2023 AUGUSTANA SHOWCASE

ABSTRACTS FOR ORAL PRESENTATIONS

(ordered in chronological order within each room where presentations are scheduled)

Name	Title	Abstract
FOR L1-055 (wahkohtowin Classroom)		
Abby Collard	From youth to adulthood - my experiences with gender identity and mental illness	A short presentation on the creative arc, from idea to completed body of paintings, that addresses thematic concerns of gender identity and mental illness.
Gabe Lopez	Exulansis	A short presentation on the creative journey throughout a capstone art course that details the process from first ideas to final painted works. The final works involve thematic concerns involving the representation of mental illness through portraiture and abstraction.
Lucille Wang	Dendrochronological comparison of urban and rural white spruce (*Picea glauca*): human activities influence growth rate and climatic response	The impacts that people bring to urban forests are significant and complex. Understanding how trees change their susceptibility to climate change under human influence and how they change their growth rates can help urban managers to maximize ecosystem services. We used dendrochronological methods to compare the growth rate and climate change performance of white spruce between an urban area (Camrose) and a rural area (Battle River Valley). The basal area comparison of urban and rural trees by age shows that urban trees grow much faster than rural trees due to the lack of natural competition in the early years. However, after 20 years of age, the growth rate of urban trees decreases rapidly due to the limitation of soil or space. A response function analysis relating tree-ring growth to monthly mean precipitation and monthly temperature revealed that urban trees are more sensitive to climate change and that precipitation has a greater influence on tree growth than temperature. Analysis of extreme events revealed that urban trees were more sensitive to significant drought events and that their resiliency is limited.
Ursula Mayeugue Pountou	Rewriting History: A call to Action for Challenging Historical	Derek Walcott's "The Sea is History" and Gregory Scofield's "Policy of the Dispossessed" are complex poems that highlight the methods by which diasporic identities represent nature as an archive when reconstructing personalized narratives of history. The speakers in these

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	Narratives of Black and Indigenous Diasporas	works turn to nature in order to reclaim their sense of cultural identity by uncovering history through an alternative lens. The positions they express, however, are quite different. The sea in "The Sea is History" acts as a primary conceit that the speaker uses to unlock stories from the pre-colonial, colonial and postcolonial eras and thus performs a poetic reconstruction of fragments of his own history. In comparison, land in the "Policy of the Dispossessed" is a source of knowledge that connects Indigenous people to their Métis ancestry, as the land carries and holds the stories of their ancestor's heritage. In this presentation, I will evaluate how these poems use land and sea imagery to emphasize nature's ability to challenge colonial interpretations that cast blackness and indigeneity as inferior, thereby allowing the speakers to reassert Black and Indigenous epistemologies.
Lingxiao Liu	A New Solution to the Urbilaterian Hypothesis: Understanding the Origins of Bilateral Body Plan from Xenoturbella, Sister Group of All Other Bilaterian	The concept of "Urbilaterian" refers to the hypothetical last common ancestor of all bilaterally symmetrical animals, which includes most living animals on Earth today. The idea of having a common ancestor for Protostome and Deuterostome is remarkable because the developmental processes for those two bilaterian clades are utterly distinct. For many years, the search for potential urbilaterian candidates yield few outcomes due to lack of fossil evidences and missing of bridging species. A group of species named Xenoturbella might resolve some of the problems. Xenoturbella is categorized as the sister group to all other Bilaterian according to recent research. That suggests that Xenoturbella might shared the most commonality with early urbilaterian. Analysing Xenoturbella body plan, making morphological and genetical comparison with other members of bilaterian would provide insight for shape of urbilaterian. Based on the evidences, Xenoturbella is found to share probable traits with Urbilateria, due to similarities in presumable D-V and A-P axis formation, formation of sensory organs, digestive tract precursor, yet dissimilar in segmentation, circulatory system and cephalization at anterior end. It is important to note that the idea of urbilaterian is pure hypothetical. Any definitive conclusions should be made along with further experimental evidences on Xenoturbella genome and anatomy.
Thanhhai Nguyen	The Future is Bright: A Review of Thin Film Solar Cell Technology	Historically, global energy demand has relied almost exclusively on the burning of fossil fuels. In addition to being highly polluting, fossil fuels will become increasingly scarce in the future due in part to their high rate of consumption and non-renewable nature. As such, more sustainable, environmentally friendly alternatives to fossil fuels must be explored in order to meet global energy demands, limit our dependence on non-renewable resources, and address the climate crisis. In recent years, thin film solar cell technology, which converts solar radiation into electricity, has emerged as one of the more promising alternatives to fossil fuels. This presentation will serve as a review of thin film solar cell technology by focusing on the chemistry, synthesis, composition, and efficiency of the most established thin film solar cells. The future of the field and how researchers are attempting to address the limitations of current thin film solar cell technology will also be discussed.

