Virtual

Graduate Research
SYMPOSIUM

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& Creative Works

Idaho State University

IS | Idaho State University | Graduate School

20
20

April 6, 2020
9 AM - 2:45 PM

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Table of Contents

Virtual Agenda

Virtual "Check-In"
9:00 am

Welcome…Dr. Joanne Tokle & Dr. Adam Bradford   9:10 am

3 Minute Thesis   9:20 am - 10:00 am

Zoom Meeting: https://isu.zoom.us/j/708400811
Meeting ID: 708 400 811

Poster Sessions
 10:00 am - 12:00 pm

10:00 AM

Biological & Natural Sciences -Zoom Meeting: https://isu.zoom.us/j/844098547
     Meeting ID: 844 098 547

Health, Nutrition, & Clinical Sciences - Zoom Meeting:
https://isu.zoom.us/j/387988211
     Meeting ID: 387 988 211

11:00 AM

Humanities, Behavioral & Social Sciences -Zoom Meeting:
https://isu.zoom.us/j/789338470
     Meeting ID: 789 338 470

Engineering, Physical, Mathematical Sciences, & Education- Zoom Meeting:
https://isu.zoom.us/j/799455695
     Meeting ID: 799 455 695

"Social Distancing" Keynote Speaker Lunch
 Dr. Mia Tuan

12:00 pm - 1:00 pm

Join Zoom Meeting: https://isu.zoom.us/j/378664895
Meeting ID: 378 664 895

Oral Presentations
1:00 pm - 2:30 pm

Biological & Natural Sciences- Zoom Meeting: https://isu.zoom.us/j/798617991
Meeting ID: 798 617 991

*Humanities, Behavioral, & Social Sciences-*Zoom Meeting: https://isu.zoom.us/j/613608534
Meeting ID: 613 608 534

Education, Health, Nutrition, & Clinic Sciences- Zoom Meeting:
https://isu.zoom.us/j/279710953
Meeting ID: 279 710 953

Graduate Research Symposium is Sponsored by Idaho Central Credit Union.
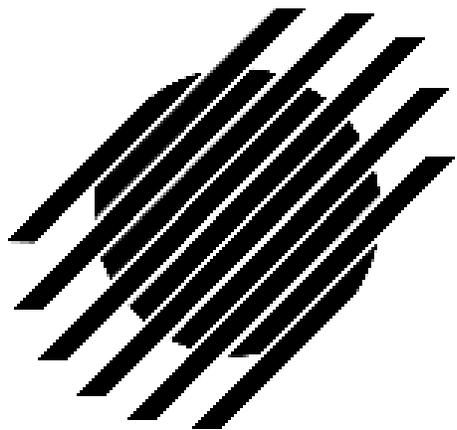
List of Presenters by Sessions

3MT Presentations

Presenter #	Presenters	Program	College	Type of Presentation	Category	Time	Zoom Link
1	**Hill, Sophie**	Biology (DA)	College of Science & Engineering	Three Minute Thesis	Biologic & Natural Sciences	9:20	https://isu.zoom.us/j/708400811
2	**Johnson, Sacha**	Instructional Design (PhD)	College of Education	Three Minute Thesis	Engineering, Physical, Mathematical Sciences & Education	9:25	https://isu.zoom.us/j/708400811
3	**Amin, Noran**	English & Teaching of English (PhD)	College of Arts & Letters	Three Minute Thesis	Humanities, Behavioral & Social Sciences	9:30	https://isu.zoom.us/j/708400811
4	**Williams, Paul**	English & Teaching of English (PhD)	College of Arts & Letters	Three Minute Thesis	Humanities, Behavioral & Social Sciences	9:40	https://isu.zoom.us/j/708400811

Oral Presentations

	Presenter #	Presenters	Program	College	Type of Presentation	Category	Start Time	Zoom Link
Biological & Natural Sciences	1	**Henderson, Stacy; Kobs Nawotniak, Shannon; Christiansen, Christiansen**	Geology (MS)	College of Science & Engineering	Oral Presentation	Biological & Natural Sciences	1:00 PM	https://isu.zoom.us/j/798617991
	2	**MacNeille, Ruth; Lohse, Kathleen; Smith, Smith**	Biology (DA)	College of Science & Engineering	Oral Presentation	Biological & Natural Sciences	1:00 PM	https://isu.zoom.us/j/798617991
	3	**Warix, Sara; Godsey, Sarah**	Geology (MS)	College of Science & Engineering	Oral Presentation	Biological & Natural Sciences	1:00 PM	https://isu.zoom.us/j/798617991
Education, Health, Nutrition, & Clinical Sciences	1	**Cantrell, Jared; Mashal, Mustafa; Ebrahimpour, Ebrahimpour; Acharya, Mahesh; Hogarth, Kathryn**	Civil Engineering (MS)	College of Science & Engineering	Oral Presentation	Education, Health, Nutrition, & Clinical Sciences	1:00 PM	https://isu.zoom.us/j/279710953
	2	**Johnson, Sacha**	Instructional Design (PhD)	College of Education	Oral Presentation	Education, Health, Nutrition, & Clinical Sciences	1:00 PM	https://isu.zoom.us/j/279710953
	3	**Shokrgozar, Ali; Clauson, Christopher; Ebrahimpour, Ebrahimpour; Mashal, Mustafa**	Civil Engineering (MS)	College of Science & Engineering	Oral Presentation	Education, Health, Nutrition, & Clinical Sciences	1:00 PM	https://isu.zoom.us/j/279710953
	4	**Afrin, Farjana; Pashikanti, Srinath; Obuch, Obuch; Dutta, Apurba**	Pharmaceutical Science (PhD)	College of Pharmacy	Oral Presentation	Education, Health, Nutrition, & Clinical Sciences	1:00 PM	https://isu.zoom.us/j/279710953
	5	**Fatema, Kaniz; Plyler, Shawn; Pavek, Pavek; Nartker, Chris; Wang, Yanliang; Jones, Kevin; Barrott,**	Pharmaceutical Science (PhD)	College of Pharmacy	Oral Presentation	Education, Health, Nutrition, & Clinical Sciences	1:00 PM	https://isu.zoom.us/j/279710953
	6	**Lane, William**	Counseling Ed & Counseling (PhD)	College of Health Professions	Oral Presentation	Education, Health, Nutrition, & Clinical Sciences	1:00 PM	https://isu.zoom.us/j/279710953
	7	**McCaw, Jennifer; Moffit, Dani; Meyers, Meyers**	Athletic Training (MSAT)	College of Education	Oral Presentation	Education, Health, Nutrition, & Clinical Sciences	1:00 PM	https://isu.zoom.us/j/279710953
Humanities, Behavioral & Social Sciences	1	**James Krzemieniecki, Anna; Sarasqueta-Allen, Kelsey**	Counseling Ed & Counseling (PhD)	College of Health Professions	Oral Presentation	Humanities, Behavioral & Social Sciences	1:00 PM	https://isu.zoom.us/j/613608534
	2	**Kim, Wonjeong**	English & Teaching of English (PhD)	College of Arts & Letters	Oral Presentation	Humanities, Behavioral & Social Sciences	1:00 PM	https://isu.zoom.us/j/613608534
	3	**Krzyzaniak, Sheherezade; Letzring, Tera; Biesanz, Biesanz; Hall, Judith**	Experimental Psychology (PhD)	College of Arts & Letters	Oral Presentation	Humanities, Behavioral & Social Sciences	1:00 PM	https://isu.zoom.us/j/613608534
	4	**Pedersen, Chloe**	Experimental Psychology (PhD)	College of Arts & Letters	Oral Presentation	Humanities, Behavioral & Social Sciences	1:00 PM	https://isu.zoom.us/j/613608534

Poster Presentations

	Presenter #	Presenters	Program	College	Type of Presentation	Category	Time	Zoom Link
Biological & Natural Sciences	1	Hill, Sophie	Biology (DA)	College of Science & Engineering	Poster	Biological & Natural Sciences	10:00AM	https://isu.zoom.us/j/844098547
	2	Khajeh Pour, Sana; Aghazadeh Habashi, Ali; Barrott, Barrott	Pharmaceutical Science (PhD)	College of Pharmacy	Poster	Biological & Natural Sciences	10:00AM	https://isu.zoom.us/j/844098547
	3	Kirkham, Matt; Kalivas, Austen; Fatema, Fatema; Luelling, Sarah; Dubansky, Brooke H.; Dubansky, Benjamin; Jones, Jared J.; Barrott, Jared J.	Pharmaceutical Science (PhD)	College of Pharmacy	Poster	Biological & Natural Sciences	10:00AM	https://isu.zoom.us/j/844098547
	4	Kline, Benjamen; Keeley, Ernest; Loxterman, Loxterman; Turner, Kathryn	Biology (MS)	College of Science & Engineering	Poster	Biological & Natural Sciences	10:00AM	https://isu.zoom.us/j/844098547
	5	Luelling, Sarah; Gardner, Timothy; Kirkham, Kirkham; Mottishaw, Christina; Barrott, Jared	Biology (DA)	College of Science & Engineering	Poster	Biological & Natural Sciences	10:00AM	https://isu.zoom.us/j/844098547
	6	MacNeille, Ruth; Lohse, Kathleen; Smith, Smith	Biology (DA)	College of Science & Engineering	Poster	Biological & Natural Sciences	10:00AM	https://isu.zoom.us/j/844098547
	7	Souza, Jennifer; Lohse, Kathleen; Schlegel, Schlegel; Warix, Sara; Murray, Erin; Godsey, Sarah; Cram, Mark; Seyfried, Mark	Geology (MS)	College of Science & Engineering	Poster	Biological & Natural Sciences	10:00AM	https://isu.zoom.us/j/844098547
Health, Nutrition, & Clinical Sciences	1	Afrin, Farjana; Pashikanti, Srinath; Barrott, Barrott; Lai, James	Pharmaceutical Science (PhD)	College of Pharmacy	Poster	Health, Nutrition, & Clinical Sciences	10:00AM	https://isu.zoom.us/j/387988211
	2	Allen, Brianna; Woods, David	Speech Language Pathology	College of Rehabilitation & Communication Sciences	Poster	Health, Nutrition, & Clinical Sciences	10:00AM	https://isu.zoom.us/j/387988211
	3	Bhattarai, Nirajan; Yeasmin, Sabina	Pharmaceutical Science (PhD)	College of Pharmacy	Poster	Health, Nutrition, & Clinical Sciences	10:00AM	https://isu.zoom.us/j/387988211
	4	Fatema, Kaniz; Plyler, Shawn; Pavek, Pavek; Nartker, Chris; Wang, Yanliang; Jones, Kevin; Barrott,	Pharmaceutical Science (PhD)	College of Pharmacy	Poster	Health, Nutrition, & Clinical Sciences	10:00AM	https://isu.zoom.us/j/387988211
	5	Argyle, Jonathan	Public Health (MPH)	College of Health Professions	Poster	Health, Nutrition, & Clinical Sciences	10:00AM	https://isu.zoom.us/j/387988211
	6	Gonzalez, Thomas; Scharp, Victoria; Brock, Brock; Horn, Elizabeth; Hardy, Amy	Speech Language Pathology	College of Rehabilitation & Communication Sciences	Poster	Health, Nutrition, & Clinical Sciences	10:00AM	https://isu.zoom.us/j/387988211
	7	Ranjit, Arina; Pour, Sana Khajeh	Pharmaceutical Science (MS)	College of Pharmacy	Poster	Health, Nutrition, & Clinical Sciences	10:00AM	https://isu.zoom.us/j/387988211
	8	Rodriguez, Luis; Richner, M.S., Danielle C.; Lynch, Ph.D., Lynch, Ph.D.; Rasmussen, Ph.D., Erin B.	Clinical Psychology (PhD)	College of Arts & Letters	Poster	Health, Nutrition, & Clinical Sciences	10:00AM	https://isu.zoom.us/j/387988211
Humanities, Behavioral & Social Sciences	1	Curiel, Victor	Historical Resource Management (MA)	College of Arts & Letters	Poster	Humanities, Behavioral & Social Sciences	11:00AM	https://isu.zoom.us/j/789338470
	2	Gibson, Jacob	Experimental Psychology (PhD)	College of Arts & Letters	Poster	Humanities, Behavioral & Social Sciences	11:00AM	https://isu.zoom.us/j/789338470
	3	Richner, Danielle	Clinical Psychology (PhD)	College of Arts & Letters	Poster	Humanities, Behavioral & Social Sciences	11:00AM	https://isu.zoom.us/j/789338470
	4	Thompson, Felicia; Hancock, Michelle	Historical Resource Management (MA)	College of Arts & Letters	Poster	Humanities, Behavioral & Social Sciences	11:00AM	https://isu.zoom.us/j/789338470
	5	Weber, Shelby; Lynch, Shannon	Clinical Psychology (PhD)	College of Arts & Letters	Poster	Humanities, Behavioral & Social Sciences	11:00AM	https://isu.zoom.us/j/789338470
	6	Bengtson, Lillian; Aubuchon-Endsley, Nicki	Clinical Psychology (PhD)	College of Arts & Letters	Poster	Humanities, Behavioral, Social Sciences	11:00AM	https://isu.zoom.us/j/789338470
Engineering, Physical, Mathematical Sciences & Education	1	Allen, Necoline; Goss, Lisa	Chemistry (MS)	College of Science & Engineering	Poster	Engineering, Physical, Mathematical Sciences & Education	11:00AM	https://isu.zoom.us/j/799455695
	2	Elder, Brett; Hillman, Michelle; Bocanegra, Joel	School Psychology (EDS)	College of Education	Poster	Engineering, Physical, Mathematical Sciences & Education	11:00AM	https://isu.zoom.us/j/799455695
	3	Grasso, Kyla	Geology (MS)	College of Science & Engineering	Poster	Engineering, Physical, Mathematical Sciences & Education	11:00AM	https://isu.zoom.us/j/799455695
	4	Johnson, Sacha	Instructional Design (PhD)	College of Education	Poster	Engineering, Physical, Mathematical Sciences & Education	11:00AM	https://isu.zoom.us/j/799455695
	5	Shokrgozar, Ali; Clauson, Christopher; Ebrahimpour, Ebrahimpour; Mashal, Mustafa	Civil Engineering (MS)	College of Science & Engineering	Poster	Engineering, Physical, Mathematical Sciences & Education	11:00AM	https://isu.zoom.us/j/799455695

