

CURRICULUM VITAE

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Education

- Doctor of Philosophy (Mathematics Education), The University of Georgia, 1998.
Dissertation: “What Works as Proof in the Mathematics Class”
Director: Professor Jeremy Kilpatrick
- Master of Arts (Mathematics Education), The University of Georgia, 1995.
Thesis: “The Construction of the Real Number System in Textbooks: A Contribution to the Analysis of Discursive Practices in Mathematics.”
Director: Professor Jeremy Kilpatrick.
- Profesor en Matemática y Cosmografía (Teacher of Mathematics and Cosmography)
Facultad de Ciencias Exactas y Naturales y Agrimensura. Universidad Nacional del Nordeste, Argentina, 1987. Graduated with highest honors.

Employment

- Professor of Education and Mathematics. University of Michigan. May 2013 to present.
- Educational Studies Program Chair, School of Education, University of Michigan, September 2015 to August 2018.
- Associate Professor of Mathematics Education. School of Education. University of Michigan. September 2005 to 2013. (Since 2010 also Associate Professor of Mathematics, College of Literature, Science, and the Arts. University of Michigan.)
- Assistant Professor of Mathematics Education. School of Education, The University of Michigan. September 1999 to September 2005.
- Visiting Assistant Professor (postdoctoral position), Department of Counseling, Educational Psychology and Special Education (CEPSE) and Department of Mathematics. Michigan State University. August 1998- August 1999.
- Graduate Assistant. Department of Mathematics Education, University of Georgia, 1994-1998.
- Mathematics instructor and research fellow. National Council for Research of Argentina (CONICET), Department of Mathematics and Group of Mathematics, Science, and Technology Education, Facultad de Matemática, Astronomía, y Física, Universidad Nacional de Córdoba, Argentina, 1990-1993.
- Mathematics instructor. Facultad de Ciencias Exactas y Naturales y Agrimensura, Universidad Nacional del Nordeste, Argentina, 1988-1990

- Mathematics Teacher (various secondary schools 8-12, 1987-1992)

Awards and Honors

- New Leadership Academy Fellow, 2018-2019. National Forum for Education and the Public Good, University of Michigan.
- Pattishall Award, 2009. School of Education. University of Michigan.
- National Science Foundation Early Career Award, 2002-2007
- Early Publication Award, SIG/RME, 2003.
- Antorchas Foundation Doctoral Fellowship, Argentina, 1997-1998.
- Del Jones Memorial Scholarship Award from the College of Education, University of Georgia, 1995-96.
- Fulbright Scholarship, 1993-1995.

Publications

Books

Herbst, P., Fujita, T., Halverscheid, S., and Weiss, M. (2017). *The learning and teaching of secondary school geometry: A modeling perspective*. New York: Routledge.

Herbst, P., Cheah, U., Jones, K., & Richard, P. (Eds., 2018). *International Perspectives on the Teaching and Learning of Geometry in Secondary Schools*. Cham, Switzerland: Springer.

Zazkis, R. & Herbst, P. (Eds, 2018). *Scripting approaches in mathematics education: Mathematical dialogues in research and practice*. New York: Springer.

Articles In Peer Reviewed Journals

Brown, A. and Herbst, P. (2026). Working collectively to design online teacher education curriculum: How do teacher educators organize themselves to accomplish this task? *Digital Experiences in Mathematics Education*, 12, 152–197. <https://doi.org/10.1007/s40751-025-00181-0>

Schwartz, G.¹, Herbst, P., & Brown, A. (2025). Harnessing asynchronous digital simulations of problem-based lessons to support mathematics teachers' professional development: A design-based research approach. *International Journal of Mathematics and Science Education*, 23, 1883–1916. <https://doi.org/10.1007/s10763-024-10514-x>

Schwartz, G.¹, Herbst, P., & Brown, A. (2025). "I don't understand the purpose of this experience": Tensions associated with collaborative, process-oriented professional learning for mathematics teachers. *Mathematics Teacher Education and Development*, 27(1), Article 3, 1-22. <https://mted.merga.net.au/index.php/mted/article/view/1225>

Schwartz, G.¹, Herbst, P., Chazan, D., Buchbinder, O., Clark, L., Wieman, R., and Zahner, W. (2025). An analysis of mathematics teacher educators' subject-specific multimodal expertise when representing practice. *Journal of Mathematics Teacher Education*, 28, 341–368. <https://doi.org/10.1007/s10857-024-09658-y>

Herbst, P., Brown, A., & Chazan, D. (2024). Practice-based teacher development in its mathematical context: Lessons and their representations in approximations of practice. *Journal*

¹ ^ Indicates co-authors who were postdoctoral fellows at the time of the work reported in a piece.

of *Educational Research in Mathematics*, 34(3), 753-791.
<https://doi.org/10.29275/jerm.2024.34.3.753>.

Herbst, P., Brown, A. M., Ion, M.*², & Margolis, C.* (2024). Teaching geometry for secondary teachers: What are the tensions instructors need to manage? *International Journal of Research in Undergraduate Mathematics Education*, 10, 458–485.
<https://doi.org/10.1007/s40753-023-00216-0>.

Brown, A., Savuran, R.^, Herbst, P. & Jeon, S.* (2024). Enhancing Teacher Collaboration: Leveraging Technology for Knowledge Expansion Through Lesson Exchange and Annotation. *Journal of Technology and Teacher Education*, 32(3), 317-346.

Jeon, S.* , Herbst, P., & Brown, A. (2024). Facilitating demonstration and simulation in practice-based professional development. *Journal of Educational Research in Mathematics*, 34(3), 733-752.

Ko, I.^, Herbst, P., and Shultz, M.* (2024). Comparing how college mathematics instructors and high-school teachers recognize professional obligations of mathematics teaching when making instructional decisions. *Journal of Mathematics Teacher Education*, 27, 1055–1082. <https://doi.org/10.1007/s10857-023-09595-2>

Ko, I.^, Mesa, V., Duranczyk, I., Herbst, P., Kohli, N., Ström, A., & Watkins, L. (2024). Understanding the characteristics of mathematical content knowledge for teaching algebra in high schools and community colleges. *International Journal of Mathematical Education in Science and Technology* 55(3), 590-614, DOI: <https://doi.org/10.1080/0020739x.2021.2006348>

Herbst, P., Brown, A. M., Chazan, D., Boileau, N.^, & Stevens, I.^ (2023). Framing, responsiveness, serviceability, and normativity: Categories of perception teachers use to relate to students' mathematical work in problem-based lessons. *School Science and Mathematics*, 123(7), 398-413. <https://doi.org/10.1111/ssm.12600>

Brown, A., Bardelli, E.* , Herbst, P., & Dimmel, J.^ (2023). The role of emotions in simulations of teaching practice. *Implementation and Replication Studies in Mathematics Education*, 3(2), 243-274. <https://doi.org/10.1163/26670127-bja10013>

Brown, A. & Herbst, P. (2023) On designing better practice-based professional development: Using “failure” to innovate. *Journal of Mathematics Teacher Education*, 26, 581–605. <https://doi.org/10.1007/s10857-023-09588-1>

Chazan, D. & Herbst, P. (2023). Extending use of instructional exchanges to teacher education. *Frontiers in Education*, 8, [doi: 10.3389/educ.2023.1163396](https://doi.org/10.3389/educ.2023.1163396)

Brown, A., Herbst, P., & Hanby, K.* (2022). Using an analytic model to gauge the potential of innovative pedagogies of approximation in mathematics teacher education. *Mathematics Teacher Education and Development*, 24(2), 57–85.
<https://mtd.merga.net.au/index.php/mtd/article/view/741>

Herbst, P., Shultz, M.* , Bardelli, E.* , Boileau, N.* , & Milewski, A. (2022). How can teaching simulations help us study at scale the tensions mathematics teachers have to manage when considering policy recommendations? *Educational Studies in Mathematics*, 110 (1), 1-21
<https://doi.org/10.1007/s10649-021-10118-0>

² * Indicates co-authors who were doctoral students at the time of the work reported in a piece.

Erickson, A. ^, Herbst, P., Ko, I*., & Dimmel, J^ (2021). When what routinely happens conflicts with what ought to be done: A scenario-based assessment of secondary mathematics teaching. *Research in Mathematics Education*, 23(2), 188-207, <https://doi.org/10.1080/14794802.2020.1855600>

Milewski, A., Erickson, A.,^ and Herbst, P. (2021). “It depends ...”: Using ambiguities to better understand mathematics teachers’ decision-making. *Canadian Journal of Mathematics and Science Education*, 21(1),123–144, <https://doi.org/10.1007/s42330-021-00141-x>

Herbst, P. and Chazan, D. (2020). Mathematics teaching has its own imperatives: Mathematical practice and the work of mathematics instruction. *ZDM-Mathematics Education*, 52,1149–1162 <https://doi.org/10.1007/s11858-020-01157-7>

Herbst, P., Ko, I.^, & Milewski, A. (2020). A heuristic approach to assess change in mathematical knowledge for teaching geometry after a practice-based professional learning intervention. *Research in Mathematics Education*, 22(2), 188-208 2017 <https://doi.org/10.1080/14794802.2019.1704851>

Dimmel, J.* and Herbst, P. (2020). Proof transcription in high school geometry: A study of what teachers recognize as normative when students present proofs at the board. *Educational Studies in Mathematics*, 105(1), 71–89 <https://doi.org/10.1007/s10649-020-09975-y>

Ko, I.* and Herbst, P. (2020). Subject matter knowledge of geometry needed in tasks of teaching: Relationship to prior geometry teaching experience. *Journal for Research in Mathematics Education*, 51(5), 600-630. <https://doi.org/10.5951/jresematheduc-2020-0163>

Ko, I.^ and Herbst, P. (2020). Are teachers amenable to increasing students’ scope of work in doing proofs? Estimating teachers’ decision-making using a diagnostic classification model. *Journal of Educational Research in Mathematics*, Special Issue, pp. 169-183. <https://doi.org/10.29275/jerm.2020.08.sp.1.169>

Aaron, W.^ and Herbst, P. (2019). The teacher’s perspective on the separation between conjecturing and proving in high school geometry classrooms. *Journal of Mathematics Teacher Education*, 22(3), 231-256. <https://doi.org/10.1007/s10857-017-9392-0>.

Shultz, M*., Herbst, P., & Schleppegrell, M. (2019). The expression of agency by graduate teaching assistants and professors in relation to their professional obligations. *Linguistics and Education*, 52, 33-43. <https://doi.org/10.1016/j.linged.2019.05.006>

Herbst, P. (2018). Teoría y métodos para la investigación de la racionalidad de la práctica en la enseñanza de las matemáticas [Theory and methods for research on the practical rationality of mathematics teaching]. *Educación Matemática*, 30(1), 11-47. <https://doi.org/10.24844/em3001.01>

Dimmel, J.* and Herbst, P. (2018). What details do teachers expect from students’ proofs? A study of routines for checking proofs in geometry. *Journal for Research in Mathematics Education*, 49(3), 261-291. <https://doi.org/10.5951/jresematheduc.49.3.0261>

Erickson, A.^ and Herbst, P. (2018). Will teachers create opportunities for discussion when teaching proof in a geometry classroom? *International Journal of Mathematics and Science Education*, 16, 167–181. <https://doi.org/10.1007/s10763-016-9764-4>

Milewski, A., Herbst, P., Bardelli, E.,* and Hetrick, C.* (2018). The role of simulations for supporting professional growth: Teachers’ engagement in virtual professional

experimentation. *Journal of Technology and Teacher Education*, 26(1), 103-126.
<https://www.learntechlib.org/p/181094/>

Dimmel, J.* and Herbst, P. (2017). Secondary mathematics teachers' expectations of student communication practices when doing proofs in geometry. *Teaching and Teacher Education*, 68, 151-160. <https://doi.org/10.1016/j.tate.2017.08.018>

Herbst, P., Chazan, D., Kosko, K.,^ Dimmel, J.* and Erickson, A.* (2016). Using multimedia questionnaires to study influences on the decisions mathematics teachers make in instructional situations. *ZDM- Mathematics Education*, 48 (1-2), 167-183.
<https://doi.org/10.1007/s11858-015-0727-y>

Chieu, V. M. and Herbst, P. (2016). A study of the quality of interaction among participants in online animation-based conversations about mathematics teaching. *Teaching and Teacher Education*, 57, 139-149. <https://doi.org/10.1016/j.tate.2016.03.010>

Ghousseini, H.* & Herbst, P. (2016). Pedagogies of practice and opportunities to learn about classroom mathematics discussions. *Journal of Mathematics Teacher Education*, 19(1), 79-103. <https://doi.org/10.1007/s10857-014-9296-1>

Herbst, P. and Chazan, D. (2015). Studying professional knowledge use in practice using multimedia scenarios delivered online. *International Journal of Research and Method in Education*, 38(3), 272-287. <https://doi.org/10.1080/1743727x.2015.1025742>

Aaron, W.* and Herbst, P. (2015). Teachers' perceptions of students' mathematical work while making conjectures: An examination of teacher discussions of an animated geometry classroom scenario. *International Journal of STEM Education*, 2(10), 1-13.
<https://doi.org/10.1186/s40594-015-0021-0>

Chieu, V. M., Kosko, K. W.,^ and Herbst, P. (2015). An analysis of evaluative comments in teachers' online discussions of representations of practice. *Journal of Teacher Education*, 66(1), 35-50. <https://doi.org/10.1177/0022487114550203>

Dimmel, J.* and Herbst, P. (2015). The semiotic structure of geometry diagrams: How textbook diagrams convey meaning. *Journal for Research in Mathematics Education*, 46(2), 147-195. <https://doi.org/10.5951/jresmetheduc.46.2.0147>

Weiss, M.* and Herbst, P. (2015). The role of theory-building and problem-solving in the secondary Geometry course. *Educational Studies in Mathematics*, 89(2), 205-229.
<https://doi.org/10.1007/s10649-015-9599-x>

Herbst, P., Chieu, V., & Rougée, A.* (2014). Approximating the practice of mathematics teaching: What learning can web-based, multimedia storyboarding software enable? *Contemporary Issues in Technology and Teacher Education*, 14(4). Retrieved from <http://www.citejournal.org/vol14/iss4/mathematics/article1.cfm>

Herbst, P. and Kosko, K.^ (2014). Using representations of practice to elicit mathematics teachers' tacit knowledge of practice: A comparison of responses to animations and videos. *Journal of Mathematics Teacher Education*, 17(6), 515-537. <https://doi.org/10.1007/s10857-013-9267-y>

Kosko, K.,^ Rougée, A.,* and Herbst, P. (2014). What actions do teachers envision when asked to facilitate mathematical argumentation in the classroom? *Mathematics Education Research Journal*, 26(3), 459-476. <https://doi.org/10.1007/s13394-013-0116-1>

González, G.* and Herbst, P. (2013). An oral proof in a geometry class: How linguistic tools can help map the content of a proof. *Cognition and Instruction*, 31(3), 271-313. <https://doi.org/10.1080/07370008.2013.799166>

Chen, C.* and Herbst, P. (2013). The interplay among gestures, discourse, and diagrams in students' geometrical reasoning. *Educational Studies in Mathematics*, 83(2), 285-307. <https://doi.org/10.1007/s10649-012-9454-2>

Herbst, P. & Chazan, D. (2012). On the instructional triangle and sources of justification for actions in mathematics teaching. *ZDM—Mathematics Education*, 44(5), 601-612. <https://doi.org/10.1007/s11858-012-0438-6>

Herbst, P. (2012). Las tareas matemáticas como instrumentos en la investigación de los fenómenos de gestión de la instrucción: un ejemplo en geometría [Mathematical tasks as instruments for research on the phenomena of instruction management: An example in geometry]. *Avances de Investigación en Educación Matemática*, 1, 5-22. <https://doi.org/10.35763/aiem.v1i1.2>

