# Eunhye Grace Flavin, Ph.D.

Curriculum Vitae

Senior Research Scientist
Center for Education Integrating Science, Mathematics, and Computing
College of Lifetime Learning
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## RESEARCH EXPERTISE

Learning Sciences, Technology-mediated Learning (Augmented reality, Artificial intelligence), Mathematics Education, Immigrant Family Engagement, and Mixed Methods

**OVERALL AIM:** As a learning scientist, my work focuses on developing and implementing advanced technologies (e.g., AR, AI), along with pedagogical approaches, policies, and community engagement strategies, to enhance the cognitive and affective aspects of learning. Through this approach, I design learning environments that make learning more engaging and immersive across the lifespan, with a particular focus on mathematics learning.

## EDUCATION

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| Ph.D. | Boston College, Chestnut Hill, MA.<br>Major: Curriculum and Instruction (Specialization: **Mathematics and Technology Education**)<br>Dissertation Title: The effects of school mathematics resources on students' intention to study mathematics over other subjects: Multilevel mediation structural equation modeling |
| M.A. | Seoul National University, Seoul, South Korea.<br>Major: Foundations of Education |
| B.A. | Daegu National University of Education, Daegu, South Korea<br>Major: Elementary Education<br>Teaching Certification: Elementary School Teacher |

## PROFESSIONAL APPOINTMENTS

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| 2024–current | Senior Research Scientist, Georgia Institute of Technology, Atlanta, GA.<br>Center for Education Integrating Science, Mathematics, and Computing |
| 2021–2024 | Assistant Professor of STEM Education (Tenured-track), Stonehill College, Easton, MA.<br>- Department of Graduate Teacher Education (2023–2024): Faculty Coordinator for the Graduate Mathematics/Science Teacher Education program<br>- Department of Education Studies (2021–2023) |
| 2022 July | Instructor, Summer Program: Competition Math (Grades 5–6) |

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| | Center for Talent Development, Northwestern University, Evanston, IL. |
| 2017–2021 | Teaching Fellow (2020–2021), Graduate Assistant (2017–2021)<br>Lynch School of Education and Human Development, Boston College, Chestnut Hill, MA. |
| 2016–2017 | Associate/Instructional Designer<br>e-Learning Contents Development Division, Seoul National University, Seoul, South Korea. |
| 2015–2016 | Associate Researcher<br>Center for Bahrom Character Education, Seoul Women's University, Seoul, South Korea. |
| 2013–2016 | Teaching Assistant (2013-2014) & Lecturer (2015-2016)<br>College of Education, Korea National Open University, Seoul, South Korea. |
| 2011–2015 | Elementary School Teacher (Grades 1-6, Curriculum development, part-time)<br>The School of Global Sarang, Seoul, South Korea. |
| 2011–2014 | Assistant Administrator<br>The Korean Society for the Study of Anthropology of Education, Seoul, South Korea. |

## FUNDED RESEARCH and RESEARCH EXPERIENCE

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| Under review | **Pathway to Excellence: Expanding data analytics, advanced manufacturing, and critical systems education**<br>Sponsor: U.S. Department of Education – Fund for the Improvement of Postsecondary Education (FIPSE)<br>Amount: $2,945,000<br>Role: Co-PI (**E. Flavin**), PI (I. Tien), Co-PI (K. Samford) |
| Under review | **Emotionally responsive STEM education: Real-time monitoring of student anxiety and AI-assisted haptics for teacher noticing**<br>Sponsor: National Science Foundation (NSF) – Research on Innovative Technologies for Enhanced Learning (RITEL)<br>Amount: $900,000<br>Role: PI (Matthew T. Flavin), Co-PI (**E. Flavin**), and Co-PI (Bruce Walker) |
| 2025-2026 | **Building an AI-assisted online course for the College of Lifetime Learning**<br>Sponsor: Georgia Institute of Technology – Provost Teaching and Learning Initiatives<br>Amount: $24,885.65 ($15k from the Provost's Office, the remainder from CEISMC)<br>Role: PI (**E. Flavin**), Co-PIs (Abeera Rehmat, Jeonghyun Lee) |

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| 2025-2026 | **Speculative design with mathematical modeling: Children building a new future in an urban mathematics program**<br>Sponsor: American Educational Research Association – Education Research Service Projects Grant<br>Amount: $5,000<br>Role: PI (**E. Flavin)**<br>Collaborator: Horizons at Georgia Tech |
| 2024-2025 | **Mechatronics and motivation**<br>Sponsor: Georgia Institute of Technology – Vertically Integrated Project Seed Grant<br>Amount: $5,000<br>Role: PI (**E. Flavin** & *Matthew T. Flavin) *equal contribution |
| 2024-2027 | **Fostering mathematical modeling competencies via collaborative learning in large language model-simulated virtual classrooms**<br>Sponsor: National Science Foundation (NSF) – Research on Innovative Technologies for Enhanced Learning (RITEL)<br>Amount: $578,047.00<br>Role: Senior Personnel (**E. Flavin**) |
| 2025 | **VOICE (Vital oral interactions for clinical excellence): Harnessing AI to build clinical communication competence and confidence for international nurses** **Submitted*<br>Sponsor: Bill Kent Family Foundation<br>Amount: $9,000<br>Role: Co-PI (**E. Flavin**), PI (Karen Peterson), Co-PIs (Abeera Rehmat, Katherine Samford) |
| 2024 | **Building a sustainable AI-assisted online calculus professional development for rural teachers** **Submitted*<br>Sponsor: William T. Grant Foundation – Reducing inequality in youth outcomes<br>Amount: $600,000<br>Role: PI (**E. Flavin**), Co-PIs (Dabae Lee, Keisha Simmons) |
| 2024 | **Bridging the role of AI with student voices in mathematics education**<br>**Submitted*<br>Sponsor: The Spencer Foundation – Research Small Grant<br>Amount: $50,000<br>Role: PI (**E. Flavin**) and Co-PI (Nicholas Witt) |
| 2024 | **"Mathematics as the foundation of artificial intelligence": Co-designing culturally responsive mathematics tasks in the context of AI** **Submitted*<br>Sponsor: National Council of Teachers of Mathematics – Early Career Grant<br>Amount: $10,000<br>Role: PI (**E. Flavin**) |

