FY 2027
CHHS RESEARCH

FLASH TALKS



OCTOBER 29, 2026

Guyon Auditorium

GRADUATE STUDENT POSTERS

3:00 pm - 3:30 pm

LIGHTNING TALKS & 3MT COMPETITION

3:30 pm - 5:00 pm

SOUTHERN ILLINOIS UNIVERSITY
COLLEGE OF HEALTH AND HUMAN SCIENCES

Poster Presentation...*At a glance!*

No.	Lead Presenter	Presentation Title
Health Sciences		
1	Katrina King	Competency Training in AAC Assessment
Justice and Public Safety		
2	Nazarenny Azinar	Bahay-Bahayan Sa Piitan: Female Social Groupings and Their Impact on Prison Governance
3	Kenna Quincer	Wanting More: Perceptions of Post-Conviction Employment Experiences
Psychological and Behavioral Sciences		
4	Cristian Urbano Mejia	A Between-Groups Comparison of Interval Commission and Omission Errors in DRO
5	Elitzia Ocasio	What Makes Speech Count? Comparing Child-Directed and Overheard Speech Across Naturalistic Family Contexts
6	Elizabeth Fenelon	Internalizing Symptoms Among Rural College Students: The Role of Chronic Health Condition Status
7	Anna Gick	Speaking Their Language: Developmental Attunement in Caregiver Speech
8	Jillian Schroeder	Which Error is Worse? An Evaluation of Treatment Fidelity Errors in DRO with Additional Operanda
9	Maxwell McLeod	Exploring the Role of Corticostriatal Circuitry in Time-based Interventions to Reduce Impulsive Choice
10	Seema Brimmer	Evaluation of Effects of Fixed-Lean and Terminal Probe Dense-to-Lean Schedule Thinning on Challenging Behavior

Lightning Talks and 3MT Competition...*At a glance!*

Psychological and Behavioral Sciences		
1	Heekyung Lee	Psychosocial Well-being of College Students with Disabilities
2	Haewon Yoon	Impatience and Decision Debiasing
3	Maria Aparcero-Suero	Forensic Mental Health Needs Assessment in Southern Illinois
4	Paige O'Neill	The Effects of Imperfect Implementation in Behavioral Interventions: Insights from Translational Research
5	Travis Smith	Diet, Dieting, and Impulsive Decision-Making
6	Lillian Masek	Language Learning in the Home Environment
Automotive		
7	Sean Boyle	Repurposing an End-Of-Life Electric Vehicle
8	Andrew Tillman	Acoustic Imaging for Common Automotive Diagnostics
Health Sciences		
9	Erica Blumenstock	Yoga, Connection, and Community: A Model for Promoting Older Adult Well-Being in Rural Settings
10	Valerie Boyer	Improving with Time and Practice: Interprofessional Education Day
11	Juhi Kidwai	Dyad based therapy in Aphasia
Human Sciences		
12	Yen-Hsun Wu	Decoding Manual Intelligence
13	Zhirui Chen	Connections Among Individual-and Community-Level Housing Characteristics and Disaster Preparedness in a National Sample of Low-Income U.S. Adults
14	Kathryn Roosevelt	SLAC: A Participant-Led, Bottom-Up Leisure Model for Healthy Aging
Justice and Public Safety		
15	Breanne Pleggenkuhle	Beyond the Bench: Drug Court in Action
16	Raymund Narag	After the Sentence: Administrative Barriers and Unequal Pathways to Release among Persons Deprived of Liberty in the Philippines

Aviation		
17	Amy Rutledge	Prevalence of Anxiety and Depression Among Canadian Air Traffic Controllers
18	Gail Avendano	Online Asynchronous vs. In-Person Course Delivery: A Modality Comparison Study
19	Irene Miller	Preparing Collegiate Flight Training Programs for the Transition to Unleaded Aviation Gasoline
20	Steven Goetz	Impact of Weather Changes Over Time on Safety of Airport Operations
21	Steven Locklear	AI and Course Curriculum Development Methods
22	Kenneth Wilkins	Equity in Flight Instruction: Are Underrepresented and Low-income Groups Getting Equitable Access to Experienced Instructors Compared to their Majority Peers?
3 Minute Thesis		
23	Ali Shahidy	"Do You Trust AI?" Is Only Half the Question
24	Pablo A Ledesma Castro	Early-life Adversity Reduces Delay Discounting of Punishment in Rats, Irrespective of Sex

