

VITA OF Joseph S. Krajcik, Director of the Institute for Collaborative Research for Educational Assessment and Teaching Environments for Science, Technology, Engineering and Mathematics (CREATE for STEM), College of Natural Science, University Distinguished Professor, Lappan-Phillips Professor of Science Education and the College of Education, Professor of Science Education, Michigan State University.

PERSONAL DATA

School Address College of Education
Michigan State University
East Lansing, Michigan
email: krajcik@msu.edu
website: <http://education.msu.edu/search/Formview.aspx?email=krajcik@msu.edu>
<http://create4stem.msu.edu>
twitter: @krajcikjoe

ACADEMIC BACKGROUND

Honorary Ph.D. University of Tartu, Estonia, December 2022
Ph.D. Science Education, The University of Iowa; August 1986.
M.S. Curriculum and Instruction, Science Education, University of Wisconsin-Milwaukee; December 1982.
B.A. Chemistry and Broad Field Natural Science Certification, University of Wisconsin-Milwaukee, 1976; Communication and Philosophy, University of Wisconsin-Milwaukee, 1973.

Certification and licenses:

- State of Wisconsin Permanent Teaching Certificates: Grades 9-12 License 600 Science (All); Grades 9-12 License 610 Chemistry.
- Open-Water Scuba Diver, Summer, 2004 (Belize Academy of Diving, PADI).
- Advanced Open-water Scuba Diver, Summer, 2006 (Belize Academy of Diving, PADI).

ACADEMIC EXPERIENCE

Sept. 2011 Director, Institute for Collaborative Research for Educational Assessment and Teaching Environment for Science, Technology, Engineering and Mathematics (CREATE for STEM), and Professor of Science Education, Michigan State University.

Sept. 2009 - 2010 Distinguished Professor, Ewha Womans University, Institute for Global Science, Society and Technology, Seoul, South Korea.

Sept. 2007 - 2011 Co-director, the IDEA Institute, University of Michigan.

2006 - 2011 Associate Dean for Research, School of Education, University of Michigan.

Jan. - July 2005 Weston Visiting Professor of Science Education, Weizmann Institute of Science, Israel.

Sept. 1998 - 2011 Professor, Educational Studies, School of Education, University of Michigan

1990 - 1994 Assistant Professor, Associate Professor, Educational Studies, School of Education, University of Michigan.

1986 -1989 Assistant Professor, Department of Curriculum and Instruction, College of Education, University of Maryland.

1983 - 1986 Instructor, Science Education, University of Iowa. Courses taught include: Science Methods II; Resources and Teaching Strategies; Introduction to Teaching; Computer Applications in Science Teaching. Also served as a Student Teacher Supervisor and Coordinator for Molecular Biology for the Secondary Science Training Program.

1976 - 1983 Marquette University High School, Milwaukee, Wisconsin. Science Teacher for Accelerated Chemistry, Chemistry and Physical Science; Science Club and Chess Club Moderator.

- 1981 - 1983 Marquette University Upward Bound Program, Milwaukee, Wisconsin. Science Teacher for Advanced Chemistry, Chemistry and Physics. Also involved in curriculum development for Accelerated Chemistry, Summers.
- 1979 - 1981 Milwaukee Area Technical College; Evening School; Milwaukee, WI. Instructor for High School Chemistry and General Science.
- 1974 - 1977 University of Wisconsin-Milwaukee, Department of Learning Skills, Milwaukee,
1976 University of Wisconsin-Milwaukee, Department of Learning Skills, Milwaukee, Wisconsin. Instructor for Mathematics workshop for high school graduates of Spanish descent, Summer.

PUBLICATIONS

Journal Publications (designates refereed manuscripts; + designates solicited manuscripts):*

- *Eidin, E., Bielik, T., Touitou, I., Bowers, J., McIntyre, C., Damelin, D., & Krajcik, J. (2023). Thinking in Terms of Change over Time: Opportunities and Challenges of Using System Dynamics Models. *Journal of Science Education and Technology*. <https://doi.org/10.1007/s10956-023-10047-y>
- *He, P., Chen, I.-C., Touitou, I., Bartz, K., Schneider, B., & Krajcik, J. (2023). Predicting student science achievement using post-unit assessment performances in a coherent high school chemistry project-based learning system. *Journal of Research in Science Teaching*, 60(4), 724-760. <https://doi.org/https://doi.org/10.1002/tea.21815>
- *Eidin, E., Bowers, J., Damelin, D., & Krajcik, J. (2023). The effect of using different computational system modeling approaches on applying systems thinking [Original Research]. *Frontiers in Education*, 8. <https://doi.org/10.3389/educ.2023.1173792>
- *Krajcik, J., Schneider, B., Miller, E. A., Chen, I. C., Bradford, L., Baker, Q., Bartz, K., Miller, C., Li, T., Codere, S., & Peek-Brown, D. (2022). Assessing the Effect of Project-Based Learning on Science Learning in Elementary Schools. *American Educational Research Journal*, 60(1), 70-102. <https://doi.org/10.3102/00028312221129247>
- Adah Miller, E., Severance, S., Krajcik J. (in press) Aligning NGSS with PBL: What do the NGSS offer Project-based Learning. *International Encyclopedia of Education 4th Edition Elsevier Ltd., Major Reference Works*, Oxford, UK.
- Zhai, X., Neumann, K., & Krajcik, J. (2023). Editorial: AI for tackling STEM education challenges [Editorial]. *Frontiers in Education*, 8. <https://doi.org/10.3389/educ.2023.1183030>
- *Li, T., Miller, E. A., & Krajcik, J. S. (2023). Theory Into Practice: Supporting Knowledge-in-Use Through Project-Based Learning. In G. Bansal & U. Ramnarain (Eds.), *Fostering Science Teaching and Learning for the Fourth Industrial Revolution and Beyond* (pp. 1-35). IGI Global. <https://doi.org/10.4018/978-1-6684-6932-3.ch001>
- *Shin, N., Bowers, J., Roderick, S. Cynthia McIntyre, A. Lynn Stephens, Emil Eidin, Joseph Krajcik, Dan Damelin.. A framework for supporting systems thinking and computational thinking through constructing models. *Instr Sci* 50, 933–960 (2022). <https://doi.org/10.1007/s11251-022-09590-9>.
- *Zhai, X., He, P., & Krajcik, J. (2022). Applying machine learning to automatically assess scientific models. *Journal of Research in Science Teaching*, 1– 30. <https://doi.org/10.1002/tea.21773>.
- *Schneider, B., Krajcik, J., Lavonen, J., Salmela-Aro, K., Klager, C., Bradford, L., Chen, i-C., Baker, Q., Touitou, I., Peek-Brown, D., Dezenorf, R., Maestrales, S., Bartz, K. (2022). Improving Science Achievement-Is It Possible? Evaluating the Efficacy of a High School Chemistry and Physics Project-Based Learning Intervention. *Educational Researcher*. <https://journals.sagepub.com/doi/full/10.3102/0013189X211067742>.
- *Shin, N., Bowers, J., Krajcik, J., & Damelin, D. (2021). Promoting computational thinking through project-based learning. *Disciplinary and Interdisciplinary Science Education Research*, 3(1), 7. <https://doi.org/10.1186/s43031-021-00033-y>
- *Bielik, T., Stephens, L., McIntyre, C., Damelin, D., & Krajcik, J. S. (2022). Supporting Student System Modelling Practice Through Curriculum and Technology Design. *Journal of Science Education and Technology*, 31(2), 217-231. <https://doi.org/10.1007/s10956-021-09943-y>
- *Juuti, K., Lavonen, J., Salonen, V., Salmela-Aro, K., Schneider, B., Krajcik, J. (2021). A teacher-researcher partnership for professional learning: Co-designing project-based learning units to increase student engagement in science classes. *Journal of Science Teacher Education*. <https://doi.org/10.1080/1046560X.2021.1872207>.
- *Maestrales, S., Zhai, X., Baker, Q., Touitou, I., Krajcik, J., & Schneider, B. (2021). Using machine learning to evaluate multidimensional assessments of chemistry and physics. *Journal of Science Education and Technology*. <https://doi.org/10.1007/s10956-020-09895-9>.
- *Krajcik, J.S. Commentary-Applying Machine Learning in Science Assessment: Opportunity and Challenges. *J Sci Educ Technol* (2021). <https://doi.org/10.1007/s10956-021-09902>.

