

3<sup>rd</sup> Annual Simpson Student  
Research Symposium  
Presentation and Poster Abstracts

(Updated 2/26/13)

Saturday, March 2, 2013  
9:00am to 5:00 pm

LaBaume-Rudat Hall  
Simpson University  
Redding, CA

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## Undergraduate Student Presentation Abstracts

**Name:** Ahnaleza Wilseck

**Degree Program:** Social Science

**Presentation Title:** How Marx Transcended European Social Theory

**Presentation Abstract:** During the nineteenth century, society was hungry for reform. Letters, news, and ideas travelled both directions across the Atlantic Ocean. The United States was growing and trying new ways to promote welfare for its citizens, and Europe watched with eagerness. A small American philosophical social movement known as transcendentalism drew some interest from European social theorists. As that movement changed and grew, it became an opportunity for those outside of it to watch what might happen in a perfectly equal world. In 1840, the transcendentalist George Ripley bought a property called Brook Farm that was to be a utopian experiment. The experiment eventually fizzled out and was considered a failure by many. However, the trials and failures of the utopic American transcendentalists were noticed by Marx and Engels and had an important impact Marx's developing theory. My paper argues that the positive and negative impacts that transcendental utopian attempts in America had on Marx's early theory of alienation helped move Marx beyond alienation theory and into the realm of class conflict.

**Name:** Jiovanna Aguirre-Smith

**Degree Program:** Cross-Cultural Studies

**Presentation Title:** Israel and Palestine: Road to Peace

**Presentation Abstract:** This paper examines the complex historical relationship between Israel and Palestine starting with World War II and ending with the most recent peace agreement. It looks specifically at wars, events, treaties and attempts at resolving the ongoing conflict between the two nations. My paper sheds light on the acts of violence that both sides have committed and questions whether any type of peace is possible between Israel and Palestine despite the violence and broken peace agreements. It as well asks the reader to question assumptions and pursue solutions based on the historical events that have led to the current situation.

**Name:** Bethany Scettrini

**Degree Program:** English

**Presentation Title:** The Necessity of Female Community for Creating Discourse and Preserving Heritage in Amy Tan's The Joy Luck Club

**Presentation Abstract:** The Joy Luck Club by Amy Tan is examined and analyzed to show the unique way in which this Chinese female community serves to resist patriarchal authority. The importance of community can be seen as a necessary way for females of many cultures to ban together to create a voice and language of their own. The research suggests that female communities are necessary for creating a female discourse and heritage that can be passed on, especially in Chinese culture. Through these communities women can find an identity and a voice.

**Name:** Kevin Martin

**Degree Program:** Mathematics

**Presentation Title:** The Perfect Shuffle: When shuffling can make a deck of cards less random.

**Presentation Abstract:** The perfect shuffle (aka the faro shuffle) is a version of the riffle shuffle in which a deck of cards is cut in half and the two halves are perfectly interleaved. We begin with a brief history of the perfect shuffle, discuss some of the mathematics that result from studying the perfect shuffle, and end with some of its real-world applications.

**Name:** Taylor Cardoza

**Degree Program:** Nursing BSN

**Presentation Title:** Marriage of Non-pharmacological and Medicinal Treatments for Pain in Chronic Disease Processes

**Presentation Abstract:** My topic is related to how we can incorporate non-pharmacological techniques including guided imagery, massage therapy, and biofeedback into nursing interventions for better patient pain control of chronic disease processes. This topic is important because of high patient dissatisfaction rates for pain control during hospitalizations related to medication administration, side effects, and adverse effects. This research is looking to help any patient who experiences mild to severe pain due to chronic disease processes, who is hindered by possible medication side effects. To get my results, I used a multitude of research articles that were peer reviewed, ethically sound, and involved both quantitative and qualitative research. I collected research that spanned both sides of the argument for nursing care using non-pharmacological techniques to control patient pain. The conclusion that I have been able to draw based on the studies done on the marriage of non-pharmacological treatments for pain and medicinal treatments for pain, we should use this evidence based practice to better our patient care by including guided imagery, massage therapy, and biofeedback into our nursing care of patients with chronic disease processes that causes them pain.

