Presented by the Office of Graduate and Postgraduate Education, the Center for Teaching and Learning, the Division of Lifetime Learning, Student Government Association, and Student Engagement and Well-Being

THE INAUGURAL GRADUATE EDUCATION SUMMIT:

GRADUATE STUDENT EXPERIENCE SYMPOSIUM

NOVEMBER 14, 2024

GEORGIA TECH EXHIBITION HALL

Georgia Tech hosted the Inaugural Graduate Education Symposium: Graduate Student Experience Summit on November 14. This landmark event brought together faculty, staff, and graduate students to address the evolving landscape of graduate education. The Symposium served as a platform to discuss pressing issues, share innovations, and mark graduate education's growing prominence in Georgia Tech's strategic initiatives. Topics covered include mentorship, student wellness, career development, and the transformative role of AI in research and education.

Keynote speakers Ronald Johnson, senior vice president for Strategic Initiatives and Chief of Staff, and Daniel Denecke, Program Director at the National Science Foundation's Division of Graduate Education, set and maintained an inspiring tone for the event. Johnson emphasized the importance of ethical leadership, innovation, and fostering relationships to build a strong leadership culture, while Denecke shared insights on the national trends and drivers shaping graduate education. Their remarks underscored the crucial role of adaptability and collaboration in their leadership lessons.

The Symposium featured a diverse range of sessions tailored to address the needs of Georgia Tech's graduate community: three strategy sessions focused on the development of a new academic advising platform, opportunities for the College of Lifetime Learning, trends in graduate education, and the importance of supporting student well-being. Six-panel discussions offered insights on mentoring, professional development, and student engagement, including a special panel led by graduate students, allowing them to voice their perspectives directly to faculty and staff. Eleven lightning round sessions showcased a range of projects, resources, and ideas focused on teaching innovations, academic enrichment, and ethical AI use in research and education.

A notable aspect of the Symposium was the group of sessions designed for graduate students. These sessions explored student wellness, professional preparation, and strategies for academic success. Each standard session, lightning round, and panel discussion fostered meaningful dialogue between students, faculty, and staff. Key themes from the graduate student panels included the need for graduate student preparedness and the students' need for a sense of belonging on campus.

The Symposium was organized by the Office of Graduate and Postdoctoral Education in partnership with the Center for Teaching and Learning, the College of Lifetime Learning, Graduate SGA, and Student Engagement and Well-Being.

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Inaugural Graduate Education Summit: The Graduate Student Experience Symposium Schedule

November 14, 2024

Georgia Tech Exhibition Hall- Midtown Ballroom
Atlanta, GA

09:00-09:35 **Opening Remarks/Welcome** - Bonnie Ferri
Keynote Address: Leadership in Global, Cross-Cultural Environments
- Dr. Ronald Johnson

09:35-09:45 **BREAK**

09:45-10:30 **Innovations in Graduate Instruction (Lightning Round)**
- Improving GTA Performance: An Expeditious Yet Thorough Training Program - Richard Kofi Mireku Aslamah
- The Applied Analytics Practicum: An Innovative Approach to Experiential Learning - Ashley Marshall
- Development of project-based learning for multidisciplinary graduate level courses - Costas Arvanitis
- Development of problem-solving studios for teaching in an engaging way rigorous graduate level courses in the classroom - Costas Arvanitis

Strategy Session
- Facilitating Connections and Enhancing a Sense of Belonging - Kristina Clement

Panel Discussion: PhD Internships as Catalysts: Driving Academic Achievement and Expanding Career Horizons - Gwenn Seo
- **Panelists:**
  - Adam Steinberg - Associate Chair of Academics, Aerospace Engineering
  - Morag Burke - Principal Academic Professional, Mathematics
  - Jitesh Jain - PhD Graduate Student, School of Interactive Computing
  - Olajide Olugbade - PhD Graduate Student, School of Public Policy
- **Moderator:**
  - Ariel Gladney - Internship Program & Operations Manager, GT Career Center

10:30-10:35 **BREAK**

10:35-11:20 **Academic Enrichment and Support Programs (Lightning Round)**
- Socratic Mind: Democratizing Oral Assessment - Jui-Tse Hung
- Effective and Responsible Use of AI in Graduate Research - Bonnie Ferri
- How to Build a Start-up at Georgia Tech - Daniel Constable

- ECE Graduate Teaching STEER Fellowship - Lakshmi Raju
- Initiatives for Student Success in Mathematics - Christopher Jankowski
- Mathematics of ECE Workshop - Matthieu Bloch

Strategy Session

- Opportunities for the College of Lifetime Learning and Graduate Education – Stephen Ruffin & Stephen Harmon

Panel Discussion: Student Support Services: Promoting Success Across Departments - John Stein

- **Panelists:**
  - John Stein
  - Joi Alexander
  - Kim Harrington

11:20-11:25 BREAK

11:25-12:10 Innovations in Graduate Instruction and Support (Standard Session)

- Enhancing Construction Students' Learning on Digital Twin through an Innovative Class Project in Collaboration with Library Staff and Industry Partners - Jing Wen
- Integrating Pedagogical Innovation into PhD Course Design Instruction - Aselia Urmanbetova
- CoS-VIGOR: A Coaching Program to benefit graduate students and faculty - Jennifer Leavey

Strategy Session

- Developing an Academic Advising and Student Success Platform

Q&A with Dr. Daniel Denecke:

- NSF & Graduate Education

12:15-01:15 LUNCH

Keynote Speaker (Hybrid):

- Dr. Daniel Denecke, Program Director, Graduate Education, National Science Foundation

01:15-02:00 Student Panel: Perspectives of Graduate Students

- **Panelists:**
  - Mehdia Ali - PhD Graduate Student, BME

        - Kayla Evans - PhD Graduate Student, Human-Centered Computing
        - Boluwatife Jide-Olugbade - Master's Graduate School, Public Policy
        - Iason Velentzas - PhD Graduate Student, Robotics
    - **Moderator:**
        - Kiera Tran - PhD Graduate Student & President of Grad SGA, Earth & Atmospheric Sciences

