Crack the Code
Cryptography Lecture Preview

Michael Kennedy

Cryptography is the practice and study of hiding and discovering hidden information. It almost sounds like a term straight from an science-fiction novel. When you first read the definition and what it entails, cliche images of mathematicians and scientists who decrypt secret messages at a hidden government bases somewhere in the desert jump to mind. But, when you learn just how important it is, you will want to know more.

Wednesday, Nov. 3 at 8 p.m., cryptography expert Alice Silverberg will give a lecture about her work and the mathematics of cryptography at the annual Harry S. Kieval Lecture.

By definition, cryptography is the study and practice of “enciphering and deciphering of messages in secret code or cipher.” It is hard not to think of an image from an old black-and-white war film or a scene from “National Treasure,” where Nicolas Cage decrypts a secret message that saves the day. In reality, cryptography plays a different and larger role in the modern world. For example, money and confidential information is exchanged daily among the millions of citizens who use the Internet. Users can access everything from bank statements to Facebook on the Internet.

A math professor at the University of California At Irvine, Silverberg worked with and studied mathematics most of her life. She earned a bachelor’s degree from Harvard University and received her doctorate from Princeton University. Silverberg moved on from there and held teaching jobs for esteemed universities, including her first job at Ohio State University. Throughout her teaching career, Silverberg developed a habit for traveling, speaking at more than 250 lectures worldwide and earning several honors along the way. One of her latest being right here at HSU, earning the Mathematics Humboldt Research Fellowship. In addition to her previous accomplishments, she has managed to create several computer programs despite her busy schedule, even some that are now patented.

Silverberg recorded hundreds of hours in this line of work. She has been a guest speaker for numerous conferences, and served on various program committees. Her latest being as a member of the program committee for CT-RSA 2011, the Cryptographers Track of the RSA conference, the largest annual computer security event. Instead of just knowing the “what” and “why” though, Silverberg wants her audience to understand the “how.” She said, “I hope that the audience will learn that cryptography relies on mathematics.”

A New York City native, Kieval arrived at HSU in 1966 as a math professor. A firm believer in undergraduate education, he left a permanent impression on Humboldt State University, even after his retirement from his 14-year tenure. His funding and donations helped create an annual undergraduate math scholarship as well as the math lecture, both named in honor of him. After Kieval’s passing, his will said that the Kieval estate will continue these traditions with annual donations.

Brilliant mathematicians and scientists spoke at HSU every year after the lecture’s debut. Each one had a distinct and intriguing issue to discuss regarding mathematics. “We have had a few presidents of the National Math Association and a couple of Nobel Prize winners speak,” said Martin Flashman, a math professor at HSU and the coordinator of the event. Even though the guest speakers and topics change over the years, the purpose of the lecture is always the same: to explore and comprehend the new and current uses of math. It ranges across hundreds of mathematical topics and professional applications.

Wildlife major Kurt Ongman said, “I feel it is crucial for our well being to keep our private information safe away from the eyes of the globe. I’m glad to hear of new methods of encryption that protect information from those with harmful intent.”

As the importance of mathematics only grows with the advancements in technology, its utility in the professional field does so as well. If we are to keep up with the world and current technology, then it is time we have at least a basic understanding of the mathematics that fuel it.

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- Alice Silverberg

The lecture is the 56th lecture. Harry S. Kieval was an HSU professor who began the lecture series over 30 years ago.

Alice Silverberg: “Cryptography -- How to Keep a Secret”
Wednesday, Nov. 3 at 8 p.m.
Science B Room 135