



Idaho State
University

Graduate
School

Three-Minute Thesis

Fall 2022

November 10, 2022

L.E. and Thelma E. Stephens Performing Arts Center



Fall 2022 Three Minute Thesis Event Program

Table of Contents

Letter from the Dean of the Graduate School	3
3MT History	5
Rules	6
Judging Criteria	6
Agenda	7
3MT Competition	7
Awards Reception	10
Fall 2021 3MT Winners	11
Upcoming Events	12
Abstracts	13

Letter from the Dean of the Graduate School



Welcome to the Three Minute Thesis Competition at Idaho State University! Whether you are joining us as a graduate student contestant, a judge, a faculty mentor, or interested community member, please know that we are thrilled with your interest in the strength of the research and creative activity occurring at Idaho State University.

The Three Minute Thesis Competition was started at the University of Queensland (Australia) in 2008. It now takes place at over 900 universities in more than 85 countries across the world. It has become a staple part of many graduate students' educational journey. We are pleased to have hosted this event at Idaho State University since 2018, and tonight's winners will be invited to participate in state and possibly national and international versions of tonight's event. The reasons for the event's popularity are arguably twofold. For our graduate researchers, clinicians, and artists, this event represents an unparalleled opportunity to present their work to an interested public in clear, compelling, and accessible terms – a skill that will be important throughout their professional careers in years to come. For the rest of us, the event offers a view of the compelling and remarkable advancements that these talented individuals are making in their various fields. In doing so, it essentially offers us a glimpse into our future – of where our intellectual and artistic journey as a species might be taking us.

Those participating today will come from a variety of disciplines – biologists working to better understand the dynamics of the ecosystems in which we live, engineers looking to build better bridges, health care workers identifying how we might enjoy a higher quality of life, humanists and artists exploring how our collective experiences have shaped and are reshaping our contemporary world. I encourage you to listen to their presentations with an eye towards seeing their research in its broadest implications, because we cannot stratify the value of what we will hear today. Cures for systemic diseases, for instance, are of critical

importance to us all – but, as our recent history has shown us, systemic disease can just as easily be social as physical, and both can be deeply destructive. Many of the answers that we need to address the challenges we collectively face will unquestionably emerge from the minds of researchers, artists, and clinicians populating our universities today.

I urge you to revel in the experience of hearing from these brilliant individuals (and in the experience of sharing your own hard-won knowledge if you are presenting!). I am certain that doing so will inspire you, as it does me every year, with hope – a renewed belief in a brighter, emergent future for ourselves, our students, our community, our institution, and our world.

Dr. Adam Bradford
Dean of the Graduate School
Professor of English

3MT History

Three Minute Thesis (3MT®) is a research communication competition developed by The University of Queensland (UQ) in 2008, whereby graduate students have exactly three minutes to present a compelling oration on their thesis and its significance. 3MT challenges students to consolidate their ideas and research discoveries so they can be presented concisely to a non-specialist audience.

Enthusiasm for the 3MT concept and its adoption in numerous universities led to the development of an international competition, of which the Graduate School has been participating in since 2018.

Rules

- A single static PowerPoint slide is permitted (no slide transitions, animations or 'movement' of any description, the slide is to be presented from the beginning of the oration).
- No additional electronic media (e.g. sound and video files) are permitted.
- No additional props (e.g. costumes, musical instruments, laboratory equipment) are permitted.
- Presentations are limited to 3 minutes maximum and competitors exceeding 3 minutes are disqualified.
- Presentations are to be spoken word (e.g. no poems, raps or songs).
- Presentations are to commence from the stage.
- Presentations are considered to have commenced when a presenter starts their presentation through movement or speech.
- The decision of the adjudicating panel is final.

Judging Criteria

Comprehension & Content

- Did the presentation provide an understanding of the background to the research question being addressed and its significance?
- Did the presentation clearly describe the key results of the research including conclusions and outcomes?

- Did the presentation follow a clear and logical sequence?
- Was the thesis topic, key results and research significance and outcomes communicated in language appropriate to a non-specialist audience?
- Did the speaker avoid scientific jargon, explain terminology and provide adequate background information to illustrate points?
- Did the presenter spend adequate time on each element of their presentation - or did they elaborate for too long on one aspect or was the presentation rushed?