2024 **Haitian im/migrant caregiver and community engagement in mathematics education**
Sponsor: Stonehill College – Research, Writing, & Artistic Production Grant
Amount: $4,350
Role: PI (**E. Flavin**)

2023 **An international comparative study on elementary preservice teachers' noticing of mathematics groupwork: Focusing on communication, collaboration, and problem-solving competencies (***translated to Korean*: 수학 그룹 활동에 대한 초등 예비교사의 노티싱 분석: 의사소통, 협력, 문제해결 역량에 대한 국제 비교 연구**)**
Sponsor: South Korea Ministry of Education – Network Utilizing IDEA Grant of Chuncheon National University of Education
Amount: ₩5,000,000
Role: Sunghwan Hwang (PI) and Co-PI (**E. Flavin**)

2023 **ARGeometry: Urban informal mathematics education program for *STEM for All Brockton***
Sponsor: Avanade
Amount: 15 laptops (January 2023)
Role: PI (**E. Flavin**)

2023 **Augmented reality mathematics manipulatives for equity**
Sponsor: Stonehill College – Research, Writing, & Artistic Production Grant
Amount: $5,000
Role: PI (**E. Flavin**)

2022 – 2024 **GeoComputation: Integrating computational thinking into elementary geometry lesson**
Sponsor: Stonehill College – College Start-up Funds
Amount: $5,000
Role: PI (**E. Flavin**)

2022 **Four decades of research of the pedagogical content knowledge of mathematics teachers**
Sponsor: Stonehill College – Research, Writing, & Artistic Production Grant
Amount: $5,000
Role: PI (**E. Flavin**)

2021 – 2022 **Social justice-oriented instructional practices grounded in real-world data**
Sponsor: Stonehill College – Research Expense Grant/Start-up Funds
Amount: $2,000
Role: PI (**E. Flavin**)

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| 2018–2021 | **Collaborative fellow grant with Potter Rd elementary school in Framingham**<br>Sponsor: Boston College<br>Amount: $105,000<br>Role: Survey team lead & Research Assistant (**E. Flavin**)<br>PI: Gabrielle Oliveira |
| 2021 | **Dissertation grant** **Submitted*<br>American Educational Research Association/National Science Foundation Grant (*submitted*)<br>ETS Harold Gulliksen Psychometric Research Fellowship |
| 2019–2020 | **Catholic immigrant networks**<br>Sponsor: Boston College Warmenhoven Fellowship<br>Amount: $45,000<br>Role: Survey team lead & Research assistant, including field work (**E. Flavin**)<br>PI: Gabrielle Oliveira |
| 2019–2020 | **The Hyukshin school innovation movement in Seoul**<br>Sponsor: Seoul Metropolitan Office of Education<br>Amount: $236,000<br>Role: Graduate student team leader & Research assistant (**E. Flavin**)<br>PI: Yoonmi Lee, Dennis Shirley, Deoksoon Kim, & Stanton Wortham. |
| 2018–2019 | **Warmenhoven Fellowship**<br>Sponsor: Boston College Rocche Center for Education<br>Amount: $30,000<br>Role: Research assistant (**E. Flavin**)<br>PI: Gabrielle Oliveira |
| 2018 | **The Lemelson–Massachusetts Institute of Technology junior varsity InventTeams program (Chill Out!)**<br>Role: Research assistant (**E. Flavin)** |
| 2016–2018 | **A longitudinal study on middle school free-semester program**<br>Sponsor: Korean Educational Development Institute<br>Role: Research assistant (**E. Flavin)** |
| 2015–2016 | **Measurement of educational effectiveness of the Bahrom character education program**<br>Sponsor: Seoul Women's University<br>Role: Associate researcher (**E. Flavin)** |
| 2014–2015 | **A study on job development and employment support for immigrant youth**<br>Sponsor: Rainbow Youth Center in South Korea<br>Amount: ₩30,000,000 |

Role: Research assistant (**E. Flavin)**
PI: Deokhee Seo

2014–2015 **A study on curriculum and educational contents development for training instructors for multicultural education**
Sponsor: Korean Healthy Family Support Center
Role: Research assistant (**E. Flavin)**
PI: Minseung Jung

2011–2012 **A study on curriculum and manual for cultural diversity education** (KACES–1240-R024)
Sponsor: Korea Arts & Culture Education Service
Role: Lesson plan developer (**E. Flavin)**
PI: Cheol-Il Lim, Seoul National University

2011–2012 **A study on current issues in mathematics education in Korea** (Policy Research 2-11-9)
Sponsor: South Korean Ministry of Education
Role: Interviewer (**E. Flavin)**
PI: Kyung Mi Park

## FUNDING IN PREPRATION

In preparation **Place-based CS and AI: Empowering rural communities**
Sponsor: National Science Foundation (NSF) – NSF K-12 STEM (November 15, 2025)
Amount: $715,000
Role: Co-PI (**E. Flavin**) and PI (Norman "Storm" Robinson)

In preparation **T.I.N.K.E.R: Tangible interfaces nurturing kids' early AI readiness**
Sponsor: National Science Foundation (NSF) – NSF K-12 STEM (November 30, 2025)
Amount: $750,000
Role: PI (**E. Flavin),** Co-PIs (Matthew T. Flavin, Abeera Rehmat)