Keynote Speaker

Mia Tuan, Ph.D., Professor and Dean

A respected scholar and long-time academic leader, Dr. Mia Tuan assumed the deanship of the University of Washington College of Education on July 1, 2015.

She previously served as associate dean of UO's Graduate School, director of its Center on Diversity & Community, and director of the sociology department's honors program. Tuan joined UO's sociology faculty in 1996, and in 2007 joined the College of Education. Tuan has won numerous academic awards, including the 2012 Western Association of Graduate Schools (WAGS) and Education Testing Services (ETS) Award for Excellence and Innovation, for Diversifying Graduate Education in STEM Disciplines.

Tuan's research focuses on racial and ethnic identity development, Asian transracial adoption, and majority/minority relations. She is the author of numerous scholarly articles and three books, *Choosing Ethnicity, Negotiating Race: Korean Adoptees in America; Prejudice in Politics: Group Position, Public Opinion and the Wisconsin Treaty Rights Dispute*; and *Forever Foreigners or Honorary Whites? The Contemporary Asian Ethnic Experience*.

Tuan received her bachelor's degree in sociology from the University of California, Berkeley, and her master's and doctorate in sociology from UCLA.

List of Participants

College of Arts & Letters

English
Noran Amin (English & Teaching of English - PhD)
Wonjeong Kim (English & Teaching of English - PhD)
Paul Williams (English & Teaching of English - PhD)

History
Victor Curiel (Historical Resource Management - MA)
Michelle Hancock (Historical Resource Management - MA)
Felicia Thompson (Historical Resource Management - MA)

Psychology
Nicki Aubuchon-Endsley (Clinical Psychology - PhD)
Lillian Bengtson (Clinical Psychology - PhD)
Erin B. Rasmussen, Ph.D. (Clinical Psychology - PhD)
Danielle Richter, M.S. (Clinical Psychology - PhD)
Shelby Weber (Clinical Psychology - PhD)
Jacob Gibson (Experimental Psychology - PhD)
William Hynes (Experimental Psychology - PhD)
Sheherezade Krzyzaniak (Experimental Psychology - PhD)
Chloe Pedersen (Experimental Psychology - PhD)
Maria Wong (Experimental Psychology - PhD)

College of Education

Organizational Learning & Performance
Sacha Johnson (Instructional Design - PhD)

School Psychology & Educational Leadership
Joel Bocanegra (School Psychology - EDS)
Brett Elder (School Psychology - EDS)
Michelle Hillman (School Psychology - EDS)

Sport Science and Physical Education
Jennifer McCaw (Athletic Training - MSAT)
Dani Moffit (Athletic Training - MSAT)

College of Science & Engineering

Biological Sciences
Sophie Hill (Biology - DA)
Kathleen Lohse (Biology - DA)
Ruth MacNeille (Biology - DA)
Rosemary Smith (Biology - DA)
Rachel Brinkley (Biology - MS)
Benjamen Kline (Biology - MS)

Chemistry
Necoline Allen (Chemistry - MS)
Katherine Obuch (Chemistry - MS)

Civil, Environmental, & Mechanical Engineering
Mahesh Acharya (Civil Engineering - MS)
Jared Cantrell (Civil Engineering - MS)
Christopher Clauson (Civil Engineering - MS)
Kathryn Hogarth (Civil Engineering - MS)
Mustafa Mashal (Civil Engineering - MS)
Bruce Savage (Civil Engineering - MS)
Ali Shokrgozar (Civil Engineering - MS)
Anish Sebastian (Mechanical Engineering - MS)

Engineering & Applied Sciences
Uma Shankar Medasetti (Engineering & Applied Science - PhD)

Geosciences
Sarah Godsey (Geology - MS)
Kyla Grasso (Geology - MS)
Stacy Henderson (Geology - MS)
Jennifer Souza (Geology - MS)
Sara Warix (Geology - MS)

College of Health Professions

Community & Public Health
Jonathan Argyle (Public Health - MPH)

Counseling
Elizabeth Horn (Counseling Ed & Counseling - PhD)
Anna James Krzemieniecki (Counseling Ed & Counseling - PhD)
William Lane (Counseling Ed & Counseling - PhD)
Kelsey Sarasqueta-Allen (Counseling Ed & Counseling - PhD)

College of Pharmacy

Arina Ranjit (Pharmaceutical Science - MS)
Farjana Afrin (Pharmaceutical Science - PhD)
Ali Aghazadeh Habashi (Pharmaceutical Science - PhD)
Jared Barrott (Pharmaceutical Science - PhD)
Nirajan Bhattarai (Pharmaceutical Science - PhD)
Kaniz Fatema (Pharmaceutical Science - PhD)
Kevin B. Jones (Pharmaceutical Science - PhD)
Austen Kalivas (Pharmaceutical Science - PhD)
Sana Khajeh Pour (Pharmaceutical Science - PhD)
Matt Kirkham (Pharmaceutical Science - PhD)
James Lai (Pharmaceutical Science - PhD)
Srinath Pashikanti (Pharmaceutical Science - PhD)
Sabrina Yeasmin (Pharmaceutical Science - PhD)

College of Rehabilitation & Communication Sciences

Communication Sciences & Disorders
Brianna Allen (Speech Language Pathology - MS)
Kristofer Brock (Speech Language Pathology - MS)
Thomas Gonzalez (Speech Language Pathology - MS)
Amy Hardy (Speech Language Pathology - MS)
Victoria Scharp (Speech Language Pathology - MS)
David Woods (Speech Language Pathology - MS)

Thank you for participating in our 1st Virtual Graduate Research Symposium. Participants will be notified via email of the list of winners following the event. More information to follow…

Abstracts

Afrin, Farjana; Pashikanti, Srinath; Obuch, Obuch; Dutta, Apurba
Faculty Mentor: Dr. Srinath Pashikanti
Subject: Health, Nutrition & Clinical Sciences
Category(ies): Presentation Session

A revised approach to design, synthesis & evaluation of Phthalimide based Sphingosine Kinase Inhibitors.
Sphingosine-1-phosphate (S1P) belongs to the Sphingolipid family which regulates growth, survival, and migration of several cell types. S1P is a ligand for five transmembrane G-protein –coupled receptors, S1P1-5 and for several intracellular targets such as histone deacetylases 1 and 2. Sphingosine kinase (SphK) enzyme is the enzyme responsible for transforming Sphingosine to Sphingosine-1-Phosphate. SphKs have been implicated in a variety of diseases such as cancer, sickle cell disease, atherosclerosis, asthma, diabetes, and fibrosis.
My current efforts included utilizing heteroaromatics which are synthetically stable and have improved solubility (for example, phthalimide). Retaining Structural features of previously synthesized SphKII inhibitor, a rigid phthalimide linker was introduced as the linker of the SphKII analog design. Phthalimide derivatives possess anticancer, antibacterial, antifungal, and analgesic properties. The imide functionality [-CO-N(R)-CO] in phthalimide makes it hydrophobic and neutral to cross different biological membranes in vivo.

In the current scheme, I have developed 5-substituted-phthalimide based analogs towards targeting sphingosine (SphK) kinase enzyme. A Sonogashira coupling strategy was employed towards the synthesis of the new C-C bond. Then regioselective reduction was performed to convert the alkyne chain into alkyl chain. Mitsunobu reaction was performed to introduce the head group. Then standard Boc deprotection allowed me to move forward with the next step. Microwave irradiation was performed to add guanyl moiety to the head group. Finally, the standard Diboc deprotection gave me the final compound.
Several alkyls, aryl substituted Pthalimide analogs were synthesized using the established scheme. The biological significance of the synthesized compounds will be discussed.
Phthalimide structural motif was utilized in several biologically relevant systems. The scheme involves utilizing alkyl groups with different chain lengths, bulky groups amenable towards synthesis. Structure-Activity Relationship studies will be guided based on the in-vitro based sphingosine kinase assays.

