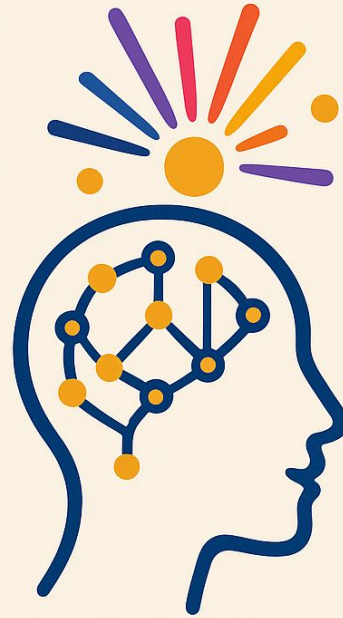


WELCOME to the Electronic Conference on Teaching Statistics (eCOTS) 2026



**Sparking
Joy and
Discovery**
In a World of AI
eCOTS 2026

What is eCOTS? (According to Gemini)

eCOTS ... is a biennial, virtual conference designed for statistics and data science educators, particularly at the undergraduate and high school levels. The conference serves as an accessible, affordable digital gathering space for exploring and refining how data concepts are taught and learned.

What is eCOTS? (According to Gemini)

Sessions cover pedagogy, technology, inclusivity, and ways to prepare students for the modern computing and artificial intelligence landscape.

What is eCOTS?

Participants engage in keynote addresses, breakout sessions, virtual poster sessions, workshops, and "birds-of-a-feather" networking discussions.

Monday, June 15th

Today's schedule

11:00 am - 11:30 am ET

Orientation for New Attendees

11:45 am - 12:45 pm ET

Opening Session: Welcome to eCOTS 2026!

1:00 pm - 2:00 pm ET

Keynote Session #1: Exploring Learning with Data Across the Curriculum and Beyond

Michelle Wilkerson (University of California, Berkeley)

2:15 pm - 2:45 pm ET

Breakout Timeslot #1

3:00 pm - 3:30 pm ET

Breakout Timeslot #2

3:30 pm - 4:15 pm ET

Posters and Beyond | Monday

Monday June 15th, 2:15 pm – 2:45 pm ET

Breakout sessions

BK1A: Opportunities and Barriers to Implementing Universal Design for Instruction in Introductory Statistics and Data Science Classrooms

Maria Tackett (Duke University) and Sinem Demirci (California Polytechnic State University)

BK1B: Revise and Resubmit: Tailoring AI-Led Analyses for Joy and Data Discovery

Lauren Samuels, Ashley Mullan, Danni Shi, Seth Young, and Ningkun Zhou (Vanderbilt University)

BK1C: Centering Student Discourse in the Introductory Statistics Classroom

Jennifer McNally and Laura Callis (Curry College)

BK1D: Modernizing a First Course in Design of Experiments

Peter Gao (San Jose State University)

Monday, June 15th

Poster and Beyond sessions

PnB-M01 - A Social Cognitive Career Theory Based Measure of Statistics Goals

Laura M. Bandi (Toronto Metropolitan University) and V.N. Vimal Rao (University of Illinois)

PnB-M02 - An AI Slop Typology: Embedding Professional Norms for Responsible AI Use in Data Science Courses

Tori Ellison (University of Illinois Urbana-Champaign)

PnB-M03 - Beyond Points: Alternative Grading with Portfolios, Standards-Based Assessment, and Generative AI

Brianna Hitt (United States Air Force Academy) and Jessica Hauschild-Eastman (United States Air Force Academy)

PnB-M04 - Data Telephone: A Game for Teaching Accessibility & Visual Literacy

Evan Fryer (St. Michaels University School, Victoria, BC) and Mine Doğucu (University of California, Irvine)

Tuesday, June 16th

11:00 am - 11:45 am ET

Birds of a Feather | Tuesday Discussions

12:00 pm - 1:00 pm ET

Keynote Session #2: Telling Stories with Data in the AI Age
Rohan Alexander (University of Toronto)

1:15 pm - 1:45 pm ET

Breakout Timeslot #3

2:00 pm - 2:30 pm ET

Breakout Timeslot #4

2:45 pm - 3:30 pm ET

Posters and Beyond | Tuesday

3:45 pm - 4:15 pm ET

Breakout Timeslot #5

4:30 pm - 5:30 pm ET

Exhibitor Demo | Teaching with Positron, a next-generation IDE for statistical computing

Tuesday June 16th, 11:00 am – 11:45 am ET

Birds of a Feather Discussions

BoF-T-01: Supporting Statistics and Data Science Teacher Education

Travis Weiland (University of North Carolina Charlotte)

BoF-T-02: Why Students Should Care About Statistics in an AI World?

Mohammed Quazi (West Virginia University)

BoF-T-03: Oral exams: Best practices and pitfalls

Harrison Li (Harvey Mudd College)

BoF-T-04: Graduate Student Preparation for Teaching

Shandy Hauk and Domenic Gulli (San Francisco State University)

Wednesday, June 17th

11:00 am - 11:45 am ET

Birds of a Feather | Wednesday Discussions

12:00 pm - 1:00 pm ET

**Keynote Session #3: Building Human Intelligence in a World of AI:
Insights from the Learning Sciences**
Barbara Means (Digital Promise)

1:15 pm - 1:45 pm ET

Breakout Timeslot #6

2:00 pm - 2:30 pm ET

Breakout Timeslot #7

2:45 pm - 3:30 pm ET

Posters and Beyond | Wednesday

3:45 pm - 4:15 pm ET

Professional Development Workshops and Job Opportunities

4:30 pm - 5:30 pm ET

eCOTS Research Hour

Thursday, June 18th

11:00 am - 11:45 am ET

Speed Mentoring

← Sign up by the end of the day today!

12:00 pm - 1:00 pm ET

Keynote Session #4: The Future of Statistics and Data Science Education: Findings from Recent National Academies Reports

Elizabeth Stuart (Johns Hopkins University) & Lance Waller (Emory University)

1:15 pm - 2:00 pm ET

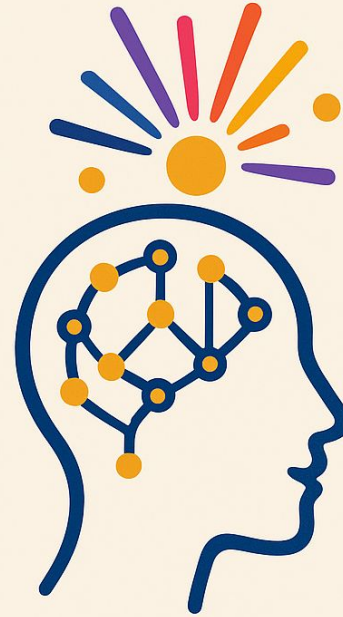
Posters and Beyond | Thursday

2:00 pm - 3:00 pm ET

Closing Session: Awards, What we've Learned, and Where are We Headed?

