Welcome to the annual Learning @ Luther Showcase at Luther College! This day is one of the highlights of our academic year as it features the exceptional work of our talented students under the skillful guidance of our faculty.

The Showcase provides an opportunity for the campus community to observe and learn. To ensure a respectful environment for all, we kindly ask that all ideas be shared in a thoughtful and considerate manner, with respect for the perspectives of others. As a courtesy to the presenters, we request that spectators only enter and exit sessions between presentations and not during them. Please refer to this program for the full schedule of events for the Showcase.

**Key features include:**

**Paideia 112 Research Presentations:**
Since its beginning in 1977, Paideia 111/112, our common first-year course, has included a research paper unit which culminates in a lengthy thesis-driven paper. Each of the 22 Spring 2023 Paideia 112 sections is represented by at least one student presentation as part of the Learning @ Luther Showcase. Presentations by students from Paideia 112 are indicated with the student names in red text.

**Oral Presentations:**
Panels of 3 or 4 talks in one session will include individual 12 to 15-minute talks with time for questions after each individual presentation, as time allows. A faculty moderator will be present in each room to monitor the timing for each talk, but exact times for each talk are not determined. The session moderator and speakers may determine a different order for presentations within one panel than is indicated in the program.

**Lightning Roundtables:**
Roundtable sessions are 60 minutes in length and start with a 5-minute back-to-back lightning talk by each of the session participants. The talks are followed by an open-ended discussion moderated by a faculty member, where audience members can ask questions for the collective group of student participants. Exact times for each talk are not determined, but timing will be monitored by the faculty session moderator.

*A special thank you to those who assisted with organizing this year’s event including:* LaDonna McGohan, Brian Hiester, Claude Mertzenich, Lindsey Row-Heyveld, Melanie Batoff, Michelle Einck, and Bethany Shroyer
# 2023 Learning @ Luther Showcase

## Day-at-a-Glance

### SESSION I: 9:00 A.M. - 10:15 A.M.

<table>
<thead>
<tr>
<th>Jenson Choir Room</th>
<th>Olin 101</th>
<th>Mott-Borlaug</th>
<th>Hovde Lounge</th>
<th>Valders 206</th>
<th>Valders 362</th>
<th>CFL Recital Hall</th>
<th>Olin 102</th>
</tr>
</thead>
</table>

### COMMUNITY GATHERING: 10:15 A.M. - 10:45 A.M.

*Center for Faith and Life stairs & Bentdahl Commons* with refreshments

### SESSION II: 11:00 A.M. - NOON

<table>
<thead>
<tr>
<th>Jenson Choir Room</th>
<th>Olin 101</th>
<th>Mott-Borlaug</th>
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### LUNCH BREAK: NOON-1:00 P.M.

### SESSION III: 1:00 P.M. - 2:00 P.M.

<table>
<thead>
<tr>
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<th>Valders 206</th>
<th>Valders 362</th>
<th>CFL Recital Hall</th>
<th>Olin 102</th>
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</table>

### Hoslett Natural History Museum Exhibit Unveiling: 2:15 P.M. - 2:30 P.M.

*Hidden Worlds of Northeast Iowa: Giant Sea Scorpions, Sinkholes and Springs*

*Valders Hall of Science*

### POSTER SESSION: 2:30 P.M. - 4:00 P.M.

*Sampson Hoffland Laboratories Carlson Atrium/Valders Hall of Science Concourse*

### SESSION IV: 2:30 P.M. - 3:30 P.M.

<table>
<thead>
<tr>
<th>CFL Recital Hall</th>
<th>Olin 102</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lightning Roundtable H</td>
<td>Lightning Roundtable I</td>
</tr>
</tbody>
</table>
SESSION I: 9:00 -10:15 A.M.

Jenson Choir Room

Expressions of Identity within Music
Moderator: Andy Hageman

Catherine Wedin
Ma Chine Saigne: Gendered and Political Dichotomies of the Occident and the Orient in M. Butterfly

Berit Skogen
Et samfunn for alle?: Everyday islamophobia, exclusion, and Norwegian identity explored through Karpe’s “Kunsten å være Inder”

Tam Ayers
There’s A Place For Us: Camp and AIDS Narratives in Pop Music

Olin 101

Computer Science & Data Science Senior Projects: Developing Networking Apps
Moderator: Phil Iversen

Tom Altier, Frank Lugola, LJ Okal & Solomon Thompson
NorseMates Roommate Finder Application

Ghazal Alabtah
Easy Help - A Communication Web App

Kritib Bhattarai, Anirudh Chauhan & Michael Musa
Luther Marketplace

Aimee Przhelyaskovskiy
The Process of Learning How to Make an Interactive Dashboard