Abstracts

Poster Presentation

1. Competency Training in AAC Assessment

Katrina King

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Co-presenters: Lesley Shawler, BCBA., Ph.D., Valerie Boyer, Ph.D

Augmentative and alternative communication (AAC) is a type of assistive technology that supplements or replaces spoken language. AAC can be a helpful tool for minimally verbal autistic children as it provides a way to functionally communicate, therefore working to eliminate participation barriers. Clinicians must know how to effectively assess a child's AAC preference for successful implementation. The project employs a non-concurrent multiple probe design to target the following objectives: (1) Compare the efficiency of a series of computer modules and behavior skills training to teach graduate students across two disciplines to prepare them for working with autistic children. (2) Evaluate the efficacy of the training procedures by measuring generalization of the AAC preference procedure when graduate students directly work with minimally verbal autistic children. (3) Evaluate the acceptability of the training procedures by graduate students and families.

2. Bahay-Bahayan Sa Piitan: Female Social Groupings and Their Impact on Prison Governance

Nazarenny Azinar

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Despite a growing academic interest about jails and prisons, there remains a significant lack of awareness in incarcerated women's lived realities. While numerous studies have examined male prison groups, particularly gangs, and their influence on prison governance in the Philippines, relatively little attention has been given to their female counterparts. To address this knowledge gap, this study explored social groupings at the Correctional Institution for Women (CIW) in Mandaluyong City. It focused on identifying the basis and characteristics of these groupings, examining their functions within the correctional setting, and distinguishing them from those found in male prison. The researchers utilized a qualitative approach with a phenomenological research design. Semi-structured interviews were used to facilitate questions for the 26 participants with criteria as follows: (1) a Woman Deprived of Liberty (WDL) from the CIW Maximum Security Compound; (2) is part of a social grouping; (3) has been in the facility for more than 1 year but less than 5 years, or has been in the facility for more than 15 years. Some prison officers were also interviewed to provide insights into their existence. The data was analyzed using thematic analysis, which revealed the presence of various types of groups in a women's correctional facility, including pseudo-families, work groups, and reformation groups, all of which contribute to the institution's overall functioning.

3. Wanting More: Perceptions of Post-Conviction Employment Experiences

Kenna Quincer

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Co-presenter: Breanne Pleggenkuhle, Ph.D

The current study examines post-conviction employment experiences, particularly as they relate to pre-conviction circumstances. Drawing upon semi-structured interviews with individuals following a felony conviction, experiences within employment, the meaning or impact perceived, and reflections on future pursuits are explored.

4. A Between-Groups Comparison of Interval Commission and Omission Errors in DRO

Cristian Urbano Mejia

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Differential reinforcement of other behavior (DRO) is commonly used in clinical contexts to reduce challenging behavior. Prior within-subject research found that DRO with occasional errors may remain efficacious and that omission errors were slightly more detrimental than interval commission errors. However, sequence effects in within-subject designs may influence responding across conditions. Therefore, this analog study compared two types of treatment-integrity errors between groups in a human-operant arrangement. Clicks on a moving button served as the target response and proxy for challenging behavior. Participants were randomly allocated to one of three groups: DRO with No Errors, DRO with Interval Commission Errors, or DRO with Omission Errors. We compared target-response frequency during DRO and percentage reduction from baseline across groups. Interval commission errors were more detrimental than omission errors. These findings highlight the potential influence of sequence effects in DRO research.