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FOR 2-102 (Library)		
Jessica Andreas, Anjolaoluwa, Anjola Fadayomi, Sukhmani Heer, Lisa Hynes, Ava Lang, Benjamin Onuzurike, Elijah Schmuland, Teniola Subair, Ziyue Zhong	Applied Statistics: What supports are useful in a large group-oriented course	Motivation & Attitudes: Haynes, Lang, & Subair RQ: What factors affect motivation and attitudes in AUSTA 153 W23 students? The aim of our research is to investigate what factors affect the motivation and attitudes of students in AUSTA 153 W23 course. Such factors include what degree the students are pursuing, what time their lab occurs, and their completion of weekly tasks. Team Satisfaction- Fadayomi & Heer RQ:Does project magnitude (concept checks vs team project) affect team satisfaction We will explore how team satisfaction changed over time when students were only faced with very short-term "projects" (concept checks) vs. when faced with long-term projects worth a significant percentage of their final grade. Have they been able to maintain a strong team dynamic? Or has the pressure gotten to them? Reflection and Student Learning - Onuzurike & Schmuland RQ: How is student learning associated with levels of student's reflection over the course of the semester? Our research project is focused on investigating the reflections of AUSTA 153 student's practice problem assignments. We are attempting to measure students' depth and level of reflection according to Hatton and Smith's Framework, as well as Bloom's Taxonomy respectively. We are trying to see whether students demonstrate insightful reflection based on their performance of their practice problems. Kahoots and Concept Checks: Associations between lab time and quiz time - Andreas, Babalola & Zhong
Bohdana Melnyk	Aboriginal People's Professional Contributions Recognized: Australia 1910	Not provided
Rhona Sinamtwa	Sustainability in Fashion: Upcycling Fabrics from in-house business scraps	My small batik clothing Business ,Sinamtwa, was able to take upon upcycling when it comes to our packaging after the enlightenment of my Environmental Sociology class and experience with the Certificate in Sustainability. Generally, Upcycling fabrics from in-house business scraps is a great way for the fashion industry to promote sustainability. By reusing materials that would otherwise be discarded, companies can reduce their environmental impact and contribute to a more circular economy. There are several benefits to upcycling fabrics from in-house business scraps. First and foremost, it helps to reduce the amount of waste generated by the fashion industry. By using scraps that would otherwise be thrown away, companies can reduce the amount of textile

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		waste that ends up in landfills. This is especially important because textile waste is a major contributor to environmental pollution. Furthermore, upcycling fabrics from in-house business scraps can also be a cost-effective way for companies to create new products. Instead of having to purchase new materials, companies can use their own scraps to create unique and sustainable products. This can also help to improve a company's bottom line by reducing the cost of materials and waste disposal. Overall, upcycling fabrics from in-house business scraps is a great way for the fashion industry to promote sustainability. By reusing existing materials, companies can reduce waste, conserve resources, and create unique and sustainable products.
Josie Middleton	Community fruit tree project	Not provided
Anna Wiebe	SCORE! as a Model of Franciscan Economics	In this presentation, fourth-year BA student Anna Wiebe will perform a comparative analysis of Franciscan economics and Augustana's annual community marketplace of reciprocity—SCORE!. Taking inspiration from the life of Saint Francis of Assisi as well as the lived experience of organizing and hosting SCORE! in October 2022, Anna will demonstrate the ways that learning from our known history can aid us in confronting our unknown future. The anthropocene has tasked humanity with the overwhelming charge of creating solutions out of a broken present for an incomprehensible future. SCORE! tangibly confronts the intersectionality of injustice in our present day and offers a path for proactive sustainability, including advocating for equity of access. This model is highly reflective of Franciscan economics born in the thirteenth century by the Franciscan Order who followed the examples found in nature to live a life of reciprocity, gratitude, and inclusion. No amount of innovation—short of a time machine—can give us knowledge of our future; however, we have centuries of history upon which to reflect and learn from, and it is in the retrospective that we might gain the insight to confront the ever encroaching anthropocene.
Gillian Ebidag	Understanding the influence of snow compaction on mammalian travel routes in Miquelon Lake Provincial Park	Some winter-active mammals' survival strategies involve endurance when food is scarce and foraging, travelling, and thermoregulation become costlier (Droghini and Boutin 2018). The presence of snow cover actively restricts their mobility and imposes high energetic costs as they sink to greater depths (Droghini and Boutin 2018). However, mammals can alleviate some of the cost through behavioural adaptations, like opting for travel routes with more supportive compact snow. Therefore, I investigated the influence of maintained snow-compacted trails on winter-active mammals' travel routes (locomotion behaviour) through winter-tracking surveys and cross-examined between large and small mammals and transect location (on-trail, 10-m, 20-m). A total of 15 randomized sites of Backcountry trails in Miquelon Lake Provincial Park was analyzed in a southern dry mixed-wood boreal region in east central Alberta. I found a significant difference in the number of tracks per metre in compacted versus uncompacted transects ($t43= 6.717$, $p< 0.001$). Similarly, both the number