Aaron, W.* and Herbst, P. (2012). Instructional identities of geometry students. *Journal of Mathematical Behavior*, 31, 382– 400. <https://doi.org/10.1016/j.jmathb.2012.04.001>

Herbst, P., Nachlieli, T.,^ and Chazan, D. (2011). Studying the practical rationality of mathematics teaching: What goes into “installing” a theorem in geometry? *Cognition and Instruction*, 29(2), 218-255. <https://doi.org/10.1080/07370008.2011.556833>

Herbst, P. and Chazan, D. (2011). On creating and using representations of mathematics teaching in research and teacher development: Introduction to this issue. *ZDM Mathematics Education* 43(1), 1–5. <https://doi.org/10.1007/s11858-011-0306-9>

Herbst, P., Chazan, D., Chen, C.,* Chieu, V.M., and Weiss, M. (2011). Using comics-based representations of teaching, and technology, to bring practice to teacher education courses. *ZDM Mathematics Education*, 43(1), 91–103. <https://doi.org/10.1007/s11858-010-0290-5>

Chazan, D., Sela, H., and Herbst, P. (2012). Is the role of equations in the doing of word problems in school algebra changing? Initial indications from teacher study groups. *Cognition and Instruction*, 30(1), 1-38. <https://doi.org/10.1080/07370008.2011.636593>

Chazan, D. and Herbst, P. (2012). Animations of Classroom Interaction: Expanding the Boundaries of Video Records of Practice. *Teachers' College Record*, 114(3), 1-34. <https://doi.org/10.1177/016146811211400302>

Cirillo, M. and Herbst, P. (2012). Moving Toward More Authentic Proof Practices in Geometry. *The Mathematics Educator*, 21(2), 11-33. <https://files.eric.ed.gov/fulltext/EJ961514.pdf>

Kosko, K.^ and Herbst, P. (2012). A deeper look at how teachers say what they say: A quantitative modality analysis of teacher-to-teacher talk. *Teaching and Teacher Education*, 28, 589-598. <https://doi.org/10.1016/j.tate.2011.11.010>

Chazan, D. and Herbst, P. (2011). Challenges of particularity and generality in depicting and discussing teaching. *For the Learning of Mathematics*, 31(1), 9-13. <https://www.jstor.org/stable/41319545>

Chieu, V.M.,[^] Herbst, P., and Weiss, M.* (2011). Effect of an animated classroom story embedded in online discussion on helping mathematics teachers learn to notice. *Journal of the Learning Sciences* 20(4), 589-624. <https://doi.org/10.1080/10508406.2011.528324>

Chieu, V.M. and Herbst, P. (2011). Designing an intelligent teaching simulator for learning to teach by practicing in the practice of mathematics teaching. *ZDM Mathematics Education*, 43(1), 105–117. <https://doi.org/10.1007/s11858-010-0291-4> *Actions*

Mesa, V. and Herbst, P. (2011). Designing representations of trigonometry instruction to study the rationality of community college teaching. *ZDM–Mathematics Education*, 43(1), 41–52. <https://doi.org/10.1007/s11858-010-0300-7>

González, G.* and Herbst, P. (2009). Students’ conceptions of congruency through the use of dynamic geometry software. *International Journal of Computers for Mathematical Learning* 14(2), 153-182. <https://doi.org/10.1007/s10758-009-9152-z>

Herbst, P. and Chazan, D. (2009). Methodologies for the study of instruction in mathematics classrooms. *Recherches en Didactique des Mathématiques*, 29(1), 11-32.

Weiss, M.,* Herbst, P., and Chen, C.* (2009). Teachers’ perspectives on "authentic mathematics" and the two-column proof form. *Educational Studies in Mathematics*, 70 (3), 275-293. <https://doi.org/10.1007/s10649-008-9144-2>

Nachlieli, T.[^] and Herbst, P. with González, G.* (2009). Seeing a colleague encourage a student to make an assumption while proving: What teachers put to play in casting an episode of geometry instruction. *Journal for Research in Mathematics Education*, 40(4), 427-459. <https://doi.org/10.5951/jresmetheduc.40.4.0427>

Herbst, P. and Miyakawa, T.[^] (2008). When, how, and why prove theorems: A methodology to study the perspective of geometry teachers. *ZDM Mathematics Education*, 40(3), 469-486. <https://doi.org/10.1007/s11858-008-0082-3>

Herbst, P. (2006). Teaching geometry with problems: Negotiating instructional situations and mathematical tasks. *Journal for Research in Mathematics Education*, 37, 313-347.

González, G.* and Herbst, P. (2006). Competing arguments for the geometry course: Why were American high school students supposed to study geometry in the twentieth century? *International Journal for the History of Mathematics Education*, 1(1), 7-33.

Herbst, P. and Brach, C.* (2006). Proving and ‘doing proofs’ in high school geometry classes: What is ‘it’ that is going on for students and how do they make sense of it? *Cognition and Instruction*, 24, 73-122. https://doi.org/10.1207/s1532690xci2401_2

Herbst, P. (2005). Knowing about “equal area” while proving a claim about equal areas. *Recherches en Didactique des Mathématiques*, 25, 11-56.

Herbst, P., González, G.,* and Macke, M. (2005). How can geometry students understand what it means to define in mathematics? *The Mathematics Educator*, 15(2), 17-24. <https://files.eric.ed.gov/fulltext/EJ845849.pdf>

Herbst, P. (2004). Interactions with diagrams and the making of reasoned conjectures in geometry. *ZDM Mathematics Education*, 36(5), 129-139. <https://doi.org/10.1007/bf02655665>

Herbst, P. (2003). Using novel tasks to teach mathematics: Three tensions affecting the work of the teacher. *American Educational Research Journal*, 40, 197-238.

<https://doi.org/10.3102/00028312040001197>

Herbst, P. and Chazan, D. (2003). Exploring the practical rationality of mathematics teaching through conversations about videotaped episodes: The case of engaging students in proving. *For the Learning of Mathematics*, 23(1), 2-14. <https://www.jstor.org/stable/40248404>

Herbst, P. (2002). Engaging students in proving: A double bind on the teacher. *Journal for Research in Mathematics Education*, 33, 176-203. <https://doi.org/10.2307/749724>

Herbst, P. (2002). Establishing a custom of proving in American school geometry: Evolution of the two-column proof in the early twentieth century. *Educational Studies in Mathematics*, 49, 283-312. <https://doi.org/10.1023/a:1020264906740>

Herbst, P. (1999). On devolving a voice to the participants of the mathematics classroom culture: a methodological critique. *Educational Review*, 51, 183-190.

<https://doi.org/10.1080/00131919997614>

Herbst, P. and Kilpatrick, J. (1999). Pour lire Brousseau. *For the Learning of Mathematics*, 19(1), 3-10. <https://www.jstor.org/stable/40248283>

Herbst, P. (1997). The number-line metaphor in the discourse of a textbook series. *For the Learning of Mathematics*, 17(3), 36-45. <https://www.jstor.org/stable/40248251>

Articles in peer reviewed conference proceedings

Herbst, P., Chazan, D., Brown, A., and Chen, Q.* (2026). Exploring the subject-specificity of practice-based mathematics teacher education: The case of examining student work. In R., Mosvold, J. Fauskanger, F. Ferretti, & N. Vondrová (Eds.), *Proceedings of the Nineteenth ERME Topic Conference. ETC19, Feb 2026* (pp. 50-57). Prague, Czech Republic 978-80-7603-673-4. <https://hal.science/hal-05463964v1>

Brown, A., Savuran, R.^, Chen, Q.*, Jeon, S.*, & Herbst, P. (2025). Supporting secondary mathematics teachers to manage discussions: A design-based approach to professional development. In Zbiek, R. M., Yao, X., McCloskey, A., & Arbaugh, F. (Eds.), *Proceedings of the forty-seventh annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 252-262). Pennsylvania State University. <https://doi.org/10.51272/pmena.47.2025>.

Jeon, S.*, Savuran, R.^, Brown, A., & Herbst, P. (2025). Lesson as an argument: Mapping how secondary mathematics teachers reason through instructional design. In Zbiek, R. M., Yao, X., McCloskey, A., & Arbaugh, F. (Eds.), *Proceedings of the forty-seventh annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 361-365). Pennsylvania State University. <https://doi.org/10.51272/pmena.47.2025>.

Herbst, P., Chazan, D., Brown, A., & Kosko, K. (2025). The professional obligations of mathematics teaching: How measurement and theoretical progress work hand in hand. In Bosch Casabò, M., Carreira, S., Bolondi, G., Gaidoschick, M., and Spagnolo C. (Eds.), *Proceedings of the Fourteenth Congress of the European Society for Research in Mathematics Education (CERME14)*, ERME (pp. 2784-2791); Free University of Bozen-Bolzano, Feb 2025, Bozen-Bolzano, France. hal-05283742

Herbst, P., Jeon, S.*, Schwarts, G.^, Savuran, Y., & Brown, A. (2025). Tracking teachers' learning to select student work for classroom discussion in a simulation. In Cornejo, C., Felmer, P., Gómez, D. M., Dartnell, P., Araya, P., Peri, A., & Randolph, V. (Eds.) (2025). *Proceedings of the 48th Conference of the International Group for the Psychology of Mathematics Education: Research Reports*, Vol. 1, pp. 379-386. PME, Santiago, Chile.

Bairwal, M.**³, Herbst, P., & Hetrick, C. (2024). Multimedia annotation: Promoting constructivist interactions about content in education. In J. Cohen & G. Solano (Eds.), *Society for Information Technology & Teacher Education International Conference* (pp. 1023-1029). Association for the Advancement of Computing in Education (AACE).
<https://www.learntechlib.org/primary/p/224082/>

Herbst, P., Jeon, S.*, & Ko, I. (2024). Instructor-student interactions in geometry courses for secondary teachers: Results from a national survey. In Cook, S., Katz, B. & Moore-Russo D. (Eds.). *Proceedings of the 25th Annual Conference on Research in Undergraduate Mathematics Education* (pp. 162-169). University of Nebraska, Omaha.

Herbst, P., Jeon, S.*, & Brown, A. (2024). How do instructors describe students' mathematical work and opportunity to learn in geometry courses for teachers? In Kosko, K. W., Caniglia, J., Courtney, S., Zolfaghari, M., & Morris, G. A., (Eds.). *Proceedings of the forty-sixth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1078-1086). Kent State University.

Brown, A., Herbst, P., & Schwarts, G.^ (2024). Gauging professional growth: Moving beyond binary assessment by examining teachers' practical arguments in simulations of practice. In Kosko, K. W., Caniglia, J., Courtney, S., Zolfaghari, M., & Morris, G. A., (Eds.). *Proceedings of the forty-sixth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1234-1243). Kent State University.

Jeon, S.*, Brown, A., Savuran, R.^, & Herbst, P. (2024) Secondary mathematics teachers' justification for sequencing student work. In Kosko, K. W., Caniglia, J., Courtney, S., Zolfaghari, M., & Morris, G. A., (Eds.). *Proceedings of the forty-sixth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1298-1306). Kent State University.

Herbst, P., Schwarts, G.^, & Brown, A. (2024). Illustrating a method for analyzing multimodal artifacts used in transactions of practice. In Evans, T., Marmur, O., Hunter, J., Leach, G., & Jhagroo, J. (Eds.). *Proceedings of the 47th Conference of the International Group for the Psychology of Mathematics Education* (Vol. 3, pp. 25-32). Auckland, New Zealand: PME.

Schwarts, G.^, Herbst, P., & Brown, A. (2024). Simulations of problem-based lessons: Using a conjecture map to relate design and outcomes. In Evans, T., Marmur, O., Hunter, J., Leach, G., & Jhagroo, J. (Eds.). *Proceedings of the 47th Conference of the International Group for the Psychology of Mathematics Education* (Vol. 4, pp. 89-96). Auckland, New Zealand: PME.

Herbst, P. & Chazan, D. (2024). From geometric thinking to geometric practice: The potential of representations of practice for teaching and learning geometry in secondary schools.

³ ** Indicates coauthors who were undergraduate students at the time of the work reported in a piece.

In A. Gutiérrez, T. Lowrie, & F. Emprin (Eds.), *Proceedings of ICMI Study 26 Advances in Geometry Education* (pp. 69-76). INSPE de Reims, France. <https://hal.science/hal-04577863v2>

Herbst, P. & Chazan, D. (2023). Toward a semiotic account of practice-based mathematics teacher education. In P. Drijvers, C. Csapodi, H. Palmér, K. Gosztonyi, & E. Kónya (Eds.), *Proceedings of the Thirteenth Congress of the European Society for Research in Mathematics Education (CERME13)* (pp. 3104–3111). Alfréd Rényi Institute of Mathematics and ERME. <https://hal.science/hal-04421167v1/file/TWG17-Herbst-437.pdf>

Ake, B.*, Dimmel, J., & Herbst, P. (2023). Teachers' Reactions to Routine and Alternative Practices for Presenting Proofs: A Survey Experiment. *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. 370-379). University of Nevada, Reno.

Brown, A., Herbst, P., & Ion, M.* (2023). How instructors of undergraduate mathematics courses manage tensions related to teaching courses for teachers? *Proceedings of the forty-fifth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 1, pp. 454-463). University of Nevada, Reno.

Ion, M.*, Herbst, P., Ko, I., & Hetrick, C.^ (2023). Agreeing on objectives of geometry for teachers' courses: Feedback from instructors on an initial list. *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. 362-369). University of Nevada, Reno.

Jeon, S.* & Herbst, P. (2023). Dilating perspectives: A comparison of teacher and student facing texts on a unit on similarity. Lamberg, T., & Moss, D. (2023). *Proceedings of the forty-fifth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 1, pp. 273-281). University of Nevada, Reno.

Schwartz, G.^, Herbst, P., Jeon, S.*, and Brown, A. (2023). What does it mean for geometry teachers to improve a lesson? A multimodal analysis. *Proceedings of the forty-fifth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 1, pp. 769-777). University of Nevada, Reno.

Herbst, P., Chazan, D., Brown, A., & Mesa, V. (2023). Professional obligations in mathematics courses for teachers. In Cook, S., Katz, B. & Moore-Russo D. (Eds.). *Proceedings of the 25th Annual Conference on Research in Undergraduate Mathematics Education* (pp. 864-872). Omaha, NE.

Hetrick, C.^, Herbst, P., Ion, M.*, & Brown, A. (2023). Building instructional capacity across difference: Analyzing transdisciplinary discourse in a faculty learning community focused on geometry for teachers courses. In Cook, S., Katz, B. & Moore-Russo D. (Eds.). *Proceedings of the 25th Annual Conference on Research in Undergraduate Mathematics Education* (pp. 915-924). Omaha, NE.

Schwartz, G.^, Herbst, P., & Brown, A. (2023). How do mathematics teachers learn to create a mathematical storyline in problem-based lessons? In M. Ayalon, B. Koichu, R. Leikin, L. Rubel & M. Tabach (Eds.). *Proceedings of the 46th Conference of the International Group for the Psychology of Mathematics Education* (Vol. 4, pp. 187-202). University of Haifa, Israel.

Schwartz, G.^, Stevens, I.^, Herbst, P., & Brown, A. (2022). "It's a different mindset here": Facilitation challenges in a practice-based professional development. In Lischka, A. E., Dyer, E. B., Jones, R. S., Lovett, J. N., Strayer, J., & Drown, S. (Eds.). *Proceedings of the forty-*

fourth annual meeting of the North American chapter of the International Group for the Psychology of Mathematics Education (pp. 1479-1487). Middle Tennessee State University.

