UND ergraduate 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 Kylen, 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 Dornagrichia

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 Watermiller, 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 Rohlfs

UAS Defense Systems for Commercial Airports
Carter Lipke, Sam Henion, Charles Hollcraft & Thomas Wolford

Radon Mitigation
Josie Sylte, Gavin Salisbury, Nick Stenegghem, Jake Schwieeters & 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 Sujanani & 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 Specifies-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)