

## Hollylynne S. Lee

Distinguished Professor of Mathematics and Statistics Education  
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### Academic Background

*University of Virginia*

Ph.D. in Mathematics Education, advisor Joe Garofalo, May 2000

Dissertation: Children's Probabilistic Reasoning with a Computer Microworld

*College of William and Mary*

M.A.Ed. in Secondary Education--Mathematics, 1995

*The Pennsylvania State University*

B.S. in Secondary Mathematics Education, 1991

### University Experience

*North Carolina State University* August 2000-current

Department of Science, Technology, Engineering, and Mathematics Education

- Distinguished Professor of Mathematics & Statistics Education, October 2021
- Professor of Mathematics & Statistics Education, May 2013-2021
- Associate Professor of Mathematics Education, May 2006-2013
- Assistant Professor of Mathematics Education, August 2000 – May 2006

Friday Institute for Educational Innovation

- Interim Associate Dean, Friday Institute, June –December 2022 (in leadership partnership with interim Executive Director Shaun Kellogg as we co-led the FI during the search for a new Executive Director/Associate Dean)
- Senior Faculty Fellow, May 2014-current
- Director of HI-RiSE: A Hub for Innovation and Research in Statistics Education, May 2015-present

*Baylor University* January – May 2023

Department of Curriculum and Instruction, School of Education

- Visiting Faculty in Residence, Robert Foster Cherry Award
- Teaching MTH 3318 *Data and Chance* and TED 4349 *Critical Issues in Mathematics Education*

*University of Virginia* Fall 1996 - Spring 2000

Graduate Fellow for the Center for Technology and Teacher Education, 1997-2000

Adjunct Instructor for the Division of Continuing Education, 1997-2000

Graduate Assistant in Dept. of Curriculum, Instruction, and Special Education, 1996-97

*College of William and Mary* 1994-96

Graduate Assistant for Mathematics Education and Special Education

## K-12 Teaching Experience

*Garner High School* (Garner, NC) Fall 2000

Collaborated and co-taught AP Statistics with regular classroom teacher

*Virginia Murray Elementary School* (Charlottesville, VA) 1997 - 1998

Collaborated and co-taught 1<sup>st</sup> & 3<sup>rd</sup> grade mathematics with regular classroom teacher

*Venable Elementary School* (Charlottesville, VA) Spring 1997

Taught 4th grade after-school mathematics enrichment class

*Toano Middle School* (Williamsburg, VA) 1994 - 95

Taught 8th grade Algebra I

*First Flight Middle School* (Kill Devil Hills, NC) Jan 1992-June 1994

Taught 8th grade Algebra I & Pre-Algebra.

*Manteo High School* (Manteo, NC) Summer 1992

Taught Algebra I and Geometry

## Honors, Awards, and Recognition

- 2022 Nominated and selected for planning committee for the National Academies workshop on Foundations for Data Science in K-12, April-October 2022 (event held September 2022)
- 2022 Selected as co-chair for the professional development efforts sponsored by the joint committee of the American Statistical Association and the National Council of Teachers of Mathematics.
- 2022 Recipient of the 2022 *Robert F. Cherry Award for Great Teaching*, a national award given by Baylor University <https://ced.ncsu.edu/news/meet-cherry-award-recipient-hollylynne-lee/>
- 2021 First place winner of the Bite-Sized Lesson Plan contest from Data Science 4 Everyone, *The Thrills of Roller Coasters: Using Data to Make Recommendations* (Full author team: Hollylynne Lee, Gemma Mojica, Emily Thrasher, Zachary Vaskalis, Bruce Graham). <https://www.datascience4everyone.org/post/data-science-for-everyone-ds4e-announces-bite-sized-lesson-plan-competition-winners>
- 2021 Named one of three finalists for the 2022 *Robert F. Cherry Award for Great Teaching*, a national award given by Baylor University [https://www.baylor.edu/cherry\\_awards/index.php?id=968226](https://www.baylor.edu/cherry_awards/index.php?id=968226)
- 2020 Named a *Fellow* of the *American Statistical Association*, awarded for excellence and advocacy in data science and statistics education and professional development of teachers
- 2020 *UNC Board of Governor's Award for Excellence in Teaching*, College level awardee and NC State awardee
- 2019 Named a *Fellow* of the *International Society for Design and Development in Education*
- 2019 *UNC Board of Governor's Award for Excellence in Teaching*, College level awardee and nominee for University level selection (not selected at university level).
- 2018 Awarded the *RTI University Faculty Scholar* for 2018-2019. This award provided funds for partial release time from NC State to work on collaborative projects with research scientists at RTI. The focus of work was on ways to infuse more data science in K-12 settings.
- 2018 Finalist for *NC State Outstanding Graduate Mentor* award. Not awarded at university level.

- 2017 College of Education nominee for the *Alumna Distinguished Undergraduate Professor* award. Not awarded at university level.
- 2016 Nominated as lead designer for the Teaching Statistics Through Data Investigations MOOC for Educators course for the *Prize for Excellence in Educational Design* by the International Society for Design and Development in Education, not awarded.
- 2014 Appointed by American Statistical Association as *Editor* of STEW [Statistics Education Web: An online journal of K-12 statistics lessons].
- 2014 Selected by editor to serve as member of *Editorial Board* for journal *Mathematical Thinking and Learning*.
- 2014 Named a *Friday Senior Faculty Fellow* at the Friday Institute for Educational Innovation
- 2014 Received *Outstanding Teaching Award* and became member of Academy of Outstanding Teachers at NC State University.
- 2014 Selected for *Alumnae Association Outstanding Teacher Award*.
- 2014 Nominated by College of Education for *Outstanding Research Award*, but not selected at University level.
- 2013 Named an NC State *University Faculty Scholar*.
- 2013 Selected by editor to serve as an *Associate Editor* for *Statistics Education Research Journal*.
- 2012 Awarded the *National Technology Leadership Initiative Fellowship for Mathematics Education*, co-sponsored by the Society for Technology and Teacher Education and Association of Mathematics Teacher Education, for best research paper "Teachers' Statistical Problem Solving with Dynamic Technology: Research Results Across Multiple Institutions."
- 2009-11 Elected *Eastern Regional College Vice President* for the NC Council of Teachers of Mathematics.
- 2008-09 Selected by Board to serve as *Co-Editor* of the Sixth Monograph of the Association of Mathematics Teacher Educators.
- 2002 Awarded the *National Technology Leadership Initiative Fellowship for Mathematics Education*, co-sponsored by the Society for Technology and Teacher Education and Association of Mathematics Teacher Education for best research.
- 2000 Received *Honorable Mention in the Learning Software Design Competition* for Probability Explorer sponsored by the University of Minnesota Design Institute.
- 1999 Received a *Dissertation Research Award* from the Curry School of Education.
- 1998 Awarded 1st place in grade 3-5 category for "Do Vampires Really Exist?" and 2nd place in grade 9-12 category for "Analyzing the Relationship Between Smoking and Lung Cancer" in *Microsoft/ASCD lesson plan contest*.
- 1995-96 Elected *Vice-President of Kappa Delta Pi*, educational honor society, College of William and Mary.
- 1996 Awarded *Nelson Memorial Scholarship*, for dedication to teaching and learning, College of William and Mary.
- 1993 Nominated by Dare County, NC, for *National Sallie Mae First Year Teacher*.

## Scholarship (previously published under H. S. Drier and H. Stohl)

Google Scholar Profile: <http://scholar.google.com/citations?user=q14UEEIAAAAJ>

### Refereed Journal Articles

- Lee, H. S., Mojica, G. F., Thrasher, E. P., & Baumgartner, P. (2022). Investigating data like a data scientist: Key practices and processes. *Statistics Education Research Journal* 21(2), <https://doi.org/10.52041/serj.v21i2.41>
- Lee, H. S., Mojica, G. M., & Thrasher, E. P. (2022). Digging into data: Illustrating a data investigation process. *Statistics Teacher* (Spring issue posted March 23). Available online. <https://www.statisticsteacher.org/2022/03/23/diggingdata/>
- Cavey, L. O., Lee, H. S., Hernandez, M., & Yokley, K. (2022). Online tools to support mathematical modeling and community building. *The Centroid* 47(2), 11-17. Available online. <https://www.ncctm.org/activities/the-centroid1/centroid-issue-archive/spring-2022/>
- Lee, H. S., Vaskalis, Z. T., Stokes, D. J., & Harrison, T. R. (2022). A look into the AP Statistics classroom: Who teaches it and what aspects of statistics do they emphasize? *CHANCE* 35(1), 38-47. <https://doi.org/10.1080/09332480.2022.2039028>
- Lee, H. S., & Harrison, T. (2021). Trends in teaching Advanced Placement Statistics: Results from a national survey. *Journal of Statistics and Data Science Education* 29(3), 317-327. [www.tandfonline.com/doi/full/10.1080/26939169.2021.1965509](http://www.tandfonline.com/doi/full/10.1080/26939169.2021.1965509)
- Woodard, V., & Lee, H. S. (2021). How students use statistical computing in problem solving. *Journal of Statistics and Data Science Education*, 145-156. <https://doi.org/10.1080/10691898.2020.1847007>
- Williams, D. A., Cudd, M. D., Hollebrands, K., & Lee, H. S. (2020). Beginning high school teachers' organization of students for learning and methods for teaching mathematics. *PNA Journal of Research in Mathematics Teaching* 15(1), 51-68. <https://revistaseug.ugr.es/index.php/pna/article/view/pna.v15i1.10748>
- Lee, H. S., Mojica, G.F., & Lovett, J.N. (2020). Examining how online professional development impacts teachers' beliefs about teaching statistics. *Online Learning*, 24(1), 5-27. <https://doi.org/10.24059/olj.v24i1.1992>
- Hollebrands, K. F., & Lee, H. S. (2020). Effective designs of Massive Open Online Courses for mathematics teachers to support their professional learning. *ZDM Mathematics Education* 52(5), 859-875. <https://doi.org/10.1007/s11858-020-01142-0>
- Woodard, V. L., Lee, H. S., & Woodard, R. (2020). Writing assignments to assess statistical thinking. *Journal of Statistics Education* 28(1), 32-44. <https://doi.org/10.1080/10691898.2019.1696257>
- Akoglu, K., Lee, H. S., & Kellogg, S. (2019). Participating in a MOOC and professional learning team: How a blended approach to professional development makes a difference. *Journal of Technology and Teacher Education* 27(2), 129-163.
- Mojica, G. F., Azmy, C. A., & Lee, H. S. (2019). Exploring data with CODAP. *Mathematics Teacher*, 112(6), 473-476.
- Harrell-Williams, L., Lovett, J. N., Lee, H. S., Pierce, R., Sorto, A., & Lesser, L. (2019). Validation of scores from the high school version of the Self-Efficacy to Teach Statistics instrument using preservice mathematics teachers. *Journal of Psychoeducational Assessment* 37(2), 194-208. <https://doi.org/10.1177/0734282917735151>

- Lovett, J. & Lee, H. S. (2018). Preservice secondary mathematics teachers' preparedness to teach statistics: A call for reform. *Journal of Statistics Education* 26(3), 214-222. <https://doi.org/10.1080/10691898.2018.1496806>.
- He, R., & Lee, H. S. (2018). Classroom implementation strategy for statistical investigation activities - Introduction to the SASI Framework. *Foreign Primary and Secondary Education* 11, 62-70. [Published in Chinese]. Available at <http://kns.cnki.net>.
- McCulloch, A. W., Hollebrands, K. F., Lee, H. S., Harrison, T. R., & Mutlu, A. (2018). Factors that influence secondary mathematics teachers' uses of technology. *Computers & Education* 123, 26-40. <https://doi.org/10.1016/j.compedu.2018.04.008>.
- Harrison, T. R. & Lee, H. S. (2018). iPads in the mathematics classroom: Developing criteria for selecting appropriate learning apps. *International Journal of Education in Mathematics Science and Technology* 6(2), 155-172.
- Lovett, J. N. & Lee, H. S. (2017). Incorporating multiple technologies into teacher education: A case of developing preservice teachers' understandings in teaching statistics with technology. *Contemporary Issues in Technology and Teacher Education* 17(4), 440-457. Retrieved from <http://www.citejournal.org/volume-17/issue-4-17/mathematics/incorporating-multiple-technologies-into-teacher-education-a-case-of-developing-preservice-teachers-understandings-in-teaching-statistics-with-technology>.
- Lee, H. S., & Stangl, D. (2017). Design and implementation of professional development MOOCs for teachers of statistics. *AMSTAT News (Special issue on Statistics Education)*, September, Available online: [http://magazine.amstat.org/blog/2017/09/01/pd\\_teachers/](http://magazine.amstat.org/blog/2017/09/01/pd_teachers/)
- Lovett, J. N., & Lee, H. S. (2017). New standards require teaching more statistics in high school: Are preservice mathematics teachers ready? *Journal of Teacher Education* 68(3), 299-311. <http://journals.sagepub.com/doi/10.1177/0022487117697918>  
[JTE featured an interview with us about this article in their [Insiders Blog](#) in September 2017. The interview was picked up by EdPrepMatters and redistributed [on their website](#).]
- Campbell, M. P., & Lee, H. S. (2017). Examining secondary mathematics teachers' opportunities to develop mathematically in professional learning communities. *School Science and Mathematics* 117(3-4), 115-126.
- Lee, H. S., Doerr, H. M., Tran, D., & Lovett, J. N. (2016). The role of probability in developing learners' models of simulation approaches to inference. *Statistics Education Research Journal*, 15(2), 216-238. Online: [http://iase-web.org/documents/SERJ/SERJ15\(2\)\\_Lee.pdf](http://iase-web.org/documents/SERJ/SERJ15(2)_Lee.pdf).
- Hollebrands, K. F., Lee, H. S. (2016). Characterizing questions and their focus when pre-service teachers implement dynamic geometry tasks. *Journal of Mathematical Behavior* 43, 148-164.
- Lovett, J. N., & Lee, H. S. (2016). Making sense of data: Context matters. *Mathematics Teaching in the Middle School* 21(6), 338-346.
- Lee, H. S., & Stangl, D. (2015). Professional development MOOCs for teachers of statistics in K-12. *Chance* 28(3), 56-63. Online: <http://dx.doi.org/10.1080/09332480.2015.1099368>
- Starling, T., & Lee, H. S. (2015). Synchronous online discourse in a technology methods course for middle and secondary prospective mathematics teachers. *Contemporary Issues in Technology and Teacher Education*, 15(2), 106-125. <http://www.citejournal.org/vol15/iss2/mathematics/article2.cfm>

- Thrasher, E. P., Perry, A. F., & Lee, H. S. (2014). High leverage iPad apps for the mathematics classroom. *Mathematics Teacher* 107(9).
- Lee, H. S., Kersaint, G., Harper, S., Jones, D. L., Driskell, S. O., Leatham, K., Angotti, R., & Adu-Gwamfi, K. (2014). Prospective teachers' use of transnumeration in solving statistical tasks with dynamic statistical software. *Statistics Education Research Journal*, 13(1), 25-54. [authors in order of contribution, Lee 50%, Kersaint 20%, others shared 30%]
- Lee, H. S., Starling, T. T., & Gonzalez, M. D. (2014). Connecting research to practice: Using data to motivate empirical sampling distributions. *Mathematics Teacher* 107(6), 465-469.
- Lee, H. S., Harper, S., Driskell, S. O., Kersaint, G., & Leatham, K. (2012). Teachers' statistical problem solving with dynamic technology: Research results across multiple institutions. *Contemporary Issues in Technology and Teacher Education* 12(3), [Online Serial].
- Lee, H. S., & Lee, J. T. (2011). Enhancing prospective teachers' coordination of center and spread: A window into teacher education material development. *The Mathematics Educator*, 21(1), 33-47.
- Wilson, P. H., Lee, H. S., & Hollebrands, K. F. (2011). Understanding prospective mathematics teachers' processes for making sense of students' work with technology. *Journal for Research in Mathematics Education*, 42(1), 42-67. [Authors contributed equally, order is reverse alphabetical.]
- Wilson, P. H., Lee, H. S., & Hollebrands, K. F. (2010). An alternative development of measures of center and spread using dynamic diagrams. *Centroid* 36(2), p. 6-11.
- Lee, H. S., Angotti, R. L., & Tarr, J. E. (2010). Making comparisons between observed data and expected outcomes: Students' informal hypothesis testing with probability simulation tools. *Statistics Education Research Journal*, 9(1), 68-96.
- Lee, H. S., & Lee, J. T. (2009). Reasoning about probabilistic phenomena: Lessons learned and applied in software design. *Technology Innovations in Statistics Education* 3(2).
- Lee, H. S., & Hollebrands, K. (2008). Preparing to teach mathematics with technology: An integrated approach to developing technological pedagogical content knowledge. *Contemporary Issues in Technology and Teacher Education* [Online serial], 8(4).
- Weber, K., Maher, C., Powell, A., & Lee, H. S. (2008). Learning opportunities from group discussions: Warrants become the objects of debate. *Educational Studies in Mathematics* 68(3), 247-261.
- Lee, H. S., & Hollebrands, K. (2006). Students' use of technological features while solving a mathematics problem. *Journal of Mathematical Behavior* 25(3), 252-266.
- Underwood, J., Hoadley, C., Lee, H. S., Hollebrands, K. F., DiGiano, C., & Renninger, K. A. (2005). IDEA: Identifying design principles in educational applets. *Educational Technology Research and Development* 53(2), 99-112.
- Lee, H. S. (2005). Facilitating students' problem solving: Prospective teachers' learning trajectory in a technological context. *Journal of Mathematics Teacher Education* 8(3), 223-254.
- Kersaint, G., Horton, B., Stohl, H., & Garofalo, J. (2003). Technology beliefs and practices of mathematics education faculty. *Journal of Technology and Teacher Education* 11(4), 549-577.

