ABSTRACT

TITLE:	Computational Complexity of Problems With Digraphs and Finite Topological Spaces
AUTHOR(S):	Yarbrough, Patrick; Groh, Christine
PRESENTED AT:	2014 Undergraduate Research and Creative Activities Symposium, Fort Lewis College

ABSTRACT: Consider a finite topological space X. By using the relationship between digraphs and finite topological spaces, a corresponding digraph, GX can be found. Then, completing the adjacency matrix for GX can be used to determine the complexity class (defined via Turing machines) of problems involving GX, and therefore of X as well. This talk will examine the complexity classes of problems in deciding whether spaces are self-complementary finite topological spaces, deformation retracts, and if a finite topological space is a T0-space.