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		of tracks for large and small mammals was significantly higher in compacted sites (t43= 3.735, p< 0.001; t43= 3.426, p= 0.001). Relative to transect location, the total number of tracks was higher on on-trail transects followed by 10-m and 20-m transects (F2,42= 51.490, p= 0.001). Also, both the number of large mammals and small mammals per metre was significantly higher on on-trail and 10-m transects (F2,42= 6.900, p= 0.003; F2,42= 17.783, p< 0.001). The following study sheds light on the positive influence compacted snow have on wildlife movement and can inform conservation strategies related to public and wildlife safety.
Josie, Middleton	Edge Effect on Bird Nest and Woodpecker Cavity Abundance	Birds are a diverse taxonomic class that fill many ecological roles in the boreal ecosystem. Impacts of human development are changing the habitat structure that birds depend on with unknown compounding effects on reproduction and population stability. Understanding if breeding birds use edge habitat in a similar manner as interior habitat is important information for future development guidelines. Winter conditions are ideal for observing bird nests and woodpecker tree cavities as there are no leaves to hide them and there is no breeding bird disturbance. My study explored bird nest and cavity abundance along road edge, trail edge, and interior forest habitat in Miquelon Lake Provincial Park. I hypothesized that there would be a higher abundance and variety of bird nests and woodpecker cavity abundance in interior habitats than along road edge habitat with trail edge habitat being in between. A total of 119 nesting sites were recorded during the study covering 5,106-m in transect length. Nests showed greater presence in interior habitat than edge habitat (p = 0.000877); however, the significance was not seen with woodpecker cavities (p = 0.377507). There was a greater abundance of bird nests near wetlands, whereas habitat had no effect on woodpecker cavity presence (p < 0.001). Woodpeckers selected trees with greater diameter at breast height (DBH) than nesting birds (p < 0.001). Nesting requirements vary by bird which highlights the importance of having diverse habitat patches retained.

FOR 2-103 (Library)

Name	Title	Abstract
Anjola Aina	Creating a General Interface for AI Models with Python and Streamlit	Natural Language Processing is a sub-branch of AI that enables computers to read, understand and process human language. Neural networks are a method in artificial intelligence that teaches computers to process data in a way that is inspired by the human brain. It is a type of machine learning process, called deep learning, that uses interconnected nodes or neurons in a layered structure that resembles the human brain. It creates an adaptive system that computers use to learn from their mistakes and improve continuously. Thus, artificial neural networks attempt to solve complicated problems, like summarizing documents or recognizing faces, with greater accuracy. A simple neural network includes an input layer, an output (or target) layer, and, in between, a hidden layer.

Due to the complexity of neural networks, the people using the AI and developers do not understand the decisions the AI model makes. It is critical for people in high stake tasks such as medicine and law to understand an AI model's decisions. To solve this problem, |

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		explainable AI algorithms have been introduced that attempt to explain the decision of these AI models. However, most of these algorithms focus on the co-occurrence of words in a sentence rather than understanding the meaning of the input and providing an explanation based on their understanding. By developing algorithms for an explainable AI system that semantically understands human language, we can reduce the gap in end-users understanding of a black box AI model's behavior. Therefore, an interactive explanation system was created using Streamlit and Python, where users could interactively explore the AI model by inputting a sentence, changing their original input, and asking a follow-up question after receiving a prediction from the AI model displayed in the interface. This system aimed to achieve two things: to help end-users and developers better understand the explainable AI model from the interactions that they encounter within the interface and to see if any limitations within the explainable AI model exist. By finding out if there are limitations in the AI model, old algorithms can be improved and new algoeithms can be made for the AI model to make decisions that are more accurate and make sense to the people using the AI model.
Shadi Khalil, Benjamin Onuzurike	Lagrange Multipliers and Optimization Applications in Economics	**Not provided**
Shameer Shahid, Yixiao Zhang	Implementation of McCormick envelopes with Pthreads	The McCormick Envelope was developed by Dr. Garth McCormick as a type of convex relaxation for bilinear optimization problems. Due to the complexity introduced by bilinear terms, such optimization problems can have multiple local optima or no solutions. Significant time, effort and computing resources are required to determine if an obtained solution is the global optimum. The McCormick Envelopes allow this non-linear problem to be converted to a simpler convex linear problem by replacing all bilinear terms with auxiliary variables bounded by 4 inequalities obtained from the constraints on the variables present in the bilinear terms. Solving this relaxed problem gives a Lower Bound on the problem within the given bounds and an Upper Bound can be found by solving for a local solution in the original problem. We aim to implement the McCormick Envelopes method in Python with a branch and bound algorithm to solve for a global optimal solution. Additionally, with Python Pthreads, we hope to parallelize the McCormick Envelope to make it more efficient. High-performance computing frequently makes use of Pthreads, a standard for sending messages between parallel processes. We aim to shorten the time needed to answer the McCormick Envelope Problem for large-scale data sets by parallelizing the solution. Python MPI will be used in our implementation to distribute the task among several processors.
Tina Chapman	Collaboration, communication, and community: building	The pandemic experience has substantially impacted work environments, often compelling employers to provide employees with the means and opportunity to work remotely. As people return to work, some employers are utilizing the technology that enabled remote