- Stohl, H., & Tarr, J. E.** (2002). Developing notions of inference with probability simulation tools. *Journal of Mathematical Behavior* 21(3), 319-337.
- Stohl, H.** (2002). Using electronic tools to investigate rational number relationships. *ON-Math: The Online Journal of School Mathematics* 1(1), [On-line serial [http://my.nctm.org/eresources/view\\_article.asp?article\\_id=2071](http://my.nctm.org/eresources/view_article.asp?article_id=2071)].
- Drier, H. S.** (2001). Teaching and learning mathematics with interactive spreadsheets. *School Science and Mathematics* 101(4), 170-179.
- Drier, H. S.** (2001). Conceptualization and design of Probability Explorer: A research-based journey towards innovative educational software. *Tech Trends* 45(2), 22-24. [invited article]
- Harper, S. R., Schirack, S. O., **Stohl, H.**, & Garofalo, J. (2001). Learning mathematics and developing pedagogy with technology: A reply to Browning and Klespis. *Contemporary Issues in Technology and Teacher Education*, 1(3) [Online serial <http://www.citejournal.org/vol1/iss3/currentissues/mathematics/article1.htm>].
- Vasquez-Levy, D., Garofalo, J., Timmerman, M., & **Drier, H. S.** (2001). Teacher's rationales for scoring students' problem solving work. *School Science and Mathematics* 101(1), 43-48.
- Drier, H. S.** (2000). The Probability Explorer: A research-based microworld to enhance children's intuitive understandings of chance and data. *Focus on Learning Problems in Mathematics* 22(3-4), 165-178. [Special issue on technology and mathematics.]
- Drier, H. S.** (2000). Investigating mathematics as a community of learners. *Teaching Children Mathematics* 6(6), 358-363. [Special issue on children as mathematicians.]
- Garofalo, J., **Drier, H. S.**, Harper, S. R., Timmerman, M.A., & Shockey, T. (2000). Promoting appropriate uses of technology in mathematics teacher preparation. *Contemporary Issues in Technology and Teacher Education*, 1(1), 66-88. [Online serial <http://www.citejournal.org/vol1/iss1/currentissues/mathematics/article1.htm>].
- Drier, H. S.** (1999). Do vampires exist? Using spreadsheets to investigate a common folktale. *Learning and Leading with Technology* 27(1), 22-25.
- Drier, H. S.**, Dawson, K., & Garofalo, J. (1999). Technology, mathematics, and interdisciplinary connections: Not your typical math class. *Educational Leadership* 56(5), 21-25.
- Drier, H. S.**, & Lee, J. K. (1999). Learning about climate: An exploration in geography and mathematics. *Social Studies and the Young Learner* 12(1), 6-10.
- Drier, H. S.** (1998). How are graphing calculators used in mathematics classrooms? Teachers' beliefs and practices. *Curry Journal of Education* (1), 39-50.
- Heinecke, W., & **Drier, H. S.** (1998). Research for better classroom practices and policy. *Educational Forum* 62, 273-280.

## Books

- Batanero, C., Chernoff, E., Engel, J., **Lee, H. S.**, & Sanchez, E. (2016). *Research in teaching and learning probability: An International Congress of Mathematical Education Topical Survey*. (40 pages), Springer. <http://www.springer.com/us/book/9783319316246> [authors in alphabetical order]

- Hollebrands, K. F., & Lee, H. S. (2012). *Preparing to teach mathematics with technology: An integrated approach to geometry*. (170 pages). Dubuque, IA: Kendall Hunt Publishers.
- Lee, H. S., Hollebrands, K. F., & Wilson, P. H. (2010). *Preparing to teach mathematics with technology: An integrated approach to data analysis and probability*. (160 pages) Dubuque, IA: Kendall Hunt Publishers.
- Mewborn, D. M., & Lee, H. S. (Eds). (2009). *Scholarly practices and inquiry in the preparation of mathematics teachers: The sixth monograph of the Association of Mathematics Teacher Educators*. San Diego, CA: Association of Mathematics Teacher Educators.

### Refereed Book Chapters

- Lovett, J. N., McCulloch, A. W., Dick, L. K., Cayton, C., Lee, H. S., & Hollebrands, K. F. (in press). Preparing secondary prospective mathematics teachers to teach with technology. In (Ed.), *Reflection on Past, Present and Future: Paving the Way for the Future of Mathematics Teacher Education* (AMTE Professional Series Volume 5). Information Age Publishers.
- Lee, H. S. Hudson, R., Casey, S., Mojica, G., & Harrison, T. (2021). Online curriculum modules for preparing teachers to teach statistics: Design, implementation, and results. In K. F. Hollebrands, R. Anderson, & K. Oliver (Eds.), *Online Learning in Mathematics Education* (pp. 65-93), Springer.
- Harrell-Williams, L., Lovett, J. N., Lesser, L., Lee, H. S., Pierce, R., Murphy, T. J., & Sorto, A., (2019). Measuring self-efficacy to teach statistics in grades 6-12 mathematics teachers. In J. Bostic, E. Krupa, & J. Shih (Eds.), *Assessment in Mathematics Education Contexts: Theoretical Frameworks and New Directions* (pp. 147-171). New York, NY: Routledge.
- Avineri, T., Lee, H. S., Lovett, J. N., Tran, D., & Gibson, T. (2018). Design and impact of MOOCs for mathematics teachers. In J. Silverman & V. Hoyos (Eds.), *Distance Learning, E-Learning and Blended Learning of Mathematics: International Trends in Research and Development* (pp. 185-200). Springer: Cham, Switzerland
- Lee, H. S. (2018). Probability concepts needed for teaching a repeated sampling approach to inference. In C. Batanero & E. Chernoff (Eds.), *Teaching and Learning Stochastics: Advances in Probability Education Research* (pp. 89-102). Springer: Cham, Switzerland
- Arnold, P., Confrey, J., Jones, S., Lee, H. S., & Pfannkuch, M. (2018). Learning trajectories in statistics education. In D. Ben-Zvi, K. Makar, & J. Garfield, (Eds.), *International Handbook of Statistics Education* (pp. 295-326). Springer: Cham, Switzerland. [authors in alphabetical order, invited refereed]
- Hollebrands, K. F., McCulloch, A., & Lee, H. S. (2016). Prospective teachers' incorporation of technology in mathematics lesson plans. In M. Niess, S. Driskell, & K. F. Hollebrands (Eds.), *Handbook of research on transforming mathematics teacher education in the digital age* (pp. 272-292). Hershey, PA: IGI Global. [blind refereed]
- Lee, H. S. (2013). Quantitative reasoning in a digital world: Laying the pebbles for future research frontiers. In R. L. Mayes & L. L. Hatfield (Eds.), *Quantitative Reasoning in Mathematics and Science Education: Papers from an International STEM Research Symposium, WISDOM e Monograph #3* (pp. 65-82). Laramie, Wyoming: University of Wyoming College of Education. [Invited refereed chapter]  
<http://www.uwyo.edu/wisdome/files/documents/lee.pdf>



- Lee, H. S., & Lee, J. T.** (2011). Simulations as a path for making sense of probability. In K. Hollebrands & T. Dick (Eds). *Focus in High School Mathematics on Reasoning and Sense Making with Technology* (pp. 69-88). Reston, VA: National Council of Teachers of Mathematics. [Invited refereed chapter]
- Lee, H. S., & Hollebrands, K. F.** (2011). Characterizing and developing teachers' knowledge for teaching statistics. In C. Batanero, G. Burrill, C. Reading, & A. Rossman (Eds.), *Teaching Statistics in School Mathematics - Challenges for Teaching and Teacher Education: A joint study of the International Commission of Mathematics Instruction and International Association of Statistical Education* (pp. 359-369), Springer. [Invited refereed chapter]
- Lee, H. S., Ives, S. E., Starling, T. T., & Hollebrands, K. F.** (2010). Knowledge for teaching statistics with technology: Examining mathematics teacher educators' planning. In J. Luebeck, & J. Lott, (Eds.), *Mathematics Teaching: Putting research into practice at all levels: The seventh monograph of the Association of Mathematics Teacher Educators* (pp. 7-23). San Diego, CA: Association of Mathematics Teacher Educators.[refereed chapter]
- Lee, H. S., & Mewborn, D. S.** (2009). Mathematics teacher educators engaging in scholarly practices and inquiry. In D. S. Mewborn & H. S. Lee (Eds.), *Scholarly practices and inquiry in the preparation of mathematics teachers* (pp. 1-6). San Diego, CA: Association of Mathematics Teacher Educators.
- Heid, M. K., & Lee, H. S.** (2008). Using technology in teaching and learning mathematics: What should doctoral students in mathematics education know? In R. Reys and J. Dossey (Eds.) *U.S. doctorates in mathematics education: Developing stewards of the discipline* (pp. 117-125). Conference Board of the Mathematical Sciences. [Invited refereed chapter]
- Tarr, J. E., Lee, H. S., & Rider, R.** (2006). When data and chance collide: Drawing inferences from empirical data. In G. Burrill (Ed.), *Thinking and reasoning with data and chance: 2006 yearbook of the NCTM* (pp. 139-149). Reston: VA: National Council of Teachers of Mathematics. [Double-Blind Refereed chapter]
- Stohl, H.** (2005). Probability in teacher education and development. In G. Jones (Ed.), *Exploring probability in school: Challenges for teaching and learning* (pp. 345-366). Kluwer Academic Publishers. [Invited submission, blind reviewed]
- Stohl, H.** (2003). Do vampires exist? Using spreadsheets to investigate a common folktale. In I. W. Baugh & A. Raymond (Eds.), *Making math success happen: The best of learning and leading with technology* (pp. 85-88). Eugene, OR: International Society of Technology in Education. [reprint of article published in 1999, chosen as an exemplary article for inclusion in this book.]
- Garofalo, J., & Drier, H. S.** (2000). Cases about scoring assessment: Right or wrong? In W. Bush (Ed.) *Classroom assessment for school mathematics: Cases and discussion questions for grades 6-12*, (pp.36-39). Reston, VA: National Council of Teachers of Mathematics. [Double-Blind Refereed chapter.]

### Refereed Proceedings

- Akoglu, K. & Lee, H.S. (2022). Supporting teachers' confidence to teach statistics through a blended professional development approach. In *Proceedings of the 12<sup>th</sup> Congress of the European Research in Mathematics Education*.

- Mojica, G. M., Barker, H., Azmy, C., & Lee, H. S. (2021). Learning to make sense of data in a CODAP-enabled learning environment: Interactions matter. In *Proceedings of the 43<sup>rd</sup> Annual Meeting of the Psychology of Mathematics Education North American Chapter* (pp. TBD), held October 2021, Philadelphia, PA.
- Mojica, G. M., Lee, H. S., Thrasher, E. P., Vaskalis, Z. T., & Ray, G.C. (2021). Making data science practices explicit in a data investigation process: A framework to guide reasoning about data. In *Proceedings of the International Association of Statistics Education Satellite Conference*, available online.
- Sanei, H. S., & Lee, H. S. (2021). Attending to students' reasoning about probability concepts for building statistical literacy. In *Proceedings of the International Association of Statistics Education Satellite Conference*, available online.
- Mojica, G. M., Barker, H., Azmy, C., & Lee, H. S. (2021). Learning to make sense of data in a CODAP-enabled learning environment: Interactions matter. In *Proceedings of the 43<sup>rd</sup> annual meeting of the Psychology of Mathematics Education-North American Chapter*, Philadelphia, PA.
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### Reports

Pearl, D., Garfield, J., delMas, R., Groth, R. E., Kaplan, J., McGowan, H., & **Lee, H. S.**, (2012). *Connecting research to practice in a culture of assessment in introductory collegiate-level statistics: Report arising from research retreat at American Statistical Association.*

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### Non-Refereed Publications

Bargagliotti, A., & **Lee, H. S.** (February 23, 2022). From public health to personal finance, statistical literacy is essential for careers and everyday life (Opinion). *K-12 Dive*.

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**Lee, H. S.** & Nickell, J. (2014). How a curriculum may develop Technological Pedagogical Statistical Knowledge: A case of teachers examining relationships among variables using Fathom. In *Proceedings of the International Conference on Teaching Statistics*. Flagstaff, AZ, July 2014. [http://icots.net/9/proceedings/pdfs/ICOTS9\\_9E3\\_LEE.pdf](http://icots.net/9/proceedings/pdfs/ICOTS9_9E3_LEE.pdf)

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Myers, M., & **Lee, H. S.** (2006). *Best practices for promoting algebraic thinking for improving learning for all students*. Research brief published by the National Educational Association.

**Stohl, H.**, & Harper, S. R. (2004). Technology Tips Column: Graphing functions, tangents, and derivatives in Geometer's Sketchpad. *Mathematics Teacher* 98(2), 136-140.

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- Bull, G., Bull, G., & **Drier, H. S.** (1999). Mining the internet: Exploring data warehouses. *Learning and Leading with Technology* 26(8), 36-39.
- Garofalo, J., Shockey, T., Harper, S. R., & **Drier, H. S.** (1999). Impact project at Virginia: Promoting appropriate uses of technology in mathematics. *Virginia Mathematics Teacher* 25(2), 14-15.
- Drier, H. S.** (1998). Do Vampires Really Exist? *Productivity in the Classroom* (Fall/Winter, 4). Microsoft Corporation.
- Drier, H. S.** (1996). *Research Brief #3: The teaching and learning of algebra: Identifying the best practices*. Williamsburg, VA: School-University Research Network.

## **Presentations** (previously presented as H. S. Drier and H. Stohl)

### Invited Presentations, Panels, Webinars, and Podcasts

- Lee, H. S.** (Panel moderator), Bargagliotti, A., Casey, S., Leftwich, A., Mojica, G., Perez, L., & Rosenberg, J., (September 14, 2022). What is the state of educator preparation in data science? **Invited panel session** at the *Foundations of Data Science for Students in Grades K-12: A Workshop*. National Academies of Sciences, Washington, DC.
- Lee, H. S.** (April 12, 2022). *Digging into data science and statistics in K-12 spaces: Current trends, issues and opportunities*. Invited webinar for the NC Chapter of the American Statistical Association.
- Lee, H. S.** (April 8, 2022). *Learning to do what data scientists do: The role of data moves*. Invited speaker for Colloquia in the Mathematics and Statistics Department at Appalachian State University.
- Otten, S. & **Lee, H. S.** (March 30, 2022). 2203: Hollylynne Lee. Hollylynne Lee from North Carolina State University discusses articles from the *Journal of Statistics and Data Science Education* and *CHANCE* about Advanced Placement (AP) Statistics. **Invited Guest** on *Mathed Podcast* (Season 2022, Episode 3, 21 min 26 sec).  
[https://www.podomatic.com/podcasts/mathed/episodes/2022-03-30T11\\_51\\_30-07\\_00](https://www.podomatic.com/podcasts/mathed/episodes/2022-03-30T11_51_30-07_00)
- Jones, D., Thanheiser, E., Amidon, J., & **Lee, H. S.**, (December 1, 2021). Hollylynne Lee: Linking data science and teacher education. **Invited guest on Teaching Math Teaching podcast** (Season 2, Episode 55, 44 min 23 sec).  
<https://www.teachingmathteachingpodcast.com/55>.
- Lee, H. S.** (October 26, 2021). *Institute for Education Science Technical Working Group for Data Science Education*. **Invited presenter and panelist for** Topic 2: Improving Practice for Data Science Education.
- Lee, H. S.** (October 8, 2021). *National Science Foundation Town Hall on Data Science Research*. **Invited Panelist for** Topic 2 Session on Data Science Education.



- Lee, H. S. (October 2021). *Data moves and discourse: Design principles for strengthening statistics education*. **Cherry Award Finalist lecture**. Presented at Baylor University [https://www.baylor.edu/cherry\\_awards/index.php?id=981435](https://www.baylor.edu/cherry_awards/index.php?id=981435)
- Lee, H. S. (September 2021). *Data moves and discourse: Design principles for strengthening statistics education*. **Cherry Award Home Campus lecture**. Presented at NC State University <https://ced.ncsu.edu/news/cherry-award-lecture/>.
- Lee, H. S. (August 2021). *Online environments for preparing teachers to teach data and statistics*. **Invited presentation** in invited session Teaching and Learning During COVID (A. Bargagliotti, organizer). Joint Statistics Meetings, held virtually.
- Lee, H. S. (July 2019). Critical learning experiences for preparing teachers of statistics. **Invited Introductory Overview Lecture** at the annual Joint Statistics Meeting, Denver, Colorado.
- Lee, H. S. (July 2019). *Preparing teachers to teach statistics with online learning modules*. **Invited webinar presentation** for the Teaching and Learning webinar series of the Consortium for the Advancement of Undergraduate Statistics Education.
- Lee, H. S. (May 2019). *Getting data-intensive experiences in secondary classrooms: Impacts of professional development and the long and interesting road ahead*. **Invited presentation** at RTI International, Research Triangle Park, NC.
- Lee, H. S. (May 2019). *Data science education in K-12 classrooms: What shoulda coulda woulda, but often ain't there*. **Invited lightning talk** presented at the opening session of the United States Conference on Teaching Statistics, State College, PA. Recording available at <https://youtu.be/53WuS5z3oPY?t=596>
- Lee, H. S. (April 2019). *How engaging with real data can improve students' engagement and learning of statistics topics in grades 6-12*. **Invited webinar** presentation for RTI's Large District Mathematics Collaborative initiative for NC.
- Lee, H. S., Baumgartner, P. (March 2019). *Bringing data science to middle and high school education*. **Invited webinar** for the DataBytes Lunch and Learn series for the National Consortium of Data Science.
- Lee, H. S., Lovett, J. N., & Mojica, G. M. (July 2018). *Designing for educators in a Teaching Statistics MOOC: Design principles and use of multimedia to support participant engagement*. **Invited paper** presented at the Tenth International Conference on Teaching Statistics, Kyoto, Japan.
- Hudson, R., Lee, H. S., Casey, S., Finzer, B., Mojica, G. M., Azmy, C., & Eide, A. (July 2018). *Designing e-modules to support preservice mathematics teachers' statistical thinking*. **Invited paper** presented at the Tenth International Conference on Teaching Statistics, Kyoto, Japan.
- Lee, H. S. & Barker, H. A. (May 2018). *Building learning opportunities for future statisticians and data scientists*. **Invited presentation** at local dinner to support teachers' engagement with the Electronic Conference on Teaching Statistics, Elon University, Elon, NC.
- Lee, H. S. (January 2018). *Teaching statistics and data science using large multivariate data and visualization tools*. **Invited presentation** at the annual Teaching Contemporary Mathematics conference, NC School Science and Mathematics, Durham, NC.
- Lee, H. S. (October 2017). *Learning opportunities in statistics and data science in high school and college*. **Invited presentation** at the Mathematics Department Colloquium series, Longwood University, Farmville, VA.