Mott-Borlaug

Biology Senior Projects: Sustaining Living Systems
Moderator: Eric Baack

Hayden Cronin
Zinc Accumulation onto Stream Sediments and its Effects on Bacterial Communities in Northeast Iowa

Max Holt
What can we learn from worms about the space outside of cells? Investigating the cuticle in C. elegans

Sophie Epps
Off to the Races: Soil Organic Matter Hastens Seed Germination in Piñon Pine

Ashley Karas
Understanding the Decline of Gray Foxes Using Diet Metabarcoding
Preus Library Hovde Lounge
Lightning Roundtable A
Moderator: Laura Peterson

Ryan Adams
*Elements of Surprise, A 3-d Adventure: Chromium*

Christian Montover
*A Six-Stringed Revolution*

Will Trunnel
*Elements of Surprise, A 3-d Adventure: Zinc*

Samuel Scheffler
*Murder, Machine, and Machinal: America’s Expressionist Response to Industrial Chaos*

Lauran Schwake
*Drawing the Line: Exploring the Human-Cyborg Continuum as it Relates to Philosophical, Moral, and Legal Pursuits*

Annika Benson
*Escalating Reliance on Robots and Artificial Intelligence*

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Valders 206
Paideia 112: The Role of Music in Shaping Culture
Moderator: Jonathan Struve

Anna Floden
*The Grrrl Scout Law: The Commodification of the Female Body Within the Riot Grrrl Movement*

Sarah Miller
*More than Music*

Kurt Lebakken
*The Twelve-Tone System’s Philosophy on Art*

Liam Edberg
*The Truth About Stradivari*
Valders 362
Paideia 112: The Effects of Communication and the Cold War
Moderator: Todd Pedlar

Olivia Engler
*Sports and Socialism: National Identity in East Germany*

Julia Sheyko
*No Communists Need Apply: How the Cold War Shaped US Immigration Policy*

Anh Nguyen
*A Comparison of Political Attitudes toward the Vietnamese Communist Government among the Younger and First-Generation Vietnamese Americans*

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Center for Faith and Life Recital Hall
Paideia 112: Power and Politics
Moderator: Kate Narveson

Elli Ess
*Churching: Oppression or Empowerment?*

Jenna Kleven
*Margaret Junkin Preston*

Macy Taylor
*Liar, Liar, Our Forests are on Fire: The Multitude of Influences on the Great Hinckley Fire of 1894*

Hannah Brown
*Women of Journalism: Walking the Line of Femininity and Progress*

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Olin 102
Immersion and Intervention
Moderator: Angela Kueny

Josie Ramler
*Physical Acting and The Facilitation of Character-Based Movement*

Grace James
*Oil and Water*

Victor Oluwa & Ester Bitijula
*Child Labour in the Democratic Republic of Congo*

Thandeka Chaka
*Building a Netflix Recommendation System for Movies using Content-Based Filtering*
COMMUNITY GATHERING: 10:15 A.M. - 10:45 A.M.
Center for Faith and Life stairs & Bentdahl Commons

SESSION II: 11:00 A.M. - 12:00 P.M.

Jenson Choir Room
Music Senior Projects: Musical Influences
Moderator: Melanie Batoff

Jayna Kendell
Battle Hymns: How the Music of the Civil War Served as a Unifying Force in the North

Ali Pinto
Arvo Part's Tintinnabuli

Olin 101
Computer Science & Data Science Senior Projects: Building New Perspectives
Moderator: Thuy Do

Brandon Cruz
Traffic Sign Classification using Convolution Neural Networks

Tess Hilgerson, Ian Baker & Jacob Vandermoss
Confused and Deranged Chess

Noah Woxland, Micah Miller & Aidan Schooling
First-Person-Shooter Game Development: Extra Death

Tayton Bartholomew
Predicting Offensive Efficiency in the NFL

Mott-Borlaug
Biology Senior Projects: Biological Disruptions
Moderator: Kirk Larsen

Julia Schulte
Transcriptomic Analysis of Caenorhabditis elegans in High and Low Iron Conditions Using Poly(A)-test RNA Sequencing

Ethan Braun
Impact of Vegetation Composition on Carbon Storage in Tallgrass Prairies

Stephanie Lewis
CAR-T Cell Therapy Targeting Exhausted T cells in Tumors

Nathan Anderson
Canine Distemper Virus Infection Alters the Gut Microbiome Composition of the Gray Fox
Preus Library Hovde Lounge

