

# Professor to explore global emergence of engineering

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Gary Downey, a professor science and technology in society in the College of Liberal Arts and Human Sciences at Virginia Tech, has been awarded a National Science Foundation grant to research the emergence of the engineering profession in France, Germany, the United Kingdom, Japan, Mexico, Brazil, and the United States.

The project "Engineers and the Metrics of Progress," will be based on ethnographic interviews, participant observation, and extensive collection of primary and secondary documents to map engineering education in reverse chronology and ideas of progress in chronological order.

Engineers in France "have valued mathematical knowledge and sought to work for the state where they have constituted the country's highest ranked occupation," said Downey. "Whereas engineers in the United Kingdom have valued practical knowledge and worked primarily in the private sector, where they have constituted a relatively low-ranked occupation. In Germany the status of engineering rose after unification in 1870 when precision techniks came to be seen as a new way of achieving progress by emancipating the German spirit."

As principal investigator for the \$172,000 award, Downey has been charged to complete a book manuscript with former Virginia Tech graduate student Juan Lucena, who is now an associate professor at the Colorado School of Mines.

By following how engineers have responded to different ideas of progress, Downey and Lucena seek to show that engineers have been key figures in promoting the idea of the nation around the world.

Understanding the relationship between engineering and nations helps to explain the struggles of engineers today to redefine engineering education in the context of globalization. Downey and Lucena began this research to provide material for students in their popular Engineering Cultures course.

Downey has also received an \$18,000 NSF grant to support "Locating Engineers: Education, Knowledge, Desire," the first of three annual international research workshops under the auspices of the International Network for Engineering Studies (INES). Reform in engineering education has become an object of intense interest and desire in countries throughout the world. This Department of Science and Technology in Society workshop, to be held at Virginia Tech in September 2006, will bring together researchers in the history, social and cultural studies, and philosophy of engineering education to address what is at stake in the contents of engineering education.

Hayden Griffin, chair of the Department of Engineering Education, and Joseph Pitt, chair of the Department of Philosophy, are co-principal investigators with Department of Science and Technology in Society Ph.D. student Sharon Ruff serving as the graduate student coordinator.

Source: Virginia Tech

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