- Lee, H. S. (June 2017). *Impact of data presentation and tasks on learning opportunities in data science concepts*. **Invited 2-hour webinar** through Concord Consortium. Video of recorded session available [here](#). Slides available at <http://bit.ly/DSE-june17>
- Erickson, T. (chair), Arnold, P., Gould, R., Hammerman, J., & Lee, H. S. (February 2017). *Data science educational technology design*. **Invited discussion leader** for session at Data Science Education Technology conference, Berkeley CA.
- Reischman, F. (chair), Damelin, D., Lee, H. S., Merrill, J., Zieffler, A. (February 2017). *Using simulations and modeling environments as data sources*. **Invited discussion leader** for session at Data Science Education Technology conference, Berkeley CA.
- Damelin, D. (chair), Busey, A., Kugler, T., Lee, H. S., Roderick, S., & Talley, B. (February 2017). *Reports from the Trenches*. **Invited discussion leader** for session at Data Science Education Technology conference, Berkeley CA.
- Lee, H. S. (August 2016). *Designing opportunities to learn to teach statistics: Lessons from a MOOC for educators*. **Invited webinar presentation** for the Teaching and Learning webinar series of the Consortium for the Advancement of Undergraduate Statistics Education. Available [online](#).
- Lee, H. S., & Doerr, H. M. (July 2016). *A framework of probability concepts needed for teaching repeated sampling approaches to inference*. **Invited paper** as part of the Topic Study Group on Probability Teaching and Learning at the 13<sup>th</sup> International Congress on Mathematical Education. Hamburg, Germany.
- Avineri, T., Lee, H. S., Lovett, J. N., Tran, D., & Gibson, T. (July 2016). *Design and impact of MOOCs for mathematics teachers*. **Invited paper** as part of the Topic Study Group on Distance and E-Learning at the 13<sup>th</sup> International Congress on Mathematical Education. Hamburg, Germany.
- Lee, H. S. (Chair), Lovett, J. N., Peters, S., & Franklin, C. (Discussant). (April 2016). *Teacher Development in Statistics Education: A critical examination of how teachers' experiences impact their knowledge, beliefs, and practices for teaching statistics*. **Invited Featured Research Symposium** at the annual Research Conference of the National Council of Teachers of Mathematics, San Francisco, CA.
- Lee, H. S. (July 2015). *Stepping outside classroom walls: Designing experiences for teachers in a Massive Open Online Course [MOOC] on teaching statistics*. **Invited Plenary** for the International Association of Statistics Education Satellite Conference held before the 60th World Statistics Conference, Rio de Janeiro, Brazil.
- Lee, H. S. (April 2015). *Mathematics and statistics: What are they good for anyway?* **Keynote speaker** at Elon University Mathematics and Statistics department Graduation and Awards Ceremony, Elon, NC.
- Lee, H. S. (November 2014). *Using animations to create teaching and learning scenarios for mathematics teacher education*. **Invited Webinar** presentation given for the Association of Mathematics Teacher Educators.
- Lee, H. S. & Nickell, J. (July 2014). *How a curriculum may develop Technological Pedagogical Statistical Knowledge: A case of teachers examining relationships among variables using Fathom*. **Invited paper presentation** in Session 9E at the Ninth International Conference on Teaching Statistics. Flagstaff, AZ.
- Lee, J. T., & Lee, H. S. (July 2014). *Visual representations of empirical probability distributions when using the granular density metaphor*. **Invited paper** in Session 6E at the Ninth International Conference on Teaching Statistics. Flagstaff, AZ.
- Hollebrands, K. F. & Lee, H. S. (March 2014). *Teacher professional development in relation to digital media and tools*. **Invited presentation** at the Convening on K-12

Mathematics Education: Common Core, Digital Learning, and State Policy. Held at the Friday Institute for Educational Innovation, March 10-11, 2014.

**Lee, H. S.** (May 2013). *Envisioning the future K-12 teacher of statistics*. **Invited Plenary** at the biannual United States Conference on Teaching Statistics, Cary, NC.

**Lee, H. S.** (May 2012). *Quantitative Reasoning in a Technological World: Laying the Pebbles for Future Research Frontiers*. **Invited Plenary and Lead Scholar for Working Groups** at the International STEM Research Symposium: Quantitative Reasoning in Mathematics and Science Education, Savannah, GA.

**Lee, H. S.** (May 2012). *Quantitative Reasoning in Science Education: Connections to Data and Chance with Technology in Mathematics Education*. **Invited Commentary on a Plenary** at the International STEM Research Symposium: Quantitative Reasoning in Mathematics and Science Education, Savannah, GA.

Dick, T., Zbeik, R. M., Heid, M. K., Dove, A., Burrill, G., **Lee, H. S.**, Cohen, J., & Hollebrands, K. (April 2012). *Linking research and practice: A focus on reasoning and sense making with technology*. **Invited research symposium** presented at the annual meeting of the Research Pre-session of the National Council of Teachers of Mathematics, Philadelphia, PA.

**Lee, H. S.**, Harper, S., Driskell, S. O., Kersaint, G., & Leatham, K. (March, 2012). *Teachers' statistical problem solving with dynamic technology: Research results across multiple institutions*. **Invited featured research paper** presented at the annual international meeting of the Society for Informational Technology and Teacher Education, Austin, TX. Paper presented was based on the 2012 National Technology Leadership Initiative Fellowship Award.

Lee, H. S. (February, 2012). *Tapioca and technology: Lessons learned for a mathematics classroom*. **Invited Keynote Address** at the annual Conference on the Teaching of Mathematics 6-12, Sam Houston State University, TX.

Enders, F., Hilton, S., & **Lee, H. S.** (May, 2011). *A conceptual framework for statistics education: Identifying research priorities*. **Invited research-sponsored session** presented at the United States Conference on Teaching Statistics, Raleigh, NC.

Groth, R. E., Jacobbe, T., Madden, S., Zieffler, A., Lehrer, R. (Discussant), **Lee, H. S.** (Discussant), (April, 2011). *Research in statistics education: Current efforts and future directions*. **Invited Discussant for Research Symposium** held at the Research Pre-session of the Annual meeting of the National Council of Teachers of Mathematics, Indianapolis, ID.

Garfield, J. (chair), Jersky, B., delMas, R., Pearl, D., **Lee, H. S.**, & McGowan, H. (August, 2010). *Establishing a career in statistics education*. **Invited panelist** for session at the Joint Statistics Meeting, Vancouver, Canada.

**Lee, H. S.** (April, 2010). *Using concept maps to organize reviews of literature*. **Invited webinar presentation** for the Research participants of the Consortium for the Advancement of Undergraduate Statistics Education, April 6, 2010.

**Lee, H. S.**, & Lee, J. T. (February, 2010). *Foundations in probability to support statistical reasoning*. **Invited webinar presentation** for the Teaching and Learning Series sponsored by the Consortium for the Advancement of Undergraduate Statistics Education, February 9, 2010. Archived at: <http://www.causeweb.org/webinar/teaching/>.

- Lee, H. S.** (November 2009). *Using Fathom to investigate univariate and bivariate distributions*. **Invited webinar presenter** for American Statistical Association Webinar Series on K-12 Statistics Education, November 17, 2009. Archived at: [www.amstat.org/education/k12webinars](http://www.amstat.org/education/k12webinars).
- Lee, H. S.** (April 2009). *Technological statistical knowledge: How dynamic statistical software changes the landscape for statistical thinking*. **Invited keynote speaker** at Key Curriculum Press Technology Users Support Session held at the National Conference of Teachers Mathematics, Washington, DC.
- Heid, M. K., & **Lee, H.S.** (September 2007). *Core knowledge of use of technology in mathematics education*. **Invited session presenters** and facilitators at the National Conference on Doctoral Programs in Mathematics Education. Kansas City, MO.
- Rider, R. L., & **Lee, H. S.** (July 2006). *Differences in students' use of computer simulation tools and reasoning about empirical data and theoretical distributions*. **Invited paper** presented at the 7<sup>th</sup> International Conference on Teaching Statistics, Salvador, Brazil.
- Lee, H. S.** (June 2005). *The complexities of reasoning probabilistically*. **Invited lecturer** of 3-hour mini-course as part of the Mathematics Content Academy for Teachers at James Madison University, Harrisonburg, VA.
- Lee, H. S.** (March 2005). *Researching students' learning in computer-enabled contexts: Technological challenges and methods for capturing and analyzing video-based data*. **Invited methodological presentation** given for graduate students and faculty at Rutgers University.
- Rachlin, S., **Stohl, H.**, & Preston, R. (September 2004). *Content support for in-service middle grade teachers in the Middle Math Project*. **Invited session** presented at the Mathematical Preparation of Middle School Mathematics Teachers Conference, St. Louis, MO.
- Stohl, H.** (February 2004). *Tapioca and technology: What are they good for anyway?* **Keynote address** given at the Elon University High School Mathematics Contest, Elon, NC.
- Stohl, H.** (March 2003). *Preparing to teach mathematics with technology: Research implications for a learning trajectory*. **Keynote address** presented at the annual international meeting of the Society for Informational Technology and Teacher Education, Albuquerque, NM.
- Stohl, H.** (March 2002). *Prospective teachers learning to facilitate social interaction and mathematical problem solving with technology tools*. **Invited featured research paper** presented at the annual international meeting of the Society for Informational Technology and Teacher Education, Nashville, TN. Paper presented was based on the National Technology Leadership Initiative Fellowship Award.
- Stohl, H.** (May 2001). *Standards and research-based support for use of computers in middle school mathematics*. **Keynote address** presented at the Technology in Middle Grades Mathematics conference at the University of California-Davis.
- Garofalo, J., Harper, S., and **Drier, H. S.** (January 2001). *Beginner's guide to incorporating technology into secondary methods courses*. **Invited mini-course** given at the fifth annual conference of Association of Mathematics Teacher Educators, Costa Mesa, CA.
- Drier, H. S.** (July 1998). *Spreadsheets as a tool for learning mathematics*. **Invited guest lecturer** as part of a lecture series on "Innovative Uses of Technology in Education"

during the Summer Technology Institute for K-12 teachers at Shenandoah University, Winchester, VA.

**Drier, H. S.** (October 1998). *Using spreadsheets to explore mathematics*. **Invited workshop** presented at the annual meeting of the Tidewater Council of Teachers of Mathematics, Chesapeake, VA.

**Drier, H. S.** (October 1996). *Teaching and learning algebra*. **Invited presentation** at Algebra for Everyone: Teachers Networking for Success sponsored by the School-University Research Network at The College of William & Mary, Williamsburg, VA.

### National / International Presentations

**Lee, H. S.,** Peters, S., Franklin, C., Harding, M., & Buchanan, M. (September 2022). *Data science in middle and high school: A real modern approach*. Session presented at the annual meeting of the National Council of Teachers of Mathematics, Los Angeles, CA.

**Lee, H. S.** (September 2022). *Key processes and dispositions that belong in K-12 mathematics*. Session presented at the annual meeting of the National Council of Teachers of Mathematics, Los Angeles, CA.

**Lee, H. S. & Mojica, G. M.** (September 2022). *Thinking like a data scientist: Using tools and an investigation framework to support students*. Workshop presented at the annual meeting of the National Council of Teachers of Mathematics, Los Angeles, CA.

Wilkerson, M. H., Stokes, D. J., **Lee, H. S.,** Reigh, E.V., Escude, M., Rivero, E., Guiterrez, R. (April 2022). *A framework for exploring self, community, histories, futures through data*, in the structured poster session *Data Literacy in Context: Culturally Oriented and Place-Based Learning through Data* . Presented at the annual conference of the American Educational Research Association, San Diego, CA.

Akoglu, K. & **Lee, H.S.** (February 2022). *Supporting teachers' confidence to teach statistics through a blended professional development approach*. Presented at the 12<sup>th</sup> Congress of the European Research in Mathematics Education, held virtually.

Mojica, G. M., Barker, H., Azmy, C., & **Lee, H. S.** (October 2021). *Learning to make sense of data in a CODAP-enabled learning environment: Interactions matter*. Paper presented at the 43rd annual meeting of the Psychology of Mathematics Education-North American Chapter, Philadelphia, PA.

Mojica, G. M., **Lee, H. S.,** Thrasher, E. P., Vaskalis, Z. T., & Ray, G.C. (August 2021). *Making data science practices explicit in a data investigation process: A framework to guide reasoning about data*. Paper presented at the International Association of Statistics Education Satellite Conference, held virtually.

Sanei, H. S., & **Lee, H. S.** (August 2021). *Attending to students' reasoning about probability concepts for building statistical literacy*. Paper presented at the International Association of Statistics Education Satellite Conference, held virtually.

Vaskalis, Z. T., & **Lee, H. S.** (August 2021). *Current trends in the AP Statistics classroom: Results from follow-up interviews with current AP Statistics teachers*. Paper presented at the International Association of Statistics Education Satellite Conference, held virtually.

**Lee, H. S.,** Hudson, R., Casey, S., & Mojica, G. F. (June 2021). *Enhancing Statistics Teacher Education Through E-Modules* [Showcase session]. IUSE Project Office Hours Showcase. Virtual AAAs-IUSE Summer Lab. <https://www.aaas-iuse.org/summer-series/>

Louie, J., **Lee, H. S.,** & Matuk, C. (June 2021). *Data science education and data literacy roundtable*. Session at the 2021 Discovery Research PreK-12 PI Meeting. Virtual. <http://cadrek12.org/2021-drk-12-pi-meeting>

- Lee, H. S.,** Mojica, G.F., Drier, A. (June 2021). *Invigorating statistics and data science teaching through professional learning* [Poster presentation]. 2021 Discovery Research PreK-12 PI Meeting. Virtual. <http://cadrek12.org/2021-drk-12-pi-meeting>
- Lee, H.S.,** Mojica, G.F., Drier, A. (June 2021). *Invigorating statistics and data science teaching through professional learning* [Arcade Session]. 2021 Discovery Research PreK-12 PI Meeting. Virtual. <http://cadrek12.org/2021-drk-12-pi-meeting>
- Lee, H. S.,** Mojica, G. M., Thrasher, E. P., Dreier, A., & Vaskalis, Z. (April 2021). *Harnessing the Power of Videos to Support Teachers in Asynchronous Personalized Learning*. Poster presented as part of poster session, A. Busey (organizer), E. van Es, (Discussant). Innovations in Video-Intensive STEM Professional Development in Online and Blended Environments. Annual conference of the American Educational Research Association. Virtual conference. [Link to interactive Poster](#)
- Mojica, G. M., **Lee, H. S.,** & Thrasher, E. P. (February 2021). *Professional Development Materials to Support Using a Data Investigation Process*. Session at Annual conference of the Association of Mathematics Teacher Educators, held virtually
- Casey, S., Hudson, R., Mojica, G. M., Casillas, M., & **Lee, H. S.** (Moderator) (February 2021). *Preparing to Teach Math in a Data-Rich World*. Panel session at Annual conference of the Association of Mathematics Teacher Educators, held virtually.
- Lee, H. S.,** & Mojica, G. M. (October 2019). *Data science in grades 6-12 STEM: Possibilities and realities*. Research presented at the National STEM Education Research Conference. Raleigh, NC.
- Akoglu, K., & **Lee, H. S.** (September 2019). *Blending online coursework and small learning communities to support professional growth in teaching statistics*. Paper presented at 4<sup>th</sup> International Symposium on Turkish Computers and Mathematics Education. Izmar, Turkey.
- Lee, H. S.** (organizer and panelist), Brems, M., Brown, C., Pittard, M., Ripp, S., & Slade, E. (July 2019). *Student engagement and interactions in online/hybrid courses*. Panel presented at the annual Joint Statistics Meeting. Denver, Colorado.
- Lee, H. S.** (June 2019). *Bringing data experiences into classrooms with online visualization and analysis tools*. Session presented at the second annual Early College Summit, RTI International. Research Triangle Park, NC.
- Hudson, R., **Lee, H. S.,** & Mojica, G. M. (May 2019). *Using videos of students' statistical reasoning to support preservice teachers' learning of content and pedagogy*. Session presented at the United States Conference on Teaching Statistics. State College, PA.
- Mojica, G. M., Barker, H., Harrison, T., **Lee, H. S.,** & Mutlu, A. (May 2019). *Supporting inferential reasoning through key data science ideas of modeling, simulation, and argumentation*. Session presented at the United States Conference on Teaching Statistics. State College, PA.
- Lee, H. S.** (April 2019). *Development of diagnostic assessments in probability reasoning for middle grade students*. Paper presented at the Annual Research Conference of the National Council of Teachers of Mathematics. San Diego, CA.
- Lee, H. S.,** Mojica, G. M., Azmy, C., & Barker, H. (April 2019). *How a MOOC for Educators Can Make a Large Impact*. Paper presented at the Annual Research Conference of the National Council of Teachers of Mathematics. San Diego, CA.
- Mojica, G.M., **Lee, H. S.,** Azmy, C. (April 2019). *Promoting Meaningful Statistics Teaching: Moving From Calculating to Investigating*. Session presented at the annual meeting of the National Council of Mathematics Teachers. San Diego, CA.