Afrin, Farjana; Pashikanti, Srinath; Barrott, Barrott; Lai, James
Faculty Mentor: Srinath Pashikanti
Subject: Health, Nutrition & Clinical Sciences
Category(ies): Poster Session

Development of assay for quantification of Cellular Ceramide utilizing fluorescently labelled C6-NBD-Ceramide.
Anhydrophytosphingosine, jaspine B is a marine natural product, exhibited sub-micromolar cytotoxicity (IC50 ≤ 0.5 µM) in several cancer cell lines. Jaspine B induced dose- and time-dependent increases in apoptosis in murine B16 and human SK-Mel28 melanoma cells. Preliminary biochemical studies have identified that jaspine B inhibited Sphingomyelin Synthase (SMS) resulting in increased intracellular ceramide levels and initiating apoptotic events in the cancer cells. The main objective of this project is to develop inhibitors targeting SMS. The design of these analogs involves retaining the SMS substrate/cofactor/ enzyme transition state structural features towards improving potency. Analogs with a closer resemblance of an enzyme transition state might exhibit selectivity and potency. In this current study, we are developing a bench-top assay system towards quantification of cellular ceramide utilizing jaspine B.
Experimental design involves treatment of cells with fluorescent-labelled ceramide analog C6-NBD Ceramide. Sphingomyelin synthase activity results in the formation of fluorescent-labeled C6-NBD Sphingomyelin. Quantification of cellular C6-NBD-Sphingomyelin is used to study the activity of sphingomyelin synthase. Higher expression of ceramide metabolizing enzymes is observed in cancer cells. Sphingomyelin synthase is one of the ceramide metabolizing enzymes and small molecules targeting SMS exhibit anticancer potential. A bench top non-radioactive assay will help to screen SMS analogs in a time efficient manner.
The results of the assays performed using different types of cell lines & microsomal fractons will be discussed.

Allen, Brianna; Woods, David
Faculty Mentor: David Woods
Subject: Health, Nutrition & Clinical Sciences
Category(ies): Poster Session

The Use of Visual Phonics with a Child with Normal Hearing but Limited Verbal Output and 16p11.2 Microdeletion Syndrome
Intervention for children with rare chromosomal disorders is not often well-documented. This case report describes the initial stages of speech-language treatment for a single participant with a partial chromosomal deletion. Treatment integrated methods typically used for deaf and hard-of-hearing populations. The current case report involved a hearing 5:5-year-old male with a medical diagnosis of proximal 16p11.2 Deletion Syndrome, and a clinical diagnosis of both an articulation disorder and expressive language disorder. Initial treatment involved a communication device, but was replaced with sign language (ASL) and visual phonics. The participant was enrolled for a half day each in a mainstream classroom and a deaf education classroom. The 16p11.2 microdeletion syndrome is caused by a recurrent partial deletion on chromosome 16 (Hennekam, 2013). Prevalence is estimated at .5% (Raca et al, 2012). This syndrome can present clinically with various developmental and language delays (Kumar, et al., 2007).
Visual Phonics incorporates "visual, auditory, tactile, and kinesthetic representations of sound" (Waddy-Smith & Wilson, 2003) into 46 hand-shaped cues and movements that represent English phonemes (Montgomery, 2008). It is an instructional tool rather than a communication modality; therefore, it can be used in both oral and signing environments (Smith & Wang, 2010). Visual phonics were employed to teach correct speech sounds in word shapes. Spoken vocabulary and word combinations were also targeted. Quantitative measures were used to assess progress.

Results after 14 weeks of intervention showed spoken sound combinations improved from imitating segmented words to complete CVC and CVCV words with bilabials. Spoken vocabulary increased by 25 words. The participant combined words into short carrier-phrase utterances given direct models.
This case report supports the hypothesis that visual phonics in intervention can increase articulatory accuracy and spoken vocabulary growth for a child with normal hearing.

Allen, Necoline; Goss, Lisa
Faculty Mentor: Lisa Goss
Subject: Engineering, Physical & Mathematical Sciences
Category(ies): Poster Session

Characterization of polyacrylamide used as a solid calibration material in photon activation analysis
Photon activation analysis (PAA) is a nondestructive technique for the elemental analysis of solid materials. Nuclei within a sample and a calibration material of known composition are activated via photonuclear reactions. Then, gamma spectrometry is performed on the sample and calibration material, and this allows measurement of the elemental content. Suitable calibration materials are limited in composition and their cost prohibits wide use of the technique (Segebade, Weise, & Lutz, 1988).
Development of calibration material in which the elemental composition could be customized for each analysis would allow wider use of PAA. A solid, homogeneous matrix is required for the calibration material. Polyacrylamide was selected for use as a solid matrix. A homogeneous, aqueous solution of target elements and acrylamide can be polymerized using an electron beam. This ensures both purity and homogeneity of the calibration material during polymerization.

For development purposes, linear and crosslinked polyacrylamide were polymerized using two methods of chemical initiation: reduction-oxidation initiation and atom transfer radical polymerization. The focus of this research has been to characterize polymers by analyzing thermal stability, level of cross linking, size for linear polymers, conversion rate, crystallinity, and presence of the amide groups within the polyacrylamide.
Chemically initiated polymers were analyzed using the following techniques. Thermogravimetric analysis (TGA) of both linear and crosslinked polyacrylamide showed clear differences between linear and crosslinked polymers. The tea bag swelling method showed crosslink densities varied depending on crosslink:monomer ratio. Kinematic viscometers were used to determine a range of sizes which varied with polymerization method and

monomer:initiator ratio. Conversion rates were used to investigate the overall efficiency of the reaction over time and to determine the reaction times for desired sizes.

Infrared spectroscopy showed that the amide groups remained intact even after the polymers were oven dried. X-ray diffractometry showed most samples were amorphous. This information will aid in determining methods necessary for characterization of the calibration material prepared via electron beam polymerization.

The calibration material polymers can now be synthesized and characterized as the research moves forward. After synthesis of electron beam initiated polyacrylamide it is important to determine its solubility. For soluble polymer samples, viscometry should be used to determine size; and swelling data should be gathered for insoluble samples or portions of samples. Structural information should be determined using FT-IR and 1H NMR analyses. TGA and DSC should be used to ensure the ranges of thermal stability for electron beam initiated polymers. XRD should only be used on samples with metals incorporated. In using these characterization techniques, the polymer matrix of PAA calibration materials can be characterized as part of quality assurance for the finalized product.

Amin, Noran
Faculty Mentor: Matthew Levay
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Three Minute Thesis

The Superpowers of the Interrogative Mode

My work addresses the question of how teachers today are in dire need of instruction on how to teach comics as a medium. The question of how to teach different subjects through comics has been answered extensively over the past few decades through scholarly texts that view comics as a teaching tool and not necessarily as a medium whose format is inherently worthwhile, on its own terms. The question that still needs to be discussed more thoroughly, though, is how to teach students to read, interpret, and critique the medium itself. Because of the scarcity of pedagogy scholarship that focuses on form rather than content, many comics teachers go to class with the assumption that reading comics is intuitive. However, when they start teaching, they discover that this assumption is false; students need scaffolding techniques that lead them through the process of reading visuals.

My dissertation presents an approach I devised for analyzing and teaching comics that I term "the interrogative mode." The interrogative mode presents various sets of questions that scrutinize different aspects of comics: page and panel layouts, time, visual-verbal synergy, just to name a few. Those questions braid different comics critics' propositions with comics creators' statements that currently seem unrelated. Thus, the interrogative mode provides different lenses for examining the medium, which can lead to a more comprehensive analysis of comics.

The interrogative mode solves the problem by supplying teachers with the superpowers required for facilitating the process of reading comics for newbies.

Argyle, Jonathan
Faculty Mentor: Diana C. Schow
Subject: Health, Nutrition & Clinical Sciences
Category(ies): Poster Session

Understanding Sexual Misconduct Policies at Institutions of Higher Education: A Content Analysis of Literature

Sexual misconduct is a prevalent issue at institutions of higher education (IHEs). A great amount of policies and research have been devoted to understanding and addressing it, but it can still be a somewhat difficult task to know what to include or evaluate in policies for IHEs. This is partially attributed to the complexity of the guidance received at the federal level, along with the shifting policy landscape. For example, in 2017, the U.S. Department of Education's Office for Civil Rights rescinded 2011 and 2014 Title IX guidance. This left IHEs subject to implementing a mixture of guidance from 2001, 2006 and 2017. In order to gain a better understanding of past assessments of the appropriateness and effectiveness of sexual misconduct policies at the IHE level, a review of federal policies and policy content analyses was conducted. The questions asked in this review included: What considerations are made in the analyses of IHE sexual misconduct policies and approaches? What are some fundamental requirements written in federal sexual misconduct policies to which IHEs must adhere?

Eighteen documents were purposefully selected for review, including two policy documents and sixteen evidence-based research articles relating to sexual misconduct policies at IHEs. Inter-rater reliability was achieved by having two researchers collaborate in a process of extracting and revising relevant themes from the literature. This was done utilizing a qualitative evaluation software called HyperResearch.

In fine, twenty-seven themes emerged from the content analysis. These were then categorized into five groups: post-incident response for victims, timely investigation and resolution, pro-active approaches to sexual misconduct, rights for both parties post-incident, and stakeholders involved in addressing sexual misconduct.

Findings from this research can help guide future policy studies and content analyses at IHEs in the state of Idaho and elsewhere.

Bengtson, Lillian; Aubuchon-Endsley, Nicki
Faculty Mentor: Nicki Aubuchon-Endsley
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Poster Session

Maternal trauma, markers of HPA axis dysregulation, prenatal depression, and breastfeeding
Exposure to traumatic life events is associated with a host of negative effects for women in the perinatal period, including increased prenatal depressive symptomatology and dysregulation of the body's hypothalamic-pituitary-adrenal (HPA) axis and the primary human stress hormone,cortisol. Research suggests that trauma and its related consequences also are closely tied to women's ability to meet standard recommendations for breastfeeding, a crucial component for both maternal and infant health. Dysregulated cortisol production may mediate the relationship between trauma and breastfeeding outcomes, as cortisol is associated with both the biological mechanisms of breastfeeding as well as stress responses that may influence breastfeeding behavior. Furthermore, depressive symptoms may moderate this relationship. Specifically,the experience of more depressive symptoms in addition to dysregulated cortisol production can present a further barrier to successful breastfeeding.

Utilizing data collected from a community sample of 125 women residing in a health professional shortage area for mental health who completed the IDAHO Mom Study, the proposed study will investigate a moderated mediation model of relations among maternal trauma(primary predictor), prenatal cortisol awakening response(mediator), prenatal depressive symptomatology (moderator), and postpartum breastfeeding duration and exclusivity(outcomes). Data collection is complete, but results have yet to be analyzed.

Results would further understanding of the biological mechanisms behind trauma-related breastfeeding difficulties. Furthermore, findings may help clarify relationships between trauma and mental health as pertain to breastfeeding outcomes. Understanding these relationships would allow for prenatal identification of women potentially in need of additional breastfeeding support postpartum, as well as improve knowledge about perinatal healthcare needs in Health Provider Shortage Areas (HPSAs).

Bhattarai, Nirajan; Yeasmin, Sabina
Faculty Mentor: Marvin K Schulte
Subject: Health, Nutrition & Clinical Sciences
Category(ies): Poster Session

Peptides Derived from Rabies Glycoprotein as Potential Therapeutics Against Clinical Rabies
The fatality rate associated with rabies is 100% with fifty-five thousand annual reports of human death. Although rabies can be successfully combated with preventive measures, including pre- and post-prophylaxis (PrEP and PEP) treatment, it still causes a death every 10-20 minutes with a child mortality rate (<15 yrs) of 40-50 %, in developing countries in Africa and Asia. Once observable clinical symptoms arise the disease is nearly 100% fatal. There are currently no available treatment options for the clinical rabies stage, thus palliative care is the only option left for victims.

