2019 STUDENT RESEARCH SYMPOSIUM
AND SENIOR RECOGNITION CONVOCATION
COMPLETE SCHEDULE

SESSION I: 9:00-9:45 a.m.

Center for Faith and Life Main Hall
Opening Event: Celebration and Keynote Address
*Introit: My Spirit Be Joyful (BWV 146), by J. S. Bach (1685-1750), transcribed by Harry Herforth. Performed by The Transcendent Brass (Dr. Rebecca Boehm Shaffer, faculty advisor): Marya Haugland ’20 and Curtis Cook ’19, trumpets; Luke Berkley ’20, horn; Christopher Lange-Pearson ‘19, trombone; Noah Reisdorff ‘20, tuba.
*Invocation: Anne Edison-Albright, campus pastor
*Welcome: Elizabeth Steding, associate professor of German and director of student honors and fellowships
*Research Reflections: Alex Aakre ‘19 and Ananda Easley ‘19
*Recognition of Symposium Participants: Loren Toussaint, professor of psychology and member, honors advisory committee
*Postlude: Quintet, op 73, III. con brio, Malcolm Arnold (1921-2006). Performed by The Transcendent Brass.
*Benediction: Anne Edison-Albright
Valders 367
Medicine and Health
Moderator: Claude Mertzenich

Marta Williams ’19
PI3K/Akt Signaling Influences Iron Metabolism in Caenorhabditis elegans

Madison Devine ’19
Testing the Effectiveness of a New Drug on Mitochondrial Trifunctional Protein Deficient Patient Cell Line

Emily Fuller ’19
The Application of Steady-State Fluorescence Spectroscopy to Investigate the Binding of Curcuminoids and HSA

Preus Library, Hovde
Literary Explorations
Moderator: Holly White

Kelli Emerson ’19
"Sunflowers"

Kaitlyn Buls ’19
“And it was soon over”: Negotiating Memory in Austen’s Persuasion and Ishiguro’s The Remains of the Day

Matthew Espey ’19
What Makes a Story Worth Telling: An Analysis of the Many Adaptations of Hans Christian Andersen’s The Little Mermaid through Character Transformation

Olin 107
The Body and Pain
Moderator: Angela Kueny

Ananda Easley ’19
The Impact of Mealtime Environment on the Formation of Eating Disorders

Becca Buse ’19
Exploring Gender-Based Violence in Bolivia

Shannon Lunn ’20
Men’s Experience with Fibromyalgia: A Comparison Across Cultures

Olin 112
The Arts and Social Attitudes
Moderator: Jon Jensen

Emily Stifter ’20
The Arts as Propaganda: A Look into the Reign of Louis XIV

Annika Rotto ’19
Hogarth’s Marriage à-la-Mode: Public Perception of Syphilis in the 18th Century

Alexander Davis ’19
Human-Robot Soldiers of the 17th Century: How Louis XIV’s Army Inspired the Human Automaton
Valders 262
Farming, Forests, and Flooding
Moderator: Molly McNicoll

Jack Craven '21
Economics of Cover Crops

Samantha Clements '19
Jonathan Rivera '20
Exploring Community Flooding Experiences in the Upper Iowa River Watershed

Savannah Wilson '19
Forest Communities of Finch Memorial Hardwoods, Winneshiek County, IA

Marty's (Dahl Centennial Union)
Erdman Prize Candidate Presentations
Moderator: Alexandra White

Olin 102
Code(s) and Numbers
Moderator: Roman Yasinovskyy

Allen Junge '19
Eros Casas '19, Kevin Cobble '19, Jason Hu '19
WebIDE - An Online IDE for Budding Developers

Matthew Deetz '19
Mitchell Petellin '19, Maxwell Tapp '19
Track Tracker

Laura Olson '20
John Kelly '21, Samuel Moyer '20
Exploring Paths: Parker's Conjecture on Square Sums
SENIOR RECOGNITION CONVOCATION: 11:15 a.m. - 12:00 p.m.

Center for Faith and Life Main Hall
- **Invocation:** Mike Blair, campus pastor
- **Recognition of Honor Society Membership**
- **Introduction of speaker:** Mark Eichinger, associate professor of biology
- **Address, “Choices and Perspectives”:** Marian Kaehler, professor of biology
- **Anthem:** Circle of Life, by Elton John and Tim Rice, arr. Erik Sherburne. Performed by Aurora and Norsemen, Jennaya Robison and Mark Potvin, conductors
- **Benediction:** Mike Blair

LUNCH BREAK: 12:00 - 1:00 p.m.