- Hudson, R., Casey, S., & Lee, H. S. (April 2019). *Granola graphs galore: Exploring categorical data with dynamic statistics tools*. Session presented at the annual meeting of the National Council of Mathematics Teachers. San Diego, CA.
- Mojica, G., Lee, H. S., Mutlu, A., Barker, H., & Azmy, C. (February 2019). *Designing and Implementing Micro-credentials to Support Teachers' Learning*. Session at the Association of Mathematics Teacher Educators Conference, Orlando, FL.
- Mutlu, A., Lee, H. S., & Mojica, G. (February 2019). *A Framework for Analyzing and Redesigning Statistics Tasks to Promote Inferential Reasoning*. Session at the Association of Mathematics Teacher Educators Conference, Orlando, FL.
- Casey, S., Hudson, R., Lee, H. S., Mojica, G., Azmy, C., Barker, H., & Harrison, T. (February 2019). *Teaching Teachers to Lead Statistical Investigations with Technology*. Session at the Association of Mathematics Teacher Educators Conference, Orlando, FL.
- Smith, N., Bartlett, A., Johnson, A. D., Oliver, K., & Lee, H. S. (January 2019). *What instructional scaffolds are needed to support first-year physical therapist students' clinical reasoning using mobile technology? A multi-case study*. Poster presented at American Physical Therapist Association Combined Sections Meeting. Washington, DC.
- Mojica, G., Lee, H. S., & Lovett, J. (November 2018). *Designing Spaces to Support Teacher Learning about Teaching Statistics*. Brief Research Report presented at *Psychology of Mathematics Education, North American Chapter Conference*. University of South Carolina, Greenville, SC.
- Harrison, T., Azmy, C., & Lee, H. (November 2018). *Online Learning Experiences and Impact on Statistics Education Perspectives*. Brief Research Report at *Psychology of Mathematics Education, North American Chapter Conference*. University of South Carolina, Greenville, SC.
- Azmy, C., Barker, H., Mojica, G., & Lee, H. S. (November 2018). *Task Design for Statistical Habits of Mind*. Session at the North Carolina Council of Teachers of Mathematics Conference.
- Mojica, G. M., Lee, H. S., Lovett, J. N., & Azmy, C. A. (July 2018). *Impacts of a Teaching Statistics MOOC on educators' perspectives and practice*. Contributed paper presented at the Tenth International Conference on Teaching Statistics, Kyoto, Japan.
- McCulloch, A. W., Hollebrands, K. F., Lee, H. S., Harrison, T., & Mutlu, A. (April 2018). *Factors that influence high school mathematics teachers' uses of technology*. Presented at the annual Research Conference of the National Council of Teachers of Mathematics. Washington, DC.
- Lee, H. S., Mojica, G. F., & Azmy, C. A. (April 2018). *Investigating real world data with online visualization tools: Building future data scientists*. Presented at the annual meeting of the National Council of Teachers of Mathematics, Washington, DC.
- Bradshaw, L., Famularo, L., Lee, H. S., & Masters, J. (April 2018). *Designing diagnostic inventories of cognition in education*. Presented as part of the research symposium on Learning from our students' mistakes: Using information from incorrect, incomplete, and inefficient student responses, at the annual meeting of the American Educational Research Association conference, New York City, NY.
- Mojica, G. F., Lee, H. S., & Lovett, J. N. (January 2018). *Designing effective professional development in an online environment to support teachers' learning*. Presented at the annual meeting of the Association of Mathematics Teacher Educators, Houston Texas.
- Lee, H. S. (organizer), Franklin, C., Bargagliotti, A., Casey, S., Hudson, R., Mojica, G. F., Azmy, C., Confrey, J., & Shah, M. (January 2018). *Activities to support the statistical*

- education of teachers*. Extended session presented at the annual meeting of the Association of Mathematics Teacher Educators, Houston Texas.
- Lee, H. S.,** Lovett, J. N., & Mojica, G. M. (October 2017). *Characterizing impacts of online professional development on teachers' beliefs and perspectives about teaching statistics*. Research report presented at the 39<sup>th</sup> annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Indianapolis, Indiana.
- Azmy, C. & **Lee, H. S.** (October 2017). *Preservice secondary mathematics teachers understanding of binomial distribution*. Brief report presented at the 39<sup>th</sup> annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Indianapolis, Indiana.
- Lovett, J. N., & **Lee, H. S.** (October 2017). *Preservice secondary mathematics teachers' statistical knowledge: Snapshot of strengths and weaknesses*. Research report presented at the 39<sup>th</sup> annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Indianapolis, Indiana.
- Lee, H. S.** (organizer), Franklin, C. (Chair), Halverson, K., Mojica, G., Weber, V. L., Mutlu, A., & Posner, M. (August 2017). *Design, implementation, and impact of different approaches to professional development for teachers of statistics*. Panel presentation at the Joint Statistics Meeting, Baltimore, MD.
- Harrell-Williams, L, Lovett, J., Koklu, O., **Lee, H. S.**, Sorto, A., Pierce, R., Lesser, L. M., & Franklin, C. (May 2017). *Using self-efficacy data to inform teacher preparation and professional development*. Session presented at United States Conference on Teaching Statistics, State College, PA.
- Lee, H. S.**, Mojica, G. M., Hudson, R., Lovett, J., Casey, S., Azmy, C., & Akoglu, K. (May, 2017). *Bringing data and tools into classrooms through online large-scale teacher education*. Session presented at United States Conference on Teaching Statistics, State College, PA.
- Akoglu, K. & **Lee, H. S.** (May 2017). *A MOOC and PLT: Blending two Professional development models to enhance teaching statistics*. Poster presented at United States Conference on Teaching Statistics, State College, PA.
- Lee, H. S.** (January 2017). *Preparing to teach mathematics and statistics with technology: A Decade of development and impact on preservice secondary mathematics teachers*. Poster presented at the NSF-funded projects poster session at the Joint Mathematics Meeting, Atlanta, GA.
- McCulloch, A., **Lee, H. S.**, Hollebrands, K F., Chandler, K., & Lovett, J. N. (January 2016). *Preparing teachers to plan and implement technology-based algebra tasks using open access tools*. Extended session presented at the annual conference of the Association of Mathematics Teacher Educators, Irvine, CA.
- Pulis, T., & **Lee, H. S.** (November 2015). *Secondary mathematics teachers' approaches to statistical investigations with multivariate data sets using technology*. Presented at the 37<sup>th</sup> annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. East Lansing, Michigan.
- Thrasher, E. P., Starling, T., Lovett, J.N., Doerr, H. M., & **Lee, H. S.** (November 2015). *The influence of a graduate course on teachers' self-efficacy to teach statistics*. Presented at the 37<sup>th</sup> annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. East Lansing, Michigan.
- Lee, H. S.**, Doerr, H. M., Jacob, B., Starling, T. T., Pulis, T., Tran, D., Nickell, J., & Thrasher, E. (April 2015). *Development of teachers' statistical reasoning and confidence*



- in teaching statistics*. Research Symposium session presented at the annual Research Conference of the National Council of Teachers of Mathematics, Boston, MA.
- Nickell, J., **Lee, H. S.**, & Doerr, H. M. (April 2015). *Teachers' visual models of inference using simulation*. Research poster presented at the annual Research Conference of the National Council of Teachers of Mathematics, Boston, MA.
- Lee, H. S.**, Tran, D., Nickell, J., & Doerr, H. M. (February 2015). *Simulation approaches for informal inferences: Models to develop understanding*. Research paper presented at the Ninth Congress of European Research in Mathematics Education, Prague, Czech Republic.
- Jacobs, B., **Lee, H. S.**, Tran, D., & Doerr, H. M. (2015). *Improving teachers' reasoning about sampling variability: A cross institutional effort*. Research paper presented at the Ninth Congress of European Research in Mathematics Education, Prague, Czech Republic.
- Lee, H. S.**, Bos, B., Ozgun-Koca, A., Berry, R., McCulloch, A., Nickel, J., Chandler, K. (February, 2014). *Supporting teachers in developing technology-based mathematics tasks*. Extended session presented at the annual conference of the Association of Mathematics Teacher Educators, Irvine, CA.
- Thrasher, E. P., Perry, A. F., Hollebrands, K. F., & **Lee, H. S.** (February, 2014). *Supporting and retaining beginning mathematics teachers*. Extended session presented at the annual conference of the Association of Mathematics Teacher Educators, Irvine, CA.
- Lee, H. S.**, Doerr, H. M., Arleback, J. B., Pulis, T. (November, 2013). *Collaborative design work of teacher educators: A Case from statistics*. Paper presented at the 35<sup>th</sup> annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Chicago, IL.
- Pulis, T., & **Lee, H. S.** (November, 2013). *High school mathematics teachers' statistical question posing*. Paper presented at the 35<sup>th</sup> annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Chicago, IL.
- Lee, H. S.**, Pulis, T., & Casey, S. (May, 2013). *Preparing to Teach K-12 Statistics: Using Digital Tools for Teaching and Learning*. Presented at United States conference for Teaching Statistics, Raleigh, NC.
- Pulis, T., Whitley, K. B., & **Lee, H.S.** (April 2013). *Collecting Live Data in Fathom*. Session presented at the annual meeting of the National Council of Teachers of Mathematics, Denver, CO.
- Lee, H. S.**, Whitley, K. B., & Pulis, T. (April 2013). *Using Technology Simulations to Reason about Probability and Statistics*. Paper presented at the annual meeting of the National Council of Teachers of Mathematics, Denver, CO.
- Hollebrands, K. F., Steketee, S., McCulloch, A. W., **Lee, H. S.**, & Whitley, K. B. (April 2013). *High School Student's Thinking About technology-based geometry functions*. An interactive paper session presented at the Research Presession of the National Council of Teachers of Mathematics, Denver, CO.
- Hollebrands, K. F., **Lee, H. S.**, McCulloch, A. M., Dick, T., Jones, D., Berry, R. Q., Mohr-Schroeder, M., Stallings, L. (January, 2013). *Technology-based tasks in mathematics teacher education*. Extended session presented at the Association of Mathematics Teacher Educators, Orlando, FL.
- Hollebrands, K. F., **Lee, H. S.**, Starling, T. T., Gonzalez, M. D., & Pulis, T. (November, 2012). *Prospective high school mathematics teachers' design and implementation of dynamic geometry tasks*. Paper presented at the 34<sup>th</sup> annual meeting of the North

American Chapter of the International Group for the Psychology of Mathematics Education, Kalamazoo, MI.

- Hollebrands, K. F., **Lee, H. S.**, Starling, T. T., Gonzalez, M. D., Pulis, T. (April, 2012). *Preservice Mathematics Teachers' Design and Implementation of Interactive Geometry Tasks*. Paper presented at the annual meeting of the Research Pre-session of the National Council of Teachers of Mathematics, Philadelphia, PA.
- Lee, H. S.**, Starling, T. T., Gonzalez, M. D., & Pulis, T. (April, 2012). *Simulations as a Tool for Reasoning about Probability and Statistics*. Session presented at the annual meeting of the National Council of Teachers of Mathematics, Philadelphia, PA.
- Lee, H. S.**, Harper, S., Driskell, S. O., Kersaint, G., & Leatham, K. (February, 2012). *Teachers' statistical problem solving with dynamic technology: Research results across multiple institutions*. Paper presented at the annual meeting of the Association of Mathematics Teacher Educators, Fort Worth, TX. **Authors awarded the National Technology Leadership Initiative Fellowship for Best Research Paper.**
- Dick, T., Hollebrands, K., Zbeik, R. M., Heid, M. K., **Lee, H. S.**, Burrill, G., & Cohen, J. (February, 2012). Sense making and reasoning with technology: An interactive panel. Three hour pre-session presented at the annual meeting of the Association of Mathematics Teacher Educators, Fort Worth, TX
- Hollebrands, K. F., **Lee, H. S.**, Starling, T. T., Gonzalez, M. D., Pulis, T. (February, 2012). *Prospective teachers' design and implementation of technology-based geometry tasks*. Paper presented at the annual meeting of the Association of Mathematics Teacher Educators, Fort Worth, TX.
- Erbacher, C., & **Lee, H. S.** (January, 2012). *Engaging students in reasoning about the logic of hypothesis testing*. Paper presented as part of the Contributed Paper Session "Innovations in Teaching Statistics in the New Decade" at the Joint Mathematics Meeting, Boston, MA.
- Lee, H. S.**, Driskell, S. O., Harper, S. R., Leatham, K. R., Kersaint, G., & Angotti, R. L. (October, 2011). *Prospective teachers' use of representations in solving statistical tasks with dynamic statistical software*. Paper presented at the thirty-third annual meeting of the North American Chapter of the International Group for the Psychology in Mathematics Education. Reno, NV.
- Gonzalez, M. D., & **Lee, H. S.** (October, 2011). Middle school students' growth in understanding of probabilistic inference. Paper presented at the thirty-third annual meeting of the North American Chapter of the International Group for the Psychology in Mathematics Education. Reno, NV.
- Lee, H. S.**, Franklin, A., Thrasher, E. (July, 2011). *Providing opportunities for teachers to take a scholarly lens towards designing and implementing research-based tasks*. Session at the sixth annual National Science Foundation Robert Noyce Teacher Scholarship Program Conference, Washington, DC.
- Lee, H. S.**, Driskell, S., Harper, S., Jones, D. L., Kersaint, G. (April, 2011). *Creating a framework to examine mathematics teachers' exploratory data analysis*. Presented at the Research Pre-session of the Annual Meeting of the National Council of Teachers of Mathematics. Indianapolis, IN.

- Keene, K. A., Lee, H. S., & Lee, J. T. (February, 2011). *Linking instructor moves to classroom discourse and student learning in differential equations classrooms*. fourteenth Annual Conference on Research in Undergraduate Mathematics Education, Portland, OR.
- Lee, H. S., Hollebrands, K. H., Starling, T. T., & Gonzalez, M. D. (January, 2011). *Preparing to teach mathematics with technology [PTMT]: Engaging practices and materials for technology-using mathematics teacher educators*. Three-hour faculty professional development pre-session presented at the annual meeting of the Association of Mathematics Teacher Educators, Irvine, CA.
- Lee, H. S., Klein, K., & Pylypiw, N. (July, 2010). *Developing a community of scholars*. Poster session presented at the NSF Robert Noyce Teacher Scholarship Program Conference: Building Excellence in STEM Teaching, Washington, DC.
- Washington, H. T. & Lee, H. S. (April, 2010). *Building a community of scholars in a teacher education program*. Presented at the annual meeting of the National Council of Teachers of Mathematics, San Diego, CA.
- Lee, H. S., Ives, S. E., Gonzalez, M. D., Starling, T. A., & Shaughnessy, J. M. (January, 2010). *Helping teachers develop their technological pedagogical statistical knowledge (TPSK)*. Presented at the annual meeting of the Association of Mathematics Teacher Educators, Irvine, CA.
- Lee, H. S., Hollebrands, K. H., Washington, H. T., Mewborn, D. M., & Thomas, C. (January, 2010). *Supporting and preparing talented secondary mathematics teachers for high needs schools*. Symposium presented at the annual meeting of the Association of Mathematics Teacher Educators, Irvine, CA.
- Lee, H. S., Hollebrands, K. H., Smith, R. C., & Gonzalez, M. D. (January, 2010). *Preparing to teach mathematics with technology [PTMT]: Engaging practices and materials for technology-using mathematics teacher educators*. Four-hour faculty professional development pre-session presented at the annual meeting of the Association of Mathematics Teacher Educators, Irvine, CA.
- Lee, H. S., & Lee, J.T. (September, 2009). *Students' interpretations of probability distributions in a simulation environment*. Paper presented at the thirty-first annual meeting of the Psychology in Mathematics Education-North American Chapter. Atlanta, GA.
- Lee, H. S. (June, 2009). *Preparing middle and secondary teachers to use technology in statistics*. Poster presented at the United States Conference on Teaching Statistics, Columbus, OH.
- Hilton, S., Holcomb, J., & Lee, H. S. (June 2009). *Making research relevant: Planting seeds for future research in statistics education*. Session presented at the United States Conference on Teaching Statistics, Columbus, OH.
- Lee, H. S. (Chair), Hollebrands, K.F., Smith, R.C., Ives, S.E., Niess, M. Bowers, J., Zbiek, R. M. (April, 2009). *Technology pedagogy and content knowledge for mathematics teachers*. Research symposium presented at the Research Pre-session of the National Council of Teachers of Mathematics, Washington, DC.
- Ives, S. E., Lee, H. S., & Starling, T. (February, 2009). *Preparing to teach mathematics with technology: Lesson planning decisions for implementing new curriculum*. Paper presented at the annual conference of Research in Undergraduate Mathematics Education, Raleigh, NC.

