



UNIVERSITY OF
NEW ENGLAND

13th Annual Undergraduate Arts and Sciences
Research and Scholarship Symposium

Sponsored by the College of Arts and Sciences

May 4, 2012 | 9:30am - 3:00pm

9:30–11:30 am	Open House: Art Displays and Poster Presentations <i>Decary Upper Cafeteria</i>
11:30–Noon	Welcome Address: Dean Hey <i>Decary Cafeteria Function Room 2</i>
Noon- 12:20 pm	Lunch Break <i>Refreshments available on the second floor of Decary Hall</i>
12:20-3:00 pm	Honors Thesis and Oral Presentations <i>Decary 202, 203, 205, 208, 210, 212</i> <i>Presentation schedule enclosed in program</i>

Featuring Honors Thesis Presentations by:

Tyler Brown (Aquaculture - Marine Science)	Joseph Gousse (Political Science)
Vernon Chan (Chemistry & Physics)	Margaret Hutton (Marine Science)
Briana Chu (Education)	Ryan Knotek (Marine Science)
Karson Couture (Marine Science)	Brittany Morley (Psychology)
Daniel Crear (Marine Science)	Casey Toombs (Marine Science)

ART/POSTER PRESENTATIONS

9:30—11:30 am

13th Annual Undergraduate Research Symposium

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PRESENTATION 1

Airbrush, Acrylics, and Abstracts.

Presenter: Gavin Kuns

Advisor: Steven Travis

My display is a compilation of works of varying mediums. The subject matter is meant to be experiential and exploratory with hopes to make the viewer think.

PRESENTATION 2

3D Printing and Design

Presenters: Kevin Connell, Stephen Barton

Advisor: Andy Rosen

Using a kit bought from MakerBot industries, we constructed a 3D printer that can replicate any shape we upload using 3D graphing software. This cutting edge technology is still in its infancy in terms of practical applications, which continue to grow.

PRESENTATION 3

Giraffe Study

Presenter: Kimberly Hentz

Advisor: Sarah Gorham

This painting is the final image from a series featuring giraffes for Painting II.

PRESENTATION 4

Stakeholders of the Saco River

Presenter: Michael D'Apice

Advisor: Joe Habraken

This 20 minute documentary explores the relationship between businesses established along the estuary of the Saco River and how and why the healthy growth of local economy depends on the health of the River and vice versa.

PRESENTATION 5

Drift

Presenter: Nick Blunier

Advisor: Nancy Rankin

Sculptures created out of Driftwood found at local beaches

PRESENTATION 6

Can Art Reduce Stress? A Study of Art Making and Responses to a Stress Induction

Presenters: Nicholas Blunier, Rebecca Shedden, Nicole Bertone

Advisor: Julie Longua Peterson

This project explored whether making art (as compared to a control condition) could reduce the effects of a stress induction task on self-reported stress and mood.

PRESENTATION 7

Sibling Relationships and Birth Order's effect on Personality Development

Presenters: Alex Bellows, Kerri Grant, Lisa Manchen

Advisor: Amanda Hare

The presentation is taking a look at the relationship the siblings have with each other, both as adults and when they were children, and we will see if any type of relationship correlates with any personality types. Birth order is also being looked at to see if there is a correlation between birth order and personality development.

PRESENTATION 8

Channel Surfing for Mates: Using Video Playback to Assess Female Preference for Male Behavioral Strategy in Siamese Fighting Fish

Presenters: Alyssa M. Russell, Lindsay M. Forrette, Krystal L. Mannion

Advisor: Teresa Dzieveczynski

We assessed female mate choice preference for male behavioral strategy using video playback techniques and both sequential and simultaneous choice tests.

PRESENTATION 9

First Impressions: A Study of Canine (*Canis lupus familiaris*) Greeting Styles and Social Behavior

Presenter: Alyssa Russell

Advisor: Emily Chester

I observed the greeting styles of dogs in the local area and analyzed the social behavior for differences between American Kennel Club breed groups.

PRESENTATION 10

I Think you Have High Self-esteem, but am I Right?: Attachment Style and Perceptions of Romantic Partner's Self-Esteem

Presenters: Bethany Kay, Shelby Peterson

Advisor: Julie Longua-Peterson

This study examined how accurately one predicts their romantic partner's self-esteem compared to their romantic partner's self-evaluations. People who are high in attachment avoidance significantly underestimate their partner's self-esteem.

PRESENTATION 11

A Comparative Study Between Prey Item Variations in the Diet of Conspecific Great Horned Owls *Bubo virginianus* Residing in Different Ecological Home Ranges

Presenter: Borah Kim

Advisor: Emily Chester

This study examines the differences in diets between conspecific Great Horned Owls living in different ecological home ranges. A sample of Great Horned owl pellets collected in two different locations in Maine was dissected to identify and quantify the different prey items to be compared with published data from Colorado.

PRESENTATION 12

The Effect of Defendant Race and Crime Violence on Perception and Memory

Presenters: Brendan Brickley, Mallory Morin, Julian Kingsley

Advisor: Julie Longua Peterson

This project explored whether defendant race (Black vs. White) and Crime Violence (Violent vs. Non-violent) influence participants perceptions and memory of a crime.

PRESENTATION 13

Satisfaction in the Eye of the Beholder

Presenters: Brittany Gough, Maryanne Connolly, Alyssa Garvey, Amanda Scarpon

Advisor: Jennifer J. Stiegler-Balfour

This study compared participants' ratings of perceived relationship satisfaction of a couple, which was described as either having met through an online dating website or face-to-face in the park. The results showed that participant's attitudes toward relationships predicted how they rated other couple's happiness.

PRESENTATION 14

The Tidal Preference of the Common Mallard (*Anas platyrhynchos*)

Presenter: Casey Howley-Brigham

Advisor: Emily Chester

The current study examined whether the common Mallard (*Anas platyrhynchos*) had a preference for either low tide or high tide in the Back Bay of Biddeford Pool. Behaviors observed to enhance reasoning were resting and feeding. The results showed that the Mallards spent more overall time in the low tide and the amount of resting behaviors observed were significantly greater than feeding behaviors observed.

PRESENTATION 15

The Importance of Pointing Gestures and the Domestic Dog

Presenter: Christiana M. Booth

Advisor: Emily Chester

The present study looked at the influence of human pointing gestures directed towards pet dogs and shelter dogs using a food-discrimination experiment involving these simple pointing gestures. The results suggest that age and population have an effect on the outcome of pointing tasks.