Plus a reveal of USCOTS 2027 dates, location, and theme!

**Some thanks and
appreciation!**



**Sparking
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Discovery**
In a World of AI
eCOTS 2026

eCOTS 2026 Program Committee

- Heather Cook (poster co-chair), University of Southern Indiana
- Andrew Ferguson, Penn State University
- Tyler George, Cornell College
- Juan Gomez, Carmel High School, CA
- Jacqueline Herman (poster co-chair), Northern Kentucky University
- Nicholas Horton (chair), Amherst College
- Vimal Rao, University of Illinois
- Kelly Spoon, San Diego Mesa College
- Sara Stoudt, Bucknell University
- Maria Tackett, Duke University
- Allison Theobald, Cal Poly, San Luis Obispo
- Jennifer Ward, Clark College
- Jonathan Wells, Grinnell College
- Beverly L. Wood, Embry-Riddle Aeronautical University

eCOTS 2026 Program Committee

- Heather Cook (poster co-chair), University of Southern Indiana [also 2024]
- Andrew Ferguson, Penn State University
- Tyler George, Cornell College [2024]
- Juan Gomez, Carmel High School, CA [2024]
- Jacqueline Herman (poster co-chair), Northern Kentucky University
- Nicholas Horton (chair), Amherst College [2018, 2020, 2022]
- Vimal Rao, University of Illinois [2024]
- Kelly Spoon, San Diego Mesa College [2022, 2024]
- Sara Stoudt, Bucknell University
- Maria Tackett, Duke University
- Allison Theobold, Cal Poly, San Luis Obispo [2024]
- Jennifer Ward, Clark College [2024]
- Jonathan Wells, Grinnell College [2024]
- Beverly L. Wood, Embry-Riddle Aeronautical University [2020, 2022, 2024]

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eCOTS 2026 Sponsors

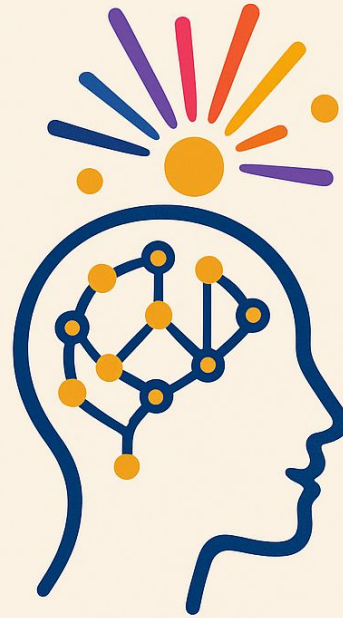


WILEY



PennState
Eberly College of Science

**Thanks to CAUSE
(Consortium for the
Advancement of
Undergraduate
Statistics Education)**



**Sparking
Joy and
Discovery**
In a World of AI
eCOTS 2026

Advancing Undergraduate Statistics Education: The CAUSE Mission



Curating Educational Resources

Collecting, reviewing, and disseminating teaching materials to support the undergraduate statistics community.

Professional Development & Growth

Providing workshops at conferences like USCOTS and eCOTS, alongside diverse webinar series.



Elevating Statistics Education Research

Promoting statistics education research as a recognized academic discipline with a visible presence.



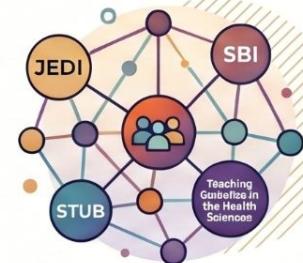
Student Contests & Competitions

Engaging students through USPROC, Data Scrollytelling, and the A-mu-sing Caption Contest.

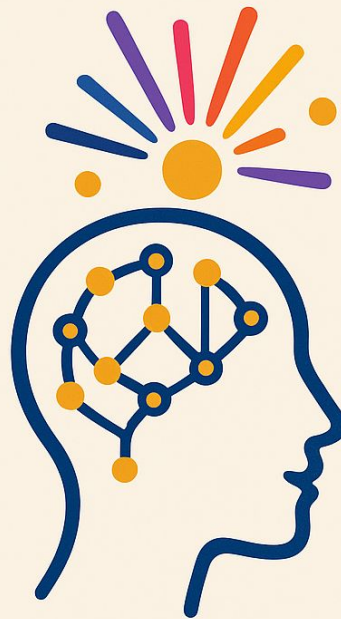


Specialized Affiliated Groups

Collaborative networks including JEDI, SBI, STUB, and Teaching Statistics in the Health Sciences.

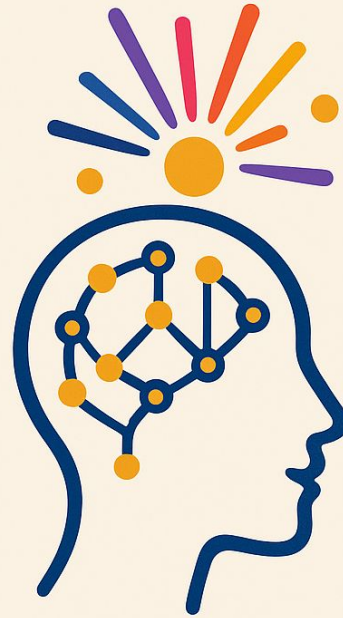


From the call for participation: In a world increasingly shaped by technological tools and artificial intelligence (AI), how can we spark discovery and joy in ourselves and our students?



**Sparking
Joy and
Discovery**
In a World of AI
eCOTS 2026

Are there ways to foster wonder, imagination, and critical thinking (with or without AI) and to center human values and interactions in our teaching?