Ion, M.* & Herbst, P. (2022). Conceptions of the derivative: A natural language processing approach. In S. Karunakaran & A. Higgins (Eds.), *Proceedings of the 24th Annual Conference on Research in Undergraduate Mathematics Education* (p. 1021-1027). Boston.

Ko, I.,[^] Ion, M.* , & Herbst, P. (2022). Comparing the mathematical knowledge for teaching geometry of preservice and inservice secondary teachers. In S. Karunakaran & A. Higgins (Eds.), *Proceedings of the 24th Annual Conference on Research in Undergraduate Mathematics Education* (p. 1235-1236). Boston.

Herbst, P & Chazan, D. (2022). Teachers' decision-making as a context for networking theories of mathematics teaching. In Hodgen, J., Geraniou, E., Bolondi, G. & Ferretti, F. (Eds.). In Hodgen, J., Geraniou, E., Bolondi, G. & Ferretti, F. (Eds.), *Proceedings of the Twelfth Congress of the European Society for Research in Mathematics Education (CERME12)* (pp. 2962-2969). Free University of Bozen-Bolzano and ERME. [hal-03749215](#)

Milewski, A., Strickland, S., Buchbinder, O., Herbst, P., & Chazan, D. (2021). Moves teachers use to respond to students' non-canonical approaches for solving equations. In Olanoff, D., Johnson, K., & Spitzer, S. (2021). *Proceedings of the forty-third annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1411-1419). Philadelphia, PA.

Margolis, C.*, Ion, M.*, Herbst, P., Milewski, A., & Shultz, M.* (2020). Understanding instructional capacity for high school geometry as a systemic problem through stakeholder interviews. In Sacristán, A.I., Cortés-Zavala, J.C. & Ruiz-Arias, P.M. (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. 620-627). Mexico. Cinvestav / AMIUTEM / PME-NA. <https://doi.org/10.51272/pmena.42.2020>

Stevens, I.[^], Ko, I.[^], Paoletti, T., Boileau, N.*, & Herbst, P. (2020). Introducing inverse function to high school students: Relating convention and reasoning. In Sacristán, A.I., Cortés-Zavala, J.C. & Ruiz-Arias, P.M. (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. 227-235). Mexico. Cinvestav / AMIUTEM / PME-NA. <https://doi.org/10.51272/pmena.42.2020>.

Herbst, P. and Milewski, A. (2020, February). Using *StoryCircles* to inquire into the social and representational infrastructure of lesson-centered teacher collaboration. In H. Borko & D. Potari (Eds.), *Teachers of Mathematics Working and Learning in Collaborative Groups: Proceedings from ICMI Study 25* (pp. 629-636). Lisbon, Portugal: University of Lisbon.

Ion, M.*, Herbst, P., Margolis, C.*, Milewski, A., and Ko, I.* (2019, November). Developing practical measures to support the improvement of geometry for teachers courses. In Otten, S., Candela, A. G., de Araujo, Z., Haines, C., & Munter, C. (Eds.). *Proceedings of the forty-first annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 352-359). St Louis, MO: University of Missouri.

Milewski, A., Bardelli, E.* , and Herbst, P. (2019, November). The role of emotions in simulations of practice. In Otten, S., Candela, A. G., de Araujo, Z., Haines, C., & Munter, C. (Eds.). *Proceedings of the forty-first annual meeting of the North American Chapter of the*

International Group for the Psychology of Mathematics Education (pp. 470-479). St Louis, MO: University of Missouri.

Shultz, M.* & Herbst, P. (2019). The Choice to Use Inquiry-Oriented Instruction: The INQUIRE instrument and differences across upper and lower division undergraduate courses. In Weinberg, A., Moore-Russo, D., Soto, H., & Wawro, M. (Eds.). (2019). *Proceedings of the 22nd Annual Conference on Research in Undergraduate Mathematics Education* (pp. 558-567). Oklahoma City, Oklahoma.

Herbst, P., Shultz, M.*, Ko, I.*, Boileau, N.*, and Erickson, A. (2018, October). Expanding students' role when doing proofs in geometry. In T. Hodges, G. Roy, & A. Tyminski (Eds.), *Proceedings of the 40th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Greenville, SC: University of South Carolina.

Herbst, P., Milewski, A., Ion, M.*, and Bleecker, H. (2018, October). What influences do instructors of the geometry for teachers course need to contend with? In T. Hodges, G. Roy, & A. Tyminski (Eds.), *Proceedings of the 40th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Greenville, SC: University of South Carolina.

Herbst, P., Boileau, N.*, Clark, L., Milewski, A., Chieu, V. M., Gürsel, U.,* & Chazan, D. (2017, October). Directing focus and enabling inquiry with representations of practice: Written cases, storyboards, and teacher education. In Galindo, E., & Newton, J., (Eds.). *Proceedings of the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 789-796). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.

Herbst, P. & Ko, I.* (2017, October). Measuring recognition of the professional obligations of mathematics teaching. In Galindo, E., & Newton, J., (Eds.). *Proceedings of the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 1242-1245). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.

Milewski, A., Gürsel, U.,* & Herbst, P. (2017, October). Working collectively to design online teacher education curriculum: How do teacher educators manage to do it? In Galindo, E., & Newton, J., (Eds.). *Proceedings of the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 112-119). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.

Shultz, M.* & Herbst, P. (2017, October). Stories of agency: Do graduate students perceive themselves as part of the mathematical community? In Galindo, E., & Newton, J., (Eds.). *Proceedings of the 39th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. (pp. 1250-1253). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.

Boileau, N.,* Dimmel, J.K.,^ & Herbst, P. G. (2016, November). Teachers' recognition of the diagrammatic register and its relationship with their mathematical knowledge for teaching. In M.B. Wood, E.E. Turner, M. Civil, & J.A. Eli (Eds.), *Proceedings of the Thirty-Eighth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 266-269). Tucson, Arizona. <http://hdl.handle.net/2027.42/137972>

Boileau, N.,* & Herbst, P. G. (2015, November). Teachers' expectations about geometric calculations in high school geometry. In T.G. Bartell, K.N. Bieda, R.T. Putnam, K. Bradfield & H. Dominguez (Eds.), *Proceedings of the Thirty-Seventh Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 269-276). East Lansing, MI. <http://hdl.handle.net/2027.42/137971>

Dimmel, J.* & Herbst, P. (2015, November). Investigating secondary mathematics teachers' attitudes toward alternative communication practices while doing proofs in geometry. 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* (pp. 277-284). East Lansing, MI: Michigan State University.

Erickson, A.^ & Herbst, P. (2015, November). What influences a teacher's willingness to create opportunities for discussion in a geometry classroom? 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* (pp. 1110-1113). East Lansing, MI: Michigan State University.

Herbst, P., Chazan, D., Milewski, A., Gürsel, U.,* Amidon, J., Buchbinder, O., Walkoe, J., & Wieman, R. (2015, November). Representations of mathematics teaching and their use in transforming teacher education: Studying preservice teachers' learning from work with representations of practice. Working group held at PME-NA. East Lansing, MI.

Milewski, A., Erickson, A.^ Herbst, P., & Dimmel, J.^ (2015, November). When mathematics teachers consider acting on behalf of the discipline, what assumptions do they make? 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* (pp. 1130-1133). East Lansing, MI: Michigan State University.

Chieu, V. M., Boileau, N.,* & Herbst, P. (2015, March). An Instrumental Co-Genesis Approach to Developing an Online Practice-based Environment for Teacher Education. In D. Rutledge and D. Sylkhuus (Eds.), *Society for Information Technology & Teacher Education International Conference* (Vol. 2015, No. 1, pp. 2763-2772).

Herbst, P., Dimmel, J.,^ Erickson, A.,^ Ko, I.,* & Kosko, K.^ (2014). Mathematics teachers' recognition of an obligation to the discipline and its role in the justification of instructional actions. In C. Nicol, P. Liljedahl, S. Oesterle, & D. Allen (Eds.), *Proceedings of the 2014 annual meeting of the International Group for the Psychology of Mathematics Education* (Vol. 3, pp. 273-280). Vancouver, Canada: Simon Fraser University.

Dimmel, J.* and Herbst, P. (2014). What details do geometry teachers expect in students' proofs? A method for experimentally testing possible classroom norms. In C. Nicol, P. Liljedahl, S. Oesterle, & D. Allen (Eds.), *Proceedings of the 2014 Annual Meeting of the International Group for the Psychology of Mathematics Education* (Volume 2, pp. 393-400). Vancouver, BC: Simon Fraser University.

Herbst, P., Kosko, K.,^ & Dimmel, J.* (2013). *How are geometric proof problems presented? Conceptualizing and measuring teachers' recognition of the diagrammatic register.* In Martinez, M. & Castro Superfine, A (Eds.). *Proceedings of the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics*

Education (pp. 179-186). Chicago, IL: University of Illinois at Chicago. Available from Deep Blue at the University of Michigan <http://hdl.handle.net/2027.42/97761>

Herbst, P., Aaron, W.,[^] Balacheff, N., Bieda, K., Chazan, D., Chieu, V. M., Dimmel, J.,^{*} Erickson, A.,^{*} Mesa, V., and Moore-Russo, D. (2013, November). Representations of students' mathematical conceptions and their use in teacher education. Proceedings of the 2013 Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education.

Chieu, V.M.,[^] & Herbst, P.G. (2013, June). Designing reference points in animated classroom stories to support teacher learners' online discussions. In N. Rummel, M. Kapur, M. Nathan, & S. Puntambekar (Eds.), *To See the World and a Grain of Sand: Learning across Levels of Space, Time, and Scale. The 10th International Conference on Computer Supported Collaborative Learning*, (vol. 1, pp. 89-96). Madison, WI: University of Wisconsin.

Herbst, P. & Kosko, K.[^] (2012, November). Mathematical Knowledge for Teaching High School Geometry. *Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Kalamazoo, MI. Available on Deep Blue at The University of Michigan. <http://hdl.handle.net/2027.42/91279>

Herbst, P., Aaron, W.,^{*} Bieda, K., and Moore-Russo, D. (2012, November). *Representations of mathematics teaching and their use in transforming teacher education: The role of approximations of practice*. Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Kalamazoo, MI. Available on Deep Blue at The University of Michigan. <http://hdl.handle.net/2027.42/91280>

Aaron, W.^{*} & Herbst, P. (2012). *Teachers' and students' perceptions of classroom discussions*. Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Kalamazoo, MI.

Dimmel, J.^{*} & Herbst, P. (2012). *Analyzing the diagrammatic register in geometry textbooks: Toward a semiotic architecture*. Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Kalamazoo, MI. (Longer version available on Deep Blue at The University of Michigan, <http://hdl.handle.net/2027.42/91288>)

Kosko, K.[^] & Herbst, P. (2012). *Evaluating Teachers' Decisions in Posing a Proof Problem*. Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Kalamazoo, MI. Available on Deep Blue at the University of Michigan, <http://hdl.handle.net/2027.42/91282>

Chieu, V. M.[^] & Herbst, P. (2012). LessonSketch: A Rich-Media Scenario based learning environment for teacher development. In P. Resta (Ed.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2012* (pp. 968-973). Chesapeake, VA: AACE.

Chieu, V.M.[^] & Herbst, P.G. (2011). Supporting mathematics teachers' online discussion with the use of animated classroom stories as reference point. *In Proceedings of the 11th IEEE International Conference on Advanced Learning Technologies* (pp. 479-481). DOI 10.1109/ICALT.2011.149. Washington, DC: IEEE Computer Society.

Herbst, P., Aaron, W.,* Bieda, K., González, G., and Chazan, D. (2011). Representations of mathematics teaching and their use in transforming teacher education: Contributions to a pedagogical framework. Discussion document for the working group ‘representations of mathematics teaching’. *Proceedings of the 2011 Annual PME-NA Conference*. Reno, NV.

Chieu, V. M.,^ Herbst, P., & Weiss, M.* (2010). The use of animations and online communication tools to support mathematics teachers in the practice of teaching. In Gomez, K., Lyons, L., & Radinsky, J. (Eds.), *Learning in the Disciplines: Proceedings of the 9th International Conference of the Learning Sciences (ICLS 2010) - Volume 2, Short Papers, Symposia, and Selected Abstracts* (pp. 290-291). International Society of the Learning Sciences: Chicago, IL.

Chazan, D., Herbst, P., Sela, H., and (T) R. Hollenbeck, (2011). Rich Media Supports For Practicing Teaching: Introducing Alternatives Into A “Methods” Course. In B. Ubuz (Ed.), *Proceedings of the 35th Conference of the International Group for the Psychology of Mathematics Education*. (Vol. I: pp. 119-123). Ankara, Turkey: PME.

Aaron, W.* and Herbst, P. (2011). An Exploration of ‘Studenting’ in High School Geometry Classrooms. *Proceedings of the 2011 Annual PME-NA Conference*. Reno, NV.

Kosko, K.^ and Herbst, P. (2011). Where’s the proof? Proof in U.S. high school geometry content standards. *Proceedings of the 2011 Annual PME-NA Conference*. Reno, NV.

Herbst, P. (2010). Practical Rationality and the Justification for Actions in Mathematics Teaching. *Proceedings of the 2010 Annual PME-NA conference*. Columbus, OH: Ohio State University.

Herbst, P., Bieda, K., Chazan, D., and González, G.^ (2010). Representations of mathematics teaching and their use in teacher education: What do we need in a pedagogy for the 21st century? *Proceedings of the 2010 Annual PME-NA conference*. Columbus, OH: Ohio State University.

Aaron, W.* and Herbst, P. (2010). Virtual Others: One learner’s mathematical arguments in response to an animated episode of geometry instruction. *Proceedings of the 2010 Annual PME-NA conference*. Columbus, OH: Ohio State University.

Chieu, V. M.,^ Weiss, M.* & Herbst, P. (2009, March). Using Web 2.0 Interactive Rich-media Technologies in Mathematics Teacher Development. In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2009* (pp. 3619-3624). Chesapeake, VA: AACE.

Herbst, P. (2008). The teacher and the task. In O. Figueras, J. Cortina, S. Alatorre, T. Rojano, & A. Sepúlveda (Eds.), *Proceedings of the 32th Annual Meeting of the International Group for the Psychology of Mathematics Education (Vol. 1, pp. 125-131)*. Morelia, Mexico: Universidad Michoacana San Nicolás de Hidalgo.

Chieu, V.M.^ & Herbst, P.G. (2008). Learning to teach: Web-based interactive rich-media technologies supporting cognitive flexibility in teacher education. *Proceedings of the 19th SITE International Conference on Information Technology and Teacher Education*, Las Vegas, NV, March 3-7, pp. 4579–4586.

Chieu, V.M.,^ Weiss, M.,* & Herbst, P.G. (2008). ThEMaT’s virtual settings: Practicing math teaching with web-based interactive rich-media technologies. *Proceedings of the 19th SITE International Conference on Information Technology and Teacher Education*, Las Vegas, NV,

March 3-7, pp. 4587–4592.

Miyakawa, T.^ and Herbst, P. (2007). Geometry teachers' perspectives on convincing and proving when installing a theorem in class. In *Proceedings of the 29th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Reno, NV.

Nachlieli, T.^ and Herbst, P. (2007). Students engaged in proving - participants in an inquiry process or executors of a predetermined script? In *Proceedings of the 31st Annual Meeting of the International Group for the Psychology of Mathematics Education*. Seoul, Korea.

Chen, C.* and Herbst, P. (2007). The interplay among gestures, discourse and diagrams in students' geometrical reasoning. In *Proceedings of the 29th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Reno, NV.

Miyakawa, T.^ and Herbst, P. (2007). The nature and role of proof when installing theorems: The perspective of geometry teachers. In *Proceedings of the 31th Annual Meeting of the International Group for the Psychology of Mathematics Education*. Seoul, Korea.