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	stronger teams with Microsoft 365	operations to help keep employees connected. In this practicum I created an internal website for a local accounting firm, to provide employees with external access to important information. The firm had recently migrated to Microsoft-based services, so SharePoint was our platform of choice. This presentation will illustrate the integrative nature of the Microsoft applications that we implemented, specifically focusing on communicating with SharePoint sites, collaborating in smaller groups with OneDrive and Teams, and building stronger intra-office social connections with Viva Engage. I will also emphasize the importance of planning and interface design principles, as the finished product will be used and maintained by a diverse employee pool. The intention was not only to employ these communication and collaboration tools, but also to ensure that employees could easily and enthusiastically engage with them. Finally, I hope this project will demonstrate the value of reconnecting employees after this unprecedented hiatus to ensure they feel like they are part of a strong, connected team, no matter where they are.
Brayden Dickau	Computer Systems: The Process of Fixing and Maintaining Computers	Personal computers continue to be upgraded with new software and hardware in pursuit of more processing power, storage and portability. Resulting in the potential to cause an error in a computer's functioning. In this presentation, I will go over the approach taken during my practicum when fixing computers, including hardware or software-related issues. If a computer is able to power up, then the focus is fixing issues by working on the software and operating system (OS). The difference between operating systems changes what tools and methods can be used to attempt to fix a given problem. If the OS is not causing the problem, the programs running on the computer are perused, trying to find malicious software. If the problem persists, then the hardware might be at fault and may need replacement. Cost to the user is important when considering hardware changes, and sometimes it is more cost-effective to get another computer entirely. In cases of severe failure where a new hard drive or computer is required, the user's data is transferred, if possible. All of this effort is done to give the user a computer experience with as little hassle and frustration as possible. Following this process has taught me the tools and know-how needed to confidently fix any issue that a computer is experiencing.
Zachary Kelly	Python, GitHub, and Project Jupyter: the process of automating GitHub commands to build and upload Jupyter products using Python part II	This presentation will explore the manner in which Python can be used to automate and simplify a user's experience in uploading Jupyter Books and Notebooks to an online and centralized repository. This will include a brief introduction to Jupyter Books and Notebooks, as well as the repository website and my experience working on it, followed by a more in-depth explanation of the methodology used to implement functionality in the program. Discussion will include the work-flow surrounding the process in which unwanted changes and commits to the users local repository are reversed, the efficacy of different executable compilers and the process of creating an installer for the program. Both successes and roadblocks surrounding this implementation will be discussed, with explanations covering both the approaches used to eliminate roadblocks, as well as reasons why some issues remain unsolved. The presentation will end with a short demonstration of the program in

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		action, showing both the user's experience along with how the moderator would use GitHub's pull request feature to screen incoming pushes to the website. I hope to outline the experience I have gained through the continuation of development for this program including time management, research, and problem solving.

2-004 (Roger Epp Room)

Name	Title	Abstract
Sarah Dedrick	Assessing the shifting landscape of student sexual health norms during the Covid-19 pandemic	Sexual health is generally not an everyday topic of public discussion. Unfortunately, this stigmatization of public discourse surrounding sex and sexual health topics also tends to promote a lack of knowledge and unhealthy personal behaviours. According to social norms theory, people develop their own sexuality from perceptions of their peers' attitudes and practices (that are often indirectly influenced by biased media portrayals). Little research has examined how providing accurate normative information might impact young people's sexual health attitudes and intentions. To address this gap, the purpose of my project is to determine if a social norms intervention could influence the sexual attitudes and perceived norms of young adults. A sample of young adults (aged 18-25) located in the Camrose/Edmonton areas were recruited to complete an online, previously piloted sexual health perceptions survey. Prior to reporting their perceptions of sexual health norms, half of the respondents were exposed to normative information factsheets that described either local norms (typical of university-aged students in their city) or population-level norms (typical of the average North American young adult). On top of these quantitative reports, respondents also provided open-ended reports of how much they thought normative sexual health practices had changed during the course of the COVID-19 pandemic. Analyses indicated that the norm intervention feedback sheet altered perceptions of sexual health attitudes regarding casual sexual relationships. The implications of these results will be further discussed in the presentation.
Faith Wildman	An Examination of the Impact of Perceived Sexual Health Norms on STI-Protective Sexual Health Behaviour	Very little research has examined how young people perceive the norms surrounding sexually transmitted infections. The limited past research on norms and norm perceptions involving sexual health has commonly looked at three main areas of sexual health: contraceptive use, substance abuse (drugs/alcohol), and incurable STIs (most commonly HIV). In these studies, individuals commonly overestimate norms for risky sexual practices (i.e., alcohol use) and underestimate norms for protective behaviours (i.e., condom use) which subsequently predict intentions to engage in riskier sexual behaviour. The present study expands understandings of social norms to young people's key perceptions of STI-related attitudes and beliefs. This study involves a large sample of undergraduate students taking an online survey reporting their sexual health attitudes and behaviours pertaining to specific STIs (i.e., actual norms) and their perceptions of group-level support for these same attitudes and behaviors of STIs (i.e., perceived norms). The goal of this study was to determine if people hold accurate perceptions of peer sexual health attitudes and behaviors towards actual STI norms. It was expected that individuals would generally view curable STIs (i.e., chlamydia) as less severe than incurable STIs (i.e., HIV). It was also expected that the