- * Kaldaras, L., Akaeze, H., & Krajcik, J. (2021). A methodology for determining and validating latent factor dimensionality of complex multi-factor science constructs measuring knowledge-in-use. *Educational Assessment*, 26(4), 241-263.
- *Zhai, X., Krajcik, J., Pellegrino, J. (2021). On the validity of machine learning-based Next Generation Science Assessments: An inferential validity network. *Journal of Science Education and Technology*. DOI: 10.1007/s10956-020-09879-9.
- *Adah Miller, E., Severance S. & Krajcik, J. (2021). Motivating Teaching, Sustaining Change in Practice: Design Principles for Teacher Learning in Project-Based Learning Contexts. *Journal of Science Teaching Education*, 32:7, 757-779.
- *Miller, E. C., Reigh, E., Berland, L., & Krajcik, J. (2021). Supporting Equity in Virtual Science Instruction Through Project-Based Learning: Opportunities and Challenges in the Era of COVID-19. *Journal of Science Teacher Education*, 1-22.
- *Li, T., Miller, E., Chen, I., Bartz, K., Codere, S., Krajcik, J. (2021). The Relationship between Teacher's Support of Literacy Development and Elementary Students' Modeling Proficiency in Project-Based Learning Science Classrooms. *Education 3-13 - International Journal of Primary, Elementary and Early Years Education*.
- *Kaldaras, L., Akaeze, H., Krajcik, J. (2021). Developing and validating Next Generation Science Standards-aligned learning progression to track three-dimensional learning of electrical interactions in high school physical science. *J Res Sci Teach*; 1-30. <https://doi.org/10.1002/tea.21672>.
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- *Inkinen, J, Klager, C, Juuti, K, et al. High school students' situational engagement associated with scientific practices in designed science learning situations. *Science Education*. 2020; 104: 667692. <https://doi.org/10.1002/sce.21570>.
- Miller, E. C., Severance, S., & Krajcik, J. (2020). Connecting Computational Thinking and Science in a US Elementary Classroom. In *Integrated Approaches to STEM Education* (pp. 185-204). Springer, Cham.
- *Fortus, D., Kubsch, M., Bielik, T., Krajcik, J., Lehavi, Y., Neumann, K., ... & Touitou, I. (2019). Systems, transfer, and fields: Evaluating a new approach to energy instruction. *Journal of Research in Science Teaching*.
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- *Nordine, J., Krajcik, J., Fortus, D., & Neumann, K. (2019). Using Storylines to Support Three-Dimensional Learning in Project-Based Science. *Science Scope*, 42(6), 85–91.
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- *Bielik T., Damelin D., & Krajcik J. (2018). Why do Fishermen Need Forests? Developing a Project-Based Unit with Engaging Driving Question. *Science Scope*, Vol. 41.6, 64-72.
- *Tapia, Sanchez-Ingrid; Krajcik, J., Reiser, B. (2018). We Don't Know What is the Real Story Anymore": Curricular Contextualization Principles That Support Indigenous Students in Understanding Natural Selection. *Journal of Research in Science Teaching*, 55(3), 348-376, DOI10.1002/tea.21422.
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- †Krajcik, J., & Delen, I. (2017). The Benefits and Limitations of Educative Curriculum Materials. *Journal of Science Teacher Education*, 28(1), 1-10.
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- *Krajcik, J.S. (2013), The Next Generation Science Standards: a Focus on Physical Science, *The Science Teacher*, The National Science Teacher Association.
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- *Lee, O., & Krajcik, J. (2012), Large-scale interventions in science education for diverse student groups in varied educational settings. *Journal of Research in Science Teaching* 49(3), 271–280.
- *Nordine, J., Krajcik, J., and Fortus, D., 2011. Transforming energy instruction in middle school to support integrated understanding and future learning. *Science Education*, 95: 670-699.
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- *Krajcik J.S. & Sutherland, L.M (2010). Supporting Students in Developing Literacy in Science. *Science*, American Association for the Advancement of Science, 328, 456-459.
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- Merritt, J., Swartz, Y. Sutherland, L. & Krajcik, J. (2012). "How can I smell things from across the room?" in J.Krajcik, J, Reiser, B., Sutherland, L., and Fortus, D. (editors), *IQWST: Investigating and questioning our world through science and technology*, (Middle School Science Curriculum Materials). Activate Learning, USA.
- McNeill, K. L., Harris, C. J., Heitzman, M., Lizotte, D. J., Sutherland, L. M., & Krajcik, J. (2004). How can I make new stuff from old stuff? In J. Krajcik & B. J. Reiser (Eds.), *IQWST: Investigating and questioning our world through science and technology*. Ann Arbor, MI: University of Michigan.
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- Krajcik, J. S. (1990) *Temperature in Labnet Training Materials*. Technical Educational Research Center, Boston, MA (chapter).

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Contributing Author for McMillan's Elementary Science, Journeys through science, (1987). Two units: Unit 5, "Changes in Matter"; and Unit 6, "Structure of Matter."

Software development:

Model-It (1997). (Jackson, S., Soloway, E. & Krajcik, J. S.), Modeling software.

Project Integration Visualization Tool (1995). Brade, K. Krajcik, J. Soloway, E., Blumenfeld, P. and Marx, R., project planning tool.

Casebook of Project Practices (1995). (Hayes, P. Krajcik, J. Soloway, E., Blumenfeld, P. and Marx, R.), Multimedia cases on teaching practices.

Molecular Velocities (October, 1989). Krajcik, J. S. and Peters, H. Conduit, University of Iowa, Iowa City, Iowa.

Video Production:

Project-based Science: An Innovative Approach to Science Teaching. (Hydel, D., Krajcik, J., and Marx, R.)

"7th Graders Using hi-ce's Technologies in Science Inquiry. Center for Highly-Interactive Computing in Education At UM. (Edgrin, K., Soloway, E., Krajcik, J. and Marx, R.)

Other writing endeavors:

Rogat, A., Anderson, C., Foster, J., Goldberg, F., Hicks, J., Kanter, D., Krajcik, J., Lehrer, R., Reiser, B., and Wisner, M. (2011). Developing Learning Progressions in Support of the New Science Standards: A RAPID Workshop Series. CPRE: University of Pennsylvania. <http://files.eric.ed.gov/fulltext/ED536834.pdf>.

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Krajcik, J. (June 1999), President's Speech presented at the Annual Meeting for the National Association for Research in Science Teaching: Reflections on the Past Year. *NARST NEWS*, 42(2), 1 -3.

Krajcik, J. (January 1999). Getting Involved in NARST. *NARST NEWS*, 42(1), 1 -3.

Krajcik, J. (October 1998). Growing as an Organization: Reflections on the Revised Mission Statement. *NARST NEWS*, 41(3), 1 -3.

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Wallace, R., Krajcik, J.S. & E. Soloway (September 1996). Digital libraries in the science classroom: An opportunity for inquiry, *D-Lib Magazine*, <http://www.dlib.org/dlib/september96/umdl/09wallace.html>.

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Krajcik, J. S. (1988). Response to Professor Chapman's Letter to the Editor regarding High School Chemistry as Preparation for College Chemistry. *Journal of Chemical Education*.

PROFESSIONAL PRESENTATIONS

Invited Talks of a Substantial Nature:

Invited Presentation: Krajcik, J.S., *AI for STEM Education: Exploring Perspectives and Advancements*, 32nd Southern African Association for Research in Mathematics, Science and Technology Education (SAARMSTE) Conference, January 2024.

Invited Presentation: Krajcik, J.S., *Designing High-Quality Instruction Materials & Constructing Performance-based Assessment Items to Promote Knowledge-in-Use*, International Autumn School for STEAM Doctoral students, University of Tartu, Estonia, October 16-18, 2023 (virtual).

Invited Presentation, Council of the Great City Schools, Krajcik, J.S., Examine three important features of all science materials: learner-centered, knowledge-centered, and assessment-centered, and will discuss how these features align with the vision of the *Framework for K-12 Science Education*. Explore the results of a recent efficacy study of materials based on these ideas, October 10, 2023 (virtual).

Invited Presentation: Krajcik, J.S., *The Growing Mistrust of Science: What can we do in K-12 Education?*, Committee on Science Technology and the Law, National Academies, September 2021 (virtual).

- Invited Presentation: Harris, C. J. & Krajcik, J. S. *Designing science assessment tasks that focus on knowledge-in-use*. Science Assessment Resource Symposium, hosted by Learning Policy Institute, Palo Alto, CA. March 2021 (virtual).
- Keynote Presentation: Krajcik, J., Supporting all learners to use knowledge to make sense of the world, APEC Project, Cross-Border Human Capacity Building for Glocalized Scientific Literacy, STEM-Plus Education for Women and Girls Webinar, March 25-26, 2021(virtual).
- Keynote Presentation: Krajcik, J., Promoting deep learning in the era of Covid and beyond, Ohio Mathematics and Science Coalition (OMSC), February 12, 2021(virtual).
- Keynote Presentation: Krajcik, J., Reflections on being a good mentor, Postgraduate School, Supervision Enrichment Winter School Programme, University of Johannesburg, South Africa, July 8 -12, 2019.
- Keynote presentation: Krajcik, J., Promoting Student Engagement and Creativity Thought through Project-Based Learning, Crossing-Border Human Capacity Building for Glocalized Scientific Literacy, Asia-Pacific Economic Cooperation, Taipei, Taiwan, May 22-24, 2019.
- Keynote presentation: Krajcik, J., Designing Science Education Learning Environments to Engage Students in Developing Useable, Jubilee Celebration Conference, Science Education Institute, Weizmann Institute of Science, Rehovot, Israel, January, 2019.
- Keynote presentation: Krajcik, J., Designing Science Education Learning Environment to Engage Students in Developing Useable Knowledge. In the Launching Ceremony of the International Center for Science Education Research of Beijing Normal University NU &The International Science Education Forum of Beijing Normal University, Beijing, China, November 3-4, 2018.
- Keynote presentations: Krajcik, J., Toutou, I., & Schneider, B., Crafting Engaging Science Environments, in Reforms in Science Teaching and Learning towards the 21st Century -- An International Conference Academic Arab College for Education in Haifa, Israel, December 11-13, 2018.
- Keynote presentation: Krajcik, J.S. Promoting Student Engagement and Imagination through Project-Based Learning, OECD Centre for Educational Research and Innovation (CERI) International Conference, September 4-5, 2017, Durham, UK.
- Keynote presentation: Krajcik, J.S. Promoting Student Engagement through Project-Based Learning Bill & Melinda Gates Foundation Convening on Teacher's Use of Curricula, January 11-13, 2018, Seattle, WA.
- Keynote: Krajcik, J. S., Designing Environments to Promote Optimal Learning through Project Based Learning, presented at Promoting Future Learning Skills: Interventions, Impact, Internationalization, May 9-10, 2017, Academy of Finland, Hakaniemenranta.
- Plenary: Krajcik, J. S., Assessing three-dimensional learning: Next Generation Science Assessment (NGSA) Project. Presentation given at the NGSS@NSTA Forum at National Science Teachers Association National Conference, April 2017, Los Angeles, CA.
- Plenary: Krajcik, J.S., Hug, B., Developing Assessments that Elicit Learners' Thinking, Knowledge and Skills. Presentation at Annual Conference for NIH Science Education Projects, Grand Hyatt Washington, May 30-June 2, 2017 (Plenary).
- Keynote: Krajcik, J.S., How to Engage Learners to Develop Usable and Lasting Knowledge of STEM Institute for Science and Technology Education (ISTE), University of South Africa (UNISA) invites you to make a plenary presentation at its 7th International Conference on Mathematics, Science and Technology Education at the Kruger National Park, South Africa, October 23-28, 2016.
- Keynote presentation: Developing and Testing Instructional Materials to Support Students in Designing Solutions to Problems and Explaining Phenomena, International Conference on Education in Mathematics, Science and Technology, May 19-22, 2016, Bodrum, Turkey.
- Keynote Presentation: What Do the New Michigan Science Standards Mean for Instruction and Assessment, Michigan Science Teacher Association, March 4, 2016, Lansing, MI.
- Invited talk: Supporting the Implementation of the New Michigan Science Standards. Michigan State University's President's Forum, April 5, 2016, Lansing Radisson Hotel.
- Keynote Presentation: Designing and Utilizing Three-Dimensional Assessments, Council of State Science Supervisor's Annual Meeting, Tuesday, March 29, 2016, Nashville, TN.
- Keynote Presentation: Strategies to Support the Implementation of the Next Generation Science Standards, 2nd Annual NGSS Leadership Conference, San Diego, California, March 18, 2016.
- Keynote Presentation: What is so different about NGSS? Vermont Science Teachers Association, May 1, 2015.
- Keynote Presentation: What is so different about NGSS? Nevada Science Teachers Association, Reno, Nevada, November 2014.
- Keynote Presentation: Implementing the Next Generation of Science Standards, Wisconsin Science Teachers Annual meeting, Appleton, Wisconsin, March 2014.