Herbst, P. and Chazan, D. (2006). Producing a Viable Story of Geometry Instruction: What Kind of Representation Calls Forth Teachers' Practical Rationality? In Alatorre, S., Cortina, J.L., Sáiz, M., and Méndez, A. (Eds) *Proceedings of The 28th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol 2, 213-220). Mérida, México: Universidad Pedagógica Nacional.

González, G.* and Herbst, P. (2005). Students' interactions with dynamic diagrams. In F. Olivero and R. Sutherland (Eds.), *Visions of Mathematics Education: Embedding technology in learning—Proceedings of the 7th International Conference on Technology in Mathematics Teaching* (ICTMT7) (Vol 1, pp. 87-94). Bristol, UK: University of Bristol.

Herbst, P. (2003, July). Descriptive and prescriptive interaction with diagrams and customary situations of proving in geometry. *Proceedings of the 27th annual meeting of the International Group for the Psychology of Mathematics Education*, Volume 1, p. 229. University of Hawaii at Honolulu.

Herbst, P. (2002). Enabling students to make connections while proving: The work of a teacher creating a public memory. In D. Mewborn (Ed.), *Proceedings of the 23rd. Annual meeting of the Psychology of Mathematics Education-North American Chapter*. Athens, GA: University of Georgia.

Kulp, C.* & Herbst, P. (2002). Remembering and forgetting in the mathematics classroom. In D. Mewborn (Ed.), *Proceedings of the 23rd. Annual meeting of the Psychology of Mathematics Education-North American chapter*. Athens, GA: University of Georgia.

Herbst, P. (1997). Effectiveness of a strategy as a sociomathematical norm. In E. Pehkonen (Ed.) *Proceedings of the 21st conference of the International Group for the Psychology of Mathematics Education. Volume 3* (pp. 57-64). University of Helsinki.

Mesa, V. and Herbst, P. (1997). A problem solving session designed to explore the efficacy of similes of learning and teaching mathematics. In J. Dossey, J. Swafford, M. Parmantie, and A. Dossey (Eds.), *Proceedings of the Nineteenth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 331-338). Bloomington/Normal, Illinois: Illinois State University.

Peer reviewed book chapters

Sinclair, N. & Herbst, P. (2024). Images of theory in the practices of theorising in mathematics education research. In M. A. Clements, B. Kaur, T. Lowrie, V. Mesa, & J. Prytz (Eds), *Fourth International Handbook of Mathematics Education* (pp. 245-270). Springer

An, T., Boyce, S., Brown, A., Buchbinder, O., Cohen, S., Dumitrescu, D., Escudero, H., Herbst, P., Ion, M.*, Krupa, E., Miller, N. Pyzdrowski, L., Sears, R., St. Goar, J., Szydlik, S., & Vestal, S. (2024). (Toward) Essential student learning objectives for teaching geometry to pre-service secondary teachers. In B. Benken (Ed.), *The AMTE Handbook of Mathematics Teacher Education: Reflection on Past, Present and Future – Paving the Way for the Future of Mathematics Teacher Education* (pp.175-197). IAP.

Herbst, P., Chazan, D., & Schleppegrell, M. (2023). How digital storyboards support the transaction of practice: The semiotic infrastructure of representations of practice. In: Pepin, B., Gueudet, G., Choppin, J. (Eds), *Handbook of Digital Resources in Mathematics Education* (pp. 159-189). Springer. https://doi.org/10.1007/978-3-030-95060-6_6-1

Herbst, P. & Chazan, D. (2023). Keeping theorizing in touch with practice: Practical rationality as a middle range theory of mathematics teaching. In A. K. Praetorius and C. Charalambous (Eds.), *Theorizing Teaching: Current Status and Open Issues* (pp. 189-224). Springer. https://doi.org/10.1007/978-3-031-25613-4_7

An, T., Berzina-Pitcher, I., Bigelow, V., Buchbinder, O., Herbst, P., Hetrick, C.^, Milewski, A., Miller, N., Prasad, P., Pyzdrowski, L., St Goar, J., Sears, R., Szydlik, S., & Vestal, S. (2023). A cross-institutional faculty online learning community: Community-guided faculty development in teaching college geometry for teachers. In S. Linder, C. Lee, S. Stefl, and K. High (Eds.), *Handbook of STEM Faculty Development* (pp. 325-336). IAP.

Brown, A. M., Stevens, I.^, Herbst, P., & Huhn, C. (2021). Confronting teachers with contingencies to support their learning about situation-specific pedagogical decisions in an online context. In K. Hollebrands, R. Anderson, & K. Olivier (Eds.), *Online learning in mathematics education* (pp. 291-316). Springer. https://doi.org/10.1007/978-3-030-80230-1_15

Herbst, P., Boileau, N.*, Shultz, M.*, Milewski, A., & Chieu, V. M. (2020). What simulation--based mentoring may afford: Opportunities to connect theory and practice. In E. Bradley (Ed.), *Games and Simulations in Teacher Education* (pp. 91-114). Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-030-44526-3_7

Milewski, A., Herbst, P., & Stevens, I. ^ (2020). Managing to collaborate with secondary mathematics teachers at a distance: Using storyboards as a virtual place for practice and consideration of realistic classroom contingencies. In Ferdig, R.E., Baumgartner, E., Hartshorne, R., Kaplan-Rakowski, R. & Mouza, C. (Eds). (2020). *Teaching, Technology, and Teacher Education during the COVID-19 Pandemic: Stories from the Field*. Association for the Advancement of Computing in Education (AACE). Retrieved June 15, 2020 from <https://www.learntechlib.org/p/216903/>.

Herbst, P., Chazan, D., & Milewski, A. (2020). Technology tools for mathematics teacher learning: How might they support the development of capacity for specific teaching assignments? In O. Chapman & S. Llinares (Eds.), *Handbook of research in mathematics teacher education* (pp. 223-251). Dordrecht, The Netherlands: Sense. https://doi.org/10.1163/9789004418967_009

Herbst, P. (2019). Geometric modeling tasks and opportunity to learn geometry: The ranking triangles task revisited. In P. Felmer, P. Liljedahl, & B. Koichu (Eds.), *Problem solving in mathematics instruction and teacher professional development* (pp. 123-143). Springer.

https://doi.org/10.1007/978-3-030-29215-7_7

Herbst, P. & Boileau, N.* (2018). Geometric modeling of mesospace objects: A task, its didactical variables, and the mathematics at stake. In K. Mix & M. Battista (Eds.), *Visualizing mathematics: The role of spatial reasoning in mathematical thought* (p. 277-308). Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-319-98767-5_13

Chazan, D., Herbst, P., Grosser-Clarkson, D., Fleming, E., Walkoe, J., & Alibegovic, E. (2018). Describing curricular materials for mathematics teacher education in an online, rich media platform. In V. Hoyos & J. Silverman (Eds.) *Distance learning, e-learning and blended learning in mathematics education* (pp. 201-220). Cham, Switzerland: Springer.

https://doi.org/10.1007/978-3-319-90790-1_12

Herbst, P., Boileau, N.,* & Gürsel, U.* (2018). Examining the work of teaching geometry as a subject specific phenomenon. In P. Herbst, U. Cheah, K. Jones, & P. Richard (Eds.), *International Perspectives on the Teaching and Learning of Geometry in Secondary Schools* (pp. 87-110). Springer. https://doi.org/10.1007/978-3-319-77476-3_6

Herbst, P. & Milewski, A. (2018). What StoryCircles can do for mathematics teaching and teacher education. In R. Zazkis and P. Herbst (Eds.), *Scripting approaches in mathematics education: Mathematical dialogues in research and practice* (pp. 321-364). Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-319-62692-5_15

Chieu, V. M., Aaron, W., ^ & Herbst, P. (2018). What can designed reference points in an animated classroom story contribute to support teachers' study of practice? In R. Zazkis and P. Herbst (Eds.), *Scripting approaches in mathematics education: Mathematical dialogues in research and practice* (pp. 147-162). Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-319-62692-5_7

Rougée, A.* & Herbst, P. (2018). Does the medium matter? A comparison of secondary mathematics preservice teachers' representations of practice created in text and storyboarding media. In R.Z Zazkis and P. Herbst (Eds.), *Scripting approaches in mathematics education: Mathematical dialogues in research and practice* (pp. 265-292). Springer.

https://doi.org/10.1007/978-3-319-62692-5_13

Herbst, P. & Chazan, D. (2017). The role of theory development in increasing the subject specificity of research on mathematics teaching. In J. Cai (Ed.), *Compendium for Research in Mathematics Education* (pp. 102-127). Reston, VA: NCTM.

Chazan, D., Herbst, P., & Clark, L. (2016). Research on the Teaching of Mathematics: A Call to Theorize the Role of Society and Schooling in Mathematics. In D. Gitomer and C. Bell (Eds.), *Handbook of research on teaching* (5th ed., pp. 1039-1097). Washington, DC: AERA.

https://doi.org/10.3102/978-0-935302-48-6_17

Herbst, P., Chazan, D., Chieu, V. M., Milewski, A., Kosko, K., & Aaron, W. (2016). Technology-Mediated Mathematics Teacher Development: Research on Digital Pedagogies of Practice. In M. Niess, K. Hollebrands, & S. Driskell (Eds.), *Handbook of Research on Transforming Mathematics Teacher Education in the Digital Age* (pp. 78-106). Hershey, PA: IGI Global. <https://doi.org/10.4018/978-1-5225-0120-6.ch004>

Herbst, P. (2015). Proof exercises and how they challenge the work of students and teachers in high school geometry. In E. A. Silver & P. A. Kenney (Eds.), *More lessons learned from research: Volume 1, Useful and useable research related to core mathematical practices* (pp. 49-57). Reston, VA: National Council of Teachers of Mathematics.

Herbst, P., & Kosko, K. (2014). Mathematical knowledge for teaching and its specificity to high school geometry instruction. In J. Lo, K. R. Leatham, & L. R. Van Zoest (Eds.), *Research Trends in Mathematics Teacher Education* (pp. 23-45). New York, NY: Springer. https://doi.org/10.1007/978-3-319-02562-9_2

Herbst, P., Aaron, W., & Chieu, V. M. (2013). LessonSketch: An environment for teachers to examine mathematical practice and learn about its standards. In D. Polly (Ed.), *Common Core Mathematics Standards and Implementing Digital Technologies* (pp. 281-294). Hershey, PA: IGI Global. <https://doi.org/10.4018/978-1-4666-4086-3.ch019>

Jones, K. and Herbst, P. (2012). Proof, proving, and teacher-student interaction in the mathematics classroom: Theories and diverse contexts. In G. Hanna and M. de Villiers (Eds.), *Proof and proving in mathematics education* (pp. 261-277). New York: Springer. https://doi.org/10.1007/978-94-007-2129-6_11

Chazan, D., Herbst, P. & Sela, H. (2011). Instructional alternatives via a virtual setting: Rich media supports for teacher development. In Zaslavsky, O. and Sullivan, P. (Eds.). *Constructing knowledge for teaching secondary mathematics: Tasks to enhance prospective and practicing teacher learning* (pp. 23-37). New York: Springer. https://doi.org/10.1007/978-0-387-09812-8_2

Herbst, P. Chen, C., Weiss, M., and González, G., with Nachlieli, T., Hamlin, M., and Brach, C. (2009). “Doing proofs” in geometry classrooms. In M. Blanton, D. Stylianou, and E. Knuth (Eds.), *Teaching and learning of proof across the grades: A K-16 perspective* (pp. 250-268). New York: Routledge. <https://doi.org/10.4324/9780203882009-15>

Herbst, P. and Balacheff, N. (2009). Proving and Knowing in Public: What Counts as Proof in a Classroom. In M. Blanton, D. Stylianou, and E. Knuth (Eds.), *Teaching and learning of proof across the grades: A K-16 perspective* (pp. 40-63). New York: Routledge. <https://doi.org/10.4324/9780203882009-3>. Preprint at <https://hal.archives-ouvertes.fr/hal-00998146>

Silver, E. and Herbst, P. (2007). Theory in mathematics education scholarship. In F. Lester (Ed.), *Second Handbook of Research in Mathematics Teaching and Learning* (pp. 39-67). Charlotte, NC: Information Age.

Non-peer-reviewed articles, book chapters, book reviews, proceedings, editorials, and white papers

Herbst, P. (2025). Editorial. A Leadership Bound to Mission in the Institutions of Our Field. *Journal for Research in Mathematics Education*, 56(5), 224-232.

Herbst, P. (2025). A descriptive theory of mathematics teaching: What can the theory of practical rationality say about the improvement of mathematics instruction. In Kwon, O. N., & Kaur, B. (Eds., 2025). *Proceedings of the 9th ICMI-East Asia Regional Conference on Mathematics Education (EARCOME 9)*, Volume 1, pp. 81-102. Seoul National University, Korea.

Herbst, P. (2025). Editorial: Five years of editing JRME: What we have published between 2021 and 2025. *Journal for Research in Mathematics Education*, 56(4), 148-158.

Herbst, P. (2025). Editorial: The Journal as part of the infrastructure of the field: Learning from what JRME reviews. *Journal for Research in Mathematics Education*, 56 (3), 90-106.

Herbst, P. (2025). Editorial: Open-mindedly asking “how is this submission a report of research on mathematics education?” *Journal for Research in Mathematics Education*, 56 (2), 29-35.

Herbst, P. (2025). Editorial: Writing an empirical research report in mathematics education: Understanding the genre and its registers. *Journal for Research in Mathematics Education*, 56(1), 1-9.

Herbst, P. (2024). Editorial: Stewarding the legacy of our elders: A reflection on the impact of Guy Brousseau. *Journal for Research in Mathematics Education*, 55(5), 210-218.

Herbst, P. (2024, August). Sustainability in a year between funding cycles. *GeT: The News!* Spring 2024.

Herbst, P., Chazan, D., Crespo, S., Kosko, K., Matthews, P., & Lichtenstein, E. (2024). Editorial: A way to consider balance among JRME publications: Descriptive, transformative, and reflective research. *Journal for Research in Mathematics Education*, 55(4), 156–162.

Herbst, P. (2024). Editorial: Working interinstitutionally to apprentice doctoral students in mathematics education research. *Journal for Research in Mathematics Education*, 55(3), 119-126.

Herbst, P. (2024). Editorial: Reproducing research capacity through interinstitutional collaboration around doctoral courses. *Journal for Research in Mathematics Education*, 55(1), 1-6.

Herbst, P. (2023). Editorial: The doctorate is part of the infrastructure of our research field. *Journal for Research in Mathematics Education*, 54(5), 288–294.

Herbst, P. (2023). Editorial: Stewarding our commons for the infinite game of research. *Journal for Research in Mathematics Education*, 54(4), 234-239.

Herbst, P. (2023, June). Toward a system that curates and documents resources for GeT instruction. *GeT: The News!*, 4(3). <https://www.gripumich.org/v4-i3-sp2023/#toward-a-system-that-curates-and-documents-resources-for-get-instruction>

Chazan, D., Herbst, P., Crespo, S., Matthews, P., & Lichtenstein, E. (2023). Editorial: Research Commentaries: Engaging in stewardship of our field. *Journal for Research in Mathematics Education*, 54(3), 176-182.

Herbst, P. (2023, April). GeT: A Pencil’s finite and infinite games: Reflections after the GeT: Together at RUME pre-Conference and workshop. *GeT: The News!*, 4(2). <https://www.gripumich.org/v4-i2-wi2023/#get-a-pencil-nite-and-innite-games-reections-afterthe-get-together-at-rume-pre-conference-and-workshop>

Herbst, P. (2023). Editorial: In Memoriam Jeremy Kilpatrick: An editors’ editor. *Journal for Research in Mathematics Education*, 54(2), 90-96.