Community Dessert Gathering with Complimentary Ice Cream Novelties, Bentdahl Commons, central campus.
SESSION III: 1:00-2:00 p.m.

Valders 367
Human Rights
Moderator: Nancy Gates Madsen

Ana Itzel Lopez Romero '19
La Pachamama Está Viva: Non-human Rights and Personhood in the Andes

Jacob Domogalla '19
Slavery: A Comparison between the Life of the Roman ‘Paedagogus’ and the Biracial ‘Mulatto’ Slave in the Antebellum South

Claire Eichhorn '19
Politics and Human Rights: The Human Rights Paradox and the Madres de Plaza de Mayo

Preus Library, Hovde
Religion, Ethics and Suffering
Moderator: Kelly Sharp

Madeline Ajack '19
Post-Holocaust Jewish Influence on Christian Thinking: Is God Intervening or Merely Present?

Robert Muller '20
The God Who Suffers: An Exegetical and Theological Exploration of Pain and Suffering

Jane Clare '20
The Buddha Bowl: Food Ethics in Zen Buddhism

Olin 107
Social Issues
Moderator: Carly Foster

Mareda Smith '19
Shaping Equitable School Finance Policy: Comparative Analysis of American and Finnish Cultural Values and Education Policy

Alex Aakre '19
The Haugean Diaspora

Forrest Stewart '19
A Green New Deal: An Intersection of the Environmental and Social

Olin 112
Data Science in Society
Moderator: Michael Engelhardt

Nkosi Mngomezulu '20
The Role of Fundamental Analysis in Forex Trading: An Analysis of Scalping Strategy in the EUR/USD Pair

Adam Ulring '19
NYC Ride Times Analysis

Gavin Schaeferle '19
Predicting Stock Changes With Natural Language Processing
Valders 262
Understanding Wildlife Patterns
Moderator: Stephanie Travers

Matt Lagus '19
Bee Diversity and Comparison of Trapping Methods along an Elevational Gradient in an Ecuadorean Cloud Forest

Gabrielle Blair '19
Multiple Paternity in Wild White-tailed Deer detected using High-throughput Sequencing

Claire Hamilton '19
The Role of Place and Environmental Values in Northeastern Farmers' Land Management Decisions

Noble Recital Hall (Jenson-Noble)
Music Composition
Moderator: Jeff Dintaman

Natalie Nelson '19
John Kuntz '19
Virago: A Study in Writing for Song

Fezile Mnisi '20
Music Composition

John Kuntz '19
Matthew Espey '19, Andrew Tiede '19
Matchgirl: A New Musical Theater Work

Olin 102
Social Networks
Moderator: Roman Yasinovskyy

Katherine Hummel '19
Alexander Davis '19, James Miller '19
LutherCHIPS

Tyler Conzett '19
Mason Donnehue '19, Thomas Twiton '19
PluggedIn: Connecting Musicians with Opportunities

Bradley Kovacovich '19
Rafael Broseghini '19, Tristan Shaffer '19
Treffe
SESSION IV: 2:15-3:45 p.m.

Shl/Valders
Poster Session
Moderator: Kirk Larsen

Mohammed Aljardat '19
Movie Recommender

Keanna Belau '19
Beyond the Books: Luther College Social Impact Research Fellowship - Decorah Public Library

Beka Beriashvili '19
Yelp Restaurant Recommender System

Gabrielle Blair '19
Kendra Weirens '20
Investigating Whether Dysregulation of Matrix Metalloproteinase Activity Causes Changes in the Structure of the Extracellular Matrix in *C. elegans*

Italee Castellon '19
Lauren Voigt '20
Connecting Communities: How to Bridge the Gap through Volunteering

Maya Evans '19
Developments in the Study of Anatomy in Seventeenth Century France

Kyle Gilberg '19
An Analysis of Historical Olympic Games Data

Claire Hamilton '19
Joshua Tank '20
Herbivory Damage on Cultivated, Wild, and Hybrid Varieties of *Helianthus annuus*

Isaac Highum '19
Determining the Functional Requirement for the *C. elegans* Matrix Metalloproteinases ZMP-4 and ZMP-6

