Introduction

Science education is a hot topic many of us have heard discussed widely in the media, by politicians and in America’s school systems. This talk will shed light on the different aspects of science education, why they are important and how they will impact us today and in the future. Our presentation will open with Kevin discussing traditional methods of science education as well as introducing new teaching methodologies to educate and inspire students. He will use experimental examples to highlight these new methodologies. Katie will discuss science education outside of the traditional K-12 environment, focusing on how scientists, the media and the general public can work together to continue science education after school. She will use climate change as a case study to encourage improved science communication. PhD students and teaching assistants Greg Kestin and Ben Morris will also join us for Q&A sessions about their work in various innovative educational endeavors. Following the talk there will be a tour of Stirling Churchman’s lab located in the Harvard Medical School Department of Genetics.

Speakers

Kevin Harlen grew up Helena, Montana and received his Bachelor of Science degree in cell biology at Montana State University. He is currently a third year PhD student studying gene expression in the laboratory of Stirling Churchman at Harvard Medical School. Kevin has worked with students and educators from Montana to South Africa to develop new ideas for science education and is excited to present on the topic.

Katie Dagon grew up in New England and went to college at Brown University where she studied physics and math. She is currently a third year PhD student in the Department of Earth and Planetary Sciences at Harvard. Her research focuses on climate change and modeling climate engineering schemes in order to mitigate global warming. She is also interested in climate and energy policy and science communication. In her spare time, she enjoys cooking, traveling and live music.

Ben Morris is a graduate student in the Biological and Biomedical Sciences program at Harvard Medical School, studying how proteins are destroyed during the cell cycle. Last spring he produced a science-theater project titled The Edge of the Map, in conjunction with microbiologist Dr. Jon Beckwith and, with Dr. Beckwith, is currently co-advising a student science-theater company at Harvard. In his free time Ben enjoys performing comic roles in Gilbert and Sullivan operas around Boston (and next summer, England!).
Gregory Kestin is a Physics Ph.D. candidate at Harvard University studying theoretical particle physics in The Center for the Fundamental Laws of Nature. In the past he has done research on quark-gluon plasma, nuclear physics, fusion energy, gravitational wave physics, and is currently doing work related to the Large Hadron Collider. Greg is also a Stand-Up Comedian who has performed all across the country. He has been and is currently in numerous innovative educational endeavors; he has even created a science-comedy television program!

Glossary of Important Terms

Inquiry based education: using questions as a means of studying or examining a topic or concept

STEM: science, technology, engineering and mathematics.

Leaky pipeline: the process of students leaving the STEM fields as they progress through primary, secondary and higher education systems.

The fluid pyramid: The idea that scientific inquiry is fluid and moves between the areas of discovery, basic knowledge and advanced knowledge, rather than starting with basic knowledge and building up.

Cultural cognition of scientific consensus: The idea that acceptance of scientific evidence is tied to cultural beliefs.

Resources to learn more


Citizen Science (www.citizenscience.org), Public engagement in scientific research.

Sense About Science – Ask for Evidence (http://www.senseaboutscience.org/pages/a4e.html), Challenge scientific claims and ask for reliable evidence.

Other Related Events

Oct. 29th, Harvard University Science Center Lecture Hall C, 4pm. Assessment: The Silent Killer of Learning, Dudley Herschbach Teacher/Scientist Lecture by Eric Mazur, Balkanski Professor of Physics and Applied Physics.

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Upcoming SITN Events

Oct. 16th, Dancing Bees to Robobees: How honeybees behave and why we need them

Oct. 21st, Science By The Pint - Robert C. Green: Your Genome and Your Medical Future

Oct. 23rd, Talking Back to the Brain: How neuroscientists use light to uncover the language of neurons

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Go to the SITN homepage http://sitn.hms.harvard.edu for more information about our organization and upcoming events.