Herbst, P., Chazan, D., Matthews, P., Lichtenstein, E., & Crespo, S. (2023). Editorial: How Manuscripts Can Contribute to Research on Mathematics Education: Possibilities for Applied Research. *Journal for Research in Mathematics Education*, 54(1), 2-6

Matthews, P., Herbst, P., Crespo, S., & Lichtenstein, E. (2022). Editorial: Continuing a conversation about equity-focused research in mathematics education. *Journal for Research in Mathematics Education*, 53(5), 342-349.

Herbst, P., Chazan, D., Crespo, S., Matthews, P., & Lichtenstein, E. (2022). Editorial: What the Current Editorial Team Values in Reviews for JRME. *Journal for Research in Mathematics Education*, 53(4), 248-254.

Herbst, P. (2022, May). On mathematical knowledge for teaching geometry and the SLOs: A reflection. *GeT: The News!*, 3(3)

Ko, I., Ion M.*, and Herbst P. (2022, May). Does our MKT-G instrument measure the same knowledge in the same way for GeT students and for practicing teachers? *GeT: The News!*, 3(3). <https://www.gripumich.org/v3-i3-sp2022/#does-our-mkt-g-instrument-measure-the-same-knowledge-in-the-same-way-for-get-students-and-for-practicing-teachers>

Herbst, P., Chazan, D., Crespo, S., Matthews, P., & Lichtenstein, E. (2022). Editorial: The practice of reviewing and its proactive role in building the field of mathematics education research. *Journal for Research in Mathematics Education*, 53(3), 174-180.

Crespo, S., Herbst, P., Lichtenstein, E., Matthews, P., and Chazan, D. (2022). Editorial: Challenges and opportunities to sustaining an equity focus in mathematics education research. *Journal for Research in Mathematics Education*, 53(2), 88-93

Herbst, P. (2022, February). Reflecting on what our community has accomplished. *GeT: The News!*, 3(2). <https://www.gripumich.org/v3-i2-w2022/#reflecting-on-our-community>

Herbst, P., Chazan, D., Crespo, S., Matthews, P., & Lichtenstein, E. (2022). Editorial: How manuscripts can contribute to research on mathematics education: An expansive look at basic research in our field. *Journal for Research in Mathematics Education*, 53(1), 2-9

Herbst, P. & Ion M.* (2021, November). A Deeper Dive into an SLO Item: Examining Students' Ways of Reasoning about Relationships between Euclidean and Non-Euclidean Geometries. *GeT: The News!*, 3(1). <https://www.gripumich.org/v3-i1-f2021/#a-deeper-dive-into-an-slo-item>

Ion, M.* & Herbst, P. (2021, November). A Contribution to Stewarding the SLOs: Developing SLO Assessment Items and Examining Item Responses. *GeT: The News!*, 3(1). <https://www.gripumich.org/v3-i1-f2021/#a-contribution-to-stewarding-the-slos-developing-slo-assessment-items-and-examining-item-responses>

Matthews, P., Herbst, P., Crespo, S., and Lichtenstein, E. (2021). Editorial: Reimagining a research-teaching nexus: Modern infrastructure for a future vision. *Journal for Research in Mathematics Education*, 52(5), 494-509.

Chazan, D., Herbst, P., Crespo, S., Matthews, P., and Lichtenstein, E. (2021). Editorial: Archival infrastructures for supporting research that treats mathematics education research as a situated activity. *Journal for Research in Mathematics Education*, 52(4), 362-369.

Herbst, P. (2021, May). Illustrating a modeling approach to high school geometry: The pool problem. *GeT: The News!*, 2(3). <https://bit.ly/GeTPoolProb>

Herbst, P., Chazan, D., Crespo, S., Matthews, P., & Lichtenstein, E. (2021). Editorial: Considering the importance of human infrastructure in the apprenticing of newcomers in mathematics education research practices. *Journal for Research in Mathematics Education*, 52(3), 250-256.

Herbst, P., Crespo, S., Matthews, P., & Lichtenstein, E. (2021). Editorial: Dissertating through disruptions: COVID-19 and the need for a research infrastructure. *Journal for Research in Mathematics Education*, 52(2), 110-116.

Herbst, P. (2021). Editorial: Ephemeris: Between the momentous and the recurring. *Journal for Research in Mathematics Education*, 52(1), 2-11.

Herbst, P. (2020, October). What are we trying to achieve when we teach Geometry for Teachers? *GeT: The News!*, 2(1)

Herbst, P. (2020, May). Teaching geometry during the pandemic. *GeT: The News!*, 1(3), 1-2.

Herbst, P. (2020, February). Instructional capacity for high school geometry. *GeT: The News!*, 1(2), 1-2.

Herbst, P. (2019, November). Did you GeT: The News? *GeT: The News!*, 1(1), 1-2

Herbst, P. (2019, November). An odd copy of a triangle: Where do student errors come from? *GeT: The News!*, 1(1), 5.

Herbst, P., Cheah, U., Jones, K., & Richard, P. (2018). International perspectives on secondary geometry education: An introduction. In P. Herbst, U. Cheah, K. Jones, & P. Richard (Eds.), *International Perspectives on the Teaching and Learning of Geometry in Secondary Schools* (pp. 1-4). Springer.

Herbst, P., Cheah, U., Jones, K., & Richard, P. (2018). Conclusion: Prospects for developments and research in secondary geometry education. In P. Herbst, U. Cheah, K. Jones, & P. Richard (Eds.), *International Perspectives on the Teaching and Learning of Geometry in Secondary Schools* (pp. 377-381). Springer.

Chazan, D., Herbst, P., Fleming, E.* , & Grosser-Clarkson, D.* (2018). Technological supports for practice-based teacher education. *Journal of Technology and Teacher Education*, 26(1), 5-11.

Herbst, P. (2018). On dialogue and stories as representations of practice: An Introduction. In R. Zazkis and P. Herbst (Eds.), *Scripting approaches in mathematics education: Mathematical dialogues in research and practice* (pp. 1-19). Cham, Switzerland: Springer.

Herbst, P. and Ko, I.* (2017). Measuring recognition of the professional obligations of mathematics teaching: The PROB surveys. *Deep Blue at The University of Michigan*. <http://hdl.handle.net/2027.42/136788>

Herbst, P. (2015). What's involved in the work of dissertation advising? An interview with Jeremy Kilpatrick and some personal reflections. In E. Silver and C. Keitel-Kreidt (Eds.), *Pursuing excellence in mathematics education: Essays in honor of Jeremy Kilpatrick* (pp. 17-50). Springer.

Herbst, P. (2014). Assigning and Reviewing Students' Work: A Decomposition of Practice. *Deep Blue at the University of Michigan*. <http://hdl.handle.net/2027.42/102572>

Herbst, P. (2013). Explaining procedures--A decomposition of practice. *Deep Blue at The University of Michigan* <http://hdl.handle.net/2027.42/113192>

Herbst, P. and Chazan, D. (2011). Research on Practical Rationality: Studying the Justification of Actions in Mathematics Teaching. *The Mathematics Enthusiast*, 8(3), 405-462. <https://doi.org/10.54870/1551-3440.1225>

Herbst, P. and Chieu, V. M. (2011). Depict: A Tool to Represent Classroom Scenarios. Technical report. *Deep Blue at the University of Michigan*. <http://hdl.handle.net/2027.42/87949>

Herbst, P. (2011a). Promoting and Managing Students' Discourse. Decomposition of practice. *Deep Blue at The University of Michigan*. <http://hdl.handle.net/2027.42/84368>.

Herbst, P. (2011b). Explaining concepts and propositions. Decomposition of practice. *Deep Blue at The University of Michigan*. <http://hdl.handle.net/2027.42/84658>.

Herbst, P. (2011c). Setting norms for mathematical work: A decomposition of practice. *Deep Blue at The University of Michigan*. <http://hdl.handle.net/2027.42/101119>

Herbst, P. with González, G.*, Hsu, H. Y.*, Chen, C.*, Weiss, M.*, and Hamlin, M.* (2010). Instructional situations and students' opportunities to reason in the high school geometry class. Manuscript. *Deep Blue at the University of Michigan*. <http://hdl.handle.net/2027.42/78372>

Herbst, P., Miyakawa, T.^, and Chazan, D. (2010). Revisiting the functions of proof in mathematics classrooms: A view from a theory of instructional exchanges. Manuscript. *Deep Blue at the University of Michigan*. <http://hdl.handle.net/2027.42/78168>

Nachlieli, T.^ and Herbst, P. (2010). Facilitating encounters among teachers with representations of teaching: two registers. Manuscript. *Deep Blue at the University of Michigan*, <http://hdl.handle.net/2027.42/64852>

Herbst, P. (2009). Testing a model for the situation of “doing proofs” using animations of classroom scenarios. In F. Lin, F. Hsieh, G. Hanna, M. de Villiers (Eds.) *Proof and Proving in mathematics education: ICMI Study 19 Conference Proceedings* (pp. 190-195). Taipei, Taiwan: Department of Mathematics, National Taiwan Normal University.

Herbst, P. (2008). Tasks that embody knowledge, tasks that probe teaching. Manuscript. *Deep Blue at the University of Michigan*. <http://hdl.handle.net/2027.42/62486>

Herbst, P., Chen, C.*, Weiss, M.*, and Aaron, W.* (2008). What nonverbal interactions with diagrams teachers perceive as meaningful elements of students' mathematical work. Manuscript. *Deep Blue at the University of Michigan*. <http://hdl.handle.net/2027.42/62487>

Herbst, P. (2008). *Proof, proving, and the work of teacher and students in classrooms*. In M. Niss (Ed.), Proceedings from the 10th International Congress in Mathematics Education, Roskilde University, Denmark.

Herbst, P. (2008). Recurrent issues vying for change: A review of Nathalie Sinclair's The history of the geometry curriculum in the United States. *International Journal for the History of Mathematics Education*, 3(2), 109-112.

García, N.** and Herbst, P. (2006). Teaching mathematics with problems: What one teacher learned through research. In Van Zoest, L.R. (Ed.). *Teachers engaged in research: Inquiry into mathematics practice, Grades 9-12*. Reston, VA: National Council of Teachers of Mathematics.

Herbst, P. (2000). Mathematics in classrooms that contribute to understanding. *Contemporary Psychology: The APA review of books*, 45, 651-653.

Herbst, P. (2000). ¿A dónde va la investigación sobre la prueba? [Where is research on proof heading?] Epilogue to the book by Nicolas Balacheff, *Procesos de prueba en los alumnos de matemáticas* [Proof processes of mathematics students]. “una empresa docente,” Universidad de Los Andes, Colombia. Also available in Funes, <http://funes.uniandes.edu.co/>

Herbst, P. (2000, March). The articulation and structuring of conceptions in the mathematics class: Argument and public knowledge. Feature article in *International Newsletter on the Teaching and Learning of Mathematical Proof*. On line at <http://www-cabri.imag.fr/Preuve>

Herbst, P. (1999). Le travail du maître dans la gestion d’une situation de preuve [The work of the teacher in the management of a situation of proof]. In M. Bailleul (Ed.), *Actes de la Xème école d’été de didactique des mathématiques Vol. II* (pp. 102-106). Houlgate, France: ARDM.

Herbst, P. (1999, January). On proof, the logic of practice of geometry teaching, and the two-column proof format. Feature article in *International Newsletter on the Teaching and Learning of Mathematical Proof*. On line at <http://www-cabri.imag.fr/Preuve>.

Herbst, P. (1998). Mathematics education as a project and as a problem: Some observations about doctoral education. In T. Lingefjärd and G. Dahland (Eds.), *Research in mathematics education: A report from a follow-up conference after PME 1997* (pp. 61-71). Gothenburg University, The Department of Subject Matter Didactics.

Herbst, P. (1998). Metaphor and mathematical discourse. In J. F. Quesada (1998, Ed.), *Logic, semiotic, social, and computational perspectives on mathematical languages* (pp. 43-63). Seville, Spain: SAEM Thales.

Herbst, P. (1998). Reflexiones sobre las prácticas de la enseñanza en la formación profesional de los docentes de matemática [Reflections on the role of student teaching in the professional preparation of mathematics teachers]. *Revista EMA: Investigación e innovación en educación matemática*, 3 (2), Marzo 1998, Bogotá. (pp. 170-180).

Conference papers

Chen, Q*. & Herbst, P. (2026, April). From Perception to Appreciation: How Teachers Interpret Student Work in Problem-Based Mathematics Lessons. Paper presented at the Annual Meeting of AERA, Los Angeles, California.

Jeon, S*., Savuran, R^., Brown, A., & Herbst, P. (2026, April). How Lesson Design Functions as the Making of an Argument. Paper presented at the Annual Meeting of AERA, Los Angeles, California.

Brown, A., Jeon, S.* , Herbst, P., & Schwarts, G.^ (2024, July). Investigating the potential for the annotation of less idealized lessons to serve as low floor/high ceiling tasks for lesson-centered professional development. Presented at TSG 4.4, ICME 15 conference, Sydney, Australia.

Herbst, P., Ko, I.[^], & Brown, A. (2024, July). Assessing prospective teachers' growth in mathematical knowledge for teaching geometry. Presented at TSG 4.6, ICME 15 conference. Sydney, Australia.

Schwartz, G.[^], Herbst, P., & Brown, A. (2024, July). Designing virtual simulations to support mathematics teachers' approximations of problem-based instruction. Presented at TSG 3.17, ICME 15 conference, Sydney, Australia.

Herbst, P., Jeon, S.*^{*}, & Brown, A. (2024, April). How do geometry courses for teachers support learning to teach? Results from an instructor survey. Paper presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA.

Schwartz, G.[^], Herbst, P., & Brown, A. (2024, April). Navigating the complexities of promoting student voice and agency through teachers' collaborative design of problem-based lessons. Paper presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA.

Schwartz, G.[^], Herbst, P., Stevens, I.[^], & Milewski, A. (2023, April). Beyond correctness: What do teachers notice about student work produced in problem-based lessons? Paper presented at the Annual Meeting of AERA, Chicago, IL.

Hetrick, C.[^], Herbst, P., Milewski, A., & Ion, M.* (2023, April). Contention and coalescence in mathematical knowledge: Undergraduate geometry instructors' cooperative design of student learning objectives. Paper presented at the Annual Meeting of AERA, Chicago, IL.

Herbst, P., Milewski, A., & Stevens, I.[^] (2022, April). The Evolution of StoryCircles: An Online Professional Learning Approach to Attend to Practice in Context. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.

Berzina-Pitcher, I., Ion, M.*^{*}, An, T., Buchbinder, O., Herbst, P., Milewski, A., Miller, N., Prasad, P., Pyzdrowski, L., St Goar, J., Sears, R., Szydlik, S., & Vestal, S. (2022, April). Learning and Participating in Scholarship of Teaching and Learning Through a Faculty Online Learning Community. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.

Stevens, I.[^], Boileau, N.*^{*}, Bridges, S.*^{*}, Milewski, A., & Herbst, P. (2022, April). Timing as a Complexity in Teaching. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.

Herbst, P., Chazan, D., and Boileau, N.* (2021). Framing, normativity, and serviceability in teachers' decision making during lessons. Paper accepted for presentation at TSG 37, ICME 14, Shanghai, China, 2021, later withdrawn. Available at <https://hdl.handle.net/2027.42/171072>

Chazan, D. and Herbst, P. (2021). Teacher educators use of technology to represent instruction. Paper presented at TSG29, ICME 14, Shanghai, China, 2021.

Ko, I.[^], Herbst, P., and Shultz, M* (2021, April). Comparing how college mathematics instructors and high-school teachers recognize professional obligations of mathematics teaching when making instructional decisions. Paper presented at the Annual Meeting of the American Educational Research Association, Online.