**Name:** Jessica Lewis

**Degree Program:** CCST- Community Development

**Presentation Title:** The Value of the Arts in Peacebuilding

**Presentation Abstract:** The purpose of this paper is to demonstrate how the communicational power of art has been used as an effective tool in the process of peace building. I will do this by looking at several different peace-building case studies that involved the arts. Then I will evaluate them against peace-building principles taken from John Paul Lederach's book, *Building Peace: Sustainable Reconciliation in Divided Societies* (1998), and Daniel Philpott and Gerard F. Powers' book, *Strategies of Peace: Transforming Conflict in a Violent World* (2010). Finally, I will connect the core values found in the case studies and Lederach's and Philpott's books to peace-building processes that are happening or are being considered for our school community and the larger community of Redding.

**Name:** Grace G. Slowik

**Degree Program:** Psychology

**Presentation Title:** The Other Concept: Literary Theory Conceptualizing of the Other

**Presentation Abstract:** The concept of the "Other" reinforces key cultural binaries such as race, gender, class, and sexuality and this has reduced identity into subject position that forms one term in a binary relationship, a binary that leads to prejudice and discrimination. This is why language and cultural critique is so important; it allows us to look at the constructs that language creates and to combat the resulting stereotypes. The unfortunate side effect of this critique is that by breaking down the binary, we create a fluidity that leaves many unsure of how to define race, gender and other cultural hot topics. Critique of binary thinking must go beyond this deconstruction into something called the third space, a combination of the two opposing terms in a binary. This third space will elevate the conversations of topics traditionally used to discriminate and subjugate into words that mutually affirm and benefit the community as a whole, promoting understanding and the biblical ideal of loving and respecting the "other" even if there are differences.

**Name:** Janelle Roth

**Degree Program:** Communication

**Presentation Title:** Connections of Media and Violence in China and North Korea: Philosophy, Power and Propaganda

**Presentation Abstract:** China and North Korea have been the topic of conversation in regards to media censorship for decades, with both nations coming from a common political and cultural background. In the text to follow we will attempt to better understand how media has played a role in each of the nations in regards to violence by gaining an understanding of each of their cultural philosophies and foundations which shape their daily mindsets about who they are and how to maintain total control.

**Name:** Brent Aaronson

**Degree Program:** Biology

**Presentation Title:** Simpson University Pond Chemistry Study

**Presentation Abstract:** SU Pond Water Chemistry 2012 abstract Student Researcher: Brent Aaronson Faculty Advisor: Larry Siemens The purpose of the experiment was: to determine whether the Simpson University pond can sustain human use as well as to determine the health of the pond water and the organisms within. The researcher achieved this by designing collectors to test the dissolved oxygen (DO) content of the water. Other tests that were performed on the water include: pH, nitrates/nitrites, phosphates, turbidity, conductivity and temperature. We started our sampling on April 27, 2012 and our last sample was taken on December 16, 2012. We sampled for a total of 39 days. On June 25th we added in the first data collector at the dam. On July 9th we added the second data collection site near the gazebo. The limits for the equipment are: phosphate < 1mg/L, dissolved oxygen 1 mg/L, pH +/- 0.5, conductivity, turbidity; nitrates < 10ppm, nitrites < 0.5 ppm. Our data ranges are as follows: DO 1.20-5.80 Mg/l, turbidity 0.16-27.1, conductivity 0.11-0.23 mS, pH 6.29-8.32, temperature 31.8-17.7° C; Phosphates phosphateshates <1.0 Mg/l, and nitrates/nitrites < 0 PPM. Samples were taken at the water's edge and later in the experiment, from two spots deep within the pond. The results possibly show that the pond is viable for aquatic organisms as well as human use. The dissolved oxygen is well above the recommended 2 mg/L that is needed to sustain fish life within the pond. All results are below the levels required to trigger any run away eutrophication and anaerobic conditions. A concomitant Simpson University investigation regarding microbial characterization also supports the appropriateness of the pond for recreational use.