Engagement & Communication

- Did the oration make the audience want to know more?
- Was the presenter careful not to trivialize or generalize their research?
- Did the presenter convey enthusiasm for their research?
- Did the presenter capture and maintain their audience's attention?
- Did the speaker have sufficient stage presence, eye contact and vocal range; maintain a steady pace, and have a confident stance?
- Did the PowerPoint slide enhance the presentation - was it clear, legible, and concise?

Agenda

Thursday, November 10, 2022

L.E. and Thelma E. Stephens Performing Arts Center
1002 Sam Nixon Avenue, Pocatello, ID

3MT Competition

Black Box Theatre

Join us virtually via
[Youtube Live](#)

6:30 PM

Event Introduction & Opening

Dr. Tracy Collum, Associate Dean

6:35 PM

Three Minute Thesis Presentations

Presenter 1

Sarah Menish-Geryk
Political Science - DA

Presenter 2

Amanda King
Nursing Practice - DNP

Presenter 3

Najmeh Dehghani Tafti
English & the Teaching of English - PhD

Presenter 4

N. Evelin Paucar De La Cruz
Engineering & Applied Science - PhD

Presenter 5

Heather Wulff
Speech-Language Pathology - MS

Presenter 6

Spencer Christensen
Educational Administration - EdS

Presenter 7

Pamela Pascali
Anthropology - MS

Presenter 8	Lauren French Physical Therapy - DPT
Presenter 9	Matthew Stewart Geographic Information Science - MS
Presenter 10	Tyler Paladino Geosciences - PhD
Presenter 11	Bailey Dann Anthropology - MA
Presenter 12	Shah Md Nehal Hasnaeen Electrical & Computer Engineering - MS
Presenter 13	Phillip Bucklein Biology - MS
Presenter 14	Chelsea Cobabe Nutrition - MS
Presenter 15	Christen Cogdell Communication - MA
Presenter 16	Kiran Pandey Electrical & Computer Engineering - MS
Presenter 17	Julie Mead Educational Leadership - EdD
Presenter 18	Fatemeh Zareihajabadi Pharmaceutical Science - PhD
Presenter 19	Ujjwal Adhikari Microbiology - MS
Presenter 20	Jacob Harris Sociology - MA
Presenter 21	Tengzhang Huang Educational Leadership - EdD
Presenter 22	Jordan Oman Pharmaceutical Science - PhD

Presenter 23	Jethro Smith Communication - MA
Presenter 24	Gabriela Perez Clinical Psychology - PhD
Presenter 25	Yvette Cadeaux Educational Leadership - EdD
Presenter 26	Kelsi McDermott Chemistry - MS
Presenter 27	Megan Schmid English - MA
Presenter 28	Ritesh Yadav Business Administration - MBA
Presenter 29	Jeffrey Okojie Pharmaceutical Science - PhD
Presenter 30	Cailee Cunningham Communication - MA
Presenter 31	Jacob Hubers Experimental Psychology - PhD

Vote for People's Choice Award



Scan QR code with your photo app and make your selection

8:35 PM

Closing Remarks

Dr. Adam Bradford, Dean

Awards Reception

Rotunda

8:50 PM

Event Opening

Dr. Adam Bradford, Dean

9:00 PM

Winners Announced

Dr. Tracy Collum, Associate Dean

9:15 PM

Reception

Enjoy libations & hors d'oeuvres

The Helianthus Quartet

School of Performing Arts | Department of Music

Natalie Cohen

Violin

Bachelor of Music in
Performance

Bohan Hou

Violin

Bachelor of Music in
Performance

Lydia Ring

Viola

Bachelor of Music in
Education

Ian Woodruff

Cello

Bachelor of Arts in
Music

Fall 2021 3MT Winners



1st place

Mel Anderson

English - MA

Trauma Unheard



2nd place

Krystoff Kissoon

Political Science - DA

"Here Every Creed and Race Find and Equal Place" But Not Queer People?



