**Nicole L. Fonger, Ph.D.**

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# FORMAL EDUCATION

**Western Michigan University, Kalamazoo, Michigan**

Doctor of Philosophy – Mathematics Education, 2012

Dissertation: *Characterizing and Supporting Change in Algebra Students’ Representational Fluency in a CAS/Paper-and-Pencil Environment*

Master of Arts – Mathematics, 2009

Master of Arts – Mathematics Education, 2008

**University of Saint Thomas, Saint Paul, Minnesota**

Bachelor of Arts, Mathematics, 2006

*Magna cum laude*

# ACADEMIC APPOINTMENTS

**Syracuse University**

**Department of Mathematics, College of Arts and Sciences**

**School of Education**

Associate Professor, Mathematics and Mathematics Education, 2023 – current position

Assistant Professor, Mathematics and Mathematics Education, 2017 – 2023

**University of Wisconsin – Madison, Wisconsin Center for Education Research**

Postdoctoral Research Fellow, Mathematical Thinking, Learning, and Instruction, 2014 – 2017

**North Carolina State University, Friday Institute for Educational Innovation**

Research Associate, 2013 – 2014

**Western Michigan University, Department of Mathematics**

Instructor, 2012 – 2013

Doctoral Fellow, Center for the Study of Mathematics Curriculum, 2009 – 2012

Graduate Teaching Assistant, Department of Mathematics, 2010 – 2011

Graduate Research Assistant, Core Plus Mathematics Project, 2006 – 2009

# HONORS, AWARDS, AND FELLOWSHIPS

|  |  |  |
| --- | --- | --- |
|  | 2025-2027 | Lender Center for Social Justice Faculty Fellow “The Data Warriors” |
|  | 2019 | Service, Teaching, and Research (STaR) FellowAssociation of Mathematics Teacher Educators (AMTE) |
|  | 2019 | Writing Across the Curriculum Faculty FellowSyracuse University, College of Arts and Sciences |
|  | 2014 | Linking Research and Practice Outstanding Publication AwardNational Council of Teachers of Mathematics, “Equivalent Expressions Using CAS and Paper-and-Pencil Techniques” was authored by **Nicole L. Fonger**, published May 2014, pp. 688-693. |
|  | 2011 | Graduate Research and Creative Scholar AwardWestern Michigan University, Department of Mathematics |
|  | 2010 | All University Teaching Effectiveness AwardWestern Michigan University |

# RESEARCH AND PUBLICATIONS

**A. Books (n=1)**

(1) **Fonger, N. L.** (2024). *Making Algebra Meaningful: A Visual Approach to Math Literacy for All.* Teachers College Press, Teachers College, Columbia University. [ISBN 9780807769966](https://www.tcpress.com/making-algebra-meaningful-9780807769966)

**B. Journal Articles (n=19)**

(19) Altindis, N., & **Fonger, N. L.** (2025). A culturally inclusive mathematics learning environment framework: Supporting students’ representational fluency and covariational reasoning. *Education Sciences, 15*(8), 980. <http://dx.doi.org/10.3390/educsci15080980>

(18) Huntley, M. A., Terrell, M. S., & **Fonger, N. L.** (2024). A content analysis of the algebra strand of six commercially available U.S. high school textbook series. *Education Sciences, 14*(8). <https://doi.org/10.3390/educsci14080845>

(17) Boutros, E., Wu, Q., Xu, H., & **Fonger, N. L.** (2023). Making mathematics meaningful: How learning about local social injustices develops undergraduate students’ identity, intellect, skill, and criticality. *The Crown: Syracuse Undergraduate Research Journal, 1*, Article 16. <https://surface.syr.edu/thecrown/vol1/iss1/16/>

(16) Keech, K., Routhouska, B., & **Fonger, N. L.** (2022). People, place, and population predictions. *Mathematics Teacher: Learning and Teaching PK-12, 118*(8), 566-575. <https://doi.org/10.5951/MTLT.2021.0120>

(15) **Fonger, N. L.** (2022). Teaching is a journey: Toward anti-racism in practice. *Mathematical Teacher Learning and Teaching, 115*(4), 314-319. <https://doi.org/10.5951/mtlt.2021.0328>

(14) **Fonger, N. L.** (2021). A heart-centered stance: Receptivity to algebra teachers’ and students’ multidimensional experiences. *Journal of Humanistic Mathematics, 11*(1), 225-264. <https://scholarship.claremont.edu/jhm/vol11/iss1/12/>

(13) **Fonger, N. L.**, Ellis, A., & Dogan, M. F. (2020). A quadratic growth learning trajectory. *Journal of Mathematical Behavior, 59,* 1-22. <https://doi.org/10.1016/j.jmathb.2020.100795>

(12) **Fonger, N. L.** (2019). Meaningfulness in representational fluency: An analytic framework for students’ creations, interpretations, and connections. *Journal of Mathematical Behavior*, 54. <https://doi.org/10.1016/j.jmathb.2018.10.003>

(11) Meyer, J., Huntley, M. A., **Fonger, N. L.**, & Terrell, M. (2019). Professional learning through teacher-researcher collaborations. *Mathematics Teacher, 112*(5), 382-385. <https://www.jstor.org/stable/10.5951/mathteacher.112.5.0382>

(10) **Fonger, N. L.**, Stephens, A., Blanton, M., Isler, I., Knuth, E., & Gardiner, A. (2018). Developing a learning progression for curriculum, instruction, and student learning: An example from mathematics education. *Cognition and Instruction, 36*(1), 30-55. <https://doi.org/10.1080/07370008.2017.1392965>

(9) **Fonger, N. L.** (2018). An activity structure for supporting students’ coordination of computer algebra systems and paper-and-pencil across phases of curriculum. *International Journal for Technology iin Mathematics Education, 25*(1), 3-18. <https://www.researchgate.net/publication/329309990_An_activity_structure_for_supporting_students%27_coordination_of_computer_algebra_systems_and_paper-and-pencil_across_phases_of_curriculum>

(8) **Fonger, N. L.**, Davis, J., & Rohwer, M. L. (2018). Instructional supports for representational fluency in solving equations with computer algebra systems and paper-and-pencil. *School Science and Mathematics, 118*(30), 30-42. <https://onlinelibrary.wiley.com/doi/abs/10.1111/ssm.12256>

(7) Stephens, A. C., **Fonger, N. L.**, Strachota, S., Isler, I., Blanton, M., Knuth, E., & Gardiner, A. M. (2017). A learning progression for elementary students’ functional thinking. *Mathematical Thinking and Learning, 19*(3), 143-166. <https://www.tandfonline.com/doi/abs/10.1080/10986065.2017.1328636>

(6) **Fonger, N. L.**, Reiten, L., Strachota, S., & Ozgur, Z. (2017). Engaging in research: Why? How? Now! *Mathematics Teacher 110*(6), 462-465. <https://www.jstor.org/stable/10.5951/mathteacher.110.6.0462>

(5) Davis, J. D., & **Fonger, N. L.** (2015). An analytical framework for categorizing the use of CAS symbolic manipulation in textbooks. *Educational Studies in Mathematics, 88*(2), 239-258. <https://www.jstor.org/stable/pdf/43589931.pdf>

(4) **Fonger, N. L.** (2014). Equivalent expressions using CAS and paper-and-pencil techniques. *Mathematics Teacher, 107*(9), 688-693. <https://www.jstor.org/stable/10.5951/mathteacher.107.9.0688#metadata_info_tab_contents>

(3) **Fonger, N. L.** (2012). Shed new light on student thinking with a representational lens. *Consortium: The newsletter of the consortium for mathematics and its applications, 102*, 1-6. <https://www.researchgate.net/publication/283547704_She_new_light_on_student_thinking_with_a_representational_lens>

(2) **Fonger, N. L.** (2011). Lessons learned as a novice researcher: The case of a pilot study in mathematics education. *The Hilltop Review, 4*(2), 55-62. Retrieved October 25, 2011, from https://www.researchgate.net/publication/238053387\_Lessons\_Learned\_as\_a\_Novice\_Researcher\_A\_Pilot\_Study\_in\_Mathematics\_Education

(1) Hedican, E. B., Kempber, J. T., & **Lanie, N. M.** (2007). Modeling biomarker dynamics with implications for the treatment of prostate cancer. *Computational and Mathematical Methods in Medicine, 8*(2), 77-92. <https://doi.org/10.1080/17486700701349021>

**C. Book Chapters (n=5)**

(5) Huntley, M. A., Terrell, M., & **Fonger, N. L.** (2024). Creating mosaics to portray the algebra strand within six high-school textbook series. In D. R. Thompson, M. A. Huntley, & C. Suurtamm (Eds.). *Lessons Learned from Research on Mathematics Curriculum.* Information Age Press.

(4) **Fonger, N. L.**, & Lim, K. (2018)..The promise of mindfulness as a proposed intervention to alleviate the delimiting effects of math anxiety. In L. Hong, D. Grimes, & Q. Wang (Eds.). *Empirical Studies of Contemplative Practices* (pp. 165-180). Hauppaugue, NY: NOVA Science Publishers, Inc.

