

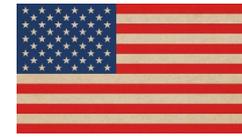
The background of the image features a dark blue field with numerous bright blue, diagonal streaks of light that create a sense of motion and energy, resembling lightning or data streams. The text is centered in the upper half of the image.

# Lightning Talks

# Ana Ferreras, PhD

NASEM

[aferrerasfiel@nas.edu](mailto:aferrerasfiel@nas.edu)



## ABOUT ME:

I am an American electrical and industrial engineer working on STEM policy and STEM diplomacy in Washington, DC.

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Crafted resolutions and policies that were adopted by international scientific organizations and approved by global scientific communities
- Managed and supported the U.S. National Commission on Mathematics Instruction (USNC/MI) and the relations with the International Commission on Mathematics Instruction (ICMI) for the United States
- Launched workforce development programs to build a robust STEM capacity and advance preK-20 education.

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- The best practices of international educators, researchers and leaders in AI, Computational Thinking, Data Science, and Mathematics Education
- How to groom a future generation of mathematicians, data scientists, mathematics educators, AI and Computational Thinking experts, and other STEM professionals in the AI era

## ASK ME ABOUT

- Development of new STEM initiatives, collaborations and partnerships. I truly enjoy advancing workforce development and building a strong STEM capacity/capability. Currently looking for funding. If interested, please approach me over a break/social events.



# Junaid Mubeen

## Parallel (<https://parallel.org.uk>)



### ABOUT ME:

Mathematician turned educator, writer and speaker, and Director of the Parallel Academy.

A STORY OF  
HUMAN SUPERIORITY  
OVER MACHINES



MATHEMATICAL  
INTELLIGENCE

JUNAID MUBEEN

### MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Director of online maths education initiatives at Parallel
- Author of *Mathematical Intelligence* and *Think Like a Mathematician*

### THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- Practical approaches for supporting students to adapt to the challenges and opportunities presented by Artificial Intelligence.

### ASK ME ABOUT

- What should a maths curriculum designed for the age of AI look like?



Sarah Schönbrodt

Salzburg University  
www.schoenbrodt.info



**ABOUT ME:** Assistant professor of mathematics education; co-initiated the international Symposium Series on Integrating AI and Data Science into School Education Across Disciplines ([aidea2025.github.io](https://aidea2025.github.io)); CEO of nonprofit KI macht Schule Austria (“AI goes School”).

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Design-based research: development and implementation of innovative learning materials on AI and data science for the mathematics classroom
- Research on teaching and learning applied mathematics

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- Practical examples from other countries of how to combine traditional math content with modern AI/data science concepts.



## ASK ME ABOUT

- Research and outreach programs on applied math education and AI education (e.g., [www.cammp.online/english](https://www.cammp.online/english) & <https://ki-macht-schule.de/>); Jupyter-based learning environments



NATIONAL ACADEMIES *Sciences  
Engineering  
Medicine*

**Amy Stephens**

Director



Mathematical Sciences Education Board (MSEB)

## ABOUT ME:

I have been in STEM education policy for over 10 years working to provide evidence that informs national-level guidance on a broad range of issues, now specifically for mathematics education.



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Understand the intersections to ensure all learners have high-quality learning opportunities
- Bring diverse constituents to the table to advance national conversations for coherence across the system

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- How others are thinking about the different components and how that can be conceptualized and taken up in our education system

## ASK ME ABOUT

- How MSEB can support mathematics education broadly in the US



## University of Auckland | Waipapa Taumata Rau

### ABOUT ME:

- Senior Lecturer Data Science & Statistics
- Vice President, IASE
- Assistant Editor (Technology), SERJ
- Previous National Examiner Statistics
- Taught high school statistics 12 years



### MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

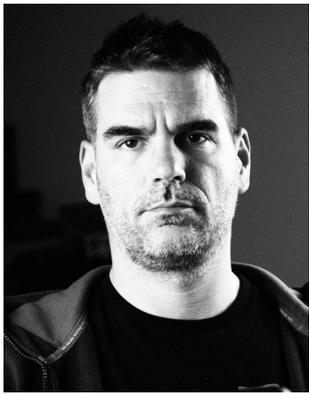
- Teaching and assessing integrated statistical and computational thinking
- Designing tasks and computational tools to support data science education
- Using AI to support human-centred assessment practice for intro stats + data science

### THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- As many things as I can, particularly in the areas of teacher development and assessment design
- What aspects of “modernised math education” should be similar for different countries? What aspects should be different?

### ASK ME ABOUT

- Cats, photos, music, drawings, memes, and more for teaching all things data science
- Designing positive first experiences with programming/coding (see above)
- Promoting and assessing creativity, curiosity, and belongingness (also see above!)



**Balazs Koren**  
Mathematics teacher  
[balazs.koren@gmail.com](mailto:balazs.koren@gmail.com)

## ABOUT ME:

Mathematics Educator; Teacher trainer; EdTech advisor; Robotics coach

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- How AI effects our everyday teaching
- How AI can help students better understand more complex mathematical concepts
- STEM education and AI
- How AI effects what we teach, future changes in curriculum at national and international level

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- What is happening in the world of mathematics education and how AI is internalized
- Where we are in this field, how different, how alike to the others
- Learn about new ways to teach, get to know fellow educators and exchange ideas

## ASK ME ABOUT

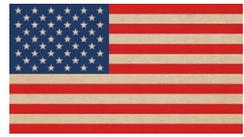
- Hungarian (mathematics) education
- Photos, videos, AI, technology, robotics in education
- kitesurfing, skiing, snowboarding



# Ben Galluzzo

Consortium for Mathematics and Its Applications

[ben@comap.org](mailto:ben@comap.org)



**ABOUT ME:** Trained as an applied mathematician, I became a mathematical modeling educator and researcher by working with, and learning from, teachers and learners at all levels before joining COMAP to support and advance modeling at scale across curricula.



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Promoting a mathematical modeling mindset as a bridge connecting powerful (but potentially mystifying) quantitative and computational tools and meaningful sense-making.
- Developing and supporting accessible approaches to integrate modeling, data science, and responsible use of computational tools into traditional K-12 curriculum

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- How others are integrating data science and computational thinking into K-12 mathematics, as well as other disciplines.
- How policy frameworks are supporting (or hindering) sustainable implementation.
- Which disciplines are leading AI integration? How should responsibility be shared?