PRESENTATION 16

Perceived Locus of Control and Beliefs in Psychokinesis

Presenters: Christiana M. Booth, Monique L. Guimond, Casey T. Howley-Brigham, and Leah B. Tustin

Advisor: Jennifer J. Stiegler-Balfour

The purpose of the current study was to examine whether participants' estimates of success of a die rolling task were predicted by their locus of control. The results revealed that when participants were actively involved in the task, individuals who scored higher on the internal locus of control measure gave higher estimates of their success than participants who scored lower on the internal locus of control measure.

PRESENTATION 17

Dyadic Problem Solving: Are Friends or Strangers better?

Presenters: Erica Page, Dearndra Galvin, Friedrich Kleinhempel, Allison Martin

Advisor: Julie Longua Peterson

This project explored the problem solving abilities of dyadic groups. We compared whether groups of friends are better or worse problem solvers than groups of strangers.

PRESENTATION 18

Perceived Paw Preference in the Domestic Dog Varies with Task

Presenter: Garret Barcheski

Advisor: Emily Chester

This study was conducted to expose the extent to which paw preference in the domestic dog is task dependent. Four of the most prevalent tests for paw preference were conducted on a small population of dogs each of which yielded contrasting results.

PRESENTATION 19

The Effects of Text Distracters on Comprehension in Skilled- and Less-skilled Readers

Presenters: Julia Rich, Hadleigh Smith

Advisor: Jennifer J. Stiegler-Balfour

To better understand the cognitive processes underlying reading comprehension, we examined what type of information (i.e., semantically related or -unrelated) is most distracting to readers and thus disrupting their comprehension of text. The results revealed that less-skilled readers are distracted by all irrelevant information whereas skilled readers only experienced interference when the distracter information was semantically related to the text.

PRESENTATION 20

Initial Characterization of the Reinforcing Effects of the Mixed-action Delta/ μ Opioid Receptor Glycopeptide MMP-2200 in Rats

Presenters: Julio Dutra, Phillip Atherton, Brooke Bell and Julie Barker

Advisor: Glenn Stevenson

Currently, there is great interest in developing novel delta opioid receptor drugs as pain relievers with the hope that this class of opioid has a reduced risk of abuse liability, relative to standard μ opioid receptor drugs like morphine and fentanyl. This study evaluated the reinforcing effects of the mixed-action delta/ μ agonist, MMP-2200 using a preclinical model of abuse liability, the drug self-administration procedure in rats

PRESENTATION 21

The Effect of Human Activity on the Behavioral Responses of Eastern Gray Squirrels (*Sciurus carolinensis*)

Presenter: Julissa Good

Advisor: Emily Chester

I recorded the distance at which a behavioral response is elicited from squirrels in two different location types; one high human activity level and one low human activity level.

PRESENTATION 22

The Relationship between Body Image, Self-Esteem, and Gender Roles

Presenters: Kayla Anderson, Shelby Peterson, Brett Peterson

Advisor: Amanda Hare

A correlational analysis of responses about body image, levels of masculinity and femininity, and self-esteem. Two age cohorts, first year students and fourth years students, will be compared based on collected responses to distributed surveys at an undergraduate institution.

PRESENTATION 23

Birdie See Birdie Do: Observational Learning and the Foraging Preference of Zebra Finches, *Taeniopygia Guttata*

Presenter: Kristin Catrano

Advisor: Emily Chester

This study examined the effects of observational learning on foraging preference in captive male zebra finches, a gregarious species.

PRESENTATION 24

Food Preference and Foraging Behavior of Grey Squirrels

Presenter: Kylie Galliani

Advisor: Emily Chester

Grey Squirrel foraging behaviors alter depending on what type of food they choose.

PRESENTATION 25

Escape Distances in Herring Gull Populations: UNE Campus v. Fortunes Rocks Beach

Presenter: Lauren Stephenson

Advisor: Emily Chester

Observational study looking at the difference in escape distance of herring gulls between the UNE campus and Fortunes Rocks Beach. I tested whether gulls from the UNE campus have a higher tolerance for human proximity than a population from Fortunes Rocks Beach.

PRESENTATION 26

Effects of Music Styles on Task Performance and Frustration Levels

Presenters: Lindsey Carleton, Elizabeth Graham, Kristin Catrano

Advisor: Amanda Hare

In this study we looked at the effects of different styles of background music on frustration levels and task performance in college students.

PRESENTATION 27

Becoming Aware: The Effect of Locus of Environmental Control on Anticipated Environmental Behaviors

Presenters: Lindsey Lavin, Hannah Tavella, Daniel O’Gorman

Advisor: Julie Longua Peterson

This project explored whether participants could be influenced to increase intentions to recycle and to report more control over their recycling behavior. Participants were assigned to one of three conditions (recycling fact sheet, recycling video, or control) and then reported on intentions to recycle and control over recycling behavior.

PRESENTATION 28

Competition Behaviors of Harbor (*Phoca vitulina*) and Grey Seals (*Halichoerus grypus*) during Feeding while in Rehabilitation

Presenter: Lisa Manchen

Advisor: Emily Chester

This study looks at agnostic behaviors and dominance relationships among seals during feeding.

PRESENTATION 29

Social Status and Conformity

Presenters: Lydia Colbert, Krista Maynes, Felicia Mazzone

Advisor: Amanda Hare

This project is on the correlational relationship between social status, social conformity, and conformity. Participants completed a survey and watched a few videos then were asked questions to see if they would conform to the three confederates.

PRESENTATION 30

Paw Preference in the Domestic Cat (*Felis silvestris catus*)

Presenter: Meaghan Richard

Advisor: Emily Chester

Presentation of research conducted on the paw preference of the domestic cat.

PRESENTATION 31

Predictors of Drug and Alcohol Use During the Transition to College: Parental Psychological Control and Student Rebelliousness

Presenter: Nicole Baker, Samantha Baker

Advisor: Amanda Hare

The transition into college can be a tumultuous time for adolescents as they leave home and emerge into adulthood. The purpose of this longitudinal study was to examine the ways in which parents’ use of psychological control and students’ predisposition to rebelliousness may predict increases in drug and alcohol use during this transition. Implications for academic adjustment are also discussed.