- Guest Presentation: Next Generation of Science Standards and the Future of Science Education. Smithsonian International K-12 Science Education Institute for Leadership Development and Strategic Planning, July 28, 2013, Alexandria, VA.
- Keynote Presentation: Implications of the K -12 Science Framework and NGSS for Teaching and Learning, Ministry of Education, Santiago, Chile, July 8, 2013.
- Guest presentation: Attributes of Curriculum Well-Aligned to NGSS. Building Capacity for State Science Education (BCSSE, Council of State Science Supervisors, Omni William Penn Hotel, Pittsburgh, PA, July 7 & 8, 2013.
- Guest Presentation: Getting to Know the Next Generation of Science Standards. Introduction to NGGS. Michigan State University, Michigan State Department of Education, Kellogg Conference Center, Michigan State University, May 28, 2013.
- Keynote Presentation: Opportunities and Challenges of Project-Based Learning; German Educational Research Association inaugural meeting, Gesellschaft für empirische Bildungsforschung, held at the University of Kiel, Kiel, Germany March 13, 2013.
- Keynote Presentation: Implications of the K-12 Science Framework and NGGS for Teaching and Learning, International Conference on Science Education held at Nanjing University, Nanjing, China, October 12-15, 2012.
- Keynote Presentation: Supporting Students' Integrated Understandings of Big Ideas and Scientific Practice. National Conference on Upgrading the quality of Science Education, Bangkok, Thailand, Ministry of Education, August 26-27, 2012.
- Featured Speaker. Supporting Students' Integrated Understandings of Big Ideas and Scientific Practices Across Time. The National Science Teachers Association (NSTA) fall conference, November 26-29, 2011, Settle, Washington.
- Keynote. Designing Science Education Learning Environments to Promote Creative Problem Solving. TERA International Conference on Education (TICE 2011), December 15-18, 2011, Kaohsiung, Taiwan (Conference theme: Creativity and Imagination).
- Invited Speaker, Supporting Students' Integrated Understandings of Big Ideas and Scientific Practices Across Time. Eastern Asian Science Education (EASE) Chosun University, Gwangju, South Korea, October 25-29, 2011. (Conference Theme: Lighting the World with Science).
- Invited Speaker, Supporting students in building a particle model of matter. At the International Science Education Symposium on Particulate and Structural Concepts of Matter, Athens, Greece, November 5-8, 2010. G. Kalkanis & G. Tsapralis (organizers) (invited conference and invited talk).
- Keynote Speaker: Designing science education learning environments to promote student learning, The Value of Science Teaching and Learning conference, Ewha Woman's University, Seoul, South Korea (International Asian Conference), September 14-16, 2010.
- Keynote Speaker: Developing Students' Understanding of the Transformations of Matter Over Time, 21st International Conference on Chemical Education, Chemical Education International, Taipei, Taiwan August 2010.
- Keynote Speaker: Integrating 21st Century Competencies into Science Instruction and Assessment. Instruction and Assessment for Promoting Understanding of Science Essential for 21st Century Global Citizens International Conference, Ewha Womans University, Seoul, June 2010.
- Keynote Speaker: Features of Project-Based Learning, Korean Association for Science Education, Kwandong University, Kangreng, South Korea, January 2010.
- Keynote Speaker: New Directions for Promoting Science Learning in a Global Society, Opening Ceremony for the Institute for Global Science, Technology and Society Education, Ewha Womans University, Seoul, South Korea, November 3, 2009.
- Invited Speaker: Designing science education learning environments to promote student learning, Ewha Womans University, Seoul, South Korea, October 7, 2009.
- Invited Speaker: Supporting Science Teachers in Utilizing Model-Based Inquiry: The evolution of teachers' model-building practices. Distinguished Lecturer Series Sponsored by The Center for Research in Mathematics and Science Education. San Diego State University, San Diego, CA, April 30-May 1, 2009.
- Keynote: Lessons learned: How to Bring About Change in Learning. The Contribution of Yesterday to Tomorrow: What can We Learn from the Experience of "Tomorrow 98?" Weizmann Institute of Science, Rehovot, Israel, March 3, 2009.
- Invited presentation: IQWST Materials: Meeting the Challenges of the 21st Century. Exploring the Intersection of Science Education and the Development of 21st Century Skills: A Workshop The National Academies, Washington, D.C., February 5-6, 2009. Paper available at: http://www7.nationalacademies.org/bose/21st_Century_Skills_Workshop_Homepage.html.
- Congressional Testimony to the House Committee on Science and Technology on the *National* Nanotechnology Initiative Amendments Act of 2008, Rayburn House Office Building, Washington, D.C., April 16, 2008.

Luncheon Briefing on Capital Hill: Catalyzing Change in Science-Education through Nanoscience. Krajcik served as panelist for a luncheon briefing on Capitol Hill on “Educating to Advance Nanotechnology” sponsored by the American Chemical Society of Science & the Congress Project and the Nano Business Alliance, January 2008.

Keynote: Learning-Goals-Driven Design: Developing Instructional Materials that Align with Learning Goals and Project-Based Pedagogy. International Conference of Professional Development and Student Learning for Innovative Science Curricula, sponsored by Taiwan’s National Research Council, National Taiwan Normal University, Taipei, Taiwan, March 6, 2008.

Featured Presentation: Promises and Challenges of e-Learning and Digital Textbooks. E-learning: Global Leaders Conference 2007. Sponsored by Ministry of Education, Korea; Seoul, Korea, September 19-20, 2007.

Keynote: New ideas to catalyze change in secondary science instruction. The Waterbury Summit on Secondary Education, “Re-visioning the American High School for an Engaged Citizenry”. The Pennsylvania State University, The Penn Stater Conference Center Hotel, University Park, Pennsylvania, June 6-8, 2007.

Featured Presentation: Supporting Students in Learning Science through the Emerging Field of Nanotechnology: Big Ideas in Nanoscience. New Technologies: A Virtual Symposium on Nanotechnology and Biotechnology for K-12 Science Teachers, University of Wisconsin-Madison, Pyle Center, WI.

Keynote Speaker: Designing Science Learning Materials to Foster In-depth Understanding of Content and Scientific Practices. Issues and Trends in Science Curricular Materials Research and Development Sponsored by Taiwan’s National Research Council, National Taiwan Normal University, Taipei, Taiwan, February 2007.

Featured Presentation: Big Ideas in Nanoscience workshop for K-12 Nanoscale Science and Engineering Education, with Shawn Stevens. National Science Foundation, Washington D.C., January 2007.

Featured Presentation: Designing Instruction to Support Students in Scientific Inquiry without Sacrificing the Science Content. National Science Teacher Association Area Conference, Baltimore, Maryland, November 2-4, 2006.

Keynote: Using Learning Technologies to Support Students in Developing Integrated Understanding. The 13th International Conference on Computers in Education, Singapore, November 28th - December 2, 2005.

Keynote: Supporting Students in Developing Scientific Explanations. MSELA (Michigan Science Education Leadership Association) Dinner held in conjunction with the 53rd Annual Michigan Science Teacher Association Conference, March 2-4, 2006.

Plenary Speaker: Designing and Implementing Technology-Driven Solutions for Sustaining SMT Reforms: A Partnership Story. Principle Investigator Leadership Institute For Systemic Initiatives, National Science Foundation, Urban Systemic Initiative Programs, Washington, DC, November 15, 2005.

Invite Symposium Speaker: Designing Science Learning Environments to Foster In-depth Understanding of Content and Practices. University of Georgia, Learning and Performance Support Laboratory, Athens, GA, April 18, 2005.

Invited Symposium Speaker: Scaffolding Students in Writing Evidence-based Explanations. Weston Visiting Professor of Science Education, Weizmann Institute of Science, Science Education Department, Israel, February 2005.

Keynote Speaker: Developing Students Understanding in Chemistry: Connections that Matter. Jahrestagung der Gesellschaft für Didaktik der Chemie und Physik (GDGP) 2003 Chemie- und physikdidaktische Forschung und naturwissenschaftliche Bildung"GDGP-Meeting at Berlin, Jahrestagung in Berlin, September 15-18, 2003.

Keynote Speaker: New Teaching Practices in Science Education. First International Forum on Education, Tianjin Experiment High School, Tianjin, China, Sept 25– 26, 2002.

Keynote Speaker: Using Ideas from Learning Theory to Design New Chemistry Materials, Beijing Normal University, Beijing, China, September 2002.

Speaker, National Science Foundation, Instructional Materials Development conference for Principal Investigators, Middle School Science Curriculum Materials: Meeting Standards and Fostering Inquiry Using Learning Technologies, National Science Foundation, Arlington, Virginia, January 26-29, 2003.

Invited Speaker: Embedding Learning Technologies into Science Curricular Materials. National Research Council Committee on Improving Learning with Information Technology, Palo Alto, California, December 11, 2001.

Guest Lecturer: Shanghai Normal University, South China Normal University, Beijing Normal University, Academic Exchange, Lectures on the use of learning technologies and inquiry in science education, August 4-19, 2001.

Keynote Speaker: Technology Tools to Support Students in Inquiry, Invited Symposium in Science Education in Honor of Professor Uri Ganiel, Weizmann Institute of Science, Rehovot, Israel, September 2001.

Keynote speaker: Advantages and Challenges of Using the WWW to Fosters Sustained Science Inquiry. Educational Uses of World Wide Web, sponsored by Taiwan’s National Research Council, National Taiwan Normal University, Taipei, Taiwan, October 2000.

Seminar speaker: Designing Learning Technologies to Support Extended Inquiry. Weizmann Institute of Science, Rehovot, Israel, January 11, 1999.