## ASK ME ABOUT

- Resources that provide authentic, data-driven problem-solving opportunities for students and teachers.
- Collaborating. We're always interested and excited to build with others!
- Karaoke 😊



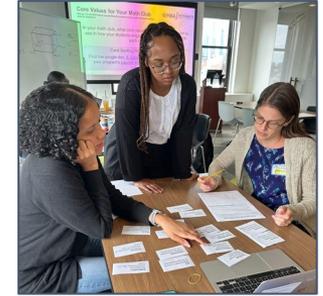
Catherine Paolucci



## Mathematical Association of America

### ABOUT ME:

MAA Director of Outreach and Impact;  
Secondary & postsecondary mathematics educator;  
Mathematics teacher educator;  
Education researcher, consultant, and mentor.



### MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Mathematics teacher education (initial certification and professional learning)
- Mathematics enrichment - Expanding mathematical engagement and learning beyond the classroom
- Building collaborations and cross-sector partnerships

### THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

Strategies for

- Providing teachers the research and support they need to integrate data science, computational thinking, and AI in K-12 curricula, instruction, and enrichment
- Leveraging informal learning spaces (e.g., afterschool programs, math clubs) to foster student and teacher development

### ASK ME ABOUT

- Building integrated K-12 and higher education communities and cross-sector partnerships to drive systemic change in mathematics education



# Claudia Vargas

## Universidad de Santiago de Chile



**Assistant Prof. at the Mathematics & Computing Science Department. Director Museum Lab of Didactics of Mathematics**



### **MY INTERESTS in Math Education, Data Science, Computational Thinking and AI**

- Promoting critical thinking in the use of AI for teachers and students with focus in equity and gender inclusion.
- Developing school-museum networks to co-create experiences that prevent, mitigate, and reduce math anxiety while strengthening students' math self-efficacy.

### **THINGS YOU WANT TO LEARN FROM THIS WORKSHOP**

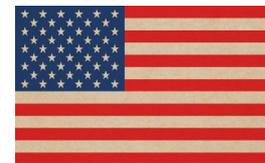
How different countries are addressing the integration of AI in K–12 mathematics education while ensuring equitable access, gender-sensitive practices, and ethical use of data and algorithms, and how these approaches can support cognitive and emotional dimensions of learning.)

### **ASK ME ABOUT**

Mathematics anxiety, self-efficacy, gender equity in mathematics learning, and inclusive approaches to AI integration.



David Barnes  
dbarnes@nctm.org



## ABOUT ME:

NCTM's Associate Executive Director, Senior Mathematics Educator, and local instigator. Former high school math teacher, university professor, teacher trainer, researcher, ...



## MY INTERESTS

What is and should be the lasting residue of 10, 12, or 14 years of math sciences education on each person – in how they view themselves, as a member of society, and in its ability to increase or decrease their opportunities?

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

To better understand how others are thinking about and acting on how mathematics and statistics education along with data science, computational thinking and potential and challenges of AI effect their student now and into the future.

## LET'S TALK ABOUT

Mechanisms to increase the quality of learning, the quality of instruction, and sustaining a workforce of qualified teacher. And our kids.



**Dave Kung**

Executive Director, [TPSE Math](#)  
[dtkung@gmail.com](mailto:dtkung@gmail.com)



**ABOUT ME:** Mathematician (Harmonic Analysis) turned Math Educator (Knowledge for teaching college math), stints at [SMCM](#), [MAA Project NExT](#), the [Dana Center](#), now [TPSE Math](#) & Math 4 the Future. Always up for good trouble, especially if it involves more (& more useful) students learning more math better. Or justice. Always up for more of that.

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

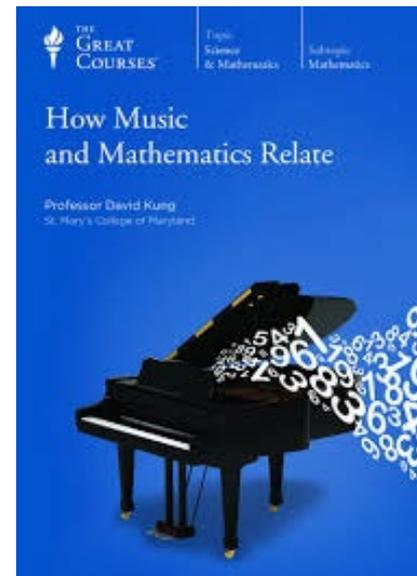
- Updating math curricula, esp. in transition years (10-13)
- Getting students into courses aligned with their interests
- Systemic change
- Interactive, engaging pedagogy
- Equity, esp. racial and gender.

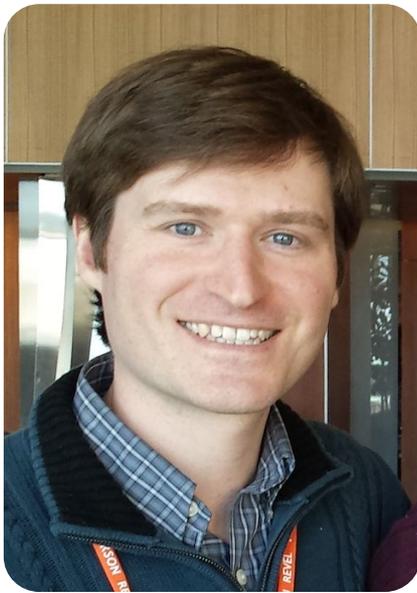
## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- Understand strategies for incorporating data at scale, especially in HS math courses.
- Connecting with like-minded reformers
- Changing my mind about something related to DS & AI.

## ASK ME ABOUT

- Math & music (or just classical music)
- Running
- DC restaurants

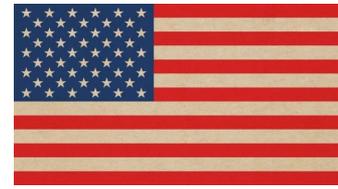




David Weintrop

[weintrop@umd.edu](mailto:weintrop@umd.edu)

<https://go.umd.edu/weintrop>



## ABOUT ME:

I am an associate professor with appointments in Education (75%), Information Studies (25%), and Computer Science (affiliate). My Ph.D. is in the Learning Sciences and I was a professional software developer prior to entering the academy.