PRESENTATION 32

Social Networking and Relationships: The Influence of Attachment Styles and Self-Esteem on Facebook Use

Presenters: Samantha Baker, Jane Parker, Beth Giguere

Advisor: Amanda Hare

The purpose of this project is to investigate the ways in which attachment styles and self-esteem influence Facebook use and Facebook generated behaviors amongst undergraduate students.

PRESENTATION 33

Herring Gulls: Does Vigilance Decline with Increasing Group Size?

Presenter: Samantha Kelly

Advisor: Emily Chester

My project determines whether vigilance behavior decreases as group size increases in herring gulls.

PRESENTATION 34

The Effect of Mating Display Intensity on Likelihood of Copulation in the Mallard Duck (*Anas platyrhynchos*)

Presenter: Sara Winchenbach

Advisor: Emily Chester

This research project focused on whether an increase in duration or number of male Mallard mating displays lead to an increase in the number of overall copulations. Two common mating displays were observed and recorded for this study and a statistical analysis was performed to determine if there was a significant increase in number of copulations for males who performed more, or longer displays.

PRESENTATION 35

The Effect of Food Availability on Aggressive Behaviors in Feeder Birds

Presenter: Scott Deschenes

Advisor: Emily Chester

I am looking at how birds interact to other birds when access to food is limited.

PRESENTATION 36

Social Interaction in Cats: Does it Lead to Play Behavior?

Presenter: Stephen Barton

Advisor: Emily Chester

Project sought to discover if group oriented behavior led to play behavior.

PRESENTATION 37

The Role of Inhibition in Reading Comprehension Among Skilled and Less-Skilled Readers

Presenters: Tiffany Shahin, Michael Wilson

Advisor: Jennifer Stiegler-Balfour

A cued task-switching paradigm was used to assess skilled- and less-skilled readers' ability to inhibit irrelevant information to complete a task. The results of three experiments revealed that less-skilled readers not only took significantly longer to suppress irrelevant task information than skilled readers but were also unable to adapt to the switch task after several practice trials.

PRESENTATION 38

Facebook and the Big Five; The Role of Personality in Social Networking

Presenter: Andrew May, Samantha Binder, Alison Marchand

Advisor: Jennifer Stiegler-Balfour

The current study investigated the relationships among aspects of an individual's personality traits and their Facebook usage habits. Participants took a self-reported survey on their social networking habits and their personality, measured using the Big Five Inventory.

PRESENTATION 39

Hippocampus Disruption Caused by Lesion, but not Genetic Knockout, Disrupts Contextual Fear Conditioning in Mice

Presenter: Miles Hughes, Rose Jacobson, Cassandra Simmons, Lei Lei, Michael Burman

Advisor: Michael Burman

The goal of this project is to determine the neural substrates involved in the formation of traumatic memories. Conditional knockout mice were created using a dorsal forebrain progenitor cell-specific Cre-lox system to delete the SOX11 or KLF-7 genes. When these conditional knockout mice went through the learning task, there was no difference compared with control mice. However, mice with electrolytic lesions were impaired. We are currently examining the role that conditioning parameters, lesion size and trace interval duration play in this effect.

PRESENTATION 40

Development of Contextual Fear in Post-Weanling Conditioned Rats Associated with Enhanced Activation of the Perirhinal Cortex

Presenter: Maria Kuehl, Miles Hughes, Rose Jacobson, Cassandra Simmons, Kerri Grant, Lucas Bohn, Michael Burman

Advisor: Michael Burman

Our research seeks to identify the contribution of memory development to pediatric anxiety in rats. We focus on environmental (contextual) fear, and fear to a particular stimulus (cued fear). By examining c-Fos proteins, we can discern which structures were active in older vs. younger rats during these learning tasks. Overall, our data supports our hypothesis that emergence of contextual fear conditioning at PD 23 depends upon development of the perirhinal cortex.

PRESENTATION 41

Blue Jays Prefer Feeders Under High Tree Coverage

Presenter: Christina Buckman

Advisor: Emily Chester

Three feeders were placed in trees under different degrees of branch coverage and the number of visits Blue Jays made to each feeder were recorded.

PRESENTATION 42

Women in Baseball in the 1940s-1950s and Women in Baseball in the 1990s

Presenter: Christina Buckman

Advisor: Elizabeth DeWolfe

A comparison of women's experiences in baseball during WWII and in the 1990s.

PRESENTATION 42A

Exploring the Unconscious during Roommate Conflict: Satisfaction in Roommate Relationships Predicts Implicit Evaluations of the Roommate in Times of Threat

Presenter: Michelle Arkow, Beth Giguere, Lyle Vintinner

Advisor: Julie Longua Peterson

In a study of roommates at University of New England, we found that those roommates who are dissatisfied with their roommate relationship report decreased implicit, or unconscious, regard for that roommate when the relationship is threatened. Conversely, students whose relationship was not threatened do not differ in implicit roommate regard, regardless of how satisfied they are with their relationship.

PRESENTATION 43

Skin in a Can, Lips in a Tube: A History of Make-Up

Presenter: Lynsey Carr

Advisor: Elizabeth DeWolfe

A comparison of the use, popularity, and consumption of cosmetics between the 1920s and the 1950s.

PRESENTATION 44

Women in the Work Force; Secretary Work in the 1920s Versus Rosie the Riveter of the 1940s

Presenter: Aisling Donohoe

Advisor: Elizabeth DeWolfe

Research comparing the work of women as secretaries in the 1920s to the “Rosie the Riveter’s” of the 1940s and how feminine beauty played an important part in the work force.

PRESENTATION 45

False Confessions; False History

Presenter: Brittany Mayou

Advisor: Elizabeth DeWolfe

In 1993, three West Memphis, Arkansas boys all ages eights and under were brutally murdered. In 1994, Damien Echols, Jesse Misskelley, Jr., and Jason Baldwin, also known as the “West Memphis 3”, were convicted for these heinous crimes and sentenced to life in prison, and death. Almost twenty years later, history is being modified. The trial of 1994 led to the imprisonment of three falsely prosecuted boys, and a made-up history. This fabricated historical gap all originates from a forced confession from Jesse Misskelley pressured by law enforcement. Much research has been done on false confessions, but how does it relate to history? Inaccuracy of any kind, including a false confession in a trial results in insincere history.