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		perceived norms would support riskier sexual health intentions (i.e., individuals will underestimate their peer's actual normative sexual practices pertaining to protection from curable STI infections). The results and implications of this research in relation to sexual health knowledge will be discussed in the study and presentation.
Rebekah Stretch	Posture of Hope: Contextual Theology Within the Contemporary Zeitgeist	Fourth-year Ethics and Global Studies student Rebekah Stretch explores the relationships between hope, despair, and Christian faith both historically and within the present cultural moment. Drawing upon various written works authored by theologians, philosophers, social commentators, priests, and anthropologists, Rebekah will delineate the findings of her AUIDS 390/391 capstone project guided by Rev. Craig Wentland, and develop a liberatory contextual theology. The history of the West's relationship with hope has been a tumultuous one, guided primarily by post-Enlightenment optimism and the myth of human progress. Christianity has played a distinct role in transforming North America into an officially optimistic yet disillusioned society where positivity is protected at all costs in an attempt to preserve some sense of meaning and control. Rebekah's research is an attempt to respond to and engage with the resulting zeitgeist, and her findings offer three alternative postures for grappling with hope in the midst of chronic despair and apathy. These alternative postures are as follows: 1) facing our (human) predicament, 2) facing each other, and 3) facing the darkness. By reorienting one's understanding of North American culture, Christian faith, and what it means to be human, Rebekah invites the listener to encounter lasting hope in imaginative and profound ways, even in the midst of the upheaval and tragedy that characterize our historical moment.
Jenessa Doctor	Seizure Activity after Intracerebral Hemorrhage in Female Rats: The Impact of the Estrous Cycle	Intracerebral hemorrhage (ICH) is a debilitating stroke caused by bleeding into the brain, and it is associated with high rates of mortality and morbidity. More specifically, large ICH is associated with higher mortality, high intracranial pressure (ICP), and tissue compliance where neurons far removed from the bleed shrink to create more space in the brain. ICH is rarely studied in female models due to presumed hormonal influences and assumptions regarding the estrous cycle's (menstrual cycle) effect on physiology and behaviour. Estradiol is a naturally occurring hormone known for its coagulant and anti-inflammatory properties and therefore, in ICH studies, serves as a neuroprotectant. Unfortunately, estradiol has also demonstrated pro-convulsive effects in epilepsy models, which might increase seizures after stroke. Seizure occurrence is associated with poor prognosis, and likely underestimated due to the lack of continuous electroencephalographic (EEG) monitoring. The purpose of this study was to assess seizure occurrence after a large ICH in female rats and identify any differences between rats in different phases of the estrous cycle. Twelve rats underwent a collagenase induced ICH during either their high or low estradiol phase of their cycle, and were implanted with an EEG probe to monitor brain activity and potential seizure incidence. After 72 hours, rats were euthanized and lesion volume was assessed. Our results indicate no seizures occurred, likely due to the high ICP impairing neuronal activity. There were also no

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		statistically significant differences in lesion size between the groups. We found that the variability in brain waves was highest on day one and then decreased over the remaining days. Still, this was not affected by the stage of the estrous cycle. Overall our results suggest that the estrous cycle does not impact lesion volume, seizure incidence, or brain excitability, supporting the idea that females should not be excluded from stroke research.
Jocelyn Kublik	A guide to becoming an Augustana summer research assistant	Are you interested in learning about what it's like to work as a summer research assistant (RA) here at Augustana? In this presentation, I will talk about the best ways to apply for a position and what to expect in the daily life of an RA. I will use some of my own experiences to walk you through what you may encounter throughout the summer and will answer any questions you may have regarding this opportunity. I strongly encourage you to attend if you are at all curious about summer research and the opportunities it can offer you in your academic career.
Taylor Buryn	Perceived support for mental health in male collegiate ice hockey	Little research previously conducted within the world of hockey has been linked to mental health problems, resources or even education. Focusing on male hockey at the college level when the sport takes another step into higher competition. Male hockey players are seen as some of the most popular, fit, and mentally tough members of our society, leaving a large reputation for hockey players to fill. By conducting interviews with current and former college athletes and coaches there will be a better understanding towards mental health and support within the sport. Being able to understand what support is made available, education of mental health, and what experiences athletes may have had turning them towards wanting to seek help. Having this information can help shape further research into mental health and hockey, also the development of potential mental health training and awareness sessions for athletes and coaching staff.
1-315 (F&L Classroom)		
Ethan Wood	Technical astronomy	The Hesje Observatory at the Augustana Miquelon Lake Research Station is home to a beautiful telescope, the PlaneWave CDK17. This telescope provides a perfectly flat field and excellent astrophotographs with stunning clarity from corner to corner. To take full advantage of this telescope, it is important that certain technological requirements have been met. Appropriate telescope control software is highly important for locating and pointing towards the objects we wish to view. As is the case with any telescope, focus must be achieved to begin observing. For this, PlaneWave provides an autofocus routine. The telescope also requires a sort of calibration called a pointing model. This pointing model orients the telescope to the night sky, ensuring that objects are centered in our view when we point to them. To build a pointing model, plate solving was used which compares a telescope star field picture to a database of star positions.
Susan Sun	Astrophotography: How To Image Deep Sky Objects	The topic of my talk will be how to image deep sky objects. I will be talking about the various considerations needed for choosing a deep-sky object to image, in particular, the field of view of the telescope, the apparent sizes of the objects, the exposure times, the apparent magnitude of the objects and the position of the object overnight. I will also be talking about