- Lee, H. S.,** Keene, K. A., Lee, J. T., Holstein, K., Early, M.E., Eley, P. (February, 2009). *Pedagogical content moves in an inquiry-oriented differential equations class: Purposeful decisions to further mathematical discourse.* Paper presented at annual conference of Research in Undergraduate Mathematics Education, Raleigh, NC.
- Keene, K. A., Lee, J. T., **Lee, H. S.,** Early, M.E., Eley, P. Holstein, K., (February, 2009). *An investigation of one instructor's mathematical knowledge for teaching: Developing a preliminary framework.* Paper presented at the annual conference of Research in Undergraduate Mathematics Education, Raleigh, NC.
- Lee, H.S.,** & Mojica, G. F. (June 2008). *Examining teachers' practices: In what ways are probabilistic reasoning and statistical investigations supported?* Paper presented at the Joint Study of the International Commission of Mathematics Instruction and International Association of Statistical Education. Monterrey, MX.
- Lee, H. S.,** & Hollebrands, K. F. (June 2008). *Preparing to teach data analysis and probability with technology.* Paper presented at the Joint Study of the International Commission of Mathematics Instruction and International Association of Statistical Education. Monterrey, MX.
- Lee, H. S.,** Lee, J. T., Konold, C., Abrahamson, D., Vahey, P., Rubin, A. (April 2008). *Contrasting perspectives on connecting important ideas in probability.* Symposium presented at the Research Presession of the National Council of Teachers of Mathematics Salt Lake City, UT.
- Lee, H. S.,** & Lee, J. T. (February, 2008). *Emphasizing coordination of measures of center and spread via focus on intervals instead of point values.* Paper presented at the annual conference of Research in Undergraduate Mathematics Education, San Diego, CA.
- Hauk, S., **Lee, H. S.,** Marongelle, K., & Weber, K. (February, 2008). *Doctoral programs in mathematics education.* Panel session presented at the annual conference of Research in Undergraduate Mathematics Education, San Diego, CA.
- Lee, H. S.,** & Mojica, G. F. (October 2007). *Teachers' use of probability experiments and simulations.* Paper presented at the twenty-ninth annual meeting of the Psychology of Mathematics Education-North American Chapter. Lake Tahoe, UT.
- Hollebrands, K. F, Wilson, P. H., & **Lee, H. S.** (October 2007). *Prospective teachers use of a videocase to examine students' work when solving mathematical tasks using technology.* Paper presented at the twenty-ninth annual meeting of the Psychology of Mathematics Education-North American Chapter. Lake Tahoe, UT.
- Lee, H. S.** (September 2007). *Earning the doctoral degree in mathematics education at NC State: The past decade.* Poster presented at the National Conference on Doctoral Programs in Mathematics Education. Kansas City, MO.
- Lee, H. S.,** Hollebrands, K. F., & Wilson, P. H. (September 2007). *The use of research-based methods and materials for preparing to teach mathematics with technology.* Presented at the ninth International Conference on Mathematics Education in a Global Community, Charlotte, NC.
- Lee, H. S.** (Chair), Hollebrands, K. F., Mojica, G. M., Wilson, P. H., Maher, C., Palius, M., Alston, A., & Liu, Y. (March 2007). *Learning to teach probability with a simulation approach: Focus on teachers.* Research symposium presented at the Research Presession of the National Council of Teachers of Mathematics, Atlanta, GA.

- Lee, H. S.,** Hollebrands, K. F., & Wilson, P. H. (March 2007). *Preparing to teach mathematics with technology: Research-based methods and materials*. Presented at the annual conference of the National Council of Teachers of Mathematics, Atlanta, GA.
- Hollebrands, K., **Lee, H. S.,** & Wilson, H. (January 2007). *Preparing to teach mathematics with technology: Prospective teachers' interpretations of students' mathematical thinking*. Research paper presented at the annual meeting of the Association of Mathematics Teacher Educators, Irvine, CA.
- Maher, C., Powell, A., Weber, K., & **Lee, H. S.** (November 2006). *Tracing middle school students' arguments*. Research paper presented at the twenty-eighth annual meeting of the Psychology of Mathematics Education-North American Chapter. Mexico.
- Powell, A. (Chair), Maher, C., Weber, K., Pedrick, L., Francisco, J., Shay, K., & **Lee, H. S.** (April 2006). *The development of probabilistic reasoning among urban students*. Research symposium presented at the Research Pre-session of the National Council of Teachers of Mathematics, St Louis, MO.
- Powell, A. (Chair), Maher, C., **Lee, H. S.,** Weber, K., & Alston, A. (April 2005). *Mathematics initiative, students of color, and the development of probabilistic reasoning*. Research symposium presented at the Research Pre-session of the National Council of Teachers of Mathematics, Anaheim, CA.
- Lee, H. S.** (January 2005). *The complexities of teachers' knowledge of probability: Results from research to inform teacher education*. Research report presented at the annual meeting of the Association of Mathematics Teacher Educators, Dallas, TX.
- Hollebrands, K.F., & **Stohl, H.** (October 2004). *The interplay between technology design and students' control of problem solving*. Research report presented at the twenty-sixth annual meeting of the Psychology of Mathematics Education-North American Chapter. Toronto, Canada.
- Stohl, H.** (Chair), Maher, C., English, L., Berry, E., Tarr, J. E., Pratt, D., & Shaughnessy, J. M. (April 2004). *Research on students' learning of probability: Implications and connections*. Research symposium and papers presented at the Research Pre-session of the National Council of Teachers of Mathematics, Philadelphia PA.
- Renninger, K. A., Sinclair, N., Hand, V. M., **Stohl, H.,** Alejandre, S. & Underwood, J. S. (July 2004). *Students' interest for and work with applet-enhanced word problems*. Paper presented at sixth International Conference of the Learning Sciences, Santa Monica, CA.
- Stohl, H.** (July 2003). *Prospective teachers' development of teaching with technology*. Paper presented at the twenty-seventh annual meeting of the International Group for Psychology of Mathematics Education, Honolulu, HI.
- Stohl, H.,** & Rider, R. (July 2003). *Are these die fair: An analysis of students' technology-based exploration*. Poster presented at the twenty-seventh annual meeting of the International Group for Psychology of Mathematics Education, Honolulu, HI.
- Underwood, J., Hoadley, C., DiGiano, C., **Stohl, H.,** & Hollebrands, K. (April 2003). *Design principles of the ESCOT math environments*. Paper presented at The American Educational Research Association Meeting. Chicago, IL. Available in ERIC <http://files.eric.ed.gov/fulltext/ED477693.pdf>
- Stohl, H.,** & Tarr, J. E. (October 2002). *Using multi-representational computer tools to make sense of inference*. Paper presented at the twenty-fourth annual meeting of the North

American Chapter of the International Group for the Psychology of Mathematics Education, Athens, GA.

**Stohl, H., & Tarr, J.** (April 2002). *Engaging students in probabilistic reasoning using simulations and dynamic representations*. Computer workshop presented at the annual meeting of the National Council of Teachers of Mathematics, Las Vegas, NV.

**Stohl, H.** (April 2002). *Prospective teachers learning to facilitate social interaction and mathematical problem solving with technology tools*. Paper presented at the annual meeting of the American Educational Research Association as part of the symposium Teaching with Technology: Implications for Teacher Education, chaired by Carolyn Everton. New Orleans, LA.

**Stohl, H., & Underwood J.** (April 2002). *Design principle: Provide multiple linked representations*. Poster presented at the annual meeting of the American Educational Research Association as part of the symposium Design Principles for Educational Software, chaired by Marcia Linn. New Orleans, LA.

**Stohl, H., Harper, S. R., & Enderson, M.** (January 2002). *Prospective teachers' development of mathematical, pedagogical, and technological knowledge*. Research symposium at the sixth annual conference of the Association of Mathematics Teacher Educators, San Antonio, TX. **Individual paper awarded the National Technology Leadership Initiative Fellowship for Best Research Paper.**

Rasmussen, S., Matthews, S., & **Stohl, H.** (January 2002). *Data-driven mathematics and statistics with Fathom*. Invited mini-course given at the sixth annual conference of the Association of Mathematics Teacher Educators, San Antonio, TX.

**Stohl, H.** (October, 2001). *Learning to facilitate and analyze students' problem solving with technology*. Poster presented at the twenty-second annual meeting of the International Group for the Psychology of Mathematics Education, North American Chapter, Snowbird, UT.

**Drier, H. S.** (March, 2001). *Beliefs, experiences, and reflections that affect the development of techno-mathematical knowledge*. Research paper presented at annual international meeting of Society for Informational Technology and Teacher Education, Orlando, FL.

Grable, L., Spires, H., Lambert, J., Beal, C., Park, J., **Drier, H. S., & Alibrandi, M.** (March 2001). *Ridges and bridges: MentorNet collaboration yields a watershed of preservice infusion*. Paper Panel presented at the annual international meeting of the Society for Informational Technology and Teacher Education, Orlando, FL.

**Drier, H. S.** (October, 2000). *Children's meaning-making activity with dynamic multiple representations in a probability microworld*. Research paper presented at the twenty-first annual meeting of the International Group for the Psychology of Mathematics Education, North American Chapter, Tucson, AZ.

**Drier, H. S.** (April, 2000). *Using the Probability Explorer to investigate chance and proportional reasoning*. Computer workshop presented at the annual meeting of the National Council of Teachers of Mathematics, Chicago, IL.

Harper, S.R., Garofalo, J., & **Drier, H. S.** (April, 2000). *Preparing preservice secondary school teachers to use technology appropriately*. Session presented at the annual meeting of the National Council of Teachers of Mathematics, Chicago, IL.

- Drier, H. S.** (March, 2000). *Improving children's probabilistic reasoning with technology*. Paper presented at the annual meeting of the Research Council on Mathematics Learning, Las Vegas, NV.
- Garofalo, J., **Drier, H. S.**, Harper, S. R., Enderson, M., Horton, B., & Pullano, F. (February, 2000). *Integrating technology in preservice secondary methods courses: Evaluation and dissemination of Impact Project materials*. Session presented at the annual meeting of the Association of Mathematics Teacher Educators, Charlotte, NC.
- Drier, H. S.** (June, 1999). *Creating interactive spreadsheets with Microsoft Excel and Visual Basic for Applications*. Workshop presented at the Barrett Lectures: Successful Strategies for the Use of Technology in the Teaching of Mathematics, University of Tennessee Knoxville, TN.
- Drier, H. S.** (June, 1999). *Facilitating the effective integration of various technologies in secondary mathematics methods courses*. Session presented at the Barrett Lectures: Successful Strategies for the Use of Technology in the Teaching of Mathematics, University of Tennessee Knoxville, TN.
- Drier, H. S.** & Garofalo, J. (June 1999). *Impact Project: Facilitating effective integration of technology in mathematics education*. Session presented at the annual meeting of the National Educational Computing Conference, Atlantic City, NJ.
- Drier, H. S.** & Garofalo, J. (April 1999). *Using computer microworlds to explore mathematics*. Computer workshop presented at the annual meeting of the National Council of Teachers of Mathematics, San Francisco, CA.
- Garofalo, J., **Drier, H. S.**, & Pullano, F. (April 1999). *Using technology to integrate social studies with mathematics*. Session presented at the annual meeting of the National Council of Teachers of Mathematics, San Francisco, CA.
- Harper, S. R., Shockey, T., **Drier, H. S.**, & Garofalo, J. (April, 1999). *Exploring recursion through various technologies*. Session presented at the annual meeting of the National Council of Teachers of Mathematics, San Francisco, CA.
- Abramovich, S. & **Drier, H. S.** (March, 1999). *Preparing K-12 mathematics teachers to use a spreadsheet as an instructional tool*. Paper presented at the annual international meeting of the Society for Informational Technology and Teacher Education, San Antonio, TX.
- Watson, K., **Drier, H. S.**, & Garofalo, J. (March, 1999). *Using technology tools to integrate mathematics and social studies*. Poster session presented at the annual international meeting of the Society for Informational Technology and Teacher Education, San Antonio, TX.
- Abramovich, S., **Drier, H. S.**, Dugdale, S., Mochan, S., Neuwirth, E., & Woodward, J. (March, 1999). *Spreadsheets: A new form of educational software for school mathematics?* Panel discussion held at the annual international meeting of Mathematics and Science Educational Technology, San Antonio, TX.
- Drier, H. S.**, Rushton, S. R., & Shockey, T. (April, 1998). *Algebra in the middle school? You bet!* Workshop session presented at the annual meeting of the National Council of Teachers of Mathematics, Washington, D.C.
- Drier, H. S.** (March, 1998). *Exploring probability with preservice teachers using dominoes, dice, and technology*. Poster session presented at the annual international meeting of the Society for Informational Technology and Teacher Education, Washington, D.C.

Garofalo, J., Shockey, T., **Drier, H. S.**, & Rushton, S. (March, 1998). *Guidelines for incorporating technology into mathematics*. Paper presented at the annual international meeting of the Society for Informational Technology and Teacher Education, Washington, D.C.

### Regional/State Presentations

Thrasher, E., **Lee, H. S.**, Graham, B., & Kuhlman, A. (November 2022). *Reimagining your statistics unit: Building statistics and data literacy through data investigation*. Session presented at the annual meeting of the NC Council of Teachers of Mathematics, Winston Salem, NC.

Mojica, G. M., Thrasher, E., **Lee, H. S.**, & Graham, B. (November 2022). *Encouraging students to be data detectives: Building statistical and data reasoning*. Workshop presented at the annual meeting of the NC Council of Teachers of Mathematics, Winston Salem, NC.

**Lee, H. S.**, Stokes, D. J., & Ray, G. C. (August 2021). Data and statistics experiences for every classroom. Session presented at *NC Virtual Math Summit*, NC.

**Lee, H. S.** & Mojica, G. M. (November 2020). Data science: Careers and STEM classroom excursions. Session presented at the *STEM Connect Virtual Conference*, NC.

**Lee, H. S.** (January 2020). Using CODAP for data-intensive statistics lessons in advanced high school classes. Session presented at the *Teaching Contemporary Mathematics* conference, NC School of Science and Mathematics, Durham, NC.

**Lee, H. S.** (October 2019). Diving into data in STEM classrooms with online visualization and analysis tools. Presentation at the 9<sup>th</sup> annual conference of *Bridging the Gap 2020: Uniting North Carolina K-16 STEM Education*, Raleigh, NC.

Khounmeuang, A., **Lee, H. S.**, Jewkes, N. (April 2019). *Data science in relation to Advanced Placement Statistics*. Poster presented at the NC State Undergraduate Research Symposium.

Starling, T. S., & **Lee, H. S.** (October, 2013). *Developing the meaning of mean*. Session at the annual conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.

Thrasher, E., Perry, A., **Lee, H. S.**, Hollebrands, K., Hall, W., Early, M., & Swandby, A. (October, 2012). *Using iPads to enhance the mathematics classroom*. Session at the annual conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.

Monroe, N., Franklin, A., & **Lee, H. S.** (March, 2012). An analysis on student justifications on probability concepts and implications for instruction using technology. Session presented at the *Southwest Regional Conference of the Mathematical Association of America*, Scottsdale, AZ.

Starling, T. T., & **Lee, H. S.** (October, 2011). *That is so random*. Workshop session presented at the annual conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.

**Lee, H. S.**, Brannan, T., Childs, K., Clay, L., Franklin, A., Hall, W., Jordan, L., Limer, C., Pawelka, E., Searfoss, A., Thrasher, E., & Washington, H. (October, 2011). *Teacher led inquiry into fostering reasoning and motivation*. Session at the annual conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.



- Lee, H. S.,** Swandby, A., & Klein, K. (March, 2011). *Activities to promote motivation and reasoning for mathematics teachers*. Session presented at the Robert Noyce Scholarship Southeast Regional Conference, Greenville, SC.
- Hollebrands, K. F., **Lee, H. S.,** Washington, H. T., & Noyce Scholars (October, 2010). *Activities to promote reasoning and sense making in the high school mathematics classroom*. Session presented at the annual conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.
- Lee, H. S.,** & Starling, T. T. (2010). *Designing and using simulations to investigate probability with Fathom and Probability Explorer*. Workshop session presented at the annual conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.
- Lee, H. S.,** Hollebrands, K. F., Washington, H. T., Hernandez, J., Ward, J., & Ray, G. (October, 2009). *Classroom communication to promote equity and engagement*. Session presented at the annual conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.
- Wilson, H. & **Lee, H. S.** (October, 2007). *Supporting bivariate data analysis with univariate techniques with Fathom 2.0*. Session presented at the annual Central Regional conference of the National Council of Teachers of Mathematics, Kansas City, MO.
- Wilson, H., Hollebrands, K., & **Lee, H. S.** (October 2006). *From univariate to bivariate analysis with Fathom*. Session presented at the annual conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.
- Lee, H. S.,** Hollebrands, K., & Wilson, H. (October 2006). *PTMT: An integrated approach*. Session presented at the annual conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.
- Hollebrands, K., **Lee, H. S.,** & Wilson, H. (October 2005). *Using video cases to prepare teachers to teach mathematics using technology*. Session presented at the annual conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.
- Campbell, M., & **Stohl, H.** (October 2004). *Developing integrated mathematics lessons: An undergraduate research project*. Session presented at the annual conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.
- Stohl, H.,** & Gildersleeve, R. (November 2003). *Connections among fractions, proportional reasoning, and probability*. Computer workshop presented at the Southern regional conference of the National Council of Teachers of Mathematics, Charleston, SC.
- Stohl, H.,** & Campbell, M. (October 2003). *Connecting empirical and theoretical probability with simulations*. Session presented at the annual conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.
- Stohl, H.,** Norgaard, N., & Tuprah, K. (October 2002). *Middle Math Project: A focus on chance and data analysis*. Session presented at the annual conference of the North Carolina Council of Teachers of Mathematics, Charlotte, NC.
- Stohl, H.,** & Hollebrands, K. F. (October 2001). *Technology as a vehicle for promoting mathematical reasoning*. Session presented at the annual conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.
- Drier, H. S.,** Berman, S., & Brown, J. (October 2000). *Teaching with technology: Exemplar lessons, intuitive software, and internet resources*. Session presented at the Eastern regional conference of National Council of Teachers of Mathematics, Philadelphia, PA.