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

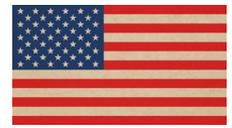
- I have designed primary school computer science and secondary data science curricula
- I have done collaborative research with school districts in Chicago and Washington, DC
- I have studied ways to integrate CT across the curriculum and block-based programming

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- How different countries are thinking about the similarities/differences between DS, CT, and AI and various strategies for integrating them across K-12 classrooms
- Emerging pedagogical approaches and technologies for AI/CS/DS for younger learners

## ASK ME ABOUT

- Interest-driven Data Science; Teaching kids to program; Research-Practice Partnerships



# Deborah D. Stine

## Science and Technology Policy Academy

### ABOUT ME:

- 30+ years in science and tech policy, including NASEM, Congress, and Obama White House
- Former professor, engineering and public policy, Carnegie Mellon



### MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Analysis and coaching to help STEM workers at all education levels find science and tech jobs, including weekly science and tech policy jobs newsletter
- Teach government staff and others how to apply GenAI to their everyday workflows

### THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- Is there a match between what is taught in K-12 education and the job market? What impact will AI itself have on the job market? Will it take jobs away?
- How is “data science” defined by educators vs employers vs students?

### ASK ME ABOUT

- Data science job market, AI data centers



# Eboney McKinney Arizona DoE & ASSM



**ABOUT ME:** I am a leader who leads with heart and high expectations, grounded in the belief that every student deserves high-quality mathematics education.

[ebony.mckinney@azed.gov](mailto:ebony.mckinney@azed.gov)

[www.assm.org](http://www.assm.org)



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

...shows up in how I design professional learning and support K12 math teachers and leaders.

...and in how I stay curious and learn alongside the educators and leaders I serve.

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

...how to actively advocate for access to learning for both students and teachers across these subjects.

...to support state supervisors in their roles as they oversee the creation of standards, courses, and/or frameworks

## ASK ME ABOUT

- my Friday the 13th surprise...



**Farshid Safi**

AMTE President, University of Central Florida

[president@amte.net](mailto:president@amte.net)



**ABOUT ME:** Association of Mathematics Teacher Educators (AMTE) president, K-12 mathematics teacher educator, researcher on intersection of mathematical modeling and equitable teaching practices, co-author of national position papers on mathematics education policies including intentional uses of technology in mathematics education.

## PROFESSIONAL INTERESTS

- Collaborating on a more inclusive and comprehensive view of mathematics teacher education to serve evolving needs of our communities
- Leading research and teaching efforts in mathematics and STEM education to de-silo ongoing efforts and be responsive to resource and bandwidth concerns
- Creating authentic partnerships between education researchers, classroom teachers, and national organizational leaders

## INTERESTED IN LEARNING

- Leverage modeling, STEM, quantitative reasoning and AI to connect education & literacy efforts
- Learn from international perspectives on collaborative approaches to better prepare students academically, professionally including innovative new pathways connected with AI.
- Gain further understanding on upcoming educational policies and efforts that enhance teaching, learning and student engagement through technology

## LET US WORK TOGETHER

- Building and sustaining academic communities through professional organizations
- Revising and reimagining standards for the preparation of teachers of mathematics
- Vision for mathematics education as crucial in achieving literacies (data, math, civic, etc.)



# Hollylynn S. Lee

Distinguished University Professor of  
Mathematics and Statistics Education  
North Carolina State University



**ABOUT ME:** I'm an educational designer whose passionate about empowering students and teachers to learn from and with data



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Co-leading the ESTEEM Network of Faculty, Institutions, Organizations, and Leaders working to improve teacher preparation in teaching statistics and data science in K-12.  
<http://go.ncsu.edu/esteemhub>
- Engaging educators around the world in professional learning at    
<http://instepwithdata.org>

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- All the amazing educational efforts happening around the world
- Consider how we can collaborate to create more international synergies related to CT/DS/AI in mathematics education

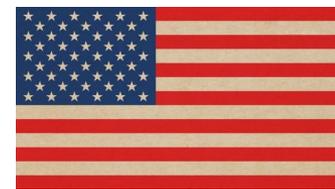
## ASK ME ABOUT

- My family (Todd, Delta, Jonah), standard poodle Toka, and cat Radcliffe
- The current crime/mystery novel I am reading

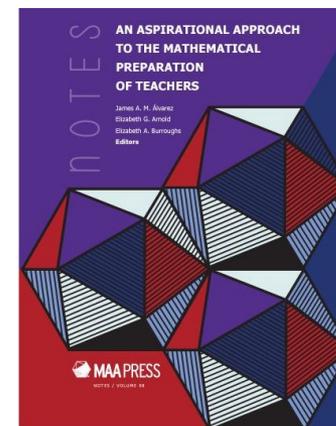


# James A. M. Álvarez

## The University of Texas at Austin



**ABOUT ME:** Currently Professor of Mathematics & (inaugural) College of Natural Sciences Associate Dean for P-20 Education Initiatives. Recently, NSF Program Director in the Division of Undergraduate Education.



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Mathematical Knowledge for Teaching
- Mathematical Problem Solving
- Addressing access to high quality mathematics (P-20) that provides appropriate connections to data science, incorporates meaningful mathematical tasks in the age of AI, and fosters mathematical habits of mind that include computational thinking.

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- Ideas (structure, policy, implementation), from an international perspective, on how increased emphasis on computational thinking, data science, and AI are changing the way educators think systemically about mathematics education.

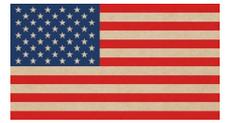
## ASK ME ABOUT

- Historical Plucked Instruments
- Testimonios



The University of Texas at Austin  
Charles A. Dana Center

Josh Recio  
Dana Center, University of Texas



## ABOUT ME:

I am a math and statistics educator who cares deeply about how adult practices and decisions shape students' outcomes and futures.

