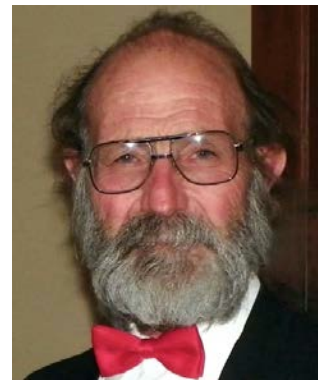
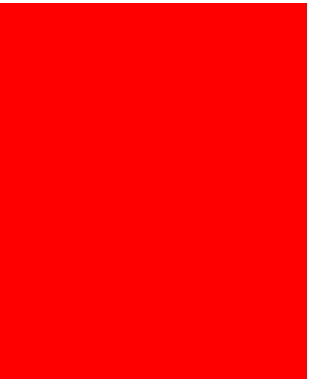
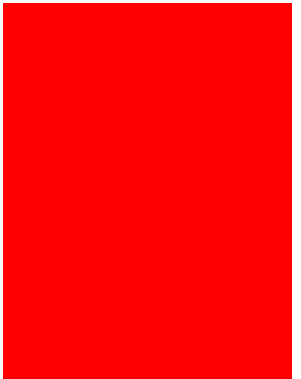
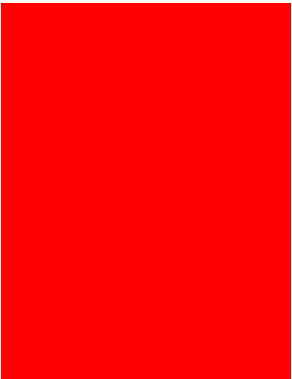
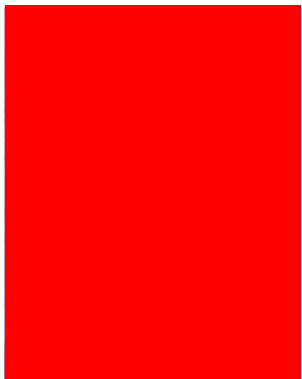
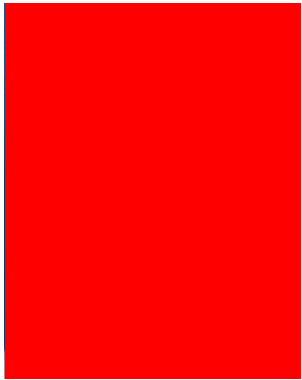
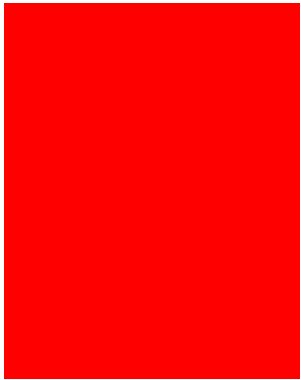
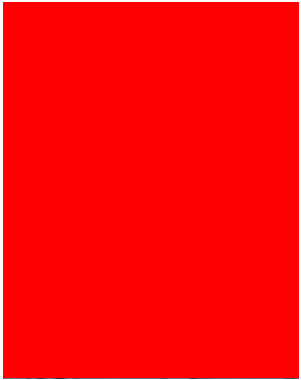
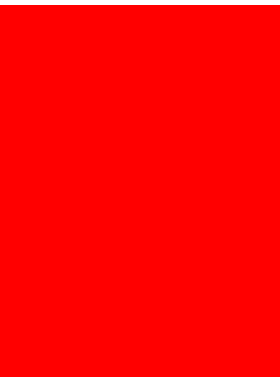
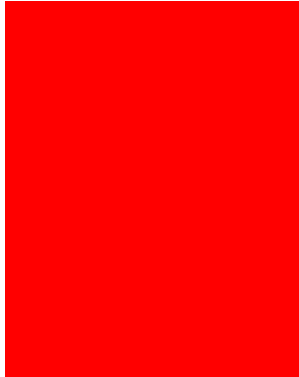