The development of therapeutics for clinical rabies has been impeded by a lack of knowledge of the molecular mechanism of rabies in the CNS. Nevertheless, it has been documented that the short ectodomain of rabies glycoprotein (RGP) is homologous to three-fingered snake toxins such as bungarotoxin. RGP, binds to the orthosteric binding site of nicotinic acetylcholine receptors (NAChR), antagonizing function and altering host behavior. Specifics of this interaction are unknown and the role of nicotinic receptor inhibition in CNS dysfunction resulting from rabies infection has not been determined.

The goal of our research is to use small peptides derived from RGP to study the molecular basis of the RGP/nAChR interaction. This information can be used as the basis for the rational drug design of peptides and peptidomimetics that may provide treatment for clinical rabies by displacing viruses from the receptors and restoring function. To achieve the goal, we have formulated three aims. 1) evaluate the selectivity of rabies glycoprotein for neuronal

nAChRs. 2) determine key residues present in nAChR that are critical to binding and selectivity of RGP and 3) model and optimize peptide ligands by reducing flexibility and maximizing the strength of interactions. A preferred drug would be one that displaces RGP without inhibiting the receptor.

This research will provide new information about the interaction between different nAChR subtypes and the RGP, create a pharmacophoric model for peptide ligands, identify the functional effects of these ligands and produce potential lead molecules for the treatment of clinical rabies.

Brinkley, Rachel; Finney, Bruce
Faculty Mentor: Rachel Brinkley
Subject: Biological & Natural Sciences
Category(ies): Poster Session

ESTIMATING HISTORICAL SOCKEYE SALMON ABUNDANCE USING STABLE ISOTOPES AND SEDIMENT CORES
Idaho's sockeye salmon (Oncorhynchus nerka) have been virtually extirpated due pressures from a number of factors including commercial harvest, the development of the hydropower system, and the introduction of non-native species. Since the Snake River Sockeye Salmon were listed as an endangered species in 1991, there have been extensive management efforts aimed at restoring these populations. However, with limited understanding regarding the number of sockeye salmon that historically used Idaho lakes for spawning, there is a need for a frame of reference to inform current and future attempts at restoration and management. Anadromous salmon have a high proportion of stable isotope 15N:14N relative to other nitrogen sources, and therefore the analysis of sediment $\delta15N$ has proved to be an effective means of constructing historical population estimates of anadromous salmon. We are refining lake nitrogen budgets, informed by stable isotopes, to quantify past sockeye salmon abundance; we are applying this framework to a suite of sediment cores from Idaho Lakes. A range in the abundance of Idaho's Sockeye salmon is evaluated for a suite of current and past conditions and suggests that the historical abundance of sockeye salmon in this watershed may be higher than previously derived population estimates.

Cantrell, Jared; Mashal, Mustafa; Ebrahimpour, Ebrahimpour; Acharya, Mahesh; Hogarth, Kathryn
Faculty Mentor: Mustafa Mashal
Subject: Engineering, Physical & Mathematical Sciences
Category(ies): Presentation Session

A Precast Pier System for Accelerated Bridge Construction (ABC)
Accelerated bridge construction (ABC) has been widely adopted for areas of low seismic activity, while application in regions of moderate to high seismic activity has failed to be adopted as readily. The failure of adoption within such regions is due to uncertainties regarding the performance of precast connections under seismic conditions. The Idaho Transportation Department (ITD) is interested to investigate a precast connection for bridge substructure similar to that of a pipe-pin connection concept only the connection would act as a pipe-fix connection designed to carry the anticipated moments at the columns upper and lower plastic hinge regions. The connection is aimed to be designed such that it provides similar moment capacity as that of a traditional cast-in-place foundation, column, and pier cap. For elements themselves the column will consist of a fully precast length with the pipe insert protruding from each end, which is to be fitted into the foundation and hollow-shell pier cap, each of which have a larger diameter pipe cast into them. An additional aspect for the fitting of the column pipe into the larger diameter pipes is the use of aligning fins to allow for greater tolerances during onsite assembly. Once the elements are assembled, grout is placed between the two pipes and high-early strength concrete would be used to complete the remainder of the connection and hollow-shell pier cap.

Idaho State University is performing experimental testing of the proposed connection in the Structural Laboratory at ISU. The testing consists of one cast-in-place cantilever column and full bent, consisting of the full assembly of two columns and a pier cap. The cast-in-place specimens will serve as benchmark references to compare the proposed pipe-fixed connection against which are also being tested as a cantilever column and full bent.

Curiel, Victor
Faculty Mentor: Kevin Marsh
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Poster Session

Its Time for Baseball: The Formation of Transpacific identities in Southeastern Idaho
American employees introduced Baseball to the Japanese shortly after Commodore Matthew C. Perry "opened" Japan to the world. Baseball serves as a social space where the two antagonistic pacific powers were able to negotiate contested terrain, aspirations, and identities. Baseball connected America and Japan through times of strife and helped the different generations of Issei, Nissei, and Sansei Japanese assimilate into the American culture. Idaho, in particular, saw regular games between visiting Japanese super teams and American teams. Even during WWII, when President Franklin Roosevelt signed Executive order, 9066, initiating the forced relocation of American citizens, baseball was being played. The globalization of Baseball and its ability to transcend ethnic bias played a direct role in the creation of Idaho's cultural identity.

Elder, Brett; Hillman, Michelle; Bocanegra, Bocanegra
Faculty Mentor: Joel Bocanegra
Subject: Education, Learning & Training
Category(ies): Poster Session

A Lack of Exposure to School Psychology in Undergraduate Psychology Coursework
For the past 40 years, school psychology has experienced a chronic shortage of practitioners, particularly those of racial/ethnic minority (Curtis, Gastillo, & Gelley, 2012). Research suggests that this shortage could, in part, be due to a lack of exposure to school psychology in undergraduate coursework (Bocanegra, Gubi, Fan, & Hansmann, 2015). It is argued that increasing awareness of and exposure to school psychology may increase students' intention to enter the profession of school psychology (Bocanegra, Gubi, & Cappaert, 2016). Thus, we examined whether undergraduate students enrolled in various sections of a general psychology course demonstrated significant increases in their knowledge, exposure, self-efficacy, outcome-expectation, and choice-intentions in regards to school psychology. Results suggest that students did not demonstrate significant increases in the aforementioned areas. These results are similar to previously published findings regarding the lack of inclusion, and/or impaction, of school psychology related material within undergraduate psychology textbooks and careers in psychology coursework. These findings support the notion that school psychology is underrepresented in undergraduate coursework, and further suggest a call to better expose undergraduate students to the profession of school psychology using multiple methods, such as creating coursework or materials focused on school psychology to increase intention for entering the field, particularly for students of racial/ethnic minority.

Fatema, Kaniz; Plyler, Shawn; Pavek, Pavek; Nartker, Chris; Wang, Yanliang; Jones, Kevin; Barrott,
Faculty Mentor: Dr. Jared J. Barrott
Subject: Health, Nutrition & Clinical Sciences
Category(ies): Poster Session,Presentation Session

Arid1a deletion results in enhanced osteosarcomagenesis and altered chromosome structure
Osteosarcoma (OS) is a primary malignant bone tumor mainly affecting children and young adults. Early metastasis, chemoresistance and stagnation in the treatment options for the last 4 decades resulting in a less than 20% chance of long-term survival in metastatic OS. Investigating the molecular mechanisms underlying a more aggressive phenotype in osteosarcoma will certainly help develop novel treatment alternatives.
Through a transposon-mediated forward genetic screen, we were able to increase osteosarcomagenesis by random mutagenesis. Among the possible candidate genes on our list, we discovered a loss-of-function mutation in ARID1A. ARID1A is a member of the SWI/SNF chromatin-remodeling protein complex and has been implicated as a tumor suppressor in other cancers. We hypothesized that loss of ARID1A in osteosarcoma would increase the rate of tumor progression and metastasis by impacting the epigenetic configuration of the chromatin.
In-vitro (CRISPR/Cas9) deletion in human OS cell lines and cell behavioral studies validated that ARID1A loss contributes to faster tumorigenesis. To understand its effect in-vivo, we have developed mice cohorts with or without ARID1A with a Cre-mediated, Osteoblast specific (Osx) conditional knockout system. We observed that Arid1a-mutant mice develop tumors and die on an average 13 weeks earlier than that of the wildtype cohort. By 3D

micro CT scanning, we further confirmed a relatively higher number of primary and metastatic tumors in the Arid1a mutant mice, albeit the histology and morphology of the tumors did not change. The analysis of genome-wide chromatin accessibility by ATAC-seq confirmed an open chromatin organization in Arid1a mutant mouse samples. We conclude that acting as an epigenetic regulator, ARID1A plays a significant role in osteosarcoma progression and metastasis. Further investigation to strengthen this link would present the opportunity for alternatively targeting genetically unstable cancers with epigenetic drugs.

Fatema, Kaniz; Plyler, Shawn; Pavek, Pavek; Nartker, Chris; Wang, Yanliang; Jones, Kevin; Barrott,
Faculty Mentor: Jared Barrott
Subject: Health, Nutrition & Clinical Sciences
Category(ies): Poster Session,Presentation Session

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Gibson, Jacob
Faculty Mentor: Tera Letzring
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Poster Session

The Impact of Prior True or False Information on Personality Trait Judgment Accuracy
Most accuracy research relies on situations where judges have no information about a target prior to interacting, looking at a picture, or observing a recorded interaction and then making a personality judgment.
In contrast, in the current study judges where given either true, false, or no information about a target's personality prior to watching a recorded interview of the target and then making personality judgments.
Giving judges true prior information led to greater distinctive accuracy, but not greater normativity, compared to judges who were not given prior information; and giving false prior information led to less distinctive accuracy and normativity compared to judges who were not given prior information. When accuracy was broken down by trait, accuracy for most traits did not differ between the true and no information conditions, while distinctive accuracy and normativity were smaller in the false condition compared to the no information condition.
These results highlight the importance of using reliable and accurate sources of information when trying to form accurate impressions of others.

Gonzalez, Thomas; Scharp, Victoria; Brock, Brock; Horn, Elizabeth; Hardy, Amy
Faculty Mentor: Victoria Scharp, PhD, CCC-SLP
Subject: Health, Nutrition & Clinical Sciences
Category(ies): Poster Session

Pilot Study of Functional Outcomes from a Modified Intensive Comprehensive Aphasia Program
Aphasia is a prevalent neurogenic language disorder that affects one in 250 Americans. Approximately 40% of stroke survivors acquire aphasia, adversely affecting an individual's ability to comprehend and express language. Depression, anxiety, social isolation, and a reduced quality of life are common psychosocial effects for persons with aphasia (PWA). One service delivery model with growing evidence for PWA is an Intensive Comprehensive Aphasia Program (ICAP). Based on principles of neuroplasticity in rehabilitation, ICAPs offer a high volume of individual and group therapy to a cohort of stroke survivors within a short period (i.e., 2-6 weeks). Because ICAPs are a relatively novel service delivery model, few studies have tracked ICAP participant outcomes beyond immediate post-ICAP participation. Due to the volume of resources necessary to implement an ICAP, modifications of the intensive dosing schedule are emerging. Idaho State University (ISU) is the only university in the Mountain West to conduct a modified ICAP (M-ICAP) offering the minimum 30-hour therapeutic dose in 1-week. The purpose of this thesis was to investigate functional outcomes for PWA who participate in ISU's modified 1-week ICAP.