**Measuring and Predicting Changes**
Moderator: Brian Caton

**Kaeden Fellingham & Kirby Masso**
*Water Use and Water Conservation at Luther College: An Analysis and Recommendation for Improved Sustainable Usage of Water*

**Sam Wilson**
*Analysis of Radiative Decays of the Upsilon(2S) State of Bottomonium*

**Oumar Samassi Souare**
*The Role of External Debt in the Ivorian Public Sector Corruption*

**Pratiksha Gautam**
*The Housing Market and Interest Rates*

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Valders 206

**Paideia 112: Racial Identities and the Arts**
Moderator: Amy Weldon

**Sea Orme**
*African-American Folktales: Adaptable Reflections and Distortions*

**Shae Downing**
*From Plantation to Museum: The Art of Quilting in African American Culture*

**Lindsey Moseley**
*Depictions of Native Americans in Silent Film*

**Jersie Benson**
*Blaxploitation Film: More than Black Stereotypes*

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Valders 362

**Paideia 112: Technology, Bias, and Misinformation**
Moderator: Gereon Kopf

**Bao Nguyen**
*#HelenKellerisNOTfake: Disability Stereotypes and TikTok Conspiracies*

**L’Engle Charis-Carlson**
*Algorithmic Integrity: The Role of AI Art in the Art World*

**Supreme Paudel**
*Effective Lawmaking is the Best Way to Mitigate Biases in AI Models*
Cecilia Ruiz  
*The Importance of Sense of Belonging for Students of Color in Higher Education*

Sophia Chadima  
*The Role of Black Students in the Desegregation of Southern Schools*

Niamh Mee  
*Brown v. Board of Education 70 Years Later: The Desegregation and Resegregation of Little Rock Schools*

Liz Clement  
*Critical Race Theory: Youth Indoctrination*

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Navia Erbst  
*Things We Know to be True: Acceptances & Regrets*

Rikka Heimdal  
*Elements of Surprise, A 3-d Adventure: Titanium*

Edie Meehan  
*Redwood Wars: How Division led to Violence in the Fight for Land, 1900s*

Judith Zimundi  
*Elements of Surprise, A 3-d Adventure: Nickel*

Matthew Binsfield  
*Modern Atomic Theory: Why Should We Trust Anything Anyone Says?*

Kenlin Schmitt  
*Traumatic Brain Injuries: How do Occupational Therapists Help?*

Mariah Klimesh  
*Finding a Middle Ground: Inclusive Special Education*

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**LUNCH BREAK: NOON-1:00 P.M.**
<table>
<thead>
<tr>
<th>Session</th>
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</table>
| SESSION III: 1:00-2:00 P.M. | 1:00 - 2:00 P.M. | Jenson Choir Room | Music Senior Projects: Storytelling through Music | Nathan Elsbernd  
*The Hymnals and Community of the Evangelical Lutheran Church in America, ELCA*  
Madeline Starck  
*Ouroboros: Birth, Life, and Death* |
| | | Olin 101 | Computer Science & Data Science Senior Projects: Collectives & Collaborations | Isaac Habben  
*Exploring Stability in Professional Baseball: Swinging Strike Rate*  
Ryan Mantemach  
*MLB Expected Salary*  
Loi Mai, Nguyen An Vuong & Ratanak Uddam Chea  
*Exploring Real-Time Collaboration with Code Editing and Video Conferencing*  
Anna Thomley  
*Fitbit Data Dashboard* |
| | | Mott-Borlaug | Lightning Roundtable C | Aidan Schooling  
*Building Parallel Realities: Virtual Reality in the Liberal Arts Classroom*  
Ryan Dornfeld  
*“Your Business is Rejoicing:” Interpreting Art in Difficult Times*  
Julia Weigle  
*Recognizing the Unrecognized: The Life and Accomplishments of Mary Frances Early*  
Khadija Ramadan  
*Joy in Celebration: Do Birthday Celebrations Bring Us as Much Joy as We Anticipate?*  
Audrey Zielstra  
*Corporate Personhood: Human Perception and the Question of the Soul*  
Kyle Pido  
*Cloning, Should We Normalize It?* |
Preus Library Hovde Lounge

**Lightning Roundtable D**

Moderator: Maryna Nading

**Adelee Wrightsman**  
*Posters as Propaganda in World War I*

**Shulei Wang**  
*The “Divorce Temple” Tōkeiji: Comparing the Marriage and Divorce Rights/Practices of Impoverished Bushi Class and Hyakushō Village Women to That of Men in Edo Period Japan (1603-1868)*

