An event to recognize the research and creative talents of graduate students in Idaho.

Presented by the University of Idaho College of Graduate Studies with special thanks to the University of Idaho Provost Office
Welcome to Idaho’s
Three Minute Thesis® (3MT) Competition!

This competition was originally developed by the University of Queens-
land in 2008, and is now held in over 600
universities across the world.

Today, 12 graduate students from the University of Idaho, Boise State,
and Idaho State University will compete to describe their research in 3
minutes or less.

The winner will take home $1000, second place will receive $750, third
place will receive $500, and the People’s Choice winner will get $250.

The top competitors of the statewide 3MT event will be given the
opportunity to present their work at the regional 3MT event.

Thank you for participating in this wonderful event to celebrate graduate student’s research throughout the state of Idaho.
Officiator of Events
Chandra Zenner Ford
U of I Boise Executive Officer

Judging Panel
Clark Krause
Executive Director, Boise Valley Economic Partnership

Caroline Nilsson Troy
Representative, Idaho House of Representatives

Andrew Scoggin
Member, State Board of Education

Mathew Weaver
Deputy Director, Idaho Department of Water Resources

Enrique Rivera
CEO, Idaho Hispanic Chamber of Commerce
University Speakers

Presidents

Kevin Satterlee, J.D.
Idaho State University

C. Scott Green, M.B.A.
University of Idaho

Marlene Tromp, Ph.D.
Boise State University

Graduate College Deans

Adam Bradford, Ph.D.
Idaho State University

Jerry McMurtry, Ph.D.
University of Idaho

Tammi Vacha-Hasse, Ph.D.
Boise State University
Clark Krause
Executive Director
Boise Valley Economic Partnership (BVEP)
Clark Krause has been the Executive Director of the Boise Valley Economic Partnership (BVEP) since September 2010. In that time, Clark has been instrumental in restructuring the organization, and creating a new mission based on measurable and accountable actions and goals. In the past five years, our organization has welcomed 15 companies and over 3,400 jobs to the Boise Metro.

Clark has been on dozens of national sales missions promoting the Boise Valley to companies and consultants rebuilt the marketing program & Public Relations outreach, coordinated a new effort to assist valley entrepreneurs, and actively advocates for local and statewide programs that will jumpstart economic-based job growth in our communities. He was also instrumental in helping pass two new incentives through Idaho's legislature with the Idaho Opportunity Fund and the Tax Reimbursement Incentive. Clark's knowledge of state incentive programs has helped Idaho be more competitive in economic development. Out of Clark’s leadership, GrowIdeasHere.com was launched in 2014 as an initiative to assist local Boise Valley tech companies in attracting talent. Showcasing a day in the life, the website identifies six personalities of tech talent that live and thrive in the Boise Metro.

Clark came to BVEP with a strong history and experience in economic development, most recently as the former President and CEO of the New Mexico Partnership. During six and half years with the New Mexico Partnership, Clark and his team were tasked with out of state recruitment of economic-based jobs into New Mexico. Under his leadership, the Partnership attracted 45 companies and created over 14,000 jobs in the state. Prior to his time in New Mexico, Clark was the Director of Economic Development for Cedar City/Iron County, Utah, where he recruited nine companies, 1,150 jobs and $185 million worth of industrial development. He also spent seven years as Director of Sales and Marketing for the Brian Head Ski Resort in southern Utah, and ten years in sales and marketing for American Honda Motor Corporation and Ford Motor Company.
Caroline Nilsson Troy was elected to the Idaho House of Representatives for Latah and Benewah counties in 2014. Her committee assignments include serving as the Vice Chair of the Joint Finance and Appropriations Committee and on the Judiciary and Rules Committee. She also serves on the Millennium Fund and the Joint Legislative Oversight committees. She developed the “Distance Testimony Project,” which has been modified to allow the public to testify to legislative committees during the pandemic. She co-chaired the “Respectful Workplace Taskforce,” and founded the “Farm, Ranch and Timber Caucus,” focused on issues important to rural Idaho.

Caroline currently serves on the Idaho Rural Partnership Board, the University of Idaho College of Letters, Arts and Social Sciences Advisory Board, the University of Idaho Cooperative Extension Advisory Board, and the McClure Center Board. Outside of the legislature she runs a non-profit consulting firm, “Nilsson Advisory Group.”