3rd place

Arina Ranjit

Pharmaceutical Science - PhD

Novel Treatment Option for Rheumatoid Arthritis through Bone Targeted Delivery of Novokinin



People's Choice

Allison Loyola

Pharmaceutical Science - MS

Altered microglia the gardeners of the CNS may potentially lead to atypical feeding behaviors in a valproic acid rodent model of autism

Upcoming Events



State Three Minute Thesis Competition

Spring 2023

Regional Three Minute Thesis Competition

Western Association of Graduate Schools Annual Meeting

March 26–29, 2023

Portland, Oregon



2023 Graduate Research Symposium

Wednesday, March 15, 2023

Ballroom, Earl R. Pond Student Union, Pocatello, Idaho

Abstracts

Ujjwal Adhikari

Microbiology - MS

Asbestos Exposure Alters Alveolar Macrophage Activity in an Acute Exposure Mouse Model

Libby amphibole asbestos (LAA) exposure can lead to serious diseases like cancer, lung disease, and autoimmunity. To better understand the early responses that may lead to these chronic effects, our study examines 14 day effects of low dose LAA exposures. Our study shows that macrophages, one of the first responder cells to inflammation, are trafficked and activated at the pleural cavity. This comparison based on sex is the first study that uses low dose environmental exposure to determine the acute responses that drive later disease development.

Phillip Bucklein

Biology - MS

The Post Office Properties of the Cell

What happens to proteins and enzymes as they move through the golgi apparatus? To gain a deeper understanding of how medicines work at the cellular level we must understand how the cells themselves work. Discovering the transport mechanism for the golgi would also help in neuroscience research which will in turn help with space medicine and space exploration.

Yvette Cadeaux

Educational Leadership - EdD

Differential attitudes toward technology-driven instruction in K-12 institutions before and after COVID-19 school closures

This empirical study explores K-12 stakeholder attitudes toward technology-driven instruction in the context of the COVID-19 school closures. K-12 administrators, teachers, students, and parents, from five regions across the U.S., are surveyed regarding their teaching and learning experiences during the pandemic. Data on attitudes toward online and remote instruction is gathered and tabulated. The results are compared and contrasted against pre-COVID-19 attitudes, in published literature, toward the use of technology as a learning tool.

Spencer Christensen

Educational Administration - EdS

School Governance: Digitizing School Board Policy Manuals

Technology always makes things easier, right? School districts across the state have implemented various approaches to meeting the requirement to have publicly accessible board policy manuals. These approaches include building websites, using document hosting services, and more. Not every approach is equal in its usability for patrons to access the information or its efficiency for school district personnel to keep the information up to date. This research reviews those approaches and recommends one efficient and effective approach.

Chelsea Cobabe

Nutrition - MS

COVID-19 Taste/Smell Changes: Impact on Dietary Intake & Potential Coping Strategies

Smell/taste changes have been a common side effect with COVID-19 infection. The purpose of this study was to identify dietary changes that may result from smell/taste alteration and explore potential coping strategies for sufferers. This study collected information via a survey and 2 focus groups. Participants with taste/smell changes reported reduced appetite & altered intake, weight changes, new textural sensitivities and more. These alterations can impact both physical and mental health and employing coping strategies discussed may help.

Christen Cogdell

Communication - MA

Increasing Informed Consent About the Way Media Consumption Affects Us

This is a meta-analysis of how media shapes its audience's ideas about relationships and their roles in their relationships using cultivation theory. No one is entirely immune to media influence including propaganda. The goal of this study is not to demonize media use for its ability to shape people's minds, but to create an awareness of it. Research creates knowledge to allow intellectually informed consent around what type of media people choose to consume.

Cailee Cunningham

Communication - MA

Memes that act as Modern Propaganda

On May 14th, 2022, a white supremacist targeted a supermarket in a Black neighborhood in Buffalo New York. He would murder 10 innocent Black people for his ideology. He shared his confession letter online and included several memes to explain his fallacy. Memes can work as propaganda to promote dangerous ideologies. Modern fascist movements have used memes as a way to indoctrinate internet users. This study analyzes the Alt-Right's use of memes and how they affect our society outside of the internet.