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

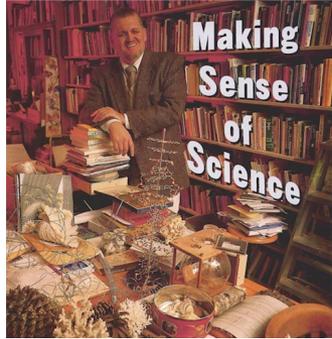
- Modernizing math
- Revising standards
- Curriculum development
- Improving outcomes for each and every student

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

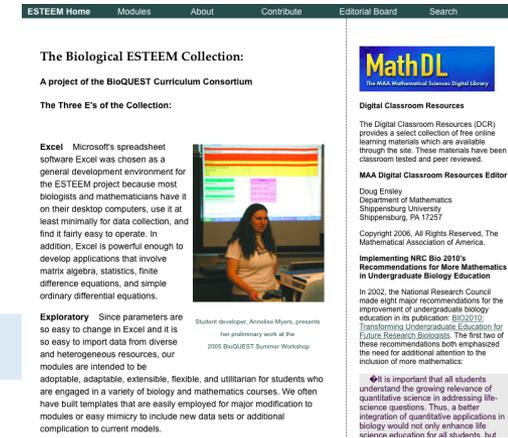
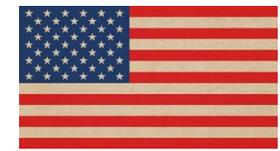
- Learn what's working well in data education across systems.
- How are we alike?
- How are we different?

## ASK ME ABOUT

- Texas 🇺🇸
- Baseball
- Music



John R. Jungck  
University of Delaware  
jungck@udel.edu



**ABOUT ME:** AAAS Fellow; Education Editor, *Bulletin of Mathematical Biology*; Editorial Board: *Mathematics, Evolutionary Bioinformatics*; grantee: Society for Industrial and Applied Mathematics, Society for Mathematical Biology; Founder, BioQUEST Curriculum Consortium

## MY INTERESTS in Math Education, Data Science, CT, and AI

- Educating diverse learners to become numerate, responsible, and empathic citizens in a participatory democracy
- “Brave Spaces”: Using AI in a Friere problem posing pedagogy that empowers learners to be creative and productive
- Promoting the importance of mathematical manipulatives

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

Creating Culturally Inclusive Classrooms

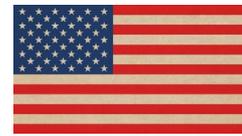
Integrating computational thinking, AI and data-driven instruction in classrooms that respects learners as knowledge producers

## ASK ME ABOUT

- Ethnomathematics: Art, Culture and Social Justice; \*Exploratory Data Analysis; \*Finite Mathematics - especially graph theory; Computational Geometry; PBL



Jun Li



## Student Achievement Partners

### ABOUT ME:

Director, Math at SAP; Former educator, instructional coach, professional learning designer and facilitator, system leader



### MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- aligning standards, instructional materials, professional learning, and classroom instruction
- supporting math classrooms that feel relevant and joyful for our students

### THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- innovations in curriculum and instruction to better integrate data science, computational thinking, and AI into K-12 mathematics
- best practices for addressing professional learning needs

### ASK ME ABOUT

- our work on integrating data science learning progressions into K-12 Common Core State Standards-Mathematics
- our work on modernizing high school math



Justine Sakurai  
j.sakurai@unimelb.edu.au



## ABOUT ME:

I am a passionate and experienced teacher, researcher, lecturer and curriculum writer working across Master of Education (MEd) and pre-service teacher education programs.



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Thing I do: write state curriculum and support materials, provide professional learning to teachers, editor of mathematics teacher journal
- Another thing I do: lecture pre-service teachers

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- What can we learn from other countries to move policy, and curriculum forward?
- How can data science be enacted in the secondary school curriculum?

## ASK ME ABOUT

- My PhD looking at motivational factors and values amongst teachers and low achieving students in senior high school.



**Kang Hao CHEONG**  
Associate Professor & Assistant Dean  
[kanghao.cheong@ntu.edu.sg](mailto:kanghao.cheong@ntu.edu.sg)



**ABOUT ME:** Mathematics Educator; Computational Scientist; AI Scientist;  
Member of the Singapore MOE Math Syllabus Development Committee &  
Exam Syllabus Development Committee (2024)

### MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Mathematics education at the intersection of data science, computational thinking, and artificial intelligence
- Teaching and learning of mathematical modeling, with an emphasis on real-world and computational approaches
- STEM education design, including data and AI literacy programs
- Active learning involving XR
- International partnerships that accelerate educational innovation and research collaboration



### THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- Advancing mathematical modeling, computational thinking, and data science education for AI-era learning innovation
- Policy-to-practice analysis across curriculum, instruction, technology, and assessment

### ASK ME ABOUT

- Developing standards and implementation frameworks for high school data science
- Integrating computational thinking and AI through data-driven instructional design in classroom practice



Kate Farrell

kate.farrell@ed.ac.uk

k

@Digitalkatie

## ABOUT ME:

Educational developer who champions FUN in learning! 20 years experience as Computing teacher and delivering professional learning



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Playful low-tech or no-tech approaches to teaching technology (such as robot card games and AI sustainability board games, data literacy escape rooms and creative data crafting)
- Developing engaging and accessible curricular resources and professional learning in data literacy, data science, AI literacy, digital learning and Computing Science.

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- How other countries are teaching AI concepts (perhaps 'unplugged') and providing safe access to suitable AI tools designed for young people.
- Finding other resources we can use or adapt for our context

## ASK ME ABOUT

- Our AI and data literacy resources - we love sharing (and I have copies with me!)
- Collaborating on AI and Data literacy projects - we love working with others :)
- How to create sign language signs for computing, data science and AI terms



Keith Young

[keith.young@mic.ul.ie](mailto:keith.young@mic.ul.ie)



**ABOUT ME:** Assistant Professor in ICT & Digital Learning in the Department of STEM Education at Mary Immaculate College, focusing on teacher education and the ethical use of digital technologies, including AI, to strengthen teaching and support student learning.

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Teacher education + digital competence: designing and teaching digital technology modules for student teachers (cross-curricular)
- Developing computational thinking, data and critical AI literacy through classroom tasks (including math contexts)



## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- Assessment and progression: what emerging practices and approaches are developing internationally.
- Implementation: how systems are supporting teachers (guidance, exemplars, PD) as AI enters classrooms.

## ASK ME ABOUT

- Curricular change in Ireland and its impact on assessment approaches.
- Development of critical AI Literacy for teachers and learners.

