Geophysical Research Abstracts
Vol. 13, EGU2011-1799, 2011
EGU General Assembly 2011

A Global View of the Geoscience Profession: Updates from the IUGS Taskforce on the Global Geoscience Workforce

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The next several decades will be a key time for the geosciences as the profession goes through a wave of retirements in developed countries, and tackles issues surrounding resources and hazards around the world. In order to meet these challenges head on, we must first understand the global nature of the geosciences, namely, how geoscientists are defined, where they are educated, where they work, and what factors will influence the development and direction of the profession over the coming decades.

The International Union of Geological Sciences, with endorsement by UNESCO, established a taskforce on global geosciences workforce to address three issues on a global scale: define the geosciences, determine the producers and consumers of geoscientists, and frame the understandings to propose pathways towards improved global capacity building in the geosciences. IUGS tasked the American Geological Institute to lead the taskforce's efforts to collect and synthesize the data. A synthesis of the Taskforce's initial year of data collection sheds light on key issues surrounding how geoscientists are defined in different countries, where geoscientists are being educated vs. where they work, and how the migration of geoscientists between countries effects the ability of countries to meet local demand for geoscientists and build infrastructure to support the production of geoscience graduates.

Prior IUGS estimates indicated that nearly half of all working geoscientists resided in the Unites States, and that the US also produced nearly half of all new geoscience graduates globally. However, initial data collection from the IUGS Taskforce indicates that Europe and Russia combined graduate more geoscientists per year than the US. Furthermore, Indonesia and China are also graduating several thousand new geoscientists annually. Added to the eastward shift in geoscience graduate production is the wave of retirements in the geoscience workforce of developed countries over the next two decades. Economic factors will play a large role in whether or not these retirements will be prolonged over several years or will occur rapidly. The global migration of geoscience professionals and students also factor into the ability of developed and developing countries to develop and sustain the infrastructure required for producing new geoscience graduates. Currently regions that produce the most geoscientists are not meeting their own domestic needs, and areas with high domestic needs continue to export graduates to other countries. In addition to these pressing issues, the migration of geoscience professionals raises questions about how nationality is defined and if there is an ideal 'global geoscientist'.