02:00-02:10 BREAK

02:10-2:55 Wellness and Development

- Navigating Past the Loneliness Pandemic - Chad Young
- Building your Self-Care Toolbox - Richelle Fields
- Know Before You Go: Graduate Student Preparation and Engagement as an Undergraduate - James Allen

Panel Discussion: Mentorship Matters: Transformative Programs that Support Graduate Student Success - Jana Stone

- **Panelists:**
    - David Ballantyne - Associate Professor, Physics
    - Stefan France - Professor, Chemistry & Biochemistry
    - Martha Grover - Associate Chair of Academics, Chemical & Biomolecular Engineering
    - Preet Singh - Associate Chair of Academics, Materials Science & Engineering

Research and Studies on Topics in Graduate Education

- Non-traditional International Students: A Forgotten Population - Christian Gallie, Ed.D
- Better Together: A Hybrid Conference to Foster Connection and Community Among Online Graduate Students - Alex Duncan
- Creating an Inclusive and Supportive Learning Environment - Christian Middleton

02:55-3:00 BREAK

03:00-03:45 Student Track - Panel Discussion:

- Cultivating Connection: Building and Maintaining Healthy Relationships - Susannah Fulling-Smith

Panel Discussion: Perspectives from the Colleges on Graduate Education

- **Panelists:**
  - Matthieu Bloch - Associate Dean of Academics, College of Engineering
  - David Collard - Associate Dean of Academics, College of Sciences
  - Shatakshee Dhongde - Associate Dean of Academics, Ivan Allen College
  - Manpreet Hora - Associate Dean of Academics, Scheller College of Business
  - Javier Irizarry - School Chair of Academics, College of Design
  - Stephen Ruffin - Associate Dean of Academics, GTPE
- **Moderator:**
  - Laurence Jacobs - Sr. Vice Provost, Teaching and Learning

Panel Discussion: International Student Experiences with Faculty & Staff: Shaping Positive Relationships for Effective Learning and Innovation in Teaching and Research Labs - Sarah Kegley

03:45-04:00 Closing Remarks/Event Wrap-Up

Keynote

Innovations and Opportunities in Graduate Education

Daniel Denecke

Program Director, National Science Foundation (NSF)

The presentation "Innovations and Opportunities in Graduate Education" by Daniel Denecke, Program Director at the National Science Foundation (NSF), discusses various aspects of innovation in graduate education and highlights NSF funding opportunities.

Innovation in Graduate Education

- **Scope:** Innovations can be driven by program and faculty-led initiatives, university policies, or larger federal policies and funding incentives.
- Ideal STEM Graduate Education:
    - Breadth of skills and depth of specialization.
    - Ethical awareness and societal impact.
    - Inclusivity and equity.
    - Effective communication.
    - Student-centered and career-focused.
    - Strong mentoring and career exploration.

Traditional STEM PhD Model

- **Characteristics:**
    - Funded by research assistantships or fellowships.
    - PI-centered with limited career exploration outside academia.
    - High attrition rates.

NSF Directorate for STEM Education (EDU)

- **Mission:** Develop a diverse and capable STEM workforce.
- **Programs:**
    - National Science Foundation Research Traineeship (NRT) Program.
    - Innovations in Graduate Education (IGE).
    - Graduate Research Fellowship Program (GRFP).
    - CyberCorps® Scholarship for Service (SFS).
    - Secure and Trustworthy Cyberspace (SaTC).

NSF Research Traineeship (NRT) Program

- **Goals:**

    - Advance convergent research in high-priority areas.
    - Produce diverse cohorts of interdisciplinary STEM professionals.
    - Promote transformative improvements in graduate education.
    - Focus Areas: Data science, AI, quantum information science, and more.
- **Training Model:** Combines domain specialty with interdisciplinary training and professional development.

NRT Institutional Partnership Pilot (NRT-IPP)

- **Objective:** Foster partnerships between R1 and non-R1 institutions and industry.
- **Focus Areas:** AI, high-performance computing, biotechnology, and more.
- **Funding:** Up to $4.5 million for five years.

Innovations in Graduate Education (IGE) Program

- **Goals:**
    - Pilot and validate innovative approaches to STEM graduate education.
    - Focus on career preparation and student success.
- **Tracks:**
    - Track 1: Career preparation and student success pilots.
    - Track 2: Research on systemic innovations in STEM graduate education.

New NSF Requirements

- Mentoring Plans: Required for postdoctoral researchers and graduate students supported by NSF projects.
- Individual Development Plans (IDPs): Required for postdoctoral scholars and graduate students receiving substantial NSF support.

Additional NSF Programs

- CyberCorps® Scholarship for Service (SFS): Scholarships in cybersecurity with a service obligation.
- Secure and Trustworthy Cyberspace (SaTC): Research on cybersecurity and privacy.
- EDU Core Research (ECR): Research on STEM education, broadening participation, and workforce development.
- Faculty Early Career Development Program (CAREER): Supports early-career faculty.
- Racial Equity in STEM Education (EDU Racial Equity): Projects addressing systemic racism in STEM.
- STEM Education Postdoctoral Research Fellowship (STEM Ed IPRF): Professional development for postdoctoral fellows.
- Ethical and Responsible Research (ER2): Promotes responsible and ethical research practices.

Opportunities to Engage with NSF

- Reviewer: Gain firsthand knowledge of the peer review process.
- Rotator: Join NSF as a temporary program director or advisor.

Lightning Talks

Improving GTA Performance: An Expeditious Yet Thorough Training Program

Richard Asiamah, Daniela Staiculescu, and Tammy McCoy

Georgia Institute of Technology

The "Improving GTA Performance: An Expeditious Yet Thorough Training Program" presentation by Richard Asiamah, Daniela Staiculescu, and Tammy McCoy at Georgia Tech outlines a comprehensive training program for Graduate Teaching Assistants (GTAs).

Introduction

- Presenter Background: Richard Asiamah, originally from Ghana, with an MSc in Electrical Engineering, enjoys teaching and playing soccer.
- Role of GTAs: GTAs in the ECE department hold office hours, lead recitations, conduct lab sessions, proctor exams, assist professors, and grade papers and exams.