(3) Blanton, M., Brizuela, B., Stephens, A., Knuth, E., Isler, I., Gardiner, A. M., Stround, R., **Fonger, N. L.**, & Stylinou, D. (2018). Implementing a framework for early algebra. In C. Kieran (Ed.). *Teaching and Learning Algebraic Thinking with 5- to 12-Year-Olds,* ICME-13, Monographs (pp. 27-49). <https://doi.org/10.1007/978-3-319-68351-5_2>

(2) Hirsch, C., Keller, B., **Fonger, N. L.**, & Edison, A. (2013). Core math tools: Supporting equitable implementation of the common core state standards for mathematics. In D. Polly (Ed.), *Common Core Mathematics Standards and* Implementing Digital Technologies (pp. 1-22). Hershey, PA: IGI Global.

(1) Ziebarth, S. W., **Fonger, N. L.**, & Kratky, J. L. (2013). Instruments for studying the enacted mathematics curriculum. In D. Thompson & Z. Usiskin (Eds.), *Enacted Mathematics Curriculum: A Conceptual Framework and Research Needs* (pp. 97-120). Information Age Publishing.

**D. Peer Reviewed Conference Proceedings (n=24)**

(24) Xu, H., Raja, W. A., Boutros, E., Wu, Q., & **Fonger, N. L.** (2024). Emotions in social justice mathematics: College precalculus students’ experience. In K. W. Kosko, J. Caniglia, S. Courtney, M. Zolfaghari, & G. A. Morris (Eds.), *Proceedings of the forty-sixth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 956-961). Kent State University.

(23) Caviness, S. L., **Fonger, N. L.**, Voyias, K., Njue, E., Odiwuor, B., & Raja, W. A. (2023). “It was meaningful because [this] is now my home”: Locality-identity and social justice mathematics. In T. Lamberg & D. Moss (Eds.). *Proceedings of the forty-fifth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 449-454). University of Nevada, Reno.

(22) Erskine, A., Odiwuor, B., & **Fonger, N. L.** (2022). An exploratory action research study of social justice mathematics in undergraduate precalculus. In A. E. Lischka, E. B. Dyer, R. S. Jones, J. N. Lovett, J. Strayer, & S, Drown (Eds.). *Proceedings of the forty-fourth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 400-404). Middle Tennessee State University.

(21) Sharpe, C., & **Fonger, N. L.** (2022). Have we cut ourselves off at the neck? Centering relationality and humanity in our research. In A. E. Lischka, E. B. Dyer, R. S. Jones, J. N. Lovett, J. Strayer, & S. Drown (Eds.). *Proceedings of the forty-fourth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1924-1925). Middle Tennessee State University.

(20) Wambua, M. M., & **Fonger, N. L.** (2020). Teacher’s collaboration with freshmen undergraduates to improve feedback practices through cogenerative dialogues. In A. I. Sacristán, J. C. Cortés-Zavala, & P. M. Ruiz-Arias (Eds.). *Mathematics Education Across Cultures: Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 464-465). Mexico.

(19) **Fonger, N. L.**, & Ellis, A. (2020). Making meaning of learning trajectories amidst multiple metaphors. In A. I. Sacristán, J. C. Cortés-Zavala, & P. M. Ruiz-Arias (Eds.). *Mathematics Education Across Cultures: Proceedings of the 42nd Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 2325-2329). Mexico.

(18) **Fonger, N. L.**, Ellis, A., & Dogan, M. F. (2019). Epistemological and methodological foundations of creating a learning trajectory of children’s mathematics. *Eleventh Congress of the European Society for Research in Mathematics Education*, Utrecht University, Utrecht, Netherlands. <https://hal.science/CERME11>

(17) **Fonger, N. L.**, & Altindis, N. (2019). Meaningful mathematics: Networking theories on multiple representations and quantitative reasoning. In S. Otten, A. G. Candela, Z. de Araujo, C. Haines, & C. Munter (Eds.). *Proceedings of the forty-first annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1776-1786). University of Missouri.

(16) Ellis, A., **Fonger, N. L.**, & Dogan, M. F. (2019). Articulating links between student conceptions and instructional actions in learning trajectories research. In S. Otten, A. G. Candela, Z. de Araujo, C. Haines, & C. Munter (Eds.). *Proceedings of the forty-first annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1803-1808). University of Missouri.

(15) Altindis, N., & **Fonger, N. L.** (2019). Seeing exponential functions despite representational fluency in a quantitatively rich quadratic function task. In S. Otten, A. G. Candela, Z. de Araujo, C. Haines, & C. Munter (Eds.). *Proceedings of the forty-first annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 980-985). University of Missouri.

(14) Altindis, N., & **Fonger, N. L.** (2018). Preservice teachers’ use and connections of representations of quadratic function in solving and planning to teach. In T. E. Hodges, G. J. Roy, & A. M. Tyminski (Eds.). *Proceedings of the 40th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (p. 819). University of South Carolina & Clemson University. <https://www.pmena.org/pmenaproceedings/PMENA%2040%202018%20Proceedings.pdf>

(13) **Fonger, N. L.**, Dogan, M. F., & Ellis, A. (2017). Students’ clusters of concepts of quadratic functions. In B. Kaur, W. K. Ho, T. L. Toh, & B. H. Choy (Eds.). *Proceedings of the 41st Conference of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 329-336). Singapore.

(12) **Fonger, N. L.** (2017). Characterizing sophistication in representational fluency. In E. Galindo & J. Newton (Eds.). *Proceedings of the 39th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 729-732). Hoosier Association of Mathematics Teacher Educators. <https://www.pmena.org/pmenaproceedings/PMENA%2039%202017%20Proceedings.pdf>

(11) Ellis, A., **Fonger, N. L.**, & Dogan, M. F. (2017). Developing function understanding through dependency relations of change. In E. Galindo & J. Newton (Eds.). *Proceedings of the 39th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 283-286). Hoosier Association of Mathematics Teacher Educators. <https://www.pmena.org/pmenaproceedings/PMENA%2039%202017%20Proceedings.pdf>

(10) Isler, I., Strachota, S., Stephens, A., **Fonger, N. L.**, Blanton, M., Gardiner, A., & Knuth, E. (2017, February 1-5). *Grade 6 students’ abilities to represent functional relationships* [Presentation]. 10th International Congress on European Research in Mathematics Education (CERME10), Dublin, Ireland. <https://hal.science/CERME10>

(9) Strachota, S., Isler, I., **Fonger, N. L.**, Blanton, M., & Gardiner, A. M. (2016). Analyzing generalizations through discourse. In M. B. Wood, E. E. Turner, M. Civil., & J. A. Eli (Eds.). *Proceedings of the 38th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (p. 213). The University of Arizona. <https://www.pmena.org/pmenaproceedings/PMENA%2038%202016%20Proceedings.pdf>

(8) Strachota, S. M., **Fonger, N. L.**, Stephens, A. C., Blanton, M. L., Knuth, E. J., & Gardiner, A. M. (2016). Understanding variation in elementary students’ functional thinking. In C. Csikos, A. Rausch, & J. Szitányi (Eds.). *Proceedings of the 40th Conference of the International Group for the Psychology of Mathematics Education* (Vol. 4, pp. 243-250). Szeged, Hungary.

(7) **Fonger, N. L.**, Ellis, A., & Dogan, M. F. (2016). Students’ conceptions supporting their symbolization and meaning of function rules. In M. B. Wood, E. E. Turner, M. Civil., & J. A. Eli (Eds.). *Proceedings of the 38th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 156-163). The University of Arizona. <https://www.pmena.org/pmenaproceedings/PMENA%2038%202016%20Proceedings.pdf>

(6) Ziols, R., **Fonger, N. L.**, Elliot, T., & Tran, D. (2015). Children’s reasoning with fraction representation systems. In T. G. Bartell, K. N. Bieda, R. T. Putnam, K. Bradfield, & H. Dominguez (Eds.). *Proceedings of the 37th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (p. 266). Michigan State University. <https://www.pmena.org/pmenaproceedings/PMENA%2037%202015%20Proceedings.pdf>

(5) **Fonger, N. L.**, Stephens, A., Blanton, M., & Knuth, E. (2015). A learning progressions approach to early algebra research and practice. In T. G. Bartell, K. N. Bieda, R. T. Putnam, K. Bradfield, & H. Dominguez (Eds.). *Proceedings of the 37th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 201-204). Michigan State University. <https://www.pmena.org/pmenaproceedings/PMENA%2037%202015%20Proceedings.pdf>

(4) **Fonger, N. L.** (2013). Equivalence and equation solving with multiple tools: Toward an instructional theory. In M. Martinez & A. Castro Superfine (Eds.). *Proceedings of the 35th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1141-1148). University of Illinois at Chicago. <https://www.pmena.org/pmenaproceedings/PMENA%2035%202013%20Proceedings.pdf>

(3) **Fonger, N. L.** (2011). An analytic framework for representational fluency: Algebra students’ connections between multiple representations using CAS. In L. R. Wiest & T. Lamberg (Eds.). *Proceedings of the 33rd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 88-96). University of Nevada, Reno. <https://www.pmena.org/pmenaproceedings/PMENA%2033%202011%20Proceedings.pdf>

(2) Davis, J. D., & **Fonger, N. L.** (2010). Computer algebra systems: Their roles and connections to paper-and-pencil skills in reform-oriented curricula. Annual Meeting of the American Educational Research Association, Denver, CO, United States. <http://www.aera.net/repository/>

(1) **Fonger, N. L.** (2009). CAS-based task frameworks and linking multiple representations. In D. J. Kadijevich & R. M. Zbiek (Eds.). *Proceedings of the 6th Computer Algebra in Mathematics Education (CAME) Symposium*, Belgrade, Serbia.