**Name:** Andrew Ward

**Degree Program:** Biology

**Presentation Title:** Microbial Characterization of Simpson University Pond

**Presentation Abstract:** The main goal of this project was to identify potentially pathogenic bacteria in the large pond located in the northeast of the Simpson University campus to determine whether the pond is suitable for recreational use. Fecal coliform tests were performed on samples collected from the eastern shore of the pond through the months of May 2012 and October 2012. Fecal coliform is a measure of the extent of fecal contamination in water and U.S. Environmental Protection Agency standard for recreational waters is 200 coliforms per 100 mL. The range of measured results was between 0 and 210 coliforms per 100 mL pond water. Only one measurement out of 19 total, made on August 21, 2012, was above the EPA standard. However, occasional readings of up to 400 are allowed by EPA as long as less than 10% of the readings eclipse the 200 coliform per 100 mL guideline. In addition, several coliform bacteria present in the pond were characterized and identified using the Enterotube method (BD Biosciences). The research team isolated three different bacterial strains in this study, *Citrobacter freundii*, *Serratia marcescens*, *Enterobacter aerogenes*. These are all generally non-pathogenic and should not be harmful for recreational use. A

concomitant project at Simpson University on the chemical characterization of the pond, similarly suggests that the pond is suitable for recreational activities including boating and swimming. Ongoing studies will continue the characterization of seasonal effects on pond water quality.

**Name:** Kelly Warner

**Presentation Title:** The Romanticization of Pocahontas: Discovering the Truth Behind the Legend

**Presentation Abstract:** Pocahontas has been portrayed in many different ways by historians and authors because of the lack of historical documentation and primary sources about her. Pocahontas is one of the most popular figures in the history of America and the United States, yet so much of her life and character is based on speculation. Being such a famous and popular character of history has made Pocahontas subject to many representations, both romantic and realist. In addition, the lack of primary sources and historical documentation about Pocahontas has made her ambiguous, and has resulted in historians, writers, and artists inventing Pocahontas based on what they thought she should have been like. This lack of documentation about Pocahontas has made her into a popular myth. Because the sources about the Virginia colony and the Native Americans were so limited, historians were eager to write the history of Pocahontas, even if the hype around her would make it difficult to write with accuracy. These works, which begin to appear in the nineteenth century, typically represented Pocahontas and her story as a fairytale, painting her as America's princess and heroine. My presentation will examine the historiography of Pocahontas, and will explain why certain historians and authors wrote about Pocahontas in either a romanticized or overly realist fashion.

**Name:** Tim Medeiros

**Presentation Title:** The Growth of Segregation: How Integration is Gradually Being Reversed in the Post-Brown Era

**Presentation Abstract:** The Supreme Court's decision in *Brown v. Board of Education* officially ended segregation in schools throughout the United States. Although there are no longer "whites only" schools, segregation is still unofficially allowed in many schools and students are often helpless to choose better schools. Today, many educators debate interschool busing, vouchers, and the roles of private and charter schools. Some educators believe that the flight to private schools has made segregation worse, while others see vouchers and charter schools as ways to promote integration. This paper will explore, over fifty years later, the effect of the historic *Brown* decision and not only clarify why it has failed to achieve its goals, but also explain solutions to integrating and improving America's schools. Enforcing *Brown* is one of the most monumental civil rights issues in modern day America and effectively integrating schools will benefit everyone and teach the next generation true values of equality and justice.

**Name:** Stephen Lennstrom

**Presentation Title:** The Relationship between Church and State

**Presentation Abstract:** Issues are constantly arising surrounding the function and boundaries of the Church and State relationship. Some advocate for a heavily integrated model with strong participation in both realms while other groups argue for a clear and distinct separation between the two. This paper seeks to thoroughly analyze, compare, contrast and integrate two models for Church – State relations by two imminent 20th century theologians: Karl Barth and John Howard Yoder. The paper outlines a schema for how to create an efficient model using the two authors' ideas surrounding the origin of the State, the State's future destiny, the nature of conflict between the Church and State, as well as the Church's responsibility towards the State. In the epilogue, the paper attempts to create a new model of Church – State relations for the modern era.