CETL 8000 - Graduate Teaching Assistant Preparation

- Structure: A three-part class spanning three weeks, including a day-long "Jumpstart to Teaching" session and semester-long sessions.
- Jumpstart to Teaching: Covers six topics:
- First day of class & teaching unfamiliar material.
- Classroom management and inclusive teaching.
- Professionalism, policies, and procedures.
- Engaging explanations.
- Time management.
- Grading.
- Engagement Strategies: Icebreakers, discussions, videos, and breakout sessions.

Semester Sessions

- Topics: Student wellbeing and midterm evaluation.
- Microteaching: Students prepare a 10-minute presentation on an ECE concept, practice delivery, and receive peer feedback.

Survey & Results

- Pre-Jumpstart Survey: Identified concerns such as time management, lack of knowledge, communication issues, and cultural/language barriers.

- Post-Jumpstart Survey: High participation rate with positive feedback on sessions like "Jumpstart to Teaching," grading, communication strategies, and interactive sessions.
- Areas for Improvement: Suggestions included more case studies, former GTAs sharing experiences, and providing online alternatives.

Conclusion

- The training program aims to enhance GTA performance through comprehensive preparation and continuous feedback, addressing both academic and personal development needs.

The Applied Analytics Practicum: An Innovative Approach to Experiential Learning

Ashley Marshall

Georgia Institute of Technology

The "Practicum" presentation for the Master of Science in Analytics program at Georgia Tech provides an overview of the practicum experience, highlighting its structure, support, and outcomes

Practicum Overview

- Purpose: Allows students to apply classroom knowledge to real-world data science problems for businesses, government agencies, or other organizations.
- Course Details:
    - 6 academic credits.
    - Approximately 20 hours per week during the semester.
    - Available both on campus and online.

Student Participation

- On-Campus: Teams of 3-4 students.
- Online (OMSA): Teams of at least 20 students, which can be broken into smaller groups of 3-4.

Support Structure

- Faculty and Staff:
- Dr. Joel Sokol, Director of the MSA program.
- Graduate Teaching Assistants (50% current students, 50% alumni).
- IT support for virtual machines and practicum website.
- Staff support from career programming and academic support coordinators.

Corporate Partnerships

- Project Sourcing:
- Heavily reliant on MSA Career Services.
- Outreach to corporate partners, including previous sponsors and alumni.
- Info sessions hosted virtually for potential project sponsors.

Student Deliverables

- Deliverables:
    - Videos, certification forms, midterm PowerPoint decks, final reports/presentations to sponsors, and peer feedback surveys.
- Certification Form: Completed by the student's manager to outline the project scope.

- Final Presentations: Presented to the sponsor, aiding in the NDA process.
- Student Survey: Used to assess participant engagement.

Data and Outcomes

- Project Sourcing:
  - 25 projects for Fall 2024.
  - 19 projects for Spring 2025.
- Statistics:
  - 191 practicum project submissions since inception.
  - 140 organizations have sponsored projects.
  - 43% of projects involve alumni.
  - 30% of organizations are recurring sponsors.
  - 90% of sponsors would sponsor a project again.
  - 92% of sponsors rated their experience as "above average or excellent."

Intellectual Property and NDAs

- IP Ownership: Belongs to the student during the project, typically signed over to the company upon completion.
- NDAs: Highly encouraged between students and companies, with Georgia Tech legal involvement if necessary.

Socratic Mind: AI-Powered Oral Assessment

Jui-Tse Hung

Georgia Institute of Technology

The "Socratic Mind: AI-Powered Oral Assessment" presentation by Ray Hung at the 2024 GT Graduate Student Experience Symposium discusses the benefits and implementation of AI-powered oral assessments.

Overview

- Purpose: To showcase the potential of AI-powered oral assessments in accurately measuring student knowledge and enhancing learning experiences.

Limitations of Traditional Assessments

- Vulnerable to tools like ChatGPT.
- Lack of depth in understanding.
- Inaccurate reflection of student knowledge.
- Limited and non-personalized feedback.

Benefits of Oral Assessments

- More accurate knowledge assessment.
- Improved material understanding.
- Enhanced higher-order thinking and verbal communication skills.
- Increased motivation to learn.
- Bolstered academic integrity.
- Not scalable with human teachers alone.

Socratic Mind: AI-Powered Oral Assessment

- Process: Creating questions, taking assessments, and moderating results.
- Case Studies:
    - CS 3600 Intro to AI: Short answer assessments.
    - CS 4420/6422 Database: Lecture slides and comprehension quizzes.

Early Results

- Piloted with over 1000 students at Georgia Tech.
- 78.5% found it more educational than short essays.
- 76.6% preferred to use it again.

Use Cases

- Lecture/reading comprehension quizzes.
- Exam preparation practice.

- Replacing short essay questions.
- Project reflections/demos.
- Interviews and more.

Contact Information

- Ray Hung: Graduate Research Assistant, Georgia Tech (ruizehung@gatech.edu)
- LinkedIn: Ray Hung

Effective and Responsible Use of AI in Research

Bonnie Ferri

Georgia Institute of Technology

The presentation "Effective and Responsible Use of AI in Research" by Bonnie Ferri, Vice Provost for Graduate and Postdoctoral Education at Georgia Tech, provides guidance on using AI in graduate research and writing.

Overview

- **Purpose:** To guide graduate students and postdocs on the effective and responsible use of AI in research, dissertations, theses, and publications.
- **Contributors:** Office of Graduate Education, Office of Research, Directors of Graduate Programs, Student Government Association, Responsible Conduct of Research Office, and AI researchers.

Contents

- Strengths and Challenges of Generative AI
- Effective and Responsible Use
- Professional Society and Funding Agency Standards and Policies
- Guidelines for Graduate Students and Postdocs

Effective Use in Graduate Research

- Idea Generation and Research Planning: Using AI to brainstorm and develop research plans.
- Literature Search: Enhancing literature searches with AI tools.
- Writing Assistance: AI can help with writing code, drafting theses, and publications, and converting bullet points into paragraphs.
- Editorial Review: Using AI for reviewing drafts and providing substantive assistance.

