Biomedical Sciences Seminar
Cosponsored by Neuroscience

*present* 
"Use of CRISPR/Cas9 for targeted integration in zebrafish and mammalian cell culture"

**Guest Speaker:** Jeffrey Essner, PhD Iowa State

**Thursday November 14th**

**WHEN:** 12:00pm-1:00pm

**WHERE:** Vet Med Room 2226

**HOST:** Open

**PIZZA SERVED IN FISH TANK LOBBY**

**Seminar Details**

Choices for genome engineering and integration involve high efficiency with little or no target specificity or high specificity with low activity. I will describe a targeted integration strategy, called GeneWeld, and a vector series for gene tagging, pGTag (plasmids for Gene Tagging), which promote highly efficient and precise targeted integration in zebrafish embryos, pig fibroblasts, and human cells utilizing the CRISPR/Cas9 system. Our work demonstrates that in vivo targeting of a genomic locus of interest with CRISPR/Cas9 and a donor vector containing as little as 24 to 48 base pairs of homology directs precise and efficient knock-in when the homology arms are exposed with a double strand break in vivo. Our results suggest that the length of homology is not important in the design of knock-in vectors but rather how the homology is presented to a double strand break in the genome. Given our results targeting multiple loci in different species, we expect the our protocols, vectors, and web interface for homology arm design to help streamline gene targeting and applications in CRISPR and TALEN compatible systems.

**Next Week’s Speaker:** Dr. Matthew W. Nonnenman, PhD

**Topic:** "Air Quality in Livestock Production Buildings: Evaluating a Prototype Aerosol Control Technology to Reduce Dust Concentrations in Commercial Swine Farrowing."