## NORTHERN ARIZONA UNIVERSITY

# Department of Mathematics and Statistics

## COLLOQUIUM
### Tuesday, January 27th, 2015
4:00 − 5:00 pm, Adel Mathematics Bldg., Room 164
(refreshments at 3:45)

# Dr. Michael Falk
## NAU

# Milnor fibers of arrangements

Abstract: Let $Q(x,y,z)$ be a polynomial with complex coefficients that factors as a product of distinct linear factors. The variety F defined by the equation $Q(x,y,z)=1$ is called the Milnor fiber of the singularity defined by $Q(x,y,z)=0$. There are several long-standing conjectures related to F. Two prominent ones are that the first betti number of F depends only on the matroid determined by the linear factors of Q, and that the first homology group of F is torsion free. We give some background on Milnor fibers, projective algebraic surfaces, and branched covers, and sketch the application of the latter two notions to the Milnor fiber conjectures, giving a proof (modulo details) of the first conjecture.

Algebra Combinatorics Geometry and Topology (ACGT) Seminar meets Tuesdays, 12:45 – 1:45 pm, AMB 164.

Applied Math Seminar (AMS) meets Thursdays, 12:45 – 1:45 pm, AMB 164.

Friday Afternoon Undergraduate Mathematics Seminar (FAMUS) meets Fridays, 3pm.