- Keynote Speaker at the Second Conference on Chemical Education, Designing Curriculum materials to support the learning of science, National Taiwan Normal University, Taipei, Taiwan, March 13, 1999.
- Seminar Speaker: Designing learning technologies to support science inquiry. National Taiwan Normal University, Graduate Institute of Science Education Taipei, Taiwan, March 11, 1999.
- Seminar Speaker: Using learning technologies to support science learning (3 hours presentation), National Kaoshiung Normal University, Kaoshiung, Taiwan, March 15, 1999.
- President's Speech at the Annual Meeting for the National Association for Research in Science Teaching: Reflections on the Past Year, Boston, MA, March 1999.
- Keynote Speaker at the International Workshop on Science Teachers Education: Toward the New Millennium, Using Curriculum Materials to Support Enactment of Extend Inquiry, Technion – Israel Institute of Technology, Technion City, Haifa Israel, January 5-6, 1999.
- Keynote Speaker with Juanita Clay-Chambers, Associate Superintendent of Educational Service and Eddy Green Superintendent, Detroit Public Schools at National Science Foundation Meeting on Systemic Change, Partnerships with Institutions for Higher Education, Washington, D.C., October 1998.

Conference/Paper Presentations:

- Kubsch, M., Fortus, D., Neumann, K., Nordine, J., Krajcik, J., (2022). The interplay between students' motivational profiles and science learning. Paper presented in the *Science Learning: Development of student understanding. SC-organized paper set-Pedagogical Approaches to Enhance Science Understanding* session at the 2022 Annual International Conference of the National Association for Research in Science Teaching (NARST), Vancouver, BC, Canada, March 2022.
- He, P., Chen, I., Krajcik, J., (2022). Three-Dimensional Learning Progression for Supporting Students' Knowledge-in-use Proficiency in High School Project-based Learning Chemistry Curriculum. Paper presented (virtual) in the *Curriculum and Assessment: SC-organized paper set-Curriculum and assessment for science learning* session at the 2022 Annual International Conference of the National Association for Research in Science Teaching (NARST), Vancouver, BC, Canada, March 2022.
- Chen, I., Li, T., Akgun, S., Adah Miller, E., Krajcik, J., Schneider, B. (2022). Curriculum-Aligned Instruction and Formative Assessments: Promote Students' Academic and Social-Emotional Learning. Paper presented (virtual) in the *Science Learning: Contexts, Characteristics and Interactions SC-organized paper set-Socioemotional Factors in Science Teaching & Learning* session at the 2022 Annual International Conference of the National Association for Research in Science Teaching (NARST), Vancouver, BC, Canada, March 2022.
- Akgun, S., Chen, I., Li, T., Adah Miller, E., Krajcik, J., Codere, S. (2022). Using ML-PBL Teaching Practices to Support Student Sensemaking and Social-Emotional Learning in Elementary Science Classrooms. Paper presented in the *Science Learning: Contexts, Characteristics and Interactions SC-organized paper set-Socioemotional Factors in Science Teaching & Learning* session at the 2022 Annual International Conference of the National Association for Research in Science Teaching (NARST), Vancouver, BC, Canada, March 2022.
- Adah Miller, E., Codere, S., Severance, S., Krajcik, J., (2022). Project-Based Learning: Principles to Sustain Student Learning and Teacher Change in Practice. 2022 Annual Conference of the National Science Teaching Association (NSTA), virtual, March 2022.
- Li, T., Chen, I., Krajcik, J., (2022). Teacher Enactment of Next Generation Science Standards-Aligned Curriculum, Student Science Achievement in Knowledge-in-Use, and Social and Emotional Learning. Paper presented in the *Equity Going Beyond Inclusion in Science Education* session at the 2022 Annual Meeting of the American Educational Research Association (AERA), San Diego, CA, April 2022.
- Chen, I., Bradford, L., Bartz, K., Krajcik, J., (2022). Exploring the Stability and Fluctuation of Experiencing “Challenges” in the High School Science Classroom. Paper presented in the *Investigating Optimal Learning Moment to Enhance Student Engagement and Social Emotional Learning* session at the 2022 Annual Meeting of the American Educational Research Association (AERA), San Diego, CA, April 2022.
- Tang, X., Chen, I., Lavonen, J., Krajcik, J., Salmela-Aro, K. (2022). Optimal Learning Moments in Finland and U.S. Science Class: Co-Occurance Network Analysis. Paper presented in the *Investigating Optimal Learning Moment to Enhance Student Engagement and Social Emotional Learning* session at the 2022 Annual Meeting of the American Educational Research Association (AERA), San Diego, CA, April 2022.
- Shin, N., He, P., Li, T., Krajcik, J., (2021). A Three-dimensional Integrated Learning Progression and Aligned Assessments to Monitor Middle School Student Proficiency of Energy, Modeling and Cause and Effect. Paper presented in the *Curriculum and Assessment: NGSS Aligned Assessment and Instruction* session at the 2021 Annual International Conference of the National Association for Research in Science Teaching (NARST), April 2021 (virtual).
- Adler, I., Morales, C., Bayer, I., Tal, T., Krajcik, J., (2021). Health in Our Hands: A Community-Inspired

- Project-based Learning Approach to Support Social and Emotional Learning. Paper presented in the *Science Learning: Contexts, Characteristics and Interactions* session at the 2021 Annual International Conference of the National Association for Research in Science Teaching (NARST), April 2021 (virtual).
- Chen, I., Miller, C., Li, T., Bartz, K., Krajcik, J., Schneider, B. (2021). How Teacher Practices Influence Elementary Students' Social Emotional Learning. Paper presented in the *Implementing Elementary Science New Curricula* session at the 2021 Annual International Conference of the National Association for Research in Science Teaching (NARST), April 2021 (virtual).
- Zhai, X., Yang, J., Li, T., He, P., Krajcik, J., (2021). Applying Machine Learning to Automatically Evaluate Student Scientific Modeling Competence. Paper presented in the *Curriculum and Assessment: Automated Scoring and Machine Learning in Science Assessment* session at the 2021 Annual International Conference of the National Association for Research in Science Teaching (NARST), April 2021 (virtual).
- Li, T., Chen, I., Adah Miller, E., Bartz, K., Krajcik, J., (2021). Examining the Relationships between Post-unit Assessments and Summative Assessment in Elementary Project-Based Science Classrooms. Paper presented in the *Curriculum and Assessment: Learning and Assessment in Project-based and Problem-based Curricula* session at the 2021 Annual International Conference of the National Association for Research in Science Teaching (NARST), April 2021 (virtual).
- Krajcik, J., Schneider, B. (2021). Engaging Students to Learn Science: Transforming Teaching and Learning. Paper presented in the *Transforming Science Education by Fostering Students' Creativity and Critical Thinking* session at the 2021 Annual Meeting of the American Educational Research Association (AERA), virtual, April 2021.
- Krajcik, J., Miller, E., Codere, S., Schneider, B., Palincsar, A. (2020). Why Is Multiple Literacies in Project-Based Learning Effective for Promoting Elementary Science Learning and Engagement? Paper presented in the *Elementary Students' Academic and Social Emotional Learning Through Project-Based Learning: Results of an Efficacy Study* session at the 2020 Annual Meeting of the American Educational Research Association (AERA), virtual, April 2020.
- Chen, I., Miller, C., Schneider, B., Krajcik, J., (2020). How Teacher Practices Influence Elementary Students' Social Emotional Learning. Paper presented in the *Elementary Students' Academic and Social Emotional Learning Through Project-Based Learning: Results of an Efficacy Study* session at the 2020 Annual Meeting of the American Educational Research Association (AERA), virtual, April 2020.
- Miller, E., Li, T., Chen, I., Codere, S., Krajcik, J., (2020). Leveraging Flexible Thinking for Scientific Sense-Making in Multiple Literacies in Project-Based Learning (ML-PBL). Paper presented in the *Elementary Students' Academic and Social Emotional Learning Through Project-Based Learning: Results of an Efficacy Study* session at the 2020 Annual Meeting of the American Educational Research Association (AERA), virtual, April 2020.
- Maestres, S.Y., Baker, Q., Touitou, I., Krajcik, J., Schneider, B., (2020). Evaluating Next Generation Science Standard-Aligned Student Constructed Responses With Machine Learning. Paper presented in the *Applying Machine Learning in Next-Generation Science Assessment* session at the 2020 Annual Meeting of the American Educational Research Association (AERA), virtual, April 2020.
- Pellegrino, J W., Harris, C. J., Krajcik, J., Damelin, D. (2020). Design of Next Generation Science Assessments: Measuring What Matters. Paper presented in the *Theoretical and Methodological Perspectives and Tensions in Developing 3-D Classroom Assessment That Promote Equity* session at the 2020 Annual Meeting of the American Educational Research Association (AERA), virtual, April 2020.
- Froschauer, L., Novak, M., Keeley, P., Willard, T., Krajcik, J., (2019). NGSS Session: Science for All Americans-30 Years of Influencing Science Education. 2019 Annual Conference of the National Science Teaching Association (NSTA), St. Louis, MO, April 2019.
- Kaldaras, L., Kolonich, A., Damelin, D., Krajcik, J., (2019). Exploring Protein Structure and Function Using Interactions: A Free 3-D Science Curriculum for Grade 9 Physical Science. 2019 Annual Conference of the National Science Teaching Association (NSTA), St. Louis, MO, April 2019.
- Miller, E. C., Codere, S. K., Severance, S., Krajcik, J. S. (2019). Designing Curriculum Resources and Enactment: Expanding Understanding of Knowledge-in-Use. Paper presented in the *Promoting and Measuring Student Learning and Engagement Through Project-Based Learning: Leveraging Coherence* session at the 2019 Annual Meeting of the American Educational Research Association (AERA), Toronto, Canada, April 2019.
- Codere, S., Miller, E., Chen, I., Krajcik, J., Schneider, B., Touitou, I. (2019). Using Fidelity of Implementation to Advance PBL Curricular Design, Professional Learning, and Assessment. Paper presented in the *Promoting and Measuring Student Learning and Engagement Through Project-Based Learning: Leveraging Coherence* session at the 2019 Annual Meeting of the American Educational Research Association (AERA), Toronto, Canada, April 2019.

