



UNDergraduate SHOWCASE

Tuesday, April 30, 2019

9:30 a.m.-4:30 p.m., Memorial Union Ballroom

OGG1 DNA Repairs for Respiratory Lung Diseases

Mariah Thoemke

CRISPR-CAS 9: History of Genome Editing

Noah Skavhaug

Analysis of Organics in Particulate Matter Collected CARES Campaign

Brielle Van Orman

Impact of progesterone and estradiol on MCF-7 breast cancer cells

Kristina Griesgraber

Stick a Needle in It: Why College Students are Not Donating Blood, and How to get them back

Sayjen Aldridge, Michael Moen, Alexa Otto, Alex Skime & Katie Moller

Public Perceptions on the Effectiveness of Music Therapy

Madison Jochim

TD-Pyr-MS Analysis of Particulate Matter collected by the CARES Campaign

Jeremy Kirk

Historical Mountain Lion (*Puma concolor*) Sightings in North Dakota

Emmalee Woods

Using citizen science to depict historical changes in moose populations in North Dakota

Sierra Schnellbach

TSA Privatizations

Emily Whitt, Jonathon Kilea, Evan Brecht & Laykn Presler

The Implementation of Electric Planes

Alex Korkowski, Carter Lane & Connor Grainger

Changing Route Structures of US Airlines

Kevin Layoun, James Benning, James Yoger & William Poirier

Winglets should be required on all US-registered aircraft

David Campos, Geoffrey Oyler & Zonghong Chen



Should aviation employees provide more protection for work exposed cancer in the flight deck?

Dante Rodondi, Chad Holstein, Russel Wyneken & Corbin Wahl

How Low Income Affects Mental Health

Katie DeBoer, Joshua Smith & Loay Bakhtyari

Northlands Rescue Mission

Caitlin McCarthy, Kayla Vandervorste & Sam Keeley

Mandatory Financial Education in High School

Hannah Vujcevic & Zak Anderson

Should United States airports implement biometric security measures?

Christina Ortega, Nathan Engstrom, Mitchell Lipson & Brandon Cooksey

Improving ATC Technologies

Brittany Barnum, Matthew Frenette, Nic Berning & Tyler Bryant

Increasing Airline Pilot Retirement Age to 67

Alexandra Olson, Jordan De Kylene, Janessa Meuleners & Tyler Couch

Expedited Integration into the National Airspace System should be done for Group 1 and 2 Unmanned Aircraft Systems (UAS)

Codie Ward, Zachery Long, Joseph Fiori & Tyson Berg

Class teaching about social issues in Grand Forks

Tenzin Dhondup & Alix Brumitt

Lower the ATP Requirement from 1,500 hours to 250 hours

Betsy Thompson, Grant Barker & Zach Neiderer

Detection of Lanthanide-Doped Silica Nanoparticles Using Single Particle Inductively Coupled Plasma Mass Spectrometry

Rachel Ross

Should the aviation industry increase investments in automation and biometric technology to improve airport security?

Samuel Maziak, Aaron Schaefer, Douglas Dorn & Tanner Dornagrighia

Psychological Effects of Familiar Music on symptoms on hypertension

Maggie O'Malley & Taylor Robinson



The effects of music therapy interventions on asthma treatment

Luke Yager, Kendal Edmonds & Devon Abler

How listening to a familiar song vs. playing a familiar song effects brain waves, heart rate and blood volume

Evie Straus & Rachael Schiller

Support Animals on Airplanes

Yevelina Pritulik, Steve Hoff, Joshua Patzer & Timo Soroush

Should UTM be utilized system-wide in the NAS?

Carson Graham, John Liljeblad, Samuel Johnson & Alan Yu

Robotics for Kids

Matthew Talley, Rachael Garvey & Alex Lee

Tool use in sea otters, enhydra lutris, and its ecological impacts

Marea Schommer & Taylor Johnson

Solubility of Lignin, a Plant-Base Macromolecule, by Various Organic Solvents

Lacy Lilleboe

Needs and Issues of Geofencing

David Watermilller, Owen Berg-Arnould, Luke Fudukowski & Brandon Sweet

Capillary Electrophoresis in the Determination of Inorganic Anions and Metal Cations in Industrial Waste

Brooke Meyer

Stabilization of Lithium Cathodes via various methods

Ken Ryan

Social interactions of translocated American Bison (Bison bison) at Theodore Roosevelt National Park

Jaylin Solberg

Public's Responses to High Rate of Suicides among Native American Youths: The Roles of Attributions and Exemplification

Jenna Peneueta-Snyder

The Concept of Compassion Fatigue Applied to the Community's Perception of Poverty

Anna Horner



Animals & Airplanes

Kyley Foster, Kala Loehrer, Avery Cryane & Owen Schrader

Learning Spaces for Students with Disabilities-Grant Proposal

Rachel Morin, Kendra Gabbert & Mattie Cox

Biometric Technology in Airport Security

Wade Baltazar, Isabella Laden, Forest Anderson & Eric White

Single Pilot Cargo Operations Assisted by Autonomous Ground Based Operator

Nikolay Todorov, Jake Zehr, Tyler Ferwins & Travis Gylling

The Changing Dynamics of Airline Macroeconomics

Nicolas Britton, Yanni Loizos, Miranda Huntsman & Spenser Rohlf

UAS Defense Systems for Commercial Airports

Carter Lipke, Sam Henion, Charles Hollcraft & Thomas Wolford

Radon Mitigation

Josie Sylte, Gavin Salisbury, Nick Steneghem, Jake Schwieters & Zachary King

Community Classrooms

Gunnar Pederson, Hans Peterson, Benjamin Ericksen, Josh Keller & Lexi Bakken

Mental health screening should be an area of evaluation when obtaining a medical certificate