**Name:** Suzannah Goerzen, Timothy Jon, Stephen Lennstrom, Dani Perez, Amanda Rippee, Grant Shields, Kaila Smith

**Degree Program:** Psychology

**Presentation Title:** The Marriage of Heart and Mind: Investigating the Relationship between Executive Function Task Performance and Heart Rate Variability

**Presentation Abstract:** This proposed presentation will present research that investigated if there are physiological changes that accompany how well we perform on tasks. Specifically, this research looked at the relationship between heart rate variability (HRV) and sustained performance on two cognitive-behavioral tasks which require executive processing. It has been argued that HRV is one index of executive processing, particularly for tasks that require self-regulation. However, few studies have measured HRV over a sustained period of task performance on behavioral tasks of executive function. The purpose of this study was to investigate how HRV and task performance change as individuals engage in executive processing. A total of 57 college students were tested on two executive function tasks over the course of two testing sessions. While both tasks are believed to assess executive function more generally, the Stroop Task consists primarily of inhibitory control demands while the other, the Operation Span Task, emphasizes working memory. HRV was measured throughout task performance and baselines were measured before and after each task. This presentation will present results of participant performance on each behavioral task and HRV results. The main analysis will investigate any HRV changes that took place during each task and will include a comparison of the baselines. Such analyses will indicate what, if any, relationship there is between the HRV and executive function. Methodological and theoretical implications will be discussed.

## Undergraduate Student Poster Abstracts

**Name:** Julie Spencer

**Degree Program:** Psychology

**Presentation Title:** The Effects of Attachment on Development

**Presentation Abstract:** John Bowlby postulated that the type of bond formed between an infant and their primary caregiver serves as the groundwork for development throughout the lifespan (Gunning, 2011). Bowlby further ascertained that this process is established in the early years of life (Malerstein, 2005). Mary Ainsworth contributed to Bowlby's ideas with her patterning of attachment styles, rounding out what is known as attachment theory. This poster explores these ideas by examining the effects of attachment styles on cognitive, social, and emotional development. The type of attachment formed between the caregiver and the infant may induce certain personality characteristics and coping mechanisms within the child that may leave them more susceptible to compromised development (if insecurely attached) or more capable of learning, adapting, and interacting (if securely attached). It is therefore important to examine the implications of attachment on children's development.

**Name:** Kristy Byrd

**Degree Program:** Psychology

**Presentation Title:** Social Intervention for Children with Autism

**Presentation Abstract:** Abstract Research has been conducted to evaluate social interventions aimed at improving social deficits prevalent in children with autism. This poster will explore various interventions in order to evaluate what types are most effective. The interventions that will be focused on are early interventions, early childhood care, inclusive centers, segregated centers, parent interventions, and peer interventions. Discussion will be made about what types of interventions are most beneficial for children with autism.

**Name:** Leanne Davis

**Degree Program:** Biology

**Presentation Title:** Mini Gas Chromatograph

**Presentation Abstract:** Mini Gas Chromatograph Programming Project Researchers: Rachel Morgan, Leanne Davis Advisor: Larry Siemens Instrument: Mini Gas Chromatograph built by Vernier Software & Technology of Beaverton, OR The goal of this research project is to test the limits of the Vernier Mini Gas Chromatograph and to design a program that will result in peak separation for ten alcohols with fewer than seven carbons. The first goal in this process was to create a program that would result in reliable separation of a mixture of two alcohols (2-propanol and ethanol) with very close boiling points. Rachel began this research by creating and adjusting a program to separate a mixture of four alcohols: methanol, ethanol, 1-propanol, and 2-propanol. Larry continued adjusting this program. Leanne tested and modified this program further, as well as testing a mixture of ten alcohols with the modified programs.

Leanne's results are as follows: The separation of 2-propanol and ethanol proved to be inconclusive. The program used gave inconsistent results, which was most likely due to the fact that both the carrier gas pressure and the temperature the program was being run at were at the absolute lower limits of the operating parameters of the machine. From both these tests and the runs of the ten alcohol mixture it was reasoned that this machine is incapable of separating alcohols that have a very close boiling point or similar chemical structure, as alcohols demonstrating these characteristics coeluted (eight peaks appeared from the ten alcohol mixture).

