



DEPARTMENT OF MATHEMATICS AND STATISTICS SPECIAL MATH CLUB PRESENTATION

Speaker: Dr. Todd Mateer, Howard Community College

Title: The Magic of Error Correcting Codes

Date: Wednesday, January 25, 2017

Room/Time: Meet -n-Greet: 2:30 p.m. Room 152 MM
Talk: 3:00 p.m. Room 152 MM

Host: Dr. Ayse Sahin

ABSTRACT:

Error correcting codes are used in many technologies that we use every day including CDs, DVDs, and smartphone QR images. This talk will feature a series of magic tricks based on simple error correcting codes. The secrets behind each trick will be revealed so that you can amaze friends and family. By learning how the tricks work, you will also learn the mathematics which explain how error correcting codes work. The talk will conclude with an explanation of the error correcting codes used in QR images.

SPEAKER BIO:

Dr. Todd Mateer received a BSEE degree and a BS degree in Mathematics/Computer Science from Grove City College. He holds a MS and a PhD in Mathematical Sciences from Clemson University. He completed his PhD in 2008 under the direction of Dr. Shuhong Gao on Fast Fourier Transform Algorithms and their applications in signal analysis, computer algebra, and coding theory. He completed his Master's degree in 1999 under the direction of Dr. Joel Brawley. He conducted a mathematical analysis of video poker in South Carolina and mathematically proved that one can profit from certain casino games such as video poker over a long period of time with the appropriate strategy. In 2001, he joined Howard Community College where he currently serves as Master Adjunct Instructor. During the summers, Dr. Mateer teaches elementary classical cryptography, the mathematics of casino games, and the drawbacks of gambling at the Math and Related Sciences camps held at the University of Maryland Eastern Shore. He also does work for the Department of Defense, has four children, and is an amateur magician. His magic tricks teach basic concepts of coding theory and computer science.