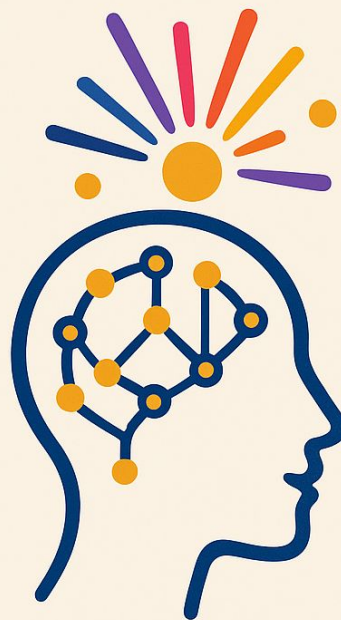


Sparking Joy and Discovery

In a World of AI
eCOTS 2026

pre-eCOTS survey results

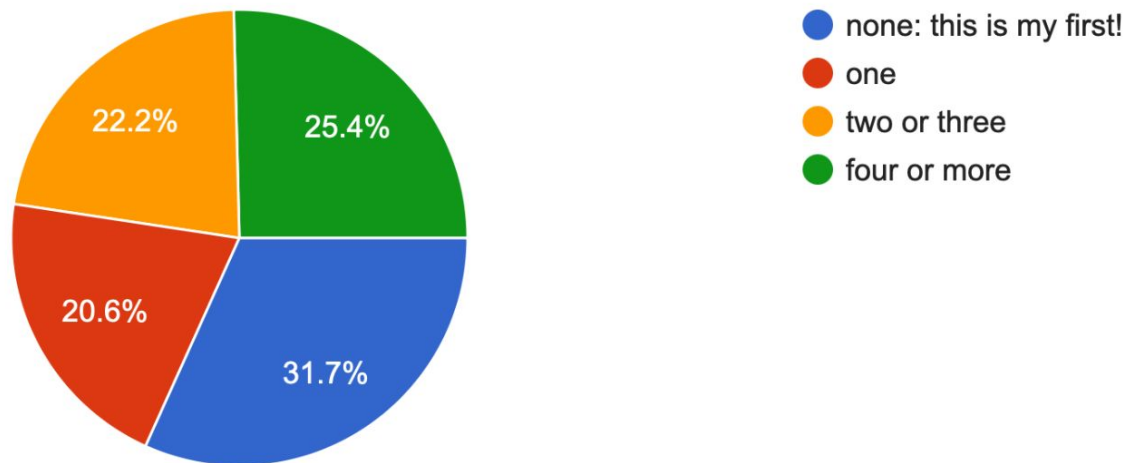
- Approximately 570 registrants invited (up to two times, depending on when they registered)
- N = 64 respondents



**Sparking
Joy and
Discovery**
In a World of AI
eCOTS 2026

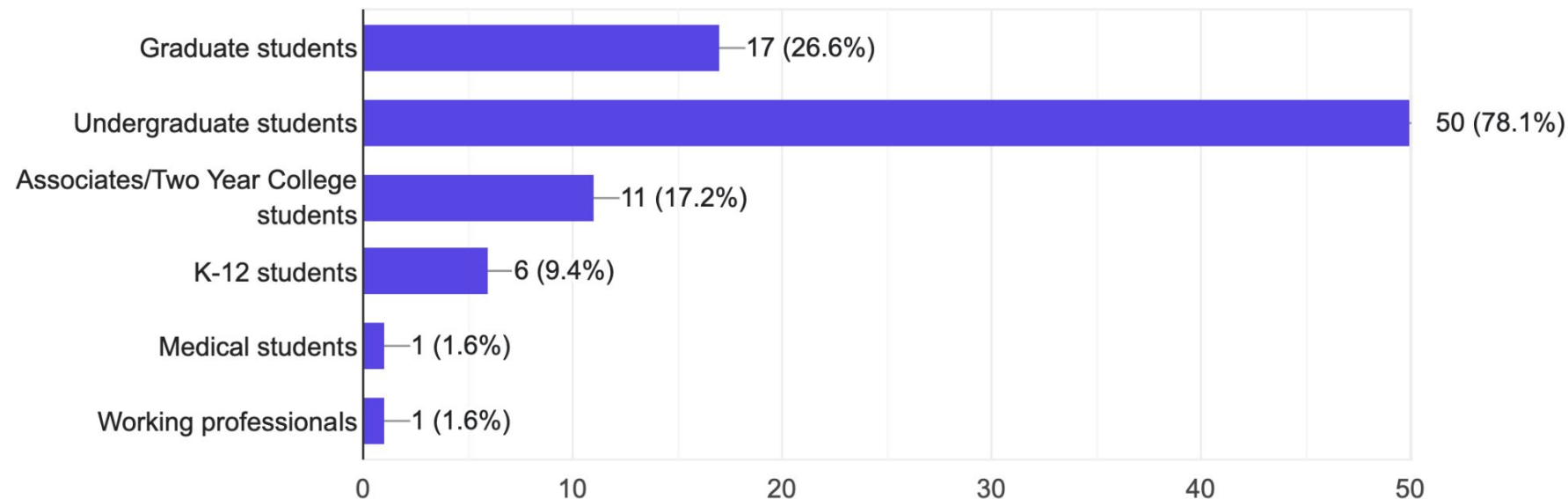
How many previous eCOTS conferences have you attended?

63 responses



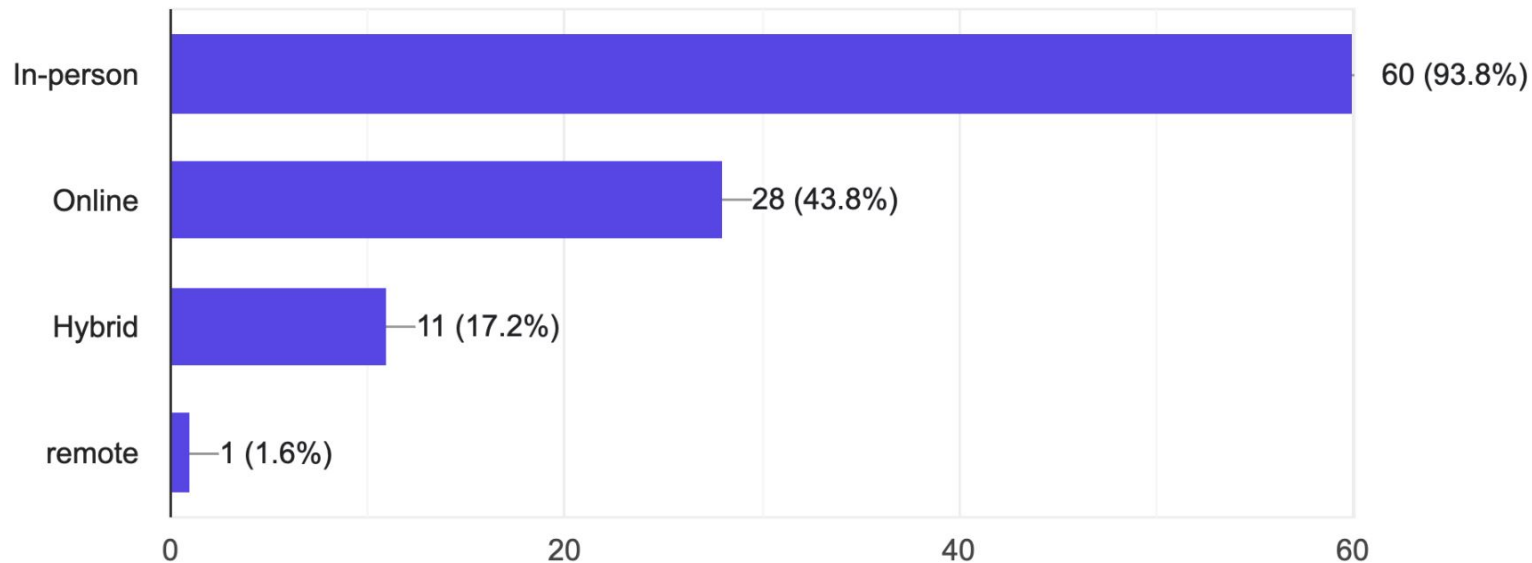
What level of students do you teach (select all that apply)?