5. What Makes Speech Count? Comparing Child-Directed and Overheard Speech Across Naturalistic Family Contexts

Elitzia Ocasio

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Language acquisition is foundational to cognition and school success, yet the mechanisms driving it remain debated. While child-directed speech (CDS) reliably predicts language development, children in cultures with minimal CDS still acquire language effectively. A study done by Shneidman & Goldin-Meadow (2012) suggested overheard speech also supports learning. Prior work shows infant attention, proximity to the speaker, and speaker relationship shape learning from CDS, but these features remain largely unexamined in overheard speech. This study addresses that gap by recording infants (12–24 months) during mother-child-only interactions (CDS only) and whole-family interactions (CDS plus overheard speech), coding speaker, proximity, and attention in each context, and testing how these features relate to vocabulary growth.

6. Internalizing Symptoms Among Rural College Students: The Role of Chronic Health Condition Status

Elizabeth Fenelon

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Adolescence and young adulthood are characterized by co-occurring transitions (e.g., pediatric to adult health care; primary to secondary education) and heightened risk for psychosocial consequences (e.g., greater internalizing symptoms), which may be complicated by chronic health condition (CHC) status and social determinants of health (e.g., rural vs. urban). The current study explored psychosocial functioning and health care transition readiness differences by CHC status among a convenience sample of rural college students. Thirty-nine percent of participating college students had one or more CHCs. Participants with and without CHCs demonstrated comparable transition readiness and quality of life scores. Participants with CHCs reported greater depressive symptoms than participants without CHCs. Participants with CHCs reported greater anxious symptoms than participants without CHCs. Results suggest that screening for and intervention of anxious and depressive symptoms may be important among rural college students with CHCs.

7. Speaking Their Language: Developmental Attunement in Caregiver Speech

Anna Gick

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The present study examines how children's developmental levels and the complexity of play objects relate to caregivers' adaptations of speech. Caregivers and infants will interact with two versions of three toys that vary in the number of items available to label (simple vs complex). By examining caregiver–infant interactions across these conditions, this study aims to clarify how the complexity of the play environment may interact with children's developmental levels to shape caregiver speech. Findings may inform the design of early learning environments, including homes and childcare settings, to better support early language development.

8. Which Error is Worse? An Evaluation of Treatment Fidelity Errors in DRO With Additional Operanda

Jillian Schroeder

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Treatment fidelity is an essential component to ensure behavioral interventions are efficacious. Differential reinforcement of other behavior (DRO) is a strategy commonly used to reduce challenging behaviors; this reinforcement-based procedure involves the delivery of a reinforcer contingent on the absence of challenging behavior for a predetermined period of time. While the procedure seems simple, it can be difficult to implement with high treatment fidelity. This study compared the efficacy of DRO when implemented with low treatment fidelity in a human operant arrangement. We evaluated the impact of two types of errors (omission and commission) delivered using a multiple-treatments reversal design. Results showed that omissions were slightly worse, but neither error made the treatment inefficacious. The findings of this study will contribute to a better understanding of the impact of treatment fidelity errors in DRO and may influence future research and supervision practices.

9. Exploring the Role of Corticostriatal Circuitry in Time-based Interventions to Reduce Impulsive Choice

Maxwell McLeod

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Impulsive choice refers to the suboptimal preference for a smaller sooner (SS) over a larger-later (LL) reinforcer. Fixed-interval training (FI) improves self-controlled LL choice and correlates with increased white matter density between the prelimbic cortex (PL) and the dorsomedial striatum (DMS). This circuit may underlie the learning of FI training and adequate performance of the impulsive choice task. Rats underwent surgery to induce expression of Cre-dependent DREADDs from the PL to DMS; rats were given fixed interval (FI) training or a no-delay control (ND) procedure with or without inhibition. Inhibition prevented FI-training improvements in impulsive choice and impulsive choice performance. This data indicates a causal role of the PL to DMS circuit in interventions which reduce impulsive choice.