**E. Research and Publications in Process**

**1. Books (n=2)**

(2) Fonger, N. L. (2025). *The power of 2* [Manuscript in preparation]. Department of Mathematics, Syracuse University.

(1) Fonger, N. L., & Fonger, J. W. (2025). *Living room math* [Manuscript in preparation]. Department of Mathematics, Syracuse University.

**2. Journal Articles (n=3)**

(3) Caviness, S. L., Cooper, K., Johnson, N., Boy, S., Torres, C., Mohamod, A., Hopkins, K., Altana, L., Christine, N., Koko, F., Kulmiya, H., Hossain, S., Williams, R., Kayitesi, J., Muriakatele, J., Holmes, K., **Fonger, N. L.**, Ashby, L. E., Keech, K., Wu, Q., Pei, R., Khan, S. F., & Banson, G. M. (2025). *Belonging in mathematical community: Voices of Data Warriors* [Manuscript accepted]. Department of Mathematics, Syracuse University.

(2) **Fonger, N. L.**, Raja, W. A., Caviness, S. L., & Wu, Q. (2025). *Meaningful mathematics (re)defined through historically responsive literacy: The case of highway racism in undergraduate precalculus* [Manuscript submitted for publication]. Department of Mathematics, Syracuse University.

(1) Voyias, K. V., & **Fonger, N. L.** (2024). *From sadness to awareness in historically responsive undergraduate mathematics: Exploring student emotion* [Manuscript submitted for publication]. Department of Mathematics, Syracuse University.

**3. Book Chapters (n=1)**

(1) Raja, W., **Fonger, N. L.**, Keech, K., & Routhouska, B. (in press). Reimagining algebra as a tool for modeling historical injustices in our city. In C. K. Warner & E. Hollins (Eds.). *Teaching Core Curriculum for College and Career Readiness.*

**4. Conference Papers (n=1)**

(1) **Fonger, N. L.**, Caviness, S. L., Ashby, L., Davila-Campos, G., Wu, Q., & Altindis, N., Keech, K., Data Warrior Youth. (2025). *Navigating multiple metaphors in community-engaged youth participatory action research: The Data Warriors* [Manuscript accepted for publication]. Department of Mathematics, Syracuse University.

# TALKS AND PRESENTATIONS

**A. Research Conference Presentations (excluding talks with proceedings) (n=45)**

(45) Ashby, L., **Fonger, N. L.**, Davila-Campos, G., & Wu, Q. (2025). *Data Warriors: Perspectives on youth participatory action research at an urban high school* [Conference presentation]. URBAN Conference: The Many Paths of Community-Engaged Research, Providence, RI, United States. <https://urbanresearchnetwork.org/resources/events/2025conference/>

(44) Gutiérrez, J., Quinonez, R., **Fonger, N. L.**, Caviness, S. L., Ashby, L., Keech, K., & Routhouska, B. (2024). *Social justice and community engagement in math education: Four examples from New York and Utah* [Paper session]. American Educational Research Association, Philadelphia, PA, United States.

(43) **Fonger, N. L.**, Caviness, S., Raja, W., & Njue, E. (2023). Students’ expressions of criticality and emotion in historically responsive math task contexts. American Educational research Association, Chicago, IL, United States.

(42) Ashby, L., Caviness, S., Voyias, K., & **Fonger, N. L.** (2023, October). *Youth-centered community, collaboration, and learning in mathematics and geography for environmental justice* [Conference presentation]. Race, Ethnicity, and Place Conference, Washington, D.C., United States.

(41) Ashby, L., Beavin, A., Drake, S., **Fonger, N. L.**, & Robinson, J. (2022, October 26-28). *Community-engaged racial justice mathematics*. In “Institutional Pathways for Community-Engaged Scholarship.” All-In Conference, Santa Cruz, CA, United States. <https://transform.ucsc.edu/past-event-all-in-conference/>

(40) **Fonger, N. L.** (2022, December 5). *Visualizing meaningful mathematics: Realizing “algebra for all” requires changes in aperture* [Poster presentation]. Mathematics Education Research and Creative Scholarship Showcase, Bird Library, Syracuse University, Syracuse, NY, United States.

(39) Keech, K., Routhouska, B., Harris, S., & **Fonger, N. L.** (2021, December). *Race and regression* [Presentation]. Mathematics Education Research and Creative Scholarship Showcase, Bird Library, Syracuse University, Syracuse, NY, United States.

(38) Kabagorobya, M. R. A., **Fonger, N. L.**, & Altindis, N. (2021). *The use of multiple resources by English as second language learners (ESLLs) to communicate mathematical ideas* [Virtual conference presentation]. American Educational Research Association, Online.

(37) **Fonger, N. L.** (2021). *Reframing equitable communication mechanism to blur research practice boundaries* [Virtual conference presentation]. American Educational Research Association.

(36) Altindis, N., & **Fonger, N. L.** (2021). *Exploring how to support students’ co-emergence of representational fluency and functional thinking* [Virtual conference presentation]. American Educational Research Association, Online.

(35) **Fonger, N. L.** (2019). *Sketchnotes of plenary presentations* [Presentation]. 41st Annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, St. Louis, MO, United States.

(34) **Fonger, N. L.** (2019). *Sketchnotes: A communication tool to strengthen research and practice links* [Presentation]. National Council of Teachers of Mathematics Research Conference, San Diego, CA, United States.

(33) Altindis, N., & **Fonger, N. L.** (2019). *Preservice teachers’ representational fluency and functional reasoning* [Presentation]. National Council of Teachers of Mathematics Research Conference, San Diego, CA, United States.

(32) **Fonger, N. L.** (2018).  *A self-study on mindfulness in precalculus* [Presentation]. Research in Undergraduate Mathematics Education (RUME), Pre-calculus Working Group, San Diego, CA, United States.

(31) **Fonger, N. L.**, Stephens, A., Isler, I., Strachota, S., Blanton, M., & Knuth, E. (2016, December). *An early algebra learning progression for characterizing and supporting students’ generalization and representation of functions: A longitudinal approach to integrating curriculum, instruction, assessment, and student learning* [Presentation]. Institute of Education Sciences Principal Investigators Meeting, Washington, D. C., United States.

(30) Huntley, M. A., Terrell, M., & **Fonger, N. L.** (2016, July 24-31). *The algebra content of high school textbooks in the U.S.* [Conference]. 13th International Congress on Mathematics Education, Hamburg, Germany.

(29) Stephens, A., **Fonger, N. L.**, Knuth, E., & Blanton, M. (2016, April). *Elementary students’ generalization and representation of functional relationships: A learning progressions approach* [Presentation]. American Educational Research Association, Washington, D.C., United States.

(28) Stephens, A., Blanton, M., Demers, L., Knuth, E., Stylianou, D., Burrows, A., Eiland, M., **Fonger, N. L.**, Gardiner, A. M., Hayes, R., Isler, I., Kang, H., & Strachota, S. (2016, February). *Project LEAP: Learning through an early algebra intervention* [Poster presentation]. University of Wisconsin-Madison Education Research Poster Fair. University of Wisconsin-Madison, Madison, WI, United States.

(27) **Fonger, N. L.** (2015, August 14). *A learning progressions approach to supporting algebra students’ representational fluency in equation solving* [Poster presentation]. 3rd Annual Meeting on Mathematical Thinking (M3T-3), University of Minnesota.

(26) **Fonger, N. L.**, Davis, J. D., & Rohwer, M. L. (2015, May 29-30).  *A functions approach to solving equations with computer algebra systems/paper-and-pencil: Supports for students’ change in representational fluency* [Poster presentation]. Social Policy and Research in Cognition & mathematics Education: A Focus on Common Core (SPaRCME), University of California, Berkeley, Berkeley, CA, United States.

(25) **Fonger, N. L.**, Tran, D., & Elliott, N. (2015, April). *Variation in children’s understanding of fractions: Preliminary findings* [Presentation]. National Council of Teachers of Mathematics Research Conference, Boston, MA, United States.

(24) **Fonger, N. L.** (2015, April). *Perspectives on linking research and practice: Thoughts from the field* [Presentation]. National Council of Teachers of Mathematics Research Conference, Boston, MA, United States.

(23) **Fonger, N. L.** (2015, April). *How partnerships are core to a linking research and practice agenda* [Presentation]. National Council of Teachers of Mathematics Research Conference, Boston, MA, United States.

(22) Blanton, M., Knuth, E., Stephens, A., Eiland, M., **Fonger, N. L.**, Gardiner, A. M., Hayes, R., Isler, I., Kang, H., & Strachota, S. (2015, February). *The impact of early algebra on students’ algebra-readiness* [Poster presentation]. University of Wisconsin-Madison Education Research Poster Fair, Madison, WI, United States.

(21) **Fonger, N. L.** (2015, February). *How partnerships are core to a linking research and practice agenda* [Presentation]. Mathematics Education Seminar, University of Wisconsin-Madison, Madison, WI, United States.

(20) **Fonger, N. L.** (2014, October). *Advancing a program of research* [Presentation]. Mathematics Education Seminar, University of Wisconsin-Madison, Madison, WI, United States.

(19) **Fonger, N. L.** (2014, April). *Synergy in linking research and practice to support students’ use of multiple tools* [Presentation]. National Council of Teachers of Mathematics Research Conference, New Orleans, LA, United States.