- Krajcik, J. S., Miller, E. C. (2019). Designing Curriculum Materials to Embody the Vision of the Framework for K–12 Science Education. Paper presented in the *Overcoming Challenges in Developing and Implementing Next Generation Science Standards–Aligned Instructional Materials and Assessments* session at the 2019 Annual Meeting of the American Educational Research Association (AERA), Toronto, Canada, April 2019.
- Harris, C. J., Pellegrino, J.W., Krajcik, J. S., Damelin, D., Alozie, N., McElhaney, K., Gane, B.D., Gaur, D., Ko, M-L., Madden, K., Zaidi, S.Z., Haugabook-Pennock, P., Severance, S. (2019). Designing and Implementing Instructionally Supportive Assessment Tasks for Promoting Three-Dimensional Learning: Challenges Faced and Lessons Learned. Paper presented in the *Overcoming Challenges in Developing and Implementing Next Generation Science Standards–Aligned Instructional Materials and Assessments* session at the 2019 Annual Meeting of the American Educational Research Association (AERA), Toronto, Canada, April 2019.
- Lavonen, J., Inkinen, J., Salmela-Aro., K., Juuti, K., Krajcik, J., Schneider, B., (2019). Designing Engaging Science Education Modules for Finnish Secondary School Classrooms Through an International Professional Development Project. Paper presented in the *Research on Learning About and Engaging in Scientific Practices* session at the 2019 Annual Meeting of the American Educational Research Association (AERA), Toronto, Canada, April 2019.
- Badrinarayan, A., Wertheim, J., Krajcik, J., Pellegrino, J., Penuel, W., Smolek, T.J., Cooper, S. (2019). Reconceptualizing Alignment for NGSS Assessments. Paper presented in the *Curriculum, Evaluation, and Assessment Symposium–Reconceptualizing Alignment for NGSS Assessments* session at the 2019 Annual International Conference of the National Association for Research in Science Teaching (NARST), Baltimore, MD, March 2019.
- Damelin, D., Krajcik, J., Upmeier Zu Belzen, A., Krueger, D. (2019). Introduction- Using Technology to Promote Students’ Modeling Practice and Complex Systems Thinking. Paper presented in the *Educational Technology Using Technology to Promote Students’ Modeling Practice and Complex Systems Thinking* session at the 2019 Annual International Conference of the National Association for Research in Science Teaching (NARST), Baltimore, MD, March 2019.
- Miller, E., Severance, S., Krajcik, J. (2019). (re)Designing Professional Learning Based on Knowledge-in-Use to Launch a Project-Based Learning Curriculum. Paper presented in the *In-service Science Teacher Education Considerations for Curricular and Materials Decisions* session at the 2019 Annual International Conference of the National Association for Research in Science Teaching (NARST), Baltimore, MD, March 2019.
- Nordine, J., McElhaney, K., Hmelo-Silver, C., Krajcik, J., Westbrook, A. (2019). Clarifying the Role(s) of the Crosscutting Concepts in Science and Engineering Learning. Paper presented in the *Science Learning, Understanding and Conceptual Change Symposium–Clarifying the Role(s) of the Crosscutting Concepts in Science and Engineering Learning* session at the 2019 Annual International Conference of the National Association for Research in Science Teaching (NARST), Baltimore, MD, March 2019.
- Kubsch, M., Nordine, J., Neumann, K., Fortus, D., Krajcik, J., (2019). Systems and transfers vs. forms and transformation: investigating approaches to teaching energy in middle school. Paper presented in the *Science Learning, Understanding and Conceptual Change–Concepts in Physics* session at the 2019 Annual International Conference of the National Association for Research in Science Teaching (NARST), Baltimore, MD, March 2019.
- Miller, E. C., Codere, S. K., DeBarger, A., Krajcik, J. S. (2018). Developing Assessment Tasks to Measure Student Sense-Making of Phenomena Using Three Dimensions of Scientific Proficiency. Paper presented at the 2018 Annual National Conference of the National Association for Research in Science Teaching (NARST), Atlanta, GA, March 2018.
- Haugabook-Pennock, P., Severance, S., McElhaney, K.M, Krajcik, J.S. (2018) Comparative analysis of three-dimensional research-based and classroom-based rubrics for formative assessment. Paper presented at the 2018 Annual National Conference of the National Association for Research in Science Teaching (NARST), Atlanta, GA, March 2018.
- Krajcik, J., Miller, E., Schneider, B. (2017). Elementary Teachers’ Experience with Project Based Learning. Paper Presented at the NARST Annual Meeting. San Antonio, Texas. April 2017.
- Krajcik, J., Bielik, T. Nordine, J. Fortus, D. & Neumann, K. (2017). The Centrality of Phenomena in 3-Dimensional Learning. Paper presented at the annual conference of the National Association for Research in Science Teaching, San Antonio, TX, March 2017.
- Krajcik, J.S., (2017). Chair, Promoting Engagement and Learning in Elementary Science Using Multiple Literacies in Project-based Learning. Organized paper set at annual conference of the National Association for Research in Science Teaching, San Antonio, TX, March 2017.
- Krajcik, J., (2017). Design Principles and Theoretical Foundation of Project-Based Learning. Paper presented at the Annual Meeting of the American Educational Research Association, San Antonio, TX, March 2017.

- Nordine, J. C., Kubsch, M., Fortus, D., Krajcik, J. S., & Neumann, K. (2017). Supporting three-dimensional energy learning in a project-based approach that emphasizes modeling energy transfers between systems. Paper presented at the Annual Meeting of the American Educational Research Association, San Antonio, TX, March 2017.
- Krajcik, J., Peek-Brown, D., Codere, S., Multiple Literacies in Project-Based Learning, CREATE for STEM Strand, MSTA Pre-Conference, March 23, 2017, Novi, MI.
- Peek-Brown, D., Miller, E., Codere, S., Krajcik, J., Using Integrated (NGSS/CCSS) PBL to Support Modeling in Elementary Science Classrooms: Multiple Literacies in Project-based Learning, NSTA National Conference, (2017), Los Angeles, CA.
- Sanchez-Tapia, I. M. and Krajcik, J. S. (2014). Culturally Relevant Science Education for Mexican Nahua Students: Design Principles for Curricular Contextualization. Paper presented at the Annual meeting of NARST, March 30th to April 4th, Pittsburgh, PA.
- Krajcik, J. Implication of the NRC Framework and the Highly Anticipated NGSS for Teaching and Learning (NGSS @ NSTA). Presentation at the National Science Teachers Association National Conference, San Antonio, Texas. April 9, 2013.
- Krajcik, J. Commentary: Monitoring Progress Toward Successful K-12 STEM Education: A Nation Advancing? Invited discussant for Commentary: Monitoring Progress Toward Successful K-12 STEM Education: A Nation Advancing? The American Educational Research Association, San Francisco, CA, April 2013.
- Duschl, R. & Krajcik, J.S., A Critical Appraisal of Learning Progressions in Science: Exploring the Intersection of Science Assessment, Policy & Practice. Paper presented at the American Educational Research Association, San Francisco, CA, April 2013.
- Lee, J., McGee, S., Duck, J., Choi, S., & Krajcik, J. (2013). Using Interactive Materials to Develop of High School Students' Understandings of How Objects Interact. NARST Annual Conference, Rio Grande, Puerto Rico.
- Krajcik, J., Sutherland, L.M., Smith, S., Reiser, B., Fortus, D. Comparing Student Achievement across Time in Contexts Using a Coherent Inquiry Curriculum Versus Those Using Traditional Curricula. Paper presented at the National Association for Research in Science Teaching, Philadelphia, PA, March 24 – 29, 2010.
- Choi, K, Kim, S. W., Lee, H., Krajcik, J. Re-Conceptualization of Scientific Literacy for the 21st Century in Korea. Paper presented at the National Association for Research in Science Teaching, Philadelphia, PA, March 24-29, 2010.
- Stevens, S. Y., Shin, N., & Krajcik, J. S. (March 2010). Progress toward the development of an empirically tested learning progression for the nature of matter. Paper presented at the National Association for Research in Science Teaching Annual Conference, Philadelphia, PA
- Plummer, J. D., & Krajcik, J. (2010). Building a learning progression for celestial motion: Elementary levels from an earth-based perspective. *Journal of Research in Science Teaching*, 47(7), 768-787.
- Merritt, J. & Krajcik, J. S., 2009. Developing A Calibrated Progress Variable For The Particle Nature Of Matter, Paper presented at the Learning Progressions in Science (LeaPS) Conference, June 2009, Iowa City, IA.
- Krajcik, J. S., Shin, N., Stevens, S. Y., & Short, H. (April 2009) "Using Learning Progressions to Inform the Design of Coherent Science Curriculum Materials." Paper presented at American Educational Research Association, San Diego, CA.
- Krajcik, J.S., Fogleman, J., Sutherland, L., Finn, L. (2008) Professional Development That Supports Reform: Helping Teachers Understand and Use Reform-Rich Materials. Poster presented at the Annual Meeting of the American Educational Research Association, New York: NY.
- Krajcik, J.S. Catalyzing Change in Science Instruction: Big Ideas in Nanoscience. Presentation at the National Science Teacher Association Annual Meeting, Boston, March 27-30, 2008.
- McNeill, K.L. & Krajcik, J. (April 2007). Relationship between teacher instructional practices and curricular scaffolds in supporting students in writing scientific explanations. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Merritt, J., Shwartz, Y., & Krajcik, J. (2007). Middle school students' development of the particle model of matter. Paper presented at the Annual Meeting of the National Association of Research in Science Teaching, New Orleans, LA.
- Yonker, M., Sabelli, N., Giordano, Krajcik, S. (2007). Identifying the Big Ideas in Nanoscience. Symposium presented at the Annual Meeting of the National Association of Research in Science Teaching, New Orleans, LA.
- Shi, S., Sabelli, N., Krajcik, J., Tinker, R. & Ellenbogen, Kirsten, 2006. Learning at the Nanoscale: Research Questions that the Rapidly Evolving Interdisciplinarity of Science Poses for the Learning Sciences. The International Conference of the Learning Sciences, June 2006, West Lafayette, IN.
- McNeill, K., Krajcik, J. (2006). Supporting Students' Construction of Scientific Explanation Through Generic Versus Context-Specific Written Scaffolds In Reiser, B., Supporting the Practices of Argumentation and Explanation in Middle-School Classrooms. Symposium conducted at the Annual Meeting of the American Educational Research Association, April 7-11, San Francisco, CA.

