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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

- Educational Studies Program Chair, School of Education, University of Michigan, September 2015 to present.
- Professor of Education and Mathematics. University of Michigan. May 2013 to present.
- 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, 1990-1993.
- Mathematics Teacher (various secondary schools 8-12, 1987-1992)

Awards and Honors

- 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

Articles In Peer Reviewed Journals

Herbst, P. and Chazan, D. (2015). Using Multimedia Scenarios Delivered Online to Study Professional Knowledge Use in Practice. *International Journal of Research and Method in Education*, 38(3), 272-287

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.

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 (Open Access: <http://www.stemeducationjournal.com/content/2/1/10>)

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. DOI: 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

Weiss, M. and Herbst, P. (2015). Geometry teachers' mathematical sensibility: The role of Theory-Building and Problem-Solving in the secondary Geometry course. *Educational Studies in Mathematics*. 89(2), 205-229

Herbst, P., Chieu, V., & Rougee, 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

Kosko, K., Rougee, 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

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.

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.

Herbst, P. & Chazan, D. (2012). On the instructional triangle and sources of justification for actions in mathematics teaching. *ZDM The International Journal of Mathematics Education*, 44(5), 601-612.

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.

Aaron, W. and Herbst, P. (2012). Instructional identities of geometry students. *Journal of Mathematical Behavior*, 31, 382– 400.

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.

Herbst, P. and Chazan, D. (2011). On creating and using representations of mathematics teaching in research and teacher development: Introduction to this issue. *ZDM—The International Journal of Mathematics Education* 43(1), 1–5.

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—The International Journal of Mathematics Education*, 43(1), 91–103.

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.

Chazan, D. and Herbst, P. (2012). Animations of Classroom Interaction: Expanding the Boundaries of Video Records of Practice. *Teachers' College Record*, 114(3)

Cirillo, M. and Herbst, P. (2012). Moving Toward More Authentic Proof Practices in Geometry. *The Mathematics Educator*, 21(2), 11-33.

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.

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.

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.

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—The International Journal of Mathematics Education*, 43(1), 105–117.

Mesa, V. and Herbst, P. (2011). Designing representations of trigonometry instruction to

study the rationality of community college teaching. *ZDM—The International Journal of Mathematics Education*, 43(1), 41–52

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.

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.

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.

Herbst, P. and Miyakawa, T. (2008). When, how, and why prove theorems: A methodology to study the perspective of geometry teachers. *ZDM - The International Journal on Mathematics Education*, 40(3), 469-486

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.

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.

Herbst, P. (2004). Interactions with Diagrams and the Making of Reasoned Conjectures in Geometry. *ZDM, Zentralblatt für Didaktik der Mathematik*, 36(5), 129-139.

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

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.

Herbst, P. (2002). Engaging students in proving: A double bind on the teacher. *Journal for Research in Mathematics Education*, 33, 176-203.

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.

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

Herbst, P. and Kilpatrick, J. (1999). Pour lire Brousseau. *For the Learning of Mathematics*, 19(1), 3-10.

Herbst, P. (1997). The number-line metaphor in the discourse of a textbook series. *For the Learning of Mathematics*, 17(3), 36-45.

Articles in Peer reviewed conference proceedings

Boileau, N. & Herbst, P. (2015, November). *Teachers' Expectation About Geometric Calculations in High School Geometry*. Paper to be presented at PME-NA, East Lansing, MI.

Dimmel, J. & Herbst, P. (2015, November). *Investigating secondary mathematics teachers' attitudes toward alternative communication practices while doing proofs in geometry*. Paper to be presented at PME-NA, East Lansing, MI.

Erickson, A. & Herbst, P. (2015, November). *What influences a teacher's willingness to create opportunities for discussion in a geometry classroom?* Paper to be presented at PME-NA, East Lansing, MI.

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 to be 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?* Paper to be presented at PME-NA, East Lansing, MI.

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 *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 P. Liljedahl, C. Nicol, 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. Proceedings of the 2014 Annual Meeting of the International Group for the Psychology of Mathematics Education. 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, University of Wisconsin, Madison, WI, 16-19 June (vol. 1, pp. 89-96).

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 *Proceedings of the 32th Annual Meeting of the International Group for the Psychology of Mathematics Education*. Morelia, Mexico.

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

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*. 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.

Herbst, P., Aaron, W., and 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.

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.

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.

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.

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.

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, and white papers

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.

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

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., Rougee, 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 teachers 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*.

Articles In Review and in Revision

Herbst, P., Chazan, D., Kosko, K., Dimmel, J. and Erickson, A. (in press, online first). Using multimedia questionnaires to study influences on the decisions mathematics teachers make in instructional situations. *ZDM-The international journal of mathematics education*. DOI 10.1007/s11858-015-0727-y

Chazan, D., Herbst, P., and Clark, L. (in press). *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.). AERA.

Chieu, V. M. and Herbst, P. (accepted pending revision). *A Study of the Quality of Entire Discussion Threads in Online Conversations about Mathematics Teaching*. In review at *Teaching and Teacher Education*.