(18) **Fonger, N. L.** (2014, February). *Conjecturing a linear equations, inequalities, and functions learning trajectory for teacher education* [Presentation]. Association of Mathematics Teacher Educators, Irvine, CA, United States.

(17) **Fonger, N. L.** (2013, November 4-8). *Design research* [Presentation]. Season School on Design-Based Research, University of Jaén, Jaén, Spain.

(16) **Fonger, N. L.** (2013, April). *Equivalence and equation solving with multiple tools: A learning progression* [Presentation]. National Council of Teachers of Mathematics Research Presession, Denver, CO, United States.

(15) **Fonger, N. L.** (2013, March). *The strategic use of paper-and-pencil and CAS: Reconciling differences between representations* [Presentation]. Conversations Among Colleagues, Central Michigan University, Mount Pleasant, MI, United States.

(14) **Fonger, N. L.** (2012, April). *Students’ development of representational fluency with CAS: An instructional theory* [Presentation]. National Council of Teachers of Mathematics Research Presession, Philadelphia, PA, United States.

(13) Hirsch, C., & **Fonger, N. L.** (2012, March). *Core Math Tools Supporting CCSSM-oriented curriculum design and enactment* [Presentation]. Center for the Study of Mathematics Curriculum Research Conference, Phoenix, AZ, United States.

(12) **Fonger, N. L.** (2012, March). *Algebra students’ representational fluency in a CAS and paper-and-pencil environment* [Presentation]. Center for the Study of Mathematics Curriculum Research Conference, Phoenix, AZ, United States.

(11) Davis, J. D., & **Fonger, N. L.** (2010, May). *Computer algebra systems: Their roles and connections to paper-and-pencil skills in reform-oriented curricula* [Presentation]. American Educational Research Association Annual Meeting, Denver, CO, United States.

(10) Ziebarth, S., **Fonger, N. L.**, Edson, A., Engelman, J., & Kratky, J. (2010, April). *Pursuing a doctorate in mathematics education: The varities of research experience* [Presentation]. National Council of Teachers of Mathematics Research Presession, San Diego, CA, United States.

(9) **Fonger, N. L.**, & Davis, J. (2010, April). *The role of computer algebra systems in high school curricula: A textbook analysis* [Poster presentation]. Fourth Annual WMU Research and Creative Activities Poster Day, Western Michigan University, Kalamazoo, MI, United States.

(8) Ziebarth, S., **Fonger, N. L.**, & Edson, A. J. (2009). *Fidelity of implementation tools: High school curricula* [Poster presentation]. Center for the Study of Mathematics Curriculum Research Conference, Phoenix, AZ, United States.

(7) **Fonger, N. L.**, Edson, A. J., & Ziebarth, S. (2009). *Fidelity of implementation tools: High school curricula* [Poster presentation]. Third Annual WMU Research and Creative Activities Poster Day, Western Michigan University, Kalamazoo, MI, United States.

(6) **Fonger, N. L.** (2009). *Technology-intensive curricula and student learning* [Presentation]. Center for the Study of Mathematics Curriculum Research Conference, Phoenix, AZ, United States.

(5) **Fonger, N. L.** (2009). *CAS-based task frameworks and linking multiple representations* [Virtual presentation]. 6th Computer Algebra in Mathematics Education (CAME) Symposium, Belgrade, Serbia.

(4) **Lanie, N.** (2008). *Delving deeper into CPMP-Tools: Java-based software for data analysis and probability simulation* [Poster presentation]. Center for the Study of Mathematics Curriculum Research Conference, Phoenix, AZ, United States.

(3) **Lanie, N.**, & Hirsch, C. (2007). *Design and development of curriculum-embedded, Java-based software for high school mathematics* [Poster presentation]. Center for the Study of Mathematics Curriculum Research Conference, Phoenix, AZ, United States.

(2) Kemper, J. T., Hedican, E. B., & **Lanie, N.** (2004, November). *Prostate specific antigen as bio-marker for prostate cancer* [Presentation]. Center for Applied Mathematics, Math Appreciation Day, University of Saint Thomas, Saint Paul, MN, United States.

(1) Rezac, L., & **Lanie, N.** (2004, September). *Classification and proof of 17 planar symmetries* [Poster presentation]. University of Saint Thomas, Saint Paul, MN, United States.

**B. Teaching Conference Presentations (n=24)**

(24) Routhouska, B., Keech, K., & **Fonger, N. L.** (2024, February 5-7). *Using culturally relevant mathematics modeling to connect students with the community* [Conference presentation]. Regional Meeting of the National Council of Teachers of Mathematics, Seattle, WA, United States.

(23) Keech, K., **Fonger, N. L.**, & Routhouska, B. (2024, February 5-7). *Mathematics, social justice, advocacy, and belonging* [Conference presentation]. Regional Meeting of the National Council of Teachers of Mathematics, Seattle, WA, United States.

(22) **Fonger, N. L.** (2024, February 5-7). *Visualizing meaningful algebra for all: Achievement, access, identity, and power* [Conference presentation]. Regional Meeting of the National Council of Teachers of Mathematics, Seattle, WA, United States.

(21) **Fonger, N. L.** (2023, November 11). *Expanding what counts as meaningful algebra* [Conference session]. Association for Mathematics Teachers of New York State (AMTNYS) Annual Meeting, Syracuse, NY, United States.

(20) Raja, W., Keech, K., **Fonger, N. L.**, & Voyias, K. (2023, November). *How can we support students learning in social justice mathematics classrooms?* [Conference session]. Association for mathematics Teachers of New York State (AMTNYS) Annual Meeting, Syracuse, NY, United States.

(19) **Fonger, N. L.** (2021). *Toward antiracist practice in mathematics education* [Virtual conference presentation]. Cornell University Department of Mathematics MATH 5080 Mathematics for Secondary School Teachers, NYS Master Teacher Program, Mathematics Professional Development.

(18) **Fonger, N. L.**, & LaBeau, K. (2020, November). *Visualizing bridges between research and practice* [Virtual conference session]. Association for Mathematics Teachers of New York State (AMTNYS) Annual Meeting, Syracuse, NY, United States. <https://sites.google.com/amtnys.org/amtnys2020/tues-nov-3rd?authuser=0>

(17) **Fonger, N. L.** (2020, January). *What is effective mathematics instruction?* [Presentation]. The Study Council at Syracuse University 2019-2020: Regional Conversations and Networking, Syracuse University, Syracuse, NY, United States.

(16) **Fonger, N. L.** (2019, June). *Fluency and meaning in solving equations* [Presentation]. USACAS Conference, Chicago, IL, United States.

(15) **Fonger, N. L.** (2017, December 8). *Math anxiety: Causes and possible supports through instruction and leadership* [Presentation]. Fall Meeting of the Math Mavens, Teacher Leaders and Math Coaches of Central New York, Fayetteville Elementary School, Fayetteville, NY, United States.

(14) **Fonger, N. L.**, Mayer, J., Huntley, M. A., & Terrell, M. (2017, November). *Engaging in research: Why? How? Now! A teacher-researcher partnership* [Conference Session]. Association for Mathematics Teachers of New York State (AMTNYS) Annual Meeting, Buffalo, NY, United States.

(13) **Fonger, N. L.** (2017, June). *Triumphs and challenges in coordinating CAS and paper-and-pencil in classrooms: Lessons from a teacher-researcher partnership* [Presentation]. United States of America Computer Algebra Systems Conference (USACAS 10), Hawken High School, Gates Mills, OH. <https://www.usacas.org>

(12) **Fonger, N. L.** (2017, April). *Building bridges to link research and practice* [Presentation]. Spring Meeting for the Tristate Instructors of Mathematics Network, University of Wisconsin Platteville Department of Mathematics, Platteville, WI, United States.

(11) **Fonger, N. L.**, Tran, D., & Elliott, N. (2015, April). *What fraction of children’s knowledge of fractions can you see?* [Presentation]. National Council of Teachers of Mathematics Annual Meeting, Boston, MA, United States.

(10) **Fonger, N. L.**, Maloney, A. M., & Confrey, J. (2013, October). *Three musketeers of algebra* [Presentation]. North Carolina Council of Teachers of Mathematics 43rd Annual Conference, Joseph S. Koury Convention Center, Greensboro, NC, United States.

(9) **Fonger, N. L.** (2013, April). *A research-based learning progression for beginning algebra* [Presentation]. Annual Meeting of the National Council of Teachers of Mathematics, Denver, CO, United States.

(8) **Fonger, N. L.** (2012, April). *Visualize shape center and spread with Core Math Tools* [Presentation]. Annual Meeting of the National Council of Teachers of Mathematics BuzzHub, Philadelphia, PA, United States.

(7) **Fonger, N. L.**, & Rohwer., M. L. (2012, March). *Expressions, equations, and equivalence, oh my! TI-Nspire CAS handhelds as a learning tool in algebra* [Presentation]. Teachers Teaching with Technology International Conference, Chicago, IL, United States.

(6) **Fonger, N. L.** (2011, August). *How dynamic links can bolster connections between representations* [Presentation]. Michigan Council of Teachers of Mathematics Annual Conference, Macomb, MI, United States.

(5) Ziebarth, S. W., **Fonger, N. L.**, & Edson, A. J. (2010, April). *Tools to help teachers and school leaders understand curriculum implementation* [Presentation]. Annual Meeting of the National Council of Teachers of Mathematics, San Diego, CA, United States.