**Name:** Michael Silliman

**Degree Program:** Cross-Cultural Studies/Business

**Presentation Title:** Green Building Technology in Uganda

**Presentation Abstract:** While building technology continues to evolve in most of the world, some less developed nations are still building with traditional mud bricks. This building method is not only outdated, but also harmful for the environment. Moreover, this traditional method creates low-quality bricks at a rising cost. The developing world has better options. Interlocking Stabilized Soil Block is a new block-making technology that represents one answer to the need for environment-friendly and cost-effective block-making technology for developing nations.

**Name:** M. Daniel Cross

**Presentation Title:** A Historiographical Analysis of the Great Awakening's Supernatural Phenomenon

**Presentation Abstract:** In this work I examined several seminal works and their authors in regards to their reaction, or lack thereof, to the supernatural occurrences mentioned and associated with the first great awakening. My goal was to obtain a broad measure of the average reaction to these occurrences, evaluate the individual reactions, and hypothesize a manner or method by which such occurrences might be examined fairly and in the entirety they deserve.

## Graduate Student Presentation Abstracts

**Name:** Kimber Serna

**Degree Program:** MACP

**Presentation Title:** What is a Healthy Marriage?

**Presentation Abstract:** Simply falling in love has become the basis for marriage in the 20th century in America. Some marriage and family theories believe partners chose one another beginning with love bonds, but healthy functioning couples have the ability to change their dynamics over time to accommodate life stresses in their family and social environments (Bowen, 1966). Marriage requires a significant amount of accommodation of each partners limits, ethics, differences, safety, emotional needs, and vulnerabilities (Jory, Anderson, & Greer, 1997).

**Name:** Kimber Serna

**Degree Program:** MACP

**Presentation Title:** Circumplex Model for the Treatment of Childhood Obesity

**Presentation Abstract:** Obesity is an epidemic in today's society and given the many associated negative health consequences, reducing the prevalence of obese youth is a public health priority. Many studies have investigated interventions for childhood obesity yet few have done so from the perspective of a family based behavioral model even though it has been shown to be an effective form of treatment ( Kalavainen, Korppi and Nuutinen, 2011). This poster will propose the use of Circumplex Model of family systems and the Integration of change of adaptability, cohesion, communication, and stress to address the complexities in the treatment of childhood obesity.

**Name:** Tiffany Cahoon

**Degree Program:** PASC

**Presentation Title:** Qualities of a Successful Marriage and Education Colide

**Presentation Abstract:** Not all questions have simple answers. What it takes to create successful change within a school system is a question that would warrant hundreds of different responses. Now consider the idea of marriage and what it takes to be successful. This is another example of a concept where simple answers do not exist. There is no cookie-cutter, one size fits all response for either question. One could even ask how the two are related. Upon closer consideration, it becomes more apparent that the idea of marriage and successful change within a school share a multitude of common threads. Qualities that are most commonly found within successful marriages are the same qualities needed to ignite sustainable changes within a school. Change takes time. It is not easy. Multiple components come into play when trying to promote change within a school structure. The following steps/qualities are what not only produce successful, sustainable change within a school but help make a successful marriage: communication, unity, vision, faith, short-term wins, and a commitment to staying true to yourself. We will explore each step individually and uncover how marriage and change in schools are “married” or interwoven ideas.

**Name:** Susan Rhyne

**Degree Program:** MACP

**Presentation Title:** Medical Family Therapy: Therapeutic Support of Couples and Families Dealing with Chronic Illness

**Presentation Abstract:** Couples and families undergo serious stressors when facing chronic illness. The purpose of this presentation is to explore the role of Medical Family Therapy as an aid in the balance of systems interactions as well as interprofessional collaboration. Discussion will focus on couples and the family as the unit of assessment and treatment. Therapy goals include: construction and maintenance of coping skills; and communication within the family unit and with healthcare professionals.