- Blumenfeld, P., Krajcik, J., Kempler, T., Geier, R., Kam, R., & Gallagher, S. (2006). Opportunity to learn: Teacher instructional practices that account for variation in achievement in project-based science in urban middle schools. Paper presented at the American Education Research Association, San Francisco.
- Krajcik, J., McNeill, K., & Reiser, B (2006). A Learning Goals Driven Design Model for Developing Science Curriculum. In Linn, M., *Measuring and Teaching Science Inquiry: Four Perspectives*. Symposium conducted at the Annual Meeting of the American Educational Research Association, April 7-11, San Francisco, CA.
- Krajcik, J. & McNeill, K. L. (2006, April). Designing middle school science curriculum materials to foster students' developing deep understanding of key learning goals. Paper presented at the annual meeting of the National Association for Research in Science Teaching, San Francisco, CA.
- Krajcik, J. (2006). In, Duschl, R., *Inquiry and the Learning of Science-Theories and Practices*. Symposium conducted at the Annual Meeting of the American Educational Research Association, April 7-11, San Francisco, CA.
- Krajcik, J. & McNeill, K. L. (2006, April). Designing middle school science curriculum materials to foster students' developing deep understanding of key learning goals. Paper presented at the annual meeting of the National Association for Research in Science Teaching, San Francisco, CA.
- Krajcik, J. & McNeill, K. L. (2006, February). Supporting secondary students in scientific practices: Using evidence, creating models and constructing explanations. Paper presented at *To Think and Act Like A Scientist: The Roles of Inquiry, Research, and Technology*, Lubbock, TX.
- McNeill, K. L., Lizotte, D. J., & Krajcik, J. (2005, April). Identifying teacher practices that support students' explanations in science. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada.
- McNeill, K. L., Lizotte, D. J., Krajcik, J., & Marx, R. W. (April 2004). Supporting students' construction of scientific explanations using scaffolded curriculum materials and assessments. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
- Davis, E. A., & Krajcik, J. (2004). Supporting inquiry-oriented science teaching: Design heuristics for educative curriculum materials. Paper presented at the annual meeting of the American Educational Research Association, San Diego.
- Fogleman, J., Scott, L. A., & Krajcik, J. (2004, April). Developing a method for determining needs for educative curriculum. Poster presented at the annual meeting of the National Association for Research in Science Teaching, Vancouver, BC.
- Lizotte, D.J., Harris, C.J., McNeill, K.L., Marx, R.W., & Krajcik, J. (2003, April). Usable Assessments aligned with curriculum materials: Measuring explanation as a scientific way of knowing. Paper presented at the annual meeting of the American Educational Research Association, Chicago.
- Krajcik, J. & Reiser, B (2003). Design Principles for Developing Inquiry Materials with Embedded Technologies. In Marx, R *Partnerships for Urban Systemic Reform: The Effects of Inquiry Curriculum Developed by the Center for Learning Technologies in Urban Schools*, Symposium conducted at the Annual Meeting of the American Educational Research Association, April 21-25, Chicago, IL.
- McNeil, K. L., Lizotte, D. L., Harris, C. J., Marx, R. & Krajcik, J. (2003). Using Backward Design to Create Standards Based Middle School Inquiry-Oriented Chemistry Curriculum and Assessment Materials. Paper presented at the annual meeting of the National Association for Research in Science Teaching. March, Philadelphia, PA.
- Reiser, B., Krajcik, J., Moje, E., & Marx, R. Design Strategies for Developing Science Instructional Materials. Paper presented at the annual meeting of the National Association for Research in Science Teaching. March 2003. Philadelphia, PA.
- Wu, H.-K., & Krajcik, J. S. (2003). Inscriptional practices in inquiry-based classrooms: How do seventh graders construct and interpret data tables and graphs? Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, March 23-26, Philadelphia, PA.
- Rivet, A., Krajcik, J., & Reiser, B. (2003). Design principles for developing inquiry materials with embedded technologies. Paper presented at the annual meeting of the American Educational Research Association (AERA). April 2003, Chicago, IL.
- Rivet, A. & Krajcik, J. (2003). Contextualizing instruction: Leveraging students' prior knowledge and experiences to foster understanding of middle school science. Paper presented at the annual meeting of the National Association for Research in Science Teaching. March 2003: Philadelphia, PA.
- Fortus, D., Dersheimer, R.C., Mamlok-Naaman, R., Marx, R.W., & Krajcik, J., (2003) Design-Based Science and the transfer of scientific knowledge and 'designerly' skills. Paper presented at the Annual Meeting of the American Educational Research Association, April 2003, Chicago, IL.
- Fortus, D., Krajcik, J., & Marx, R.W. Well and Ill-Defined Science Problems. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, March 2003: Philadelphia, PA.

- Schneider, R., & Krajcik, J. (2003, April). Why do I need to wear a bike helmet? Project-based science curriculum as a vehicle for reform in science education. Paper presented at the American Educational Research Association annual meeting: Chicago, IL.
- Zhang, B. H., Krajcik, J. S., Wang, L., Hu, J., Wu, J., Qiang, Y., & Li, J. (April 21-25, 2003). Opportunities and challenges of China's inquiry-based education reform in middle and high schools: Perspectives of science teachers and teacher educators. Paper presentation, the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Krajcik, Joseph. (2003). Designing science middle school chemistry materials aligned with national standards. Presentation at the American Association for the Advancement of Science Annual Meeting. February 2003, Denver, CO.
- Krajcik, J., Hug, B., Schneider, R., Marx, R. (2002). Designing units for project-based learning. In Kolodner, J. Integrating Project-Based Inquiry Initiatives into a Middle-Grades Science Curriculum: Essentials and Challenges. Symposium conducted at the Annual Meeting of the American Educational Research Association, April 1-5, New Orleans, LA.
- Fortus, D.L, Dershimer, R.C., Marx, R. W. & Krajcik, J. (2002). Design-Based Science (DBS) and Real-World Problem Solving. Paper presented at the Annual Meeting of the American Educational Research Association, April 1-5, New Orleans, LA.
- Fretz, E., Zhang, B., Wu, H-S., Krajcik, J.S., Soloway, E. (2002). An Investigation of Scaffolding Design and Use in a Dynamic Modeling Tool. In Reiser, J. Characterizing and Evaluating Software Scaffolds for Scientific Inquiry. Symposium conducted at the Annual Meeting of the American Educational Research Association, April 1-5, New Orleans, LA.
- Krajcik, J. (2002). Using Technology Tools to Support Urban Middle School Students in Inquiry. In Lunetta, V., The Laboratory in Science Education: Foundations for the 21st Century. Symposium conducted at the Annual Meeting of the National Association of Research in Science Teaching, April 6-10, New Orleans, LA.
- Hug, B., & Krajcik, J. (2002). Students' Scientific Practices Using a Scaffolded Inquiry Sequence. Paper presented at the Annual Meeting of the National Association of Research in Science Teaching, April 6-10, New Orleans, LA.
- Rivet, A. & Krajcik, J. (2002). Project-based science curricula: Achieving national standards in urban systemic reform. Paper presented at that annual meeting of the National Association for Research in Science Teaching, New Orleans, LA.
- Schneider, R. M., Krajcik, J., & Blumenfeld, P. (2002, April). Exploring the role of curriculum materials to support teachers in education reform. Paper presented at the National Association of Research in Science Teaching annual meeting, New Orleans, LA.
- Krajcik, J., Fretz, E. & Soloway, E. (2001). Studying Scaffolding in Model-It: a Dynamic Modeling Tool. In Davis, E. & Fretz, E. Finding Common Ground for Scaffolding in Science: Informing Theory and Design, Symposium conducted at the Annual Meeting of the American Educational Research Association, April 10-14, Settle, WA.
- Krajcik, J., Fishman, B & Soloway, E. (2001). Using the Framework to Understand and Respond to Challenges. In Blumenfeld, B. Creating Usable Innovations for Systemic Reform: Large-Scale Design Research in Science and Technology for Urban Schools. Symposium conducted at the Annual Meeting of the American Educational Research Association, April 10-14, Settle, WA.
- Fretz, E., Krajcik, J., Soloway, E. (2001). An Investigation of Scaffolding Design and Use in a Dynamic Modeling Tool. Paper presented at the annual meeting of the National Association for Research in Science Teaching, March 25-28, St. Louis, MO.
- Zhang, B., Wu, H., Krajcik, J., & Soloway, E. (2001). Exploring Middle School Students' Modeling Process and Cognitive Strategies When Using a Computational Modeling Tool. Paper presented at the annual meeting of the National Association for Research in Science Teaching, March 25-28, St. Louis, MO.
- Revital, T., Krajcik, J. and Blumenfeld, P. (2001). Urban Schools Teachers Enacting Project-Based Science. Paper presented at the annual meeting of the National Association for Research in Science Teaching, March 25 – 28, St. Louis, MO.
- Mamluk, R., Dershimer, R. Fortus, D. and Krajcik, J. (2001). A Case Study of the Development of a Design-Based Science Curriculum. Paper presented at the annual meeting of the National Association for Research in Science Teaching, March 25-28, St. Louis, MO.
- Hug, B. Krajcik, J., & Marx, R. (2001). Using Innovative Learning Technologies to Promote Learning and Engagement in an Urban Science Classroom. Paper presented at the annual meeting of the National Association for Research in Science Teaching, March 25-28, St. Louis, MO.
- Krajcik, J., Blumenfeld, P., Marx, R., & Soloway, E. (2001). Study Computational Technologies to Support Urban Middle School Students in Scientific Inquiry. Poster session at the NSF's January, 2000 Research, Evaluation and Communication, PI meeting, Virginia.