**Abby Faulk**  
*Tanzania Tourism and its Effect on Economic Development*

**Mari Paulsen**  
*Hard Times Tokens as Art*

**Harrison Arnold**  
*Clinical Mindfulness-Based Interventions: Giving People Power Over Their Well-Being*

**Amanda Teske**  
*Early Death as an Inside Job: The Mental Health Stigma in Sports*

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Valders 206

**Exploring Cultural Resilience**

Moderator: Destiny Crider

**Sadie Pichelmann**  
*Colonial Public Health in South Africa and the Philippines at the Turn of the 20th Century*

**Victoria Graf**  
*The Pathways of Acculturation: The Decorah Hmong and Western Culture*

**Korpo M. Selay**  
*An Analysis of How Fela Anikulápó Kuti’s Songs “Zombie” and “Sorrow, Tears, and Blood” Protested Against the Brutality of the Nigerian Military Regime.*
Valders 362

**Lightning Roundtable E**

Moderator: Alexandra White

Karson Trujillo
*Healthcare Discrimination and the National Medical Association*

Lydia Swarney
*Hidden Adjacent Dangers of Natural Disasters: Focusing on Earthquakes in Turkey and Syria*

Mara Pankow
*The Boundary Waters Canoe Area Wilderness: A Decades-Long Fight to Preserve Our Nation’s Last Remaining Untouched Wilderness*

Lilly Spade
*Why Physicians Didn't Study Anatomy*

Amelia Ramirez
*Overcoming Ignorance about the Circulatory System*

Anna Tauscher
*Elitism in the Implementation of Plague Orders*

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Center for Faith and Life Recital Hall

**Lightning Roundtable F**

Moderator: Olga Michels

Jocelyn Demiglio
*Elements of Surprise, A 3-d Adventure: Iron*

Audrey Fashimpaur
*Patient #604: An Artist Exploration of Medicine and Ethics*

Arin Kyllo
*History of Midwifery: Community at the Core*

Mari Minek
*“Henrietta And:” Henrietta Lacks’s Impact on Personhood in Medical Research*

Angelina Zimmerman
*Elements of Surprise, A 3-d Adventure: Cobalt*

Anastasia Cicala
*The Glorification of the First World War in North American Poetry*
Olin 102

**Lighting Roundtable G**

Moderator: Rachel Brummel

Leif Torp  
*The Wolves of Yellowstone: An Allegory of the Destruction of Nature for Capitalist Gain*

Sonja Bloeser  
*A Land Forever Changed: WWI and the Pollution of Northern France and Belgium*

Rachel Jorgenson  
*New Deal Agriculture Policy: The Framework for a Century of Inequity*

Maggie Patten  
*Learned Helplessness in American Politics: How can People Regain their Power?*

Josie Bergler  
*Canines and Cognition: How Dogs and Humans Process and Experience Emotions*

Gerjuan Taplin  
*How do we know how animals feel?*

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**HOSLETT NATURAL HISTORY MUSEUM EXHIBIT UNVEILING:**

2:15 P.M. - 2:30 P.M.  
*Valders Hall of Science*

Gwen Coleman, Audrey Fashimpaur, Lydia Gruenwald, Elisa Trail-Johnson, Abby McCarthy  
*Hidden Worlds of Northeast Iowa: Giant Sea Scorpions, Sinkholes and Springs*
**SESSION IV: 2:30-3:30 P.M.**

**Center for Faith and Life Recital Hall**

**Lightning Roundtable H**
Moderator: Elizabeth Steding

<table>
<thead>
<tr>
<th>Panelist</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Maggie Hickman</td>
<td>Ethyl Smyth: The March of the Feminists</td>
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<tr>
<td>Molly Johnson</td>
<td>Louisa May Alcott's Groundbreaking Women</td>
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<tr>
<td>Iris Roddy</td>
<td>Contraceptives in Elizabethan England</td>
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<tr>
<td>Izzy Brummer</td>
<td>Traditional Midwifery: Victim of a Man's World</td>
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<tr>
<td>Cammie Leer</td>
<td>How to Manage Clothing in the Real World: The History of Fashion and what’s seen as “Appropriate”</td>
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<tr>
<td>Elsa Queoff</td>
<td>The White Lens on Black Lives: Do they matter? The Criminalization of Black Americans</td>
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</tbody>
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**Olin 102**

