Individual Project Descriptions and Student Involvement

Common Experience
REU students will focus on a primary project but will interact with peers and faculty from the other projects during the weekly meetings to learn about the different methods, theories, and techniques used in each project. During orientation, all REU students will receive common training as described above and will learn diverse approaches to data analysis including emphasis on issues of reliability, validity, triangulation, and causal inference.

REU students will each work with one of the individual projects and participate directly in the research process. Students will learn about the concepts, methods, and analysis involved in the research project as well as gain hands-on experience in the field or lab. At the end of the experience, students will share findings from their research experience and discuss what they have learned about the research process.

Project # 1: The Socialization of Children’s Emotions
Faculty advisors: Cynthia L. Smith (Associate Professor of Human Development, College of Liberal Arts and Human Sciences) and Julie C. Dunsmore (Associated Professor of Psychology, College of Science).

The key research question addressed in this collaborative project is: How are different aspects of parenting associated with children’s optimal emotional development from infancy through childhood?

Children’s emotional development underlies moral behavior, problem-solving ability, behavioral adjustment, and social interactions and relationships (Eisenberg, Fabes, & Spinrad, 2006; Izard, 2002). Furthermore, children who lack the ability to control their emotions have been found to be at-risk for later problems with extreme defiance, aggression, and conduct problems (Calkins & Dedmon, 2000; Hill, Degnan, Calkins, & Keane, 2006). Problems with emotional development have been linked to children’s likelihood of being victims of peer aggression (Garner & Lemerise, 2007) and to the likelihood of perpetrating peer aggression (Burks, Laird, Dodge, Pettit, & Bates, 1999).

Parents play an important role in socializing children’s emotional development through their emotion-related beliefs, parenting behaviors and styles, emotional expressivity, reactions to emotions, and discussions of emotions with their children (Dunsmore & Halberstadt, 1997; Eisenberg, Cumberland, & Spinrad, 2001). More research is needed to understand how specific parenting behaviors relate to children’s emotional development, as well as the mechanisms accounting for parental socialization of children’s emotions. Such information is necessary both for successful interventions at the child level (i.e., supporting better peer relations) as well as to enhance parental support of children’s emotional development. Parental support early in children’s lives may allow for optimal emotional development at earlier developmental periods and thus decrease the potential negative outcomes associated with deficits in emotional development, which can continue to have detrimental effects later in development.

REU students will be involved in the on-going work of Smith and Dunsmore. Students will examine how parenting behaviors and parent-child emotional discourse are associated with emotion understanding and emotion regulation in children ranging in age from toddlerhood through early adolescence. Specific skills that students will develop working on this project involve learning about both data collection with families of young children as well as extensive experience in behavioral coding. Student training in behavioral coding will involve learning about inter-rater reliability, observer drift, validity, developmental sensitivity, and ethical handling of video materials. Students will develop and test their own hypotheses using pre-existing datasets and will create and assess their own observational coding schemes.

Dr. Smith has mentored 39 undergraduate students in conducting research, including presentations of research both locally and internationally. She has directed one honors thesis, mentored three McNair
Scholars students and one Multicultural Academic Opportunity Program student. Each semester, Dr. Smith works with four to twelve undergraduates in her Children’s Emotions Lab. Dr. Smith participated in 2009 VT Undergraduate Interdisciplinary Summer Research Program and took a leadership role in creating the student development programming. Dr. Smith is a Faculty Board Member for the College of Liberal Arts and Human Sciences Undergraduate Research Institute (URI) and serves as a reviewer for undergraduate research grants and ACC Meeting of the Minds Undergraduate Conference submissions. She has been instrumental in continuing to build and refine the processes of the URI.

Dr. Dunsmore has mentored over 60 Virginia Tech undergraduate students conducting research in her Social Development Lab. Nineteen of these undergraduate and two post-baccalaureate students have presented research at the following national or international conferences: Annual Biomedical Research Conference for Minority Students; Conference on Human Development; Society for Personality and Social Psychology; Society for Research in Child Development. In addition, Dr. Dunsmore participated in the 2009 VT Undergraduate Interdisciplinary Summer Research Program and took a leadership role in creating the student development programming.

**Project #2: Bullying Prevention through Actively Caring**

Faculty advisor: Dr. E. Scott Geller (Alumni Distinguished Professor of Psychology, College of Science).