Catelyn Janda '19
In-Service and Pre-Service Teacher Views on Addressing Social Justice in the Music Classroom

Madeline Kroeger '20
Jam Riyan Hamza '21, Michaela Lindemann '20
Synthesis and Characterization of a New Unsymmetrical Digi glycolamide Ligand for Rare Earth Metal Extraction

Camden Long '19
Discovering Happiness: Examining Why Five Low-developed Countries are Unusually Happy

Linh Luong '20
Geophysical Investigations at the Lane Enclosure Site

Jacob Noble '19
The Effect of Prior Encouragement by Owners and Strangers When Dogs Attempt to Solve the Unsolvable Task: Gazing
Benjamin Nottleson '19
Benjamin Nelson '21
Influence of CdSe Nanocrystal Shape on Optical and Vibrational Spectra

Hawi Nyiera '20
Serena Rolland '20
Analyzing the Binding Relationship between Curcuminoids and Human Serum Albumin through Steady State Fluorescence Spectroscopy

Rachel Penningroth '19
Shau Khadka '20, Rebecca Mullenbach '19
Pathogens in Northeast Iowa Ground and Surface Water: New Technology Allows for Potential Source Identification

Chi Pham '19
The Influence of Personal Characteristics and Sense of Belonging over Academic Motivation

Jacob Wessels '19
Analysis of Turnover Intentions Among Food Service Workers

Additional poster displays presented by students from the following classes:
Biology 112: Insects, Humans, and the Environment
Biology 250: Restoration and Conservation
Biology 354: Evolutionary Biology
Foreign Culture/Political Science 261: Moving to and from Germany: Immigrants, Refugees, and Guest Workers
Nursing 490: Senior Project
Physics 182: Classical Physics II
Physics 282: Modern Physics II
Psychology 353: Social Psychology
Valders 367
Chemistry
Moderator: Molly Wilker

Victoria Vivtcharenko '19
Dopamine Quantification in Caenorhabditis elegans with High-Performance Liquid Chromatography

Emily Reasoner '19
Examining the Effect of Functional Groups on Ligand Substitution Dynamics

Preus Library, Hovde
International Politics Past and Present
Moderator: Brian Caton

Karl Badger '19
American Interventions and Foreign Public Opinion

Brandon Trueblood '19
An Analysis on the Motives Behind Emperor Hadrian's Hellenization of Rome

Race Fisher '19
“A More Favorable Soil”: U.S. Propaganda in Norway During the First World War

Olin 107
How we Listen, What we Hear
Moderator: Jonah Elrod

Morgan King '19
Storytellers and Listeners: How Ear Hustle Bridges the Life Inside and Outside of Prison

Anna Seboldt '19
Slippin' up and Whippin' up: An Ideological Critical Analysis of Childish Gambino's This is America

Alexander Lapinski '19
Shifting the Musical Landscape: Dynamism in the Game Soundtrack of FEZ

Olin 112
Talking about Brexit
Moderator: Linda Silber

Anna DeWitt '19
Northern Ireland: Brexit, Borders and Identity

Kelli Emerson '19
Brexit, Bregret, and the "Point of No Breturn": Examining the Linguistic Implications of Brexit
Valders 262
Our Physical World
Moderator: Erin Flater

Lucas Ruge-Jones '19
Measuring Material Properties on the Nanoscale using a Multifrequency Lockin Amplifier

Zach Martin '19
Charm Meson Production from Radiative Bottomonium Decays

Jacob Schulz '19
Microwave Attenuation in Electrolyte Solutions

Olin 101
Visual Culture
Moderator: Kate Elliott

Hannah Bergstedt '19
J.M.W Turner: From Romantic Realism toward the Abstract

Grace Gibson '19
Toulouse-Lautrec: A Development from High Society Ladies to Lesbians in Love

Allison Peters '19
Plastics, Posts, and Politics: How Environmental Organizations use Facebook to Mobilize the Public around Ocean Pollution, Sparking Contemporary Policy Shifts

Olin 102
Data Analysis
Moderator: David Thompson

Sage Debrum '19
Keegan Husom '19, Brian Ramirez '19
Data Sense Senior Project

Jake Mester '19
Meghan McGinnis '19, Hannah Reuss '19
ITS Dashboard