Caroline attended schools in Lewiston and Botswana, Africa before graduating from Orofino High School and the University of Idaho. Caroline lives on a small farm in Genesee, Idaho with her husband Dave. They have four daughters, who all live and work in Idaho, and two grandchildren.
Andrew J Scoggin began his career as a lawyer with a San Francisco Bay area law firm. He left the practice of law in 1993 to join Albertsons Inc as an executive. In 2006 he and a group of management partners founded Albertsons LLC, with private equity backing, to acquire and turn around a portion of the struggling Albertsons Inc. grocery chain.
After successfully turning around the performance of the Albertsons stores which they acquired, Mr. Scoggin and his partners, through acquisition and organic growth, grew their initial business from a regional chain with $4 billion in annual sales to the second largest nationwide traditional grocery chain and the third largest private company in the United States with over $63 billion in annual sales. As a founding team member, Mr. Scoggin was a member of the Executive Committee of the company with responsibilities across numerous functions of the enterprise. Mr. Scoggin retired from Albertsons in 2020 and joined StageDotO Venture Capital as a general partner later that year.

Through Scoggin Capital Investment he controls a real estate portfolio of multi-family, single family, industrial and commercial properties and invests in and serves on the Boards of numerous for-profit businesses including a health and fitness company, an international specialty and organic foods business and a ski resort. And he sits on the Boards of Directors of Idaho First Bank, the St. Luke’s Health System, The Idaho Shakespeare Festival, the Idaho Technology Council, Trailhead Boise, and is a member of the Boise City Police Chief’s Citizen Advisory Panel.

Mr Scoggin is committed to helping to drive continual improvement in the educational system of the State of Idaho. To that end, he is Chairman of the Idaho Business for Education association, a statewide business association with over 230 businesses across the entire state. Additionally, in 2016, Mr. Scoggin was appointed by the Governor to a five year term as one of the eight members of the Idaho State Board of Education. In that role he also serves as a trustee of the Boards of Trustees of Boise State University, Idaho State University and Louis & Clark State College and he serves as a Regent on the Board of Regents of the University of Idaho.

Throughout his entire career, Mr. Scoggin has been involved in volunteer work focused on supporting, solving and preventing homelessness. He currently serves as the President of the Board of Directors of the Interfaith Sanctuary Homeless shelter.
Mat Weaver is the Deputy Director of the Idaho Department of Water Resources. As Deputy, Mat oversees the Department’s Hydrology Section, Water Compliance Bureau, and Information Technology Services Bureau. Despite those obligations, he spends most of his time wrestling with the job responsibility category of “other duties as assigned,” which recently has included the comprehensive review and republication of all of the Department’s administrative rules.

Born near the confluence of great trout rivers in western Montana, Mat grew up across the Pacific Northwest. He earned a B.S. in Civil Engineering from Montana State University, a Masters in Hydrology from Boise State University, and is currently a licensed Professional Engineer in Idaho. When Mat’s not working, he enjoys living an active “Idaho Lifestyle” with his wife and twin boys, including backpacking, skiing, mountain biking, and fly fishing.
Enrique Rivera was selected as President & CEO of the Idaho Hispanic Chamber of Commerce (IHCC), the leading Hispanic business networking, advocacy, and development organization in the Treasure Valley in August 2019.

Enrique previously served as the Board President for the IHCC before being selected as President & CEO. He has been a part of the IHCC for 6yrs.
As CEO of IHCC, he has established four priorities:

• Being a meeting point for the big Latino companies in the State of Idaho.
• Multiplying the ways to train Hispanics with small businesses.
• Ensuring that Hispanic companies can have all the information to access and the resources to help them thrive.
• Bringing together minorities in the State of Idaho to access better business opportunities.

Enrique has been a key figure in bringing together influential Hispanics to connect, collaborate, and create a lot of new opportunities.

Enrique has sought to multiply the networks with Latin American Chambers of Commerce, helping to bring new investments to Idaho.

Previously, Enrique served as the Board President of the Community Council of Idaho (CCI) for eleven years, helping the organization grow from a $8 million dollar budget to $17 million.

During his tenure there and in his current role, Enrique works closely with the local businesses, community leaders, corporations, government agencies, and elected officials to address the issues that affect the Latino business community. Enrique is a recognized expert in business financing and has helped open and grow hundreds of businesses in his community.

Enrique was invited to participate in the City of Nampa Hispanic/Latino Covid Task Force which has grown across the Treasure Valley with the support of many community leaders. Enrique has been a champion in this Task Force especially as it relates to the business community.

In addition to Enrique’s success with his community involvement he also works for the Bank of Idaho as a VP Commercial Loan Officer. He is married and the proud father of 3 beautiful and brilliant children.
School Climate and Culture: Defined by Relationships, Strengthened by Community

Jessica Johnson

If writing behavior referrals were an Olympic sport, teachers would be gold medalists. Teachers and administrators are tasked with determining the best practices for student discipline in order to create a lasting change in the student and the school. Creating and fostering a safe school environment is imperative to the success of schools. Will implementing proactive community circles in a classroom change the culture and climate of a school?