10. Evaluation of Effects of Fixed-Lean and Terminal Probe Dense-to-Lean Schedule Thinning on Challenging Behavior

Seema Brimmer

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Functional communication training and schedule thinning procedures reduce destructive behaviors by replacing them with simple requests that are sometimes honored or denied for predetermined periods. The terminal probe dense-to-lean schedule thinning approach probes initial performance and increases the waiting period gradually. The fixed-lean approach increases the waiting period rapidly. Limited research compares these approaches. This study replicated and extended Chesbrough et al. (2024) to compare the efficacy, efficiency, and preference for fixed-lean and terminal probe dense-to-lean approaches. The participant was a 4.5-year-old biracial girl who engaged in challenging behavior. Two ABAB reversal designs with embedded alternating treatments designs were utilized to compare treatment effects. Similarly to Chesbrough et al. (2024), the fixed-lean approach was slightly more efficient, but resulted in more overall challenging behaviors. Our findings provide suggestions for treatment safety and efficiency; the terminal probe dense-to-lean approach achieves treatment goals with similar speed, but less potential risk.

Lightning Talks

1. Psychosocial Well-being of College Students with Disabilities

Heekyung Lee

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College students with disabilities (SWDs) face unique challenges across academic, social, and environmental domains that may contribute to additional stress in their daily lives. Although their psychosocial well-being needs immediate attention and remediation, research and practice in higher education have often placed greater emphasis on academic success. The purpose of the presenter's line of research is to examine risk and protective factors associated with psychosocial well-being among college SWDs. This line of research also aims to inform the development and implementation of mental health interventions within disability support services and to highlight the importance of individualized accommodations and institutional-level supports.

2. Impatience and Decision Debiasing

Haewon Yoon

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Why do people choose smaller-sooner rewards over larger-later ones, and how can we help them decide better? My research examines impatience (how people perceive delays and future outcomes) and develops debiasing interventions that improve everyday decisions. In this flash talk, I will briefly introduce these two lines of work and highlight potential connections across CHHS.

3. Forensic Mental Health Needs Assessment in Southern Illinois

Maria Aparcero-Suero

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Prior research has indicated gaps in mental health care in this rural area but has not addressed specific needs in forensic mental health settings (Southern Illinois Healthcare, 2024). This needs assessment examines current practices, barriers, and interinstitutional coordination among key stakeholders, including judges, attorneys, mental health professionals, jail staff, and facility administrators. Data from semi-structured interviews are being analyzed using a hybrid inductive-deductive thematic analysis. Findings will inform the practices of SIU's new Forensic Mental Health Clinic in its mission to provide evidence-based forensic mental health services and strengthen the forensic mental health workforce in Southern Illinois.

4. The Effects of Imperfect Implementation in Behavioral Interventions: Insights from Translational Research

Paige O'Neill

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Well-established behavioral interventions typically work well under ideal conditions, but real-world conditions are rarely ideal. Practitioners provide treatments in busy, complex environments, where deviations from established procedures can occur for many reasons, including competing demands and limited resources. As a result, treatments are not always implemented exactly as intended. This research examines how the quality of implementation influences outcomes and seeks to better understand the consequences of departures from recommended practices that occur in real-world application. Using computer-based experiments, this work explores the relationship between intervention delivery and effectiveness, with the goal of identifying factors that support successful outcomes even under less-than-ideal conditions. The findings have implications for training, quality improvement, and the broader challenge of translating research into effective practice.

5. Diet, Dieting, and Impulsive Decision-Making

Travis Smith

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Impulsive decision-making involves a preference for a small reward upfront at the expense of a larger reward after a wait. Impulsivity is associated with many maladaptive behaviors, including consumption of unhealthful foods. In people this is a correlational relationship without clear causal direction. The present study, in rats, experimentally manipulated diet (high fat/sugar vs low fat/sugar) and diet patterns (predictable vs unpredictable foods) that resemble human diets and eating patterns. We assessed impulsive choice (smaller-sooner vs larger-later reward preference) and food preferences (healthful grain pellets vs. palatable fat/sugar pellets). We reported that high fat sugar/diets increased impulsive choice and unpredictable fat/sugar diets selectively increased preferences for unhealthful foods. This study demonstrated a diet -> impulsivity causal link. Future studies will look at neurobiological determinants of diet-induced impulsivity.