Ethical and Responsible Considerations

- Plagiarism, Falsification, Fabrication: Avoiding unethical practices and always verifying sources.
- Acknowledging AI Use: Properly acknowledging the use of AI in research work.
- Learning Process: Ensuring AI does not replace critical thinking and learning.
- Confidentiality and IP Concerns: Managing data responsibly and adhering to Institutional Review Board (IRB) guidelines.

Sample Guidance from Publishers and Funding Agencies

- Authorship: Guidelines on authorship when using AI.
- Reviewing Papers and Proposals: Standards for reviewing academic work involving AI.

Next Steps

- Resource Contribution: Encouraging contributions to the resource linked from the Georgia Tech graduate student website.
- Inclusion in Courses: Integrating this guidance into research methods courses.

How to Build a Start-up at Georgia Tech

Daniel Constable and Rahul Saxena

Georgia Institute of Technology

The presentation "CREATE-X 2025" outlines Georgia Tech's initiative to instill entrepreneurial confidence in students and empower them to launch real startups.

CREATE-X Mission and Vision

- **Mission:** To instill entrepreneurial confidence in students and empower them to launch real startups.
- **Vision:**
    - 300 student startups per year.
    - 100% of students engaged (both undergraduate and graduate).
    - Aim to be the #1 startup campus in the country.

CREATE-X by the Numbers

- Growth (2015-2023):
- Over 17,000 students engaged.
- 450+ ventures launched, creating hundreds of jobs.
- Current aggregate valuation of startups exceeds $2 billion.
- Co-founders from 20+ other universities have participated.
- $15 million fund managed by GTF for direct investment in CREATE-X startups.

Key Initiatives

1. Learn:
    - Startup Lab: A semester-long, three-credit class teaching evidence-based entrepreneurship, covering ideation, teaming, customer discovery, MVPs, and the business model canvas.
2. Make:
    - Idea 2 Prototype (I2P): Provides resources and technical mentorship to turn ideas into working prototypes, with funding up to $500 per team per semester.
    - Interdisciplinary Capstone: Courses that integrate multiple disciplines to develop prototypes.
3. Launch:
    - Startup Launch: A 12-week summer accelerator providing $5K seed funding, $150K in resources, and mentorship, culminating in a Demo Day event.

Impactful Startups

- **Examples:**
    - Dot.card: Digital business cards.

- SlateSafety: Wearable safety technology.
- FixD: Car diagnostic tools.
- Reframe App (Glucobit, Inc): Wellness app with a $350M valuation in 2022.
- Kingbreaker Holdings, Inc: Foreclosure prevention services.
- Ultraview Archery: Archery equipment.

Entrepreneurial Culture

- **Growth:**
  - Significant interest in entrepreneurship among applicants and enrolled students.
  - High engagement in events like Demo Day.

Support and Resources

- Founder's Pledge: CREATE-X founders giving back to the program.
- Demo Day: Annual event showcasing student startups to investors and strategic partners.

Contact Information

- Rahul Saxena: Director of CREATE-X (rahulsaxena@gatech.edu).
- Website: CREATE-X.

ECE Graduate STEER Teaching Fellowship

Lakshmi Raju

Georgia Institute of Technology

The "ECE Graduate STEER Teaching Fellowship" presentation by Lakshmi Raju outlines the fellowship program designed to support Ph.D. students in enhancing their teaching skills.

Overview

- **Purpose:** To encourage and support Ph.D. students with an interest in teaching by providing structured training and teaching experience.
- **Structure:** Fellows work towards the CTL Tech to Teaching Certification, spend a semester as a Learning Mentor, and serve as Instructor of Record the following semester.

Fellowship Requirements

- **Spring:**
  - CTL Course: CETL 8713 (Fundamentals of Teaching and Learning in Higher Education).
  - Learning Mentor for ECE 2020 IE or ECE 3710.
  - Monthly meetings with the STEER cohort and Dr. Lakshmi Raju.
- **Summer:**
  - Asynchronous online courses via LinkedIn Learning: Writing Effective Learning Objectives, Create Effective Learning Assessments, and Teaching with Technology.
- **Fall:**
  - CTL Course: CETL 8718 (Teaching Capstone).
  - Monthly meetings with the STEER cohort and Dr. Lakshmi Raju.
  - Instructor of Record for ECE 2020 IE or ECE 3710.

Fellowship Support

- Learning Mentor Semester: $1,500 stipend.
- Capstone Semester: Fellows serve as GTAs at an enhanced Ph.D. rate while teaching an ECE service course.

Cohorts and Meetings

- Current and Upcoming Cohorts: Lists of fellows and their status in the program.
- Monthly Meetings: Discussions on teaching issues, pedagogy, technical exam writing, and handling student issues.

Results

- **Fellowship Impact:**
    - Provides teaching experience to Ph.D. students, many of whom have not been GTAs before.
    - Fellows are better prepared for academic positions and have stronger teaching statements.
    - Creates a cohort of ECE students with shared teaching interests.

Initiatives for Student Success in Mathematics

Christopher Jankowski

Georgia Institute of Technology

The "Initiatives for Student Success in Mathematics" presentation by Christopher Jankowski, Director of Graduate Advising and Assessment at Georgia Tech, outlines various strategies to support and enhance the success of mathematics graduate students.

Historical Barriers to Success

1. Expectations for First-Year PhD Students:
   - Rigorous preparation required for 6000-level courses.
   - Cumulative effects of entering with fewer or less rigorous courses.
2. Written Comprehensive Exams:
   - PhD students must pass two exams from seven subjects, requiring strong knowledge of 6000-level material.
3. Discouragement for Underrepresented Groups:
   - Lack of representation and subconscious biases.
   - Psychological effects like imposter syndrome.