Bailey Dann

Anthropology - MA

Shoshoni Language Revitalization and Reclamation: Developing a Shoshoni Language Curriculum for the Secondary Classroom

Shoshoni language revitalization is possible through avenues such as schooling that were historically harmful to Indigenous peoples. Through the incorporation of Indigenous teaching methodologies such as storytelling, a powerful transformative moment occurs in the classroom where the Shoshoni language becomes an esteemed vehicle for knowledge transmission. My thesis focuses on developing a Shoshoni language curriculum that is grounded in best language revitalization education methods and theory.

Najmeh Dehghani Tafti

English & the Teaching of English - PhD

A Meta-analysis of Morphosyntactic Structure Transfer in Third Language Acquisition

This meta-analysis study analyzes the effect sizes of previous studies (200 published and unpublished) and calculates the mean correlation between the findings of transfer models and proficiency in a third language to evaluate the most effective transfer models. The result will offer a better understanding of the significant transfer models in third language acquisition based on the strength of the homogenized effect size and thus, helps the curriculum developers and scholars to develop better understandings of L3 acquisition process.

Lauren French

Physical Therapy - DPT

Utilization of Gamification to Enhance Online Learning Outcomes Within Doctor of Physical Therapy Curriculum

Gamification, or the application of typical game elements in a non-gaming context, is shown to optimize student learning outcomes within health profession education; however, the effectiveness of its use within online learning in Doctorate of Physical Therapy curriculum remains unknown. With increased utilization of online learning platforms, instructors are seeking innovative strategies to enhance online learning. This study assessed whether the integration of a "Murder Mystery Game" into an online learning platform enhanced learning outcomes.

Jacob Harris

Sociology - MA

The QAnon Infection: How Families Have Reacted to Members' Conspiratorial Identities

The conspiracy-theory-based movement known as QAnon is a danger to national security and society's most fundamental socialization unit, the family. Drawing on 23 semi-structured interviews with family members of QAnon affiliates, I demonstrate how families have attempted to manage, adapt, or abandon their QAnon-infected families. From awkward family gatherings to divorces, kidnappings, and even murders, QAnon affiliates' conspiratorial beliefs and actions are tearing families apart.

Shah Md Nehal Hasnaeen

Electrical & Computer Engineering - MS

Utilization of RFID EM fingerprinting for Malware Detection in User Memory Bank and Developing a Digital Twin Resolver

The electromagnetic signal strength in the ultra-high frequency domain (also known as the electromagnetic fingerprint) emitted by RFID tags was used to detect a variant of SQL injection malware in the user memory bank via a novel data reduction approach on the data and implementation of Random Forests, with a 84% success rate. The same unique electromagnetic fingerprint was also used to lay the foundation for a data driven digital twin resolver system that uses an XGBoost model detecting different electronic product codes.

Tengzhang Huang

Educational Leadership - EdD

Effects of the Modality and Segmenting Principles on Gear Instruction

Modality and segmenting principles are two principles from Mayer's CTML. The modality principle states that people learn better from pictures and spoken words than from pictures and printed words. The segmenting principle states that people learn better when information is presented in segments. This study will focus on the study of whether the combination of these two principles can help learners learn gear instruction better than just using only one of these two principles.

Jacob Hubers

Experimental Psychology - PhD

The Role of Anchoring on Personality Judgment

Personality judgment is an important part of human interaction, with first interactions laying the foundation for lasting impressions. One way to think about these processes is through heuristic use, or the cognitive techniques that are involved with making decisions and judgments. This project explored the personality judgment process by testing the anchoring heuristic and the potential for insufficient adjustment in personality judgments.

Amanda King

Nursing Practice - DNP

Compassion Fatigue in Primary Care During the COVID-19 Pandemic

Inappropriate patient-to-practitioner ratio, inadequate number of support staff, dissatisfaction with compensation, inadequate time allotment to complete assigned tasks and lack of supervisory support were significantly associated with higher levels of practitioner compassion fatigue and burnout. Further inquiry into means for the reduction of CF is essential and should focus on action-specific interventions in the areas of staffing, managerial strategies, compensation, and time management and allocation.