Jessica Johnson a master's student in Educational Leadership at Idaho State University, studying under Dr. Patti Mortensen
Psinging Goudimel’s Goodies

Sean Bohnet

One key aspect for renewal in liturgical communities, is the form and function their worship services adopt. In part to social and political unrest, there exists a growing body of scholarship and practice that intend to reclaim aspects of the Protestant Reformation. Crucial to the advancement of this branch of Christianity was the use of music especially hymnody and psalmody. Sixteenth century composer Claude Goudimel helped advance the potency of the Huguenot Psalter, a song book where each psalm was married with a melody, when he harmonized it in 1564. While notable scholarship has been done in the field of sixteenth century protestant reformation music, a comprehensive and accessible version of the Huguenot Psalter as harmonized by Goudimel in modern notation does not exist. The following thesis establishes the background and credence necessary for meeting this need along with select transcription examples.

Sean Bohnet a master's student in Music History at the University of Idaho, studying under Dr. Barry Bilderback
Cancel culture is a pervasive and unique aspect of social media. While holding several definitions, cancel culture is often referred to as “a form of cultural boycott”, “the removal of a figures power or their cultural capital”, and “public shaming” (Herzog, 2019, Asmelash, 2019, Ross, 2019). The intent of canceling someone is to remove someone from a position of power in order to block them from being influential or relevant. Being canceled is usually the result of an action, statement, or performance that is viewed as problematic. With the creation of new language, symbols, groups, communities, and system of governance, canceling is a culture derived and nurtured through social media. Performing a case study on the cancelation of actor Kevin Spacey, this research uses an interpretivist qualitative approach to analyze Tweets through content analysis in order to determine how cancel culture functions, and how it is communicated on social media.

Sam Haskell is a master’s student in Communication at Boise State, studying under Dr. Manda Hicks
Sideline High-School Athlete Study: An Examination of the Predictability of Concussion from a Computerized Neuropsychological Battery

Bindal Makwana

Research suggests that neuropsychological measures are able to detect changes immediately following a concussion. This study investigated the predictability of concussion diagnosis from neurocognitive modules in 64 high school athletes. Results showed that a symptom checklist and reaction time measures were predictive of concussion diagnosis. These clinically significant findings support the use of neuropsychological measures to aid in diagnostic clarification and athletic decision making.

Bindal Makwana is a doctoral student in Clinical Psychology at Idaho State University, studying under Dr. Xiaomeng (Mona) Xu, Ph.D.
A Vaccine Pill for Fish

Evan Jones

The aquaculture industry continues to grow at a rapid pace; however, it experiences losses due to preventable diseases that cost an estimated 10 billion dollars annually. Vaccinations are typically used to prevent these diseases, however much of the mortality occurs in the first 6 months of the fish’s life. These fish are too small to receive most commercial vaccines, which are injection based. Researchers at Oregon State University have developed a novel oral vaccine particle, or pill, that can be fed directly to fish. This research will focus on comparing the antibody response and protective effects of the oral vaccine to other vaccination routes, such as injection, in two fish species: rainbow trout (Onchorynchous mykiss) and sablefish (Anaplopoma fimbria). If there is evidence that the oral particle can provide a similar response as these other methods, it can reduce production costs in aquaculture and provide cheaper fish for the market.

Evan Jones is a master’s student in Natural Resources at the University of Idaho, studying under Dr. Ken Cain
Volcanoes: Earth’s Largest Horns

Bryan Rosenblatt

During a week-long excursion to Volcán Villarrica in January 2020, we collected infrasound data using a large (N=22) network distributed around the crater. During this time, a wavering of the frequency of Villarrica’s continuous monotonic infrasound was observed between 0.7-1.1 Hz. Since activity was stable, we argue that this frequency fluctuation can be explained through reasonable variations in sound speed. Past studies have found that a rise in the frequency of Villarrica’s monotonic infrasound may be precursory to an eruption. Therefore, it is important to distinguish between a rise in frequency leading towards an eruption or just due to atmospheric conditions. The efforts of this research can be expanded to many other open vent volcanoes, specifically those with active lava lakes. With Villarrica being one of the most popular tourist locations in Chile, as well as having a history of lahar flows, this system has a high potential for hazard.

Bryan Rosenblatt is a master’s student in Geophysics at Boise State, studying under Dr. Jeffrey B. Johnson
Reducing the Impact of Common Ravens on Greater Sage-Grouse through Egg-Oiling

Corina Sanchez

Common raven populations have increased with human expansion. This has led to higher rates of raven predation upon sensitive prey such as greater sage-grouse for which ravens are nest predators and sources of population declines. Past raven management methods have not adequately prevented damage caused by ravens on sensitive prey. Novel raven management methods are being evaluated with sage-grouse nest survival as the treatment response. Raven nest behavior is being recorded to understand raven breeding biology and maximize treatment efficacy.