## REFREED JOURNAL PUBLICATIONS

**Flavin, E**. & Flavin, M. (2025). Speculative design for mathematical modeling and belonging, *Mathematics Teacher: Learning and Teaching PK–12*, 118 (9), https://doi.org/10.5951/MTLT.2024.0315 [*selected as a cover article]

Hwang, S., Kang, Y., JE, Lee., & **Flavin, E**. (2025) Analysis of generative AI's diagnostic and feedback capabilities regarding fraction multiplication errors: Focusing on ChatGPT, Gemini, and DeepSeek, *Journal of Educational Research in Mathematics*. https://doi.org/10.29275/jerm.2025.35.3.467

Lee, J. H. & * **Flavin. E**. (2025). AI decision making and statistical modeling. *Mathematics Teacher: Learning and Teaching PK–12*. https://doi.org/10.5951/MTLT.2024.0217 *Equal contribution

**Flavin, E.** Chung, M. Hwang, S., & Flavin, M. (2025). Augmented reality for area measurement reasoning of elementary students. *Educational Technology Research and Development*. https://doi.org/10.1007/s11423-025-10502-0

**Flavin, E.**, Hwang, S., & Morales, M. (2025). "Let's ask the robot!": Epistemic stance between teacher candidates toward AI in mathematics lesson planning. *Journal of Teacher Education*, *76*(3), 262-279. https://doi.org/10.1177/00224871251325079

**Flavin, E., *** Hwang, S & Flavin, M.T. (2025). Augmented reality for mathematics achievement: A meta-analysis of main and moderator effects. *International Journal of Science and Mathematics Education*. https://doi.org/10.1007/s10763-025-10546-x (*equal contribution)

M. Flavin,* K. Ha,* Z. Guo,* S. Li,* J. Kim,* T. Saxena, F. D. Simatos, F. Al-Najjar, Y. Mao, S. Bandapalli, C. Fan, D. Bai, Z. Zhang, Y. Zhang, **E. Flavin**, K. Madson, Y. Huang, L. Emu, J. Zhao, J. Yoo, M. Park, J. Shin, A. Huang, H. Shin, J. Colgate, Y. Huang, Z. Xie, H. Jiang, J. Rogers. (2024) Bioelastic state recovery for haptic sensory substitution, *Nature*, 635, 345–352. https://doi.org/10.1038/s41586-024-08155-9

Lee, J., **Flavin, E**., & Hwang, S. (2024). Open mathematical tasks conceived, designed, and reflected upon by preservice elementary teachers. *Journal of Mathematics Teacher Education.* https://doi.org/10.1007/s10857-024-09661-3

**Flavin, E.** & *Lee, J. H., Chamberlin, M., Powers, R. (2024). Artificial intelligence image processing. *Mathematics Teachers: Learning and Teaching PK-12, 117* (11). 848–852. https://doi.org/10.5951/MTLT.2024.0103 (*equal contribution)

**Flavin, E.**, & Flavin, M. (2024). Black feminist thought as a guide for ethical integration of artificial intelligence in mathematics classroom. *Connections, 34*(1), 1–8, https://amte.net/sites/amte.net/files/FlavinFlavin_Connections_Fall2024.pdf

Lee, J., **Flavin, E.**, Kim, S, & Hwang, S. (2024). Recording and representing student mathematical thinking: A comparison of preservice teachers in the U.S. and Korea. *Research in Mathematical Education* (Journal of the Korean Society of Mathematical Education Series D)*, 34*(3), 511–542. https://doi.org/10.29275/jerm.2024.34.3.511

**Flavin, E.** & Suh, J. (2024). Centering empathy in a mathematics classroom. *Mathematics Teacher: Learning and Teaching PK–12. 117*(5), 361–370. https://doi.org/10.5951/MTLT.2023.0246

**Flavin, E.**, Lima Becker, M., Hubacz, H., Barbieri, O., & Oliveira, G. (2024). "(Not) the same as it was": Parents' and teachers' perception of the impact of COVID-19 on a bilingual elementary program. *Language and Education*, 1–19. https://doi.org/10.1080/09500782.2024.2343479

Segel, M., **Flavin, E**., Hubacz, H. & Oliveira, G. (2024). A currency of love: Illuminating motherhood across immigrant, cultural, and socioeconomic lines during Covid–19. *Urban Education*, 00420859241244769, https://doi.org/10.1177/00420859241244769

**Flavin, E.** & * Hwang, S. (2024). U.S. and Korean teacher candidates' approaches to mathematics modeling on a social justice issue. *Research in Mathematical Education* (Journal of the Korean Society of Mathematical Education Series D), *27*(1), 25–47. https://doi.org/10.7468/jksmed.2024.27.1.25 (*equal contribution)

Hwang, S., **Flavin, E.**, & Lee, J. (2023). Exploring research trends of technology use in mathematics education: A scoping review using topic modeling. *Education and Information Technologies*, 1–28. https://doi.org/10.1007/s10639-023-11603-0

Oliveira, G., **Flavin, E**., & Hubacz, H. (2023). Teachers and parents at odds: Results from a survey on a dual language program implementation. *Education and Urban Society*. 00131245221141071. https://doi.org/10.1177/00131245221141071

Hwang, S., **Flavin, E**., Lee, J. (2023). The use of technology in Korean mathematics education: A systemic review. *Research in Mathematical Education* (Journal of the Korean Society of Mathematical Education Series D)*, 33*(3), 537–557. https://doi.org/10.29275/jerm.2023.33.3.537

Hwang, S. & **Flavin, E**. (2023). Understanding a mathematics teacher community through a computational text analysis: Review of *change in mathematics pedagogical lexicons* by Lee & Kim (2022). *Research in Mathematical Education* (Journal of the Korean Society of Mathematical Education Series D)*,* 26 (1), 31–38. https://doi.org/10.7468/jksmed.2023.26.1.31