This study was a retrospective, within-subject cohort design. Ten participants with a diagnosis of aphasia were recruited. Data were collected at three time points (pre, post, and 8-12 weeks post M-ICAP) using standardized measurements of language impairment, functional communication, and communication confidence. Assessment and treatment were provided by graduate student clinicians under the supervision of licensed speech-language pathologists.
Pending
Irrespective of the findings, the preliminary evidence from this study has critical clinical implications. First, this pilot study is the first to investigate functional outcomes for PWA using a modified dosing schedule. Second, it fulfills a gap in the aphasia literature by tracking participant outcomes 8-12 weeks post participation. Modified ICAPs have the potential to be a cost effective option for PWA.

Grasso, Kyla
Faculty Mentor: Glenn Thackray
Subject: Engineering, Physical & Mathematical Sciences
Category(ies): Poster Session

Influences of tectonic and geomorphic processes on fault scarp height variability in an extensional tectonic terrane, Teton fault, Wyoming
Landscape disturbance events (e.g., earthquakes, landslides, floods) play key roles in landscape evolution in tectonically active areas. Similarly, glacial and alluvial processes alter landscape geomorphology along mountain range fronts, introducing landscape complexity. Along the 70-km Teton fault, fault scarps vary in height by up to tens of meters over short (<1 km) distances. Variable fault scarp height may be explained by 1) along-strike, variable offset rates of the Teton fault; 2) variable erosion of the fault scarp by Pleistocene glacial processes; 3) variable ages of landforms; 4) erosion and deposition by mass wasting and alluvial processes that have occurred since deglaciation; or 5) some combination of these factors, and possibly others.
LiDAR-based mapping of the fault zone indicates that scarp height is affected by glacial geomorphology, mass wasting, and alluvial processes. At a broad scale, vertical separation across scarps increases in the central portion of the fault. At a finer scale, vertical separation is lower in the floors of deglaciated valleys than on neighboring glacial moraines (e.g., Phelps Lake), reflecting both valley floor processes and younger landform ages. Anomalously high scarps (>15 m vertical separation) are likely an artifact of greater landform age.
The vertical separation of normal fault scarps is expected to systematically increase toward the central portion of the fault. However, overall vertical separation of Teton fault scarps increases toward the south. Typical vertical offset is ~12 m from the north end of the fault to the south end of Jackson Lake, ~16 m from Jackson Lake to the south end of Jenny Lake, and ~11 m from the south end of Jenny Lake to Granite Canyon. South of Granite Canyon, the fault bifurcates into two strands with typical vertical separation of ~28 m. The transition zones between these areas may represent boundaries between fault sections or segments.

LiDAR and field-based mapping
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The transition zones between the above mentioned areas may represent boundaries between fault sections or segments. If the Teton fault is segmented, seismic hazards may be more frequent.

Henderson, Stacy; Kobs Nawotniak, Shannon; Christiansen, Christiansen
Faculty Mentor: Shannon Kobs Nawotniak
Subject: Biological & Natural Sciences
Category(ies): Presentation Session

Water-driven Basalt Alteration: Kilauea, Hawai'i as an Analog for Mars
In order to understand where we might find life on Mars, we need to better understand the environments on Earth in which endolithic microbial communities dwell. This project examines hydrothermal systems of Kilauea to better understand how magmatic and meteoric fumaroles alter Mars-similar basaltic rocks, which may influence habitability.

In order to identify the changes to the basaltic rock I compared altered rocks within three different flows, Mauna Ulu, Kilauea Iki, and the Kilauea caldera floor, to unaltered rocks from within the same flows using X-ray Fluorescence for major and trace elements, petrographic point counts to determine mineralogy and vesicularity, and SEM/EDS to map element concentrations.

In the magmatic fumarole system on the Kilauea caldera floor, rocks are extremely enriched in SiO_2 (from 50 wt% to 93 wt%), TiO_2 (2.5 wt% to 5.1 wt%), and sulfur (200 ppm to >1 wt%). The meteoric fumarole systems of Mauna Ulu and Kilauea Iki exhibit minor depletion in SiO_2, but are more enriched in MgO and Fe_2O_3 relative to their unaltered counterparts. Precipitates within vesicles in both magmatic and meteoric fumaroles are primarily amorphous silica. Basaltic alteration to clay within all three flows is surficial where it exists, and not incorporated into the rock matrix itself. The acidic system of magmatic fumaroles yield much more alteration than in the more neutral meteoric systems, and the alteration is within the whole rock matrix itself and not limited to surficial alteration and precipitation within vesicles.

Using this data microbiologist partners in Scotland and Canada will be able to better understand what elements and/or minerals these endolithic communities are utilizing for energy and where community diversity is the greatest. Final results from this project will support NASA's efforts to identify high-priority targets for martian exploration.

Hill, Sophie
Faculty Mentor: Rebecca Hale
Subject: Biological & Natural Sciences
Category(ies): Poster Session,Three Minute Thesis

Looking Beyond Leaves: Nutrient Leaching Potential of Seasonal Litterfall in the Urban Forest
Urban trees play a key role in managing the volume of stormwater runoff, yet inundation of their litterfall leaches significant amounts of nitrogen and phosphorus into stormwater. Most research has focused on large-volume deciduous leaf sources, but year-round inputs such as blossoms and seeds could contribute to nutrient loads in unexpected ways.

We collected samples of various litterfall types from common urban trees planted across Pocatello's mid-sized urban landscape within a larger semi-arid climate. Intact litter samples were dried, bottled, and soaked in ultrapure water for 24 hours. Water samples were then taken and analyzed for the type and amount of nutrients leached within that short time frame.

We found significant differences in the amount of nitrogen and phosphorus leached based on the type (blossom, seed, leaf) of litter input as well as significant variation across species.

Understanding the differences in nitrogen and phosphorus leached across seasonal litterfall inputs from urban trees has implications for city management which govern street sweeping, tree planting, and overall urban design programs. By incorporating this information, stakeholders can work towards building more sustainable urban landscapes with minimal impacts on water quality.

Hynes, William; Wong, Maria
Faculty Mentor: Rumination, Self Concept Clarity, and Alcohol Problems

Know Thyself: Deficits in Self-Concept Clarity Predict Alcohol-Related Problems In College Students

Many students attend college during an important developmental phase of life known as emerging adulthood. Emerging adulthood is characterized by identity exploration, a process in which young people consider future life options, who they want to be as adults, and what to pursue in terms of work, school, and relationships. One of the reasons for high levels of distress among college students may be that some students have more difficulty than others integrating aspects of their identities during this period of rapid developmental change. The present study examined the relationship of self-concept clarity - a measure indicating the extent to which an individual's self-beliefs are clearly and confidently defined, internally consistent, and temporally stable - with alcohol-related problems in a college student population. We evaluated rumination and negative reinforcement drinking as possible explanatory mechanisms by which deficits in self-concept clarity are related to increased alcohol-related problems. Participants were 335 students (M age = 22.74, SD = 6.50, 53.7% female, 79.1% white) from Idaho State University. Participants ranged from 18 to 60 years old. Participants completed six assessment measures and a demographics questionnaire. Data were analyzed as a double-mediation model.

Results indicated that deficits in self-concept clarity were associated with increased rumination, increased negative reinforcement drinking, and increased alcohol-related problems. The mediated effect of rumination and negative reinforcement drinking was also significant. After accounting for the effects of the mediators, self-concept clarity was no longer a significant predictor of alcohol-related problems.

These results suggest that low self-concept clarity may be a form of identity distress which merits a coping response separate from its resultant rumination. These results also suggest that rumination at least partially explains the association between deficits in self-concept clarity and maladaptive coping (i.e., negative reinforcement drinking), which is in turn associated with alcohol-related problems.

James Krzemieniecki, Anna; Sarasqueta-Allen, Kelsey
Faculty Mentor: David Kleist
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Presentation Session

Not another t-test: Fostering a practitioner-scholar identity through creative educational approaches to research

The research-practice gap is a well-documented phenomenon cited in health care-oriented professions that highlights the inapplicability of research to clinical practice - often found in counseling, psychology, and nursing, (Bartholomew et al., 2017; Lee et al., 2014; Letourneau, 2015). Consequently, most counseling research is conducted in university settings, by academics (i.e. faculty and graduate students), and is largely criticized by practicing counselors and supervisors as insufficient, inaccessible, and irrelevant (Hays et al., 2019; Ray et al., 2010; Ray et al., 2011). Additionally, The Council for Accreditation of Counseling and Related Educational Programs (CACREP, 2016) include research and program evaluation as one of the eight common core areas required of all entry-level counseling graduates. Additionally, the American Counseling Association deems a counselor's ability to demonstrate the knowledge and skill to critique and engage in outcome driven approaches to counseling an ethical imperative (ACA, 2014). However, counseling students are typically taught more positivist leaning approaches to research methods - often incongruent to the identity of practicing counselors. Subsequently, the flippant nature of research education often leaves counseling graduates inept to engage in research as a practicing clinician. Ultimately, training programs are in an inherently influential position to foster interest, foundational knowledge and engagement of research practices. In hopes of bridging the research-practice gap to align research education and professional application, creative approaches to graduate level research methods courses will be explored.

Johnson, Sacha
Faculty Mentor: David Coffland
Subject: Education, Learning & Training
Category(ies): Poster Session,Presentation Session,Three Minute Thesis

Scenario-based E-learning and Feedback Type Effects on Learning and Motivation

Scenario-based e-learning (SBeL) is an online extension of scenario-based learning (SBL), which grew out of situated learning theory (Brown, Collins, & Duguid, 1989; Clark, 2013). Although SBL has been around for forty years, it is still unclear under what circumstances and for what learners SBeL is an effective instructional tool

(Clark, 2013). Additionally, researchers have cited feedback as a catalyst for student learning in online environments and the lack of feedback as a catalyst for student withdrawal from online courses (Ertmer et al., 2007).

Clark (2016) stated, "Learning in the context of authentic work-related situations and problems can make the relevance of the instruction more salient than in many traditional approaches" (p. 55). Further, Burkšaitienė (2011) suggested, "Effective feedback can increase student effort and motivation or engagement . . . and can foster their learning" (p. 43); however, although feedback may improve learning, not all feedback is effective (Clark, 2013). Therefore, this study used scenarios to situate e-learning in the context of real-world examples and provided two types of feedback, elaborative (providing correctness of learner responses response and additional guidance) and intrinsic (providing consequences of learner responses). The goal was to evaluate mean differences in student learning outcomes and motivation as a function of scenarios and feedback type as well as the interaction between these two variables.

Participants were randomly placed into one of four treatment conditions differentiated based on the levels of the scenario and feedback variables. All treatment conditions were delivered online and addressed the concept of manually counting sperm cells.

The results of this study could add to the research regarding under which circumstances, for what kinds of outcomes, and for what kinds of learners SBeL is most effective as well as whether one type of feedback has an effect on learning outcomes or learner motivation.