PRESENTATION 46

Who Buys the Dress?: Gender Roles in Wedding Planning from 1920 to Today

Presenter: Jessie Roh

Advisor: Elizabeth DeWolfe

A look at changes and continuities in the roles of men versus women in planning the “big day.” Focused on 1920’s weddings and ceremonies of today.

PRESENTATION 47

Birth Control From Margaret Sanger to the Pill

Presenter: Katy Rabasco

Advisor: Elizabeth DeWolfe

A Look Back at Margaret Sanger’s Work in the 1920s and the Development of the Pill in the 1960s.

PRESENTATION 48

Women In Sports

Presenters: Molly Shannon, Craig Alaimo

Advisor: Elizabeth DeWolfe

This is the history of women between late 19th century and 2000 in the life of sports. This will show the participation of women in different sports.

PRESENTATION 49

Media, Feminism and the American Woman

Presenter: Samantha Fields

Advisor: Elizabeth DeWolfe

Feminism never died; it merely transitioned from a political focal point to a more socially cognitive focus. American women are influenced by the social and political culture of their time, simultaneously; the progression of these arenas has been greatly influenced by the women who feel oppressed by American society, culture and government.

PRESENTATION 50

American Fertility

Presenter: Sara Kindness

Advisor: Elizabeth DeWolfe

A look back at the struggles faced due to infertility in American women from the 1950's through today.

PRESENTATION 51

Comparative Analysis of the Effects of Distraction on Athletic Focus and Execution

Presenters: Kari Pelletier, Nicole Cayer, Michael Tiano, Emily Fougere, Edward Fabian

Advisor: Timothy Robinson

This research was undertaken to determine whether or not crowd size or fan interference impacts the focus and performance of athletes in a scoring situation. Athletes were asked to hit targets or make a basket, first with no distraction, and then with outsiders watching and making loud noises.

PRESENTATION 52

Analyses of Covariates in the Determination of Professional Athlete's Salaries within the United States: A Historical-Explanatory Perspective

Presenters: Lauren Ball, Tyler Crabtree, Nathan Frechette, Channing Tobey

Advisor: Timothy Robinson

Has the increase in athlete's salaries over the past sixty years been due to a boom in technological innovations that have enhanced media exposure? Have new laws and regulations directly impacted salaries in professional sports? This study aims to discover the causes for the tremendous rise in salaries of professional athletes in the four major sport leagues in the United States over the last sixty years.

PRESENTATION 53

The Use of Supplements Among Males and Females

Presenters: Sean Purdy, J.D. Winn, Brian Jones, Derek Arnold

Advisor: Richard LaRue

The purpose of the study is to discover if females use supplements for different reasons than males.

PRESENTATION 54

Classification and Assessment of Land Cover Change (1962- 2003) of the lower Saco River Watershed, Maine, U.S.A.

Presenter: Cassandra Smith

Advisors: Mark Adams, Michelle Steen-Adams

This project was developed in cooperation with the EPSCoR Saco River Estuary Project grant. The purpose of this project is to see how historical land cover, circa 1962, has changed up until 2003.

PRESENTATION 55

Minor Fitness Benefits for Edge Avoidance in Nesting Grassland Birds in the Northeastern United States

Presenter: David Perkins

Advisor: Noah Perlut

Learn about the effects of edge on the Savannah Sparrow, and Bobolinks.

PRESENTATION 56

Using Stomach Content and Stable Isotope Analysis to Identify Direct and Indirect Competition by Spiny Dogfish, *Squalus acanthias*, on Commercially Important Fish Species from Southern New England

Presenter: Anna Clabaugh

Advisor: James Sulikowski

This study investigates the diet of spiny dogfish and other groundfish species from Southern New England by examining stomach content and analyzing stable isotope ratios of muscle and liver samples. From these analyses we will gain a better understanding of direct and indirect competition and the trophic structure of Gulf of Maine.

PRESENTATION 57

Photo Identification of Whale Sharks (*Rhincodon typus*) and Evaluation of Whale Shark Tourism in Kilindoni, Mafia, Tanzania

Presenter: Royale Hardenstine

Advisor: Emily Dragon

As an independent study project while studying abroad with SIT in Tanzania, photo identification of whale sharks (*Rhincodon typus*) was performed. In addition, the developing tourism centered around the whale sharks in Kilindoni a small village on Mafia Island off the coast of Tanzania, was analyzed based on the code of conduct established there.

PRESENTATION 58

In Vivo Characterization of Two Novel Mu Selective and Reversible Neutral Opioid Antagonists in Rodent Models of Antinociception and Physical Dependence

Presenter: Amanda Braithwaite

Advisors: Edward Bilsky, John Streicher, Yan Zhang

Opioid use, abuse and addiction have risen dramatically over the past few years, and there is increased concern with the consequences of this exposure in both chronic pain patients and in individuals who are using these drugs recreationally. Our groups are interested in developing reversible and selective mu opioid antagonists that also exhibit neutral antagonist (rather than inverse agonists) profiles.

PRESENTATION 59

Glycosylation of Opioid Peptides: A Strategy for Developing Novel Treatments for Pain

Presenter: Lindsay St. Louis

Advisors: Edward Bilsky, John Streicher

Current pain management relies heavily on the use of opioid analgesics for the treatment of moderate to severe pain; consequentially it is associated with several negative side effects. The glycosylation of opioid peptides is a new strategy for developing novel treatments for pain and it has favorably shown to improve peptide stability and transport across the blood-brain barrier and into the central nervous system.

PRESENTATION 60

Functions of Transcription Factor Sox11 in Rodent Models of Inflammatory and Neuropathic Pain

Presenters: Aubrey White, Emilea Y. Lee, Jordan Faloon

Advisors: Lei Lei, Ling Cao, Edward Bilsky

We generated nociceptor-specific Sox11 conditional knockout (CKO) mice and are currently using these mice to test whether the upregulation of Sox11 after nerve injury is anti-nociceptive or pro-nociceptive in two nerve injury models. We are also testing whether Sox11 is involved in inflammatory pain. These studies might provide insight into the pathophysiology of neuropathic pain and inflammatory pain states and suggest novel treatment strategies.

