Frances K. Harper

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PROFESSIONAL PREPARATION

Ph.D., Mathematics Education	*Michigan State University*, 2017
Graduate Certificate, Urban Education	*Michigan State University College of Education*, 2015
M.A., Curriculum Studies and Teacher Education	*Stanford Graduate School of Education*, 2012
A.L.M., Mathematics for Teaching	*Harvard University Extension School*, 2011
B.A., Classics	*Tufts University*, 2003

APPOINTMENTS

Assistant Professor	*University of Tennessee*	2017-present
Research Assistant	*Michigan State University*	2012-2017
Instructor	*Michigan State University*	2013-2016
Teaching Assistant	*Michigan State University*	2012-20113
Various teaching/educator positions in Tennessee, Massachusetts, and Isehara (Japan)		2003-2011

PROFESSIONAL MEMBERSHIPS

Psychology of Mathematics Education (North America)
Association of Mathematics Teacher Educators
American Educational Research Association
- Critical Educators for Social Justice Special Interest Group
- Division G: Social Context of Education
- Division K: Teaching and Teacher Education

National Council of Teachers of Mathematics
- TODOS, Mathematics for All

RESEARCH AND SCHOLARLY PUBLICATIONS

Articles published in refereed journals

Harper, F. K. (in press). A meta-analysis of teaching mathematics for social justice in action: Promises and problems of practice. *Journal for Research in Mathematics Education*.

Plumb, A., Roberts-Caudle, C. **Harper, F. K.,** & Jones, D. A. (2017). Flint, Michigan, water crisis: Connecting to local issues in mathematics classrooms. *Teaching Children Mathematics, 23*(9), 518-520.

Contributions to edited volumes

Harper, F. K. & Anderson, B. (accepted). "I just get all stressed out": Coping with perfectionism as a Black gifted girl in mathematics. In N. M. Joseph (Ed.) *Understanding the intersections of race, gender, and gifted education: An anthology by and about talented Black girls and women in STEM*. Charlotte, NC:

Information Age Publishing. (Referred)

Craig, J., Guzmán, L., & **Harper, F. K**. (accepted). Quantitative literacy supporting informed citizenship: Efficient functions and/or disruptive action? Submitted to the *Mathematical Association of America* for a book in the Notes Book series focused on quantitative literacy.

Harper, F. K., Drake, C, Bartell, T. G., & Najarro, E. (2018). "How I want to teach the lesson": Framing children's multiple mathematical knowledge bases in the analysis and adaptation of existing curriculum materials. In T. G. Bartell (Ed.) *Toward equity and social justice in mathematics education.* Springer. (Invited; Refereed)

Harper, F. K., Herbel-Eisenmann, B. & McCloskey, A., (2017). Diverse perspectives on sociopolitical framings for mathematics methods. In S. Kastberg, A. M. Tyminski, A. Lischka, & W. Sanchez (Eds.) *Building support for scholarly practices in mathematics methods* (pp. 99-114). Charlotte, NC: Information Age Publishing.

Harper, F. K., Sanchez, W., & Herbel-Eisenmann, B. (2017). Doing mathematics across languages: Exploring possibilities for supporting emergent bilinguals' mathematical communication and engagement. In S. Kastberg, A. M. Tyminski, A. Lischka, & W. Sanchez (Eds.) *Building support for scholarly practices in mathematics methods* (pp. 263-277). Charlotte, NC: Information Age Publishing.

Harper, F. K. (2016). Changing patterns. Changing my world?: Using my personal evolution of critical race consciousness in mathematics teacher education. In N. M. Joseph, C. M. Haynes, & F. Cobb (Eds.) *Interrogating Whiteness and Relinquishing Power: White Faculty's Commitment to Racial Consciousness in STEM Classrooms.* New York, NY: Peter Lang Publishing.

Harper, F. K. & Orr, S. (2015). Algebra and literacy: A social justice pairing. In J. C. Richards & K. Zenkov (Eds.) *Social justice, the Common Core and closing the instructional gap: Empowering diverse learners and their teachers*. Charlotte, NC: Information Age Publishing.