Khajeh Pour, Sana; Aghazadeh Habashi, Ali; Barrott, Barrott
Faculty Mentor: Ali A. Habashi
Subject: Biological & Natural Sciences
Category(ies): Poster Session

In-vitro and in-vivo study of novel bone-targeting angiotensin-(1-7) conjugate effects on synovial sarcoma and different components of renin-angiotensin system
The Renin-Angiotensin System (RAS) has two opposing axes: Classical RAS composed of (ACE)/Ang II/(AT1R) axis, promoting proliferation, migration, angiogenesis, and inflammation vs. Protective arm composed of ACE2/Ang-(1-7)/MasR, prompting anti-proliferation, anti-angiogenesis, and anti-inflammation effects. Imbalance between these two axes underlies tumor growth and metastasis. Ang-(1-7), an anti-tumor agent, acts as a negative regulator of Ang II activity. Therapeutic potential of Ang-(1-7) is severely hampered by its short half-life and due to rapid degradation by peptidases. We developed a novel bone-targeting Ang-(1-7) Conjugate (Ang Conj.), with 10-fold higher half-life which upon administration loads on bone and releases the active peptide in a sustained manner. In current work we aimed at studying anti-tumor effects of Ang. Conj. in-vivo and in-vitro.

Cell viability test was done on various cancer cell lines to study anti-proliferative effects of Ang Conj. using the MTT assay. Anti-cancer effect of Ang Conj. was tested on synovial sarcoma mice models. Body weight and tumor size were measured every other day. qPCR and WB assay was performed to quantify the mRNA and protein level, respectively.

Cell viability study indicates treatment with Ang Conj. or Ang-(1-7) resulted in inhibition of cell proliferation. The components of protective arm, ACE2 and MasR genes, were expressed more than 8-fold higher than control after Ang Conj. treatment. Tumor size increased in control mice and decreased in treatment groups ACE2 gene expression increased after Ang-(1-7) and Ang Conj. treatments. There was a trend on AT1R gene expression reduction due to treatment as well. Data also present the significant effect of Ang Conj. and Ang-(1-7) on increasing of ACE2, and Capsae-3 and decreasing of AT1R protein expression.

The results of this study indicates that Ang Conj. has better stability and efficacy than native peptide on suppressing of the cancer progression which is presented significantly reducing the tumor size.

Kim, Wonjeong
Faculty Mentor:
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Presentation Session

Model or Problem: the Pitfalls of the Model Minority Myth and Working-Class Korean Americans in Literature
The term model minority is commonly used today as an accolade for Asian Americans for their diligence and success in American society. However, scholars point out that the concept of model minority is a myth that is politically used to avoid finding a structural defect in a nation. Instead, the myth promotes subordination to a social

structure that oppresses racial minorities. The model minority myth also creates a racial hierarchy and advocates the idea that there is or should be only one right way to be a minority American. I, therefore, argue that the model minority myth creates imaginary whiteness, a false sense of superiority. As imaginary whiteness ostensibly promises a higher social status and a path to achieve the American dream, the model minority myth becomes more attractive, especially to immigrants and racial minorities. However, because the myth also creates a racial hierarchy, it causes interracial conflicts by reinforcing the boundaries between racial and ethnic groups. By examining Korean American shopkeepers in Carol Park's Memoir of a Cashier (2017) and Leonard Chang's The Fruit 'N Food (1996), my research will discuss how the model minority myth and imaginary whiteness construct or reconstruct the identities of working-class Korean Americans. I will also apply my analysis of the model minority myth and imaginary whiteness in analyzing the conflict between African American and Korean American communities in the early 1990s in the two texts.

Kirkham, Matt; Kalivas, Austen; Fatema, Fatema; Luelling, Sarah; Dubansky, Brooke H.; Dubansky, Benjamin; Jones, Jared J.; Barrott, Jared J.
Faculty Mentor: Jared Barrott
Subject: Biological & Natural Sciences
Category(ies): Poster Session

Underlying Ossification Phenotype in a Murine Model of Metastatic Synovial Sarcoma
Synovial sarcoma (SS) is a soft-tissue cancer that commonly develops in muscles and around joints, with an occurrence rate of 3 in every 1 million patients(1,2). With a predilection for developing near bone(3), it has been shown to arise from the mesenchymal progenitor of the periosteum(4), the outer tissue surrounding bone. In rare cases, ossification, the spontaneous development of bone tissue within the sarcoma, is observed. We hypothesize that this ossification may indicate a worse prognosis. The aim of our study was to determine if ossification within a mouse model of metastatic synovial sarcoma had any relevance to the human disease setting.
Synovial Sarcoma mouse lines were genetically developed and confirmed through PCR. Histology through wax fixing was performed for H&E analysis. RNASeq confirmed gene and protein expression from mouse samples. NanoString gene expression analysis was performed to measure expression between tumors and MDSCs. Genes of interest confirmed to have expression in bone or bone marrow, then heatmapped. Kaplan-Meier Survival analysis was performed between both heterozygous/homozygous and ossifying/non-ossifying groups.
Out of 463 metastatic and non-metastatic mice, only 33 (7.1%) demonstrated ossification, with higher prevalence in mice with heterozygous expression of hSS1 and hSS2, 13.8% and 10.2% respectively, compared to 2.1% and 1.9% in homozygous expression. Radiographic imaging of metastatic/non-metastatic tumors revealed only 30% of non-metastatic tumors displayed interaction with bone, compared to 72% of metastatic tumors.
RNA expression indicated upregulation of 52 genes of interest, six that likely act to drive ossification. Nanostring sequencing revealed four genes highly expressed in MDSCs that also can act to drive ossification. Kaplan-Meier analysis revealed mice with ossification showed longer survival rates than non-ossifying mice, correlated to heterozygous vs homozygous mice.
Analysis of mice models indicated that ossification correlated to a longer survival time in metastatic SS, disproving our hypothesis. Heterozygous mice showed more ossification than homozygous mice, where sarcomas developed quicker without time for ossification to occur. Ossification and metastasis are independent of each other, but both dependent on time.

Kline, Benjamen; Keeley, Ernest; Loxterman, Loxterman; Turner, Kathryn
Faculty Mentor: Ernest Keeley
Subject: Biological & Natural Sciences
Category(ies): Poster Session

DNA methylation as a source of adaptive variation in ectotherms from contrasting thermal environments
Local adaptation can improve survival through selection for characteristics with fitness-related responses to environmental change, and as a result, has important implications for determining the range and extent of a species distribution. However, adaptive variation can also arise from other mechanisms, such as phenotypic plasticity, or the ability of one genotype to produce multiple phenotypes. Determining the contribution of local adaptation can be done by quantifying adaptive generation variation from contrasting environmental conditions. Defining the relative contribution of phenotypic plasticity is much more difficult, as plasticity can arise from a variety of sources, one of

which being epigenetic variation. Epigenetic variation has been shown to influence local adaptation at the population level through population-environment interactions. The most well-understood mechanism of epigenetic variation is DNA-methylation, a form of gene regulation that acts in response to environmental stress. Previous studies have shown ecotypic variation in DNA-methylation, but few have attempted to quantify epigenetic variation in natural populations. Therefore, we developed a study to test levels of DNA-methylation in Rainbow Trout (Oncorhynchus mykiss) from contrasting environments.

In this presentation we present a plan to sample populations from cold montane and warm desert streams on repeated intervals over the summer where tissues samples will be collected for epigenetic analysis. Levels of DNA-methylation (percent methylation) will be quantified using bisulfite sequencing and genomic context of Single Methylated Variants (adaptive regions of the epigenome) will be identified using Next Generation Sequencing. A linear mixed model analysis will be used to test for environmental associations in adaptive SMVs.

We hypothesize that percent methylation will be differential between desert and montane populations. Since the fitness cost of maladaptive epigenetic variation is relatively low when compared to the cost of maladaptive genetic variation, we predict that epigenetic variation may be favored under environments where thermal regimes are more unstable.

Krzyzaniak, Sheherezade; Letzring, Tera; Biesanz, Biesanz; Hall, Judith
Faculty Mentor: Tera Letzring
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Presentation Session

Testing the State and Trait Accuracy Model III: The Effects of Affect Congruence on the Accuracy of Trait and State Judgments
Judgments of others' personality traits and emotions can inform how people make important interpersonal decisions. The State and Trait Accuracy Model predicts that accuracy of state affect judgments contributes to accuracy of personality trait judgments. This study examined the role of state affect congruence, or how closely a target's affect cues and self-reported state affect align, in the accuracy of judgments of traits and affective states. It was hypothesized that 1) accuracy of judging state affect would be higher after observing targets with high vs. low affect congruence, and 2) personality trait judgments would also be more accurate for high vs. low affect congruence.
A sample of 415 judges observed videos of six targets (three high and three low in affect congruence) and rated each target's state affect (15 emotions) and personality traits (Big Five Inventory; John, Naumann, & Soto, 2008).
The Social Accuracy Model was used to analyze the data. Distinctive accuracy was significant for judgments of affect ($b = .12$, SE = .04, $p = .009$), traits ($b = .09$, SE = .04, $p = .03$), and all individual components of traits and affect (except neuroticism). Normativity was significant for judgments of affect ($b = .60$, SE = .07, $p < .001$), traits ($b = .30$, SE = .07, $p < .001$), and all individual components of traits and affect (except positive affect).
For accuracy of judging affect, the findings were consistent with the prediction that affect accuracy would be higher when observing targets with high vs. low affect congruence. In contrast to the prediction, trait accuracy was higher for targets with low affect congruence. It is possible that targets who displayed affect more in line with how they were really feeling were less liked by judges and thus judges paid less attention to those targets.

Lane, William
Faculty Mentor: Chad Yates
Subject: Health, Nutrition & Clinical Sciences
Category(ies): Presentation Session

Shame in Supervision: Interpretative Phenomenological Analysis in Counselor Education
Shame is a profoundly challenging experience for all people. It can be particularly present for counseling students in clinical supervision as they develop new skills and awareness. Shame can be debilitating and lead to ruptures within the supervisory alliance. This research explored the experience of counselors-in-training feeling shame in supervision and provides discussion on how supervisors can help reduce the pain experienced when shame in present in supervision
PowerPoint lecture and dialogue with participants.
Results are not complete, but here are tentative convergent themes for the participants: When participants felt shame, they felt like their supervisor was not listening to or hearing them. They also experienced the emotion of fear, they became less invested in supervision, and they felt corrected. They also felt shame when there was no

allowance for mistakes. Participants noted the importance of collaboration in supervision. They felt less shame when their supervisors worked with them collaboratively and listened to and responded to their needs.

Conclusions are not complete yet, but it can be concluded that supervisors can help mitigate shame by listening to their supervisees and collaborating with them in their treatment of clients. They can show understanding and empathy for supervisees and the feelings of fear they may experience. Supervisors can be more proactive in providing positive feedback rather than "correcting" students on "mistakes." Supervisors may become aware of supervisee shame if they notice a supervisee seems to be less invested in supervision.

Luelling, Sarah; Gardner, Timothy; Kirkham, Kirkham; Mottishaw, Christina; Barrott, Jared
Faculty Mentor: Jared Barrott
Subject: Biological & Natural Sciences
Category(ies): Poster Session

Oncostatin M Receptor as a Therapeutic Target of Radio-Immune Therapy in Metastatic Synovial Sarcoma
Synovial sarcoma is a soft tissue malignancy of the muscle tissue which primarily affects adolescents. While it is a rare disease, little advancement has been made in the treatment of this cancer. With an overall survival rate of roughly 40%, the need for new treatments for synovial sarcoma is evident. Oncostatin M Receptor (OSMR) is a type I cytokine receptor and is overexpressed in metastatic synovial sarcoma. OSMR does not have high expression in normal tissues, making it an ideal target for cancer therapy. We hypothesize that by using an anti-OSMR monoclonal antibody conjugated to a radioactive Cu67 isotope, synovial sarcoma can be targeted at both primary and metastatic locations through systemic therapy.