The key research question addressed is: Can a behavior-based intervention, focusing on rewarding desirable behavior, decrease bullying behavior beyond the school classroom?

Bullying is the most common form of violence in our society; “between 15 percent and 30 percent of students are bullies or victims” (Cohn & Canter, 2002). Preliminary research by Geller, McCarty, Carroll, and Zakutney (2011) demonstrated the effectiveness of the Actively Caring approach to bully prevention among fourth, fifth, and sixth grade students. By definition, Actively Caring (AC) is any discretionary behavior performed for the welfare of others. The AC model proposes individuals with high self-esteem, and a sense of belonging, personal control, self-efficacy, and optimism are more likely to actively care for others (Geller, 2001). The five-week intervention encouraged students to observe, perform, recognize, and share AC stories daily, thus increasing desirable behavior and reducing the frequency of interpersonal bullying, observed bullying, and victimization by more than 40% in each category. Additionally, the percentage of students self-identified as bullies decreased by 89% from Baseline to Withdrawal phases (McCarty & Geller, in press).

In an effort to apply prior research on bystander intervention and the AC model to solve an epidemic affecting children nationwide, the intervention has developed into an evidence-based intervention package to reduce bullying behavior and increase AC behaviors in schools from Virginia to New York, including both elementary and middle schools. However, our program for undergraduates will allow for the exploration of bully reduction in a different setting.

One study on naturalistic observations of bullying behavior suggests the need for a pro-social intervention to reduce bullying on a school playground environment (Hawkins, Pepler, & Craig, 2001). Based on the recent success of the AC intervention in schools, a similar pro-social intervention will be applied in an outdoor environment, during camp activities and day care breaks. Observations of bullying and pro-social behavior will be recorded for a two-hour time period, each day for several weeks.

To begin, students will perform naturalistic observations in a visiting local day care center or local camp. Each day, they will observe the behavior of young children with documentation of both physical and verbal forms of bullying. After some time, an AC intervention will be introduced and data collection of observations will continue. Naturalistic observation allows for the students to see the effects of applied research in action. At the conclusion of data collection, students will provide feedback on the program to
the research team, comprising undergraduates, graduate students, faculty members, and teachers. Using basic tenets in behavioral science, students will enhance key skills of critical thinking and teamwork as they work with others to develop their own methodology and proposed design. They will gain basic statistical knowledge while learning how to analyze the data, interpret the findings, and then prepare a presentation about their work in conjunction with others. The student researchers will apply the resources available to students in the Center for Applied Behavior Systems, which Dr. Geller directs.

Since arriving at VT in 1969, Dr. Geller has worked with undergraduate students each semester on research related to large-scale intervention to improve quality of life. He has been director of the Center for Applied Behavior Systems (CABS) since 1987. Every semester CABS works with forty to sixty undergraduate students and five to seven graduate students on the development and evaluation of community-based and organization-based interventions to benefit people and their interactions with others with regard to safety, sustainability, health, and conflict resolution. Each fall and spring semester, six or more undergraduate students present their research at a professional conference (e.g., the Virginia Psychological Association, the Association for Behavior Analysis International, the Eastern Psychological Association, and the American Psychological Association). For example, six undergraduate students and three graduate students presented research papers at the 2011 American Psychological Association conference in Washington, DC. Dr. Geller has developed and researched the concept of “Actively Caring for People” and this concept has been applied in numerous situations, most recently to prevent bullying behavior in elementary schools. Indeed, three undergraduate students have travelled to New York and presented the Actively Caring approach for preventing bullying to teachers at several middle and elementary schools.

Project #3: Reinforcing Anti-Violence Attitudes through Exposure to Violent Media Content
Faculty advisor: Dr. James D. Ivory (Assistant Professor of Communication, College of Liberal Arts and Human Sciences).

The key research question examined by this project is: Can exposure to meaningful depictions of unjustified and unpleasant violence in media reinforce anti-violence attitudes?