6. Language Learning in the Home Environment

Lillian Masek

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Language is foundational to cognitive development in children. Interactions between caregivers and infants is key to language development, however much of the research on caregiver-infant interactions and language develops happens in the lab. This talk presents on a growing area of research looking at language learning where language learning begins: in the home environment. We are collecting video-recorded observations of infants between 6- and 35-months old interacting with their families they go about their everyday life. We will examine a range of behaviors in the home, including caregiver and sibling speech, proximity of speaker to the infants, infant attention, infant object interactions, and infant movements and test how different behaviors related to infant vocabulary. By moving beyond the lab, we can inform theories of language learning with data from a more ecologically valid setting.

7. Repurposing an End-Of-Life Electric Vehicle

Sean Boyle

Professor, School of Automotive

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This project refits an End-of-Life Nissan Leaf EV powertrain into a recreational vehicle, specifically an Off-Road Rock Crawler. The project involves reconfiguring a FWD Nissan EV powertrain to adapt to a 4WD chassis. Students and faculty are constructing a custom chassis and suspension system, redesigning the high-voltage battery pack, and wiring the vehicle using the original equipment (OE) modules, battery, and electric motor. The project aims to show how EVs with degraded batteries can support other green initiatives. Traditional rock crawler vehicles use petroleum-based fuels, often with no exhaust or emissions treatment, and generate a lot of noise. The EV Rock Crawler would emit no emissions and be relatively silent.

8. Acoustic Imaging for Common Automotive Diagnostics

Andrew Tillman

Assistant Professor, School of Automotive

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Our research examines the practical use of acoustic imaging technology in common automotive diagnostic procedures, focusing on its potential to improve diagnostic accuracy and efficiency. Acoustic imagers utilize portable microphones and sound visualization software to identify and locate noise sources to overlay on top of a live video screen. Traditional diagnostic methods often rely on technician experience and traditional testing methodology, which can make identifying intermittent issues challenging and often frustrating. By providing visual representations of sound sources, acoustic imaging offers a noninvasive approach to locating potential faults and can help enable targeted inspections. We are live testing acoustic imagers as a complementary diagnostic tool and hope to reduce technician troubleshooting time and minimize unnecessary component replacement. The goal of this research is to assess the acoustic imager's potential role in advancing modern automotive diagnostics for the average technician.

9. Yoga, Connection, and Community: A Model for Promoting Older Adult Well-Being in Rural Settings

Erica Blumenstock

Assistant Professor, School of Health Sciences

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Co-presenters: Kang Sun, Ph.D., Elaine Jurkowski, Ph.D.

Older adults in rural communities may face limited access to wellness resources and opportunities for social engagement. This qualitative study explored the experiences of 20 older women participating in a community yoga program in a rural Midwestern county. Data were collected through semi-structured individual interviews and small-group interviews. Analysis identified four themes: social connection, perceived benefits, barriers to participation, and sustainability. Participants' accounts highlighted the importance of relationships and community alongside the perceived benefits of yoga participation. Findings suggest that community yoga programs may provide opportunities to support older adult well-being through movement and social engagement. This study offers a community-based model for consideration by nurses and rural organizations seeking accessible approaches to healthy aging, while supporting further evaluation in diverse populations.

10. Improving with Time and Practice: Interprofessional Education Day

Valerie Boyer

School Director, School of Health Sciences

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A three-year evolution of an interprofessional education learning experience focused on preparing students to work in acute care setting described and data from over 100 participants summarized.