- Drier, H. S.** (October 1999). *Teaching with technology: An exploratory approach to mathematics education*. Session presented at the Eastern regional conference of National Council of Teachers of Mathematics, Pittsburgh, PA.
- Drier, H. S.** (October 1999). *Probabilistic reasoning with the Probability Explorer microworld*. Paper presented at the Eastern regional conference of National Council of Teachers of Mathematics, Pittsburgh, PA
- Dawson, K., Mason, C., & **Drier, H. S.** (March 1999). *Integrating technology into secondary mathematics and social studies instruction*. Session presented at the annual conference of the Virginia Society of Technology in Education, Norfolk, VA.
- Drier, H. S.,** & Harper, S. R. (February 1999). *Middle school mathematics for the 21st century*. Workshop session presented at the Southeast regional conference of the National Council of Teachers of Mathematics, Charlotte, NC.
- Garofalo, J., & **Drier, H. S.** (February 1999). *Integrating social studies into the mathematics curriculum*. Session presented at the Southeast regional conference of the National Council of Teachers of Mathematics, Charlotte, NC.
- Harper, S. R., Shockey, T., **Drier, H. S.** & Garofalo, J. (February 1999). *Exploring recursion through various technologies*. Session presented at the Southeast regional conference of the National Council of Teachers of Mathematics, Charlotte, NC.
- Drier, H. S.,** & Garofalo, J. (May 1998). *Using microworlds to enhance the teaching and learning of mathematics*. Presented at the annual conference of the Virginia Society of Technology in Education, Roanoke, VA.
- White, P., & **Drier, H. S.** (May 1998). *Get some M.A.T.H. (Math and Technology Help) today*. Presented at the annual conference of the Virginia Society of Technology in Education, Roanoke, VA.
- Garofalo, J., **Drier, H. S.,** Shockey, T., & Harper, S. R. (May 1998). *An introduction to graphing calculators*. Workshop session at the annual conference of the Virginia Society of Technology in Education, Roanoke, VA.
- Shockey, T., Harper, S. R., & **Drier, H. S.,** (May 1998). *Exploring mathematics with technology: Data analysis activities*. Presented at the annual conference of the Virginia Society of Technology in Education, Roanoke, VA.
- Drier, H. S.** (October 1997). *Exploring probability with Dominoes and Dice*. Presented at the annual meeting of the Tidewater Council of Teachers of Mathematics, Virginia Beach, VA.
- White, P., & **Drier, H. S.** (April 1997). *Technology is alive in this classroom*. Presented at the annual conference of Virginia Society of Technology in Education, Virginia Beach, VA.
- Drier, H. S.** (March 1997). *How are graphing calculators used in secondary mathematics classrooms? Teachers' beliefs and practices*. Paper presented at the annual conference of Virginia Educational Research Association, Richmond, VA.
- Drier, H. S.** (March 1997). *Getting ready for algebra: Strategies for success*. A workshop session presented at the annual meeting of the Virginia Council of Teachers of Mathematics, Charlottesville, VA.

**Drier, H. S.** (March 1996). *Literacy Passport Test: Predicting success for general and special education students*. Paper presented at the annual conference of Virginia Educational Research Association, Richmond, VA.

Flanagan, S. S., & **Drier, H. S.** (March 1996). *Literacy Passport Test and new SOL: Providing math success for general and special education students*. Paper presented at the annual conference of Virginia Council of Teachers of Mathematics, Hampton, VA.

## Grant Activity

### Externally funded grants

#### Active

*Enhancing Statistics and Data Science Teacher Education-Transforming [ESTEEM II].*

Grant awarded by the National Science Foundation (October 2022-September 2027). The project aims to transform undergraduate teacher preparation to ensure that prospective teachers are comfortable and confident teaching data science. They will develop and curate a large library of curriculum materials. The new project is starting by studying the current state of undergraduate teacher preparation and early career math teachers for data science and statistics to identify problems of practice in teacher education programs. The project will then build a teacher education networked improvement community through partnerships with national organizations, researchers, teacher educators, and curriculum development projects and offer sustained support for faculty development. PI: Hollylynn Lee, CO-PIs: Stephanie Casey (Eastern Michigan University), Rick Hudson (University of Southern Indiana), Gemma Mojica (NC State), and Bill Finzer, (Concord Consortium). (**\$2,500,000**).

*Invigorating Statistics Teacher Education through Professional Online Learning [InSTEP].*

Grant awarded by the National Science Foundation (August 2019-July 2023). The project will evaluate a model of professional development that integrates personalized online learning and microcredentialing to better understand its effectiveness in supporting teacher learning. The project will draw from previous work to assemble online modules that engage teachers in doing high-quality statistics and data science tasks, the analysis of video of teachers' and students' work with those tasks, learning a pedagogical framework for teachers to implement the tasks, and exploring guidelines for identifying and developing high-quality statistics and data science tasks. The project will study teacher learning through the use of these modules, and the pathways that teachers choose through them to understand the effectiveness of the model. PI: **Hollylynn Lee**, NC State University; Co-PIs: Gemma Mojica, Alex Dreier, NC State University (**\$2,852,626**).

*Writing Data Stories: Integrating Computational Data Investigations into the Middle School Science Classroom.* Grant awarded by the National Science Foundation (March 2019-June 2023). This project seeks to integrate computational data analysis into the middle school science curriculum in a longitudinal, interdisciplinary way - drawing from the computer and data sciences, literacy studies, statistics, and science education to saturate the classroom with relevant tools, resources, and support. Middle school classrooms will analyze and draw conclusions about publicly available scientific datasets using a free, innovative, computational data analysis platform (CODAP). Overall the project is anticipated to directly impact approximately 2,500 students and 20 teachers in the greater San Francisco Bay area, from predominantly high needs schools. PI: Michelle Wilkerson, UC Berkeley, Co-PIs: Kris Guiterrez, UC-Berkeley; William Finzer, Concord Consortium; **Hollylynn Lee**, NC State University (**\$2,369,845**).

*Preparing to Teach Mathematics with Technology-Examining Students' Practices [PTMT-ESP]*. Collaborative grant awarded by the National Science Foundation (October 2018-September 2024). Project will build from and expand materials from prior funded PTMT projects, with a focus on developing and researching impacts of high quality video case materials of high school students' thinking and practices while engaging in algebraic tasks with dynamic technology tools. All video case materials will be added to the PTMT portal ([go.ncsu.edu/ptmt](http://go.ncsu.edu/ptmt)) and made freely available for use in mathematics education teacher education. PI: Jennifer Lovett, Middle Tennessee State University; Co-PIs: Allison McCulloch, University of NC-Charlotte, **Hollylynn Lee**, NC State University, and Charity Cayton, East Carolina University. (**\$1,779,314**)

*Diagnostic Inventories of Cognition in Education [DICE]*. Grant awarded by the department of Education through the Institute of Education Sciences (July 2017-June 2023). Project will develop to a freely-available, web-based formative assessment system that efficiently provides teachers with valid, timely, and actionable feedback about student cognition in probabilistic reasoning. This will be a truly formative assessment system that reliably and accurately diagnoses cognitively-based misconceptions to identify key concepts for which students need targeted instruction to yield improved student outcomes. We will test methods for designing and scoring concept inventories that profile multivariate reasoning with the ultimate goal of aiding teachers in implementing an effective formative assessment process. PI: Laine Bradshaw, University of Georgia, Co-PIs: **Hollylynn Lee**, NC State University; Roger Azevedo, University of Central Florida; Jessica Masters and Lisa Famularo, Research Matters Inc. (**\$1,500,000**).

Past

*Learning Analytics in STEM Education Research Institute [LASER]* Grant awarded by the National Science Foundation (August 2020-August 2021). The LASER institute will provide professional development for early and mid-career STEM education researchers in learning analytics, a computational research methodology. The goal of the institute is to increase the capacity of researchers to understand and improve STEM learning and learning environments through use of new sources of data and analytical approaches. PI: Shaun Kellogg, Co-PIs, Shiyan Jiang, **Hollylynn Lee**, Robert Moore. (**\$999, 150**). *The project is funded until July 2023. I only served as a Co-PI from August 2020-August 2021 and requested to be removed from the project to concentrate on other research projects.*

*Enhancing Statistics Education with E-Modules [ESTEEM]*. Grant awarded by the National Science Foundation (September 2016-June 2022). Project aims to develop, implement, and examine impact of materials and online data analysis tools for use in undergraduate mathematics teacher education to better prepare preservice teachers for teaching statistics. PI: **Hollylynn Lee**, Co-PI, William Finzer, Stephanie Casey, Rick Hudson. (**\$1,500,000**).

*North Carolina School of Science and Math Phase II - Academic Program and Student Experience Planning for the Morganton Campus*. Grant awarded by the NC Department of Administration (November 2018-December 2019). This project will assist committees from NCSSM to develop the plans for the academic sequences and student life for the new campus in Morganton to open in 2021. One of the major foci of the new campus will be utilizing aspects of data science to enrich students' experiences in academic work. PI: Trip Stallings, Co-PIs: Dave Frye, **Hollylynn Lee**, Sr. Researcher: Eric Wiebe. (**\$198,407**).

*A Networked MOOC for Teaching Statistics Through Data Investigations: An initiative of HI-RiSE at the Friday Institute.* Grant awarded by the American Statistical Association (April 2016-June 2018). Project aims to engage teachers in a blended approach to professional development by supporting 10 small professional learning teams across the country to engage in the Teaching Statistics Through Data Investigations MOOC-Ed and meet in small groups to discuss course material and make plans for impacting their practices at the local level. PI: **Hollylynn Lee. (\$15,000).**

*Massive Open Online Courses for Educators-Phase II.* Grant awarded by the William and Flora Hewlett Foundation (November 2015-June 2018). Grant is focused on continuing to offer three MOOC-Ed courses developed in 2014-15 and enhancing them with micro-credentialing as well as developing 2-3 additional MOOC-EDs for supporting secondary mathematics teachers. PI: Glenn Kleiman, Co-PI: **Hollylynn Lee**, Senior Researcher: Karen Hollebrands. (**\$500,000**).

*Noyce Mathematics Education Teaching Scholars Phase II at NC State.* Grant awarded by the National Science Foundation (September 2012-August 2019). Grant is a continuation of the project started in 2007. Funds will provide new scholarships to 14 undergraduate and graduate students pursuing double degrees in mathematics education and mathematics or statistics and obtaining initial licensure for teaching secondary mathematics. Project also focuses on retention of scholars as practicing teachers and research on effective practices. PI: Karen Hollebrands, Co-PIs: **Hollylynn Lee**, Molly Fenn, and Laura Bottomley. (**\$800,000**).

*Preparing to Teach Mathematics with Technology: Expanding, Transforming, and Community Building.* Grant awarded by the National Science Foundation (September 2011-June 2017). Project continues work started in the grant listed below to develop and evaluate an Algebra module, build a community of mathematics teacher educators across the US using our approach, and research any transformative impacts on the development of prospective teachers understanding of how to use technology in teaching. PI: **Hollylynn Lee**, Co-PIs: Karen Hollebrands & Allison McCulloch. (**\$687,735**)

*Preparing to Teach Mathematics with Technology: An Integrated Approach.* Grant awarded by the National Science Foundation (September 2008-August 2012). Proposal is to continue the work started in the grant listed below to develop Geometry module and provide professional development for teacher educators across the US for implementing the modules. We aim to develop and test the modules and submit materials for commercial publication. PI: Karen Hollebrands, Co-PI: **Hollylynn Lee. (\$500,400)**

*Noyce Mathematics Education Teaching Scholars at NC State.* Grant awarded by the National Science Foundation (September 2007-August 2014). Grant funds will provide scholarships to 28 undergraduate and graduate students pursuing double degrees in mathematics education and mathematics or statistics and obtaining initial licensure for teaching secondary mathematics. PI: **Hollylynn Lee**, Co-PIs: Karen Hollebrands, Irina Kogan, and Pam Arroway. (**\$950,000**).

*Preparing Prospective Mathematics Teachers to Teach with Technology: An Integrated Approach.* Grant awarded by the National Science Foundation (June 2005-December 2007). One of the main intellectual merits of this project will be to develop and test a model for teacher preparation that we hypothesize should integrate knowledge of mathematics, technology, pedagogy and student thinking. The goal of the full-scale project will be to develop curriculum materials in the form of modules. The specific objective for this proof-of-concept project is to create one prototype module for Data

Analysis and Probability. PI: **Hollylynn Lee**, Co-PIs: Karen Hollebrands & Lee Stiff. **(\$75,000)**

*TeKnowledgey Greenhouse: An Engineering and Education Learning Community.* Awarded by National Science Foundation. Grant is a planning grant (October 2003-2005) for the Colleges of Education and Engineering at NC State University to foster a learning community that can draw upon the strengths of both fields and generate innovative solutions for the engineering education of K-12 and undergraduate students. A planning grant allowed us to establish a community culture for faculty and students at a research-intensive university to work together on educational issues of teaching, research, and societal needs. PI: **Stohl (Lee)**, Co-PIs: Bill Deluca, Steve Walsh, & Tom Miller. **(\$100,000)**

*Identifying Emergent Design Principles through Analysis of Learning Technology in Action.* (May 2002-May 2003) Co-PI on a grant sponsored by CILT (Center for Innovative Learning Technologies—an NSF funded Center) to examine mathematical java applets for contributing design principles for the CILT design principles database (<http://www.design-principles.org>). PI: Jody Underwood of ETS (Educational Testing Service). Co-PIs include **Stohl (Lee)**, Karen Hollebrands, NCSU, Chris Hoadley, Penn State, and Chris DiGiano, SRI. **(\$10,000)**

*The North Carolina Middle Math Project: A professional development project to improve grade 6-8 mathematics education.* Awarded by National Science Foundation as a 4-year collaborative effort of the University of North Carolina system (January 2002-2006). Collaborated with faculty across the state to design and deliver a course on Teaching and Learning Data and Probability (one of 3 courses developed in project) to 145 middle grade teachers in NC pursuing National Board certification. PI: **Stohl** with Co-PI Sarah Berenson for subcontract with NC State. **(\$285,806)**.

#### Internally funded grants

*Mathematics Education Program: Reaching and Engaging More.* PIs: **Hollylynn Lee**, Karen Hollebrands, Cyndi Edgington, Derek Williams. Grant funded to support development of an online graduate certificate and initial scholarships for enrolling students. October 2017. **(\$13,000)**.

*Attracting and Recruiting Top Graduate Students in Mathematics and Science Education.* PI: **H. Lee**. Grant funded through Graduate School at NC State and Department of STEM Education. September 2011. **(\$3,500)**.

*Creating connected handheld computing environments.* PI: Karen Hollebrands, Co-PI: **Stohl**. Grant funded through College of Education Computer & Technology Committee, November 2002. **(\$8,028)**

*Investigation of middle grade learners' probabilistic reasoning in a digital learning environment.* PI: **Stohl**. Grant awarded by NC State's Faculty Research and Professional Development program, December 2000. **(\$5,000)**

*Integrating hand-held and desktop technologies.* PI: **Stohl**. Grant funded through College of Education Computer & Technology Committee, November 2000. **(\$4,171)**

## Collaborative Scholarly Activities

### External

*Data Science 4 Everyone.* Part of a large coalition of researchers, educational designers, teachers, and administrators committed to improving data science opportunities in K-12 schools and informal learning settings. The coalition had a Commitments event in June 2021 and 2022. My projects were highlighted as high-level commitments for providing professional learning opportunities to middle and high school teachers. Small group meets monthly to discuss issues in data science education.

<https://www.datascience4everyone.org/>

*UNC Faculty Entrepreneurship.* Participated in 4 day workshop (May 2016) with other faculty across UNC System to engage in entrepreneur education and process for developing start-up companies or innovative entrepreneurial ways to get research into practice for high impact.

*Mathematical Proficiency for Teaching.* Invited participant in a collaborative group of about 50 mathematics educators across the country engaged in considering how to use a framework and situations to inform secondary mathematics teacher education courses. Group led by Patricia Wilson, University of Georgia and Kathleen Heid, Penn State University. Work is based on NSF funded project. First three day working conference held at University of Georgia in Spring 2010.

*Research Advisory Board for the Consortium for the Advancement of Undergraduate Statistics Education.* Appointed to this board in Spring 2009. The members are from different institutions and fields such as Statistics, Educational Psychology, and Mathematics Education. The mission of the board is to establish the area of statistics education research as a recognized discipline with a visible presence, connect researchers from diverse disciplines that inform knowledge about teaching and learning statistics, collect and disseminate resources on research in statistics education, promote statistics education research. We meet several times a year as a group and each member is assigned to a research team of statistics educators from across the US for a two-year period to mentor and facilitate their research in an area of statistics education.

*Informal Mathematical Learning grant at Rutgers University (NSF-funded grant).* I collaborated (2004-2006) with researchers on this project focusing on the learning of middle-school students. The study focused in-depth on (1) the mathematical ideas and forms of mathematical reasoning that middle-school students develop and use as they investigate well-defined, open-ended tasks; (2) the patterns of discourse among the students as they build solutions to each task; and (3) over the course of the study, changes that occur in students' views about mathematics and about themselves as mathematical thinkers. The setting is an informal after-school program for students of Hubbard Middle School in Plainfield, NJ, an economically depressed, urban school district with 98% African American and Latino students. The research group met several times a year.