PRESENTATION 61

Optimizing the Synthesis of 1,1-dimethyl-2,3,4,5-tetraphenylsilacyclopentadiene

Presenter: Abby Jones

Advisors: Amy Keirstead, Jerome Mullin

Siloles are substituted cyclopentadienes where a silicon atom replaces one of the ring carbons. This novel class of molecules has been found to have unusual electronic and photophysical properties. One of the most interesting aspects of siloles is that they exhibit aggregation-induced emission (AIE); in other words, their photoluminescence increases when they are forced to aggregate, in contrast to the aggregation-induced quenching that most luminophores exhibit. Consequently, siloles are being examined for use in electroluminescent devices and as chemical sensors. This poster will present advances towards optimizing the synthesis and purification of the silole 1,1-dimethyl-2,3,4,5-tetraphenylsilacyclopentadiene.

PRESENTATION 62

Fibroblast Growth Factor 1's Role in Preadipocyte Recruitment and Adipogenic Potential

Presenter: Jessica Archer

Advisor: Deena Small

The focus of this project was to determine if fibroblast growth factor 1 (FGF1) alters the number or differentiation potential of preadipocytes in mice. In addition, research was also completed to determine if FGF1 promotes the development of brown adipose tissue within the fat depot.

PRESENTATION 63

Effect of Fibroblast Growth Factor 2 on the Differentiation of Adipocytes

Presenter: Josephina V. Papailia

Advisor: Deena Small

Fibroblast Growth Factor – 2 (FGF2) is a growth factor essential for the formation of healthy blood vessels and adipocytes. In this study, we determined the effect that FGF2 had directly on the differentiation potential of adipocytes.

PRESENTATION 64

The Effects of Probe Density on DNA Hybridization in Microarrays

Presenter: Matthijs Van den Berg

Advisor: John Stubbs

Using Monte Carlo molecular simulations of multiple double-stranded DNA helices bound to a surface, this project investigated the effect of how close the DNA strands are to each other on their hybridization stability.

PRESENTATION 65

The Creation of Two, Stable Plasmid Constructs for Use in Testing the Activity of Thyroid Hormone Alpha

Presenter: Megan Bagdon

Advisor: Deena Small

This research was centered around the creation of two PGL4.17 plasmid constructs, one containing an Osteopontin (OPN) insert with an endogenous thyroid hormone receptor, and the other containing a smaller insert consisting of the thyroid hormone receptor itself and tandem repeats. These constructs will be used to determine the effects of poly-brominated diphenyl ethers on thyroid hormone alpha activity.

PRESENTATION 66

Investigating the Photochromism of Spiroprans in the Ionic Liquid [BMIM][BF₄]

Presenter: Sean Naughton

Advisor: Amy E. Keirstead

Ionic liquids are "green" solvents that may provide applications for molecular electronic devices such as switches. In this project, a spiropran molecule was used as a probe to investigate the properties of the ionic liquid using UV-Vis and emission spectroscopy.

PRESENTATION 67

Investigating the Behavior of Siloles in Ionic Liquids and Other Viscous Media

Presenters: Regina E. Scalise, Justin D. Crumrine, Caryn K. Prudente, Henry R. Tracy

Advisors: Jerome L. Mullin, Amy E. Keirstead

Quantifying the characteristics of ionic liquids has been a topic of interest because it will aid in the improvement of their efficiency in applications such as dye-sensitized solar cells. The photoluminescence of siloles is known to be solvent-dependent and the research here aims to use siloles as probe molecules to discover more about the polarity of ionic liquids.

PRESENTATION 68

The Effect of Solute Polarity on Solubility in Polyethylene Glycol with Varying Concentrations of Supercritical Carbon Dioxide

Presenter: Michael T. Huber

Advisor: John M. Stubbs

Molecular simulation was used to calculate the solubility of four different solutes in polyethylene glycol, as a function of supercritical carbon dioxide concentration. Solutes differed in terms of rigidity, polarity, and hydrogen bonding ability.

PRESENTATION 69

Differential Lumbar Spinal Cord Mononuclear Cell Responses Among Wild Type, CD4 Knockout, and CD40 Knockout Mice in Spinal Nerve L5 Transection-Induced Neuropathic Pain

Presenters: Adriana Eurich, Holly Beaulac

Advisor: Ling Cao

We have previously demonstrated that both lumbar spinal cord-infiltrating CD4⁺ T cells and lumbar spinal cord microglial CD40 contribute to the maintenance of mechanical hypersensitivity in the murine model of neuropathic pain spinal nerve L5 transection (L5Tx). To further delineate the CD4 and CD40-mediated mechanisms involved in the development of L5Tx-induced neuropathic pain behaviors, we examined the lumbar spinal cord mononuclear cells of wild type (WT) BALB/c, BALB/c-CD4 knockout (KO), and BALB/c-CD40 KO mice in time course studies via flow cytometry.

PRESENTATION 70

Non-Ventilatory Breathing Maneuvers Generate Error in Estimates of Breathing Parameters using Whole Body Plethysmography

Presenter: Megyn Beyer

Advisors: Renee LeClair, Andrew Binks

Measurement of breathing (rate and tidal volume) in animals can be confounded by behavioral respiratory maneuvers, such as sniffing or vocalization, particularly when automated analysis methods are used. To describe and resolve this problem we have defined the airflow characteristics of a sniff so to distinguish it from a normal tidal breath and consequently demonstrate the significant impact behavior can have on analysis of ventilation.

ORAL PRESENTATIONS

12:20-3:00 pm
 13th Annual Undergraduate Research Symposium
 Sponsored by the College of Arts and Sciences

SCHEDULE OF PRESENTATIONS

	Room 203	Room 205	Room 202	Room 208	Room 212	Room 210	
12:20-12:30	Good, Dvorak, Morley, Hotham Psychology Panel I	Dzis, Malsbury, Panaitiu, Violette English Panel		Faloon Pharmacology		Gildea Political Science	
12:30-12:40							
12:40-12:50				Coutré Thesis Marine	Chretien Environmental	Edwards Chemistry	Khromushki Political Science
12:50- 1:00							
1:00-1:10	Sleboda, Taatjes, Kaulback Psychology Panel II	Glynn English		C. Smith Marine	Brown Thesis Aquaculture /Marine	Leyden Political Science	
1:10-1:20				Crear Thesis Marine			
1:20-1:30					Spillane Marine		Winn Political Science
1:30-1:40							
1:40-1:50	Barton, Zannoni, Ashner Psychology Panel III	Tetreau History	Knotek Thesis Marine	Thompson Marine	Chan Thesis Chemistry	Sheaff Political Science	
1:50-2:00							
2:00-2:10		Bagdon History	Hutton Thesis Marine	Peterson Marine	Chu Thesis Education	Underwood Political Science	
2:10-2:20							
2:20-2:30		Ferrante History		K. Smith Marine		Mellen Political Science	
2:30-2:40	Morley Thesis Psychology / Sociology						
2:40-2:50		Kaulback Psychology	Toombs Thesis Marine		Gousse Thesis Political Science	Anderson Political Science	
2:50-3:00							