11. Dyad Based Therapy in Aphasia

Juhi Kidwai

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Aphasia affects more than the person with aphasia (PWA); it can alter communication, relationships, roles, and quality of life across the entire dyad. Although communication-partner interventions increasingly emphasize participation, less is known about how dyad-based intervention affects both members, particularly mutual and individual quality of life, and perceived stress. This ongoing study follows five dyads, each pairing an adult with confirmed aphasia and an actively involved partner, varying in relationship type and communication profile. After baseline assessment, dyads complete ten weekly one-hour sessions, individualized with Goal Attainment Scaling, that combine evidence-based aphasia treatment with partner education, functional communication strategies, home-based strategy practice, and community-resource information. Preliminary findings show individualized rather than uniform change: stress and mutuality differed across dyads and between members of the same dyad, while quality of life showed improvement, maintenance, and fluctuation after washout. Outcomes therefore need to be examined at the dyad level rather than assuming partners mirror PWA effects. These findings will guide how clinicians may integrate partner support, individualized resources, and evidence-based treatment to address outcomes beyond impairment.

12. Decoding Manual Intelligence

Yen-Hsun Wu

Assistant Professor, School of Human Sciences

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Everyday actions such as picking up a coffee cup or turning a key appear effortless, yet they require remarkable coordination within our sensorimotor system. My research in the Human Movement Intelligence & Technology (HMIT) Lab investigates a fundamental question: How does the nervous system produce intelligent, adaptable movement? Using dexterous object manipulation as a model system, I study how the brain simultaneously achieves two competing goals: maintaining grasp stability while enabling precise and flexible object control. By integrating biomechanics, muscle activity measurements, computational modeling, and AI-based approaches, my work seeks to uncover the principles underlying movement prediction, coordination, learning, and rapid error correction. This research has implications for understanding motor skill acquisition, aging, injury, and neurological disorders while informing the development of rehabilitation technologies, assistive systems, and human-machine interfaces. Ultimately, the goal is to decode the intelligence underlying human movement and translate that knowledge into real-world applications.

13. Connections Among Individual-and Community-Level Housing Characteristics and Disaster Preparedness in a National Sample of Low-Income US Adults

Zhirui Chen

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Low-income and aging populations face heightened risks from natural disasters, yet report lower disaster preparedness. This study examined associations between individual- and community-level housing characteristics and disaster preparedness among low-income adults, and how age moderated associations. We merged data from the Federal Emergency Management Agency's 2021–2023 National Household Surveys with the Centers for Disease Control community-level Social Vulnerability Index. Multilevel models showed that renters reported lower perceived and financial preparedness than homeowners. Residents in multi-unit buildings and mobile homes reported lower financial preparedness than individuals in single-unit homes. Those residing in communities with more crowded units and mobile homes reported lower disaster preparedness. Analyses assessing age moderation revealed that older adults generally showed heightened links between housing characteristics and disaster preparedness. Results inform community-based strategies seeking to develop age-responsive interventions and empower residents to build community resilience and reduce disaster risk among low-income individuals and communities.

14. SLAC: A Participant-Led, Bottom-Up Leisure Model for Healthy Aging

Kathryn Roosevelt

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Co-presenter: Jun Kim Ph.D.

Social isolation threatens well-being in later life, yet most leisure programs for older adults are designed top-down, and increased attendance alone does not consistently improve outcomes. The Senior Leisure Activity Collaborative (SLAC) is a participant-led model that operationalizes the DRAMMA framework (detachment-recovery, autonomy, mastery, meaning, affiliation) and Continuity Theory through co-design, rotating peer leadership, and skill-sharing. This flash talk introduces SLAC and its longitudinal qualitative study of 20–25 community-dwelling older adults, using interviews at two time points and reflexive thematic analysis. Findings will clarify how program design activates psychological mechanisms that support well-being, social connection, and identity continuity in aging.