Kelsi McDermott

Chemistry - MS

The Use of Charged Monomers to Create Water Soluble Polysulfides for Heavy Metal Removal

Toxic heavy metals in water present serious health and environmental hazards. The goal of this project is to incorporate charged monomers with sulfur to create water-soluble polymers capable of selectively binding to a wide range of dissolved metals and fall out of solution. By altering the charged monomers incorporated we compared the differences in water solubility, and metal removal. These materials were found to effectively remove gold, and other heavy metals such as copper, cadmium, iron, lead, and zinc.

Julie Mead

Educational Leadership - EdD

Coming to the Table: Dyslexia and Special Education in Idaho

Dyslexia—what is it, and how does it fit in special education in Idaho? As parents come to the table with educators to evaluate their child's needs, it is critical that all share a common understanding of the process for identifying a student with dyslexia in need of special education and how that differs from the criteria for a clinical diagnosis. With shared understanding from the beginning, parents and educators can avoid conflict as they move through the process together.

Sarah Menish-Geryk

Political Science - DA

Confessions of a Conspiracy Theorist: An Examination of the Influence of Being a Conspiracy Theorist on Support for Public Policy

Using a large national public opinion survey, this project examines the extent to which a variety of public policy preferences are influenced by being a conspiracy theorist. Analyses reveal that conspiracy theorists hold unique preferences that differentiate them from non-conspiracy theorists.

Jeffrey Okojie

Pharmaceutical Science - PhD

A Theranostic Approach for Synovial Sarcoma

Synovial Sarcoma is a rare form of cancer that occurs in the soft tissue adjacent to bones in adolescents and young adults. This cancer is poorly understood, resulting in poor prognosis, especially when the cancer has spread to other parts of the body. The current treatment options for this cancer are surgery, radiation, and chemotherapy. My project aims to develop a new radioimmune therapy for the treatment and diagnosis (theranostic) and monitoring of synovial sarcoma non-invasively and with limited side effects.

Jordan Oman

Pharmaceutical Science - PhD

Rational Development of Positive Allosteric Modulators (PAMs) Targeting $\alpha 9/\alpha 10$ Nicotinic Receptors for Age and Noise Induced Hearing Loss

Nicotinic acetylcholine receptor (nAChR) $\alpha 9$ and $\alpha 10$ subunits are mainly expressed in hair cells of the inner ear and are involved in auditory processing. Ascorbic acid (AA) has been identified as a positive allosteric modulator for $\alpha 9/\alpha 10$ nAChR. AA is a chiral synthon that will be used in the synthesis of new positive allosteric modulators. Synthesized analogs of AA will be screened for biological activity. This research provides the characterization, identification, and structure-activity relationship analysis of enantiopure analogs of AA.

Tyler Paladino

GeoSciences - PhD

How Wind Can Destabilize Explosive Volcanic Eruptions

Explosive eruption plumes can produce deadly hazards like pyroclastic density currents that are incredibly dangerous. Volcanologists have a good understanding of factors that lead to pyroclastic density current formation, with one critical exception: wind. I simulated hundreds of eruptions to understand how wind can affect pyroclastic density current formation. I found that wind altitude is critical to the stability of an eruption; low altitude winds tend to destabilize plumes, while high altitude winds don't affect stability at all.

Kiran Pandey

Electrical & Computer Engineering - MS

Analysis and Localization of Partial Discharges in Power Transformers

The detection and accurate localization of partial discharges (PD) during factory acceptance test (FAT) in power transformers minimizes failures and ensures safe operation. Conventional method of monitoring PD during FAT do not provide information about the location of PD activity. Different factors that can initiate PD is reviewed. Proper classification of the PD sources based on the acquired waveform and PD followed by the application of acoustic emission sensors is being performed for the accurate localization of partial discharges.

Pamela Pascali

Anthropology - MS

Idaho's Stone Tool Sources: Simple Selection or Picking Preferentially?

Due to its volcanic past, Idaho's Snake River Plain is a unique landscape dotted with obsidian. Obsidian is a glass material created from quickly cooled lava and is a perfect material to create stone tools such as arrowheads. Archaeologists have found many different styles of stone tools across Idaho and with the aid of new technology we can match those artifacts to the material source of obsidian. My research seeks to ask deeper questions about Indigenous knowledge and investigate whether or not we can quantify quality using hardness testing.

