.org/workforce/reports



#### **Other Resources**

- Medical Geology: http://www.medicalgeology.org/
- Geoscience Policy: http://www.americangeosciences.org/policy-critical-issues
- Geo Forensics: https://gsa.confex.com/gsa/2015SE/webprogram/Paper252033.html
- Article from Geotimes: http://www.geotimes.org/febo2/Feature\_Shroderside.html
- Science Art: Kathleen Cantner's geo-art subscribe to EARTH magazine at: www.earthmagazine.org, or go to her website: www.kcantner.com.
- ASBOG: Fundamentals of Geology Exam http://www.asbog.org/
- Competency Info:

www.careeronestop.org/competencymodel/

#### Questions and Discussion

Thank you! Email me with further questions at: <u>hrh@americangeosciences.org</u>

Visit our website at: www.americangeosciences.org

