

2011 Summer Undergraduate Research Fellowship Awards

Student Name: Keith Sykes (2011 Bruce LeVine Mellion '69 SURF Fellowship recipient)
Project Title: Validation of a Child Hope Scale in a Clinical Sample
Faculty Sponsor: Anthony Scioli, Psychology
Project Abstract:

The purpose of my proposed study is to evaluate the reliability, validity, and clinical sensitivity of a new measure of hope for children. This child hope scale is based on an integrative theory of hope developed by my KSC mentor, Dr. Anthony Scioli (Psychology). According to this theory, hope has four dimensions, attachment, mastery, survival, and spirituality. The Child Hope Scale includes questions from each of these dimensions. Up to this point, this child hope scale has only been used with a normal (non-clinical) sample of children. This research will have two objectives. The first will be to demonstrate that a new child hope scale is reliable and valid when used with a clinical sample. A second objective is to demonstrate that a new child hope scale is sensitive to the effects of a psychosocial and spiritually-oriented camp-based intervention. Four hypotheses will be tested. The first hypothesis is that the internal consistency (reliability) of the child hope scale (total and sub-scales) will be adequate. In terms of validity, the second hypothesis is that the total hope scores will be negatively correlated with a measure of overall child psychopathology. The third hypothesis is that the child hope subscale scores will be negatively correlated with theoretically related sub-scales on the (multidimensional) child psychopathology measure. The fourth hypothesis is that hope scores will increase significantly from beginning to end of the camp experience and these increases will be associated with decreases in psychopathology.

Student Name: Amber Poirier (2011 KSC SURF Fellowship recipient)
Project Title: Genetic Analysis of Stem Cell-Meditated Regeneration of Planarians
Faculty Sponsor: Jason Pellettieri, Biology
Project Abstract:

Schmidtea mediterranea is an aquatic flatworm, or planarian, known for its remarkable capacity to form complete individuals from tiny body fragments. This ability to regenerate missing tissues depends on a population of adult stem cells. Following amputation, these cells migrate to the wound site, where they give rise to a mass of new tissue called the blastema. Cells in the blastema then adopt new identities to restore lost body parts. I am investigating the genetic pathways underlying this response. In preliminary studies, I discovered a new gene that is required for planarians' normal regenerative abilities. In the present study, I will address the hypothesis that this gene is required for stem cell maintenance. This work will provide insight into basic mechanisms of animal regeneration, an important goal in the emerging field of regenerative medicine.