Bardelli, E.*^{*}, Ion, M.*^{*}, Ko, I.[^], & Herbst, P. (2020, April). Who Benefits from Mathematics Courses for Teachers? An Analysis of MKT-G Growth During Geometry for

Teachers Courses. Paper accepted to be presented at the Annual Meeting of AERA, San Francisco.

Boileau, N.*, Herbst, P., & Milewski, A. (2020, April). Framing Novel Tasks as Familiar: Some Reasons Why and a Resulting Tension. Paper accepted to be presented at the Annual Meeting of AERA, San Francisco.

Shultz, M.* & Herbst, P. (2020, February). The Decision to use Inquiry-Oriented Instruction: Why Don't Beliefs Align with Practice? Paper accepted to be presented at the Research in Undergraduate Mathematics Education conference, Boston.

Herbst, P. and Shultz, M.* (2019, August). How professional obligations can help understand decisions in the teaching of calculus across institutional contexts. In J. Monaghan, E. Nardi, & T. Dreyfus (Eds.), *Calculus in upper secondary and beginning university mathematics* (pp. 107-110). Kristiansand, Norway. https://matric-calculus.sciencesconf.org/data/pages/CalcConf2019_Papers_190910.pdf

Herbst, P. (2019, May). Recursos para la gestión de problemas de modelaje en clases de geometría. Paper presented at the XV CIAEM (Inter American Conference in Mathematics Education), Medellín, Colombia.

Milewski, A., Ion, M.*, Herbst, P., Shultz, M.*, Ko, I.*, & Bleecker, H. (2019, April). Tensions in teaching mathematics to future teachers: Understanding the practice of undergraduate mathematics instructors. Paper presented at the Annual Meeting of AERA. Toronto, Canada.

Ko, I.* and Herbst, P. (2019, April). Estimating Teachers' Decision Making in Doing Proofs Using a Diagnostic Classification Model. Paper presented at the Annual Meeting of AERA. Toronto, Canada.

Herbst, P. and Ko, I.* (2019, April). Reconsidering the Organization of Mathematical Knowledge for Teaching. Paper presented at the Annual Meeting of AERA. Toronto, Canada.

Shultz, M.*, Bardelli, E.*, Milewski, A., Boileau, N.*, and Herbst, P. (2019, April). What can we learn about the differences between experts and novices from a teaching simulation? Paper presented at the Annual Meeting of AERA. Toronto, Canada.

Herbst, P. (2019, March). Resemblance and Analogy across Mathematical Practices. Paper presented at the conference "Mathematics and practice," Rostock, Germany.

Herbst, P. and Ko, I.* (2018, April). Recognition of professional obligations of mathematics teaching and their role in justifying instructional actions. Paper presented at the Annual Meeting of AERA, New York, NY.

Boileau, N.*, Ko, I.*, and Herbst, P. (2018, April). Uncovering the Relationship Between Expertise in Teaching Mathematics and Teachers' Recognition of their Professional Obligations. Paper presented at the Annual Meeting of AERA, New York, NY.

Ko, I.*, & Herbst, P. (2018, April). Relationship between Response Time and Characteristics of Items Measuring Teachers' Mathematical Knowledge. National Council of Measurement in Education Annual Meeting. New York City, NY.

Shultz, M.*, Herbst, P., Boileau, N.*, and Erickson, A. (2018, April). Measuring Geometry Teachers' Willingness to Expand Proof Practices. Paper presented at the Annual Meeting of AERA, New York, NY.

Chieu, V. M., Boileau, N.*, Huisinga, M.*, Milewski, A., and Herbst, P. (2017, May). Can a Teaching Simulation Predict Novice and Expert Teachers' Decision Making? Paper presented at the Annual Meeting of AERA, San Antonio, TX.

Erickson, A.^, Boileau, N.*, Huisinga, M.*, and Herbst, P. (2017, April). Measuring Secondary Geometry Teachers' Relationships With an Instructional Norm. Paper presented at the Annual Meeting of AERA, San Antonio, TX.

Ko, I.*, and Herbst, P. (2017, April). Investigating the Dimensionality of the Instrument Measuring Teachers' Mathematical Knowledge for Teaching Secondary Geometry. Paper presented at the Annual Meeting of AERA, San Antonio, TX.

Ko, I.*, Milewski, A., and Herbst, P. (2017, April). How Are Preservice Teachers' Educational Experiences Related to Their Mathematical Knowledge for Teaching Geometry? Paper presented at the Annual Meeting of AERA, San Antonio, TX.

Milewski, A., Herbst, P., and Gürsel, U.* (2017, April). Teachers' Opportunities to Learn Through Collaborative Storytelling and Visualization. Paper presented at the Annual Meeting of AERA, San Antonio, TX.

Herbst, P. (2016, July). Is the work of teaching geometry subject specific? Paper presented at the 13th International Congress on Mathematical Education, Hamburg, Germany.

Chazan, D. & Herbst, P. (2016, July). Reconciling two uses of norm in mathematics education research. Paper presented at the 13th International Congress on Mathematical Education, Hamburg, Germany.

Fleming, E.*, Chazan, D., Herbst, P., & Grosser-Clarkson, D.* (2016, July). Describing curricular materials for mathematics teacher education in an online, rich media platform. Paper presented at the 13th International Congress on Mathematical Education, Hamburg, Germany.

Ko, I.*, & Herbst, P. (2016, July). Subject matter knowledge of geometry needed in tasks of teaching and teachers' geometry teaching experience. Paper presented at the 13th International Congress on Mathematical Education, Hamburg, Germany.

Erickson, A.^, Herbst, P., Dimmel, J.^, and Ko, I* (2016, April). When What Routinely Happens Conflicts With What Ought to Be Done: A Scenario-Based Assessment. Paper presented at the Annual Meeting of the American Educational Research Association, Washington DC.

Erickson, A.^ and Herbst, P. (2016, April). Supporting Preservice Teachers' Ability to Anticipate in Secondary Mathematics: A Comparison of Animations and Video. Paper presented at the Annual Meeting of the American Educational Research Association, Washington DC.

Herbst, P., Dimmel, J.^, and Erickson, A.^ (2016, April). High School Mathematics Teachers' Recognition of the Diagrammatic Register in Proof Problems. Paper presented at the Annual Meeting of the American Educational Research Association, Washington DC.

Milewski, A., Hanby, K.*, and Herbst, P. (2016, April). If at First You Don't Succeed ...: Using "StoryCircles" to Provide Preservice Teachers Opportunities to Practice. Paper presented at the Annual Meeting of the American Educational Research Association, Washington DC.

Dimmel, J.*, Milewski, A., & Herbst, P. (2015, April). Representing Professional Scenarios: Can nondescript cartoon graphics portray a range of human emotions? Paper presented at the Annual Meeting of the American Educational Research Association, Chicago.

Dimmel, J.* & Herbst, P. (2015, April). Examining Regularities for Presenting and Checking Proofs in Geometry: A Planned Comparison Study. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago.

Hanby, K.* & Herbst, P. (2015, April). What do elementary teachers notice about students' informal methods of early subtraction and how do they respond to those methods? Paper presented at the NCTM Research Conference, Boston.

Herbst, P., Aaron, W.^, and Erickson, A.* (2013, April). How Preservice Teachers Respond to Representations of Practice: A Comparison of Animations and Video. Paper presented at the 2013 meeting of the American Educational Research Association, San Francisco. Deep Blue at the University of Michigan. <http://hdl.handle.net/2027.42/97424>

Herbst, P., Aaron, W.^, Dimmel, J.*, and Erickson, A.* (2013, April). Expanding students' involvement in proof problems: Are geometry teachers willing to depart from the norm? Paper presented at the 2013 meeting of the American Educational Research Association. Deep Blue at the University of Michigan. <http://hdl.handle.net/2027.42/97425>

Chieu, V. M., Aaron, W.^, and Herbst, P. (2013, April). Impact of Critical Events in an Animated Classroom Story on Teacher Learners' Online Comments. Paper presented at the 2013 Annual Meeting of the American Educational Research Association, San Francisco, CA. Deep Blue at the University of Michigan. <http://hdl.handle.net/2027.42/97551>

Ghousseini, H.* and Herbst, P. (2013, April). Learning about leading classroom mathematics discussions in, from, and for practice. Paper presented at the 2013 Annual Meeting of the American Educational Research Association, San Francisco, CA.

Kosko, K.^, Rougée, A.*, and Herbst, P. (2013, April). What Actions do Teachers Envision When Asked to Facilitate Mathematical Argumentation in the Classroom? Paper presented at the 2013 Annual Meeting of the American Educational Research Association, San Francisco, CA.

Herbst, P. and Kosko, K.^ (2012, April). *Using Cases as Triggers for Teachers' Thinking about Practice: A Comparison of Responses to Animations and Videos*. Paper presented at the 2012 Annual Meeting of the American Educational Research Association, Vancouver, BC, Canada.

Aaron, W.*, Mesa, V., and Herbst, P. (2012, February). Challenges and tools in the facilitation of combined professional development and research sessions: The case of community college trigonometry instructors. Paper presented at the 15th Annual Conference on Research on Undergraduate Mathematics Education, Portland, Oregon.

Herbst, P. and Dimmel, J.* (2011, April). *Teaching geometry through problems and its demands of knowledge management*. Paper presented at the 2011 Annual Meeting of the American Educational Research Association. New Orleans, LA.

Herbst, P. (2011, April). *Categories of perception and categories of appreciation: An operationalization of those constructs for the study of teacher study group discourse using ideas from systemic functional linguistics*. Paper presented at the 2011 Research Pre-session of the Annual Meeting of the National Council of Teachers of Mathematics. Indianapolis, IN.

Herbst, P. (2010, April). *What practical rationality is*. Paper presented at the Research Pre-session of the Annual Meeting of the NCTM. San Diego, CA.

Mesa, V., & Herbst, P. (2011, February). *Using animations of teaching to probe the didactical contract in community college mathematics*. Paper presented at the 14th Annual Conference on Research on Undergraduate Mathematics Education, Portland, Oregon.

González, G.* and Herbst, P. (2010, May). *On proving relationships between possible facts: What do geometry teacher consider as valuable?* Paper presented at the 2010 Annual Meeting of AERA, Denver, CO.

Weiss, M.* and Herbst, P. (2010, May). *Geometry teachers' mathematical sensibility: The role of Theory-Building and Problem-Solving in the secondary Geometry course*. Paper presented at the 2010 Annual Meeting of AERA, Denver, CO.

Chieu, V.M, Weiss, M.*, and Herbst, P. (2009, April). *A pilot study toward building web-based interactive rich-media virtual settings for teacher preparation and development*. Paper presented at the Annual Meeting of AERA, San Diego, CA.

Mehrotra, M.* and Herbst, P. (2009, April). *How and why geometry teachers respond to students' errors*. Paper presented at the Annual Meeting of AERA, San Diego, CA.

Miyakawa, T.^ & Herbst, P. (2008, July). *Why some theorems are not proven in geometry class: dispositions and constraints*. Presented at TSG 18, ICME 11, Mexico.

González, G.* & Herbst, P. (2008, March). *Students' geometry toolbox: How do teachers manage students' prior knowledge when teaching with problems?* Paper presented at the American Educational Research Association annual meeting in New York City, New York.

González, G.* & Herbst, P. (2008, March). *How teachers of geometry use diagrams as repository of the collective memory of a class*. Paper presented at the American Educational Research Association annual meeting in New York City, New York.

Aaron, W.* and Herbst, P. (2007, April). *The Use of Animated Sketches in Constructing Narratives of Geometry Teaching*. Paper presented at the annual meeting of AERA. Chicago.

Chae, J.^, González, G.*, and Herbst, P. (2007, April). *Considering Alternatives in Teaching Geometry: What Expert Teachers Reported Learning about their Practice*. Paper presented at the annual meeting of AERA. Chicago.

González, G.* and Herbst, P. (2007, April). *Mathematical tasks and the collective memory: The work of the teacher*. Paper presented at the annual meeting of AERA. Chicago.

González, G.* and Herbst, P. (2007, April). *Revealing Students' Conceptions of Congruency through the Use of Dynamic Geometry: Affordances and Constraints of Artifacts in a Geometry Class*. Paper presented at the annual meeting of AERA. Chicago.

Herbst, P. and Nachlieli, T.^ (2007, April). *Studying the practical rationality of mathematics teaching: What goes into "installing" a theorem in geometry?* Paper presented at the annual meeting of AERA. Chicago.

Weiss, M.* and Herbst, P. (2007, April). *"Every single little proof they do, you could call it a theorem": Translation between abstract concepts and concrete objects in the Geometry classroom*. Paper presented at the annual meeting of AERA. Chicago.

Nachlieli, T.^, González, G.*, and Herbst, P. (2006, April). *What do they call the episode? - Teachers' casting of an episode in which students engage in proving*. Annual Meeting of AERA, San Francisco.

Weiss, M.*, Chen, C.*, and Herbst, P. (2006, April). *Teachers' Perspectives on Mathematical Proof and the Two-Column Form*. Annual Meeting of AERA, San Francisco.

Chen, C.* and Herbst, P. (2005, August). *The descriptive mode of interaction with diagrams in proving triangles congruent*. Paper presented at the 3rd East Asia Research Conference in Mathematics Education.

Herbst, P. (2004, September). *Conceptualizing and proving*. Paper presented at the Proof Collaborative Conference. September 16, Providence, Rhode Island.

Gonzalez, G.* and Herbst, P. (2004). *Competing Discourses That Define The Geometry Course: What Was New In The Twentieth Century?* Paper presented at the Working Group on Geometry, 10th International Conference in Mathematics Education, Copenhagen, Denmark.

Herbst, P. and Brach, C.* (2004). *Proving and proof in high school geometry: What is 'it' that is going on for students and how do they make sense of it?* Paper presented at the Annual Meeting of the American Educational Research Association. San Diego, CA.

Silver, E. and Herbst, P. (2004). *'Theory' in mathematics education scholarship*. Paper presented at the Research Pre-session of the 2004 Annual Meeting of the National Council of Teachers of Mathematics.

Herbst, P. (2003, April). *Triangles of Equal Area as a Proof Generated Concept*. Paper presented at the Research Pre-session of the 81st Annual Meeting of the National Council of Teachers of Mathematics, San Antonio, TX.

Herbst, P. (2002, April). *Using tasks to develop new knowledge in a geometry classroom: Tensions that underlie the work of the teacher*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans.

Herbst, P. (2001, April). *Managing the production of arguments about area—The work of the teacher*. Paper presented at the Annual Meeting of the American Educational Research Association, Seattle.

Herbst, P. and Wall, E.* (2000, April). *Mathematics teaching as work: The use of metaphors in conceptualizing mathematics teaching as an object of study*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans.

Herbst, P. (1999, August). *Prouver et enseigner la démonstration dans la classe de mathématiques aux Etats-Unis*. [Proving and teaching proof in school mathematics in the United States]. Paper presented at the 10th Summer School in Didactique of Mathematics, Houlgate, France. Available at the repository of the *International Newsletter on the Teaching and Learning of Mathematical Proof* (November 2000, <http://www-didactique.imag.fr/preuve/>)

Herbst, P. (1999, April). *What Do the Practices Associated With Two-Column Proofs Say About the Possibilities of Argumentation?—The role of the teacher*. Paper presented at the Annual Meeting of the American Educational Research Association, Montreal. Available at the repository of the *International Newsletter on the Teaching and Learning of Mathematical Proof*.