(4) **Lanie, N.**, & Thompson, A. (2006). *GEMS Camp at UST: Girls experiencing math in the summer* [Presentation]. Minnesota Council of Teachers of Mathematics Annual Conference, Duluth, MN, United States.

(3) Rezac, L., & **Lanie, N.** (2005, April). *Arabesque: Studying geometry in Spain* [Presentation]. Minnesota Council of Teachers of Mathematics Annual Conference, Duluth, MN, United States.

(2) **Lanie, N.** (2005, October). *Symmetry in southern Spain: Classification of 17 planar symmetry groups* [Presentation]. Minnesota Council of Teachers of Mathematics Conference, Andover, MN, United States.

(1) **Lanie, N.** (2005, October). *GEMS camp: Counseling girls in mathematics* [Presentation]. Minnesota Council of Teachers of Mathematics Conference, Andover, MN, United States.

**C. Workshops (n=6)**

(6) **Fonger, N. L.** (2025, August). Before TikTok: A zine-making workshop [Workshop]. Chautauqua Institution: Special Studies, Chautauqua, NY, United States.

(5) **Fonger, N. L.** (2025, August). Empowered women: Building community & wisdom [Workshop]. Chatauqua Institution: Special Studies, Chatauqua, NY, United States.

(4) **Fonger, N. L.** (2025). *Designing for change through sketchnotes and zines: Equity-focused community engagement in mathematics* [Workshop session]. 2025 URBAN Conference: Traveling Together: The Many Paths of Community Engaged Research, Brown University and URBAN Connecticut Node, Providence, RI, United States. <https://urbanresearchnetwork.org/resources/events/2025conference/>

(3) **Fonger, N. L.** (2024, August). *People, place, and algebra as a tool for critical literacy* [Workshop]. Culturally Responsive STEM Pedagogy Summer 2024 SW MiSTEM Institute, Kalamazoo Regional Educational Service Agency, Kalamazoo, MI, United States.

(2) **Lanie, N.** (2008). *New software tools supporting new expectations for high school mathematics* [Workshop presentation]. Mathematics in Action Conference, Grand Valley State University, Grand Valley, MI, United States.

(1) **Lanie, N.** (2007). *Interactive geometry software for all Michigan teachers and students* [Workshop presentation]. Michigan Council of Teachers of Mathematics Annual Conference, Holt, MI, United States.

**D. Invited Talks on Panels (n=2)**

(2) **Fonger, N. L.** (2017, November 30). *The academic job market* [Panel discussion]. The Future Professoriate Program at Syracuse University, School of Education, Syracuse University, Syracuse, NY, United States.

(1) **Fonger, N. L.** (2017, October 27). *The tenure-track interview process luncheon* [Panel discussion]. Women in STEM (WiSE) Postdocs at Syracuse University, College of Arts and Sciences, Syracuse University, Syracuse, NY, United States.

**E. Supervised Presentations (n=12)**

(12) Wu, Q., & **Fonger, N. L.** (2025, April 11). *Data Warriors: Perspectives on community-engaged youth participatory action research (YPAR)* [Poster presentation]. Arts & Sciences Undergraduate Research Festival 2025, Syracuse University, Syracuse, NY, United States.

(11) Davila-Campos, G., & **Fonger, N. L.** (Supervisor). (2024, October). *A computational approach to exploring the relationships among mathematics, geographic thinking, and justice in Data Warriors students* [Presentation]. 2024 NSF LSAMP PI/PD Meeting: Enhancing Mobility Through STEM: Louis Stokes Alliance for Minority Participation, Washington, D.C., United States.

(10) Davila-Campos, G., & **Fonger, N. L.** (2024, August). *A computational approach to exploring the relationships among mathematics, geographic thinking, and justice in Data Warriors students* [Poster presentation]. SOURCE Summer Symposium, Syracuse University, Syracuse, NY, United States.

(9) Wu, Q., Xu, H., Boutros, E., & Fonger, N. L. (2024, March 22). *Emotions in social justice mathematics: College precalculus students’ experience* [Poster presentation]. SOURCE Spring Showcase, Syracuse University, Syracuse, NY, United States.

(8) Boutros, E., **Fonger, N. L.**, Wu, Q., & Xu, H. (2023, December 1). *Making mathematics meaningful: How learning about local social injustices develops undergraduate students’ criticality, identity, intellect, and skill* [Poster presentation and interactive display]. SOURCE Fall Expo, Syracuse University, Syracuse, NY, United States.

(7) Boutros, E., **Fonger, N. L.**, Wu, Q., & Xu, H. (2023, October 3). *Enhancing students’ inclusion and belonging by developing meaningful mathematics literacy in the place we now call home* [Symposium presentation]. First Annual D.E.I.A. Symposium, Syracuse University, Syracuse, NY, United States.

(6) Boutros, E., **Fonger, N. L.**, Wu, Q., & Xu, H. (2023, August 10). *Making mathematics meaningful: How learning about local injustices develops undergraduate students’ criticality, identities, intellect, skill, and emotion* [Poster presentation]. SOURCE Summer Symposium, Syracuse University, Syracuse, NY, United States.

(5) Caviness, S. L., **Fonger, N. L.**, Njue, E., & Odiwuor, B. (2023, April). *It was meaningful because Syracuse is now my home: Locality-identity and social justice mathematics* [Poster presentation]. SOURCE Spring Showcase, Syracuse University, Syracuse, NY, United States.

(4) Caviness, S. L., **Fonger, N. L.**, Voyias, K., Njue, E., Odiwuor, B., & Raja, W. (2023, April). *Attending to locality-identity when designing social justice mathematics tasks* [Paper presentation]. School of Education Graduate Student Research Symposium, Syracuse University, Syracuse, NY, United States.

(3) Raja, W., Caviness, S., Odiwuor, B., & **Fonger, N. L.** (2022, October). *How do we analyze students’ learning of mathematics through local social justice issues?* [Conference presentation]. Northeastern Conference on Research in Undergraduate Mathematics Education, Online.

(2) Raja, W., Njue, E., **Fonger, N. L.**, & Caviness, S. L. (2022, December 5). *Social justice mathematics* [Poster presentation]. Mathematics Education Research and Creative Scholarship Showcase, Bird Library, Syracuse University, Syracuse, NY, United States.

(1) Njue, E., **Fonger, N. L.**, Caviness, S. L., & Raja, W. (2022). *Social justice mathematics* [Presentation]. SOURCE Symposium, Syracuse University, Syracuse, NY, United States.

# FUNDED RESEARCH

**A. Extramural Grants and Awards, funded (n=7)**

(7) "Data Warriors Engage Communities in Environmental Justice Art-Based Advocacy: Math and Maps Inspiring Action.” Funding awarded to working group HF3: Community Engaged Public Humanities with **Nicole L.** **Fonger**, Brice Nordquist, Timur Hammond, Kate Navickas, and Christina Willemsen. Event April 6, 2024, *$2,500*.

(6) “Data Warriors Engage Communities in Environmental Justice Awareness: Safe Communities Event.” Funding awarded to working group HF3: Community Engaged Public Humanities with **Nicole L. Fonger**, Brice Nordquist, Timur Hammond, Kate Navickas, and Christina Willemsen. Event December 2, 2023, *$2,500*.

(5) “Supporting Algebra Students’ Learning of Exponential Functions and Mindsets to See Math as Useful Through Environmental Justice Math Lessons.” National Council of Teachers of Mathematics, Mathematics Education Trust (MET) Equity in Mathematics Grants (6-12). Betty Routhouska (Primary Applicant), Ken Keech (Co-Applicant), **Nicole L. Fonger** (Co-Applicant). June 1, 2023 – May 31, 2024, *$7,700*.

(4) “Nonviolent Action from Civil Rights to Climate Justice” Event as part of the Community-Engaged Public Humanities Working Group with Drs. Brice Nordquist, **Nicole L. Fonger**, Timur Hammond, Kate Navickas, Christina Willemsen. Spring 2023, *$3,250*.

(3) “Take Me to the Palace of Love” Mini Residency with Rina Banerjee, Exhibition of Rina Banerjee’s Work (January 15 – March 15, 2022) and Conversation with Rina Banerjee and Gayatri Spivak (March 3, 2022). Awarded to the HF3: Community-Engaged Public Humanities group **Nicole L. Fonger**, Timur Hammond, Kate Navickas, Brice Nordquist, Chris Willemsen by the Central New York Humanities Corridor, *$10,940*.

(2) “Community-Engaged Social Justice Mathematics” Event by the Community-Engaged Public Humanities Working Group **Nicole L. Fonger** with Timur Hammond, Brice Nordquist, Central New York Humanities Corridor. September 2021 – May 2022, *$5,000*.

(1) “Community-Engaged Public Humanities Working Group” **Nicole L. Fonger** with Brice Nordquist, Timur Hammond, Kathryn Mariner. Central New York Humanities Corridor. March 2019 – May 2020, *$3,000*.

**B. Internal Grants and Awards, funded (n=11)**

(11) “Computational Methods” Syracuse Office of Undergraduate Research and Creative Engagement (SOURCE) Bridge Award, Awarded February 2025 Gabriel Davila-Campos (undergraduate research assistant) for student travel support, *$2,000*.

(10) “Data Warriors” Syracuse Office of Undergraduate Research and Creative Engagement (SOURCE) Research Assistant Grant, Awarded May 2024 for student work Summer 2024 – May 2025, *$10,000*.