64 responses



What modality did you teach this last academic year? (please check all that apply)

64 responses



What do you hope to gain or learn from attending eCOTS? (summarized by Gemini)

- **AI Integration:** Participants are seeking strategies to incorporate AI, Large Language Models, and AI-driven workflows into statistics curricula, specifically focusing on how to manage student use, foster AI literacy, and adapt teaching and assessment methods for the current technological landscape.
- **Pedagogical Innovation:** Attendees aim to discover creative, evidence-based, and student-centered teaching approaches, including active learning and methods that enhance critical thinking, engagement, and metacognition.
- **Community and Professional Development:** There is a strong desire to build professional networks, seek research collaborations, gain inspiration for course improvements, and stay informed on current trends and best practices within the statistics and data science education community.

What is your one word reaction to the phrase "AI in the Classroom"?

- **Apprehension and Skepticism:** Many participants expressed significant concern, anxiety, and dread regarding AI, frequently using terms like "hesitant," "trepidatious," "daunting," "disaster," and "ugh" to describe their outlook.
- **Ethical and Academic Integrity Concerns:** There is notable worry regarding the potential for student cheating, the degradation of critical thinking, and broader ethical implications.
- **Complexity and Ambiguity:** Responses highlight a sense of confusion or mixed feelings, with participants noting that the impact of AI "depends" on implementation and that the current landscape is ambiguous.
- **Functional Potential:** Some participants acknowledged AI as a potentially innovative, necessary, or efficient tool—such as a "24/7 TA"—provided that appropriate restrictions and balanced approaches are established.
- **Sense of Inevitability:** Despite the prevailing negativity or caution, several individuals recognize the adoption of AI as an inevitable change that must be navigated.

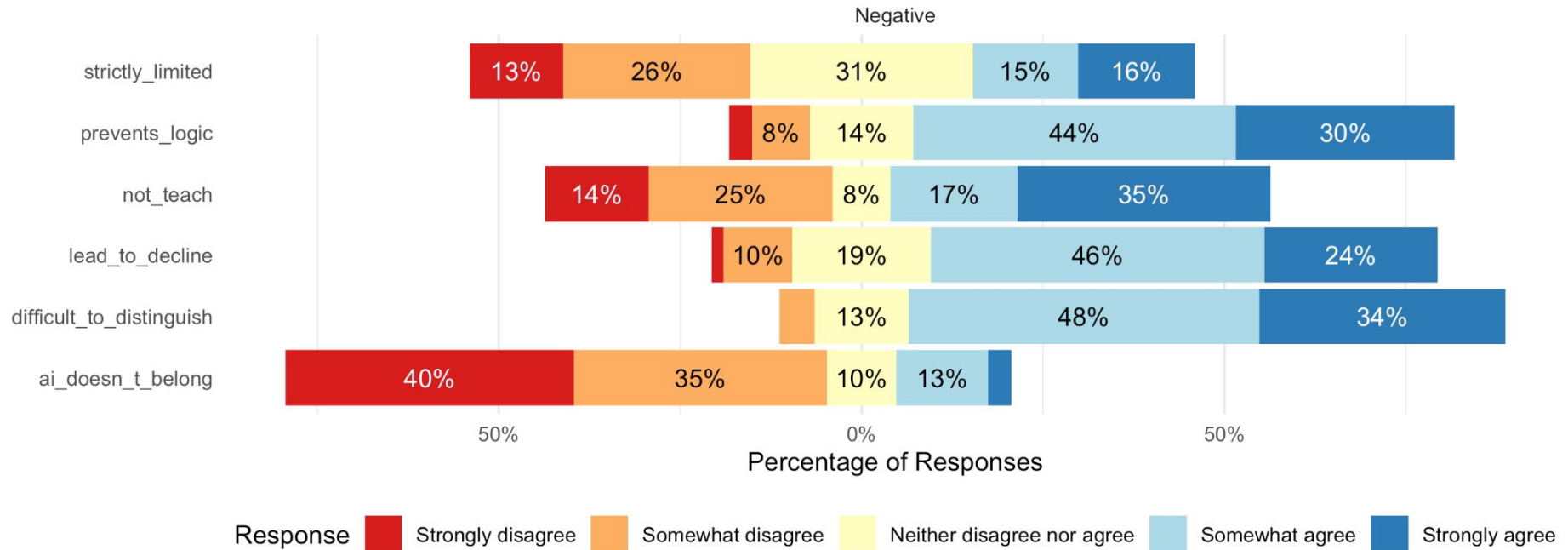
The thing I'm most worried about students doing with AI in the classroom is _____ (fill in the blank).

- **Critical Thinking and Learning:** Respondents expressed significant concern that students will outsource their cognitive efforts to AI, resulting in a loss of ability to think critically, solve problems, or engage in the necessary struggle of learning.
- **Academic Integrity and Effort:** Many are worried about students using AI to bypass the learning process, specifically through cheating, plagiarism, and "cutting corners" to complete assignments without genuine effort.
- **Over-reliance and Skill Development:** There is a common fear that students will become overly dependent on AI tools, leading to "deskilling" or a failure to build a robust mental model of statistics and data science concepts.