# Geophysics Faculty in January 2015





# Geophysics Faculty as of Fall 2017



# Geophysics for the 21<sup>st</sup> Century



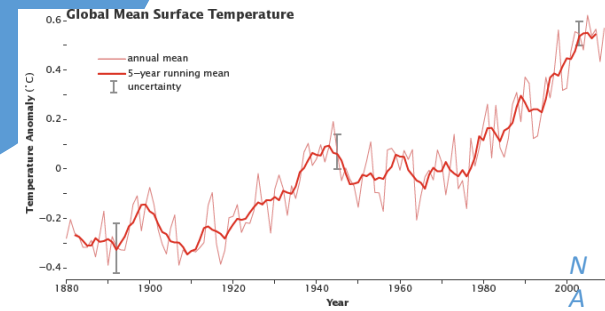
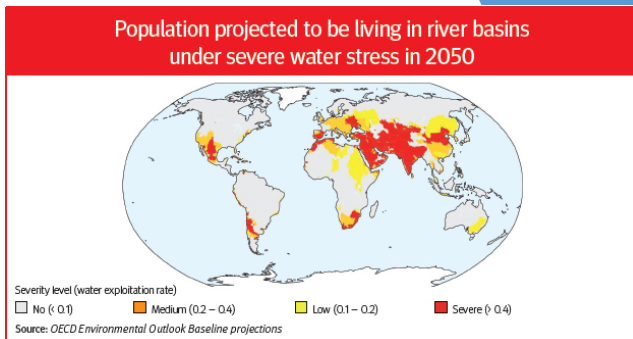
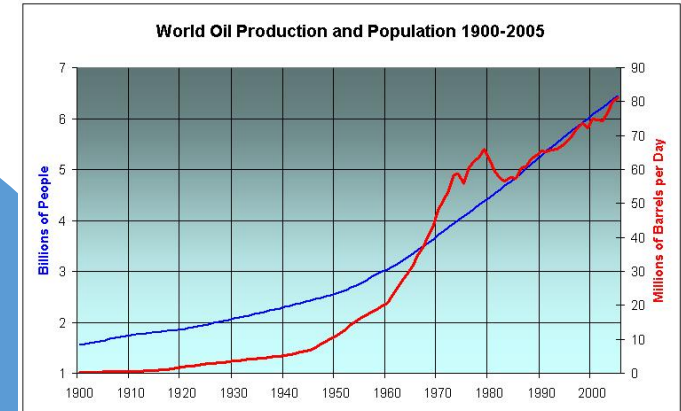
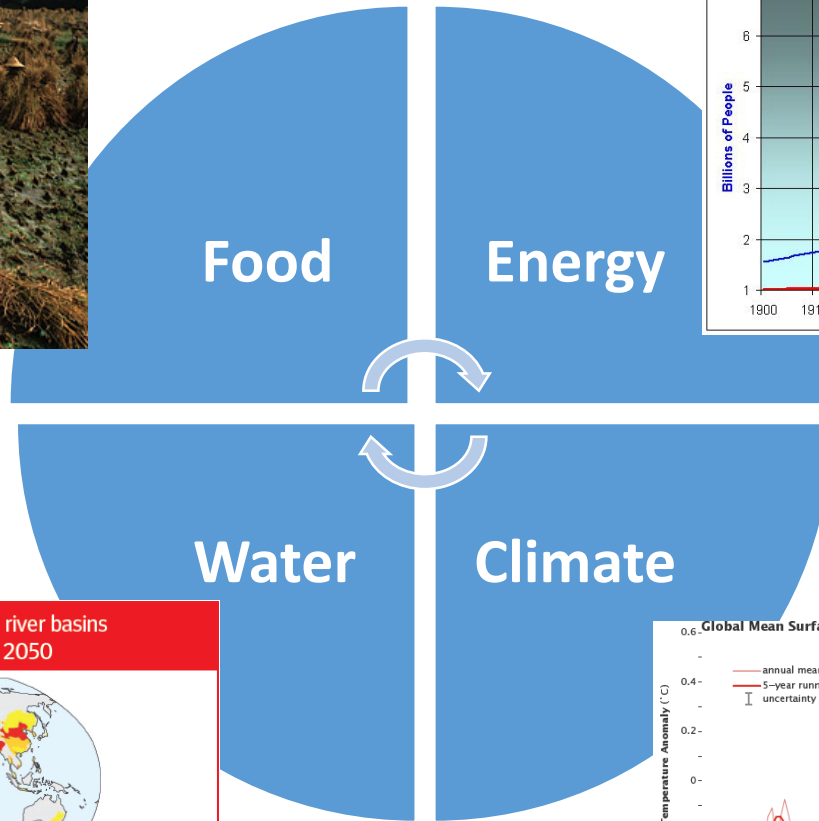
*John H Bradford*