Copper 67 is a gamma radiation emitting isotope which is tissue damaging and able to induce cell death in cancer cells. By conjugating the chelating molecule p-SCN-Bn-NOTA to an anti-OSMR antibody, Cu67 was able to be captured to the antibody.

Capture efficiency of Cu67 was measured through TLC and found to be 80 % efficient. Binding studies through Surface Plasmon Resonance (SPR) found that the conjugation did not interfere with the binding affinity of the antibody.

This data suggests that targeting OSMR through radio-immune therapy is a viable treatment and indicates further testing in animal models.

MacNeille, Ruth; Lohse, Kathleen; Smith, Smith
Faculty Mentor: Kathleen Lohse
Subject: Biological & Natural Sciences
Category(ies): Poster Session,Presentation Session

Assessing active teaching strategies in introductory STEM courses
Introductory science courses are foundation in preparing undergraduate students to become science literate citizens, enter specialized fields, and continue in STEM (science, technology, engineering, and mathematics) career paths. Despite a body of evidence that active learning (opportunities for students to generate knowledge during class) improves learning in introductory science classes, traditional lecture teaching dominates undergraduates' experiences. In this study we assess the teaching strategies and student behaviors practiced in introductory STEM lecture periods Idaho State University (ISU). We hope to determine what teaching strategies are most commonly used and how are students asked to engage with learning during lecture in introductory STEM courses? We hypothesized that individual faculty implement active learning strategies, but that this occurs at low levels institutionally.

To answer our questions, we conducted classroom observations, faculty self-assessment, and student surveys to assess teaching in introductory biology, geology, chemistry, and physics classrooms.

Preliminary findings showed a positive correlation between faculty pedagogical training and the use of evidence-based teaching. We found that less than 1% of students' lecture time was spent in small group discussions, doing group work, presenting or making predictions. We also found that the experience of ISU STEM courses is very similar to that of college science classrooms across the nation.

Many sciences courses at ISU and nationally emphasize scientific communication and understanding through the scientific method; however, undergraduates missed opportunities to build these skills when the skills were not practiced, encouraged, and facilitated during introductory classes.

McCaw, Jennifer; Moffit, Dani; Meyers, Meyers
Faculty Mentor: Dani Moffit
Subject: Health, Nutrition & Clinical Sciences
Category(ies): Presentation Session

Medical Costs of Injuries on FieldTurf versus Natural Grass
Health care costs are continually on the rise. This study quantified medical costs of game-related injuries on FieldTurf and natural grass for National Collegiate Athletic Association Division I football and compared the respective expenses from 2006 to 2016.
Because medical costs vary based on the location of treatment in the United States, expenses for each procedure were averaged using the price from each state capitol to find a national average. Injury data from thirty-four universities across the United States were included in this study. Injury report forms were completed by the head athletic trainer and submitted weekly to the data coordinator via email during the competitive season. Each injury was interpreted and given a cost by the authors. Medical costs were summed separately for FieldTurf and natural grass, then total expenses were compared.
Not complete yet
Not complete yet

Medasetti, Uma Shankar; Mashal, Mustafa; Savage, Savage; Sebastian, Anish
Faculty Mentor: Mustafa Mashal
Subject: Engineering, Physical & Mathematical Sciences
Category(ies): Poster Session

Disaster Management Robotics in collaboration with Idaho National Laboratory (INL).
Whether it is 9/11 or Fukushima nuclear power plant incidents, there is a need for trained first responders from the military, emergency services, and law enforcement branches. The demand for trained responders has proliferated, and there is a need for better practices and better-trained responders. In case of disasters at Industrial facilities, significant amounts of radioactive, toxic, or other hazardous materials may result making it dangerous for first responders. An autonomous robot can help the first responders to determine if it is a safe environment for them to operate or not.

 This research aims to enhance an INL robot that can perform tasks involving hazardous radiation and collapsed structural conditions. The INL transport robot currently has two UR-5 robots attached to a vertical iron bar. The UR-5's are collaborative robots with six degrees of freedom, flexibility in motion, and the ability to carry a small payload. However, the functionality of this robot is limited to standard UR-5 features. Our research aims to enhance its capabilities specifically, navigation, and control, path planning, vision technologies in both two-dimensional and three-dimensional systems, sensors to detect various toxic gases, sensors to detect hazardous radiation levels, identifying people on the other side of the walls, and also drill through the concrete walls and cut through reinforcing rebars. The high-level commands come from the driver/pilot of the robot, while whole-body motion generation and regulation will be modulated autonomously by the controllers in the transport robot.

This project not only focuses on enhancing the robot but also validating the robot's performance in increasingly complex-manipulation tasks; in other words, a situation resembling real-time environments such as a collapsed structure. The research would contribute to the development of the American Society for Testing and Materials (ASTM) standards for the type and specification of robots used in emergency scenarios and disaster response.

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Miller, Paige; Bush, David; Delehanty, Delehanty
Faculty Mentor: David Delehanty
Subject: Biological & Natural Sciences
Category(ies): Presentation Session

Thermal Ecology of Trumpeter Swan (Cygnus buccinator) Incubation

Trumpeter Swans (Cygnus buccinator) residing year-round in the Greater Yellowstone Ecosystem of Idaho, Montana, and Wyoming comprise a subpopulation of significant management focus. Swans are conspicuous birds that nest openly on large vegetative mounds. Previous observations have correlated swan incubation recess occurrence with time of day. Swans exhibit constant nocturnal incubation and take mid-morning and mid-afternoon diurnal incubation recesses. We are investigating the timing of swan recesses in relation to the prevailing thermal conditions in the nest environment. We are also measuring the thermal effects of the nest structure. We hypothesize that the nest structure augments swan incubation behavior by providing thermal inertia, and also may generate heat through decomposition of nest vegetation. For conservation, it would be valuable to understand how swans breeding at high elevations in a cold environment can be successful, especially in light of management proposals to use artificial floating nest platforms which may not function like natural nests.

In 2019, we used continuous videography to measure swan incubation behavior at Bear Lake and Grays Lake National Wildlife Refuges. After swan cygnets hatched and left nests with adults, we installed Thermochron iButton® temperature loggers within empty swan eggshells and placed two eggs in each of two nests at Grays Lake National Wildlife Refuge, one in the center of the nest cup and one buried 10 – 12 centimeters in the nest material. This simulated recesses in which eggs were left uncovered and covered by adults, respectively.

Uncovered eggs underwent more variable temperature fluctuations (range 3.7 – 50.3 °C) than covered eggs (range 16.6 – 28.8 °C). We attribute this variation primarily to differences in radiative heat gain diurnally, and conductive, convective, and radiative heat loss nocturnally. We will investigate swan incubation behavior and thermodynamics further in 2020.

Oborn, Ashlynn; Giesler, Fredi
Faculty Mentor: Dr. Fredi Giesler
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Poster Session

TEAM-CBT and Social Work: Skills to Breakdown Client Resistance and Promote Change in Micro Practice

Social workers often struggle with how to cope with client resistance. This paper provides social workers with with additional resources for reducing client resistance, increasing motivation to change, and developing an empathetic alliance with clients by introducing key concepts used in TEAM-CBT. TEAM-CBT was created by David Burn, MD to assist clinicians to identify the source of client resistance, to develop critical empathy skills to foster a healthy therapeutic relationship, and to help the client find their motivation. TEAM stands for testing, empathy, assessment of resistance, and methods. This client-centered approach aligns well with the National Association of Social Work (NASW) values and Council of Social Work Education (CSWE) practice competencies by encouraging evidence-based assessment of treatment, focusing on empathy and client validation to encourage the growth of a strong therapeutic relationship, identifying the client's strengths that are evident in their resistance, and using client self-determination to assist in the discovery of motivation. The authors critically examine the elements of TEAM-CBT as a mental health intervention approach that is compatible with social work values and the standards for competent social work practice. This critical analysis provides social workers with guidance for empowering clients to change problematic behaviors.

Pedersen, Chloe
Faculty Mentor: Tera Letzrubg
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Presentation Session

Is a Picture Worth 240 Characters? Personality Judgement Accuracy on Instagram and Twitter

As of March 2018, 68% of adults use social networking sites (SNSs) such as Facebook, Instagram, and Twitter. SNS use is even more common in younger populations with 86% of adults under 30 years of age using at least one SNS (Pew Research Center, 2018). With the increasing popularity of SNSs, many first impressions and personality judgements are being made within the context of a social media profile. The present study explores the accuracy of judgments made on two popular SNSs: Instagram and Twitter. In addition to examining judgements of personality, this research also examines judgments made of political ideology and political party affiliation.

It was hypothesized that judges would be able to achieve significant normative and distinctive accuracy for overall personality traits on both Instagram and Twitter. Five exploratory research questions were also examined. One-hundred and fifty targets were recruited to collect Twitter and Instagram profiles to use as stimuli, as well as

personality ratings by targets. Two-hundred and fifty judges were recruited to view both Twitter and Instagram profiles and provide ratings of the targets. The main hypothesis will be tested by entering SNS type as a moderator into the Social Accuracy Model (SAM). Data collection will be completed in mid-March.

Pedersen, Chloe
Faculty Mentor: Tera Letzring
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Presentation Session

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Ranjit, Arina; Pour, Sana Khajeh
Faculty Mentor: Ali A. Habashi
Subject: Health, Nutrition & Clinical Sciences
Category(ies): Poster Session

Bone Targeting Delivery of Small Angiotensin Peptides: A Focus on AT2 Receptor
Renin-Angiotensin System (RAS) is composed of two opposing proliferative and anti-proliferative axes that are balanced in normal physiological conditions. The activation of Angiotensin II Type 1 receptors (AT1R) with Angiotensin (Ang II) switches the balance toward the proliferative axis and results in vasoconstriction, inflammation, angiogenesis, proliferation, and neuro disorders. Whereas the activation of Angiotensin II Type 2 receptors (AT2R) opposes the action of AT1R and helps to bring back to normal physiological conditions. Small peptides like Novokinin, LKP, LGP have an agonistic effect in the AT2 receptors but suffer from low bioavailability. Here bone-targeted delivery with its unique approach of using the bone as a reservoir by conjugation with bone targeting moiety for the extended-release. Objective: The proposed studies will investigate the hypothesis that skeletal drug delivery will improve the poor bioavailability by elongating the residence time of peptide. We have outlined out two objectives for this proposed study as (i) To extend the half-life of the peptide utilizing bone-targeted delivery and (ii) To show the superior therapeutic effect compared to the parent compound.

Here we will synthesize peptide through Peptide Synthesizer and conjugate it with the bone targeting moiety. After the successful conjugation of the peptide, we will isolate, purify by High-Performance Liquid Chromatography (HPLC) and characterize it by Mass Spectrometry (MS). The half-life of the conjugated peptide will be assessed by in vitro stability. Similarly, we will evaluate the in vitro and in vivo biological activity of the conjugated peptide by appropriate cell and animal models
Small peptides and their conjugates have been synthesized by using peptide synthesizer and characterized by HPLC and MS
This proposed prodrug strategy of utilizing bone as a reservoir for drug delivery could prolong the half-life of the small peptide and consequently give superior biological effects.