**Lightning Roundtable I**
Moderator: Lise Kildegaard

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Garrett Kilgas</td>
<td>Chemicals vs Soldiers</td>
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<tr>
<td>Tung Nguyen</td>
<td>Agent Orange: A Lingering Aftermath of Suffering</td>
</tr>
<tr>
<td>Daniel Pfeffer-Kleemann</td>
<td>Elements of Surprise, A 3-d Adventure: Copper</td>
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<tr>
<td>Enzo Mitidieri</td>
<td>How the Sit-in Movement Fostered Desegregation through Economic Consequences on Businesses</td>
</tr>
<tr>
<td>Mike Petersen</td>
<td>Elements of Surprise, A 3-d Adventure: Vanadium</td>
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<tr>
<td>Kristian Stordalen</td>
<td>How the Chicago Defender Spread News of the Murder of Emmett Till and its Aftermath to Areas Outside of the South</td>
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</tbody>
</table>
POSTER SESSION: 2:30 P.M.- 4:00 P.M.
Sampson Hoffland Labs Carlson Atrium/Valders Concourse

POSTER DISPLAYS FROM COURSES:

Evolutionary changes in antibiotic production levels (4 posters)
Students from Biology 354: Evolutionary Biology
Kaitlyn Bebensee, Ethan Braun, Sarah Da conceicao Carlos, Aislinn Geedey, Sara Gehling, Avihe Kalipondoka, Adam Koller, Gavin McFarland, Methembe Moyo, Mitchell Schmieder, Julia Schulte, Ellie Shuros, Meg Stucker

Using C. elegans to Investigate Alzheimer’s Disease (4 posters)
Students from Biology 260: Experimental Neuroscience
Jadyn Gasper, Rachel Heinrich, Ashley Karas, Theodore Keller, Naree King, Natalie Neff, Madelyn O’Brien, Brynja Riehm, Lauren Whitney, Blayre Wisneski

Vertebrate Research (5 posters)
Students from Biology 258: Vertebrate Natural History
Kaitlyn Bebensee, Jens Bjorge, Janet Borchardt, Ethan Braun, Owen Bruening, Hayley Carr, Sydney Clausen, Sophie Epps, Haylee Felt, Amenla Forjoe, Emily Hagen, Dylan Holven, Benjamin Kiewel, Gavin McFarland, Jorgen Olson, Walter West

GIS Applications (8 posters)
Students from Environmental Studies 175: Introduction to GIS
Nathan Anderson, Kaitlyn Bebensee, Janet Borchardt, Sarah Da conceicao Carlos, Savannah Deters, Kaeden Fellingham, Victoria Graf, Dylan Holven, Linnea Johnson Nordqvist, Jorgen Olson, Grace Parrott, Gideon Perez, Grant Schaeferle, Mitchell Schmieder, Walter West, Rory Wisgerhof

People and Climate (6 posters)
Students from Environmental Studies 225: Earth’s Climate: Past, Present, and Future
Konstantine Akhvldeiani, Anastasia Baldus, Gwenyth Coleman, Tristan Day, Jalen DenHartog, Soren Doerfler, Nolan Dungey, Sergey Dutt, Caroline Lambrecht, Grace May, Madalyn McWilliams, Josie Ramler, Kelly Ristau, Marina Sawyer, Preston Schuelke, Lauren Siems, Ourmar Samassi Souare, Austin Wesenberg

Insects, Humans and the Environment (13 posters)
Students from Biology 112: Insects, Humans and the Environment

Nursing Senior Projects (22 posters)
Students from Nursing 490: Senior Project in Nursing
Riley Bartlett, Alice Feist, Nicole Fitzpatrick, Shakira Herrera, Devon Kothenbeutel, Emma Lichte, Sela Rist, Madilyn Wooten, Dylan Anderson, Rainey Baker, Emma Elbert, Ga Kim, Lars Marquardt, Allison Reding, Annie Rhomberg, Dylan Schmidt, Greta Stauffacher, Samantha Thompson, Kaitlyn Vold, Kaylee Waterhouse
INDIVIDUAL POSTER DISPLAYS:

Nathan Behrens
*Worker experience during the COVID-19 Pandemic*

Allison Hasenmiller & Aidan Brook
*Volunteer Retention at the Humane Society of Northeast Iowa*

Jack Meehan
*Predicting the National Walkability Index*

Annalise Meyer
*Fine-scale patterns in microclimate and vegetation on algific talus slopes in Northeastern Iowa*

Lani Himegarner & Anders Peterson
*Dissecting Bernard Herrmann’s Compositional Techniques for Film in Vertigo*

Delroy Taylor & Sten Bulander
*Adsorption of copper and zinc onto soils*

Will Trunnell
*Environmental zinc and copper in Winneshiek County*

Ally Moseley & Deepa Gavadin
*Neurotransmission and Insulin/IGF-1 signaling*

Dickyi Lhamo
*Investigating Sleep Disorders Using Polysomnography*