Who we are

• Over 13,000 students and professionals in weather water and climate
  • ~ equal representation of public, private and academic sector
• The AMS Policy Office informs policy-making and builds capacity in science policy

[Logos of NASA, NSF, NOAA, Ball, and Lockheed Martin]
What we did

• 1.5 day workshop on the future of our workforce
• ~50 participants from all sectors

• Outline:
  • Technological Drivers
  • Societal Drivers
  • Perspectives from Public / Private Employers
  • Education from K–12 to professional training
Main Conclusions

• Human capital is the greatest resource we have and its effectiveness depends on our choices
  • Part of the solution to many societal issues
  • The effects of technological and societal drivers are not predetermined

• In a time of rapid transitions, we need to build resiliency and adaptation strategies
  • e.g. soft skills are more resilient than hard skills
Technological Drivers

• A number of technologies are transforming work in geosciences at once (CubeSats, autonomous vehicles, cloud computing, …)
• The largest effects are expected from non-traditional data sources and artificial intelligence (AI)
• AI can lead to new scientific insights, but is also already transforming how we hire, train and evaluate
• Impacts of new technologies are hard to predict: 100% of jobs are changing
Societal Drivers (1/2) – The lack of Diversity

- More diversity outperforms less diversity
- Nobody joins a particular field to increase diversity
- Make sure everyone feels safe, valued and welcome
- Address biases (gender, race, age disciplines, sectors)
- Show that geoscience is a valuable career choice, not just exciting field trips

Bernard, Cooperdock; 2018 Nature Geoscience
Societal Drivers (2/2)

• Growing demand for jobs “with a purpose” and the creation of actionable knowledge
  • Design for Impact
  • Design with Humility and Respect
  • Design for Equity
  • Design with Nature and Partners

• Can we adjust incentives accordingly?
Lessons from Public / Private Employers

• Job growth concentrated in the private sector
• Largest changes to forecasting (on and off air)
• Increased emphasis on connecting forecasts to societal outcomes
• New jobs in consulting, finance, energy, climate adaptation
• Students need a long time to transition into the workforce
General Education

• We can’t afford to focus on overachievers

• The human–machine interface is constantly evolving

• There is a lack of education research in our field

• Alternative career paths are not visible enough

• Opportunities for partnerships across sectors
Graduate Level Education

• Our community is not taking advantage of existing opportunities (e.g. NSF programs)
• The first year experience is critical
• Build relationships to HBCUs, community colleges, etc.
• The data revolution should work in our favor
• Reliable data on career outcomes is hard to come by
Next steps

• Publish report and policy memo on workshop results
• New AMS Department on Workforce Development
• Initiative on DEI in weather, water, climate
• Teacher trainings and textbooks developed by the AMS Education Department
• Explore opportunities for collaborations among societies and sectors
Thank you for your attention!!!