Richner, Danielle
Faculty Mentor: Shannon Lynch
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Poster Session

Cognitive Emotion Regulation Strategies as Mediators of Shame Following Trauma
Following traumatic events, survivors frequently report mental health problems. Treatment models posit that post-traumatic cognitions or affective states (e.g. shame) may increase trauma-related distress (Seligowski et al., 2015). This study examined adaptive (positive reappraisal) and maladaptive (self-blame) cognitive emotion regulation strategies as mediators between sexual assault (SA) and other traumatic events (combat, accidents, natural disasters, etc.) and levels of traumatic shame.
A sample (N = 307, 72.6% female-identified) of university students reported at least one PTSD Criterion A traumatic event within their lives on the Life Events Checklist for the DSM-5, and indicated usage of cognitive emotion regulation strategies via the Cognitive Emotion Regulation Questionnaire (Garnefski et al., 2001).
In a double mediation model, self-blame mediated the relationship between trauma type and trauma-related shame, while positive reappraisal did not. Survivors of SA were significantly more likely to engage in self-blame (t = -3.43, p < .001), and experienced significantly higher levels of shame (t = -4.66, p < .001). Both positive reappraisal and strength of ethnic identity were significantly negatively correlated with traumatic shame.
Self-blame cognitions may represent an internalization of the widely-documented stigma and victim-blaming culture surrounding sexual assault. Conversely, both strength of ethnic identity and positive reappraisal may serve as protective factors against shame. Implications for treatment and future research will be discussed.

Shokrgozar, Ali; Clauson, Christopher; Ebrahimpour, Ebrahimpour; Mashal, Mustafa
Faculty Mentor: Dr. Arya Ebrahimpour
Subject: Engineering, Physical & Mathematical Sciences
Category(ies): Poster Session,Presentation Session

Performance of High-Early Strength Concrete with Fibers for Connection of Precast Girders in Accelerated Bridge Construction
Accelerated Bridge Construction (ABC) technologies are being adopted by state departments of transportation. ABC increases the public's and worker's safety by lowering exposure to construction activities and also increases mobility and economic opportunities by reducing traffic interruptions and delays. As an alternative to Ultra-High Performance Concrete (UHPC), Idaho Transportation Department (ITD) is interested in the suitability of High-Early Strength (HES) concrete Class 50AF with polypropylene fibers in closure pours between bridge Deck Bulb-T Girders. The advantages of this alternate material are the reduction in costs and construction time.
The SH-36 over Bear River Bridge was instrumented with 94 sensors in the closure pour concrete, precast concrete, headed bars, and bridge girder bottom flanges. The performance of the HES concrete with polypropylene fibers was monitored under known truck loading and commercial trucks. A finite element model was also developed in order to replicate strain data observed during experimental load testing.
Despite some deviations from the standard construction practices, the strain data in seven out of eight sets of gages (four sets of concrete and four sets of steel gages) shows low strains. The finite element computer model of the bridge shows that, if properly installed, the HES Class 50AF concrete with polypropylene fibers in the ITD's 10-in. closure pours performs well under the AASHTO design truck loading.
In this research project it was determined that the use of HES concrete is feasible for use in connections between deck bulb tee girders. The levels of strain observed in this project are all within the linear elastic range of concrete.

Souza, Jennifer; Lohse, Kathleen; Schlegel, Schlegel; Warix, Sara; Murray, Erin; Godsey, Sarah; Cram, Mark; Seyfried, Mark
Faculty Mentor: Kathleen Lohse
Subject: Biological & Natural Sciences
Category(ies): Poster Session

Determining Residence Times and Sources of Groundwater and Carbon in a Semi-Arid Basin
The storage and turnover of carbon in groundwater is a current gap in our understanding of how carbon moves from groundwater through the critical zone to the atmosphere. Because groundwater is a major source of irrigation and drinking water in semi-arid basins, we need to understand how elevation, precipitation type, and geology influence

water quality in order to sustain future sources of water that meet the national standards for drinking water (Bethke and Johnson, 2008). To better understand carbon sources and how groundwater moves through the subsurface, we will analyze environmental and age tracers in groundwater samples and springs collected in the Reynolds Creek Experimental Watershed, a semi-arid basin located in southwest Idaho. We expect that combing observations with geologic maps and well logs with environmental and age tracer results will enable inferences about carbon sources and potential groundwater flow paths.

A total of 16 groundwater and spring samples have been collected in collaboration with the Agricultural Research Service and ISU collaborators. We have analyzed samples for dissolved organic and inorganic carbon (DOC/DIC), isotopes (13C DIC, 13C DOC, 87Sr/86Sr, etc.), tritium, water stable isotopes, anions, and nutrients (NO3, PO4, NH4) to evaluate residence times and sources of water, carbon and nutrients. We plan to analyze select samples for 14C-DIC to improve our understanding of residence times and flow of inorganic carbon. To investigate geologic influences on groundwater, we plan to develop a cross section of our hypothesized flow path based on depth to water, total depth of wells, rock types, and structural features.

Thompson, Felicia; Hancock, Michelle
Faculty Mentor: Dr. Kevin Marsh
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Poster Session

Marriage Based on Photos: Japanese Picture Brides
The story of Japanese Immigration in the late 19th and early 20th centuries is one of courage and daring. There is nothing quite as daring as moving across the Pacific based on the photo of a complete stranger as hundreds of Japanese "picture brides" did during this period. Typically matchmakers took photos sent by Issei (first generation immigrant) men and matched them with women in Japan. "Picture Brides" would then sail across the Pacific to meet their new match and would marry soon after. The purpose of our poster is to help illustrate why so many Japanese women immigrated to the United States as "picture brides", how and if they fit into American society, why they stayed (or didn't), how their lives changed after immigrating, and examples of "picture brides" in the Eastern Idaho area.

The materials used in the poster are pulled from JACL records throughout the United States as well as from respected scholars of Asian immigration history. The main method we will employ is to track patterns though the different sources that help tell the story of "picture brides" and outline their important role as women in the United States.

Warix, Sara; Godsey, Sarah
Faculty Mentor: Sarah Godsey
Subject: Engineering, Physical & Mathematical Sciences
Category(ies): Presentation Session

What controls spatiotemporal stream drying patterns?
Approximately 59% of the streams in the United States are ephemeral or intermittent (Levick et al., 2008) and such streams are commonly the headwaters of larger streams and watersheds. In arid and semi-arid regions such as the western United States where precipitation is limited, intermittent streams are particularly critical to providing a hydrologic connection between headwater networks and larger streams. Despite the prevalence of temporary streams, the mechanisms controlling drying patterns, particularly during low flow periods, are poorly understood. Here, we utilize a dense spatiotemporal dataset to explore the dominant controls on stream drying. We quantify baseflow at four locations and the presence or absence of water at twenty-five locations at 15-minute intervals for four months throughout a headwater stream. Preliminary results suggest that baseflow and stream drying are tightly linked as streams are most likely to dry when the baseflow contribution to streams is at its peak. We find that the subsurface storage capacity as proxied by slope, upstream area, topographic wetness index, and other DEM metrics, is a good indicator of the ability of groundwater to accumulate and source persistent surface flow as baseflow. Finally, we are of the first to observe and quantify diel cycling preceding seasonal stream drying at multiple locations throughout a headwater stream. We identify evapotranspiration demands, as inferred by solar flux and diel cycling patterns, to be a control on the temporal behavior of stream drying.

Weber, Shelby; Lynch, Shannon
Faculty Mentor: Shannon Lynch
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Poster Session

Associations between traumatic experiences, substance use, and suicidal ideation and behavior among youth offenders
Exposure to trauma increases the risk of suicidal ideation among youth offenders (Chapman & Ford, 2008). Additionally, studies have found that substance use is an additional predictor of suicide and is commonly associated with traumatic experiences (Bhatta et al., 2014). However, less is known about the specific role of substance use when examining trauma and suicide. The current study investigates the extent to which severity of substance use moderates the association between traumatic experiences and suicidal ideation and behavior. The sample for this project includes 141 juvenile offenders (M=15.19, SD=1.49) detained in southeastern Idaho. Participants completed several self-report measures including the Massachusetts Youth Screening Instrument (MAYSI-2), which assesses exposure to lifetime trauma and total substance use, and the Columbia Suicide Severity Rating Scale (CSSRS) which measures current suicidal ideation and behavior. About half (48.3%) of youth reported exposure to at least one traumatic event, 61.4% indicated substance abuse, and 38.6% indicated suicidal risk. There was a significant interaction between trauma and substance use on suicide risk (β=.82, SE=.36, p=.026; 95% CI: [.101, 1.536]), suggesting that cumulative traumatic exposures were associated with greater suicide risk as substance use severity increased. Clinical implications for incarcerated youth will be discussed.

Williams, Paul
Faculty Mentor:
Subject: Humanities, Behavioral & Social Sciences
Category(ies): Three Minute Thesis

A Narratology of Afterlife Journeys
Quests into the underworld are a mainstay of mythology and fantasy literature. They can provide a single episode within a much larger drama or provide the central plot. In either case, the journey typically shares certain ideas, images, and structural hallmarks. John Crowley's novel, Ka: Dar Oakley and the Ruin of Ymr (2017) relates five distinct journeys into the afterlife, each one deliberately distinct from the others. These different depictions of the underworld journey trope artistically revise established models of the underworld quest. This allows for a contained narratological examination of how the underworld journey functions and why it continues to provoke audiences over the centuries. Using Frederick Turner's anthropological work on multiple epics that portray different underworld journeys, my presentation asks why we, as people, narrativize the afterlife and how what use these stories offer us, the living.

Faculty Judges

3MT 9:00 AM- 10:00 AM

No	Name	College
1	Dr. Adam Bradford	GS/ COAL
2	Dr. Karen Neill	CON
3	Dr. Karen Appleby	COE
4	Dr. Jeffrey Street	COB
5	Dr. Curt Anderson	COSE

Poster Sessions 10:00 AM- 11:00 AM

Biological & Natural Sciences

No	Name	College
1	Dr. Samantha Blatt	COAL
2	Dr. Charles Peterson	COSE
3	Dr. Curt Anderson	COSE

Health, Nutrition, and Clinical Sciences

No	Name	College
1	Dr. Srinath Pashikanti	COP
2	Dr. Rachelle Williams	COHP
3	Dr. Xiaomeng Xu (Mona)	COAL

Poster Sessions 11:00 AM- 12:00 PM

Humanities Behavioral & Social Sciences

No	Name	College
1	Dr. Ester Ntuli	COE
2	Dr. Mark McBeth	COAL
3	Dr. Tera Letzring	COAL

Engineering, Physical, Mathematical Sciences, Education

No	Name	College
1	Dr. Xiaoxia Xie	COSE
2	Dr. David Rodgers	COSE/Off of Research
3	Dr. John Curry	COE

Oral Sessions 1:00 PM-2:45 PM

Biological & Natural Sciences

No	Name	College
1	Dr. Karen Neill	CON
2	Dr. Curt Anderson	COSE
3	Dr. John Curry	COE

Humanities Behavioral & Social Sciences

No	Name	College
1	Dr. Margaret Johnson	COAL
2	Dr. Erika Khulman	COAL
3	Dr. Rose Alexander	COB

Education, Health, Nutrition, and Clinical Sciences

No	Name	College
1	Dr. Rachelle Williams	COHP
2	Dr. Tracy Collum	GS
3	Dr. Barbara W Roberts	GS

Special thanks to our Graduate Faculty for your continued support to ISU Graduate Students!