- Schneider, R., Krajcik, J. (2000). The role of educative curriculum materials in reforming science education. Paper presented at the Annual Meeting of the American Association for Research in Education, April 24-28, New Orleans, LA.
- Singer, J., Rivet, S., Schneider, R., Krajcik J., Amati, K., Marx, R. (2000). Setting the stage: Engaging students in water quality. Paper presented at the Annual Meeting of the American Association for Research in Education, April 24-28, New Orleans, LA.
- Krajcik, J., Marx, R., Blumenfeld, P., Soloway, E., Fishman, B., Middleton, M. (2000). Inquiry based science supported by technology: Achievement and motivation among urban middle school students. Paper presented at the Annual Meeting of the American Association for Research in Education, April 24-28, New Orleans, LA.
- Krajcik, J., Tali, T., Geier, R. (2000). Students' beliefs about science in an inquiry-based classroom. Paper presented at the Annual Meeting of the American Association for Research in Education, April 24-28, New Orleans, LA.
- Duersch, B., Batchelor, Nevsin, S., Lohr, L., Krajcik, J., Coppola, B. (2000). CSIE-PFF Fellows: A powerful model for coupling future faculty development with curriculum reform. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, April 28-May 1, New Orleans, LA.
- Krajcik, J., Marx, R., Clay-Chambers, J., Peek-Brown, D. (2000). Reforming science education through university and school district collaborations. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, April 28-May 1, New Orleans, LA.
- Wu, H., Krajcik, J. (2000). Promoting conceptual understanding of chemical representations: Students' use of a visualization tool in the classroom. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, April 28-May 1, New Orleans, LA.
- Talsma, V. L., Krajcik, J. S. (2000). Students' Changing understandings of stream ecology: A trickle or a flood? Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, April 28-May 1, New Orleans, LA.
- Rivet, A., Singer, J., Schneider, R., Krajcik, J., & Marx, R.W. (2000). The Evolution of Water: Designing and Developing Effective Curricula. Paper presented at the annual meeting of the National Association for Research on Science Teaching. New Orleans, LA.
- Krajcik, J. S. (1999). Inquiry in the Middle and High School Science Classroom. In C. Hoadley (Chair), Inquiry Learning: How, When, and Why Should Science Inquiry Be Brought to the Classroom? Invited Interactive Symposium conducted at the American Educational Research Association conference, Montreal, Canada.
- Peek-Brown, D., Krajcik, J. and Roy, M. (1999). Ecological Systems: Water. In L. Gomez and R. Marx (chairs). At the Nexus of Challenging Curriculum Design, Learning Technologies, and School Transformation: The First Year of the Center for Learning Technologies in Urban Schools. Symposium conducted at the American Educational Research Association conference, Montreal, Canada.
- Krajcik, J. (1999). Criteria for Evaluating Educational Research and Research Proposals. In L. Suter (chair) Communicating Research to the Science Teacher: How can Science Education Researchers Better Communicate Research to the Practicing Science Teacher? Symposium conducted at the American Educational Research Association conference, Montreal, Canada.
- Krajcik, J. & Talsma V. (1999). Project-Based Science at Community High: Foundations of Science. In v. Talsma (chair). Promoting Scientific Understandings in a Project-Based Technology-Infused Science Environment: The Community High Experience. Symposium conducted at the annual meeting of the National Association for Research in Science Teaching, Boston, MA.
- Hoffman, J. & Krajcik, S. (1999). Assessing the Nature of Learners' Science Content Understandings as a Result of Utilizing On-Line Resources. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Boston, MA.
- Middleton, M., Schneider, R., Krajcik, J. & Marx, R. (1999). Case Studies of Three Middle School Science Teachers: What They Tell Us About Developing Project-Based Curriculum Materials. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Boston, MA.
- Singer, J., Krajcik, J. & Marx, R. (1999). The Design and Evaluation of Classroom Supports for Seamless Integration of a Dynamic Modeling Tool. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Boston, MA.
- Krajcik, J., Singer, J., Amati, K., Peek-Brown, D. (1999). Embedding learning technologies in curriculum to foster student learning of science. Paper present at the Michigan Science Teacher Association meeting, Lansing, MI.
- Stratford, S, Krajcik, J., & Soloway, E. (1997). Secondary students' dynamic modeling processes: analyzing, reasoning about, synthesizing, and testing models of stream ecosystems. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Krajcik, J. S., Bos, N. D., & Soloway, E. (1997). Student publishing in a digital library. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

- Lyons, D., Hoffman, J., Krajcik, J., & Soloway, E. (1997). An investigation of the use of the WWW for sustained inquiry in a science classroom. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Oak Brook, IL.
- Krajcik, J. S. & Starr, M. L. (1997). Integrating knowledge bases: An upper-elementary teacher preparation program. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Oak Brook, IL.
- Blumenfeld, P. & Krajcik, J. (1997). What are we learning about well started beginners? Paper presented at the annual meetings of the American Educational Research Association. Chicago. Symposium entitled: "Education psychology and teacher education: Perennial issues."
- Blumenfeld, P., Marx, R. & Krajcik, J. (1997). Teachers transitioning to project-based science: Necessary supports. Paper presented at the annual meetings of the American Educational Research Association, Chicago. Symposium entitled: " Implications of new views of cognition for teaching learning and teacher education."
- Spitulnik, M.W., Stratford, S., Krajcik, J. & Soloway, E. (1996). Students constructing technological artifacts in science. Paper presented at the American Educational Research Association Annual Meeting. New York, NY. April 8, 1996.
- Zemal, C., Krajcik, J., & Blumenfeld, P. (1996). Elementary student teacher's science content representations. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, April 1-3, St. Louis, MO.
- Krajcik, J. S. (December 1996). Use of new technologies in science teaching. Excellence in Teacher Preparation Principal Investigators Meeting, National Science Foundation, Arlington, Virginia.
- Krajcik, J., Marx, M., (1996). Technology tools for planning. Paper present at the Annual Meeting of the Association for the Education of the Teachers of Science, Seattle, Washington.
- Krajcik, J. (1996). Realizing the Potential of Computing and Telecommunication Technologies for Science Teaching. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, March 28-31, St. Louis, MI.
- Krajcik, J. & Spitulnik, M. W. (1996). Integrating new technologies for better teaching and learning. Paper presented at Syllabus 96 Annual Meeting. Sonoma State University, Rohnert Park, CA. July 20-24.
- Krajcik, J. S., Ladewski, B., Blumenfeld, P. C., Marx, R. W., & Soloway, E. (1995). Technological support for the professional development of science teachers. Symposium conducted at the Annual Meeting of the National Association for Research in Science Teaching, April 22-25, 1995, San Francisco, CA.
- Jackson, S., Stratford, S., Krajcik, J. and Soloway, E. Learner centered software design to support students model building. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, April 22-25, 1995, San Francisco, CA.
- Krajcik, J. S., Ladewski, B., Blumenfeld, P. C., & Marx, R. W. (1995). Multiple perspectives on designing, developing, and using interactive multimedia for teacher enhancement. Symposium conducted at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Marx, R.W., Blumenfeld, P.C., Krajcik, J.S., Soloway, E., Cox, G., & Breen, T. (1995). PIViT: Technology for the professional development of science teachers. In E.S. Fletcher. Using technology to prepare effective and responsible educators. Symposium conducted at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Zemal, C., Krajcik, J., & Blumenfeld, P. (1995). The role of cycles of planning, enactment and reflection in preservice teachers' understanding of content selection and representation. Symposium conducted at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Stratford, S., Jackson, S., Krajcik, J., & Soloway, E. (March 1995). Model-It: A case study of learner-centered software for supporting model building. Paper presented at the Working Conference on Technology Applications in the Science Classroom, The National Center for Science Teaching and Learning, Columbus, OH.
- Krajcik, J.S., Ladewski, B.L., Crawford, B., & Hopkins, B. (1994). Fostering investigation and collaboration in science classrooms: Challenges and benefits. Panel presentation at the 42nd National Science Teachers Association National Convention, April 30-March 2, Anaheim, CA.
- Zemal, C.M., Krajcik, J.S., Blumenfeld, P.C., & Palincsar, A. Apprenticeship pre-service elementary teachers in developing a cognitive framework for science content representation and instruction. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, March 26-29, 1994, Anaheim, CA.
- Krajcik, J.S. (1995). Technological support for reform in teacher education. American Association of Colleges for Teacher Education Annual Meeting, February 14, Washington DC. Invited paper.
- Magnusson, S., Krajcik, J.S., & Borko, H. (1994). Teaching complex subject matter in science: Insights from an analysis of pedagogical content knowledge. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, March 26 - 29, Anaheim, CA.

- Krajcik, J., Blumenfeld, P., Marx, R., & Soloway, E. (1993). Project-based instruction in science: Challenges for teachers. In Blumenfeld, P. Project-based Instruction: Challenges, Resolutions and Support. Symposium conducted at the Annual Meeting of the American Educational Research Association, April 12-16, Atlanta, GA.
- Marx, R., Krajcik, J., Blumenfeld, P., & Soloway, E. (1993). The growth of wisdom: How teachers meet the challenges and how they change. In Blumenfeld, P. Project-based Instruction: Challenges, Resolutions and Support. Symposium conducted at the Annual Meeting of the American Educational Research Association, April 12-16, Atlanta, GA.
- Soloway, E., Krajcik, J., Blumenfeld, P., & Marx, R. (1993). Technological support for implementing project-based instruction in science. In Blumenfeld, P. Project-based Instruction: Challenges, Resolutions and Support. Symposium conducted at the Annual Meeting of the American Educational Research Association, April 12-16, Atlanta, GA.
- Ladewski, B., Krajcik, J., Connie, C. & Hopkins, B. (1993). Studying teacher change in a profession school environment. Paper presented at the Annual Meeting of the American Educational Research Association, April 12-16, Atlanta, GA.
- Mills, K. M., Krajcik, J. & Marx, R. (1993). Change in teacher beliefs about learning and the nature of science. Paper presented at the Annual Meeting of the American Educational Research Association, April 12-16, Atlanta, GA.
- Krajcik, J. S., Blumenfeld, P., Marx, R., Soloway, E., Blunk, M., Ellies, B., Kelly, B., Ladewski, B., & Mills, K. (1993). Case studies of project-based science instruction: Challenges of implementation. Symposium conducted at the Annual Meeting of the National Association for Research in Science Teaching, April 15-19, Atlanta, GA.
- Rubio, R and Krajcik, J. (1993). Influence of the use of telecommunications upon student motivation in a science classroom. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, April 15-19, Atlanta, GA.
- Starr, M. L., Krajcik, J.S., & Blumenfeld, P. (1993). Content representation: A part of the science teaching of preservice elementary teachers. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, April 15-19, Atlanta, GA.
- Breen, T.J., Krajcik, J. S., & Coppola, B. (1993). The development of preservice teachers' content knowledge in an integrated teacher preparation program. Poster session at the Annual Meeting of the National Association for Research in Science Teaching, April 15-19, Atlanta, GA.
- Zemal, C., Starr, M., Krajcik, J., & Palincsar, A. (1993). Change in preservice teacher beliefs about elementary science teaching. Poster session at the Annual Meeting of the National Association for Research in Science Teaching, April 15-19, Atlanta, GA.
- Krajcik, J., Blumenfeld, P. & Soloway, S. (1992). Integrating the knowledge bases in science teacher preparation. Presentation at the Teacher Preparation and Enhancement Principal Investigator Meeting. May 29-31, 1992, Washington, D.C.
- Ladewski, B., Krajcik, J. S., Levy, J. S. and Hall, R. The development of elementary school students' ideas related to the categorization of living things. Paper presented at the 65th Annual Meeting of the National Association for Research in Science Teaching, March 21-25, 1992, Cambridge, MA.
- Nakhleh, M. B. & Krajcik, J. S. (1992). A protocol analysis of the effect of technology on students' actions, verbal commentary, and thought process during the performance of acid-base titrations. Paper presented at the 65th Annual Meeting of the National Association for Research in Science Teaching, March 21-25, Cambridge, MA.
- Magnusson, S., Borko, H., Krajcik, J. S., & Layman, J. W. (1992). The relationship between teacher content and pedagogical content knowledge and student content knowledge of heat energy and temperature. Paper presented at the 65th Annual Meeting of the National Association for Research in Science Teaching, March 21 - 25, Cambridge, MA.
- Starr, M. & Krajcik, J. S. (1992). The use of concept maps in a physical science course for elementary preservice teachers. Presentation presented at the 40th National Science Teachers Association National Convention, March 26-28, Boston, MA.
- Krajcik, J. S. & Borko, H. (1991). Pedagogical content knowledge: an important construct for science education. In Pedagogical Content Knowledge: Definitions and Implications for Science Teacher Education and Research, Symposium. Paper presented at the 64th Annual Meeting of the National Association for Research in Science Teaching, April 7-10, Lake Geneva, WI.
- Krajcik, J. S. & Starr, M. (1991). The use of concept mapping in science education research: overview and issues, panel topic. Presentation presented at the 64th Annual Meeting of the National Association for Research in Science Teaching, April 7-10, Lake Geneva, WI.