Initiatives for Improving Success

1. Peer Mentoring:
   - Pairing current graduate students with incoming PhD students for advice and guidance.
     - Pros: Valuable peer feedback and mentoring.
     - Cons: Relies on busy PhD students, potential strain on resources.
2. Summer Edge Program:
   - Additional preparation in Abstract Algebra and Analysis for selected students.
   - Successful participants are offered admission into the PhD program.
   - Started in Summer 2023, with three participants matriculating.
3. Math Alliance and GAANN:
   - Math Alliance: Connecting universities with students from underrepresented groups. A Southeastern Regional Math Alliance is starting.
   - GAANN Grant: $1,000,000 over three years for PhD students, providing financial support, travel support, and teaching mentoring.

Other Initiatives

1. Tea Time Revitalization:
   - Social events led by graduate students with faculty participation.
2. Student Organizations and Outreach:
   - Chapters of AWM, AMS, and SIAM.

- High School Math Day led by grad students.

3. Math 6001 and Comp Exam Prep Classes:
   - Includes panel sessions and discussions on mental health, conflict resolution, and Title IX.
4. Department-Wide Events:
   - Monthly social events and a holiday event in December.
5. Faculty Contacts List:
   - For students seeking advice beyond their advisor.

Mathematics of ECE

Matthieu Bloch

Georgia Institute of Technology

The "Mathematics of ECE" presentation by M. Bloch focuses on the importance of mathematics in Electrical and Computer Engineering (ECE) at the graduate level.

Overview

- **Purpose:** To set the stage for doing math at the graduate level and facilitate adjustment to graduate school, especially in the context of changes brought by the pandemic.

Key Needs

1. Mathematical Foundation:
   - Many areas of ECE are grounded in mathematics, including probabilities, linear algebra, and real analysis.
2. Adjustment to Graduate School:
   - The pandemic has affected social dynamics, making it challenging to create study groups and make new friends.

Solution: Workshop-Like Lectures

- **Format:**
  - Two workshops per week, each lasting about an hour.
  - Led by an ECE PhD student.
  - Covering key mathematical concepts such as concentration inequalities, Singular Value Decomposition (SVD), and limits.

Effectiveness

- **Attendance:**
  - Decent attendance and requested by students in subsequent years.
- **Evaluation:**
  - No formal measure of effectiveness in place.

Future Directions

- **Potential Expansion:**
  - Considering similar workshops for the physics and computing aspects of ECE.
- **Challenges:**
  - Requires additional time commitment from faculty and instructors.
  - Need to create a sustainable model.

Know Before You Go: Graduate Student Preparation and Engagement as an Undergraduate

James E. Allen, Jr., Sharon Brownlow, and Colleen Riggle

Georgia Institute of Technology

The "Know Before You Go" presentation is designed to prepare and engage graduate students at Georgia Tech.

Presentation Outcomes

- Knowledge of Undergraduate Needs: Aligning undergraduate needs with the graduate student experience from the perspectives of the New Student & Transition Programs (NSTP) and Dean of Students (DOS) offices.
- Sharing Graduate Experience: Ways to share your Georgia Tech graduate experience with undergraduates, family, and friends.

Undergraduate Trends and Needs

- Sense of Belonging: Finding community and campus resources.
- Research Opportunities: Increased demand for research opportunities.
- Transition Knowledge: Understanding the transition from undergraduate to graduate school.

Benefits for Undergraduates from Graduate Students

- Mentorship Programs: Opportunities for mentorship.
- Panel Discussions: Sharing experiences through panels.
- Research Collaboration: Collaborative research opportunities.
- Information Sessions: Hosted by specific Masters/Doctoral programs.
- Workshops and Seminars: Educational and developmental sessions.

Graduate Family Engagement

- Family Involvement: Virtual and in-person engagement opportunities.
- Events: Fall and spring events, first day of school pictures, commencement celebrations.
- Communication: Newsletters, email alerts, SMS texts.

Campus and Community Partners

- Yellow Jacket Family Pride: Encouraging pride and involvement at all stages of student life.

"Know Before You Go" Panel Interest

- Grad School Requirements: Entry requirements and differences in academic expectations.

- Work/Life/School Balance: Managing different aspects of life as a graduate student.
- Professor Expectations: Understanding differences in expectations from professors.

Contact Information

- Dr. Colleen Riggle: Associate Dean of Students (colleen@gatech.edu)
- Sharon Brownlow: Director of Parent and Family Programs (Sharon.brownlow@gatech.edu)
- James E. Allen Jr.: Interim Director of New Student & Transition Programs (Jallen352@gatech.edu)

Creating an Inclusive and Supportive Learning Environment

Christian Middleton

Georgia Institute of Technology

The "Creating an Inclusive and Supportive Learning Environment" presentation by Christian Middleton focuses on the importance of fostering an inclusive and supportive academic environment.

Why It Matters

- Inclusive Environments: Essential for academic success and emotional well-being.
- Supportive Learning Spaces: Ensure all students feel valued and capable of achieving their goals.

Key Questions

- Do our students feel seen, heard, and valued?
- How can we change the narrative?

The 3 Ps Framework

1. Purpose: Connecting personal values, passions, and goals to daily work in higher education.
2. Personalized Learning: Tailoring education to meet individual student needs.
3. Pathways: Creating programs and events to guide students through their educational journeys.

Programs and Workshops

- Dissertation Writing Workshops: Including Dissertation Day, a writing marathon.
- Mental Health & Wellness Workshops: Stress relief and finding balance.
- Peer Mentoring Programs: Mentor-mentee meet-ups.
- Imposter Syndrome & Self-Confidence Workshops: Building self-confidence and belonging.
- Interdisciplinary Programs: Partnering with the GT Career Center for career workshops.
- Capstone Project Workshops: Regular check-ins and support.

Benefits of an Inclusive and Supportive Learning Environment

- **For Students:**
    - Enhanced engagement and motivation.
    - Increased sense of belonging and empowerment.
    - Higher academic achievement and retention rates.

Closing Thought

By focusing on Purpose, Personalized Learning, and Pathways, we can create an inclusive and supportive learning environment that values every student’s unique contribution and potential.