Papers published in refereed conference proceedings

Harper, F. K., & Deshpande, D. (accepted for 2018). Social justice drive STEM: Achieving equity goals through integrated mathematics education. *Proceedings of the 40th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education,* Charlotte, SC.

Harper, F.K. (2017). Coming to understand the big issues: Remaking meaning of social justice through mathematics across the school year. *Mathematics Education and Society 9*, Volos, Greece.

Scroggins, A., Herbel-Eisenmann, B., **Harper, F. K.**, & Bartell, T.G. (2017). Designing and facilitating mathematics teacher professional development toward equitable systems: Weaving together mathematics, discourse, community, positionality, and action research. *Mathematics Education and Society 9*, Volos, Greece.

LópezLeiva, C., Larnell, G., **Harper, F. K.,** & Herbel-Eisenmann, B. (2016). Epistemologies and coalitions *sin fronteras* in mathematics education. In M. B. Wood, E. E. Turner, M. Civil, & J. A. Eli (Eds.), *Proceedings of the 38th annual meeting of the North American Chapters of the International Group for the Psychology of Mathematics Education.* Tucson, AZ: University of Arizona.

Harper, F. K., Najarro, E., Bartell, T. G., & Drake, C. (2015). Identifying spaces for diverse learners' multiple mathematical knowledge bases in existing curriculum. In T. Bartell, K. Bieda, R. 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. East Lansing, MI: Michigan State University.

Papers or extended abstracts in conference proceedings (refereed on basis of abstract)

Bartell, T. G., **Harper, F.K.**, Yolcu, A., Wager, A. (2017). At the crossroads of mathematics and lived experiences: Increasing young children's access to rigorous mathematics. In E. Galindo & J. Newton (Eds.) *Proceedings of the 39th annual meeting of the North American Chapters of the International Group for the Psychology of Mathematics Education*, Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators. (abstract)

Harper, F.K. & Swartz, B. A. (2016). (Re)defining smartness: Exploring multiple abilities in elementary and secondary mathematics teacher education. In M. B. Wood, E. E. Turner, M. Civil, & J. A. Eli (Eds.), *Proceedings of the 38th annual meeting of the North American Chapters of the International Group for the Psychology of Mathematics Education*. Tucson, AZ: University of Arizona. (abstract)

Amidon, J., Koestler, C. **Harper, F**., Herbel-Eisenmann, B., Wager, A., & Scroggins, A. D. (2016). Negotiating an equitable mathematical system through professional development. In M. B. Wood, E. E. Turner, M. Civil, & J. A. Eli (Eds.), *Proceedings of the 38th annual meeting of the North American Chapters of the International Group for the Psychology of Mathematics Education.* Tucson, AZ: University of Arizona. (abstract)

Harper, F. K. (2012). From confusion to clarity: How Complex Instruction supports students' mathematical proficiency. In L. R. Van Zoest, J. Lo, & J. L. Kratky (Eds.), *Proceedings of the 34th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education.* Kalamazoo, MI: Western Michigan University. (abstract)

Manuscripts submitted for publication

Harper, F. K. (under review; submitted 7/30/2018). What's a fair housing wage? In R. B. Berry III, B. Conway IV, B. R. Lawler, & J. W. Staley (Eds.) *Social Justice Mathematics Lessons for Secondary.* Thousand Oaks, CA: Corwin.

Harper, F. K., & Orr, S. (under review; submitted 7/30/2018). Literacy: What matters and why? In R. B. Berry III, B. Conway IV, B. R. Lawler, & J. W. Staley (Eds.) *Social Justice Mathematics Lessons for Secondary.* Thousand Oaks, CA: Corwin.

Crespo, S. & **Harper, F. K.** (under review; submitted 7/18/18). Exploring collaborative mathematics problems with secondary prospective teachers. Submitted to *International Journal of Educational Research.*

Harper, F. K. (under review; submitted 6/17/2018). Using graphic elicitation methods to talk about social identities and mathematics. Submitted to *Mathematics Education and Society 10*, Hyderabad, India.