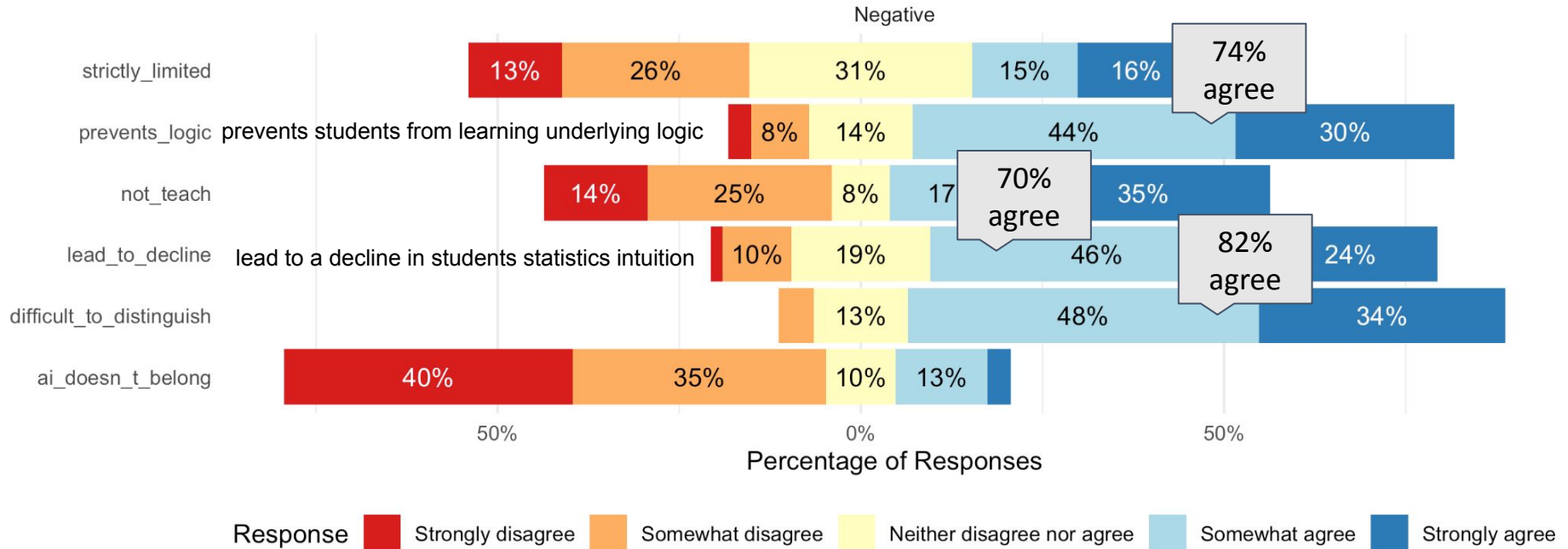
The thing I'm most excited about students doing with AI in the classroom is _____ (fill in the blank).

- **Enhanced Capabilities and Efficiency:** Participants are excited about students performing complex analyses, pursuing advanced projects, and completing higher-order problem-solving tasks that would otherwise be beyond their reach. Many also look forward to increased efficiency in learning, personalized support, and the ability to automate routine or menial tasks.
- **Coding and Technical Support:** There is a strong interest in using AI to overcome coding barriers, debug programs in R, and assist with writing code, allowing students to focus on higher-level creative and analytical output.
- **Pedagogical Enrichment:** Potential for AI as a 24/7 tutor, a tool for generating practice problems, and for creating dynamic visualizations or simulations that aid in conceptual understanding.
- **Skepticism and Reserved Perspectives:** A notable segment of respondents expressed no excitement, citing concerns about academic integrity, a desire to ban AI in the classroom, or a fundamental uncertainty regarding its value in the learning process.

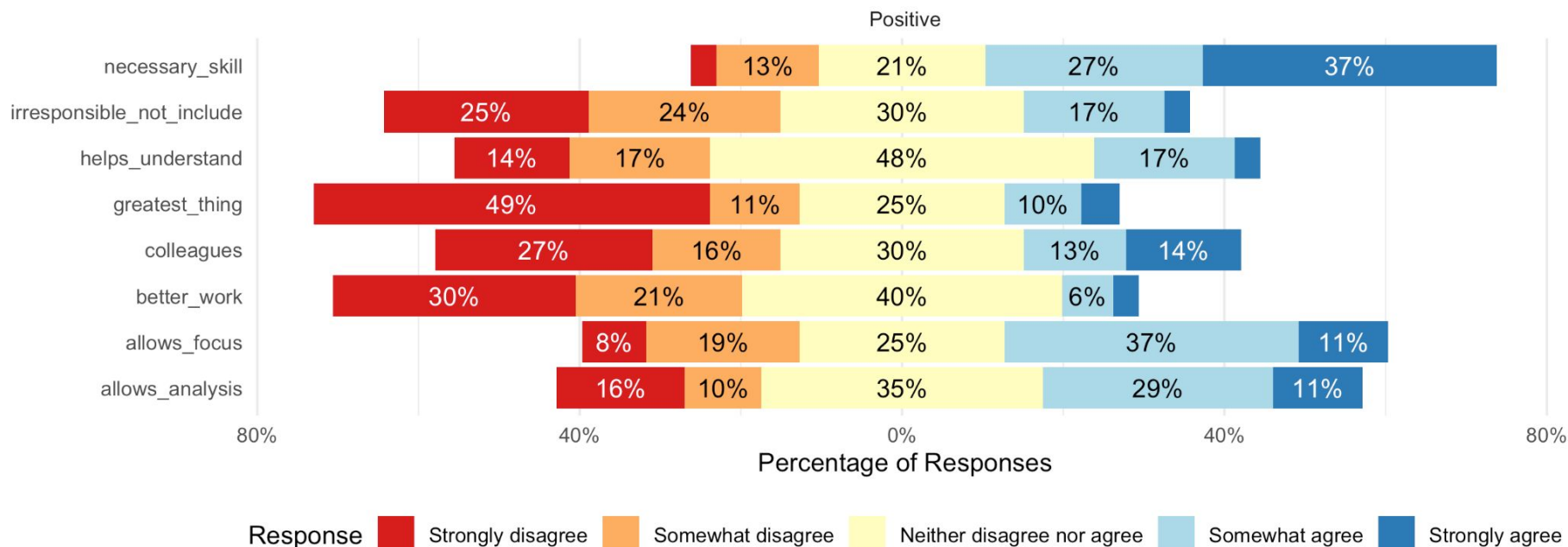
eCOTS 2026 Survey Results (Negative Questions)