(9) “2024 Joan N. Burstyn Endowed Fund for Collaborative Research: Data Warriors Youth Participatory Action Research with Historically Marginalized Youth at an Urban Public School" with Stephen Caviness, Lauren Ashby. March 2024 – May 2025, *$2,500*.

(8) “Intersection of Math Education and Geography through Youth-Centered Community-Engaged Research on Environmental Justice” with Dr. Jonnell Robinson, and collaborators Ken Keech, Stephen Caviness, Lauren Ashby, Karley Voyias. Syracuse University College of Arts and Sciences Engaged Humanities Network. May 2023 – May 2024, *$5,000*.

(7) “Meaningful Math Research Group” Syracuse Office of Undergraduate Research and Creative Engagement (SOURCE) Research Assistant Grant, Awarded Nov. 2021 for student work Spring 2022 – Summer 2022, *$8,720*.

(6) “Social Justice Mathematics” Syracuse University College of Arts and Sciences Engaged Communities Course Grant, *$3,000*.

(5) “Racial Justice Mathematics” Syracuse Office of Undergraduate Research and Creative Engagement (SOURCE) Research Assistant Grant, Awarded Nov. 2021 for student work Spring 2022 – Summer 2022, *$3,876*.

(4) “The Antiracist Algebra Coalition” College of Arts and Sciences Engaged Humanities Network (EHN) Grant, Syracuse University, *$3,000*.

(3) “Building Research-Practice Partnerships to Improve Student Outcomes in School Algebra” Syracuse University Collaboration for Unprecedented Success and Excellence Grant, June 2020 – June 2022, *$8,800*.

(2) “Community-Engaged Scholarship: A Cross Disciplinary Approach.” Syracuse University, School of Education. Awarded Fall 2019, *$1,500*.

(1) “A Research-Practice Partnership to Enrich and Support Youth Experience of Meaningful Math Learning in an Urban Public High School” **Fonger, N. L.** (PI) and Keech, K. (Collaborator). Syracuse University, School of Education, April 2018 – 2020, *$5,000*.

# TEACHING

**A. Mathematics Secondary School Teaching Appointments**

2006 Kalamazoo Public Schools, Geometry

2006 – 2008 Kalamazoo Christian High School, Algebra, Geometry

**B. University Courses Taught**

**1. Syracuse University (2017 – Present)**

CAS 101 First Year Forum, Meaningful Mathematics

CAS 101 First Year Forum, Women in Science and Engineering

MAT 100 Social Justice Mathematics (Special Topics Course)

MAT 194 Pre-calculus (UG)

MAT 295 Calculus (UG)

MAT 375 Introduction to Abstract Mathematics (UG)

EED 423/600 Elementary Math Methods and Curriculum – Intermediate Grades (UG/G)

EDU 508 Candidacy Student Teaching Experience

SED 413/613 Methods and Curriculum in Teaching Mathematics (UG/G)

SED 416/616 Assessment and Data Driven Instruction (UG/G)

MTD 630 Internship in Mathematics Education (G)

MTD 634 Teaching and Learning Functions (G)

MTD 690 Independent Study (G)

MTD/EDU 700 Linking Research and Practice in Education (G)

MTD/EDU 700 Linking Research and Practice in STEAM Education (G)

MTD/EDU 835 Learning Theories in Mathematics/Education (G)

MTD 830 Research Seminar on Mathematics Education (G)

**2. University of Wisconsin—Madison (2015)**

C&I 942 Seminar in Research on Mathematics Education
 (in collaboration with Dr. Amy Ellis)

**3. Western Michigan University (2006 – 2012)**

MAT 3510 Computing Technology in Secondary School Mathematics

MAT 1510 Geometry for Elementary and Middle School Teachers

MAT 1500 Number Concepts for Elementary and Middle School Teachers

MAT 1140 Excursions in Mathematics

# COMMUNITY-ENGAGED SCHOLARSHIP

**A. Comics and Zines**

(12) **Fonger, N. L.**, & Data Warriors. (2024, August). Joy & justice: Lead poisoning and housing justice. *Data Warriors Zine Series 1*(1).

(11) **Fonger, N. L.** (2023, September 18). “It was meaningful because…” [Zine]. <https://nicolefonger.com/2023/09/18/it-was-meaningful-because/>

(10) **Fonger, N. L.** (2022, August 16). *What is culturally and historically responsive literacy?* [Zine]. <https://nicolefonger.com/2022/08/16/cultivating-math-genius/>

(9) **Fonger, N. L.** (2022, August). *Where were you in 2012-13?* [Zine].

(8) **Fonger, N. L.** (2022, August). *What is algebra?* [Zine].

(7) **Fonger, N. L.** (2022, August). *How can I help my kids with fractions?* [Zine].

(6) **Fonger, N. L.** (2021, November). *How can math be racist?* [Zine]. <https://documentcloud.adobe.com/link/track?uri=urn:aaid:scds:US:fb90b8d9-d9ba-4c61-9f2c-038d4fd20768>

Inspired by Tashia Thomas-Neil.

(5) **Fonger, N. L.** (2021, September 15). *What is community-engaged scholarship?* [Zine]. <https://nicolefonger.com/2021/09/15/what-is-community-engaged-scholarship-2/>

(4) **Fonger, N. L.**, & Syracuse University Office of Diversity and Inclusion. (2021, August 29). *That’s so ghetto #microaggression* [Zine]. <https://nicolefonger.com/2021/08/29/thats-so-ghetto-microagression/>

Inspired by Eboni Joy Britt and Ebony King at Syracuse University Office of Diversity and Inclusion.

(3) **Fonger, N. L.** (2022, February 9). *Are you White?* [Zine]. <https://nicolefonger.com/2022/02/09/are-you-white-a-zine/comment-page-1/#:~:text=I%20created%20this%20zine%20%E2%80%9CAre,under%20a%20creative%20commons%20license>

(2) **Fonger, N. L.**, & Cogen Leaders of the Antiracist Algebra Coalition. (2021, April). *What is our work?* [Zine]. <https://nicolefonger.com/2021/06/02/what-is-our-work/>

Inspired by Cogen Leaders of the Antiracist Algebra Coalition.

(1) **Fonger, N. L.** (2021, March). *What is antiracism?* [Zine].

**B. Social Justice Math Lessons**

(4) **Fonger, N. L.**, Keech, K., Caviness, S., Voyias, K., & Raja, W. (2023, April 10). Math Tasks: Culturally and Historically Responsive Math Tasks. <https://nicolefonger.com/2023/04/10/culturally-and-historically-responsive-math-lessons/>

(3) **Fonger, N. L.**, Mosier, T., Raja, W., Erskine, A., Sharif, K., Njue, E., Peña, D., & Caviness, S. (2022, May 7). “A Sense of Place: Using Math to Engage in Community” Public Event held at Café Sankofa. <https://www.cnycorridor.net/calendar/a-sense-of-place-using-math-to-engage-in-our-communities/>

(2) **Fonger, N. L.** (Fall 2021). “Antiracist Algebra Coalition: Black Brilliance and Math Coaching” Working sessions with school teachers, coaches, district leaders, and parents. The project webpage can be accessed here: <https://nicolefonger.com/antiracism/>

(1) **Fonger, N. L.** (Spring 2021). “Antiracist Algebra Coalition” inaugural working sessions of “Cogen” leaders. Established in collaboration with educators, trainers, and administrators. The project webpage can be accessed here: <https://nicolefonger.com/antiracism/>

**C. Data Warriors Program & Events**

**1. The Data Warriors**

Keech, K., **Fonger, N. L.** (December 2022 – Ongoing). Data Warriors. [www.thedatawarriors.com](http://www.thedatawarriors.com)

* Data Warriors is an enrichment program for high school youth to engage in youth participatory action research to investigate social justice issues in their community they care about. Our guiding processes are: statistical investigation, informing the public through events and presentations, and inspiring change.
* As teacher-researcher leaders we: organize and convene high school youth after school on a weekly basis to lead youth-centered discussions on Syracuse-based environmental justice issues in our communities; design curricula to support students’ data literacy through a process of stastistical investigation, mapping, and youth participatory action research.
* Fall 2025 Data Warrior Teacher leaders include: Lauren Ashby, Destiny Pearson, Xavier Trapps
* Past Data Warrior teacher leaders include: Stephen Caviness, Betty Routhouska, Karley Voyias.

**2. Data Warriors Events**

(7) **Fonger, N. L.** with Nottingham Data Warriors. (2025, May 2). *Engaged Humanities Network Showcase.* Community Folk Art Center, Syracuse, NY.
 Nottingham High School students prepared and presented to an interdisciplinary public audience. Together we co-presented what Data Warriors is, highlighted select student research projects, and shared some of the origins of the group.

(6) Keech, K., **Fonger, N. L.**, Caviness, S. L. with Nottingham Data Warriors. (2025, April 23). *Try-Mathalon Community Math Night.* Nottingham High School.
 Data Warrior youth presented their research posters in a gallery walk, and participants voted on a people’s choice award. Youth, teachers, and faculty collaborated on hands-on math activities involving factors, prime numbers, binary codes, penny boats, and towers.

(5) Ashby, L., Keech, K., **Fonger, N. L.** with Nottingham High School Students. (2025, March 24). *Community Geography Computer Lab Learning ArcGIS and Creating Data Visualizations.* Syracuse University.