*Studying the Development of Mathematical Reasoning: R.B. Davis International Invitational Conference.* I participated in this invitational conference with about 25 researchers in mathematics education from 6 different countries. Researchers share current research projects, theories under development, and participate in small group data analysis sessions. *Meeting Dates:* October, 2004 Emerald Isle, NC; June, 2003 Umea, Sweden; October 2000, Emerald Isle, NC.

*IDEA: Identifying Design Principles in Educational Applets.* Collaborative effort with researchers at Educational Testing Service, SRI, the Math Forum at Drexel, Penn State University, and North Carolina State University. We examined the design of and students' work with 42 educational java applets created by the ESCOT (Educational Software Components of Tomorrow) project. Purpose was to extract a general set of design principles that can guide future design and development of educational applets that are created to be used with specific mathematical problems. Researchers met face-to-face over 3 different 4-day periods in 2002 and had numerous teleconferences.

*International Working Group on The Complexity of Learning to Reason Probabilistically.* I was the co-chair of this group of about 30 international researchers from 2003-2009. The group met once a year as part of the meetings for the Psychology of Mathematics Education -North American Chapter and the International Group of the PME. As Co-chair, I maintained website and listserv, wrote the research descriptions and goals for annual proceedings, and planned collaborative research activities.

## Internal

### *Data Science Initiative 2015-current*

Working with faculty across campus to develop faculty capacity for data science education and big data research, as well as curricular options for undergraduate and graduate education. In 2021, the Data Science Academy at NC State was formed. I continue to serve as an advisor for the DSA.

### *Digital Transformation of Learning Faculty Cluster at the Friday Institute 2014-2019*

Collaboration with faculty across disciplines such as Computer Science, Learning Sciences, Psychology, Mathematics Education, Science Education. The faculty cluster share work on design, development, and research on digital tools for learning and teaching.

### *NCSU STEM faculty initiative 2009-2016*

Participate in meetings (several times per semester) with STEM faculty in disciplines across campus to discuss issues of teaching and research and to plan collaborative efforts.

### *Statistics Education Group 2005-2016*

Engaged in cross-department collaborations between statistics and mathematics education faculty and graduate students. Research studies conducted in the context of undergraduate statistics courses. Group met regularly to discuss research and practices in statistics. Group developed a graduate certificate in Statistics Education.

### *TeKnowledge Greenhouse. 2003-2005*

As part of this planning grant, I worked with faculty in several departments within NC State University (e.g., Electrical Engineering, Chemical Engineering, Physics, Computer Science, Design) in seeking ways to engage in collaborative efforts that are mutually beneficial for the education of engineering undergraduates and the recruitment of students grades 6-12 to STEM-related majors. Faculty met numerous times throughout the year, including a 4-day retreat in summer 2004.

### *Mathematics and Science Education Collaboratory. 2003-2007*

As part of the Friday Institute for Educational Innovation, I was co-chair (with Eric Wiebe) of this collaboratory that included 25 faculty members. Faculty gathered on a bimonthly to share research interests, data analysis, and collaborative efforts.



# Teaching and Mentoring

## *Courses Taught since Fall 2000*

NC State University

My teaching load has varied from 0-4 courses per academic year, depending on grant activities. Class sizes typically range from 12-29.

EMS 204 Introduction to Teaching and Learning Mathematics

EMS 480/580 Teaching Mathematics with Technology (online since Fall 16)

EMS 474 Teaching Mathematics Topics in the Middle Grades

EMS 471 Supervision of Mathematics Student Teaching (Middle and High School)

EMS 513 Teaching and Learning Algebraic Thinking

ST 519 / EMS 519 Teaching & Learning Statistical Thinking (online since Summer 15)

EMS 581 Advanced Applications of Technology in Mathematics Education

EMS 770 Foundations in Mathematics Education

EMS 792 Special Topics: Foundations in Statistics and Data Science Education

EMS 792x Mathematics Education Literature and Research Methods

ED 795 Special Topics: Qualitative Methods for Examining Teaching and Learning

EMS 802 Seminar in Mathematics Education

EMS 851 Doctoral Practicum in Mathematics Teacher Education

Baylor University

Faculty in residence in Spring 2023. Taught two classes

MTH 3318 Data and Chance (Statistics class for elementary and middle grades preservice teachers)

TED 4349 Critical Issues in Mathematics Education

## *Mentoring of Students*

### Doctoral

#### Chair/Co-Chair:

Current: Asli Mutlu, Zachary Vaskalis, David Stokes, Hamid Sanei, Purity Muthitu, Adrian Kuhlman

#### Graduated:

Heather Barker (2021, Lecturer, Elon University, Elon, NC)

Taylor Harrison (2020, Assistant Professor, Northwest Missouri State University, MO)

Christina Azmy (2019, Assistant Professor, Catawba College, NC)

Kemal Akoglu (2018, Assistant Professor, Boğaziçi University, Istanbul Turkey)

Victoria Weber (2017, Teaching Assistant Professor, University of Notre Dame)

Marggie Gonzalez-Toledo (2016, Assistant Professor, University of Puerto Rico)

Jennifer Nickell Lovett (2016, Assistant Professor, Middle Tennessee State University)

Ayanna Perry (2013, Director of professional development, Knowles Teaching Scholars)

Tyrone Washington (2012, Associate Professor, Millersville University),

Tina Starling (2011, St. Mary's School, Mathematics Department Chair)

Amanda Lambertus (2010, Associate Prof. and Department Head, Arkansas State Univ.),

Sarah Ives (2009, Associate Professor, California State University-Sacramento),

Rachel Kenney (2008, Associate Professor, Purdue University),

Robin Rider (Angotti) (2004, Professor, University of Washington Bothell),

### Committee Member:

Graduated: Nancy Smith (2018), William Hall (2017), Samet Okumus (2016), Tamar Avineri (2016), Carrie Lineberry (2015), Megan Ryals (2014), Jennifer Sloan (2013, Statistics), Charity Cayton (2012), Krista Holstein (2012), Ryan Smith (2010), Julie Beier (2008, Mathematics), Maria Droujkova (2004), Min Jung Kim (2004, Comparative Biomedical Sciences), Katrina Staley (2003), C.E. Davis (2003), Matthew Clark (2003), Angela Teachey (2003), Laurie Cavey (2002)

### Masters (\*Advisor for M.Ed., \*\*chair of thesis committee for M.S.)

Current: Michelle Bailer\*, Amy Wagoner\*, Linda Zier\*, Garner Overton\*

Graduated: Aaron Ideus\* (2021), Abby Adcock\* (2021), Tabitha Moore\* (2021), Hamid Sanei\* (2021), Jennifer Orr\* (2020), Haley Harrison\* (2019) Suzanne Jordan\*(2019), Donna Irving\* (2018), Kelly Laveroni\*(2017), Greg Ray\* (2017), Nick Koberstein\* (2016), Josh Jenkins\* (2015), Nina Bailey\* (2015), Kemal Akoglu\*\* (2014), Jenna Rice\*\*(2013), Taylor Harrison\*\*(2013), Feezah Ishmail\* (2012), Shana King\*(2012), Meagan Laskowski\* (2011), Gail Kweon\* (2011), Janet Bailey\* (2011), James Hedges\* (2010), Marggie Gonzalez\*\* (2010), Breanna Harrill\* (2009), Morgan Loughridge\* (2009), Karen Klien\* (2009), Matt Campbell\*\* (2009), Candace Blackwood\* (2008), Mary Klinikowski\* (2008), Lindsay Holland (2008), Cyndi Edgington (2008), John Henderson (2008), Jera Mendenhall\*(2007), Christine Mainey\* (2007), Katie Park\* (2007), Bethany Hudnutt\*\* (2007), Amanda Lambertus (2007), Gemma Mojica \*\* (2006), Lee Ann Ochs\* (2004), Eleanor Pusey\*\* (2003), Kate Mansi\*\* (2003), Paula Johnson (2002), Ashley Allain (2001), Deborah Mills\*\* (2001)

### Undergraduate Research

Andy Khounmeuong, STEM Education scholar (2018-2020)

Derrick McCann, STEM Education scholar (2016-2018)

Jenna Rice (Statistics education project through AGEP 2010-11)

Co-mentor for summer research through AGEP (2007-8): Dana Jones, Jenadayi Harmon.

Research Mentor for 2 Park Scholars: Matt Campbell (2001-05), Lauren Riggs (2004-06)

### Noyce Mathematics Education Teaching Scholars

Participated in mentoring of 36 graduate and undergraduate Noyce Scholars, 2008-2015. Activities included bi-weekly seminars in Fall and Spring, engaging in action research, providing special topic workshops and summer institutes, taking scholars to professional conferences, and engaging in social events. Mentoring began while scholars were in teacher education program, and extended through their first 4 years of teaching.

## **Software, App, & Open Educational Resource Development**

*Committed to OERs and disseminating materials under Creative Commons licensing.*

### *ESTEEM Statistics Teacher Education Modules 2017-current*

In January 2018, the ESTEEM project launched the open education resource site for disseminating statistics teacher education curriculum materials. These materials are multimedia in nature (text, video, online apps) and are disseminated as complete packages that be downloaded and imported into three Learning Management Systems: Moodle, Blackboard, and Canvas. Approximately 45 hours of course materials included. Registration for the site is free. See <http://go.ncsu.edu/esteem> to gain access.

### *PTMT portal 2015-current*

For over a decade, I worked with colleagues Karen Hollebrands and Allison McCulloch to develop, field test, revise, implement, and disseminate a series of three modules (Data Analysis and Probability, Geometry, Algebra) to assist teacher educators to prepare middle and secondary teachers to teach mathematics using dynamic technology tools. Modules include text, digital technology files, videos of students and teachers working with technology, sample solutions, facilitator guides, and suggested readings. Two modules were initially published by Kendall Hunt in 2010 and 2012. In 2014-15, to better meet needs of teacher educators and preservice teachers, all materials were converted to digital formats and an online portal was created to house all materials, with access made free. In 2017, videocases from interviews and classroom observations of teachers using technology were created and added to the portal. In 2018, a module with 4 chapters about statistical investigations that included investigations with the online tool CODAP and online applets were added to the portal. In 2021 new materials were added to the portal to enhance examining students' practices in working on technology-enhanced algebra tasks. <http://go.ncsu.edu/ptmtportal>.

### *Massive Open Online Courses for Educators 2014-current*

Designer and instructor for creating open educational resources (briefs, instructional videos, frameworks, video cases, professional development guides, etc) that are part of free online courses offered for educators through the Friday Institute for Educational Innovation. Collectively, these courses have enrolled 7500+ educators from every state in the U.S. and 94+ countries. Courses include:

[Amplifying Statistics and Data Science in Classrooms](#) (Lead instructor & designer)

[Teaching Statistics Through Data Investigations](#) (Lead instructor & designer)

[Teaching Statistics Through Inferential Reasoning](#) (Lead instructor & designer)

[Teaching Mathematics with Technology](#) (support designer and facilitator, lead instructor Spring 2020)

### *Balancing Mummies 2013-2015*

Worked with graduate students in a serious games class to design and develop an online game intended to teach a conceptual approach to the arithmetic mean as a balancing point. Collaboration among a mathematician, myself, and computer science faculty and graduate students. Applet is currently being field tested with middle grades students and teachers (Spring 2014). App currently offline.

### *Technology-Based Problems of the Week 2000-2002*

As part of the ESCOT (Educational Software Components of Tomorrow) project, researchers, teachers, and software developers integrated various software components to create innovative applets and accompanying problems for middle school mathematics. The NSF-funded grant was a collaboration between SRI's Center for Technology in Learning and the MathForum.com. Available at <http://www.mathforum.com/escotpow>

### *Probability Explorer 1998-2003*

Designed and developed a microworld for elementary and middle school students to explore probability and rational number concepts with such devices as coins, dice, spinners, and marbles as well as real world events such as the weather, sports and the lottery. Have conducted extensive research on students' reasoning using this software.

### *Dominoes and Dice* 1997-98

Designed and developed a microworld to help elementary and middle school students learn probability concepts. The environment is designed to be open-ended and enhance students' understanding with concepts such as sorting, classifying, randomness, fair, empirical and theoretical probability, combinations, permutations, and graphing. An instructional unit to accompany the software was written by H. S. Drier and P. White. (microworld developed in Oracle Media Objects)

## **Other Educational Materials Development**

### *Center for Technology and Teacher Education* 1997-2003

Part of a team developing materials to help preservice and inservice teachers learn how to effectively integrate technology into middle and secondary mathematics classes. The materials utilize Microsoft Excel, The Geometer's Sketchpad, MicroWorlds (Logo), the WWW, java applets, and graphing calculators. Materials have been disseminated for use in mathematics content and methods courses at other colleges and universities. Materials and our guidelines can be viewed online at [curry.edschool.virginia.edu/teacherlink/math](http://curry.edschool.virginia.edu/teacherlink/math).

### *University of Virginia Continuing Education* 1997-2000

Developed a 3-credit graduate course on the "Teaching and Learning of Algebra," including a comprehensive course packet. Most algebraic concepts are developed through pattern-based situations and utilize real world applications, concrete materials, and technology tools. I conducted training sessions for other adjunct faculty.

### *Virginia Department of Education* 1997-1998

Collaborated with several mathematics educators to design an institute for enriching K-5 teachers' knowledge about patterns, functions and algebra. Piloted the 3-day institute twice during 1997. Materials distributed through Virginia Department of Education.

### *School-University Research Network* 1996

Designed three activity packets for teachers to improve the teaching and learning of algebraic concepts in upper elementary, middle school, and Algebra I. The activities were designed to correlate with the 1995 Virginia Standards of Learning. Materials distributed to teachers in 14 school divisions in Virginia.

## **K-12 Teacher Development, Faculty Workshops and Courses**

Lee, H. S., Wilkerson, M. H., Stokes, D., & McBride, C. (April 2022). *Telling stories with data: Tools and strategies for building data fluency*. One hour free webinar offered for educators from across the U.S. <https://www.fi.ncsu.edu/event/telling-stories-with-data-strategies-and-tools-for-building-data-fluency/>

Lee, H. S., & Mojica, G. M. (August 2022). *Importance of bringing real data and investigations into your classroom*. Session presented at the Virtual "Meeting within a Meeting" professional development for secondary teachers, sponsored by the Joint Committee of the ASA and NCTM.

Kellogg, S., Jiang, S., Rosenberg, J., Moore, R., & Lee, H. S. (June 2021). LASER Summer Institute. Two-week virtual workshop for 40 STEM education researchers from across the U. S. <https://www.fi.ncsu.edu/projects/laser-institute/>

Mojica, G. F., & Lee, H. S., (April 2021). *Expanding your professional learning in teaching statistics and data science in 6-12 classrooms* [Webinar]. ASA Statistics Teacher Meet-ups. Virtual. Recording at <https://www.youtube.com/watch?v=uqSRaVNJP3Q>

- Lee, H. S.,** Mojica, G. F., Thrasher, E., & Ray, G. C. (March 2021). *Investigating real, multivariate data with CODAP* [Webinar]. ASA Statistics Teacher Meet-ups. Virtual. Recording at <https://www.youtube.com/watch?v=aUEcdbHGXhk>
- Lee, H. S.,** Hudson, R., Casey, S., & Harrison, T. R. (March 2021). *ESTEEM Webinar for Mathematics Teacher Educators: A 2-hour webinar held for faculty implementing ESTEEM materials in university courses.*
- Lee, H. S.,** Hudson, R., Casey, S., & Harrison, T. R. (September 2020). *ESTEEM Webinar for Mathematics Teacher Educators: A 2-hour webinar held for faculty implementing ESTEEM materials in university courses.*
- Wilkerson, M., **Lee, H.S.,** Gutiérrez, K., Lopez, L., Riveria, E., & Cortez, K. (July 2020—2021). *Telling Data Stories: Scientific Data, Student Experience, and Authorship for Social Justice in Middle School Science Classrooms.* 4 hours of webinars plus 4 online modules and personalized supports for 16 middle school science teachers in California.
- Lee, H. S.** (August 2019). *Sparking Curiosity as a Data Detective.* Session held for middle school teachers during back-to-school professional development day in Durham Public Schools.
- Lee, H. S.** (August 2019). *Diving Deeper with an Online Data Tool.* Session held for high school teachers during back-to-school professional development day in Durham Public Schools.
- Lee, H. S.,** (February 2019). *Investigating statistics and probability with the online tool CODAP.* A half day workshop held for 17 secondary mathematics teacher in Durham Public Schools.
- Lee, H. S.** (November 2019). *ESTEEM Webinar for Teacher Educators: Implementing the Foundations in Teaching Statistics and Supporting Inferential Reasoning Modules.* A 2-hour webinar held for faculty across U.S. implementing ESTEEM materials in university courses.
- Hudson, R., **Lee, H. S.,** Mojica, G. F., Barker, H., Harrison, T. (May 2019). *ESTEEM workshop for statistics teachers and teacher educators.* A one-day workshop held for 14 faculty at institutions across the US to learn about strategies for preparing teachers to teach statistics and to become familiar with the ESTEEM project open-educational resource materials. Held at US Conference on Teaching Statistics
- Hudson, R., Casey, S., Mojica, G. F., **Lee, H. S.,** Azmy, C., & Barker, H. (February 2019). *ESTEEM workshop for teacher educators: Part II.* A one-day workshop held for 18 faculty at institutions across the US to learn about strategies for preparing teachers to teach statistics and to become familiar with the ESTEEM project open-educational resource materials. Held prior to Association of Mathematics Teacher Educators conference.
- Hudson, R., Casey, S., **Lee, H. S.,** Mojica, G. F., & Azmy, C. (February 2018). *ESTEEM workshop for teacher educators.* A one-day workshop held for 12 faculty at institutions across the US to learn about strategies for preparing teachers to teach statistics and to become familiar with the ESTEEM project open-educational resource materials. Held prior to Association of Mathematics Teacher Educators conference.
- Lee, H. S. & Mathematics Education Team at Friday Institute** (2017-current). *Teaching statistics through inferential reasoning.* A 5-unit Massive Open Online Course for Educators. About 70% of participants are classroom teachers (middle school through college level), while about 10% are teacher educators.
- Lee, H. S., & Mojica, G. M.** (May 2017). *Teaching and learning statistics in the middle grades.* Two day workshop held for 28 regional mathematics specialists in Texas as part of Mathematics Leadership Institute, University of Texas Austin.