PSYCHOLOGY PANEL I: SCHOOL PROJECTS

12:20 – 1:00

Piloting Interventions to Improve Nutrition in Elementary School Students

Presenter: Julissa Good, Jesalyn Dvorak

Advisor: Maryann Corsello

Evaluating pilot interventions used to improve the BMI of students attending Atwood Primary School. Also analyzed results from the Family Nutrition and Physical Activity screening tool distributed to parents at the Second grade health fair at the school.

The ‘Go Grrrls’ Program: A Look at Findings from a Local Female Empowerment Group

Presenter: Brittany Morley

Advisor: Maryann Corsello

This presentation reports findings from a six-week female empowerment program within a local middle school. The program was aimed at at-risk 8th grade females to build social competencies and positive identity.

Analysis of the Maine Integrated Youth Health Survey (2009 and 2011) and its Use and Implications for a Maine High School

Presenter: Brandon Hotham

Advisor: Maryann Corsello

This project assisted in the analysis of data from the Maine Integrated Youth Health Survey (MIYHS) from the years of 2009 and 2011 for a Maine high school. The project aims to make use of this data in a functional way for the community members.

PSYCHOLOGY PANEL II: UNITED WAY PROJECTS

1:00 – 1:40

Toxic Stress and School-based Programs in York County

Presenter: Krystal-Kalene Sleboda

Advisor: Maryann Corsello

A review of the prevalence and effects of Toxic Stress in Maine and what school-based programs are being offered in York County to address these effects.

Child Abuse Prevention Programs in Maine

Presenter: Andrea Taatjes

Advisor: Maryann Corsello

This project focused on child prevention programs in the state of Maine and the effectiveness of these programs.

Evaluating Parent Education Programs in York County

Presenter: Katelyn Kaulback

Advisor: Maryann Corsello

Made possible through the REACH Collaborative, this project examined multiple parenting education programs in York County.

Survey of Parent Engagement

Presenter: Lauryn Barton

Advisor: Maryann Corsello

Evaluation of Parent survey data for the Greater Waterville Communities for Children and Youth (Youth Matter) for insight on how to achieve better parental communication and attendance.

Evaluating and Addressing Substance Abuse in a Diversion Program for Maine at-risk Youth

Presenter: Amanda Zannoni

Advisor: Maryann Corsello, Ph.D.

Identified a “medium” drug use in juvenile diversion programs (has used drugs before but is not a severe user or addict). Problem is prevalent and unaddressed. Created a research based program to address this issue, as well as the tools to evaluate the program’s effectiveness.

Parent Resource Center: Preparing People for the Most Important Job They Will Ever Have

Presenter: Rose Ashner

Advisor: Maryann Corsello

This project examined an already designed parent education program, the Parent Resource Center Inc. A weekly evaluation form was created and implemented along with evidence based pre and post test surveys to measure the effectiveness of the program through parent self-report.

HONORS THESIS**2:30 – 3:00****The Importance of Best Practices in Mentoring Relationships**

Presenter: Brittany Morley

Advisors: Maryann Corsello, Samuel McCreynolds

This Honors thesis explores the importance of three best practices within a single college community mentoring program. These practices include the duration of the mentoring relationship, mentoring structure, and the amount of mediating factors.

ROOM 205 *Listed in order of appearance.***ENGLISH COMP PANEL****12:20 – 1:20****Why Small Healthcare Practices Should Switch to EMRs**

Presenter: Alissa Dzis

Advisors: Michael Cripps, Eric Drown, Joseph Hessert, Joshua Pahigian

This project was a research paper that was based on the findings of whether or not small practices in the human healthcare field would benefit the same as large practices by switching to electronic medical records instead of the continued use of paper records.

Go Green, Make Green

Presenter: Katelyn Malsbury

Advisors: Michael Cripps, Eric Drown, Joseph Hessert, Joshua Pahigian

Discusses the benefits of the legalization of marijuana.

The Economist and Masculinity

Presenter: Ioana D. Panaitiu

Advisors: Michael Cripps, Eric Drown, Joseph Hessert, Joshua Pahigian

The presentation deals with how the financial publication perpetrates masculine and misogynistic values.

Father Sébastien Rasle: Friend to the Abenakis

Presenter: Renée Violette

Advisors: Michael Cripps, Eric Drown, Joseph Hessert, Joshua Pahigian

This research focused on the little-known story of an influential Jesuit missionary, Father Sébastien Rasle. Rasle lived among the Abenaki people during the late seventeenth and early eighteenth centuries and was a key figure in securing the Abenakis as allies of the French.

ORAL PRESENTATION

1:20 – 1:40

An Examination of How Celtic Lore, and in Particular; the Visual Motifs of the Book of Kells, are Reflected in the Lyric Poetry of W.B. Yeats and How This is Emblematic of an Irish Nationalism that Emerged in Irish Literature in the Early 1900s

Presenter: Constance Glynn

Advisor: Matthew Anderson

An examination of how Celtic lore, and in particular: the visual motifs of the Book of Kells, are reflected in the lyric poetry of W.B. Yeats and how this is emblematic of an Irish nationalism that emerged in Irish literature in the early 1900s.

ORAL PRESENTATION

1:40 – 2:00

Pecan Pies and Passion: 1940s Sexuality through the WWII Letters of Ruth Banfield Lowderback

Presenter: Caitlin Tetreau

Advisors: Beth DeWolfe, Cally Gurley

This paper was written for this year's Maine Women Writers Consortium Conference, which took place on March 31st. It examines the sexual nature of the letters of a WWII flight nurse and attempts to explain why women who worked during WWII were given increased sexual freedom.