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		the procedures to take when imaging a deep sky object. In particular, I will be talking about how to center and orient the object and how to get a single-exposure picture of the object. In addition, I will also be talking about how to get an even better image by using live stacking and applying flat, bias and dark frames. Moreover, the advantages and limitations of the camera software (MallincamSky) will be discussed.
Karylle Mata	Speed of light experiment	The speed of light in empty space is one of the most significant and fascinating constants in nature. If you measure the speed of light, it does not matter if it originates from a desk-top laser or a star that is traveling at incredible speeds, you will measure the same constant value. I will describe the experimental determination of the speed of light using the Foucault method, in which laser light is reflected from a high-speed rotating mirror and a fixed mirror and focused by lenses. The result of my experiment was 2.998×10^8 m/s, close to the actual value with a 0.01 percentage discrepancy.
Ethan Wood	Michelson Interferometer	The Michelson interferometer is a precision instrument capable of incredibly small measurements. We can measure the thickness of a piece of hair or even extremely small spacings between two lines in the emission spectrum of a molecule to a precision of 0.01 nanometers. Using this instrument, I measured the sub-nanometer spacing of the famous D-Lines in the sodium emission spectrum, the refractive index of air, and observed white light fringes.
Cargill Theatre, Lougheed Centre		
Rylee White Gerrik Ripley Jordan Mish Jake Gudjonson Tarik Reed	Schielke Farms Lamb Operation Start-up & Opportunity Analysis	The contents of this paper is the culmination of our research/analysis regarding the establishment of a sheep husbandry operation on Schielke farm. It includes information sourced both internally from known registered shepherds, and through external academic– and otherwise trustworthy–sources. The report begins with a table containing a variety of calculations. This table contains a relatively comprehensive depiction of the costs associated with initiating such an operation. The table also contains some general recommendations for minimizing costs and challenges. Following the table, the topic of feeding techniques is explored. This section describes common terms associated with feeding, types of feed, when supplementation is necessary, how to determine if feeding is adequate, and a general method for calculating supplementary feed costs. The next section explores lambing. The focus of this section is considerations that must be made regarding the reproductive process– specifically, how to ensure the health and safety of both the laboring mother and infantile lamb. The large section which follows is our analysis of the costs/challenges that our brutal Albertan winters pose to such an operation, as well as our proposed solutions to such challenges. The subsequent section portrays our efforts in researching competitors and alternative meat processors for Schielke Farms to consider. The final segment looks into regional opportunities that may be beneficial to Schielke Farms' sales and overall exposure. Additionally, this last segment lists and describes some grant opportunities, which may provide some of the necessary financing.

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Treyle Martin, Sarah Nagel, Ari Olivera, and Joanne Varghese	Schielke Farm e-newsletter	Lacking an informative newsletter to send to clients, over the past 14 weeks, we have created and organized attractive e-newsletter templates for Schielke Farm to relay information to their clientele. We also included a method for seamlessly sending these email newsletters to clientele. We completed this task by researching why an electronic newsletter embedded into an email is the best format and distribution method and how to create the most eye-catching and efficient templates. After extensive research, we found that MailChimp would be the most well-suited for Schielke Farm since it is embedded into QuickBooks, a software they already use and are familiar with. With the templates we created, Schielke Farm intends to send out quarterly updates through their expanding and now more organized mailing list, informing their clients about essential aspects of their business, such as products they have available for purchasing, shipping dates, pricing, and other exciting things happening around the farm.
Laura Toutant, Lara Birkill, Connor Peake, Cameron Shorrock, Dylan Draker	Marketing for the Schielke Farm	The Schielke family farm has tasked us with improving their marketing strategy to attract new clients, primarily by expanding its social media. Our team has extended the Schielke Farm's online presence by putting them on Kijiji and Facebook Marketplace. We also aimed to simplify social media for Danielle by researching the psychology behind effective marketing, creating post and infographic templates, finding apps that allow her to link her pages, and setting the times when posts are uploaded. These online advertisements take an educational approach to draw people in because the general population is unaware of the benefits of local grass-fed beef. Apart from getting the Schielke Farm online, we wanted to get their name in the schools too. By targeting large friend groups and teams at Augustana, and exploring a fundraiser at New Norway School, we showed local students and families that the deli section at Superstore is not the only nearby beef option.
Great Adeleye, Owen Chartrand, Em Kuhn, Artur Vakula	Expanding Little Bird Baking	Abby Reimer is the owner of Little Bird Baking, where she specializes in cookies and has plans to renovate her basement into a commercial kitchen. The goals of this project included expanding her customer base and finding financial aid, which helped fund the construction of the commercial kitchen. We planned to expand her customer base by revamping her Instagram account and by finding local small businesses to partner with, which will increase her networking abilities. We found financial aid through government websites, such as the City of Camrose, the Province of Alberta, and the Government of Canada, all of which provide different grants which Abby applied for. The proposed timeline was curated to be realistic and flexible, with almost two weeks at the end to be used as buffer days.
Brendan Hubar, Zachary Kelly, Jemma Lauder, Israel Oni.	Little Bird Baking: Newsletter development for a local business	This presentation will demonstrate the process, development and implementation of digital newsletters for Little Bird Baking, a local bakery looking to expand its business in a post-covid world. This will include the development process for three distinct styles of newsletters (a monthly blog, a targeted holiday announcement, and a birthday contest), along with their accompanying guides, and the process of collecting and integrating customer feedback. As this local baking company is looking to expand their operations, moving from a small-scale cottage business to a larger industrial bakery, reconnecting with old customers and drawing