- Lee, H. S.** & Mathematics Education Team at Friday Institute (2015-current). *Teaching statistics through data investigations*. A 5 unit Massive Open Online Course for Educators. Offered 7 times, thus far, with over 3500 registrants from 84 countries. About 64% of participants are classroom teachers, while about 12% are teacher educators.
- Lee, H. S.** (November 2014). *Using animations to create teaching and learning scenarios for mathematics teacher education*. One hour webinar as part of the webinar series for Association of mathematics teacher educators. 45 participants attended live, and webinar archived for members to view later.
- Lee, H. S.,** & McCulloch, A. M. (May 2014). *Preparing to Teach with Technology: Faculty resources with a focus on Algebra*. Two hour webinar held for 10 faculty members from institutions across the country. Session recorded and posted for others to view.
- McCulloch, A., **Lee, H. S.,** & Hollebrands, K. F. (June 2013). *Preparing to Teach Mathematics with Technology: Faculty Professional Development in Algebra*. Three day institute for 25 faculty members from institutions across the country, held at NC State.
- Lee, H. S.,** Hollebrands, K. F., & McCulloch, A. (May 2012). *Preparing to Teach Mathematics with Technology: Faculty Professional Development in Geometry, Data Analysis, and Probability*. Three day institute for 24 faculty members from institutions across the country, held at NC State.
- Hollebrands, K. F., & **Lee, H. S.** (June 2011). *Preparing to Teach Mathematics with Technology: Faculty Professional Development in Geometry, Data Analysis, and Probability*. Co-taught one week institute for 18 faculty members from institutions across the country at the Friday Institute at NC State.
- Lee, H. S.,** & Hollebrands, K. F. (July 2010). *Preparing to Teach Mathematics with Technology: Faculty Professional Development in Data Analysis, Probability and Geometry*. Co-taught one week for 15 faculty members from institutions across the country at the Friday Institute at NC State.
- Lee, H. S.,** & Hollebrands, K. F. (June 2009). *Preparing to Teaching Mathematics with Technology: Faculty Professional Development in Data Analysis and Probability*. Held for one week for 7 faculty members from institutions across the country at the Friday Institute at NC State.
- Lee, H. S.** (Fall 2004 & Spring 2005). *Learning to Use Technology Tools for Teaching High School Mathematics*. Three-day workshop with teachers in Elizabeth City, NC.
- Stohl, H.** (September, 2003). *Engaging Technology Tools for Data Analysis and Probability in the Middle School*. One day workshop with teachers in Buncombe County, Asheville, NC.
- Stohl, H.** (Fall 2002). *Algebra Success for All*. A 2-day workshop given to teachers in military schools through the Department of Defense Education Activity. Workshops held in Germany and Atlanta, GA.
- Stohl, H.** (July 2002). Three Educational Technologies for Integrating Mathematics and Technology. A 2-day workshop given to educational officers and teachers at the NASA Research Center Office of Education, Langley, VA.
- Stohl, H.,** & Hollebrands, K. (Spring 2002). *Teaching Mathematics with Technology*. A series of workshops (10 hours) with teachers from Cary High School, Cary, NC.

- Drier, H. S.** (2000-2001). Using a graphing calculator to investigate middle school mathematics. A series of workshops with teachers from Centennial Campus Middle School, Raleigh, NC.
- Garofalo, J., **Drier, H. S.**, & Harper, S. R. (1999-2001). Integrating technology in middle and secondary school mathematics. A two-year professional development project with teachers as part of the XL Education Initiative Grant. Hamilton, Bermuda.
- Drier, H. S.** (1999-2000). Making mathematics matter. A year-long professional development project as part of a Toyota TIME Grant with middle school teachers. St. Gregory's School, Virginia Beach, VA.
- Drier, H. S.** (Fall, 1999). Using manipulatives to teach algebra concepts. A two-day workshop with high school teachers in Prince George Public Schools, Prince George VA.
- Drier, H. S.** (February, 1999). Using probability, statistics, and technology projects as a vehicle to meet many of the K-5 Virginia Standards of Learning. Workshop with elementary teachers in Amherst County Public Schools, Amherst, VA.
- Garofalo, J., **Drier, H. S.**, Harper, S. R., Shockey, T., & Timmerman, M. (1998-99). Using technology to explore middle and secondary school mathematics. A three-day inservice project with teachers in Albermarle County Public Schools, Charlottesville, VA.
- Drier, H. S.**, & Murray, M. (Fall, 1998). Explorations in K-5 probability and statistics. A two-day workshop with elementary teachers in Charlottesville Public Schools, Charlottesville, VA.
- Drier, H. S.** (November, 1998). Exploring probability and statistics in grades K-5. Workshop presented at the annual professional development conference of the Amherst Public Schools, Amherst, VA
- Drier, H. S.** (November, 1998). Developing reasoning with patterns, functions, and algebra in grades K-5 . Workshop presented at the annual professional development conference of the Amherst Public Schools, Amherst, VA
- Drier, H. S.** (July, 1998). Using manipulatives in middle school algebra. A two-day inservice with middle school teachers in Newport News City Schools, VA.
- Harper, S. R., Shockey, T., & **Drier, H. S.** (July, 1998). Integrating the Virginia technology Standards of Learning into the eighth grade mathematics curriculum. A four day inservice project with mathematics and technology teachers in Pittsylvania County Schools, Chatham, VA.
- Drier, H. S.** (1997-1998). Conducted a year-long project to improve the teaching, learning, and assessment of Algebra I with high school mathematics teachers. Project included model teaching, consultation and evaluation, workshops, and curriculum and assessment alignment. Louisa County Public Schools, Mineral, VA.
- Drier, H. S.** (Fall, 1996). TI-82 overview: An introduction to the graphing calculator. A two-day project with middle and high school teachers in Warren County Public Schools, Front Royal, VA.
- Drier, H. S.** (October, 1996). Algebra and the graphing calculator: Connections and applications. A workshop with middle and high school teachers in Winchester Public Schools, Winchester, VA.
- Drier, H. S.** (January, 1995). TI-81 overview: An introduction to the graphing calculator. A workshop with middle school teachers in Williamsburg/James City County Schools, VA.

## Professional Service

### Fields of Mathematics and Statistics Education

*NCTM-ASA joint committee on statistics education*

Appointed as **co-lead** (with Gemma Mojica) for annual “Meeting within a Meeting” professional development efforts for K-12 teachers. 2022-current.

*NCTM- MAA-SIAM Joint Committee on mathematical modeling*

**Member**, Appointed by NCTM President 2019-2022

*Statistics Teacher*

**Co-editor**, January–September 2017 to launch this new online publication from the American Statistical Association

*STEW: Statistics Education Web-an online journal of K-12 statistics lessons*

**Editor**, June 2014 – September 2017

*Statistics Education Research Journal*

**Associate Editor**, March 2013-December 2019

*Mathematical Thinking and Learning*

**Editorial Board**, May 2014-2017

*NCTM-ASA Joint Committee on Statistics Education*

**Committee member**, 2015-2017.

*10<sup>th</sup> International Conference on Teaching Statistics.*

**Co-leader** of Topic area Technology and Multimedia in Statistics Education. Wrote call for papers, reviewed proposals, chose invited papers and organized into sessions. Conference to be held in Kyoto, Japan. July 2018

*9<sup>th</sup> International Conference on Teaching Statistics.*

Served as invited **organizer** of papers for one session under the topic of Probability in Teaching Statistics. Conference held July 2014 in Flagstaff, AZ.

*13<sup>th</sup> International Congress on Mathematical Education.*

Invited to serve as a **lead team member** for the Topic Study Group focused on Probability. Conference to be held July 2016 in Hamburg, Germany.

*Wyoming Institute for the Study and Development of Mathematical Education (WISDOMe).*

Appointed member of the International Advisory Board (2013-2016).

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

Appointed member of the **Research Advisory Board** (2009-2016).

*NC Council of Teachers of Mathematics*

Appointed member of the **Special Awards committee**. (2012-current)



Elected **Vice President for Colleges** in the Eastern Region and thus on Board of Directors (2009-2011)

*Association of Mathematics Teacher Educators*

Appointed **representative** for the Launch Years Math Organizations Leadership Network Partners (through the Dana Center at UT Austin). The Launch Years team is working to improve the experiences and outcomes for students in the transition from secondary to postsecondary mathematics. (2022)

Appointed member of **Technology Committee** (2012-2014)

Appointed member of **Membership Committee** (2002-2004)

*Monograph Series*. In 2007-08 served on **editorial review board**. In 2008-09 I was appointed **Co-editor** with Denise Mewborn.

*On-Math: Technology Research into Practice* column. Online mathematics education journal published by the National Council of Teachers of Mathematics. [review submissions, correspond with authors, edit accepted submissions.]  
**Editor** of Research into Practice articles, 2007-2008.

*Technology Tips* (monthly column), Mathematics Teacher journal, published by the National Council of Teachers of Mathematics. [review submissions, correspond with authors, edit accepted submissions, write several columns per year.]  
**Editor**, with co-editor Suzanne Harper (2003-2005).  
**Co-editor**, with editor Karen Hollebrands (2002-2004).

*Working Group on The Complexity of Learning to Reason Probabilistically*, part of both the International Group for Psychology of Mathematics Education and the Psychology of Mathematics Education -North American Chapter  
**Co-chair** with various faculty over the years (2003-2009)  
**Member** (2000-2010)

*Council for Technology in Mathematics Education*, an affiliate of National Council of Teachers of Mathematics. **Steering Committee member** (1999-2007)

*Contributions to Mentoring and Evaluation of young scholars external to NC State*

- Mentor to a Community College faculty member as part of the TANGO project to improve statistics education at the community college level. Meet 2-3 hours per month to discuss progress and offer assistance. 2016-2017.
- Prepared external review for grant proposal at the *University of Cyprus* for project to develop measures of TPACK specific to mathematics, Spring 2012.
- External evaluations for promotion and tenure for faculty at different institutions (about 2-3 per year).
- Mentor of team of 4 young scholars in a research cluster focused on undergraduate statistics education, sponsored by CAUSE. (met bi-weekly to review progress and assist in all aspects of their research cycle). 2009-2011.
- Invited member of young scholar research mentoring session held at Psychology of Mathematics Education North American Chapter conference in 2009.
- Invited member of new professor mentoring session held at Association of Mathematics Teacher Education conference in 2011.

### *Advisory Board for Research Grants*

- Member of advisory board for CAREER grant funded by NSF for Dr. Travis Weiland focused on improving teaching and learning of statistics and data investigations. 2022-2027.
- Advisory board member of DRK12 NSF funded grant, *Probability through AI problem-solving in game-based environment*, PI Nina Wang and Eric Greenwald, 2022-2025.
- Advisory board member of DRK12 NSF funded grant *Integrating the statistical investigation process, data visualization, and simulation into high school statistics*, PIs: Nathan Tintle, Beth Chance, Karen McGaughey, Elsa Medina, Todd Swanson, Jill VanderStoep, and Ruth Carver. 2022-2026.
- Advisory board member of grant, *Boosting Data Science Teaching & Learning in STEM*, PI Kirsten Daehler (WestEd), Co-PI Bill Finzer (Concord Consortium). August 2021-2025
- Advisory Board member for grant, *Supporting the Development of Mathematics Preservice Teachers' Critical Consciousness through Statistical Investigations of Systemic Racism*, PI: Anthony Fernandez (UNC Charlotte), Co-PIs: Ksenija Simic-Muller, Travis Weiland. October 2021-2024.
- Advisory board member of grant, *A Data-Driven, Multidisciplinary Curriculum Providing Access to the Data Analytics Economy through Project-based Learning* funded by NSF. PI Lisa Dierker. September 2018-August 2023
- Member of advisory board for CAREER grant funded by NSF for Dr. Susan Peters focused on teachers' understanding of statistical variation, 2013-2019.

### *Grant Proposal Reviewer for National Science Foundation*

Reviewer and panelist for grant proposals submitted to NSF under solicitations of REESE, DRK-12, CAREER, IUSE, and SBIR (2007-present).

### *Manuscript Referee: Review 1-3 manuscripts per year.*

Mathematics Teacher: Learning and Teaching PreK-12 (2000-present)

Mathematics Teaching in the Middle School (2000 - 2017).

Journal of Mathematical Behavior (2002-present)

Journal of the Learning Sciences (2003 - present)

Journal for Research in Mathematics Education (2003-present)

Technology Innovations in Statistics Education (2010-present)

### *Proposal Reviewer:*

Association of Mathematics Teacher Education (2002 – present)

International Congress in Mathematics Education (2015-present)

Congress for European Research in Mathematics Education (2014)

Psychology of Mathematics Education North American Chapter (2001-present)

National Educational Computing Conference (2000)

### NC State Service

#### *Departmental Service*

Chair, Departmental Voting Faculty, 2017-18, Fall 2018

Executive Committee member (advisors to department head), Spring 2014-2016

Mentor for several Assistant Professors

Conduct Peer Teaching Reviews for colleagues (about 1-2 per year)

Graduate Program Coordinator in Mathematics Education, Aug 2020-Dec 2021, 2017-18,  
Fall 2015, 2005-2014

*College of Education Committees*

Friday Institute for Educational Innovation,  
Interim Associate Dean, College of Education, Friday Institute, June –Dec 2022  
Leadership team, 2020-current  
Faculty Advisory Board, 2002-2006  
Co-chair of the Mathematics and Science Collaboratory, 2003-2006  
College PhD 5-year Review Committee, member, 2021  
Undergraduate Courses and Curricula Committee, 2017-2018  
Colleges of Education and Engineering-Task Force on development of Engineering  
Education doctoral program, 2015-2019  
PhD Revisioning Task Force, 2012-2014 (Co-Chair of Curriculum task force)  
College Reappointment, Promotion and Tenure Committee, 2013-2016 (co-chair 2013-  
14, chair 2014-16)  
College Research Methods Curriculum Committee, 2015-2017  
Member of two mentoring teams for Assistant/Associate professors in other departments  
in College of Education, 2014-2019.  
Faculty Grievance Panel, elected member, 2012-2014  
Program Coordinators Committee member 2007-2014  
Graduate Studies Committee, 2007-2009  
MAT Faculty Council, 2011-2014  
Research Committee member 2000 - 2001  
Technology Committee member 2003-2006  
NCATE review committees  
Field Experiences Committee, member 2000-2001  
Curriculum Committee, member 2005-2008

*Faculty Search Committees*

Mathematics Education Searches,  
Assistant Professor, Chair of Committee, 2020 (successfully hired 2 faculty)  
Assistant Professor, committee member, 2017-2018  
Teaching Assistant Professor, committee member, Spring 2017  
Teaching Assistant Professor, Chair of Committee, Fall 2012  
Assistant Professor, Chair of Committee, 2006-2007 (successfully hired 2 faculty)  
Assistant Professor, Member of two committees, 2000-2001, Spring 2006  
Associate Dean for Innovation and Research, Fall 2016  
Dean, College of Education, Fall 2015-Spring 2016  
Master of Arts in Teaching, Teaching Assistant Professor in STEM Ed, Spring 2013  
Quantitative Research Methodologist search, Spring 2011  
Department Head, Mathematics, Science, and Technology Education search, 2007-2008  
Elementary Mathematics Education Search, Spring 2006  
Educational Foundations & Policy Search, 2004-2005

*University Service*

University Faculty Scholars Administrative Advisory Committee, 2016-2019  
Data Science Initiative and Academy,  
Member of Curriculum Committee for Data Science Academy, 2022-present

Faculty Advisory Committee, College of Education representative, 2015-2021  
Member of Educational initiatives sub-committee, 2016-2021  
Graduate Student Research Symposium, Judge 2008, 2013  
University Courses & Curriculum Committee, Spring 2011  
Library Committee member 2000 - 2007  
Park Scholar Program Academic and Research Mentor for 2 Park Scholars in  
Mathematics Education (2001-2005)

### Service to NC Public Schools

*School Improvement Team*, parent member at Lowes' Grove Middle School, Durham Public Schools, NC, 2018-2022

*Science Fair Judge*, served as a judge for school-level fair at Lowes' Grove Middle School, Durham Public Schools, NC. January 2019.

*NC Science Olympiads*, coach for elementary and middle school teams in Durham Public School, 2015-2019

*Durham Public Schools Title I Parent Advisory Committee Steering Committee*, 2017-18.  
Met 5 times a year with representatives from all Title I schools in DPS and central administrators to discuss issues and advocate for resources and family involvement in Title I schools.

*Volunteer mathematics teacher* in several Wake and Durham county public elementary, middle, and high schools (2-6 days per year), 2012-2019.

*Volunteer Consultant for NC Department of Public Instruction* on revisions to middle grade and high school mathematics Standard Course of Study, 2006-2014.

### **Current Memberships**

Association of Mathematics Teacher Educators (and NC Chapter)  
National Council of Teachers of Mathematics  
NC Council of Teachers of Mathematics  
Psychology of Mathematics Education-North American Chapter  
American Statistical Association (and NC Chapter)  
International Association of Statistics Education