Johnson, K.R., **Harper, F. K.**, & Herbel-Eisenmann, B.A. (under review; resubmitted 6/4/2018). Turning a poststructuralist lens on 'beliefs instruments' in mathematics education. Submitted to *Journal of Mathematics Teacher Education.*

Harper, F.K. (under review; submitted 6/1/2018). Collaboration and critical mathematical inquiry: Negotiating mathematics engagement, identity, and agency. Submitted to *Bank Street College of Education Occasional Paper Series.*

CREATIVE ACTIVITY

Book review

Harper, F. K., Suh, H., Nurnberger-Haag, J., Herbel-Eisenmann, B. (2015). A review of the book by Elizabeth de Freitas and Natalie Sinclair (2014) *Mathematics and the body: Material entanglements in the classroom*. *Educational Studies in Mathematics, 90*, 221-230. (Invited).

Websites

Harper, F.K. (2018). *Solving world problems: Equity and social justice in mathematics education*. Retrieved from: www.francesharper.com.

Harper, F. K. (2018). *Teaching mathematics in the elementary school: K-5*. Retrieved from: https://sites.google.com/utk.edu/medu530k-5/.

Harper, F. K. (2018). *Teaching mathematics in the elementary school: PK-3*. Retrieved from: https://sites.google.com/utk.edu/medu530-pk-3/.

Harper, F. K. (2018). *Elementary & middle school teaching methods: Math.* Retrieved from: https://sites.google.com/utk.edu/eled422math.

Harper, F. K. (2018). *Elementary & middle school teaching methods for urban, multicultural education: Math.* Retrieved from: https://sites.google.com/utk.edu/eled-422-urban-math.

PROJECTS, GRANTS, COMMISSIONS, AND CONTRACTS

Harper, F. K. (August 2018-July 2019). Lesson study collaboration with Vanderbilt University. Funded by Office of Research and Engagement at University of Tennessee, Knoxville's *SEC Visiting Faculty Travel Grant Program.* ($1,143.26)

Harper, F. K., & Hodge, L. (July 2018- June 2019). Partnering to support integrated STEM learning for minoritized youth and their future teachers. Funded by the Office of Community Engagement and Outreach at University of Tennessee, Knoxville's *Community Engagement Incentive Grant.* ($2,000)

Harper, F. K. (June 2018- June 2019). Service, Teaching, and Research (STaR) in Mathematics Education Fellowship. Funded by the Association of Mathematics Teacher Educators and University of Tennessee, Knoxville. ($3500)

Ho, A. & Harper, F. K. (June 2018-December 2018). East Tennessee math teachers' circle opening workshop. Proposal submitted to the Office of Community Engagement and Outreach at University of Tennessee, Knoxville's *Engagement and Outreach Mini Grant*. ($998 not funded)

Hodge, L. (PI), Barker, K. (co-PI), Riechert, S. (co-PI), Long, L. (co-PI), Harper, F.K. (Senior Personnel) (August 2018 – July 2023). VolsTeach for Appalachia: Strengthening the STEM Teacher Pathway from Community College to East Tennessee High-need School Districts. Funded by National Science Foundation's *Robert Noyce Teacher Scholarship Program.* ($1,135,651)

Clark, J. L. (PI), Cady, J. (co-PI), & Harper, F. K. (co-PI). (August 2018 – July 2023). Collaborative Research: STEM-powering State of Tennessee Education Majors (STEM^2). Proposal submitted to NSF's *Improving Undergraduate STEM Education Program: Institutional and Community Change* grant. ($939,499 not funded)

Harper, F. K. (PI), & Hodge, L. (co-PI). (July 2018- June 2021). Pairing algebra and collaboration in elementary rural schools: A collaborative professional development research and design project. Proposal submitted to CPM Educational Program's *Extensive Research Grant*. ($249,996 not funded)

Harper, F. K. (August 2016- July 2017). Piecing together equity in mathematics education with patchwork pedagogy: An investigation of students' mathematics experiences and identity development. Funded by CPM Educational Program's *Dissertation Fellowship Award.* ($30,000)

Harper, F. K. (August 2016- July 2017). A mixed methods investigation of students' mathematics experiences and identity development through equity-focused mathematics pedagogies. Proposal submitted to National Academy of Education/Spencer *Dissertation Fellowship Program*. ($27,500 not funded).