# Kyungwon Lee



Teacher, Dankook University Middle School,  
PhD Candidate, Seoul National University

[kyungwon.lee.snu@gmail.com](mailto:kyungwon.lee.snu@gmail.com)



## ABOUT ME:

Co-researcher, Korean Mathematics Curriculum  
(2015 Revised *Basic Mathematics*, 2022 Revised)

Co-author, Korean Middle School Mathematics Textbooks

Local Organizing Committee Member, EARCOME 9

Academic Event Coordinator,

SNU Center for Research in Mathematics Education John



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Exploring teacher competence, national curriculum documents and textbook development (including data science, computational thinking and AI), and teaching and learning of advanced mathematics
- Teaching and learning of mathematics using generative AI (mathematical modelling, proving, and problem posing)

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- How can curriculum policy, curriculum documents, and textbooks support the integration of data science, computational thinking, and AI into mathematics classrooms?
- What international perspectives and emerging trends exist in research and practice related to data science, computational thinking, and AI in mathematics education?

## ASK ME ABOUT

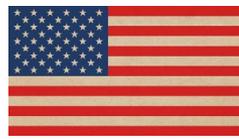
- The national mathematics curriculum and textbook development in Korea
- Professional development programs for mathematics teachers in Korea



Latrenda Knighten

[LKnighten@nctm.org](mailto:LKnighten@nctm.org)

National Council of Teachers of  
Mathematics



### ABOUT ME:

NCTM President, teacher, coach, mentor, mathematics supervisor, lifelong learner and advocate for high quality mathematics learning opportunities for ALL students, daughter, sister, and aunt



### MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Include serving as a passionate advocate for providing all students with varied and diverse mathematics experiences that amplify students' mathematical thinking, foster critical thinking and problem solving, and position students as learners and doers of mathematics.

### THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- I'm interested in learning how we can use research-informed practices to incorporate data science and AI in instructional practices to provide all students with increased opportunities in mathematics and implement structures to support teachers in implementing these practices

### ASK ME ABOUT

- Facilitating meaningful mathematical discourse, using ongoing professional learning to support and sustain a cadre of mathematics educators, and advocating for relevant, engaging, and high quality math learning for ALL



**Lucas Rocha**

AI Product Leader - Nova Escola

[lucas.rocha@novaescola.org.br](mailto:lucas.rocha@novaescola.org.br)



**ABOUT ME:** AI Product Leader, Nova Escola; Professor & Mentor in AI, Tera; Former MIT Media Lab Visiting Fellow; Co-founder, Programaê! (Coding Education Movement); Brazilian Creative Learning Network co-founder

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Developing LLM-based teaching tools: building conversational AI agents for math teachers via WhatsApp
- Creating quality assurance systems for AI-generated educational content



## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

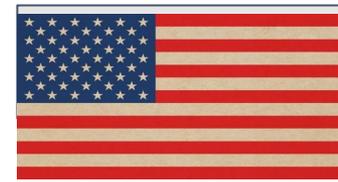
- Lessons learned from failed/successful AI implementations with teachers
- Practical strategies for improving quality of AI-generated pedagogical content

## ASK ME ABOUT

- Automated evaluation systems for LLM-generated lesson plans



**David Manderscheid**  
**Professor of Mathematics**  
**University of Tennessee, Knoxville**  
[dmanders@utk.edu](mailto:dmanders@utk.edu)



## **ABOUT ME:**

Former academic administrator and federal government executive looking at college mathematics programs. Served on two charter high school governing boards.

## **MY INTERESTS in Math Education, Data Science, Computational Thinking and AI**

- Built data science programs at Ohio State and NSF
- Built AI initiatives at NSF, building AI at Tennessee
- Rethinking College Mathematics Curriculum

## **THINGS YOU WANT TO LEARN FROM THIS WORKSHOP**

- What is happening at the K-12 level and how that interfaces with the first two years of college
- What can we learn from our international colleagues

## **ASK ME ABOUT**

- Funding at NSF
- How university administrators think

# Markku S. Hannula

## University of Helsinki



### ABOUT ME:

Teacher educator  
Mathematics education researcher  
Past president of IGPME



### MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Mathematics-related motivation, attitudes, and emotions
- Visual attention in mathematics learning and teaching
- \* Problem solving
- \* Comparative research

### THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- Recent development in AI-related research
- Current educational policies regarding technology use

### ASK ME ABOUT

- Embodied cognition, specifically emotions in learning
- Visual attention in classrooms



# Matti Tedre

University of Eastern Finland

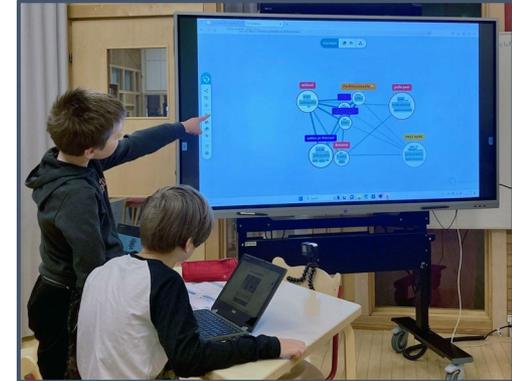
matti.tedre@uef.fi



## ABOUT ME:

Computing education researcher who leads a large national program on how to teach AI mechanisms and principles to children and novice learners.

60+ AI education publications since 2021



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- I lead development of research-based tools, content, and pedagogy for AI education
- I focus on no-code approaches to teaching the principles of the machine learning pipeline

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

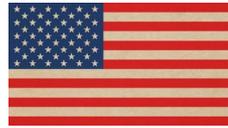
- What do these international efforts have in common and where do we all differ
- What can we learn from innovative practices elsewhere

## ASK ME ABOUT

- Why no-code AI education is 1) equitable, 2) low-threshold, 3) scalable, 4) disciplinary
- Our research-driven approach in **Generation AI** national strategic program ([gen-ai.fi](https://gen-ai.fi))

Nastaran Ghazi, Ph.D.

Program Manager/ U.S. [Department of Energy \(DOE\)](https://www.energy.gov)



**ABOUT ME:** Mechanical Engineer/ Program Manager at Office of Workforce Development for Teachers and Scientists (WDTS) in Office of Science/ U.S. Department of Energy

<https://www.ai.gov/initiatives/presidential-challenge>

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

Role of modernized K-12 math education, incorporating computational thinking, data science, and AI, in the future workforce vital for DOE initiatives like Quantum, fusion energy, and critical technologies.



## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- ready talent.
- International best practices for integrating computational thinking, data science, and AI into K-12 math curricula.
- Models for engaging students and educators with AI experts to enhance programs like the

## ASK ME ABOUT

- Workforce development opportunities managed by WDTS Office for Students and Educators to prepare highly skilled DOE workforce and strengthen U.S. STEM workforce of tomorrow (<https://science.osti.gov/WDTS>)

# Natalie Woods

Albert Einstein Distinguished Educator Fellow  
2025-2026



## ABOUT ME:

Hosted this year in Washington DC by the Air Force, Air & Space K-12 STEM Outreach; High School Math Teacher and National Leader; Presidential Awardee for Excellence in Mathematics and Science Teaching



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

I am a true math education practitioner - course and pathways designer, department head, district leader, college professor, dual credit instructor, state mentor, state standards and curriculum expert, national presenter, and **a classroom teacher through it all.**

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- More strategies for integrating computational thinking, AI and data-driven instruction into classrooms.
- Learn from others on what they are doing, what works, and what doesn't...

## ASK ME ABOUT

- Idaho's state-funded dual enrollment ecosystem
- High school mathematics pathways
- Building rigorous and relevant high school math courses



# Nicholas Fisher

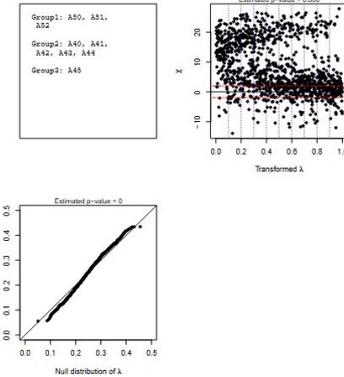
University of Sydney

[Nicholas.Fisher@sydney.edu.au](mailto:Nicholas.Fisher@sydney.edu.au)



## ABOUT ME:

- Former Chief Research Scientist, CSIRO
- Principal of [ValueMetrics Australia](#), an R&D consultancy in Data Science, with primary focus on *Measuring relationships*
- Hon. professorial appointment at U of Sydney
- Founding Chair of *SSA History Standing Committee*



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- IDSSP – an introductory pre-calculus Data Science course for the final two years of school, that is fun to teach and fun to learn, will attract students to careers in Data Science, and be transformational in terms of the numeracy of everyone else.
- Chimult – graphical exploration of dependence in multivariate data.

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- What is being done to pursue the sorts of aims behind IDSSP?
- Interest in collaborating on Phase 2 of IDSSP ?
- Possible ways to fund Phase 2 (~ \$25M)?

## ASK ME ABOUT

- IDSSP
- Measuring relationships



Padmanabhan (**PADHU**) Seshaiyer

Professor and Director

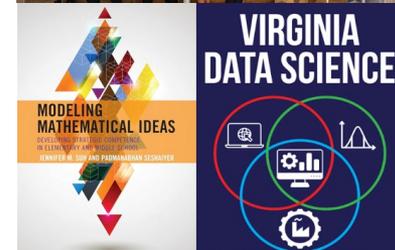
[pseshaiy@gmu.edu](mailto:pseshaiy@gmu.edu)



**ABOUT ME:** Mathematics Educator; Computational Mathematician; Data Scientist; Immediate Past Chair USNC/MI; Chair, VA STEM Education Advisory Board, VA Workforce Development Board and AI Taskforce, Office of the Governor, Virginia

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Teaching and Learning of Mathematical Modeling, Computational Thinking and Data Science Education
- Designing STEM education, Data and AI Literacy programs to increase number of students from women and underrepresented groups
- Creating International Partnerships for Educational and Research Innovation



## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- Research and Development around Mathematical Modeling, Computational Thinking, Data Science Education in the age of AI for Educational Innovations
- Understand the Impact of educational policy in curriculum, instruction, technology and assessment

## ASK ME ABOUT

- Development of Standards and Implementation of Data Science in High School
- Creating Culturally Inclusive Classrooms
- Integrating computational thinking, AI and data-driven instruction in classrooms



# M. Pilar Vélez

Professor/Math Dep. Director

[pvelez@nebrija.es](mailto:pvelez@nebrija.es)



**ABOUT ME:** As a passionate math enthusiast, I enjoy teaching Math and researching in automated reasoning and Math Education. I love algebra and geometry, algorithms, and computational tools in symbiosis with mathematical reasoning (augmented intelligence).

ORCID: [0000-0002-5724-4300](https://orcid.org/0000-0002-5724-4300)

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Learning and research on AI and CT to improve digital skills in secondary and tertiary education math courses.
- Design of STEM activities CT supported and AI for teacher training.
- Creating International Partnerships for Research in Innovation.



## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

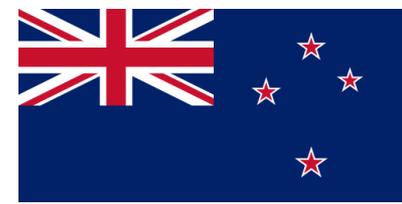
- Different countries Educational policies and the real impact of CT-DS-AI curricular principles in classrooms.
- Research and development of educational innovations involving CT-DS-AI and modeling.

## ASK ME ABOUT

- Designing activities using DGS and automated reasoning in plane Geometry.
- Mathematical reasoning skills (deduction, induction, abduction) driven by math software.

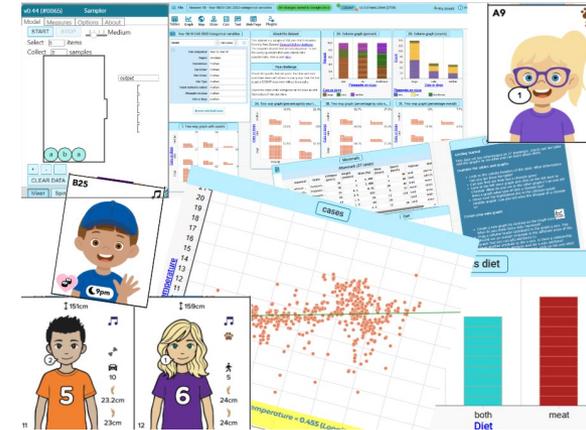
# Pip Arnold

## University of Auckland



### ABOUT ME:

Have returned to teaching statistics after many years doing teacher PLD. Recent VP IASE executive, still do the webinars.



### MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

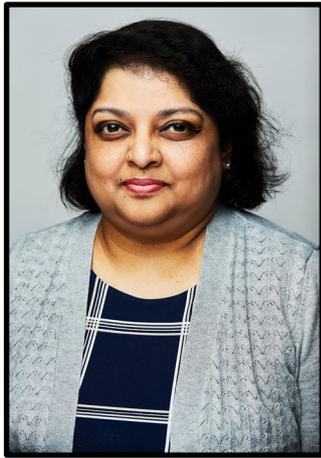
- Teach bridging statistics & data literacy and data analytics courses at Auckland University
- Posing statistical questions, connecting across curriculum areas
- Teacher PLD K-10, especially supporting K-7 teachers to integrate statistics and software such as CODAP into their teaching practice.

### THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- International directions in statistics and data science education and the implications of AI, and how this may impact on/or support implementation of

### ASK ME ABOUT

- CensusAtSchool New Zealand
- IASE webinars
- Probability Teachers Guide



# Pragyansmita Nayak

Chief Data Scientist

Hitachi Vantara Federal



## ABOUT ME:

Focus on solution architectures design and deployment, partner enablement, and serving as a trusted technical advisor to multiple Federal Government agencies. Specializing in machine learning, system design and data complexity analysis.

**Strengths:** Positivity, Restorative, Learner, Achiever, Arranger

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Absolutely enjoy the “art to the science” of data science and tackling the challenges of working with disparate systems, technologies and data types.
- Mentoring and community development

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- Learning methodologies to accelerate dissemination of a data science concept
- Opportunities for industry like ours to contribute to this community

## ASK ME ABOUT

- Hitachi Data Products, Solution architectures, Proof of concept methodologies



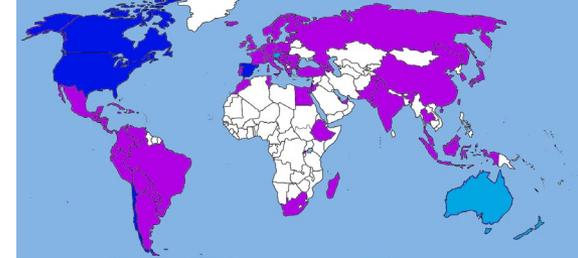
# Ricardo Baeza-Yates

## KTH, UPF, UChile



### ABOUT ME:

Computing and data scientist with national research awards in Chile & Spain. ACM & IEEE Fellow. Applied geographer.



### MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

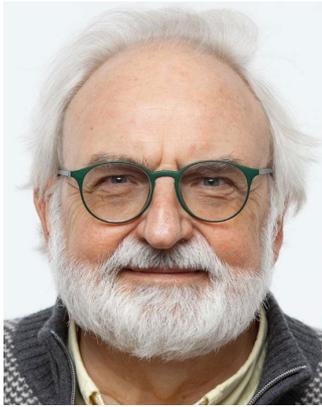
- Responsible AI & AI Ethics
- Search & Recommender Systems

### THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- The impact of AI in Education
- Experiences from other participants

### ASK ME ABOUT

- Responsible AI, AI Ethics, Bias in Computing Systems, Geography



# Rolf Biehler

Professor (emeritus), Co-director ProDaBi project  
Paderborn University



**ABOUT ME:** Trying to inspire students and teachers to engage in meaningful data exploration grounded in conceptually rich and socially relevant problems.



Foto Universität Paderborn, Johanna Pitsch) Ausgehend von ihren Nährwertangaben wurden die verschiedenen Lebensmittel in die Kategorien „ehr empfehlenswert“ und „nicht empfehlenswert“ eingeteilt.

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

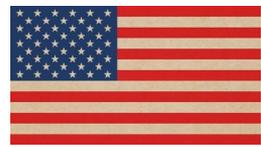
- Teaching and learning mathematics and data science with digital tools
- Design-based research aimed at understanding and improving students' and teachers' practices
- Conceptual and epistemological foundations of statistical, data, and AI literacy
- Research in university mathematics education — my “second academic identity”

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- Defining what AI and data science education should look like in K–12
- Identifying enabling conditions and addressing foreseeable implementation challenges

## ASK ME ABOUT

- My domains of interest



# Karen Saxe

## American Mathematical Society

**ABOUT ME:** Mathematics Professor Emerita; Higher Education congressional staffer for one year; current Director of Government Relations for AMS; AIMS Ghana

### **MY INTERESTS in Math Education, Data Science, Computational Thinking and AI**

- Developing undergraduate curricula
- Supporting aspiring mathematicians
- What role government plays in education

### **THINGS YOU WANT TO LEARN FROM THIS WORKSHOP**

- Understand how policy and education interact in other countries

### **ASK ME ABOUT**

- US Congressional work on education policy



**홍익대학교**  
HONGIK UNIVERSITY

**Sejun Oh**

[soh@hongik.ac.kr](mailto:soh@hongik.ac.kr)

Hongik University (Seoul, South Korea)



## ABOUT ME:

I am an Assistant Professor in the Department of Mathematics Education at Hongik University. I received my Ph.D. in Mathematics Education from Seoul National University in 2023. My work focuses on AI-integrated mathematics curriculum and technology-enhanced learning and assessment.

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- AI-integrated mathematics curriculum and textbook development (Korea's AI Mathematics)
- Block-based coding and dynamic math tools (AlgeoMath) for inquiry-based learning
- Generative AI for mathematical reasoning, formative assessment, and feedback

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- How different countries connect data science, computational thinking, and AI within K–12 mathematics
- Approaches to assessment and teacher learning when students work with coding and AI

## ASK ME ABOUT

- AlgeoMath and block-based coding tasks in Korean Grade 7 textbooks
- Korea's AI Mathematics course and using Python as a mathematical tool



Middle East Technical University

[skazak@metu.edu.tr](mailto:skazak@metu.edu.tr)

## ABOUT ME:

Associate Professor of Mathematics Education;  
Past Vice-President of International Association  
for Statistical Education (IASE); a collector of dice  
in all sorts of shapes and sizes



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- How mathematics, especially probability, statistics, and data science, is learned and taught.
- Developing and implementing data science modules for teacher education (with colleagues from Germany, Ireland, Greece, and Cyprus)



## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- How other countries prepare mathematics teachers for data science and AI
- Potential collaborations and innovative materials for teaching data science and AI at the K-12 level

## ASK ME ABOUT

- EU funded Erasmus+ project: Promoting Data Science Education for Teacher Education at the University Level (DataSETUP) (<https://datasetup.euc.ac.cy>)
- The use of image-based data in classroom investigations (and its connections to AI and computational thinking)

# Stefania Bocconi

CNR - National Research Council of Italy

[stefania.bocconi@cnr.it](mailto:stefania.bocconi@cnr.it)



**ABOUT ME:** Senior Researcher in Technology Enhanced Learning, working on digital education, computational thinking, and AI in education. My work sits at the intersection of curriculum, teacher professional development, and assessment, with a particular focus on core competences in K–12 education.