Students from a Nottingham High School statistics class and the Nottingham Data Warriors went on a field trip to Syracuse University, where they learned how to use ArcGIS in a Lyman Hall computer lab lesson led by Lauren Ashby, worked on their own statistical investigation projects, and toured the Maps room at Bird Library to better understand the history of Syracuse through social-spatial perspectives.

(4) Keech, K., **Fonger, N. L.** with Nottingham Data Warriors. (2025, February 27). *Black History Month Showcase*. Nottingham High School.
 Students showcased their research projects in the Nottingham Library through an interactive gallery walk. Guest speaker Ricky Brown, CEO of Diversify NY, connected student projects to historical redlining, wealth accumulation, and community wellness.

(3) **Fonger, N. L.**, Keech, K., Routhouska, B., Ren, P., Ashby, L., Caviness, S., Royster, R., Robinson, J. with Nottingham Data Warriors. (2024, April 17). *Syracuse University Makerspace.* <https://www.cnycorridor.net/calendar/data-warriors-maker-space-field-trip-2/> Featuring artist and professor Rochele Royster, Data Warriors refined their social justice art projects during a workshop at the Barner-McDuffie House (119 Euclid), then translated their designs into wearable art at the ITS MakerSpace at Kimmell Hall at Syracuse University. Students’ projects resulted in art representing data visualization of housing injustice and other local social justice issues.

(2) **Fonger, N. L.**, Keech, K., Voyias, K., Ashby, L., Robinson, J. with Nottingham Data Warriors. (2023, December 2). *Safe Communities Event*. <https://nicolefonger.com/2023/11/21/data-warriors-safe-communities-event/> This public event served over 100 people and featured student, teacher, and faculty work across topics of redlining, lead poisoning, and safe communities through math, maps, and hands-on displays. I led the concept of the event as a world cafe discussion. I coordinated and designed the event flow, layout, focus, and execution. This work represented not only the work of Data Warriors students in Fall 2023 on graphs inspiring action, concentration of crime and landlord responsibility to ensure safe housing at large apartment complexes, as well as past and ongoing work on culturally and historically responsive lesson design, and youth participatory action research.

(1) **Fonger, N. L.**, Keech, K., Voyias, K., Caviness, S., Boutros, E. with Nottingham Data Warriors. (2023, June 10). *Lead Poisoning Prevention Event*. <https://nicolefonger.com/2023/05/23/syracuse-truth-seekers-june-10-2023-event/> This public event served over 50 people and featured student, teacher, and faculty research and creative scholarships focused on using math and maps to spread awareness and advocacy around lead poisoning prevention. I led and designed a half-life of lead interactive display with pennies and Legos. I also coordinated the involvement of community members, food, scheduling, and concept. This work represents a culmination of Data Warriors programming activities (our group name changed from Truth Seekers to Data Warriors).

**3. Annual Reports**

(1) **Fonger, N. L.**, Keech, K., & Nottingham Data Warriors. (2025, May 1). *Data Warriors Annual Report 2024-2025.* Nottingham High School. [bit.ly/DW24-25](https://bit.ly/DW24-25)

**D. Meaningful Mathematics Research Group (MMRG)**

**1. The Meaningful Mathematics Research Group**

The meaningful mathematics research group is dedicated to understanding and advancing community-engaged scholarship in support of meaningful mathematics at the high school and college levels. We partner with classroom teachers to design lessons, conduct curriculum research, and lead youth participatory action research in classrooms in urban communities. We disseminate our research to local, regional, national, and international audiences through conferences, peer-review publications, books, and reports. A key project of our team is the Data Warriors.

**2. Members**

**i. Active Members**

|  |  |
| --- | --- |
| **Graduate Students** | **Undergraduate Students** |
| Lauren AshbyGideon BansonSaef KhanAnis MunfarikhatinCalistus Wekesa SimiyuFridgo Tasman | Elyas LayachiQiong Wu |

**ii. MMRG Alumni**

|  |  |
| --- | --- |
| **Former Graduate Student RAs** | **Former Undergraduate Student RAs** |
| Nigar AltindisStephen CavinessWaleed RajaBrian OdiwuorRen Pei | Gabriel Antonio Davila-CamposHanyi XuEmanuel BoutrosEmmy Njue |

# CONSULTING & TEACHER PROFESSIONAL DEVELOPMENT

**A. Professional Consulting**

|  |  |  |
| --- | --- | --- |
|  | 2024 | Kalamazoo Regional Educational Service Agency, MiSTEM, Kalamazoo, MI |
|  | 2022 | Equity Focused School Leadership, Ed Smith PreK-8 School, Syracuse, NY |
|  | 2021 | Environmental Justice STEM Lessons, Western Michigan University |

**B. Teacher Professional Development**

|  |  |  |
| --- | --- | --- |
|  | 2024 | Culturally Responsive Math Education, MiSTEM Institute, Kalamazoo, MI |
|  | 2022 | Cultivating Math and Science Genius, MiSTEM Institute, Kalamazoo, MI, August 8-12, 2022 |
|  | 2020 | Syracuse, NY, Syracuse City School District Teacher Leaders Culturally Responsive Education: Antiracism Training Session |
|  | 2014 | Raleigh, NC, Friday Institute for Educational Innovation, Course Developer, MOOC-Ed Series Course on Fractions Foundations |
|  | 2013 | Raleigh, NC, Friday Institute for Educational Innovation, Course Developer and Leader, MOOC-Ed Series Course on Mathematics Learning Trajectories, Equipartitioning as a Foundation for Rational Number Reasoning in K-5 |
|  | 2013 | Gaylord, MI, *Deep Understanding of Geometry,* Workshop Developer and Leader, Michigan Mathematics Rural Area Project workshop for elementary teachers |

# STUDENT MENTORING AND ADVISEMENT

**A. Doctoral Committees (chair)--Syracuse University (n=2)**

|  |  |  |
| --- | --- | --- |
|  | Awarded August 2024 | Waleed Raja, PhD“Exploring the Role of Task Design and Students’ Emotions in Supporting Students’ Learning in Social Justice Mathematics” |
|  | Awarded May 2021 | Nigar Altindis, PhD“Exploring the Nature of Co-Emergence of Students’ Representational Fluency and Functional Thinking” |

**B. Doctoral Committees (member)--Syracuse University (n=2)**

|  |  |  |
| --- | --- | --- |
|  | Awarded May 2025 | Stephen Caviness, PhD“Linking the Mathematics Identities of Learners, Teachers, and Educators” |
|  | Awarded May 2020 | Grace Njuguna Visher, PhD,“An Investigation of Sixth Grade Students’ Reasoning of the Angle Concept: A Design Research Study in a Miniature Golf Context” |
|  | 2019 – 2022 | Tonya Wilson, PhD Candidate,Mathematics Education. Summer 2019 – 2022, did not finish. |

**C. Dissertation Reader—Syracuse University (n=1)**

|  |  |  |
| --- | --- | --- |
|  | 2023 | Alexa R. Kulinski, PhD,“The Matter of Artmaking and Teaching: Exploring Preservice Art Teachers’ Perceptions and Uses of Matter in Artmaking, Reflection, and Curriculum Making.” |

**D. PhD Mathematics Education Research Apprenticeship (n=3)**

|  |  |  |
| --- | --- | --- |
|  | Fall 2022 | Waleed Raja“Social Justice Mathematics” |
|  | Summer/Fall 2021 | Miriam Kabagorobya“The Use of Multiple Resources by English as Second Language Learners (ESLLs) to Communicate Mathematical Ideas” (Published in the AERA Paper Repository August 2021) |
|  | Fall 2019 | Nigar Altindis“Seeing exponential functions despite representational fluency in a quantitatively-rich task context” (Published in the PME-NA Proceedings, November 2019) |

**E. General Graduate Student Advising**

|  |  |  |
| --- | --- | --- |
|  | Fall 2018 – P | Research Support and Mentoring for Graduate Students Outside of Syracuse University |
|  | 2018 | Graduate Student Mentoring Luncheon, PME-NA Conference |

# SERVICE

**A. Service to Syracuse University**

**1. Service to the University**

|  |  |  |
| --- | --- | --- |
|  | 2024 – Present | Senator, University Senate |
|  | 2024 – Present | Member, Senate Committee on Intersectional Equity for Race, Ethnicity, Sexuality, Gender Identity, Disability |
|  | 2020 – Present | Reviewer, Future Professoriate Program |
|  | 2017 – Present | Member, Women in Science and Engineering |
|  | 2017 – 2018 | Postdoctoral Faculty Liaison, Women in Science and Engineering |

**2. Service to the College of Arts and Sciences**

|  |  |  |
| --- | --- | --- |
|  | 2023 | Academic Strategic Planning Committee |
|  | 2023 | Meetings with Candidates for Dean |
|  | 2022 | Member, Curriculum Committee |

**3. Service to the School of Education**

|  |  |  |
| --- | --- | --- |
|  | 2023 – Present | Academic Advising for the Early Childhood Inclusive Elementary Program (UG) |
|  | 2023 – Present | Review of applications to graduate programs in mathematics education (Master’s in Teaching and Curriculum; PhD in Mathematics Education) |
|  | 2023 – 2024 | Member, Tenure Track Faculty Search Committee for Inclusive STEM Education |
|  | 2019 – 2023 | Member, Committee on Policies, Standards, and Scholarship |
|  | 2021 | Member, Ad Hoc Vision Committee |
|  | 2018 | SK-12, Summer Launch Event, Committee |