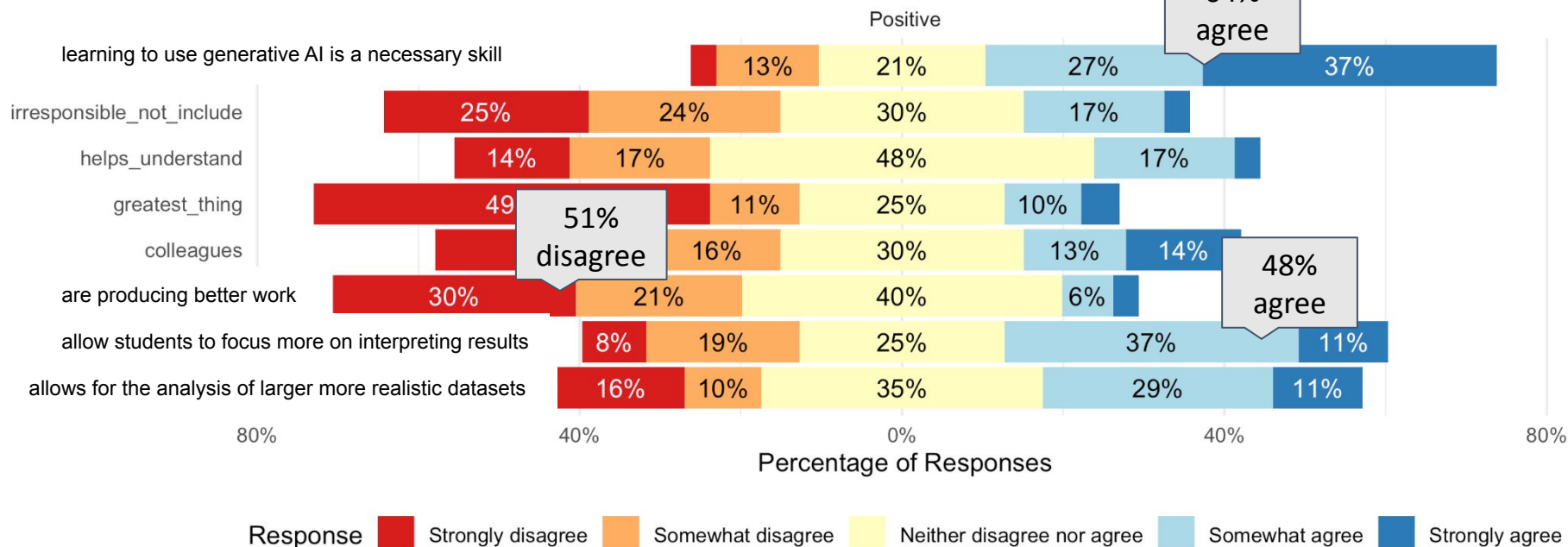
eCOTS 2026 Survey Results (Negative Questions)



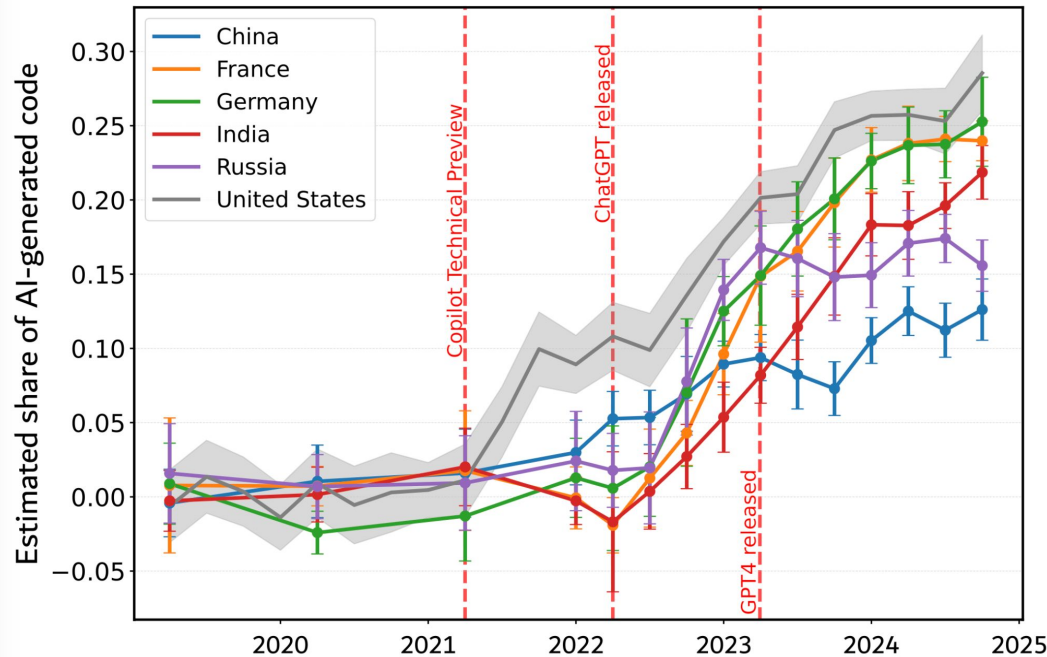
eCOTS 2026 Survey Results (Positive Questions)



eCOTS 2026 Survey Results (Positive Questions)



More on the Generative AI landscape

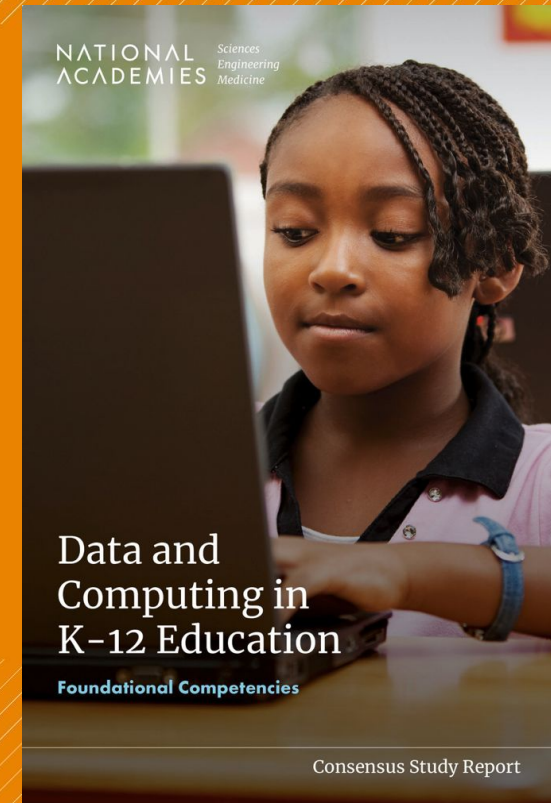


Share of AI-written Python functions (2019-2025),
“Who is Using AI to Code?” *Science*
2026-02-19, Daniotti et al.

More on the Generative AI landscape

Conclusion 5-6: Many K–12 students and teachers are now using generative artificial intelligence (AI). This presents an opportunity for lessons and discussions in schools on the practical and ethical issues related to use of AI, including how to evaluate the validity of AI outputs.

Recommendation 5: Students [need to] engage in learning experiences about artificial intelligence (AI), and the opportunities, potential uses, tensions, limitations, and risks of AI (NASEM, 2026).



More on the Generative AI landscape

“If students are unable to directly apply methods to actual data they care about, they end up as spectators on the sidelines. They miss out on the valuable experience (and the fun) that comes with directly interacting with data. Furthermore, when they graduate and face real-world datasets, they are left with no experience applying what they have been taught.”

“... we found that our use of Copilot led students to take an expansive view of what they could accomplish in code (rather than being confined to a small set of operations).”

“Generative AI for Data Science 101: Coding Without Learning to Code”, Bien and Mukherjee (2025), *JSDSE*, 33(2).