**Flavin, E**., & Hwang, S. (2022). Examining multicultural education research in Korean mathematics education. *Research in Mathematical Education* (Journal of the Korean Society of Mathematical Education Series D)*, 25* (1), 45–63. https://doi.org/10.7468/jksmed.2022.25.1.45

Hwang, S., & **Cho, E**. (2021). Exploring latent topics and research trends in mathematics teachers' knowledge using topic modeling: A systematic review. *Mathematics*, 9, 2956. https://doi.org/10.3390/math9222956

Oliveira, G., **Cho, E**., & Barbieri, O. (2021). Latino family engagement in a network of Catholic bilingual schools. *Journal of Catholic Education, 24*(1), 183–203. http://dx.doi.org/10.15365/joce.2401102021

**Cho, E**., Albert., L, & Hwang, S. (2021). Exploring white preservice mathematic teachers' racial identity and culturally relevant teaching practices. *Research in Mathematical Education* (Journal of the Korean Society of Mathematical Education Series D), 24(1). 29–47. http://doi.org/10.7468/jksmed.2021.24.1.29

Hwang, S., **Cho, E.**, & Albert, L. (2020). Examining mathematics teachers' perception toward multicultural education: Teachers' noticing of multicultural contents in mathematics textbooks. *Research in Mathematical Education* (Journal of the Korean Society of Mathematical Education Series D)*, 23* (2), 93–111. https://doi.org/10.7468/jksmed.2020.23.2.93

Oliveira, G., Chang-Bacon, C. K., **Cho, E.**, & Baez-Cruz, M. (2020). Parent and teacher perceptions of a Brazilian Portuguese two-way immersion program*. Bilingual Research Journal, 43*(2), 212–231. https://doi.org/10.1080/15235882.2020.1773961

Kim, D., **Cho, E.**, Stephanie, C., & Barnett, M. (2019). Culturally relevant science: Incorporating visualizations and home culture in an invention-oriented middle school science curriculum. *Technology & Innovation, 20*, 251–266. https://doi.org/10.21300/20.3.2019.251

**Cho, E.** & Hwang, S. (2019). Exploring changes in multi-ethnic students' mathematics achievement motivation: A longitudinal study using expectancy-value theory. *The Mathematical Education* (*Journal of the Korean Society of Mathematical Education Series A), 58*(1), 101–120. https://doi.org/10.7468/mathedu.2019.58.1.101

Seo, D. & **Cho, E.** (2017). An exploratory research on career dispositions of immigrant youths and their ecological conditions. *Journal of Education and Culture, 23*(1), 217–247. https://doi.org/ 10.24159/joec.2017.23.1.217

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## JOURNAL ARTICLES UNDER REVIEW / IN PREPARATION

**Flavin, E**., Hwang, S., & Flavin, M. Lekòl, Legliz, Lakay: Haitian immigrant parental engagement in mathematics education. Reviewed and in revision: *Educational Studies in Mathematics*, 2024.

**Flavin, E**., Chung, M., & Flavin, Augmented reality–based intervention package on children's construction of a volume measurement. Under review.

**Flavin, E**., Cudd., M., Mauntel, M., Witt, N., Suh, J. Designing AI virtual students to support teacher noticing towards asset-based pedagogy. *In revision*. *Journal of Mathematics Teacher Education*.

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## REFREED CONFERENCE PROCEEDINGS (*Research with a mentoring student)

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**Flavin, E.**, Mohindra, K., & Lee, J. (2026, under review), CoDialogue Space: Design of AI-supported collaborative learning platform. The International Society of the Learning Sciences Conference, June 15-19, CA, USA.

Minter, E., & **Flavin, E.** (2026, accepted), Mathematical modeling for community well-beings in an informal learning setting. *The 2025 STEAM Leadership Conferenc*e. February 27-28, 2026, GA, USA.

Mauntel, M., Witt, N., Suh, J., Cudd, M., **Flavin, E**., (2026, accepted). Teaching the teachers: What AI student agents reveal about preservice teachers' noticing in statistics. *28th Annual Conference on Research in Undergraduate Mathematics Education* (February 26-28, 2026). VA, United States.

**Flavin, E.**, & *Castaneda, C. (2026, accepted). When and how students engage with augmented generative AI during mathematical modeling tasks. *2026 Annual Meeting of the American Educational Research Association* (April 8-12, 2026). CA, United States. [***Selected as one of the 10 highest ranked AERA SIG-Instructional Technology proposals***]

Hwang, S., **Flavin E.**, Chung, M. Application AR to improve volume measurement competency (넓이 측정 함양을 위한 AR 활용). The 2025 International Conference of the Korean Society of Mathematical Education, "Bridging Research and Classroom Practice for the Future of Mathematics Education" (pp. 82-83), November 14-16, 2025, Daegu, South Korea.

**Flavin, E.**, Witt, N., Suh, J., Panorkou, N., Chandler, K., Joseph, M., Mauntel, M., Jegede, K., & Shojaei, L., Year 3 of TechQuity Working Group. *Proceedings of the 47th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (October 26-29, 2025). PA, United States.

Witt, N., Jogede, K., **Flavin, E.**, Panorkou, N., Chandler, K., McCulloch, A., Suh, J., Joseph, M., & Mauntel, M. Report from year 2 of the TechQuity Working Group. *Proceedings of the 47th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (October 26-29, 2025). PA, United States.

**Flavin, E.**, & Flavin, M. (2024). Developing an augmented reality system for embodied mathematics learning. In Kosko, K. W., Caniglia, J., Courtney, S., Zolfaghari, M., & Morris, G. A., (2024). Proceedings of the forty-sixth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (pp. 1985–1989). Kent State University.

Witt, N., Chandler, K., **Flavin, E.**, Suh, J., Panorkou, N., McCulloch, A., Hollebrands, K., & Joseph, M. Working group proposal (Year 2): Conceptualizing the role of technology in equitable mathematics classrooms (Math TechQuity). In Kosko, K. W., Caniglia, J., Courtney, S., Zolfaghari, M., & Morris, G. A., (2024). Proceedings of the forty-sixth

annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (pp. 1985–1989). Kent State University.