Dimmel, J. and Herbst, P. (in review). *What details do teachers expect from students' proofs? A study of routines for checking proofs*. Submitted to *Journal of Research in Mathematics Education*.

Herbst, P., Chazan, D., Chieu, V. M., Milewski, A., Kosko, K., and Aaron, W. (in press). *Research on mathematics teacher development mediated by digital representations of practice*. In

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M. Niess, K. Hollebrands, & S. Driskell (Eds.), *Handbook of Research on Transforming Mathematics Teacher Education in the Digital Age*. IGI Global.

Herbst, P. and Chazan, D. (in edition). The role of theory development in increasing the subject specificity of research on mathematics teaching. In J. Cai (Ed.), *First Compendium for Research in Mathematics Education*.

Erickson, A. and Herbst, P. (in revision). Will teachers create opportunities for discussion when teaching proof in a geometry classroom? To be resubmitted to *International Journal of Mathematics and Science Education*.

Book in review

Herbst, P., Fujita, T., Halverscheid, S., and Weiss, M. (in preparation, book contract). *The teaching and learning of secondary school geometry*. Routledge.

Presentations

Invited Talks

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. (I was not present for the talk.)

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 Boston College, Educational Development Center (EDC), Michigan State University, Portland State University, Sun-Yat Sen University (Taiwan), University of Arizona, University of Georgia, University of Haifa (Israel), University of Maryland, University of Utah, Western Michigan University, University of Delaware, and University of Michigan.

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

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 Presession, 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 Presession, 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 Presession, 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 Pre-session, 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 Pre-session, 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 Pre-session 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 and presenter of this symposium at the Annual Meeting of the American Educational Research Association, Montreal.

Funded Research and Development Projects

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. 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. 2014-2017.

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, Michigan Subcontract for \$1,146,373.00. 2013-2017.

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, 2009-2015.

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

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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

National

Founder, Chief Executive, and Designer of the LessonSketch platform, www.lessonsketch.org

University and School

Educational Studies Program Chair, 2015-

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

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-present

Reviewing and Editing

Guest Editor, 2011(1) issue of *ZDM, The International Journal of Mathematics Education*

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* conferences

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

Editorial Board Member, 2006-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*.

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

Reviewer for grants submitted to the 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 reappointment and promotion and tenure dossiers for higher education institutions. Various years.

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

Reviewer for scholarly journals: *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*.

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

Membership in professional organizations

American Educational Research Association (AERA), Division C (Learning and Instruction), Division K (Teaching and Teacher Education), 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 pour la Recherche en Didactique des Mathématiques, France (ARDM)

PDK (Phi Delta Kappa)

MERLOT (Multimedia Educational Resource for Learning and Online Teaching)

Mentoring and advising

Postdoctoral fellows

Ander Erickson (postdoctoral mentee, 2014-present)

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

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Amanda Milewski (postdoctoral mentee 2013-present)

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

Wendy Aaron (postdoctoral mentee, 2011-2012, now at Oregon State University)

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

Takeshi Miyakawa (postdoctoral mentee, 2006-2009, now at Joetsu National University, Japan)

Vu Minh Chieu (postdoctoral mentee, 2006-2009, now Research Scientist at University of Michigan)

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

Jeong-lim Chae (postdoctoral mentee, 2005-2006, now at University of North Carolina Charlotte)

Doctoral students (completed)

Justin Dimmel (advisor and dissertation chair, defended December 2014, now at University of Maine)

Ander Erickson (advisor and dissertation chair, defended December 2014, now at University of Michigan)

Elaine Lande (member of dissertation committee, defended December 2014, now at University of Michigan)

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

Wendy Aaron (advisor and dissertation chair, defended November 2010, now at Oregon State University)

Hui-Yu (Angela) Hsu (member dissertation committee, defended July 2010, now an assistant professor in Taiwan)

Michael Weiss (dissertation chair, defended June 2009, now at Michigan State University)

Mark Hoover (member dissertation committee, defended April 2009, now at University of Michigan)

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

Hala Ghouseini (member dissertation committee, defended December 2007, now at University of Wisconsin-Madison)

Maria Lizzette Hamlin (co-chair, defended May 2006, now at University of Wisconsin-Milwaukee)

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

Doctoral students (current)

Kristi Hanby (advisor, candidate)

Inah Ko (advisor, precandidate)

P. Herbst – February 2016

Nicolas Boileau (advisor, precandidate)

Umut Gursel (advisor, precandidate)

Mollee Huisinga (advisor, precandidate)

Undergraduate students (UROP)

Xinzhu Chen (2013-2014)

Maranda Discenna (2013-2015)

Corin Cooney (2015-2016)

Steven Katofiasc (2015-2016)

Keith Chung (2015-2016)

Yasmine Abushukur (2015-2016)

Doctoral Education Roles in other Universities

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

Member of the doctoral faculty for the Doctorate in Science Education, University of Córdoba, Argentina

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

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

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

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

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