Standard Sessions

Enhancing Construction Students' Learning on Digital Twin through an Innovative Class Project in Collaboration with Library Staff and Industry Partners

Jing Wen

Georgia Institute of Technology

The presentation "Enhancing Construction Students' Learning on Digital Twin through an Innovative Class Project in Collaboration with Library Staff and Industry Partners" by Dr. Jing Wen, Qinghao Zeng, Kamyar Fatemifar, Abdurrahman Baru, and Tran Duong Nguyen outlines a project aimed at equipping students with skills in Digital Twin technology.

Project Objectives

1. Skill Development: Equip students with skills to use Digital Twin technology by creating a digital replica of the Price Gilbert Library.
2. Practical Understanding: Develop a practical understanding of facility management through interactions with real-world tools.
3. Interdisciplinary Collaboration: Foster collaboration with library staff for operational insights and industry partners for technical support.

Technical Approach to Digital Twin Creation

- Reality Capturing: Introduce students to 3D laser scanning and Panorama 360 Camera.
- Building Information Modeling (BIM): Use Autodesk Revit to establish a 3D model of the library.
- Digital Twin Platform: Use Wiretwin platform to construct the Digital Twin, including space, maintenance, and cleaning management modules.

Student-Centric Learning Components

- Understanding Digital Twin Concepts: Introduce foundational concepts and familiarize students with tools and technologies.
- Collaboration and Teamwork: Structure project teams with cross-functional roles to simulate real industry environments.

Interdisciplinary Collaboration

- Learning from Facility Managers: Facilitate sessions where students present their Digital Twin models and receive feedback.

- User-Testing Sessions: Design sessions where facility managers and library staff interact with the models and provide feedback.

Project Results & Student Outcomes

- Developed a Web-Based Interactive System: Aids navigation and provides real-time information to users.
- Implemented Interactive Wayfinding Features: Includes interactive maps, real-time information display, and occupancy prediction.
- Applied Emerging Technologies: Used Laser Scanning, Camera 360, and Revit software to create a BIM model.
- Created a Digital Twin Platform: Offers functionalities for facility managers.
- Identified Challenges: User adoption, data accuracy, and maintenance.

Future Directions

- Predictive Maintenance: Implement strategies to monitor equipment health and optimize maintenance schedules.
- Energy Efficiency: Analyze energy consumption patterns and optimize building systems.
- IoT Sensor Integration: Enhance data collection and monitoring with real-time sensor data.
- VR and AR Integration: Provide immersive visualization and training experiences.
- Collaborative Partnerships: Foster collaborations for innovative applications of Digital Twin technology.

Connecting Students to Purpose through Vertically Integrated Projects

Jennifer Leavey

Georgia Institute of Technology

The presentation "Connecting Students to Purpose through Vertically Integrated Projects" by Jennifer Kraft Leavey focuses on the Valuing Individual Goals and Objectives in Research (VIGOR) program, a grad student coaching and faculty peer support initiative.

What is Coaching?

- **Definition:** A thought-provoking and creative partnership aimed at maximizing personal and professional potential.
- **Focus Areas:** Setting goals, creating outcomes, managing personal change.
- **Assumptions:** Individuals are resourceful, willing, and competent.

The Coach's Role

- **Responsibilities:**
    - Discover, clarify, and align with the coachee's goals.
    - Encourage self-discovery.
    - Elicit self-generated solutions and strategies.
    - Serve as an accountability partner.

Typical Reasons for Engaging Coaches

- Optimize individual/team performance (43%).
- Improve communication skills (39%).
- Increase productivity (38%).
- Expand career opportunities (35%).
- Increase self-esteem/self-confidence (34%).
- Manage work/life balance (34%).
- Improve business management (32%).

Why VIGOR?

- Protégé Empowerment: Based on the model by Fullick-Jagiela, Verbos, and Wiese (2015), focusing on relational impact, developmental meaning, interpersonal competence, and self-determination.

VIGOR Timeline

- **Cohort 1:**
    - 5 Faculty: Training and peer coaching in Summer 2024.
    - 6 Students (within the first year): Orientation and weekly coaching in Fall 2024.
- **Cohort 2:**

    - Faculty: Training and peer coaching in December 2024.
    - Students: Orientation and weekly coaching in Spring 2025.

Preliminary Feedback and Challenges

- **Feedback:**
    - First-year students may need more information and confidence to engage effectively.
    - Faculty have limited time and find it hard to practice coaching.
    - Students are reluctant to engage with PIs on non-research topics.
- **Challenges:**
    - Difficulty in changing interaction modes for supervisors.
    - Need for professional coaching instructors in future phases.
    - Consideration of including students beyond the first year.

Future Directions

- Involvement of professional coaching instructors.
- Expanding the program to include students beyond their first year.

Navigating Past the Loneliness Pandemic

Chad Young

Georgia Institute of Technology

The presentation "Navigating Past the Loneliness Pandemic" by C. Young addresses the growing issue of loneliness among graduate students and offers strategies to combat it.

Introduction

- Relational Poverty: Recently recognized as an epidemic in the U.S.
- Surgeon General's Report: Highlights the increasing sentiment of loneliness among young people.

Loneliness Statistics

- Harvard Study: 61% of young people (ages 18-25) report serious loneliness post-pandemic.
- Georgia Tech Study: Nearly 92.3% of GT graduate students reported struggling with loneliness in the past week.

Causes of Increased Loneliness Among Graduates

- Stressful Decisions: Made more alone than ever.
- High Rates of Anxiety and Depression: These conditions fuel loneliness.
- Cultural Emphasis on Grades: Success is prioritized over caring.
- Disconnection: From family and friends.
- Lack of Outreach: Grads not reaching out due to loneliness or lack of skills.
- Social Media: Found to exacerbate loneliness.

Strategies to Navigate Loneliness

- Join a Community: Find a grad community where you feel cared for and understood.
- Set Boundaries with Social Media: Limit usage to reduce feelings of isolation.
- Encourage Good Community in Lab Groups: Foster supportive environments.
- Learn Caring Conversation Skills: Important for building meaningful connections.
- Join a Cause: Engage in activities that provide a sense of purpose.