Papers In Press

Herbst, P. (in press). *Afterword: Where can research on the teaching and learning of proof go now?* In N. Balacheff, *Mathematical argumentation: A key step on the path to learning mathematical proof*. Springer

Herbst, P., Jeon, S.*, & Brown, A. (in press). Noticing the serviceability of student work in a simulation of problem-centered instruction. Oral communication for the 49th conference of the International Group for the Psychology of Mathematics Education. Helsinki, Finland.

Herbst, P., Prediger, S., Abrahamson, D., Chazan, D., Izsak, A., Lensing, F., Mesa, V., Nathan, M., and Schwarts, G. (in press). What is mathematics-specific when we build knowledge in mathematics education research? Research forum to be presented at the 49th conference of the International Group for the Psychology of Mathematics Education. Helsinki, Finland.

Chazan, D. & Herbst, P. (in press). Illustrating the importance of designing semiotic infrastructures for mathematics teaching and mathematics teacher education. Plenary paper submitted to the 15th International Conference on Mathematical Education (ICME-15), Sydney, Australia.

Software

Herbst, P., Lavu, S., & Ko, I. (2023, December). **GRIP Database**. Database application.

Herbst, P., Chazan, D., & Lavu, S. (2020, November). **LessonDepict**. Web-based collaborative software tool for the creation of storyboards and storyboard maps. Disclosed to the Office of Technology Transfer, University of Michigan. www.lessondepict.org

Herbst, P., Chazan, D., & Lavu, S. (2019, March). **Anotemos**. Web-based collaborative software tool for the annotation of video. Disclosed to the Office of Technology Transfer, University of Michigan. www.anotemos.com

Presentations

Invited Talks

Herbst, P. (2025, July). A descriptive theory of mathematics teaching: What can the theory of practical rationality say about the improvement of instruction? Plenary talk at the 9th EARCOME (East Asia Research Conference in Mathematics Education), Seoul, Korea.

Herbst, P. (2025, July). Brousseau's actual and possible influence on anglophone research in mathematics education. Plenary talk at the Colloque Brousseau, Bordeaux, France.

Herbst, P. (2025, March). Collaboration or change: Finding a sustainable stride. Closing plenary at the annual meeting of the Conversations among Colleagues conference of the Michigan Association of Mathematics Teacher Educators. Kalamazoo, MI.

Herbst, P. (2024, November). Una teoría descriptiva de la enseñanza de las matemáticas: ¿Qué puede decir sobre el mejoramiento de la instrucción en matemáticas?[A descriptive theory of mathematics teaching: What can it say about improving mathematics instruction] Plenary lecture at the XI Taller internacional Tendencias en la Educación Matemática basada en la investigación (TEMBI 11). Puebla, Mexico.

Herbst, P. (2024, April). Research on teaching knowledge in geometry: The case of proof in the United States. Plenary lecture at ICMI Study 26, Advances in geometry teaching and learning. Reims, France.

Herbst, P. (2023, July). Géneros y registros en la escritura científica en educación matemática [Genres and registers in scholarly writing in mathematics education]. Plenary talk at the Summer School for researchers organized by the SPIEM (Portuguese Society for Research in

Mathematics Education) and SEIEM (Spanish Society for Research in Mathematics Education). Bragança, Portugal.

Herbst, P. (2022, September). La racionalidad práctica y el conocimiento matemático de los enseñantes. Plenary talk at the X EDIMAT conference. Universidad de San Martín, Buenos Aires, Argentina.

Herbst, P. (2021, October). Las lecciones como contenedores del conocimiento matemático de los enseñantes [Lessons as containers of teachers' mathematical knowledge]. Plenary at the Segundas Jornadas de Práctica Profesional Docente en Profesorados Universitarios en Matemática. Rosario, Argentina.

Herbst, P. (2019, December). How can we account for the decisions mathematics teachers make in instruction? Plenary at the Korean Society for Mathematics Education Conference, Ajou University, Korea.

Herbst, P. (2018, February). On mathematics textbook writing as storytelling. Invited response to plenary talk by Scott Baldrige. Research Council on Mathematics Learning Conference, Baton Rouge, LA.

Herbst, P. (2017, November). A modeling approach in the teaching of secondary geometry: What difficulties does it present to the teacher? Invited talk at the Problem Solving in Patagonia Conference, University of Magallanes, Punta Arenas, Chile.

Herbst, P. (2017, June). A modeling approach in the teaching of secondary geometry: What difficulties does it present to the teacher? Invited talk at the First International Week, University of Vechta, Germany.

Herbst, P. (2016, July). How Theory-Building Research on Instruction can Support Instructional Improvement: Toward a Modeling Perspective in Secondary Geometry. Keynote address at the 39th conference of the Mathematics Education Research Group of Australasia, Adelaide, Australia. (Available in ERIC ED572403)

Herbst, P. (2015, September). Teorías y métodos para la investigación de la racionalidad de la práctica en la enseñanza de las matemáticas. Plenary at the 3rd International doctoral colloquium in mathematics education. Mexico City, CINVESTAV.

Herbst, P. (2014, May). Scenario-based assessments and the Standards for Mathematical Practice. Invited talk at the Annual Meeting of the Michigan Section of the Mathematical Association of America and AMATYC. Flint, Michigan.

Herbst, P. (2013, January). Thought Experiments on Mathematics Teaching: How animated cartoons can help broker conversations about practice. Weizmann Institute of Science, Rehovot, Israel.

Herbst, P. (2013, April). The many functions of proof in high school mathematics. Invited presentation at the Research on Proof Strand, Annual Meeting of the National Council of Teachers of Mathematics (NCTM), Denver, CO.

Herbst, P. (2010, October). Practical rationality and the justification of actions in mathematics teaching. Invited plenary talk at the Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Columbus, Ohio.

Herbst, P. (2010, February). Researching the practical rationality of mathematics teaching. Invited plenary lecture at the Annual Meeting of the Special Interest Group of the

Mathematical Association of America on Research in Undergraduate Mathematics Education (RUME). Raleigh, NC.

Herbst, P. (2009, March). What “doing mathematics” could look like in high school. Invited plenary lecture. Conversations among Colleagues conference, Dearborn, MI.

Assude, T., Boero, P., Herbst, P., Lerman, S., and Radford, L. (2008, July). *The Notions and Roles of Theory in Mathematics Education Research*. Invited survey team presentation at the ICME 11th, Monterrey, Mexico.

Herbst, P. (2007, November). *The Roles of Theory in Mathematics Education Scholarship: How We Make Use of and Build Theory*. Invited plenary at the conference "Justification of findings in mathematics and science education research, with particular regard to the role of theory in such justification" organized by the National Danish Graduate School of Mathematics and Science Education (NADIFO) and the Nordic Graduate School of Mathematics Education (NoGSME). Nyborg, Denmark.

Herbst, P. and Chazan, D. (2006, March). Active Representations of Mathematics and Its Teaching. Invited plenary talk. Conversations among Colleagues conference, Ann Arbor, MI.

Herbst, P. (2004, July) *Proof, proving, and the work of teachers and students in classrooms*. Invited regular talk. 10th International Conference in Mathematics Education, Copenhagen, Denmark.

I've given invited colloquia at University of East Anglia (UK), Ludwig Maximilians University Munich (Germany), TU Dortmund University (Germany), Humboldt University of Berlin (Germany), Katholieke University of Leuven (Belgium), Indiana University, Université de Paris Sorbonne (France), East China Normal University (China), Instituto Pedagógico Nacional (Mexico), Universidad Nacional del Nordeste (Argentina), Syracuse University, Mofet Institute (Tel Aviv, Israel), Universidad Antonio Nariño (Bogotá, Colombia), University of Arizona, Arizona State University, Boston College, Texas State University, University of Bremen (Germany), University of Delaware, Educational Development Center (EDC), University of Georgia, University Joseph Fourier (Grenoble I, France), University of Haifa (Israel), University of Maryland, University of Michigan, Michigan State University, Portland State University, Sun-Yat Sen University (Taiwan), University of Utah, Virginia Technological University, Western Michigan University.

Selected other presentations (listed only those not listed as papers)

Herbst, P. & Ko, I. (2019, April). Reconsidering the Organization of Mathematical Knowledge for Teaching. Paper presented at the *Annual Meeting of the American Educational Research Association*, Toronto, Canada.

Herbst, P., Boileau, N., and Ko, I. (2017, April). Understanding the Rationality of Mathematics Teaching Using Multimedia Questionnaires: The ThEMaT Online study. Presentation at the Research conference of the National Council of Teachers of Mathematics (NCTM), San Antonio, TX.

Herbst, P. (2014, April). Practical rationality and beliefs. Symposium presentation at the Research Conference of the National Council of Teachers of Mathematics (NCTM), New Orleans, LA.

Herbst, P., Chazan, D., Aaron, W., Buchbinder, O., Dimmel, J., Erickson, A., and Kosko, K. (2013, April). Methods to study decisions in mathematics teaching. Symposium presentation at the Research Pre-session of the Annual Meeting of the National Council of Teachers of Mathematics (NCTM), Denver, CO.

Herbst, P. (2013, April). Depicting classroom scenarios to facilitate discussions about mathematical practice and its Standards. Presentation at the Annual Meeting of the National Council of Supervisors of Mathematics (NCSM), Denver, CO.

Herbst, P., Aaron, W., Chieu, V.M., and Moore-Russo, D. (2013, January). A Software Tool for Authoring Online Experiences in Mathematics Teacher Development. Presentation at the annual meeting of AMTE (Association of Mathematics Teacher Educators), Orlando, FL.

Cirillo, M. and Herbst, P. (2013, January). The role of rigor in mathematical proof. Presentation at the annual meeting of AMTE (Association of Mathematics Teacher Educators), Orlando, FL.

Herbst, P. and Chieu, V. M. (2012, July). *LessonSketch*: An online, practice-based environment for teacher development. Presentation at the SLOAN-C/MERLOT conference, July 27, Las Vegas, NV.

Herbst, P., Chazan, D., and Aaron, W. (2012, July). Using stories of *learning* and *teaching* in practice-based teacher education: The affordances of *LessonSketch*. Presentation at the conference Connecting Advances in Learning Research and Teacher Practice: A Conference about Teacher Education. Teachers' College, Columbia University, NYC, July 18.

Herbst, P. (2012, April). How do high school teachers relate to alterations in the practice of “doing proofs” in geometry? Presentation at a symposium organized by Michelle Cirillo at the NCTM Research Pre-session, Philadelphia, PA.

Herbst, P. (2012, April). Design Considerations for Representations of Teaching: The ThEMaT II Multimedia Surveys. Presentation at a symposium organized by Gloriana Gonzalez at the NCTM Research Pre-session, Philadelphia, PA.

Herbst, P. (2012, April). *LessonSketch*: An online, practice-based environment for learning to teach mathematics. Presentation at the Annual Meeting of NCTM, Philadelphia, PA.

Herbst, P. (2012, March). Animations and comics as representations of mathematical practice. Presentation at the Critical Issues in Mathematics Education 2012: Teacher education in view of the Common Core. Mathematical Sciences Research Institute (MSRI), Berkeley, CA.

Crespo, S., Aaron, W., Herbst, P., and Moore-Russo, D. (2012, February). Designing Practice-Based Mathematics Teacher Education Using Virtual and Interactive Technologies. Association of Mathematics Teacher Educators, Fort Worth, TX.

Herbst, P. (2011, April). Using an “impossible” construction problem to teach a geometric theorem. Presentation at the Annual Meeting of NCTM, Indianapolis, IN.

Herbst, P. (2011, April). Some Features of *LessonSketch* and How It Can Be Used with Preservice Teachers. Presentation at a symposium. NCTM Research Pre-session, Indianapolis, IN.

Herbst, P. and Chazan, D. (2011, March). Practical Rationality and its relationship with Mathematical Knowledge for Teaching. Presentation at a Conference in the Institute of Mathematics and Education, Tucson, AZ.

Herbst, P., Aaron, W., Chieu, V. M., Dimmel, J., Erickson, A., Kosko, K., and Rougee, A. (2011, February). Learning about the Work of Doing Mathematics from Geometric Problem Solving. Presentation at the Mathematics in Action – Conversations among Colleagues Joint Conference. Grand Valley State University.

Herbst, P. (2010, May). Representations of teaching and their roles in teacher education. Presentation on the occasion of receiving the Pattishall Award. School of Education, University of Michigan.

Herbst, P., Ball, D., Chazan, D., and Philipp, R. (2010, April). Practical rationality and mathematical knowledge for teaching. Symposium organized at the NCTM Research Presession, San Diego, CA.

Herbst, P. (2010, January). Assessing teacher thinking using online experiences with rich media. Presentation at a symposium. Association of Mathematics Teacher Educators, Irvine, CA.

Herbst, P. (2009, October). The many functions of proof in classroom mathematics. Invited address. Sun-Yat-Sen University, Kaohsiung, Taiwan.

Herbst, P. (2009, October). Researching the practical rationality of mathematics teaching. Invited address. Sun-Yat-Sen University, Kaohsiung, Taiwan.

Herbst, P., Aaron, W., González, G., & Weiss, M. (2009, April). Studying teachers' rationality using representations of teaching. Paper presented at the NCTM Research Presession, Washington, DC.

Herbst, P. (2009, April). Animations of classroom episodes: Visualizing opportunities to engage a class in proving. Presentation at the Annual Meeting of the National Council of Teachers of Mathematics, Washington, DC.

Herbst, P. (2008, October). Representations of teaching and their role in teacher learning. Presentation at the CKC Workshop, Laboratoire LIG, Grenoble, France.

Herbst, P. with T. Nachlieli and T. Miyakawa (2008, April). What a teacher needs to do to “install” a theorem: A study of practical rationality. Presentation at the NCTM Research Presession, Salt Lake City, UT.

Herbst, P., Chazan, D., and Nachlieli, T. (2007, April). *Toward an Experimental Paradigm for the Study of Mathematics Teaching: The Case of “Installing a Theorem.”* Presented at a symposium at the annual meeting of AERA, Chicago.

Herbst, P., Hsu, H., Chen, C., González, G., and Jeppsen, A. (2007, April). Conceptions of *figure* in high school geometry instruction. Poster presented at the annual meeting of AERA, Chicago.

Herbst, P., Chazan, D., González, G., Weiss, M., Sandow, D., Nachlieli, T., Lueke, M., & Aaron, W. (2006, April). Creating and using representations of instruction to probe hypotheses. Presented at the NCTM Research Presession, St. Louis, MO.

Herbst, P. (2006, April). Managing the transaction between work and learning in the mathematics classroom. Intervention in a symposium on classroom management. Annual Meeting of AERA, San Francisco.

Herbst, P. (2005, April). *What can didactique offer to a teacher?* Intervention in the Symposium in honor of Guy Brousseau, ICMI Klein Medalist, at the NCTM Annual Meeting, Anaheim, CA.

Herbst, P. (2004). *A discussion of the papers by Fang, Izsák et al., Langrall et al., and Le et al. Session 25.045*, Division K. 2004 Annual Meeting of the American Educational Research Association. San Diego, CA.

Herbst, P. (2003, April). *Conceptualizing and Proving in Mathematics Classrooms*. A 150-minute symposium organized by Herbst at the Research Pre-session to the Annual Meeting of the National Council of Teachers of Mathematics in San Antonio, TX.

Herbst, P. (2003, April). Invited intervention as recent author in the session titled “Publishing In The Journal For Research In Mathematics Education” organized by the Editorial Panel of the Journal. Research Pre-session to the Annual Meeting of the National Council of Teachers of Mathematics in San Antonio, TX.

Herbst, P. (2002, May). Relating the Schism between “Doing Proofs” and “Coming to Know” to Teachers’ Practical Reason. Poster presented at the NSF-REC Principal Investigator Annual Meeting, Arlington, VA.