Corina Sanchez is a master’s student in Biology at Idaho State University, studying under Dr. David Delehanty
Efficient degradation and mineralization of methylene blue via continuous-flow electrohydraulic plasma discharge

Anilkumar Krosuri

A novel, continuous-flow electrohydraulic plasma discharge (EHPD) process characteristic of establishing a stable discharge through the conducting channel in the center orifice of a dielectric plate was developed and investigated to degrade methylene blue (MB) in water. The effect of three operating parameters, i.e., liquid flow rate (37-94 ml/min), air flow rate (1-4 L/min), and initial dye concentration (10-100 mg/L), on the MB degradation efficiency was evaluated. The results indicated 100% degradation of MB was achieved within 10 min of treatment for all MB concentrations tested and the mineralization showed 92.5% COD removal for 100 mg/L MB. The energy efficiency for different operating parameters was in the range between 0.16g/kWh-0.81g/kWh at 50% conversion. The overall results indicated that the novel, continuous-flow EHPD is a robust and highly effective process for degradation and mineralization of MB, a potential technology that can overcome the limitations of advanced oxidation processes for wastewater treatment.

Anikumar Krosuri is a doctoral student in Environmental Science at the University of Idaho, studying under Dr. Sarah Wu
To preserve our world, we need to reduce our fossil fuel dependence and develop carbon-free power. Currently, nuclear power accounts for 55% of the clean energy in our country. New nuclear materials are tested at research reactors including those at Idaho National Laboratory. Research reactors function as “crash tests.” Just as cars are crash tested to ensure high safety standards, nuclear research strives to continually maximize safety. Sensors are required to record the results of these crash tests. This requires that the sensors survive the same high temperatures and irradiation that candidate nuclear materials are subjected to. My research develops a computational method to better understand nuclear sensors. With this method, sensor performance can be predicted under the extreme research reactor environment. By better understanding the sensors, we can continue to improve their durability and accuracy. This will aid in the ongoing development of nuclear power.

*Ember Sikorski is a doctoral student in Materials Science and Engineering at Boise State, studying under Dr. Lan Li*
Blackleg Disease of Canola in Northern Idaho

Kayla Yearout

Blackleg disease of canola, caused by the fungal pathogen Leptosphaeria maculans, is a major constraint to production of canola (Brassica napus) worldwide and an emerging threat in Idaho. Blackleg can cause severe stem lesions and cankers, resulting in detrimental yield loss. In northern Idaho blackleg was first identified in 2009. As a recent introduction it is crucial to understand the biology of L. maculans and its epidemiology specific to this region to develop management strategies. Research objectives aim to identify the most common disease-causing genes in the pathogen population, determining when initial disease infection occurs and if it is caused by wind-blown or rain-splashed spores, and identifying the optimal time of fungicide application to reduce disease incidence and severity. It is from this research that grower guidelines for best management practices can be developed specific to the production of canola in northern Idaho.

Kayla Yearout is a master’s student in Plant Science at the University of Idaho, studying under Dr. Kurt Schroeder
Modelings Watershed Hydrologic Response to Changes in Burn Severity Heterogeneity

Luke Telfer

Wildfire changes hydrologic properties such as vegetation cover and soil characteristics. These changes influence watershed energy fluxes and water balance partitioning, altering the rainfall-streamflow relationship. Additionally, burn severity manifests as a heterogeneous mosaic across the burned landscape and the spatial patterns that arise also impact postfire hydrology. While the effects of burn severity configuration have been explored at plot and hillslope scales, the watershed scale remains poorly understood. I propose using ParFlow-CLM – a fully coupled, surface-subsurface, distributed hydrological model – to simulate the hydrology for a single watershed under a range of burn severity configuration scenarios. This research will demonstrate an approach to modeling heterogeneity of fire effects in computational hydrology at the watershed scale and explore questions such as: (1) How does the overall magnitude of burn severity influence hydrologic response? and (2) How much variation can be attributed to burn severity spatial patterns?

Luke Telfer is a master’s student in Hydrologic Sciences at Boise State, studying under Dr. Alejandro Flores
Understanding the Relations Among Adverse Childhood Experiences (ACE), Substance Use, and Reoffending Among Juvenile Offenders

Shelby Weber

Existing literature suggests that ACEs are related to reentry in the criminal justice system and increased risk of using substances among youth offenders, but there is little research on the indirect role of substance use in the relation between adversity and offending. In the present study, there was a significant medium indirect effect of ACEs on reoffending via substance use. Gender differences and clinical implications will be discussed.

Shelby Weber is a doctoral student in Clinical Psychology at Idaho State University, studying under Dr. Shannon Lynch
Thank you for attending Idaho’s Statewide 3MT event!

We hope to see you at the Regional Competition on March 24th, 2021

www.uidaho.edu/cogs/3mt-state