Chandler, K., Witt, N., Suh, J., Hollebrands, K., McCulloch, A., **Flavin, E.,** Panorkou, N., Joseph, M., Yao, X. Working group report (Year 1): Conceptualizing the role of technology in equitable mathematics classrooms (Math TechQuity). In Kosko, K. W., Caniglia, J., Courtney, S., Zolfaghari, M., & Morris, G. A., (2024). Proceedings of the forty-sixth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education (pp. 2126–2135). Kent State University.

**Flavin, E.** (2024). The role of artificial intelligence for equitable mathematics teaching. *Proceedings of the Korean Society of Educational Studies in Mathematics* (pp. 2195–2197). Incheon, South Korea.

Hwang, S. & **Flavin, E.** (2024). The impact of augmented reality on mathematics performance: A meta-analysis. *Proceedings of the Korean Society of Educational Studies in Mathematics* (pp. 180–182). Incheon, South Korea.

Hwang, S., Lee, J., & **Flavin, E.** (2024). Analysis of preservice teachers' perception of open mathematical tasks (개방형 수학 과제에 대한 예비교사들의 인식 분석). Proceedings of the Korean Society of Elementary Mathematics Education 2024 Annual Conference. (pp. 75–78). Seoul, South Korea.

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## SCHOLARLY CONFERENCE PRESENTATION (*Research with a mentoring student)

**Flavin, E.** & Hwang, S. (Accepted, 2026, February 5-7). AI governance: Reconfiguring power and politics in mathematics education. 2025 Association of Mathematics Teacher Education

**Flavin, E.** (2024, December 6–7). *The role of artificial intelligence for equitable mathematics teaching* [Paper presentation].The Korean Society of Educational Studies in Mathematics 2024 62nd Annual Conference (December 5, 2024), Incheon, South Korea.

**Flavin, E.**, & Flavin, M. (2024, November 7–10). *Developing augmented reality system for embodied mathematics learning* [Brief report presentation]. North American Chapter of the International Group for the Psychology of Mathematics Education (PME–NA) 2024 46th Annual Conference. Cleveland, Ohio, United States.

Hwang, S., Lee, J., & **Flavin, E.** (2024, November 1–2. A study on the characteristics of open mathematical tasks developed by preservice teachers (예비교사들이 개발한 개방형 수학 과제의 특성 연구) [Paper presentation]. The Korean Society of Mathematical Education Fall Academic Conference. Suwon, South Korea.

**Flavin, E.**, Flavin, M, & Hwang, S. (2024, September 25–28). *Augmented reality: Integrating real-world into math classroom* [Paper presentation]. National Council of Teachers of Mathematics [NCTM] 2024 Annual Meeting & Exposition. Chicago, IL, United States.

Hwang, S., Lee, J., & **Flavin, E.** (2024, August 9). Analysis of preservice teachers' perception of open mathematical tasks (개방형 수학 과제에 대한 예비교사들의 인식 분석) [Paper presentation]. Korean Society of Elementary Mathematics Education 2024 Annual Conference. Seoul, South Korea.

Hwang, S. & **Flavin, E**. (2024, April 5–6). *International comparative study of mathematical modeling strategies* (수학적 모델링 전략 국제비교 연구) [Paper presentation]. 2024 Spring conference for the Korean Society of Mathematical Education. Busan, South Korea.

**Flavin, E.**, Flavin, M., Chung, M., Simeon, M., Marie, R.*, & Solari, M.* (2024, February 8–10). *Teaching mathematics at a Black immigrant church: Implications for mathematics teacher education* [Paper presentation]. Association of Mathematics Teacher Educators [AMTE] 2024 28th Annual Conference. Orlando, FL, United States.

**Flavin, E**., Lee, J., & Hwang, S. (2023, October 1–4). *Technology in mathematics education research: Analysis of the past four decades* [Poster presentation]. North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA) 2023 45th Annual Conference. Reno, NV, United States.

**Flavin, E.** & Hwang, S. (2023, April 13–16). *A systemic review on mathematics education and technology* [Paper presentation]. American Educational Research Association [AERA] Annual Meeting. Chicago, IL, United States.

**Flavin, E.** (2023, February 24–26). *Racialized identities and mathematics teacher education: White preservice teachers' teaching practices* [Paper presentation]. American Association of Colleges for Teacher Education (AACTE) 2023 75th Annual Conference. Indiana, MN, United States.

**Flavin, E.** & Hwang, S. (2022, November 17–20). *What knowledge is needed for teaching mathematics? Using topic modeling* [Poster presentation]. North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA) 2022 44th Annual Conference. Nashville, TN, United States.

**Flavin, E.** (2022, September 28–October 1). *Rich mathematical and computational tasks for grade 4-6 geometry: Using a language, Scratch* [Paper presentation]. National Councils of Teachers of Mathematics [NCTM] 2022 Annual Meeting & Exposition. Los Angeles, CA, United States.

Segel, M., **Cho, E.**, Hubacz, H., & Oliveira, G. (2022, April 21–26). *From gratitude to frustration: Two-way immersion parents' perceptions of school supports during COVID-*

*19* [Paper presentation]. American Educational Research Association [AERA] Annual Meeting. San Diego, CA, United States.

**Cho, E.**, Hwang, S., & Herosian, G.* (2022, April 6–8). *Three decades of research in mathematics teacher knowledge: Using text network modeling* [Paper presentation]. New England Educational Research Organization [NEERO] Annual Meeting. Portsmouth, NH, United States.

**Cho, E**. (2022, February 10–12). *Multilevel mediation structural modeling to assess whether attending a mathematics school can predict students' intention to pursue a mathematics-related field* [Manuscript Review Group]. Association of Mathematics Teacher Educators [AMTE] Annual Meeting. Henderson, NV, United States.