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		in new customers is of the utmost importance. Abby is looking to rebuild an active and involved community after covid had made it difficult for her to maintain personal connections with her customer base. As well, access to most of Little Bird Bakings social media advertising was lost in the previous year, resulting in a situation wherein customers may have been unaware of how and when to purchase from Little Bird Baking. Both successes and roadblocks surrounding this process will be explored; getting into the fundamentals of working with community members, learning how to set a schedule, and how to work within the confines of Little Bird Bakings platforms and resources. Furthermore, an emphasis will be placed on the importance of setting our community partner up for success in the future once our project is complete.
Kyle Bergquist, Chantel Brozny, Anshul Gunjoo, Cole Tiede	Improving Irving's Farm Fresh's Social Media Presence	This presentation will detail our work for Irvings Farm Fresh regarding social media planning. With the growing success of their business, Irving's Farm Fresh expressed that through partnering with us through AUIDS 301, they would like to achieve the goals of becoming more aware of related novelty holidays, such as National Bacon Day on December 30th, and receiving ideas on how to make posting easier and develop a more prominent social media presence for their business. As AUIDS 301 students, we created a comprehensive calendar outlining holidays and less well-known occasions throughout the year that could in some way be related to pork or managing a business and developed conceptual content for our partners to use at their discretion.
Madison Edwards, Corbin Diprose, Paulina Dias Afonso, Addison Komranisky	Food Forest	Not provided.
Benny Meng, Robbie Nanuan, James Rota, Kari White	Agricultural education packages for round hill renaissance	Our team (The Fantastic Four, consisting of Benny Meng, Robbie Nanuan, James Rota, and Kari White) will present the solution for the challenges communicated to us by our community partner, Kyle Nahirniak of Round Hill Renaissance. Kyle wants to ensure that future generations of Albertans within the Battle River region have a strong involvement in agriculture, including the variety of career opportunities available within the sector. This is where the educational packages our team has developed come into play. We have generated educational packages which are based on the pedagogical needs of kindergarten to grade twelve students in elementary, junior high, and high schools. These packages will consist of information and resources which students can use to further their knowledge regarding agriculture, local food producers, and sustainability practices in farming. With these packages, we are building a foundation for Kyle and Round Hill Renaissance to build upon so that the expansion of agricultural education to other schools within the Battle River area is achieved.
Eric Mason, Isaac Okocha, Simon Shen,Greysen	Maplewood Acres Task Force	This project and subsequent presentation were created due to the issues raised by the family-owned farming company, Maplewood Acres. The owners, Doug, Margaret, and Adam Lyseng have a wide variety of vegetables, herbs, flowers, and other organic products that are

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Tilleman,Blen Woldmariam,		grown from their small garden and greenhouse. Their point of concern pertained to their overall social media presence, which was lacking in its ability to draw in a younger customer base. Other issues that plagued the Lysengs involved the overall look of their website and the creation of a standard operating procedure (SOP). Taking into account the issues at hand, we at the Maplewood Acres Taskforce decided that the solution to Maplewood Acres's problems was the combination of various long-term goals. This included the polishing of their Instagram posts, creating paid Instagram ads that are informative yet appealing to look at, an overall aesthetic and organizational revision of their market website, and researching ways to successfully format an SOP that the Lysengs can give to their employees. After completing all of these various tasks, we hope that our goal of creating an influx of new customers for Maplewood Acres has paid off.
Tauhid Hasan, Rayhan Ladhajuma, Thaison Nghiem and Jessica Schultz	Glen View Farm and Greenhouse	Our community partner wants to expand her clientele through social media and an interactive website. She has trouble reaching target audiences due to a lack of accessibility to information about Glen View Greenhouse and what products/services are available. Our community partner stated that most of her clients are seniors and she would like to expand her business to a younger demographic. We are planning to use digital marketing for Esther Walker, using the internet and online based digital technologies to reach a younger audience. We are proposing to create a platform, an Instagram account and website, on which she can promote and showcase her business to a younger demographic not previously reached. Social media platforms such as Facebook and Instagram will be more effective at promoting the business than other methods like e-newsletters because they aim towards younger audiences. Our plan is to create a mesmerizing and informative website page, clearly displaying any new updates to customers. This website will also provide another means of contact and communication with her customers. Our goal is to provide our community partner with a viable and productive form of communication and location of regularly updated information with her current and future clients.
Neha Ahmad, Amy Petryshyn, Khushi Sony, Maitri Nanda, Hongtao Liu	Tiny but mighty: Glean Farms microgreens	Not provided
Lexine Calata, James Mendoza, Uzair Moideen, Angeline Pascual, Airah Taguiwalo	TME Farms: Vision for Success - A Social Media And Marketing Campaign	Not provided
Sydney Abel, Luke Beattie, Cailyn Katchur, Isabel Levesque, Hannah Resch		While climate change is a topic that requires attention and action on a government level, individual action is just as critical. Citizens are surprised to know that they can contribute dramatically to the reversal of climate change simply by implementing sustainable practices around their homes and in their yards. Commonplace monoculture turfgrass lawns pollute

