Streams are branching networks that drain heterogeneous terrestrial landscapes. From headwaters to mouth, natural streams have broadly predictable gradients of environmental change – but habitat mosaicism is also common, especially when streams drain complex topography and/or geology. I have long been captivated by the branching structure of stream networks in mountainous topography, and I will give an overview of how my research has developed through a couple of decades. I will emphasize multi-scale ecological connectivity within and among stream networks and how natural habitat heterogeneity influences connectivity and inflates regional-scale biodiversity from population to ecosystem levels. I will specifically discuss, chronologically: 1) broad-scale patterns of dispersal and gene flow, including species of conservation concern with isolated populations in high headwaters; 2) habitat heterogeneity within and among headwaters, including the potential for identifying climate refugia in alpine streams undergoing rapid warming; 3) the potential roles of surface/subsurface (“hyporheic”) connectivity in providing refugia from flow disturbance and in powering diverse stream and riparian food webs by substantially inflating secondary production.

If you would like to visit with Dr. Debra Finn, please contact Dr. Lydia Zeglin at lzeglin@ksu.edu.

Coffee & cookies served preceding the seminar in Ackert Hall, Room 225