More on the Generative AI landscape

- “We want to keep the fun stuff for us, let AI do the tedious stuff”
- “Unlike humans, LLMs will read error messages and documentation”
- “But when learning, can’t use AI all the time”

How do we ensure that students:

- Develop an appropriate mental model (Ben Baumer)
- Use the AI systems as an interrogator (see “AI Should Challenge, Not Obey” CACM, 2024) and not as a substitute for learning

Hadley Wickham, “y code when ai?” ASA SLDS May 28, 2026 Webinar (see also USCOTS 2026 keynote)

More on the Generative AI landscape

“... both systems engaged in acts that aren’t acceptable in research ...”

“The misbehaviors weren’t obvious and required a lot of sleuthing to track down, suggesting AI-assisted studies might fall victim to such problems without their authors’ knowledge”.

“AI Scientist Agents Violate Research Integrity Rules: Advanced AI Systems are Shown to Make Up Data and ‘P-hack’ Their Results”, Nicola Jones, *Science*, 2026-05-07

Back to eCOTS 2026

"We are currently preparing students for jobs that don't yet exist... using technologies that haven't yet been invented ... in order to solve problems we don't even know are problems yet."

Back to eCOTS 2026

"We are currently preparing students for jobs that don't yet exist... using technologies that haven't yet been invented ... in order to solve problems we don't even know are problems yet." (Fisch, 2006)

Beers (2009) NCTE Presidential Address

“We are preparing them for life ... while they still attend schools that ‘operate on an agrarian calendar (summers off to allow students to work in the fields), an industrial time clock (fifty-minute classroom periods marked by bells), and a list of curriculum subjects invented in the Middle Ages (language, math, science, and the arts)’” (Trilling and Fadel, 2009)

Lightning talks: Three speakers share their thoughts about what excites them about the program and related topics

- Allison Theobald (Cal Poly San Luis Obispo)
- Jacqueline Herman (Northern Kentucky University)
- Jennifer Ward (Clark College)

Lightning talks: Allison Theobold

In Search of Self-Actualization Amidst AI



“Enter the classroom ‘whole’ and not as ‘disembodied spirit’.”



Academic Dishonesty

Trusting Our Students in a World of AI

Authentic Exams

Talk is Not Cheap: Oral Exams in the Presence of AI

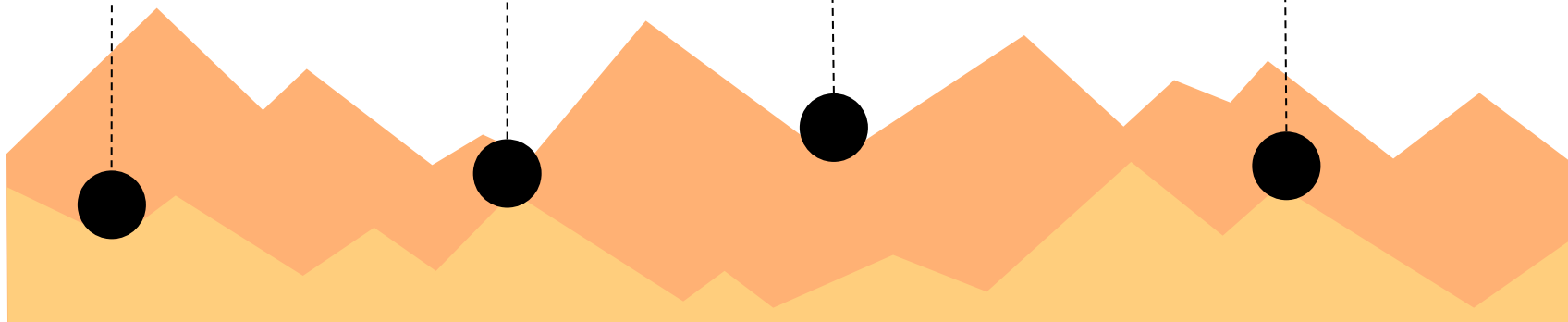
AI Ethics

Values-Driven Game for Teaching AI Ethics in the Statistics Classroom

AI Motivations

Alternative Grading as a Way to Disincentivize Unauthorized AI Use

Scaffolding Success with Projects in the Age of AI



“To teach in a manner that respects and cares for the souls of our students is essential if we are to provide the necessary conditions where learning can most deeply and intimately begin.”



Lightning talks: Jacqueline (Jackie) Herman

What Students Still Need From Us in
an AI World



Student Access to Technology

- ★ Calculators
- ★ Graphing Technology (e.g. Desmos)
- ★ Statistical Software (i.e. Minitab, R, SAS, Python)
- ★ AI Tools

Access $\neq$ Understanding

What I Want Students to Learn

Introductory Students

- ★ Critically Read Statistical Results
- ★ Ask Questions
- ★ Challenge Conclusions

Statistics Majors

- ★ Understand Underlying Theory/Formulas
- ★ Use Statistical Tools Appropriately
- ★ Communicate Findings Effectively

What Students Still Need From Us

1. Critical Thinking
2. Communication Skills
3. Human Connection

AI changes access to information

It does not replace

- ★ Curiosity
- ★ Reasoning
- ★ Communication
- ★ Human Connection

Potential Breakout Sessions

- ★ Why Community-Engaged Statistics and Data Science? Motivations, Obstacles, and Connections in the Age of AI
- ★ Learning Beyond the Syllabus: Preparing Adaptive Data Scientists in an AI-Driven World
- ★ Talk is Not Cheap: Oral Exams in the Presence of AI (shameless self-promotion)
- ★ Scaffolding Success with Projects in the Age of AI

Lightning talks: Jennifer Ward

Perspectives from a
Two-Year College Instructor



Perspectives

Hi, I'm new here!

- BK2A GAISE Recommendations
- BK7C Nevada's statistics pathway

2YC/K-12

- BK2C AI Supporting Time Management
- BK3A Scaffolding Success w/ Projects

“Low Tech Conversations”

- BK1C Student Discourse
- BK5A Oral Exams

Posters & Beyond



We're a furr-iendly bunch!

Say hi, be brave, embrace the awkwardness :)

Who works in the same state?

Who do you keep seeing in sessions?

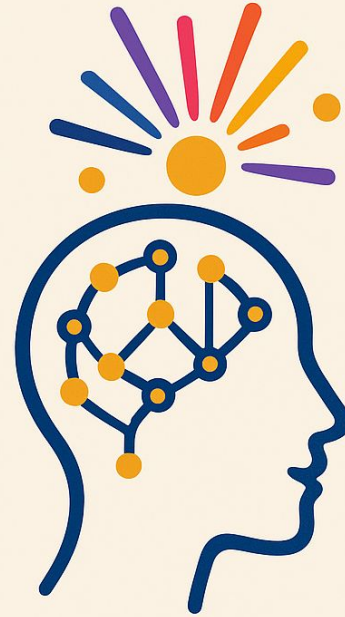
Share a detail about yourself

Thank people



eCOTS Past and Future

- The first eCOTS took place in 2012
- It has repeated every two years since then
- How did it start? How has it evolved?
- Where is eCOTS headed?