*Professor and Department Head*

*Department of Geophysics*

*Colorado School of Mines*

# Defining Issues of the 21<sup>st</sup> Century



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# The reimagine geophysics committee

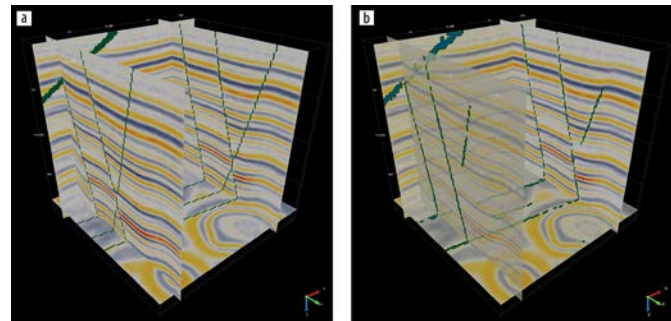


# The future of geophysics: Technology

- Identify trends in the profession
  - Trend toward high performance computing and machine learning
  - Robotics and distributed networks for data acquisition
  - Coupling space-borne, remotely sensed data with terrestrial based information

“The explosion of data types and volumes we are experiencing in the oil field ... is stretching the capabilities of traditional manual workflows.”

Davidson, 2017

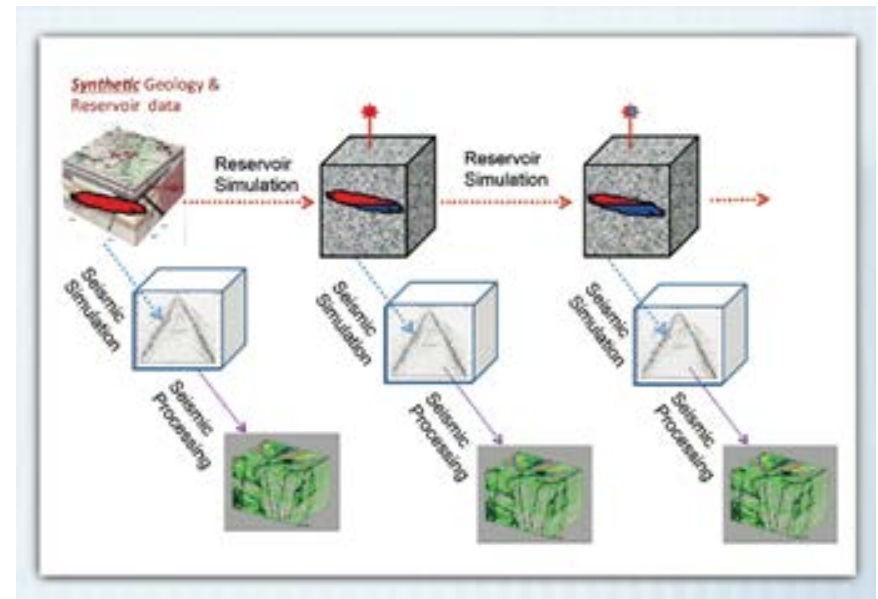


Huang et al. 2017

Baker Hughes and Nvidia announce new partnership

# The future of geophysics: Work environment

- Geology
- Hydrology
- Petroleum Engineering
- Civil and Environmental Engineering
- Physics, Chemistry, and Materials Science
- Chemical and Electrical Engineering
- Computer Science and Applied Math



SEAM Life of Field



# Redesign curriculum around major trends and challenges

- Emphasize computation, machine learning, data analytics
- Integrate remote sensing, robotics, distributed sensing
- Focus on social contribution, communication, and teamwork
- Increase flexibility in skillset
- Revise and enhance suite of MS tracks