Upcoming Initiative

- **Working Group:** A group will be formed in Spring 2025 to study the impacts of the loneliness pandemic on Georgia Tech grad students and develop solutions.
- **Goals:** Create a sense of belonging and connectedness while addressing the issue of loneliness.
- **Participation:** Open to all grad students, offering training on having better caring conversations and an invitation to join the Grad Cru community.

Contact Information

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Building Your Self-care Toolbox

Richelle Fields

Georgia Institute of Technology

The presentation "Building Your Self-care Toolbox" focuses on the importance of wellness and provides practical steps for creating a personalized self-care toolkit.

What is Wellness?

- **Definition:** Wellness is the active pursuit of activities, choices, and lifestyles that lead to a state of holistic health.
- **Holistic Health:** Achieving wellness involves attending to multiple dimensions of living, including emotional, physical, occupational, intellectual, financial, social, environmental, and spiritual aspects.

Building Your Self-care Toolbox

- Purpose: A self-care toolbox is a pre-identified set of tools that you can use when feeling stressed, overwhelmed, or anxious.
- Personalization: Everyone's toolbox will look different, tailored to individual needs and preferences.

Steps to Build Your Toolkit

1. Awareness: Identify the tools, resources, and activities that help you feel calm.
2. Selection: Choose the ones that interest you the most and try them out to see which fits you best.
3. List: Make a list of the tools you use in moments of stress or anxiety.

Practical Tips

- Quick Self-care Activities: Identify three things you can do in five minutes or less to support your self-care practice (e.g., journaling, using a relaxation app, calling a friend).

Nontraditional International Students: A Forgotten Population: A Phenomenological Study

Christian Gallie

Georgia Institute of Technology

The presentation "Nontraditional International Students: A Forgotten Population: A Phenomenological Study" by Christian Gallie explores the unique challenges faced by nontraditional international students and aims to provide insights for higher education professionals to better support this population.

Problem Statement

- **Significance:** International students significantly contribute to the U.S. economy and cultural diversity but face adjustment challenges.
- **Challenges:**
  - Institutional: Lack of support services.
  - Societal: Marginalization and discrimination.
  - Personal: Language barriers, financial difficulties, homesickness, loneliness, and anxiety.

Who Are Nontraditional International Students?

- **Characteristics:**
  - Older, often graduate students.
  - Financially independent with family responsibilities.
  - Face dual challenges as both international and nontraditional students.

Research Questions

1. How do nontraditional international students perceive the services they receive at their institution?
2. What do non-traditional international students need to foster their success in college?

Theoretical Framework

•Schlossberg's Adult Transition Model: Examines transitions through the "4 S's" (Situation, Self, Support, and Strategies).

Study's Significance and Purpose

- **Significance:**
  - Addresses a gap in literature on nontraditional international students.
  - Provides data to design effective support systems.
- **Purpose:** Explore the lived experiences of these students.

Methodology

- Design: Phenomenological study.
- Data Collection and Analysis: Interviews with participants.
- Participants: Ph.D. students from various countries studying at "City College."

Findings, Summary, and Discussion

- **Themes for RQ1:**
  1.Communication Issues: Lack of clear communication and overwhelming information.
  2.Insufficient Services: Burdensome coursework and family responsibilities.
  3.Financial Issues: Low stipends and family-related expenses.
  4.Slight Discrimination: Experiences of marginalization.
  5.Welcoming Campus: Diversity and peer support.
- **Themes for RQ2:**
  6. Need for More Financial Support: Increase stipends and provide financial opportunities.
- Communicate Clearly and Effectively: Simplify messages and promote services better.
- Amplify NTISs' Voices and Needs: Flexible schedules, accelerated processes, and expanded services.

Practical Implications

1.Financial Resources:
  - Increase stipends.
  - Provide more internships and fellowships.

2.Resources for Families:
  - Healthcare, housing, social events, and flexible course schedules.

3.Effective Communication:
  - Promote services through various channels.
  - Reduce the number and length of emails.
  - Respond promptly and accelerate processes.

Better Together

Alex Duncan and Hannah Moon

Georgia Institute of Technology

The "Better Together" presentation by Alex Duncan and Hannah Moon at the Georgia Tech Graduate Student Experience Symposium outlines the creation and impact of a hybrid conference designed to foster connection and community among online graduate students in the Online Master of Science in Computer Science (OMSCS) program.

Overview

- Program Background:
- Launched in 2014.
- Fall 2024 enrollment: 14,939 students.
- Over 12,000 alumni.
- Students are typically older, working professionals juggling multiple responsibilities.

Purpose of the OMSCS Conference

- **Goals:**
    - Knowledge-sharing through presentations, workshops, demonstrations, and panel discussions.
    - Building connections among students, alumni, the OMSCS program, Georgia Tech, and industry.

2024 OMSCS Conference

- **Attendees:**
    - 152 in-person attendees (110 students/alumni) and 105 virtual attendees.
    - Diverse representation from various states and countries.
- **Activities:**
    - 10th anniversary reception, networking events, keynote speeches, career and resource fairs, and social activities.
    - Virtual experience included interactive sessions and social media engagement.

Outcomes

- **Impact:**
    - Attendees found the conference valuable for personal and professional growth.
    - Enhanced sense of community and connection to the program and university.

Challenges and Recommendations

- **Challenges:**
    - Small team with minimal event planning experience.

    - Navigating financial policies and coordinating across multiple teams.
- **Recommendations:**
    - Set clear goals and responsibilities.
    - Explore funding opportunities.
    - Emphasize diversity and inclusion.
    - Balance in-person and virtual experiences.
    - Involve faculty and staff.
    - Gather feedback from attendees.

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Strategy Sessions

Sense of Belonging

Kristina Mickel Clement, Ph.D.

Georgia Institute of Technology

The presentation "Sense of Belonging" by Kristina Mickel Clement, Ph.D., focuses on the challenges graduate students face and strategies to enhance their sense of belonging.