ORAL PRESENTATION

2:00 – 2:20

Desertion in the Seventeenth Maine Regiment during the Civil War

Presenter: Megan Bagdon

Advisor: Elizabeth DeWolfe

This project explores the Seventeenth Maine Regiment's experiences with military desertion during the Civil War. The soldiers of the Seventeenth Maine held different views of deserters, based on the reason for desertion: cowards were spurned and scorned, while those who deserted to help their families at home were often seen as victims to be pitied. A soldier's rank in the Regiment complicated their beliefs and actions regarding desertion.

ORAL PRESENTATION

2:20 – 2:40

Food for Thought: Advertising Taste and the Evolution of Womanhood

Presenter: Anna Lisa D. Ferrante

Advisor: Elizabeth DeWolfe

An analysis of women featured in food advertisements from the 1900s to the 1960s

ORAL PRESENTATION

2:40 – 3:00

Psychological Control: The Implications of Differences in Parent and Child Perceptions for Adolescent Adjustment

Presenter: Katelyn Kaulback

Advisor: Amanda Hare

This longitudinal, multi-reporter study examines how differences in perceptions of student and parent behaviors of psychological control affect student emotional adjustment during their first year in college. Implications for academic success will also be discussed.

ROOM 202 *Listed in order of appearance.*

HONORS THESIS

12:30 – 1:00

Age and Size at Sexual Maturity of the Barndoor Skate, *Dipturus laevis*, based on Morphological Analyses

Presenter: Karson Coutré

Advisor: James Sulikowski

The objectives of the current study were to evaluate the age, growth and maturity of the barndoor skate and determine if density dependent changes in these life history parameters have occurred within the sampled population.

HONORS THESIS

1:00 – 1:30

Age Distribution of Six Shark Species within the Mississippi Sound Nursery Ground

Presenter: Daniel Crear

Advisor: James Sulikowski

The objectives of this study were to describe the age distribution and population structure of local shark species within the MS Sound over a three year period.

HONORS THESIS

1:30 – 2:00

Investigating Potential Reproductive Anomalies in the Spiny Dogfish (*Squalus acanthias*) along the United States East Coast

Presenter: Ryan Knotek

Advisor: James Sulikowski

This study aims to better understand how the reproductive biology of the spiny dogfish (*Squalus acanthias*) may be contributing to an observed population increase.

HONORS THESIS

2:00 – 2:30

Substrate Analysis, Juvenile Lake Sturgeon, and the Taxonomic Identification of Macroinvertebrates in the Detroit River – East of Fighting Island

Presenter: Margaret Hutton

Advisor: Charles Tilburg

A complete analysis of benthic composition including substrate and invertebrates was conducted in the Detroit River east of Fighting Island with a focus on lake sturgeon (*Acipenser fulvescens*) presences. The information is used to gain a better understanding of the life history of juvenile and young of year lake sturgeon.

HONORS THESIS**2:30 – 3:00****Differential Stress Tolerance of the Color Morphs in the Green Crab, *Carcinus Maenas****Presenter: Casey Toombs**Advisor: Markus Frederich*

An honors thesis presented to investigate the stress tolerance of the two color morphs of *Carcinus maenas* to the exposure of anoxia and hypoxia. This study measures both organismic parameters, including running endurance on a treadmill, and whole animal level parameters including HSP70 protein levels and AMPK activity.

ROOM 208 *Listed in order of appearance.***ORAL PRESENTATION****12:20 – 12:40****Targeting Novel FAAH Inhibitors for the Treatment of Chronic Pain***Presenter: Jordan Faloon**Advisors: Edward Bilsky, John Streicher*

This project investigates the analgesic potency and efficacy of two novel fatty acid amide hydrolase (FAAH) inhibitors in the treatment of two chronic pain states, inflammatory pain and neuropathic pain.

ORAL PRESENTATION**12:40 – 1:00****Grey Squirrel (*Sciurus carolinensis*) Habitat Use on the University of New England's Biddeford Campus***Presenter: Cody Chretien**Advisor: Noah Perlut*

This ecological study looks to understand squirrel habitat use and home ranges on UNE's Biddeford Campus. The research looks to compare home range differences between males and females, and individuals caught within the campus core are in the campus periphery.

ORAL PRESENTATION**1:00 – 1:20****Impact of Ocean Acidification on Predator Induced Defenses in Blue Mussels, *Mytilus edulis* and *M. Trossulus****Presenter: Christopher M. Smith**Advisor: Phillip Yund*

Investigates the impact of ocean acidification on two species of blue mussel and compares their abilities to respond to (*Carcinus maenas*) chemical cues.

ORAL PRESENTATION**1:20 – 1:40****Bacteria in the Saco River: Indicators of Watershed Health***Presenter: Tyler Spillane**Advisor: Stephan Zeeman*

The project involves the monitoring of indicator bacteria in the Saco River, to determine the health of the river. Data over the course of a year and a half will be presented; which includes experimental studies on the bacteria.

ORAL PRESENTATION**1:40 – 2:00****Steller Sea Lions, Will We Ever Know?***Presenter: Kelsey Thompson**Advisor: Kathryn Ono*

This presentation will review of the suspected causes for the decline of Steller sea lions in Alaska.

ORAL PRESENTATION**2:00 – 2:20****Determining the Gestation Period of Spiny Dogfish (*Squalus acanthias*) Using Ultrasound and Plasma Hormone Analysis***Presenter: Cassidy Peterson**Advisor: James Sulikowski*

My project is to develop a new methodology of monitoring the gestation period of live, captive spiny dogfish (*Squalus acanthias*) over their full pregnancy using two non-lethal methods: ultrasound imaging and steroid hormone analysis.

ORAL PRESENTATION**2:20 – 2:40****Evaluating the Saco Bay Estuary System as a Nursery Ground for Commercially Valuable and Ecologically Important Fish Species***Presenter: Kayla M Smith**Advisor: James Sulikowski*

Coastal river systems, such as the Saco River, are known to play an important role as fish nursery grounds for many marine species within the Gulf of Maine (GOM). Examining early life history characteristics and compiling an up to date baseline ecosystem structure of the significant species richness present in these waters is essential for future conservation and management of commercially important and threatened GOM fish stocks.