Harper, F. K. (August 2016-July 2017). A mixed methods investigation of students' mathematics experiences and identity development through equity-focused mathematics pedagogies. Proposal submitted to Ford Foundation's *Dissertation Fellowship.* ($25,000 not funded).

Harper, F. K. (August 2012- May 2017). Dean's Scholar Fellowship. Funded by Michigan State University College of Natural Science and College of Education. ($40,000)

Harper, F. K. (Spring 2017). Dissertation completion fellowship. Funded by Michigan State University College of Natural Science. ($6,000)

Harper, F. K. (2014-2016). Summer dissertation continuation fellowship. Funded by Michigan State University College of Natural Science. ($18,000)

Harper, F. K. (September 2015- May 2016). Writing fellows in the disciplines. Funded by The Graduate School at Michigan State University. ($2,000)

Harper, F. K. (September 2015- May 2016). Future academic scholars in teaching fellowship. Funded by The Graduate School at Michigan State University and the Center for the Integration of Research, Teaching, and Learning. ($2,000)

Harper, F. K. (Summer 2015). Fellowship to enhance global understanding for travel to Indonesia. Funded by Michigan State University College of Education. ($3,400)

Harper, F. K. (January 2014- May 2015). Urban education retention fellowship. Funded by Michigan State University College of Education. ($3,500)

Harper, F. K. (Summer 2013). Preparing lessons and naming strategies for teaching mathematics for social justice. Funded by Michigan State University College of Education's *Summer Research Development Fellowship*. ($5,000)

PAPERS PRESENTED AT TECHNICAL AND PROFESSIONAL MEETINGS

International Presentations

Harper, F. K. (accepted for 2018, November). *STEM experiences for girls of Color in urban schools: Considerations for equitable mathematics engagement.* Paper presented at a roundtable at the biennial International Conference on Urban Education, Nassau, Bahamas. [P]

Harper, F. K. (2014, November). *No progress without struggle: The fight to establish community accountability*

in Chicago Public Schools. Paper presented at International Conference on Urban Education, Montego Bay, Jamaica.[P]

National Presentations

Harper, F. K., & Hodge, L. (accepted for 2019, February). *Partnering to support STEM learning for minoritized youth and (future) math teachers.* Individual session presented at the annual conference of Association of Mathematics Teacher Educators, Orlando, FL. [P]

Guzmán, L., **Harper, F. K.,** Leyva, L., & Raygoza, M. (accepted for 2019, February). *A process of "becoming": Transitioning into equity, social-justice oriented mathematics teacher educator roles.* Symposium presented at the annual conference of Association of Mathematics Teacher Educators, Orlando, FL. [P]

Anderson, B., & **Harper, F. K.** (accepted for 2018, November). *"I just get all stressed out": Coping with perfectionism as a Black gifted girl in mathematics.* Presentation at National Association for Gifted Children Convention, Minneapolis, MN.

Harper, F.K. (2018, April). *Students' negotiation of equitable strategies for collaborative math.* Research report presented at the annual research conference of National Council of Teachers of Mathematics, Washington, D.C.*[P]

Harper, F.K. (2017, April). Limiting pre-service teachers' English use to reveal the role of language in mathematics learning. With J. M. Martínez, Y. Bian, & G. Krause. *Learning to teach mathematics in bilingual classrooms: Considering pre-service teachers' past, present and future experiences.* Symposium session presented the American Educational Research Association Annual Conference, San Antonio, TX.[P]

Harper, F.K. (2017, February). *Extending mathematics problems to investigate issues that matter to students.* Workshop presented at the annual CPM Teacher Conference, San Francisco, CA.[P]