**4. Service to the Department of Mathematics**

|  |  |  |
| --- | --- | --- |
|  | 2024 – 2025 | Undergraduate Committee |
|  | 2018 – 2020; 2021 – Present | Course Supervisor, Precalculus (MAT 194) |
|  | 2022 – Present | Meetings with Job Candidates |
|  | 2022 | Course Tagging (MAT 194) |
|  | 2022 | Course Supervisor, Calculus I (MAT 295) |

**5. Service to the Department of Teaching and Leadership\***

*\*The School of Education de-departmentalized in 2023.*

|  |  |  |
| --- | --- | --- |
|  | 2017 – Present | Mathematics Education Faculty Review of applications for prospective Masters and PhD students |
|  | 2022 – 2023 | Secondary Mathematics Education Program Coordinator |
|  | 2022 | Course Tagging (SED 416) |
|  | 2018 | Outreach to Mathematics Education Leadership Scholars |

**B. Service to the Profession**

**1. Reviewing**

**i. Reviewer for Refereed Journals**

Ad hoc reviewer for the following journals:

* *Journal for Research in Mathematics Education (JRME)*
* *Journal of Mathematics Teacher Education*
* *Contemporary Issues in Technology and Mathematics Teacher Education*
* *Mathematics Teacher (MT)*

**ii. Reviewer for Professional Organizations**

Ad hoc reviewer for the following conferences:

* American Educational Research Association (AERA)
* North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA)

**iii. Reviewer for Funding Agencies**

|  |  |  |
| --- | --- | --- |
|  | 2021 | National Science Foundation, Review Panel Member |
|  | 2020 | National Science Foundation, Ad Hoc Reviewer |
|  | 2019 | National Science Foundation, Review Panel Member |
|  | 2018 | National Science Foundation, Ad Hoc Reviewer |
|  | 2016 | National Science Foundation, Review Panel Member |
|  | 2015 | National Science Foundation, Review Panel Member |

**2. Conference Planning**

|  |  |  |
| --- | --- | --- |
|  | 2014 | Convening on K-12 Mathematics Education: Common Core, Digital Learning, and State Policy |
|  | 2011 – 2012 | Local Organizing Committee Member, North American Chapter of the International Group for the Psychology of Mathematics Education |
|  | 2009 – 2010 | CSMC Doctoral Fellows Symposium, San Diego, CA |
|  | 2007 – 2008 | Conversations Among Colleagues Conference |

**C. Service to City of Syracuse, County of Onondaga**

**1. Onondaga County**

|  |  |  |
| --- | --- | --- |
|  | Spring 2022 | Grand Jury Duty, Recording Member |

**2. Syracuse City School District**

|  |  |  |
| --- | --- | --- |
|  | 2022 – P | Parent Representative, Superintendent Parent Council |
|  | 2021 – 2023 | Parent Teacher Organization Vice President, Climate Team Representative, Ed Smith PreK-8 School |

**3. Community Beautification**

|  |  |  |
| --- | --- | --- |
|  | 2020 – Present | Volunteer, Neighborhood Trash Clean Up “Sherman Park Trash Sharks” and “Barry Park Association” |
|  | 2020 – 2022 | Volunteer, Café Sankofa Community Garden |

# PROFESSIONAL AND CIVIC MEMBERSHIPS

|  |  |  |
| --- | --- | --- |
|  | 2009, 2011, 2017 – Present | American Educational Research Association (AERA) |
|  | 2011 – Present | North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA) |
|  | 2017 – 2020, 2023 – Present | Association of Mathematics Teachers of New York State (AMTNYS) |
|  | 2017 – 2021 | National Council of Teachers of Mathematics (NCTM) |
|  | 2013 – 2014, 2019 – 2020 | Association of Mathematics Teacher Educations (AMTE) |
|  | 2017 – 2020 | European Research in Mathematics Education (ERME) |
|  | 2017 – 2019 | International Group for the Psychology of Mathematics Education (IGPME) |

# LEADERSHIP, DIVERSITY, EQUITY, AND INCLUSION PROFESSIONAL LEARNING

|  |  |  |
| --- | --- | --- |
|  | 2022 – 2023 | Becoming an Antiracist Educator Series Level 2, Virginia Commonwealth University |
|  | 2021 | Becoming an Antiracist Educator Series Level 1, Virginia Commonwealth University |
|  | 2021 | Conversations About Race and Equity (CARE) Circles, Syracuse University |
|  | 2021 | Diversity and Inclusion Training, Syracuse University |
|  | 2019 | Leadership Training, Women in Science and Engineering, Syracuse University |
|  | 2018 | Fostering an Inclusive Learning Environment, Syracuse University |
|  | 2016 | Undergraduate Research Mentor Training, DELTA Program, University of Wisconsin-Madison |
|  | 2015 – 2016 | Postdoctoral Training Course in Scientific Leadership & Management, University of Wisconsin-Madison |
|  | 2014 | Conflict Management Training, North Carolina State University |

# PUBLIC RECOGNITION

**A. Reviews (n=1)**

(1) Fischer, R. M. (2025). [Review of the book *Making algebra meaningful: A visual approach to math literacy for all,* by **N. L. Fonger**]. *Choice Reviews, 62*(8). <https://www.choicereviews.org/review/10.5860/CHOICE.237158>

**B. News, Press Releases, and Features (n=13)**

(13) Stirling, D. (2025, August 28). *Lender Center Faculty Fellow empowers high schoolers via math, maps, data literacy.* Syracuse University News: Campus & Community. <https://news.syr.edu/blog/2025/08/28/lender-center-faculty-fellow-empowers-high-schoolers-via-math-maps-data-literacy/>

(12) Davenport, K. (2025, May 13). *High school students aim to combat injustices through Data Warriors groups.* Syracuse City School District. <https://www.syracusecityschools.com/districtpage.cfm?pageid=14651>

(11) Bernadi, D. (2025, May 21). *Engaged Humanities network Community Showcase spotlights collaborative work.* Syracuse University News. <https://news.syr.edu/blog/2025/05/21/engaged-humanities-network-community-showcase-spotlights-collaborative-work/>

(10) Rosen, E. (2024, September 16). *“Making Algebra Meaningful” is a fresh, equitable approach to visual learning*. The Daily Orange. <https://dailyorange.com/2024/09/making-algebra-meaningful/>

(9) CitrusTV. (2024, September 14). *Sketching to Make Algebra Meaningful | News Live at 6* [Video]. YouTube. <https://www.youtube.com/watch?v=np2WNL0bAMc>

(8) Leuschke, G. (2024, July 16). *Centering equity, academic writing and community*. Syracuse University College of Arts & Sciences. <https://artsandsciences.syracuse.edu/mathematics/centering-equity-academic-writing-and-community/>

(7) Brodsky, S. (2022, November 4). *Tech education is racist—Here's how to fix it, experts say*. Lifewire. <https://www.lifewire.com/tech-education-is-racist-heres-how-to-fix-it-experts-say-6825640>

(6) Warren, S. (2022, October 24). *Syracuse City School District highlights teachers’ inclusive teaching methods.* The Daily Orange. <https://www.dailyorange.com/2022/10/syracuse-city-school-district-highlights-teachers-inclusive-teaching-methods/>

(5) Stevens, S. (2022, May 7). *Syracuse CSD staff, SU students engage community through math*. Spectrum News. <https://spectrumlocalnews.com/nys/central-ny/community/2022/05/07/syracuse-csd-staff--su-students-engage-community-through-math>

(4) Syracuse University School of Education. (2022, February 23). *School of Education, SCSD collaboration connects math to Black history in Syracuse.* Syracuse University School of Education. <https://soe.syr.edu/school-of-education-scsd-collaboration-connects-math-to-black-history-in-syracuse/>

(3) Syracuse University School of Education. (2020). Sketchnotes: A visual communication mechanism to strengthen research-practice links. *Education Exchange:* *Teaching and Learning in 2020*, 6-7. <https://soe.syr.edu/wp-content/uploads/EducationExchangeFall2020.pdf>

(2) Stallings, T., **Fonger, N. L.**, & DeWitt, J. (2014, March). Recommendations for moving North Carolina forward in digital learning and mathematics instruction. *Friday Institute for Educational Innovation, North Carolina State University*.

(1) **Fonger, N. L.** (2014). Reader Reflections: Hexagons. *The Mathematics Teacher, 108*(5), 325. <https://doi.org/10.5951/mathteacher.108.5.0324>

# TECHNOLOGICAL EXPERTISE

Experienced user of both Macintosh and Windows operating systems.

Familiarity and expertise with software including:

* **Creative Publishing Tools:** Adobe, Freehand, iMovie, Camtasia
* **Website Development Tools:** Dreamweaver, WordPress
* **Microsoft 365 Suite:** OneNote, Excel, Teams, PowerPoint, Publisher, Word
* **Mathematics and Statistics Education Technology:** Desmos, Dynamic Statistics (e.g., Fathom), Dynamic Geometry (GSP, Geogebra, TI-Nspire, CPMP-Tools), JAVA applets (e.g., Core Math Tools), handheld and presenting/navigation software for CAS and calculators (e.g., Texas Instruments products TI-83+, TI-86, TI-89, TI-Nspire, TI-Nspire CAS)
* **Qualitative Data Analysis Tools:** Studiocode video coding software, HyperRESEARCH (textual analysis), MaxQDA
* **Management Tools:** Endnote (reference library), Zotero
* **Video Conferencing:** Zoom, Teams