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		water, limit habitat and wildlife diversity, and have high input costs. As the population of the City of Camrose continues to grow, its water source may not be able to efficiently sustain the growing population. Solutions to these problems exist but are often published in scholarly journals, which the general public is either unaware of or does not have access to. From January-April 2023, we aimed to increase public awareness regarding individual water conservation actions by researching and producing publicly available resources. With input from the Camrose Green Action Committee, we formulated several works for public viewership: an article for the Camrose Booster, a deliverable post for the Sustainable Camrose website, as well as a poster and presentation at the Augustana Student Academic Conference. These works highlight five major themes that Camrose residents can implement to sustainably ecoscape their yard, including water conservation, knowing your site, mimicking nature, saving money, and building your soil. These themes each add up to a term we have called "ecoscaping," which we have defined as the integration of sustainable practices into pre-existing landscaping techniques.
Ursula Mayeugue Pountou	A Comparison between the Patterning of Lepidopteran wings and patagium of genus Draco	The spectacular colour patterns on butterfly wings have fascinated biologists and are still the most vivid examples of pattern formation in biology. These colour patterns arise from the spatial distribution of monochromatic projections of epidermal cells termed scales, which are arranged like tiles on a roof on each side of a wing. These scales, also known as individuated colour elements are arranged in multiple parallel rows across the wings to form symmetry systems. They are organized in novel ways to produce species-specific patterns, including adaptations such as mimicry and camouflage. Interestingly, similar patterns have been observed in vertebrates, the family of Anolid lizards to be exact. The Draco, for example, has wing-like structures called the patagium that allows them to glide. The colour patterning of these structures contains tiny individuated spots which make up the overall colour pattern of the structure. The patagium of the Draco is similar to the patterning of butterfly wings as it creates a distinctive pattern but is not as intricate as butterfly wings. The colour patterning of these gliding membranes varies based on species. In this paper, we will compare the colour patterns of the patagium of several species of the genus Draco with the patterning of butterfly wings in order to evaluate the extent of the analogy of patterning between Draco and Lepidopterans.
Abdullah Hammawa	The Impact of Hebrew-Israelite Mythology in Black Diasporic Consciousness	At a surface level it may seem that the chief characterization of the diasporic experience is that of physical displacement. This assumption ought to be questioned more closely since humans are, without fail, constantly moving from one physical location to another. Therefore, to regard the diasporic experience as merely a symptom of physical movement leaves the concept too inexact and opaque to be useful as a tool for understanding the social, cultural, or economic realities of such groups. This paper argues that the concept of diaspora is essentially about grappling with the asymmetrical power dynamics that arise from migratory movements in certain, but not all, contexts. To this end, I analyze Derek Walcott's poem "The Sea is History" in order to understand how historically disenfranchised

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		diasporic groups can draw on each others symbols and imagery to reassert their identity. This kind of cross-cultural pollination could then have the potential to serve as a basis for greater understanding between and towards marginalized diasporic communities.
Darby-Anne Swanson	Alberta Separatism: Comparing Past and Contemporary Movements	Western alienation and Alberta separatist movements still linger in Alberta's political culture. For this project, I looked to answer the following research question: what are the similarities and differences between contemporary and past Western separatist movements in Alberta? In order to comprehend current separatist sentiments, I focused my analysis on the Alberta Prosperity Project (APP). The APP is a present-day separatist organization that looks to protect Albertans' prosperity by advocating for Alberta's independence. The leaders of the APP host webinars and events to "educate" and empower Albertans to take back their freedoms. My research analyzed APP events to understand the group's separatist notions. I examined transcriptions of the events using an open coding technique, looking for themes relating to Western alienation and separatist concepts and how it relates to past separatist sentiments.
Luke Beattie	Are farmers willing to adopt? Sustainable agriculture and environmental attitudes in Alberta	Best management practices or BMPs are farming practices that attempt to mimic natural systems. BMP adoption in Alberta has increased over the last decade, but some producers still refuse to adopt BMPs. One barrier to adoption for producers may be attitudes toward the environment, given that environmental attitudes can be predictors for adopting sustainable practices. Little research has been done on the environmental attitudes of agricultural producers, making it difficult to know whether environmental attitudes are a significant factor in BMP adoption. Mixed farmers were chosen as the focus of this study because they have the most opportunity to adopt BMPs, most of which involve the integration of cropping systems and livestock. This research study aimed to answer the following question: do mixed farmers in Central Alberta and the Edmonton Metropolitan Region new ecological paradigm (NEP) scores correlate with their willingness to adopt (WTA) BMPs?" An online survey was sent by email to mixed farmers in the central and Edmonton metropolitan regions of Alberta, potential respondents' email addresses were collected using exponential discriminative snowball sampling. The results of the survey showed that NEP scores did not correlate significantly with WTA. The lack of correlation between NEP and WTA suggests that environmental attitudes are not a barrier to BMP adoption for mixed producers. Future directions include large-scale replication of this research and the inclusion of multiple farm types in the sample.