

Rachel Pries

COLORADO STATE UNIVERSITY

presented by

The UO Chapter of the **Association for Women in Mathematics**

Error-correcting codes and maximal curves

1pm Thursday Oct 17th
Willamette 110
Tea to follow in Fenton Lounge

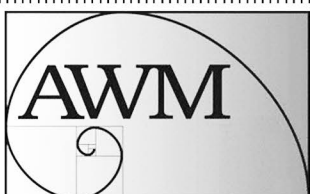
Errors can occur when data is stored, transmitted, or securely encoded. The idea with error-correcting codes is to add repetitive data to a message so that errors can be detected and corrected automatically. They are used ubiquitously, for example for cell phones, satellites, on-line security, and bar codes. After starting with the easiest examples, I will describe the construction of Reed-Solomon codes, which were first used for compact disks and Voyager spacecraft photos. If there is time, I will talk about Goppa codes constructed from maximal curves and recent research on automorphisms and Jacobians of maximal curves.

THIS TALK ACCESSIBLE TO UNDERGRADUATES

The boundary of the moduli space of curves and arithmetic applications

3pm Friday Oct 18th
Deady 208
Tea to follow in Fenton Lounge

This talk is about the pivotal role played by topology and geometry in the proofs of arithmetic results about curves in positive characteristic. We will first discuss background about the boundary of the moduli space of curves and the action of fundamental groups on torsion points of abelian varieties. These were key concepts used in results such as: Deligne and Mumford's proof of the irreducibility of the moduli space of curves of genus g ; Harbater and Raynaud's proof of Abhyankar's Conjecture about Galois covers of curves; and my proof with Achter about monodromy of the p -rank strata of the moduli space of curves.



ASSOCIATION FOR WOMEN IN MATHEMATICS