

Teach creativity in science higher education

Itai Yanai^{1*}, Oliver Bogler², Sean B. Carroll³, Jennifer Couch⁴, Maria Lund Dahlberg^{5†}, Cynthia N. Fuhrmann⁶, James C. Kaufman⁷, Sonali Majumdar⁸, Jennifer Oyler-Yaniv⁹, Rodney D. Priestley⁸, Tim Stearns¹⁰, Bodo Stern¹¹, Valda Vinson¹², Keith R. Yamamoto¹³, Martin J. Lercher^{14*}

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In 2023, creativity became the second-most in-demand skill, after analytical thinking, across industries (1), reflecting the increasingly complex challenges faced by organizations and individuals. The teaching of creativity has been integrated into higher education in the arts (2), business (3), and engineering (4). Creativity should also be taught in basic science programs.

Science graduate programs aspire to equip students with the knowledge, perspective, judgment, and tools required for research. Those tools should include not only hypothesis testing, the common focus of training, but also the process of creative discovery that precedes it. Creativity can be taught, nurtured, and encouraged (5). Teachable strategies for enhancing creativity include being open to new ideas and experiences, identifying novel questions, generating many diverse ideas, using analogies and metaphors, looking for connections across subfields and disciplines, embracing contradictions and outliers, and understanding one's own creative strengths and weaknesses (6, 7).

Demystifying the scientific creative process can make science more equitable and accessible (8). Researchers who understand the full scientific process, including its creative side, are more likely to have confidence in their self-efficacy for research and their identity as a scientist (9). As a result, such researchers are likely to have greater work satisfaction and a better chance of remaining in science long term than those who are not trained in creativity (9). Access to the space, time, and tools for creativity can also motivate early career scientists to select topics and problems that are especially meaningful to them (10). More broadly, teaching creativity in science presents a complete and honest trajectory of the research process, including its inherent distressing elements (11). Harvard Medical School, New York University, Princeton University, Stanford University, Rockefeller University, and the National Cancer Institute, as well as the European Molecular Biology Organization (EMBO) and Heinrich Heine University Düsseldorf, have begun to integrate creativity into their curricula and could serve as models for others (12). Honing science training to address the complexity of modern challenges will improve the accessibility, effectiveness, and quality of science.

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AUTHOR AFFILIATIONS AND CONTACT

¹Institute for Systems Genetics, NYU Langone Health, New York, NY, USA. ²Center for Cancer Training at the National Cancer Institute, Bethesda, MD, USA. ³Department of Biology, University of Maryland, College Park, MD, USA. ⁴Division of Cancer Biology, National Cancer Institute, National Institutes of Health, Bethesda, MD, USA. ⁵The National Academies of Sciences, Engineering, and Medicine, Washington, DC, USA. ⁶University of Massachusetts Chan Medical School, Worcester, MA, USA. ⁷Neag School of Education, University of Connecticut, Storrs, CT, USA. ⁸The Graduate School, Princeton University, Princeton, NJ, USA. ⁹Department of Systems Biology, Harvard Medical School, Boston, MA, USA. ¹⁰The Rockefeller University, New York, NY, USA. ¹¹Howard Hughes Medical Institute, Chevy Chase, MD, USA. ¹²*Science* Editorial, *Science* journals, AAAS, Washington, DC, USA. ¹³Cellular & Molecular Pharmacology, University of California, San Francisco, CA, USA. ¹⁴Institute for Computer Science & Department of Biology, Heinrich Heine University, Düsseldorf, Germany. †The author is solely responsible for the content of this Letter. The views expressed herein do not necessarily represent those of the National Academies of Sciences, Engineering, and Medicine.

*Corresponding author.

Contact: itai.yanai@nyulangone.org (I.Y.); martin.lercher@hhu.de (M.J.L.)