

Who's Creative in Genetics & Nanotechnology?

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Survey Seeks Top Scientists for a Study of Research Innovation

Who's doing the most innovative and important research in the fields of human genetics and nanotechnology? A team of U.S. and European researchers will be asking that question through a survey that 1,200 leading scientists, industrial researchers, editors and research program directors will be receiving in June.

Image shows semiconducting and piezoelectric nanosprings of zinc oxide synthesized at Georgia Tech. The Project on Creative Capabilities and Promotion of Highly Innovative Research will be studying factors affecting innovation in nanotechnology and human genetics.

The questionnaire is part of an 18-month study to determine what factors lead to especially innovative and important research – with a goal of determining what institutions might do to foster it.

The [Project on Creative Capabilities and the Promotion of Highly Innovative Research](#) (CREA) is being carried out by researchers at the Fraunhofer Institute for Systems and Innovation Research (ISI) in Germany, the Technology Policy and Assessment Center (TPAC) in the School of Public Policy at the Georgia Institute of Technology in the United States, and Sussex University's Science and Technology Policy Research Unit in the United Kingdom.

Using the results of the survey, the research team aims to identify about

60 scientists and research teams on both sides of the Atlantic that are responsible for creative research that has produced innovative breakthroughs in human genetics and nanotechnology. Using in-depth interviews with the individuals and systematic studies of scientific productivity, the CREA study will then attempt to determine the factors, both personal and environmental, that helped those researchers work so effectively.

“Past research, especially in psychology, has looked at individual creativity,” noted Philip Shapira, a professor in Georgia Tech’s [Source: School of Public Policy](#) and the U.S. research team leader. “That’s obviously important, but we particularly want to understand the environmental and institutional circumstances that lead to highly innovative discoveries.”

The research team has some ideas about the important factors.

“Some of the hypotheses we will test relate to organizational flexibility, interdisciplinary activity, strategic vision, core funding stability, and environments that tolerate failures and allow people to recover from them,” he said.

The study is expected to shed light on such issues as:

- How to balance support between individuals and groups,
- When and where multidisciplinary research is most appropriate, and
- The best ways to stimulate and reward creativity.

The study is also expected to highlight differences between U.S. and European research systems in encouraging and rewarding creativity. The findings could be important to government, industry and other agencies that fund research, as well as to the researchers themselves.

“The ultimate goal for this study will be to use the knowledge we gain to make recommendations about the design of science policy to support innovative research, and how research institutions should be organized and managed to optimize these results,” said Dr. Thomas Heinze, one of the study directors at the Fraunhofer ISI in Germany.

The disciplines of nanotechnology and human genetics were chosen because they are rapidly growing research areas where the most promising results can be expected, he explained.

The study is being sponsored by the European Union’s program in New and Emerging Science and Technology (NEST).

Source: Georgia Institute of Technology

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