Graduate Student Concerns

1. Academic Workload and Stress: High demand and pressure from coursework.
2. Financial Pressures: Reliance on stipends, grants, and assistantships.
3. Mental Health: Susceptibility to anxiety, depression, and feelings of isolation.
4. Support Systems: Need for robust institutional support.
5. Career Preparation: Anxiety about post-graduation steps.
6. Diversity and Inclusion: Access to resources and support based on race, ethnicity, gender, and socioeconomic status.

Sense of Belonging

- Defined as the experience of personal involvement in a system or environment, making individuals feel integral to that system.

Graduate Students' Views on Belonging

1. Balancing School with Life Demands: Graduate students often feel a stronger sense of belonging to their area rather than the institution due to personal and family responsibilities.
2. Investment in Graduate Degree: Graduate students start with a sense of direction, focusing on and investing in their courses.
3. Building Friendships: Friendships revolve around academic interests and deepen over time.
4. Relationships with Faculty: Graduate students feel stronger connections with faculty compared to their undergraduate experiences.

Strategy Session Discussion

- Balancing School with Life Demands: Successful strategies and potential improvements.
- Investment in Graduate Degree: Professional development and networking opportunities.

- Building Friendships: Introduction to the academic community and existing opportunities for connection.
- Relationships with Faculty: Fostering relationships and facilitating connections between faculty and students.

Recommendations for Fostering Belonging

1. Norms, Values, and Expectations: Introduce students to departmental norms through promotional materials, orientation, and workshops.
2. Advising: Clear expectations and academic plans to build confidence.
3. Create Community: Opportunities for interaction outside the classroom to foster collaboration.
4. Celebrate Students: Highlighting successes to affirm belonging.

Recommendations to Support Graduate Students

1. Sponsor Affinity Groups: Create opportunities to connect with different identities.
2. Facilitate & Fund Grad Organizations: Support personal and professional network building.
3. Sponsor Campus-wide Orientation: Introduce resources outside academic units, such as healthcare, financial aid, and writing support.

Developing an Academic Advising and Student Success Platform

James Black, Andrew Eichel, Theresa Nash, Tiffany Owens- Georgia Institute of Technology

Amber Amari- Georgia State University

The document "Developing an Academic Advising and Student Success Platform" outlines the strategic approach to transforming academic advising at Georgia Tech.

Objectives

- **Purpose:** Develop a comprehensive advising and student success platform to enhance academic experience for students.

Background to Advising Transformation

- Undergraduate Advising Project: Led by Dr. Andrew Eichel and Tiffany Owens, providing a foundation for the graduate advising platform.
- Project Sequencing: Planned initiatives from FY25-26 to FY29-30.

Student Success Transformation Portfolio Structure

- **Portfolio Advisors:** Steven Girardot (Undergraduate), Bonnie Ferri (Graduate), John Stein (Dean of Students).
- **Key Initiatives:**
    - Onboarding Excellence
    - Advising Transformation
    - Employment Success
    - Reducing Degree Complexity
    - High Priority Students
    - Transfer Student Success

Current State and Vision

- Student Values: Accuracy, availability, personalization, and a range of advising topics.
- Advising Goals: Accurate, available, effective for all, individualized, and holistic advising.

Key Findings

- Current System: Effective for some students but not all.
- Opportunities: Use new technological tools in advising, maintain personal connections, and address gaps in the current system.

Historical Context

- 2018 Advising Task Force Report: Recommendations included ensuring equitable and accessible advising, aligning academic and career advising, establishing centralized services, providing advisor training, and utilizing technology and data.

Transformational Focus Areas

1. Equipping People: Training and development for advisors.
2. Streamlining Processes: Improving efficiency and effectiveness.
3. Campus Engagement: Involving students, advisors, faculty, staff, and leaders.

Advising Technology Platform Selection

- Collaboration with Emory: Researched 17 platforms and selected EAB Navigate 360.
- Implementation Timeline: Key milestones from January to December 2024.

Team Structure and Meetings

- Core Project Team: Includes representatives from various departments and offices.
- Meeting Topics: Engagement, technology demos, visioning, advising milestones, policies, and best practices.

Implementation Journey

- Leadership Roles: Executive roles and core implementation leaders assigned.
- Key Activities: Data integration, configuration sessions, and onboarding.

Panel Discussion

PhD Internship Highlights from Graduate Internship Program

Ariel Gladney and Gaeun Seo, Ph.D.

Georgia Institute of Technology

The presentation "PhD Internship Highlights from Graduate Internship Program" by Ariel Gladney provides an overview of the PhD internship program at Georgia Tech for the academic year 2023-2024.

Internship Highlights

- **Participants:**
  - Total of 1,513 Master's and PhD students participated in internships.
  - 30% (461) of participants were PhD students.

Hourly Rates by College

- Computing: $60
- Design: $44
- Engineering: $48
- Sciences: $42
- Ivan Allen (Liberal Arts): $38
- Scheller (Business): $30

Hourly Rates by Region

- South: $40
- West: $57
- Northeast: $52
- Southwest: $43
- Midwest: $41
- Mid-Atlantic: $35

Internship Participation by College

- Computing: 105
- Design: 4
- Engineering: 312
- Sciences: 22
- Ivan Allen (Liberal Arts): 6
- Scheller (Business): 12

Citizenship of Participants

- International: 375
- Domestic: 86

Top Hiring Companies

- Google
- Amazon
- Meta
- NASA
- Apple
- NVIDIA
- Microsoft Corporation
- Intel Corporation
- Tesla
- Adobe

Internship Position Types

- Research Intern
- Research Scientist Intern
- Applied Scientist Intern
- Data Analytics Intern
- Software Engineering Intern
- ASIC Packaging Architecture Intern
- Product Development Intern
- Research Scientist/Engineer
- Research Analyst
- Research Associate Intern

Program Details

- **Administrative Process:** Helps maintain student status while interning and completing research.
- **CPT Work Authorization:** Required process for international students.
- **Course Registration:** Tuition-free audit INTN 6000 level courses
- for full-time or part-time internships.
- **Benefits:** Eligible for student activities and services, Title IX protections, GRA/GTA option.
- **Data Collection:** Average salary rate, employer outlook.