ROOM 212 *Listed in order of appearance.***ORAL PRESENTATION****12:40 – 1:00****Spectroscopic Characterization of a Series Substituted Siloles and Germales***Presenter: Katie A. Edwards**Advisor: Jerome Mullin*

Siloles have received much recent attention due to the unusual luminescence properties of many of the members of this class of compounds. The UV-Vis absorption and emission behavior, including luminescence quantum yields, luminescence lifetimes, and aggregation-induced emission (AIE) of several substituted siloles and germales will be reported and compared to each other and a tetraphenylsilole, with particular emphasis on the effects of the positions of substitution on the heteroatom core ring and the point of attachment of the substituents.

HONORS THESIS**1:00 – 1:30****The Breeding and Microhabitat of Sandlance (*Ammodytes americanus*)***Presenter: Tyler A. Brown**Advisor: Jeri L. Fox*

Sandlance, *Ammodytes americanus*, are an important trophic link between zooplankton and the top marine predators including many commercially important fishes, such as cod, haddock, and mackerel. Because of this, it is important to understand the life history and most notably, the spawning of these fish, such that they can be used as an appropriate food item for the aquaculture of these commercially important fish. The present study looks at the substrate preference of adult sandlances and incorporates the determination of appropriate substrate into an examination of possible induced spawning techniques.

HONORS THESIS**1:30 – 2:00****Computational Investigation and Nuclear Magnetic Resonance Spectroscopy Analysis of 6 β -Naltrexol Derivatives***Presenter: Vernon Chan**Advisors: Amy Deveau, John Stubbs*

In a previous attempt to synthesize derivatives of the mu opioid receptor antagonist naltrexol, an unexpected alkene product was formed. Quantum chemical calculations, transition state searches, and NMR analysis were utilized to better understand this surprising reaction.

HONORS THESIS**2:00 – 2:30****The Value of Cursive Writing: Teachers' Thoughts on its Current Usefulness***Presenter: Briana Chu**Advisor: Susan J. Hillman*

This research project investigates whether or not cursive writing is still being taught in schools as well as current teachers' attitudes and beliefs on the value of cursive writing. A survey was developed with twenty Likert-formatted attitudinal statements based on prior research identifying the benefits of cursive writing as well as two open-ended questions exploring whether cursive writing is taught and general feelings as to its usefulness.

HONORS THESIS**2:30 – 3:00****Institutionalized Racism and the Politics of Justice: Disproportional Incarceration of Native Americans in the State of Maine***Presenter: Joseph G. Gousse**Advisor: Ali Ahmida*

Institutionalized Racism and the Politics of Justice focuses on a little-discussed, often unknown issue that exists in Maine's contemporary prison system: racial disparity. This presentation will identify and explore the causal factors that have historically acted to create a social system which yields a disproportionately high number of incarcerated minority citizens in Maine, particularly those of Native American descent. Through the exploration of the Native American population's interaction with Maine's criminal justice system, state government, and general society, this presentation will provide a narrative of, and explanation for, the racial disparity that exists in Maine prisons today.

ROOM 210 *Listed in order of appearance.***ORAL PRESENTATION****12:20 – 12:40****College Education in America and the Middle Class: The Forces, Opportunities, and Politics Behind A round it***Presenter: Zachary Gildea**Advisor: Ali Ahmida*

This presentation will cover the forces that are driving middle class America to seek higher education. It will also discuss the opportunities and complications that come with a higher education.

ORAL PRESENTATION**12:40 – 1:00****The Struggle over Ukraine's Future: The Question of Integration with Russian Federation and the European Union***Presenter: Roman Khromushkin**Advisor: Ali Ahmida*

Analysis of particular events and forces which influence the political, social, and economic life of Ukrainian people as well as attempting to answer the meaning of Ukrainian national identity

ORAL PRESENTATION**1:00 – 1:20****James Scott, Social Media and the Politics of Mobilization: The 25th January 2011 Egyptian Revolution***Presenter: Kathryn Leyden**Advisor: Ali Ahmida*

As my senior thesis for the Political Science Department, I examine to what extent social media played a role in the January 25th Egyptian Revolution.

ORAL PRESENTATION**1:20 – 1:40****The Politics of Immigration – Two Cases from Texas and Arizona, and Immigration Reform in America***Presenter: Marcus Winn**Advisor: Ali Ahmida*

Immigration in the United States has been dealing with immigration from Mexico for hundreds of years, and up until the past 20 years has it become a big problem in America. Border States deal with it differently than everyone else because they are heavily affected by its influence. Texas and Arizona deal with the problem differently and this paper looks to explore why are some states are stricter and more aggressive handling the issue than others. Why is immigration a problem and what people saying about it, and what people are doing to try to "fix" the problem, in Texas and Arizona, and what this does for immigration reform going forward is what I am looking to address.

ORAL PRESENTATION**1:40 – 2:00****Recurrence of Punishment-as-Spectacle: Foucault and the UC Davis Pepper-Spraying***Presenter: Chase Sheaff**Advisors: Ali Ahmida, Jennifer Denbow*

The UC Davis pepper-spraying incident shocked many Americans and raised questions about police forces. Foucault's analysis is used to make sense of the situation and mark how far America has come from the age of punishment-as-spectacle.

ORAL PRESENTATION**2:00 – 2:20****Oil, Hegemony and the Making of American Foreign Policy towards Saudi Arabia 1938-1945***Presenter: Whitney Underwood**Advisor: Ali Amida*

This presentation will provide a critical analysis to the formulation of American foreign policy toward Saudi Arabia throughout the Second World War, and the extent to which it was influenced by oil. It will examine the international system through the lens of political theorist Michel Foulcault to discern the assimilation of American hegemony during this era.

ORAL PRESENTATION**2:20 – 2:40****Corporate Media, Language and Power: The New York Times Case and the 2003 Iraq War***Presenter: Courtney Mellen**Advisors: Ali Ahmida, Julie Mueller*

I applied Chomsky, Scott and Foucault's assessments about media filters, language and power to The New York Times editorials to examine how the Bush administration used the corporate media to strategically connect the 2003 Iraq war with the terrorist attacks of 9/11 to gain support for the Iraq invasion.

ORAL PRESENTATION**2:40 – 3:00****The Supreme Court's Resolution on Citizens United: Corporate Power and the Politics of Representation***Presenter: Matthew Anderson**Advisor: Ali Ahmida, James Roche*

Investigates the intended and unintended consequences of the Supreme Court ruling in the Citizens United Case. Investigates two cases on the California legislature and Montana State Court and how this was impacted by the Ruling. Determines how this case undermines the speech of individuals in the democratic system.