Harper, F.K. (2017, February). *Learning to teach mathematics for social justice with technology.* Discussion session presented at the annual conference of Association of Mathematics Teacher Educators, Orlando, FL. [P]

Scroggins, A. D. & **Harper, F.K.** (2017, February). *Weaving together mathematics, discourse, community, and power in mathematics teacher professional development towards equitable systems.* Individual session presented at the annual conference of Association of Mathematics Teacher Educators, Orlando, FL.[P]

Harper, F. K. (2016, April). *Teaching mathematics for social justice in action: Promises and problems of practice.* Paper presented at a roundtable session at the American Educational Research Association Annual Conference, Washington, D.C.* [P]

Harper, F.K. (2016, April). *A mixed methods investigation of students' mathematics experiences and identity development through equity-focused pedagogies.* Presentation at a roundtable session at the Division K Graduate Student Session at the American Educational Research Association Annual Conference, Washington, D.C. [P]

Harper, F.K. (2015, September). *Using the Blind Triangles task to help prospective teachers explore strategies for English Language Learners.* Poster for the Scholarly Inquiry and Practices Conference for Mathematics Education Methods, Atlanta, GA. [P,I]

Harper, F. K. (2015, April). *Teaching mathematics for social justice as a tool for teacher educators to translate theories of equity into practice.* Paper presented at a roundtable session at the American Educational

Research Association Annual Conference, Chicago, IL. *[P]

Guzman, L., **Harper, F.,** Aguirre, J., Bartell, T., Drake, C., Foote, M. Roth McDuffie, A. & Turner, E. (2014, June). *Exploring Mathematics Modeling Reflected in Elementary Mathematics Lesson Plans*. Session presented at the annual conference of TODOS Mathematics for All, Phoenix, AZ. [P]

Harper, F. K., Murata, A., Triggs, M. & Kamikawa, K. (2014, April). *Mathematics teaching in urban classrooms: Perspectives from teachers and researchers*. Symposium presented at the annual research conference of National Council of Teachers of Mathematics, New Orleans, LA. [P]

Harper, F. K. (2014, February). *Instructional activities in secondary mathematics teacher education: Learning through practice in only twenty minutes.* Brief session presented at the annual conference of Association of Mathematics Teacher Educators, Irvine, CA. [P]

State Presentations

Harper, F. K. (2016, March) *Mathematics Students' Identity Development through Equity-Focused Pedagogies.* Work-in-progress session presented for the fifth annual Indiana Mathematics Education Research Symposium, Indianapolis, IN. [P]

Orr, S., & **Harper, F. K**. (2015, July). *Using literacy strategies in Algebra.* Workshop for the annual conference of Michigan Council of Teachers of Mathematics, Traverse City, MI. [P]

Harper, F. K. & Sweet, Z. (2015, February). *Solving systems of linear equations: It takes more than one.* Workshop presented at the annual Math in Action conference. Allendale, MI. [P]

Harper, F. K. (2013, July). *Making groupwork work: Supporting student learning with Complex Instruction.* Workshop presented at the annual conference of Michigan Council of Teachers of Mathematics, Traverse City, MI. [P]

Local Presentations

Harper, F. K. (2019, March). Colloquium for the Department of Mathematical Sciences at Appalachian State University, Boone, NC. [P,I]

Harper, F. K. (2016, August). *In solidarity: Small group exploration of social justice issues through mathematics.* Workshop for the third annual Nepantla Teachers Conference, Chicago, IL.[P,I]

Harper, F. K. (2014, March). *Naming strategies toward teaching mathematics for social justice.* Research report presented at the annual Michigan State University Graduate Academic Conference, East Lansing, MI. [P]

Harper, F. K. (2013, May). *From confusion to clarity: How Complex Instruction supports students' mathematical proficiency*. Poster presented at the CREATE for STEM Institute's Mini-Conference 2013, East Lansing, MI. [P]

Harper, F. K. (2013, May). *Solving world problems: Using mathematics to explore social justice issues.* Workshop presented at Math and Science Conference at Jackson Community College, Jackson, MI. [P]

