Colloquium speaker: Dr. Carmen Caprau (Fresno State)

Title: Why Knot?

Abstract: Classical knot theory is a branch of topology that involves the study of mathematical knots and links. A knot is a closed curve in three-dimensional space, and a link is a disjoint union of closed curves (tangled or not together) in the three-dimensional space. The fundamental problem in classical knot theory is the classification of links (including knots) up to the natural movement in the space. To distinguish knots and links we look for invariants of links, which are quantities that are unchanged when the knot is continuously deformed within the ambient space. Knot theory is a quickly growing and relatively new area of study, with the most significant results having taken place in the second part of the 20th century through these days. Applications of knot theory range from chemistry to molecular biology to the world of quantum mechanics
This talk will be a brief introduction to knot theory with a focus on the Kauffman bracket, which is a polynomial invariant for knots and links.