Luke Lohse, Alex Kennerly, Tanner Rhodes & Kyle Zimmerman

Flight Training: Quality over Quantity

Josh Sanchez, Declan Hoffman, Logan Diehl & Garret Gubbels

For the People: A Grant Proposal for Educating Students on the Public Defense Career Path

Names

Katie Tschosik, Peyton Smiley & Jack Hadack

Improving Industry Health Services for Pilots

Nathan Schlegel, Morgan Peng, Alexis Anderso & Philippe Koenig

Remote Air Traffic Control Tower: The Future

Liz Rahmlow, Luke Bradley & Scott Colbacchini

Vocational Training for Mothers in Poverty

Maddie Ardelean & Alyssa Machovsky



Effects on Greater Sage-Grouse (*Centrocercus urophasianus*) Potential Lekking Sites Due to Oil Surge in Southwest North Dakota

Hunter Beckert

Are You My Mommy? Conspecific Brood Parasitism in Lesser Snow Geese (*Anser caerulescens*)

Ayla Morehouse, Abby Keller & Samuel Hervey

Stigma of Mental Illness: Relationships to Social Psychology and Political Attitudes

Jenna Wolff

Bio Fuels in the Aviation Industry

Mason Kipp, Mohamed Ragab, Kunal Sujjanani & Alec Cote

Seat Standards in the Aviation Industry

Jesse Foster, Kale Gieske, Nick Richard & Adam Suchomel

How does Wetland Surface Area Correlate with Estimated Mallard (*Anas Platyrhynchos*) Population?

Kevin Frigon

Perceived Efficacy in Patient-Provider Interactions in Rural Health Clinics and a Federally Qualified Health Center in North Dakota

Claire Erickson

Privatization of ATC

Dylan Lindenfelser, Jack Pucillo, Chase Norberg & Madeline Lilley

Necessity of U.S. Airports to Expand and Modernize

Christian Ierino-Summers, Joe Smowski, Keegan D'Souza & Colton Sullens

The Benefits and Potential Issues Related to the use of Biocontrol to Manage Invasive and Nuisance Species

Noah Hollen & Nick Urlaub

FAA should offer grant and mandate airport improvement programs

Jonathon Wickersham, Tyler Lauer, Connor Cazac & Jeff Glatz

A Diacid Building Block Synthesized from Sorbic Acide Using Crystal Engineering and Solid State (2+2) Photocycloaddition

Micah Mabin

Targeting Chemoresistance in Breast Cancer through Blockade of Calcium Channels

Kole Hermanson



Gender Pay Gap Awareness Program: A Grant Proposal

Josie Fredericksen, Alex Niebeling & Kyllie Trenda

Cultural Competency in Healthcare

Nick Vejr, Max Bourne & Kylee Cruys

Dealing with Financial Anxiety

Tessa Philips, Travis Summers & Alex Bodin

Environmental Sustainability Union Renovation

Nate Clinton & Juliann Spilman

UNDer Financial Control!

Will Bennett, Mohammed Alshehry, Daniel Marschall & Ezri Thoreson

Constructing a Complement of the revA Gene in Borrelia burgdorferi, the Cause of Lyme Disease

Paul Schoenberger

Hunger in Grand Forks, ND

Mandi Hamilton & Fatema Suleiman

Food Security

Phoebe Eichorst & Zachary Seeger

Urban Water Conservation

Devin Stephens & Briar Lebeau

Decline in Bee Population

Masha Lobanova & Daniel Pawlak

Plastics in the Ocean

Emmalee Woods & Sierra Schnellbach

Contemporary Wildfire Management

Matthew Mutchler

Solic Power

Ang Anpeng

“A New Grand Challenge for UND”

Kalli Sonnenburg, Maria Draper, Bethany Fehr, David Fehr, Maxwell McCann, Michael Thompson & Kryston Wisele



Increasing Bee Populations with Modified Honey Replacements for Apiculture

Ally Sogge & Jacob Kipp

Bacteria in Thunderstorm Anvils

Harrison Rademacher

Forest Fire Recovery

Kennedy Kraft & Louis Belley

Wind Farm Suitability Analysis

Jordan Swanson & Sean Olson

Food Insecurity in Africa

Jordan Vail

Invasive Specifities-Zebra Mussels

Brady Hauch & Tyler Demenge

Dam Removal in Clolumbia River Basin: Balancing environmental, social, and economic needs

Samuel Landau

Human Burial and Its' Effect on Local Ground Water and Soil

Holden Pieh

Live Music Presentations

Work presented: "Fish are Jumping" for solo flute by Robert Dick

Student: Sarah Curtiss (flute)

Work presented: Toccata in E flat minor by A. Khachaturian

Student: Kara Hathaway (piano)

Work presented: Allegro from Concerto for Double Bass and Orchestra Op. 3 by Sergey

Koussevitzky

Student: Michael Farrek (double bass)

Piano accompanist: Matthew Sebald

Work presented: Scherzo, Largo and Saltarelle from "Triptyque" by H. Tomasi

Student: Christiena Taralson (trumpet)

Piano accompanist: Matthew Sebald

Work presented: "Che fiero momento" from Orfeo ed Euridice by C. Gluck

Student: Rachael Schiller (soprano)

Piano accompanist: Dr. Anne Christopherson



Work presented: “Mourning Dove Sonnet” by C. Deane
Student: Rachel Agan (marimba)