**Cho, E**., Hwang, S., & Herosian, G.* (2022, January 7). *Exploratory analysis on research in mathematics teacher knowledge* [Paper presentation]. National Councils of Teachers of Mathematics [NCTM] Research Conference. Virtual Meeting.

**Cho, E.**, Hubacz, H., Oliveira, G. (2021, Apr 8–12). *School community members at odds in dual language program implementation* [Paper presentation]. American Educational Research Association [AERA] Annual Meeting, Virtual Meeting.

Oliveira, G., **Cho, E.,** et al. (2021, Feb 26–27). *Im/migrant children and families' experiences in dual language education in Massachusetts* [Paper presentation]. 2021 Ethnography in Education Research Forum, Virtual meeting.

**Cho, E.** (2020, Dec 12) *Understanding the development of multi-ethnic students' mathematics achievement motivation* [Paper presentation]. 2020 International Conference of the Korean Society of Mathematical Education, Virtual meeting.

**Cho, E.**, Hwang, H., & Albert, L. (2020, Dec 12) *Understanding mathematics teachers' perception toward multicultural education* [Paper presentation]. 2020 International Conference of the Korean Society of Mathematical Education, Virtual meeting.

Chang-Bacon, C., **Cho, E.**, & Oliveira, G. (2020, Dec 2) *Community consciousness: Parallel parent and teacher perceptions of a two-way dual language immersion program* [Paper presentation]. Literacy Research Association (LRA) 70th Annual Conference, Virtual meeting.

**Cho, E**., Jeon, A. & Oliveira, G. (2020, Apr 17–21) *Promoting Latino family engagement in Catholic bilingual school* [Roundtable presentation]. AERA Annual Meeting. San Francisco, CA, United States. http://tinyurl.com/vpcyu4f

Chang–Chris, B., **Cho, E**., & Cruz, M, & Oliveira, G., (2020, Apr 17–21) *Parallel perceptions of two way immersion program implementation: How parents and teachers understand its merits* [Paper presentation]. AERA Annual Meeting San Francisco, CA, United States.

**Cho, E** & Hwang, S. (2019, April 25) *Why do multiethnic students in South Korea choose (not) to study mathematics over time?* [Paper presentation]. Lynch School of Education, Boston College, Chestnut Hill, MA, United States.

Hwang, S & **Cho, E**. (2019, April 5) *Exploring changes in multi-ethnic students' achievement motivation: A longitudinal study using expectancy-value theory* [Conference presentation]. Korean-American Educational Researchers Associations Annual Conference. Toronto, Canada.

**Cho, E**., & Hwang, S (2019, April 5) *Mathematics preservice teachers' culturally sustaining teaching strategies* [Conference presentation]. Korean-American Educational Researchers Associations Annual Conference. Toronto, Canada.

Kim, D., **Cho, E**., & Kim, S (2019, March 31–April) *Leveraging youth's diverse backgrounds to broaden participation in STEM through invention education* [Paper presentation]. NARST Annual International Conference. Baltimore, MD, United States.

Barnett, M., Kim, D., **Cho, E**., & Kim, S (2019, March 3) *Culturally relevant science: An invention program for middle school English Language Learners* [Paper presentation]. The American Association for Applied Linguistics [AAAL] Conference. Atlanta, GA, United States.

Kim, D., **Cho, E**., & Kim, S (2018, Oct 19) *Inventing the future: Leveraging cultural assets to create young STEM inventors (Culturally Relevant Science: English Language Learners' Experiences in a Modified Invention Science Curriculum)* [Paper presentation]. Diversity Challenge (The Institute for the Study and Promotion of Race and Culture), Chestnut Hill, MA, United States.

Kim, D., **Cho, E**., Mannion, P., Long, Y., & Zhou, S. (2018, April 25) *Fostering English Language Learner's reflection through multimodal digital storytelling* [Paper presentation]. Graduate Research Symposium, Lynch School of Education, Boston College, Chestnut Hill, MA, United States. [***Awarded the 1st Best Student Presentation***]

Kim, D., Mannion, P., Long, Y., Zhou, S., & **Cho, E**. (2018, March 24). *Middle school English Language Learner's multimodal digital storytelling* [Paper presentation]. The American Association for Applied Linguistics Conference. Chicago, Illinois, United States.

**Cho, E**. & Won, M. (2015, December 23). *An Analysis on Bahrom Character Education III Learning outcomes related OECD key Competency.* [Paper presentation]. Seoul Women's University, Seoul, Korea

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## RESEARCH REPORT

Oliveira, G., Becker, M., **Cho, E**., Segel., M., Haylea, H., Barbieri, O., and Alex, V. (2020). *Report on school climate survey – Potter Rd. Elementary School – Framingham Public*

*Schools.* The Framingham multilingual education department. Presented at Potter Rd. Elementary School teacher meeting Jan 27, 2020.

Shirley, D., Kim, D., Wortham, S., **Cho, E**., Lee, J., Kang, Y., Agostinelli, A., Kim, H., Yang, S., & Pu, M. (2019). *Hyukshin schools in Seoul, South Korea: An interim report*. Seoul Metropolitan Office of Education.

Seo, D., Kim, E., **Cho, E**., & Lim., K. (2016). A study on job development and employment support for immigrant youth. Rainbow Youth Center. Retrieved from http://m.rainbowyouth.or.kr/bbs/board3/11024

## OTHER ARTICLES

**Cho, E.** (2015). A study on current status and feature of a multicultural alternative school in Korea (국내 다문화 대안학교 현황과 특징에 관한 소고). *Korean Journal of Education Review*, 35, 227–253.

**Cho, E.** (2015). Sadang Dong +25: Poverty, culture, and research. *Korean Anthropology of Education Newsletter, 21*(4), 1–4.