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- I led and contributed to European research and policy studies on CT in compulsory education, including large-scale comparative analyses across Europe education systems and the OECD PISA 2021 Mathematics Framework Expert Group
- Contributed to EU Guidelines for High Quality Informatics Education



## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- How different countries are approaching the integration of DS/CT/AI in K–12 education.
- Which DS/CT/AI competences are considered essential to assess, and how systems balance these with core curriculum objectives.

## ASK ME ABOUT

- Policy and implementation approaches to integrating CT in K-12 education across Europe



# Steffen Schneider, KI macht Schule

## ABOUT ME:

Founder of KI macht Schule (“AI at Schools”, [ki-macht-schule.de](https://ki-macht-schule.de))

Research Group Leader in AI and Statistics for Science at Helmholtz Munich ([dynamical-inference.ai](https://dynamical-inference.ai))



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Open and participatory approaches to establishing AI (as a topic and a tool) in education
- Empowering students from school to PhD level to use and shape AI technology for Social Good
- Bridging computer science and math education to improve statistical & AI literacy

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

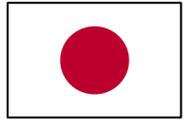
- Best practices, approaches and strategies employed in other countries
- Pedagogical approaches to prevent “skill skipping” as AI enters the education system

## ASK ME ABOUT

- The Germany-wide, multi-stakeholder effort of providing an open-infrastructure adaptive learning environment for every school: [ais.schule](https://ais.schule)



Takashi Kawakami  
Utsunomiya University, Japan  
[t-kawakami@a.utsunomiya-u.ac.jp](mailto:t-kawakami@a.utsunomiya-u.ac.jp)



## ABOUT ME:

- Associate Professor of Mathematics Education
- Former Elementary School Teacher
- [ICME-15](#) (2024, Sydney) [DS Survey-Team](#) Member
- [ICTMA-22](#) (2025, Sweden) [Plenary Speaker](#)
- [CERME-15](#) (2027, Slovakia) TWG06 (Applications & Modelling) Co Leader



## MY INTERESTS in Math Education, Data Science, Computational thinking and AI [ORCID](#)

- Exploring the intersection of **mathematical modeling (MM)**, DS, CT, and AI education in K-12
- Promoting professional development through the collaboration with teachers and researchers

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- What is the effective way to integrate the core topics of DS, CT, and AI into the mathematics curriculum and teaching practices?
- How mathematics textbooks and teacher education can be improved?

## ASK ME ABOUT

- MM education research in K-12
- Current mathematics national curriculum and mathematics textbooks in Japan



An Institute of



**Tianming ZHU**

Assistant Professor

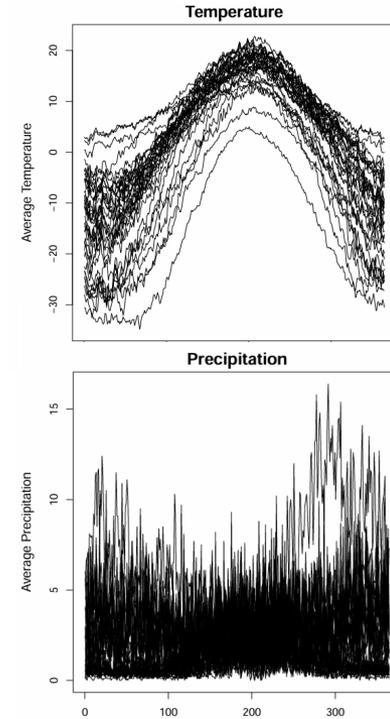
[tianming.zhu@nie.edu.sg](mailto:tianming.zhu@nie.edu.sg)



**ABOUT ME:** Statistician; Data Scientist; Secretary of Association of Mathematics Educators (AME), Singapore; High-Dimensional and Functional Data Analyst; Researcher on AI-Assisted Learning in Statistics and Data Science

## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Teaching and learning of Statistics and Data Science, integrating AI and computational thinking
- Designing AI-assisted educational tools and programs to support statistical literacy and data visualization skills
- Applying high-dimensional and functional data analysis to educational research



## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- Research and development in statistics and data science education
- Explore AI applications in teaching statistics and data science
- Learn methods to measure student engagement, understanding, and learning outcomes

## ASK ME ABOUT

- Using AI-assisted coding tools to support beginner students in statistics and data science
- Applying statistical and data science methods to analyze complex data in education research



# Tin Lam TOH

## National Institute of Education



### ABOUT ME:

Mathematician (Real Analysis) turned into Mathematics Educator (Mathematical Problem Solving, Mathematics Teacher Education), Executive Member of the Association of Mathematics Educator and Singapore Mathematical Society.



### MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Research and Practice of AI and CT infusion in Teacher Professional Development and Pre-service Mathematics Teacher Education
- Infusion of CT and AI in mathematics instruction for K-12. In particular, how AI and CT change the mode and content of lesson enactment, in particular, problem solving and problem posing.

### THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- Practices in Other Nations about Computational Thinking and AI. In particular, the paradigm of AI infusion in the mathematics curriculum.
- Computational Thinking infusion into the mathematics curriculum.
- Teacher preparation for DS, CT and AI.

### ASK ME ABOUT

- Teacher Professional Development Practices in Singapore and the infusion of AI and CT in Teacher Education Courses.



# Tyler Kloefkorn

American Mathematical Society

tjk@ams.org



## ABOUT ME:

Trained in mathematics; transitioned to US science policy; now working for the American Mathematical Society Office of Government Relations



## MY INTERESTS in Math Education, Data Science, Computational Thinking and AI

- Supporting advocacy efforts related to mathematical sciences education
- Communicating federal science/education policy news to the mathematical sciences community

## THINGS YOU WANT TO LEARN FROM THIS WORKSHOP

- How federal science/education policy can help transform mathematical sciences education to better support and empower students.

## ASK ME ABOUT

- #MathSciOnTheHill
- Sen. Cassidy's recent inquiry on mathematics education