**Name:** Dan Marshall

**Degree Program:** MACP

**Presentation Title:** Attachment to God

**Presentation Abstract:** The Attachment System is one of the most influential aspects of relationship development among humans. Every person is born with an innate drive to connect with certain people in their lives in order to maintain safety, get their primary needs met, and have a sense of belonging through emotional connection to others. Primarily, these needs are met through significant relationships in people's lives, including; parents, grandparents, siblings, best friends, aunts and uncles, and romantic partners. However, people who align with a religion or spiritual belief system that consists of a personal deity can also get these needs met through a relationship with that deity. In Christianity, for example, God is typically understood as being a God who can be related to on some level through an emotional relationship. God is traditionally understood to consist of three persons; Father, Son, and Holy Spirit, each of which can serve as a relationship figure for people to connect with. The purpose of this presentation is to offer insight on the extent to which God might serve as a primary attachment figure. It will provide an overview of the current research literature pertaining to this topic. The presentation will focus primarily on attachment to the God of Christianity, as the majority of research surrounding this topic has been done from this perspective. The presentation will attempt to provide some understanding of how attachment relationships with God are formed and maintained, as well as the primary attachment functions behind these relationships.

**Name:** Rayelle Finlayson and Vanessa Areiza

**Degree Program:** MACP

**Presentation Title:** Three In The Bed: Presentation on co-sleeping and its effect on the marriage and family

**Presentation Abstract:** Co-sleeping is a heated debate in the U.S. with copious research published supporting both sides has been published (Okami, Weisner, & Holmstead, 2002). However, when considering the research, several interesting factors must be considered to help young parents do what is best for their child. Educated parents should be aware of other cultural practices, the risk factors involved with co-sleeping,

and the benefits of co-sleeping with their children. Research addressing these three factors supports co-sleeping as a viable option for many families when done safely.

## Graduate Student Poster Abstracts

**Name:** Kimber Serna

**Degree Program:** MACP

**Presentation Title:** Circumplex Model for the Treatment of Childhood Obesity

**Presentation Abstract:** Obesity is an epidemic in today's society and given the many associated negative health consequences, reducing the prevalence of obese youth is a public health priority. Many studies have investigated interventions for childhood obesity yet few have done so from the perspective of a family based behavioral model even though it has been shown to be an effective form of treatment ( Kalavainen, Korppi and Nuutinen, 2011). This poster will propose the use of Circumplex Model of family systems and the Integration of change of adaptability, cohesion, communication, and stress to address the complexities in the treatment of childhood obesity.

**Name:** Heather M. Jordan

**Degree Program:** MACP

**Presentation Title:** Supporting Parents of Children with Hearing Loss

**Presentation Abstract:** Supporting parents of deaf, or hard of hearing children as they find themselves creating a new cultural norm within their families is critical as they move through the stages of grief after their child's diagnosis (Luterman, 2006). This paper will examine how parents of a child with hearing loss approach each of the seven stages of grief and what can be especially helpful for them at each stage. It will also describe how using Pauline Boss' Theory of Ambiguous Loss when working with these parents can be incredibly beneficial for the whole family.

**Name:** Bethany Bishop

**Degree Program:** MACP

**Presentation Title:** Attachment Theory and Family Therapy

**Presentation Abstract:** This poster attempts to address the different forms of attachment in light of the Structural and Bowenian Family Therapy models. Bowlby was on the forefront of exploring attachment within family units. Bowenian family therapy and Structural Family therapy can take valuable insight from attachment theories and constructs. Attachment is an important area to understand as it relates to marriage due to it's impact on people and their relationships from the time they are young until they grow old. This poster will give a brief overview of Bowlby's Stages of attachment and also give the descriptions of four profiles from a study on adult attachment by Bifulco, Moran, Ball and Bernazzani(2002). These four profiles will be examined in their relationship to both Bowenian and Structural Family Therapy interventions and perspectives.

**Name:** Mark Sabo

**Degree Program:** MACP

**Presentation Title:** Levels of Differentiation and Marital Satisfaction

**Presentation Abstract:** It is the purpose of this poster to demonstrate, through a graphical representation, levels of differentiation in married couples (high-satisfactory vs low-dissatisfying). This poster will have some verbal descriptors as well as pictorial representations and statistical data on emotional fusion and self-differentiation in couples and their families of origin. This poster is a meta-study of similar research studies.