An extensive body of research has examined the potential negative effects of media violence (Anderson & Bushman, 2002), including violence in the content of new interactive media such as video games (Anderson, Shibuya, Ihori, Bushman, Sakamoto, Rothstein, & Saleem, 2010; Sherry 2001). Although existing findings and theoretical frameworks explain that glorified depictions of violence without appropriate consequences in media may lead to negative consequences such as desensitization and imitation (see Bryant and Oliver, 2009), it is also possible that certain meaningful and unpleasant depictions of violence in media may be an effective way to reinforce attitudes that violence is an undesirable conflict resolution strategy.

Although this possibility has not been adequately explored by empirical research, there is relevant precedent in research dealing with persuasion based on inoculation theory (see Burgoon, Pfau, & Birk, 1995; Pfau & Burgoon, 1988). This theory explains that exposure to a weak persuasive argument counter to one’s views can reinforce resistance to the argument’s perspective, just as exposure to a weak or dead virus can buttress resistance to that virus. While inoculation and relevant perspectives have not been applied to media violence, the theory’s application in persuasive contexts suggests that a somewhat analogous strategy might be successfully employed with media depictions of violence. Specifically, this project examines whether exposure to certain media depictions of violence—depictions where that violence is unjustified, has unpleasant outcomes and is not an effective strategy—might reinforce anti-violence attitudes. This research question can be addressed with a series of experiments that examine the effects of different media stimuli on multiple physiological and psychological outcomes over the course of the program’s duration.
Students involved in the project will learn about research and theory related to the effects of media violence, work with the project director to design original laboratory experiments testing elements of the project’s general research question, learn to collect physiological and questionnaire data in experiment sessions that they administer, and learn to analyze and interpret study results with the goal of co-authoring a conference paper or journal article with the project’s director.

Dr. Ivory has worked with approximately 12 undergraduate researchers and has co-authored three papers with undergraduates that have been presented at the following national and international conferences: the annual conference of the International Communication Association (Game Studies Special Interest Group, 2009) and the annual convention of the Association for Education in Journalism and Mass Communication (Mass Communication and Society Division, 2007 and 2008). Dr. Ivory is also the Director of the Virginia Tech G.A.M.E.R Lab (The Gaming and Media Effects Research Laboratory) which regularly recruits temporary undergraduate research associates who conduct research during one-semester appointments for course credit.

Project #4: Social Technology and Conflict
Faculty advisor: Dr. Deborah Tatar (Associate Professor of Computer Science, College of Engineering).

The research question addressed is: How do social technologies influence the experience of connectedness and rapport under conditions of interpersonal conflict?

We may be raising a generation of people in America whose life conditions mean that they gain little or no face-to-face experience with the appropriate communication of strong emotions (Twenge, 2009, 2006; Tatar, 2010). Added to this, they may spend enormous amounts of time in palliative mediated communication. That is, they engage in constant communication but only in the absence of strong emotions. Technology might be adapted to better incorporate and improve the level of emotional communication that does not occur face to face. For example, Ben-David Kolikant (2010) has utilized web based communication to allow young Arab and Jewish Israeli citizens to engage in discourse about fraught topics without danger of physical violence. In this research, human connectivity will be examined in the presence of technology under conditions that are non-optimal. For example, couples will be asked to argue using the web, the phone or face-to-face. Details of their behavior, their judgments about that behavior, and their satisfaction with the self and others will be studied.

REU student involvement in this project will focus on observation, transcription and coding of video, audio and computer-log recordings of behavior related to conflict and emotional regulation under different experimental conditions. Students will read in the areas of conflict, detection of emotional expression and psycholinguistics. They will also be trained in specific analytic methods, such as the SPAFF (Specific Affect Coding System), which is oriented towards couples, and more general conversation analytic, sociological approaches to understanding communicative behavior.

Dr. Tatar regularly supervises undergraduate research in Computer Science and in Psychology, with student posters on display at the annual Virginia Tech Undergraduate Research fairs in the Computer Science department and in the College of Engineering. Two undergraduates secured funding from the College of Engineering, and two undergraduates were awarded their own Computing Research Association grants. Dr. Tatar is faculty advisor for the Virginia Tech Association for Women in Computing (AWC) which holds an annual “Girls in Computing” day for 100 local 7th grade girls. She serves on the Undergraduate Program Committee. She is a co-PI on a CPATH grant to investigate cross-disciplinary, cross-institutional courses. Her research focuses on middle school and high school pedagogy, and she is a member of the executive board of the International Society of the Learning Sciences.