15. Beyond the Bench: Drug Court in Action

Breanne Pleggenkuhle

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Treatment based courts, such as drug courts, go beyond typical courtroom procedures and use a collaborative approach of management. In existence for decades, this research focuses on the operations and processes of this type of court in action and what factors are prioritized in management. Combining structured observations and field notes, a picture of drug court in action is presented**.**

16. After the Sentence: Administrative Barriers and Unequal Pathways to Release among Persons Deprived of Liberty in the Philippines

Raymund Narag

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Co-presenter: Azinar Nazarenny, Graduate Student

Release dates for persons deprived of liberty (PDLs) in the Philippines may vary after sentences end as agencies assemble and verify records. This study uses narrative and thematic analysis of accounts from 23 persons restored of liberty (PRLs) at the First National Conference of PRLs. Participants described missing, incomplete, lost, inconsistent, or questionable records; some reported waits of up to ten years after serving their sentences. Delays reflected weak interagency coordination, paper-based records, staff shortages and turnover, competing duties, uneven procedural knowledge, inconsistent guidance, and repeated verification. Prior skills, education, confidence, initiative, and resources shaped PDLs' capacity to navigate release. Facility participation could build process knowledge and networks. Families and friends could follow up with agencies, encourage persistence, and mobilize NGOs and service providers, but access varied. Release timing thus reflected institutional lapses and unequal navigation support. Clear responsibilities, standardized requirements, reliable tracking, and accessible follow-up may reduce avoidable delays.

17. Prevalence of Anxiety and Depression Among Canadian Air Traffic Controllers

Amy Rutledge

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This IRB-approved study, conducted in partnership with the Canadian Air Traffic Control Association (CATCA) and supported by NAV CANADA, examines the prevalence of anxiety and depression among Canadian air traffic controllers. Using validated mental health measures (GAD-7 and PHQ-9), the study collected 931 survey responses, including approximately 768 completed surveys, making it one of the largest mental health datasets available for an air traffic control population. Preliminary findings indicate elevated psychological distress and align with trends observed in a previous pilot study. Because research on controllers' mental health remains limited, this work provides important evidence to inform future research, aviation policy, and industry efforts to improve mental health and well-being in aviation occupations.

18. Online Asynchronous vs. In-Person Course Delivery: A Modality Comparison Study

Gail Avendaño

Assistant Professor, School of Aviation

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This study compares three course delivery configurations for AVM 305—an 8-week online asynchronous section, a 16-week online asynchronous section, and a 16-week in-person section—taught by the same instructor using identical materials and assessments. Data are collected via three surveys, LMS engagement reports, ICE scores, and academic performance outcomes. Research questions ask: 1. Do students in the three delivery configurations differ significantly on academic performance outcomes? 2. Do students differ in their D2L Brightspace engagement? 3. Do students differ significantly in their perceptions of workload and pacing, learning, instructor presence, peer interaction, motivation, and course satisfaction?

19. Preparing Collegiate Flight Training Programs for the Transition to Unleaded Aviation Gasoline

Irene Miller

Associate Professor, School of Aviation

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Co-presenter: Kenneth Wilkins, M.B.A.

Most piston-engine aircraft in the US, including collegiate training fleets, still burn leaded aviation fuel (100LL). The EPA has found that aircraft lead emissions endanger public health, and the FAA EAGLE initiative aims to eliminate leaded aviation gasoline by 2030. Collegiate flight training programs must make the transition to unleaded aviation gasoline while facing ambiguous fuel standards, aircraft approvals, unpredictable fuel availability, cost, and the lack of organizational commitment from universities and airport operators. Professors Miller and Wilkins are surveying collegiate flight training programs to determine current fuel use and fleet compatibility, the availability of unleaded aviation gasoline at airports, and the transition planning efforts of collegiate flight training programs. The research also seeks to explore key drivers and barriers to adoption, including challenges related to fuel availability, cost, aircraft approvals, and operational considerations. This presentation will share early findings and the operational, safety, and regulatory questions the transition raises.

20. Impact of Weather Changes Over Time on Safety of Airport Operations

Steven Goetz

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Many airports in the United States were founded because of pilot training during World War II or in the economic growth immediately following. Others were founded in the golden age of general aviation, the 1960s and 1970s, to facilitate the rapid growth of the industry. Large commercial service airports like O'Hare in Chicago and Kennedy in New York have been updated to adapt to changing weather and traffic requirements, but most general aviation airports cannot afford such capital improvement projects. This study evaluates the adequacy of dingle orientation general aviation runways to historic and current wind direction and speed reports to determine if changes in weather patterns are leading to less safe operations for general aviation that are mitigated by capital investment by commercial service airports by evaluating available historic weather reports from airport founding until present time.