**Sparking
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**In a World of AI
eCOTS 2026**

eCOTS Past and Future

To help provide more context and history, we will hear from

- Dennis Pearl (founding Director of CAUSE)
- Michelle Everson (program chair in 2012 and 2014)
- Megan Mocko (program chair in 2020, 2022, and 2024)
- Matthew Beckman (Director of CAUSE)

2012: three themes

2014: three themes

2016: Changing with Technology

2018: Data Science for All

2020: Engaging Everyone

2022: Preparing the Modern
Student

2024: What's Next? Moving
Forward

2026: n = 616 registrants!

Dennis Pearl (Penn State): Founding Director of CAUSE

The CAUSE vision: Build the discipline of Statistics Education Research and provide resources & professional development opportunities to statistic instructors in an inclusive and accessible culture.

Dennis Pearl (Penn State): Founding Director of CAUSE

CAUSEweb.org goes live (2003)

First USCOTS (2005)

Workshop program starts (2005);

Webinar series starts (2006);

CAUSE governance document finalized - Charter & Institutional Membership (2006);

First Undergraduate Statistics Project & First A-mu-sing Competition (2007);

First USCOTS outside of Columbus (2011);

First eCOTS (2012);

eCOTS associated regional conferences start (2016) ...

eCOTS 2012, 2014 (Michelle Everson)

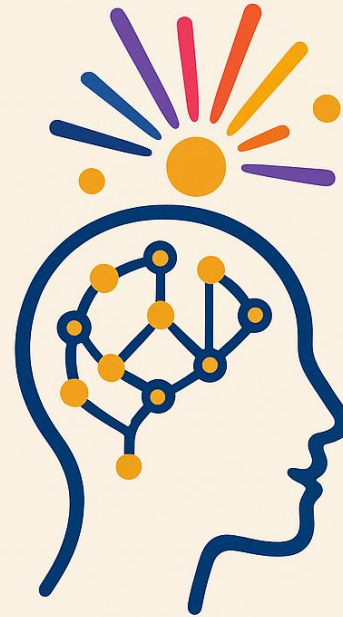


eCOTS 2020, 2022, 2024 (Megan Mocko)



eCOTS Past and Future

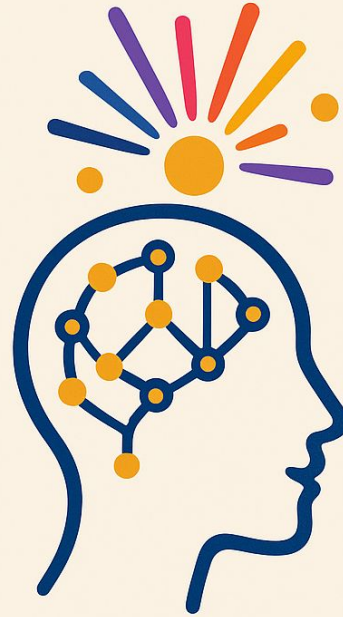
- Questions for the Panel
- What has this discussion sparked for you?
- What from eCOTS past has resonated with you?



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Awards Presentation

- Congratulations to Dennis Pearl (Penn State University) as this year's recipient of the George Cobb Lifetime Achievement Award in Statistics Education



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Tribute to “man of the
hour” **DENNIS
PEARL!**

from Larry Lesser,
2026 Cobb Awardee nominator



Thanks to....

- **Dennis for his projects/resources:**
DASL, BOAST, EESEE, The Statistical Buffet, Probability Distributome Project, etc.
- **Dennis for CAUSE initiatives** on his watch:
CAUSEweb.org, USCOTS, eCOTS, eUSR, workshops, webinars, listserv, contests, CAUSEmos/RAB, etc.
- **letters:** Michelle Everson, Rob Gould, Nick Horton, David Hunter, Jack Miller, Bill Notz, Deb Rumsey

Statistician/statistics educator

“Dennis could have put his time and energy into anything he wanted (and he did put a lot of time into things like cancer research), but he put a huge amount of time into statistics education, and for that we are all grateful.”

Deep conceptual learning

“while many taught purely procedural courses, Dennis focused on deep conceptual learning for all students”

National impact on statistics education

Dennis' "presence has been the single most important factor in establishing our reputation" as a "nationally recognized center of statistics education"

Empowers others

“Early in my own career, Dennis believed in me and encouraged me to take on various roles [in the field]... I knew I could always approach Dennis with ideas...”

Not ego-driven

“Dennis created an environment that was not ego-driven but, instead, passion driven.... in which beginners and experts can come together with great benefit and share their passion for teaching statistics.”

Infrastructure

“Dennis created a national infrastructure to support instructors of statistics at the high school, community college, 4-year college, and graduate levels and found the funds to sustain it”

Deep conceptual learning
Empowers others
National impact on stat ed
Not ego-driven
Infrastructure
Stellar statistician / statistics educator



Comparing eras of statistics

- **BCE** (**B**efore the **CAUSE** **E**ra)

- **AD** (**A**fter **D**ennis launched it)



from a letter:

“At the very center of CAUSE is Dennis’ warm (and...somewhat corny) sense of humor, which... grounds statistics education as the human-centered activity education is.”

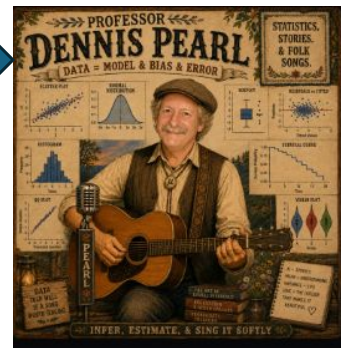
letter from a past Cobb winner:

“At the very center of CAUSE is Dennis’ warm (and...somewhat corny) sense of humor, which... grounds statistics education as the human-centered activity education is.”



for more gems about our field's Pearl...

- interview of Dennis in 2017 *JSDSE*
- 'Pearls of Wisdom' session (eCOTS 2024)
- Tuesday's poster



Add your tribute video/photo/message:
www.tribute.co/dennis-pearl-ecots2026

Stay tuned for what's next!

- Michelle Wilkerson keynote “Exploring Learning with Data Across the Curriculum and Beyond”
1:00-2:00pm ET
- Breakout Session #1 (2:15-2:45pm) and #2
(3:00-3:30pm)
- Posters and Beyond 3:30-4:15pm
- Full set of talks and activities Tuesday,
Wednesday, and Thursday