**Cho, E.** (2014). Niki de Saintpale: Creative healing of suffering. *Korean Anthropology of Education Newsletter, 20*(1), 3–9.

## INVITED TALKS

*Designing AR and AI systems for learning: From K-12 to workforce training*. Pohang University of Science and Technology [POSTECH], Innovation Center for Education, June 20, 2025.

*Supporting immigrant students in schools and communities: Technology-integrated STEM Education*. Johns Hopkins University, School of Education, December 4, 2023.

*Korea's innovative (Hyukshin) School movement and curriculum*. Deokseong women's university (Prof. So Yoon Kim), Oct 13 & Oct 15, 2020.

*Current status of multiculturalism in Korea and understanding of multiculturalism*. Seoul Women's University (Prof. Teresa Pyeon), May 11, 2017.

*Research Project on Immigrant Education in South Korea*. Seoul Women's University (Prof. Soo-Young Kim), May 17, 2016.

## TEACHING EXPERIENCE and PROGRAM DEVELOPMENT

**Georgia Institute of Technology**
***Senior Research Scientist***

Mechatronics and Motivation (In-person) (Undergraduate and graduate, Spring/Fall 2025)

**Stonehill College**
***Assistant Professor***
***Graduate Courses***

EDU 609 (In-Person) – Educational Equity and Inclusivity (Graduate, Spring/Summer 2024)
EDU 610 (In-Person) – Contemporary Issues in Education (Graduate, Spring/Summer 2024)
EDU 621 (In-Person) – Teaching Math to Students with Disabilities (Graduate, Fall 2023)
EDU 623 (In-Person) – Teaching Content Math to Middle & High School Students with Disabilities (Graduate, Fall 2023)
EDU 655 (In-Person) – Mathematics Teaching and Learning in the Middle School
EDU 644 (In-person) – EDU 644: Graduate Practicum: GEMS (Math/Science 5–8) (Spring 2024) **Note*: As a program supervisor

***Undergraduate Courses***

EDU 301 (In-Person) – Assessment and Analysis in Education (Undergraduate, Fall 2021, Spring/Fall 2022, Spring/Fall 2023)
MTH 143 (In-Person) – Mathematical Reasoning for Education (Undergraduate, Spring/Fall 2022, Spring 2023)
EDU 320 (In-Person) – Teaching Mathematics, Science, and Technology (Undergraduate, Fall 2021, Spring/Fall 2022)
EDU 315 (In-Person) – Curriculum and Instruction (Undergraduate, Fall 2021)
EDU 435 (In-person) – Practicum: Elementary Education 1-6 (Undergraduate, Spring 2021) **Note*: As a program supervisor
Directed Study (In-person) – Data Science in Education (Undergraduate, Fall 2022)
Directed Study (In-person) – Teaching Mathematics, Science, and Technology [Secondary Education] (Undergraduate, Fall 2022)

***Supervising***

EDU 644 (In-person) – Graduate Practicum: GEMS (Math/Science 5–8)
EDU 435 (In-person) – Practicum: Elementary Education 1–6

***Syllabus Development for STEM Teacher Education Program Development***

EDU 624: Mathematics Teaching & Learning in the Elementary Grades
EDU 625: Number and Operations
EDU 626: Functions and Algebra
EDU 627: Geometry and Measurement
EDU 628: Probability, Statistics, and Data Analysis

**Boston College**
***Instructor***

EDUC 7520 (Hybrid) – Mathematics and Technology: Teaching, Learning, Curriculum in the Elementary School (Graduate, Spring 2021)
EDUC 7301 (Online) – Teaching, Curriculum, and Learning Environments (Graduate, Fall 2020)
EDUC 7305 (Online) – Globalization, Migration, and Education (Graduate, Summer 2021)

***Teaching Assistant***

EDUC 7301 (Online) – Teaching, Curriculum, and Learning Environments (Graduate, 2018)
EDUC 9819 (In-person) – Educational Change: Communication of Innovations (Graduate, 2018)
Supervising Practicums (In-person) – Using a mixed-reality simulation program (Graduate, Fall 2017)

**Korea National Open University**

***Lecturer***

Life Development and Education (Undergraduate, 2015, 2016; Department of Lifelong learning *Lecture per one semester and mid-term exam evaluator)

## MENTORING and ADVISING

### Mentoring Recognition

| | |
|---|---|
| 2024 | Mentor nominee, 2024 Tri-Alpha inaugural induction ceremony and reception at Stonehill (Inductee, Marissa Solari) |
| 2023 | Supporting a mentee (RA) for the NCTM scholarship Link |
| | Selected mentor honoree, 2023 Senior class gift honoree at Stonehill Link |
| | Mentor nominee, 2023 Tri-Alpha inaugural induction ceremony and reception at Stonehill (Inductee, Gina Herosian) |

### Academic Advisor

| | |
|---|---|
| 2023 Fall – 2024 Spring | 4 graduate advisees (Graduate Math/Science program) & all graduate students in grad teacher education program at Stonehill |
| 2022 Fall – 2023 Spring | 36 undergraduate advisees, Stonehill College |
| 2021 Fall – 2022 Spring | 19 undergraduate advisees, Stonehill College |

### Research Mentoring

| | |
|---|---|
| 2022–2023 | 2 research assistants and 2 teaching assistants, Stonehill College |
| 2021–2022 | 2 research assistants, Stonehill College |
| 2020–2021 | Doctoral student mentor (1 doctoral student), Boston College |
| 2019–2020 | 4 doctoral students and 3 undergraduate students for the Hyukshin school research project, Boston College |

| | |
|---|---|
| | 1 graduate student in the survey team of G. Oliveira's research project |