Herbst, P. (2002, April). Didactique of Mathematics and mathematics education: Connecting two research traditions as we discuss Brousseau’s Theory of Didactical Situations. Organizer of and presenter in this discussion group at the Research Presession for the NCTM 80th Annual Meeting. Las Vegas, NV.

Herbst, P. & Macke, M. (2001, September). Dilemmas and Tensions in Collaborative Classroom Research. Poster presented at the NCTM Conference on Practitioner Research in Mathematics Education, Albuquerque, NM.

Herbst, P. (1999, August) Le future de la recherche sur la preuve. Participation in a round table. *Xème Ecole d’Été de Didactique des Mathématiques*, Houlgate, France.

Herbst, P. (1999, April). Fostering argumentation in the mathematics class. Organizer of and presenter in this symposium at the Annual Meeting of the American Educational Research Association, Montreal.

Funded Research and Development Projects

Principal investigator in Measuring mathematics teachers’ recognition of their professional obligations and their use in justifying ambitious and equitable instruction. Funded jointly by the office of the vice-president for research at the University of Michigan and the Marsal School of Education. (2026-2027) \$105,964

Co-principal investigator in “Examining an On-line, International Exchange Professional Development Program for High School Teachers” (P.I. Amanda M. Brown). Funded by the National Science Foundation, Directorate of Education and Human Resources (EHR), Division of Research on Learning (DRK12 program), DRL 2201087, 2022-2027, \$2,651,320.

Principal investigator in “Managing students’ contributions to mathematical work in whole class discussions in high school: How do teachers decide what to do?” Funded by the James S. Mc Donnell Foundation, AWD No. 220020524, 2018-2024, \$2,065,318.

Principal investigator in “GeT Support: An online professional learning community to support the geometry course for teachers.” Funded by the National Science Foundation, Directorate of Education and Human Resources (EHR), Division of Undergraduate Education (IUSE Program) DUE- 1725837, \$2,299,865, 2017-2024.

Principal investigator in “Embracing Mathematics, Assessment & Technology in High Schools through LessonSketch StoryCircles” contract with Macomb Intermediate School District, funded by the State of Michigan and the US Department of Education Math and Science Partnership Program for a grand total of \$370,800. APR # MI50804, 2015-2017

Principal investigator in “LessonSketch Online Modules for Implementing the Common Core Standards for Mathematical Practice” contracts with the districts of Gaylord, Dearborn, East Detroit, Orchard View, Charlotte, and Woodhaven for a grand total of \$23,840 funded by Michigan Department of Education. 2015-2016

Principal investigator in “SIMTEACH: What Can Practical Knowledge Modeled in a Teaching Simulator Contribute to Support Mathematics Teacher Learning?” Funded by the National Science Foundation, EHR, DRL-1420102, \$ 515,755. 2014-2018.

Co-principal investigator in "Developing Rich Media-based Materials for Practice-based Teacher Education" (P. I., D. Chazan). Funded by the National Science Foundation, DRL-1316241, \$2,650,526. Michigan Subcontract for \$1,146,373.00. 2013-2020.

Principal Investigator in Animation Production Agreement. Contract funded by NCTM to produce an animation, \$21,600. 2010-2011.

Principal Investigator in Supports for learning to manage classroom discussions: Exploring the role of practical rationality and mathematical knowledge for teaching. Funded by the National Science Foundation, DRL- 0918425, \$3,467,721, 2009-2018.

Principal Investigator in ThEMaT: Thought Experiments in Mathematics Teaching. Funded by the National Science Foundation, ESI-0353285, \$ 4,376,477, 2004-2011.

Principal Investigator in CAREER: Reasoning in high school geometry classrooms: Understanding the practical logic underlying the teacher’s work. Funded by the National Science Foundation, REC-0133619, \$561,893, 2002-2009.

Principal Investigator Reasoning and proving in high school geometry—A study of teaching. Funded by the Office of the Vice President for Research. The University of Michigan. \$ 6,851. 2000-2001.

Service to the profession

International

Convenor of a working group on basic research in mathematics education. May 2025 and continuing.

Participant in Oxford-style debate on requiring that articles submitted to journals in mathematics education be required to address the UN position on sustainability. Argued for the negative. PME 46 conference, Haifa, Israel.

Chair, Topic Study Group on research on secondary mathematics instruction. ICME 14, Shanghai, China, 2020. Resigned after firming up the program due to schedule conflicts when the conference was rescheduled.

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Curriculum evaluator, Ministry of Education of Colombia 2013-2014

Chair, Topic Study Group on the teaching and learning of geometry at the secondary level.
ICME 13, Hamburg, Germany 2016

Member, Survey Team on Theory, ICME 12, Monterrey, Mexico 2012

University and School

MA in Educational Studies, admissions committee 2024-2026

Faculty Senate Communications Advisory Committee, 2023-2026

Ph.D. Steering Committee, Educational Studies, 2023-2025

Member of the Board of Directors of PLUMA (Professional Latinos of the University of Michigan), 2023-

Member, Search Committee on Applied Linguistics, 2022-2023

Educational Studies Program Chair, 2015-2018

Director of the GRIP Lab, School of Education, University of Michigan, 2001-present

Principal, ScenarioSketch Team, Michigan I-CORPS 2013

Member, Graduate Affairs Committee 2013-2015

Member, Research Advisory Committee, 2008-2013

Member, Promotion and Tenure Committee, 2014-2015, 2010-2012

Lead Faculty for Secondary Mathematics, Teacher Education Program, University of Michigan, 1999-2015

Unit coordinator, EMST (Education in Mathematics, Science, and Technology), 2014-2015

Mathematics Education Search Committee Chair, 2014-2015

Member of the Mendez Commission on Information Technology

Local

Assistant Coach, MathCounts, Forsythe Middle School (2012-2014)

Head Coach, Math Counts, Forsythe Middle School (2006-2008)

Treasurer of the Board of Directors, Interfaith Hospitality Network at Alpha House, 2012-2014

Member of the Board of Directors, Interfaith Hospitality Network at Alpha House, 2011-2018

Reviewing and Editing

Editor in Chief, *Journal for Research in Mathematics Education*, 2019-2025

Member of the editorial team for GeT: The News! <https://www.gripumich.org/projects/get-a-pencil/>

Guest Editor, *Journal of Technology and Teacher Education*, 2018(1)

Guest Editor, *ZDM Mathematics Education*, 2011(1)

Guest Editor, Special Issue 29(1), 2009, on Methodologies for studying mathematics classrooms, *Recherches en Didactique des Mathématiques*

Program Chair, Division C Section 3 (Mathematics), 2009 AERA Annual Meeting, San Diego.

Strand Leader Geometry, *PMENA 2012*, *PMENA 2013*, *PMENA 2018* conferences

Editorial Board Member, 2017-present, *Revista de Educación Matemática*, Argentina

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Editorial Board Member, 2015-2018, *Journal for Research in Mathematics Education*

Editorial Board Member, 2006-2019, 2025-present, *Educational Studies in Mathematics*.

Editorial Board Member, 2003-present. *Recherches en Didactique des Mathématiques*.

Editorial Board Member, 2001-present. *Journal of Mathematics Teacher Education*.

Editorial Board Member, 2004-present. *International Newsletter on the Teaching and Learning of Mathematical Proof*.

Associate Editor of the *International Newsletter on the Teaching and Learning of Mathematical Proof*. 2000-2004.

Reviewer for grants submitted to the Spencer Foundation, National Science Foundation's Directorate of Education and Human Resources, the Social Sciences and Humanities Research Council of Canada, the Israel Science Foundation (ISF), and the National Research Foundation of South Africa.

Reviewer of grant proposals submitted to the Provost office, University of Michigan.

Reviewer of reappointment and promotion and tenure dossiers for higher education institutions. Various years and several institutions in the US, South Africa, Israel, and Lebanon.

Member of the National Selection Committee for the Presidential Award for Excellence in Mathematics and Science Teaching.

Reviewer for scholarly journals: Educational Assessment, Journal for Research in Mathematics Education, Cognition and Instruction, Journal of Mathematics Teacher Education, Educational Review, Recherches en Didactique des Mathématiques, Educational Psychologist, Educational Studies in Mathematics, American Educational Research Journal, For the Learning of Mathematics, Research in Collegiate Mathematics Education, Journal of the Learning Sciences, Zentralblatt für Didaktik der Mathematik (ZDM), Review of Educational Research, Mathematical Thinking and Learning, Yupana (Argentina), Revista Latinoamericana de Matemática Educativa (RELIME, México), Journal of Mathematical Behavior, Journal of Teacher Education, Learning and Individual Differences, Journal of Educational Psychology, Revista de Educación Matemática (Argentina), Asian Journal of Mathematics Education.

Reviewer for annual meetings of AERA (Divisions C, K, and SIG/RME), PME, and PMENA, multiple years, since 1998. Member of the Editorial Board of Division C3 (2008-2010).

Translator of many articles into Castilian for their publication in the online Newsletter on Proof (<http://www-cabri.imag.fr/Preuve/>).

Offices in professional organizations

SIG/RME (Special Interest Group on Research in Mathematics Education), Steering committee member, 2003-2005

Workforce Education Initiative, Chair. School of Education, University of Michigan. 2018-2019

Membership in professional organizations

American Educational Research Association (AERA), Division C (Learning and Instruction), Division J (Education in the Professions), and SIG-RME (Special Interest Group for Research in Mathematics Education)

National Council of Teachers of Mathematics (NCTM)

Michigan Council of Teachers of Mathematics (MCTM)

International Group for the Psychology of Mathematics Education (PME) and North American Chapter (PME-NA)

Association of Mathematics Teacher Educators (AMTE) and Michigan Chapter (MI-AMTE)

Association pour la Recherche en Didactique des Mathématiques, France (ARDM)

PDK (Phi Delta Kappa)

Mathematical Association of America (MAA) and SIGMAA-RUME

American Mathematical Society (AMS)

Heterodox Academy (HxA) and Michigan Chapter

Mentoring and advising

Postdoctoral fellows

Ruya Savuran (postdoctoral mentee, 2023-2025, currently at Florida Atlantic University)

Gil Schwartz (postdoctoral mentee, 2022-2024, currently at Weizmann Institute of Science, Israel)

Carolyn Hetrick (postdoctoral mentee, 2021-2023, currently at Seattle Public Schools)

Nicolas Boileau (postdoctoral mentee, 2021-2021, currently at the Thinkwell Foundation)

Irma Stevens (postdoctoral mentee, 2019-2022, currently at University of Rhode Island)

Inah Ko (postdoctoral mentee, 2019-2022, currently at University of Michigan Medical School)

Enes Akbuga (postdoctoral mentee, 2018-2019, left academia)

Ander Erickson (postdoctoral mentee, 2014-2016, currently at University of Washington Tacoma)

Justin Dimmel (postdoctoral mentee, 2014-2015, currently at University of Maine)

Amanda Milewski (postdoctoral mentee 2013-2015, currently at University of Michigan)

Yung-Chi (Jack) Lin (postdoctoral mentee, 2012-2013, currently at National Chiayi University, Taiwan)

Wendy Aaron (postdoctoral mentee, 2011-2012, currently at Lane Community College, Oregon)

Karl Kosko (postdoctoral mentee, 2010-2012, currently at Kent State University)

Takeshi Miyakawa (postdoctoral mentee, 2006-2009, currently at Waseda University, Japan)

Vu Minh Chieu (postdoctoral mentee, 2006-2009, currently at Oracle)

Talli Nachlieli (postdoctoral mentee, 2004-2006, currently at Levinski College, Israel)

Jeong-lim Chae (postdoctoral mentee, 2005-2006, currently at Sonoma State University)

Doctoral students (completed)

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Saba Gerami (member of doctoral committee, defended May 2024, currently an assistant professor of mathematics at California Polytechnic San Luis Obispo)

Nicolas Boileau (advisor and dissertation chair, defended December 2020, currently a researcher at Thinkwell Research & Strategy)

Mollee Shultz (advisor and dissertation chair, defended April 2020, now Director of Data and Impact at Puget Sound Education Service District, Washington)

Inah Ko (advisor and dissertation chair, defended April 2019, now Research Scientist at University of Michigan Medical School)

Kristi Hanby (advisor and dissertation chair, defended December 2017, currently a Consultant at Wayne RESA)

Justin Dimmel (advisor and dissertation chair, defended December 2014, currently an associate professor at University of Maine)

Ander Erickson (advisor and dissertation chair, defended December 2014, currently an associate professor at University of Washington Tacoma)

Elaine Lande (member of dissertation committee, defended December 2014, currently a Lecturer at University of Michigan's Comprehensive Studies Program)

Chialing Chen (advisor and dissertation chair, defended December 2011)

Wendy Aaron (advisor and dissertation chair, defended November 2010, currently a mathematics instructor at Lane Community College, Oregon)

Hui-Yu (Angela) Hsu (member dissertation committee, defended July 2010, currently a professor in National Tsing Hua University, Taiwan)

Michael Weiss (dissertation chair, defended June 2009, currently a lecturer at University of Michigan Department of Mathematics)

Mark Hoover (member dissertation committee, defended April 2009, currently a research scientist at the University of Michigan School of Education)

Gloriana González (advisor and dissertation chair, defended December 2008, currently a professor at University of Illinois at Urbana-Champaign)

Hala Ghousseini (member dissertation committee, defended December 2007, currently a professor at University of Wisconsin-Madison)

Maria Lizzette Hamlin (co-chair, defended May 2006, left academia)

Babette Marie Benken (member doctoral committee, defended October 2004, currently a professor at California State University Long Beach)

Doctoral students (current)

Qiuyu Chen (advisor, pre-candidate)

Soobin Jeon (advisor, candidate)

Doctoral advisees (former)

The following students were advisees whom I mentored and coauthored with, though they did not finish their studies under my direction: Michael Ion (graduated), Emanuele Bardelli

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(graduated), Scott Bridges (left program before candidacy), Umut Gürsel (left program before candidacy), Annick Rougee (graduated), Rachel Snyder (graduated), Manu Mehrotra (left program before candidacy), Catherine Brach (left program).

Master students (interns)

Umut Gürsel (2017)

Liangke Yang (2018)

Jinxhi Zhou (2019)

Matt Park (2019)

Annie Zhou (2025-2026)

Undergraduate students (UROP and independent studies)

Xinzhu Chen (2013-2014)

Maranda Discenna (2013-2015)

Corin Cooney (2015-2016)

Steven Katofiasc (2015-2016)

Keith Chung (2015-2016)

Yasmine Abushukur (2015-2016)

Daniel Thompson (2016-2017)

Lawrence Teng (2016-2017)

Jason Vande Velde (2017-2018)

Kirsten Birman (2018-2019)

Andrew Spiteri (2020-2022)

Michael Green (2020-2021)

Megha Bairwal (2021-2024)

Rashmi Nair (2021-2022)

André Quimper-Osores (2022-2023)

Amirali Danae (2022-2023)

Adia Lee (2023-2024)

Tingyi Xiao (2025-2026)

Doctoral Education Roles in other Universities

Doctoral committee member for Margarita Curiel Neri (Advisor: Claudia Acuña; CINVESTAV-IPN, México, defended April 2019)

Member of the doctoral faculty for the Doctorate in Science Education, University of Córdoba, Argentina (current).

Committee member in the doctoral dissertation by Arnon Avitzur (Advisor: Martin Simon; New York University, discontinued)

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External evaluator of the doctoral dissertation by Ana Lage Ramírez (Advisor: Patrick Thompson; Arizona State University, defended August 2010).

External evaluator of the doctoral dissertation by Leong Yew Hoong (Advisor: Helen Chick; University of Melbourne, Australia, defended June 2008)

Opponent (external critic and defense examiner) in the dissertation by Johan Prytz (Advisor: Staffan Rodhe; University of Uppsala, Sweden, defended June 2007).

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