Harper, F. K. (2013, March). *Solving world problems: Teaching mathematics for social justice*. Workshop presented at I AM a Teacher Expo at Michigan State University, East Lansing, MI. [P]

SERVICE TO PROFESSIONAL ORGANIZATIONS

Offices held

Secretary & Founding Member 2013-2016
Program in Mathematics Education Graduate Student Organization, *Michigan State University*

Committee work

Department-Level (University of Tennessee, Theory & Practice in Teacher Education)
Elementary Education Major Development Committee 5/2018 – present
Clinical Assistant Professor in STEM Education Search Committee 3/2018 – 5/2018
Sponsored Efforts, Engagement, and Development (SEED) Committee 11/2017 – present

College-Level (Michigan State University)
Advisory Council on Diversity and Community 2014 – 2016

National-Level
Psychology of Mathematics Education (North America) Steering Committee 2015 – 2016
Campus Liaison, American Educational Research Association Division G 2014 – 2015

Journal manuscript reviewing

Occasional Paper Series August 2018 – present
International Journal of Educational Research April 2018 – present
Journal for Research in Mathematics Education December 2017 – present
Journal of Mathematical Behavior October 2017 – present
Journal of Teacher Education September 2016 – Present
Journal of Numerical Cognition January 2016

Conference proposal refereeing

Psychology of Mathematics Education – North America 2013 – present
National Council of Teachers of Mathematics 2015 – present
Association of Mathematics Teacher Educators 2015 – present
AERA Division K and Critical Educators SIG 2015 – present

Conference/Meeting volunteer

Local Planning Committee for Annual Conference 2014-2016
Psychology of Mathematics Education (North America)

Service to public and private organizations or institutions

Harper, F. K. (April 2018). Developed and facilitated a workshop for high school freshmen to learn about career paths in education. *Sequatchie County High School.*

Harper, F. K. & Hodge, L. (March 2018). Guided prospective elementary teachers from the urban cohort enrolled in ELED 422 to develop and facilitate mathematics activities for the first annual Family STEM Night at Pond Gap Elementary. *University of Tennessee at Knoxville and Pond Gap Elementary.*

Harper, F. K. (February 2016). Developed and facilitated one professional development session focused on mathematical modeling. *Michigan State University's Woodrow Wilson Teaching Fellowship Program.*

Harper, F. K. (August 2015). Developed and facilitated four professional sessions for K-6 district teachers focused on strategies for small group mathematics work and number talks. *Farmington Hills Public Schools.*

Harper, F. K. (December 2014). Developed and facilitated one professional development session for district middle and high school mathematics teachers focused on classroom discourse. *Grand Blanc Public Schools.*

Harper, F. K. (Summer 2014). Developed and instructed a "Mathematize My World" summer camp for middle school students. *Michigan State University Mathematics Department.*

Harper, F. K. (November 2013, December 2014). Developed and facilitated two sessions for graduate teaching assistants focused on student-centered instruction and classroom discourse. *Michigan State University Mathematics Department.*

Harper, F. K. (Summer 2013). Developed and facilitated mathematics activities at a community summer camp for 9-13-year-olds. *City of Lansing Parks and Recreation.*

Harper, F. K. (Spring 2013). Facilitated mathematics activities with elementary students at monthly elementary mathematics circles. *East Lansing Elementary Mathematics Circles and Michigan State University Mathematics Department.*

UNIVERSITY TEACHING

Undergraduate Courses

UNIVERSITY OF TENNESSEE
ELED 422: Elementary and Middle School Teaching Methods I: Mathematics

MICHIGAN STATE UNIVERSITY
TE 407: Teaching Mathematics to Diverse Learners for Secondary Mathematics
TE 408: Crafting Teaching Practice for Secondary Mathematics

Graduate Courses

UNIVERSITY OF TENNESSEE
MEDU 530: Teaching Mathematics in the Elementary School (PK-3 and K-5)

MICHIGAN STATE UNIVERSITY
TE 825: Diverse Learners and Learning Subject Matter: Mathematics
TE 860: Practice and Inquiry in Mathematics Education