21. AI and Course Curriculum Development Methods

Steven Locklear

Assistant Professor, School of Aviation

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Co-presenter: Amy Rutledge, Ph.D.

Generative artificial intelligence (GenAI) provides technical educators with a potentially useful tool for developing curriculum more efficiently. However, concerns regarding technical accuracy, hallucinations, regulatory alignment, and instructional quality require instructors to carefully evaluate AI-generated materials. This paper proposes a five-step framework for using GenAI in aviation maintenance curriculum development while maintaining instructor control throughout the process. The framework incorporates the development of learning objectives, validation of technical content, creation of instructional materials and assignments, and development of assessments. The instructor remains responsible for technical accuracy, pedagogical suitability, regulatory alignment, and approval of the final product. Rather than positioning GenAI as an independent curriculum author, the framework treats it as a productivity tool directed by instructor expertise. The framework also provides a foundation for future research examining AI-assisted curriculum development in technical education.

22. Equity in Flight Instruction: Are underrepresented and low-income groups getting equitable access to experienced instructors compared to their majority peers?

Kenneth Wilkins

Assistant Professor, School of Aviation

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Flight instruction is a one-on-one activity. Many collegiate flight programs assign each student to a single flight instructor for an academic term or for the duration of a flight certificate or rating, making that pairing central to the student's training experience. Women, minorities, and students from lower-income backgrounds remain underrepresented among professional pilots. According to the US Bureau of Labor Statistics, women make up approximately 7% of all pilots, minorities approximately 8%. This proposed pilot study asks whether flight instructors and students are paired equitably: do students from underrepresented groups and lower-income backgrounds receive equitable access to experienced instructors? Using existing training records, the study will compare the experience level of instructors assigned to students in these groups with that of their peers. Additional questions examine the rate of mid-course instructor changes and whether those changes result in the student receiving an instructor with greater or lesser experience.

3 Minute Thesis

23. "Do You Trust AI?" Is Only Half the Question*

Ali Shahidy

Graduate Student, School of Psychological and Behavioral Sciences

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When people talk about trusting AI, they rarely use the word "trust." They say a system invents citations, or that they stopped double-checking it, or that they rely on it for writing but not for facts. This study analyzed 12.5 million posts and comments across 17 AI-focused Reddit communities to measure how people actually express trust in AI when no one is asking. Two findings emerged. First, 97% of trust evaluations used no trust vocabulary at all. Second, nearly 90% were directed at a specific task, capability, or version — not at AI in general. Yet standard trust measurement instruments ask one question about "the system" as a whole and return one number. That number averages over distinctions people are actively making. This research argues that how we measure trust in AI needs to match how people actually hold it.

24. Language Learning in the Home Environment*

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Adverse childhood (e.g., neglect) predicts impulsive behavior-related disorders (e.g., substance abuse). Delay Discounting (DD) is a model of impulsive behavior. It is the tendency for behavioral consequences to lose value as they are delayed. Although DD and Early-Life Adversity (ELA) predict psychiatric illnesses in humans, there is inconsistent evidence of an ELA-DD relationship using Maternal Separation (MS) and Limited Bedding and Nesting (LBN) as rodent models. Concern with these models and the evidence that human adverse rearing entails multiple stressors has resulted in testing MS+LBN combinations with promising outcomes, e.g., MS+LBN increased DD (Cifuentes et al. 2026). However, ELA's effects on DD of punishment remain unknown, notwithstanding negative consequences of choices are often delayed, e.g., smoking. We tested the effects of MS+LBN on DD of punishment in 64 Sprague-Dawley rats that chose between 1 pellet with no footshock or 3 pellets followed by footshock (.35 mA) delayed 0-16s. ELA reduced DD of punishment, irrespective of sex and shock sensitivity.

Note of Thanks!

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Thank you!