## PROFESSIONAL DEVELOPMENT

| | |
|---|---|
| 2025 | Instructor workshop for the summer mathematical modeling program at Horizons at Georgia Tech (Rising 9th graders). Funded by the AERA Grant. Georgia Institute of Technology (June 1 – June 3) |
| 2023 | Results from a survey on parental and teacher perception of Portuguese-English bilingual program. Potter Road Elementary School, Framingham, Massachusetts (June 1 – June 3) |
| 2017 | Collaborative coaching and learning program. Epiphany Middle School, Dorchester, Massachusetts |

## COMMUNITY ENGAGEMENT

| | |
|---|---|
| 2025 | AI for Parent Initiative<br>- Presenter at Forsyth County Public Library, GA. (March 6)<br>- Co-lead for the AI4OPT parent session at Paul Duke STEM High at Norcross, GA (November 13) |
| 2025 | Summer mathematical modeling program at Horizons at Georgia Tech (Rising 9th graders). Funded by the AERA Grant. Georgia Institute of Technology (June 12–July 17) |
| 2023 | Summer mathematical modeling program in partnership with STEM for All Brockton (Rising 3rd to 7th graders). Funded by Avanade Tech Grant (May 6–June 17th) |

## UNIVERSITY SERVICE

**Georgia Institute of Technology**

| | |
|---|---|
| 2025–Present | AI for Education Council, College of Engineering |
| 2025–Present | Instructional Technology, Research and Learning Laboratory Committee, College of Lifetime Learning |

**Stonehill College**

| | |
|---|---|
| 2023–Present | Led development of two new mathematics education programs for teacher licensure in Massachusetts (Mathematics 1–6, Mathematics 5–8) |

| | |
|---|---|
| 2023–Present | Diversity, Equity, and Inclusion Committee, University-level |
| 2021–Present | Affiliated Faculty, Faculty of Color Association |
| 2022–Present | Faculty Advisor, Stonehill College Dance Club |
| 2022–2023 | Assistant Director of Accreditation and Assessment Search Committee, Education Studies Department |
| 2022 | Affiliated Faculty, Book Talk (Whistling Vivaldi: How stereotypes affect us and what we can do) |

## SERVICE TO THE PROFESSION

**Committee**

| | |
|---|---|
| 2025 | Organizing Committee (Role: Chief Marketing Officer), US-Korea Industry Showcase (UKIS), Atlanta, Georgia (August 5–6, 2025) |
| 2024–2027 | Research Committee, The Association of Mathematics Teacher Educators |

**Ad-Hoc Journal Reviewer**

| | |
|---|---|
| 2025 | *Digital Experiences in Mathematics Education* |
| 2022–Present | *Mathematics Teacher: Learning and Teaching PK-12* |
| 2022–Present | *Education and Information Technologies* |
| 2022 | *Asia Pacific Journal of Education* |
| 2022 | *Research in Mathematical Education* |
| 2021– Present | *Journal of Educational Research in Mathematics* |

**Ad-Hoc Conference Proposal Reviewer**

| | |
|---|---|
| 2025 | STEAM leadership conference 2025 |
| 2022 | The Association of Mathematics Teacher Educators |

**Others**

| | |
|---|---|
| 2024-2025 | Lead, AI Subgroup, Math TechQuity Working Group at the PME-NA |
| 2018–2019 | Chairperson, Boston College Korean Graduate Student Association |
| 2008–2009 | Chairperson, Multicultural Education Club (Activity: Tutoring and mentoring immigrant children), Daegu National University of Education |

## HONOR, AWARD, & SCHOLARSHIP

| | |
|---|---|
| 2023, 2024 | Awarded as an Early Career BIPOC Faculty Mentee, The Association of Mathematics Teacher Educators |
| 2022 | Selected Mentee, Manuscript Review Group, The Association of Mathematics Teacher Educators |

| | |
|---|---|
| 2022 (March) | The "Professor of the Month" Award, National Residence Hall Honorary, Stonehill College, Easton, MA. |
| 2018 | The Best Student Presentation Award, Graduate Research Symposium, Lynch School of Education, Boston College, Chestnut Hill, MA |
| 2017–2021 | Fully Funded Ph.D. Scholarship — Stipend and Tuition Waiver, Boston College. |
| 2018–2020 | Travel Grants at Boston College<br>(a) Lynch Doctoral Student Travel Grant 2020 ($500); 2019 ($500); 2018 ($400)<br>(b) Boston College Graduate Student Association (GSA) 2021 ($130);<br>(c) Boston College Graduate Education Association (GEA) 2021 ($125); 2018 ($120) |
| 2011–2012 | Superior Academic Performance, Seoul National University |
| 2011–2012 | Lecture & Research Scholarship, Seoul National University |
| 2009–2010 | Superior Academic Performance Scholarship, Daegu National University of Education |

## CERTIFICATES

| | |
|---|---|
| 2021 (Jun 24–30) | Certificate of Achievement, Computer Science Crash Course 2021, Krause Center for Innovation at Foothill College |
| 2020 (Feb 6–8) | Selected Attendee, 2020 National Assessment of Education Progress (NAEP) Data Training Workshop, American Institutes for Research (AIR) |
| 2007 | Teaching Certifications: Elementary School Teacher License, South Korea |

## PROFESSIONAL AFFILIATIONS

| | |
|---|---|
| 2022–Present | North American Chapter of the International Group for the Psychology of Mathematics Education [PME–NA]<br>*Note*. Affiliated working group: Conceptualizing the role of technology in equitable mathematics classrooms (Math TechQuity) |
| 2022–2024 | American Association of Colleges for Teacher Education [AACTE] |
| 2021–Present | The Association of Mathematics Teacher Educators [AMTE] |
| 2021–Present | National Council of Teachers of Mathematics [NCTM] |
| 2021–Present | Faculty of Color Association [FOCA], Stonehill College |
| 2017–Present | American Educational Research Association [AERA] |
| 2025–Present | The International Society of the Learning Sciences |
| 2025–Present | Korean-American Scientists and Engineers Association |