N. Evelin Paucar De La Cruz

Engineering & Applied Science - PhD

Novel Microbial Fuel Cell-Hydroponic (MFC-Hyp) Technology for Simultaneous Electricity Generation and Nutrient Removal/Recovery from Wastewater

To meet the increasing demands of water, energy, and food, it is becoming essential to develop sustainable technologies capable of recovering energy and nutrients from wastewater while simultaneously treating the wastewater. In this effort, the novel integrated Microbial Fuel Cell-Hydroponic (MFC-Hyp) technology was designed, developed, and operated in the Environmental Engineering laboratory at Idaho State University to focus on bio-electricity generation and nutrient removal and recovery from wastewater.

Gabriela Perez

Clinical Psychology - PhD

Understanding Sexual Assault and Psychological Distress in the Context of Material Hardship

Sexual assaults against women are prevalent and associated with a range of negative mental health outcomes. However, mental health is also affected by contextual factors, including material hardship (food and housing insecurity). Thus, the present study investigated the extent to which sexual assault and material hardship are associated with psychological distress. Sexual assault and material hardship were both independently associated with psychological distress, demonstrating the relevance of material hardship in therapeutic interventions.

Megan Schmid

English - MA

The Phoenix of Invention

The Spanish Golden Age had a tremendous effect on the western literary canon. One of its central figures, Felix Lope de Vega Carpio, drove the development of a theatrical tradition that prefigures modern trends in structure and genre conventions more closely than his English contemporaries. Yet, he has been largely forgotten by the anglophonic world. It is long past time we rediscover Lope's contributions by enjoying more translations of his plays.

Jethro Smith

Communication - MA

Dragging Kids Down: Media Influence, Fearmongering and Silencing Youth-Friendly Drag Events

Nearly one-in-ten teenagers today identify as LGBTQ. American youth are using the art of drag to explore and express their gender identities and sexual orientations at pride parades, community events, and libraries. These spaces are increasingly under attack by political and media personalities. The application of Agenda Setting Theory to the recently canceled "Drag Kids" show at the 2022 Boise Pride Festival reveals how mediated responses to drag events involving youth villainize queerness.

Matthew Stewart

Geographic Information Science - MS

Using Remote Sensing to Assess Vegetation Changes in the Snake River Plain

Increasing levels of atmospheric carbon may harm the planet. These changes are quantified through a lengthy process of collecting and analyzing individual vegetation samples. To expedite and reduce cost, it's possible to combine multi-band imagery with isotope analysis to cover larger study areas. This project plans to pair satellite imagery and isotope analysis to assess major changes in carbon intake of vegetation in the Snake River Plain which can result in future environmental assessments and possible conservation planning.

Heather Wulff

Speech-Language Pathology - MS

Influence of Access to Social Media on Caregiver and Provider Knowledge for Children in Early Intervention

Determining if social media influence impacts caregiver/provider knowledge allows SLPs to illustrate models asynchronously to enrich programming for current clients, and to reach individuals who may benefit from programming that would otherwise not be provided with services. When incorporated effectively, the principles outlined for creating social media content can help guide clinicians to improve client knowledge, as well as engagement, attention, and memory.

Ritesh Yadav

Business Administration - MBA

Foreign Aid and Gender Inequality: Sectoral Impact of Aid

We studied the impact of foreign aid on gender inequality. We disaggregate aid into seven sectors to determine which types of foreign aid reduce gender inequality in recipient countries. We find that an increase in total aid decreases gender inequality, however, when we differentiate among types of aid, we find

that the social and economic sectors decrease gender inequality, humanitarian aid increases gender inequality while the others have an insignificant impact on gender inequality.

Fatemeh Zareihajiabadi

Pharmaceutical Science - PhD

Using Laser Technology to Liquify Tumors Inside Out

Working with children struggling with cancer, inspired me to take a step back from my clinical duties as a hospital pharmacist and start my research journey trying to improve childhood cancer treatments. My current focus is on bone cancer and I am trying to induce heat in targeted cancer cells with near infrared laser and liquify them, which can cause cancer cell death.



**Idaho State
University**

**Graduate
School**