- Templin, M. A. & Krajcik, J. S. (1991). A comparison of lesson planning decision patterns of novice and experienced biology teachers. Poster session at the 64th Annual Meeting of the National Association for Research in Science Teaching, April 7-10, Lake Geneva, WI.
- Krajcik, J. S., Layman, J., Starr, M. & Magnusson, S. (1991). A comparison of middle school teachers' content knowledge and pedagogical content knowledge of heat energy and temperature with their students' content knowledge. Paper presented at the 64th Annual Meeting of the National Association for Research in Science Teaching, April 7-10, Lake Geneva, WI.
- Nakhleh, M. B. & Krajcik, J. S. (1991). The effect of level of information as presented by different technologies on students' understanding of acid, base and pH concepts. Presentation at the 64th Annual Meeting of the National Association for Research in Science Teaching, April 7-10, Lake Geneva, WI.
- Krajcik, J. S., Layman, J. W., Starr, M. S. & Magnusson, S. (1991). The development of middle school teachers' content knowledge and pedagogical content knowledge of heat energy and temperature. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Krajcik, J. S. Less is more for conceptual learning. (1990). Presentation at the National Science Teachers Association, 38th National Convention, April 5-8, 1990, Atlanta, Georgia, invited presentation.
- Krajcik, J. S., Bloyce, E., Hangey, S., Smith, T., Hicks, L., Hansen-Grafton, B., and Keranen, K. (1990). MBL in the middle school science classroom: teachers' insights. Presentation at the National Science Teachers Association, 38th National Convention, April 5-8, Atlanta, Georgia.
- Clermont, C., Borko, H., & Krajcik, J. (1990). A comparative study of the pedagogical content knowledge of experienced and novice chemical demonstrators. Paper presented at National Association for Research in Science Teaching, 63rd Annual Meeting, March 7-10, 1990, Atlanta, GA.
- Krajcik, J. S. Students' interactions with science software containing dynamic visuals. (November 1989). In M. Eisenhart & J. G. Goetz (Chairs) Meanings of Science and Technology in Schools and Communities. Symposium conducted at the 88th Annual Meeting of the American Anthropological Association, Washington, D.C.
- Krajcik, J. S. & Layman, J. W. (1989). Middle school teachers' conceptions of heat and temperature: personal and teaching knowledge. Paper presented at National Association for Research in Science Teaching, 62nd Annual Meeting, March 30-April 1, San Francisco, CA.
- Clermont, C. P. & Krajcik, J. S. (1989). The influence of intensive inservice of pedagogical content knowledge growth among novice chemical demonstrators. Paper presented at National Association for Research in Science Teaching, 62nd Annual Meeting, March 30-April 1, San Francisco, CA.
- Sutula, V. D & Krajcik, J. S. (1988). Effective use of analogies on moles problems in high school chemistry classes. Paper presented at National Association for Research in Science Teaching, 61st Annual Meeting, April 10-13, Lake Ozark.
- Krajcik, J. S. (1988). Using computer simulations to enhance student learning of physical science concepts. Presentation at the National Science Teachers Association, 36th National Convention, April 7-10, St. Louis, MO.
- Krajcik, J. S. (1987). Learning science concepts through computer assisted instruction. W. G. Holliday (Chair), Linking three research agendas of science teaching: studying science, classrooms in science, computers in science. A symposium conducted at the National Association for Research in Science Teaching, 60th Annual Meeting, April 23-26, Washington, D.C.
- Layman, J. & Krajcik, J. S. (1987). Research matters... to the science teacher: using the computer in science instruction. Presentation at the National Science Teachers Association, 35th National Convention, March 26-29, Washington, D.C.
- Krajcik, J. S., Lunetta, V. H. & Simmons, P. E. (1986). New models for science software development and classroom use. Presentation at the National Science Teachers Association, 34th National Conventions, March 26-29, San Francisco, CA.
- Krajcik, J. S. Penick, J. E. & Yager, R. E. (1986). Evaluation of an innovative science teacher education program. Paper presented at National Association for Research in Science Teaching, 59th Annual Meeting, March 28-31, San Francisco, CA.
- Lunetta, V. N., Simmons, P. E. and Krajcik, J. S. (1986). A descriptive research strategy assessing computer assisted instruction in science education. Paper presented at the National Association for Research in Science Teaching, 59th Annual Meeting, March 28-31, San Francisco, CA.
- Krajcik, J. & Haney, R. (1984). The relationship between cognitive development of high school students and their achievement in chemistry. Paper presented at the National Association for Research in Science Teaching, 57th Annual Meeting, April 27-30, New Orleans, LA.

Regional and State Presentations:

- Krajcik, J. & McNeill, K. L. (February 2006). Supporting secondary students in scientific practices: Using evidence, creating models and constructing explanations. Paper presented at To Think and Act Like A Scientist: The Roles of Inquiry, Research, and Technology, Lubbock, TX.
- Krajcik, J. (February 2002). Fostering Inquiry Using New Learning Technologies (and Backwards Design) Michigan Assessment Team, Livingston Intermediate School District, MI.
- Krajcik, J. (March 2001). Supporting Science Teachers use of new learning technologies, Keynote speaker at the Michigan Science Teacher Leaders Association, Detroit, MI.
- Krajcik, J. & Peek-Brown, D. (February 2001) Using new learning technologies to promote student understanding of science. Michigan Mathematics and Science Centers Directors Meeting, Romulus, MI.
- Krajcik, J., Singer, J., Amati, K., Peek-Brown, D. (1999). Embedding learning technologies in curriculum to foster student learning of science. Paper present at the Michigan Science Teacher Association meeting, Lansing, MI.
- Krajcik, J. S. & Berger, C. (1995). Using technology to promote student understanding in science and mathematics. Michigan's State Systemic Initiative - Teacher Education Component. Presentation to 60 individuals from colleges and university throughout Michigan, Gaylord, MI. Invited, July.
- Krajcik, J. (1995). Potential of computing and telecommunication. ISACS/AIMS Annual Regional Conference. November 10, Grosse Pointe Woods, MI.
- Krajcik, J. (1994). Effective teaching and learning strategies. Michigan Science Teachers' Association (MSTA), February 25-26, Detroit, MI.
- Krajcik, J. (1994). Effective teaching and learning strategies. Presentation at Michigan Association for Computer-related Technology Uses in Learning (MACUL); March 10-11, Grand Rapids, MI.
- Krajcik, J., Ladewski, B., & Brade, K. (1994). Computer-based support for instructional planning. Presentation at Michigan Association for Computer-related Technology Uses in Learning (MACUL), March 10-11, 1994, Grand Rapids, MI.
- Krajcik, J. S. & Berger, C. (1994). Using multimedia in the classroom. Jackson county Presentation to Jackson County School Board, September 20, Jackson, MI. Invited paper.
- Krajcik, J. S. (1994). North Central Regional Educational Laboratories invited presentation on Project-based Science, July 16. Moving Mathematics and Science Assessment into the 21st Century Conference, Hickory Ridge Conference, Lisle, IL.
- Krajcik, J.S. (1994). How can we make chemistry instruction authentic? Paper presented at the meeting of the Joint Regional American Chemical Society Meeting, June 3, Ann Arbor, MI.
- Layman, J. W. & Krajcik, J. S. (1990). The use of microcomputer-based laboratories in constructing science concepts. Presentation at the National Science Teachers Association, Area Convention, December 13 -15, Washington, D.C.
- Krajcik, J. S. & Layman, J. W. (1989). MBL in the middle school science classroom: teacher insights. Presentation at the Maryland Association of Science Teachers Fall Conference, November 2-4, Ocean City, MD.
- Krajcik, J. S. (1988). Research matters: preliminary results from the University of Maryland middle school probeware project. Presentation at the Computers in Science Conference, John Hopkins University, June 4, Baltimore, MD.
- Krajcik, J. S. (1987). Developing skills and competence in the use of computers and technology. V. Lunetta (Chair), Toward Excellence in Teacher Education Preparation. A symposium conducted at the National Science Teacher Association, November 5-7, Pittsburgh, Pennsylvania Regional Convention.
- Krajcik, J. S. & Berg, C. (1986). Using exemplary software in the science classroom. Presentation at the National Science Teacher Association, Indiana Regional Convention, October 30-November 1, Indianapolis, IN.
- Krajcik, J. S. & Lunetta, V. N. (1986). New models for software development. Presentation at the National Science Teacher Association, Indiana Regional Convention, October 30-November 1, Indianapolis, IN.
- Krajcik, J. S. & Berg, C. (1986). Using computers effectively in the science classroom. Presentation at the Iowa Science Leadership Conference-Making Iowa Science #1, Buena Vista College, March 3-4, Storm Lake, Iowa.
- Krajcik, J. S. (1985). Exemplary programs in elementary school science. Presentation at the Iowa Science Leadership Conference, December 2-3, Iowa City, IA.
- Lunetta, V. H., Simmons, P. E. & Krajcik, J. S. (1985). Using computers effectively for school science. Presentation at the Iowa Science Leadership Conference, December 2-3, Iowa City, IA.
- Penick, J. E. & Krajcik, J. S. (1985). Exemplary programs in chemistry and physics. Presentation at the Illinois Science Teachers Association State Convention. Illinois State University, October 5, Normal, IL.

- Krajcik, J. S. (1985). Can students successfully complete college chemistry without high school chemistry? Presentation at the Iowa Curriculum Up-Date Conference. Science Education Center, University of Iowa, July 30, Iowa City, IA.
- Krajcik, J. & Berg, C. (1985). Using exemplary software to teach science. Presentation at the Illinois Science Teachers Association State Convention. Illinois State University, October 5, Normal, IL.
- Krajcik, J. S. (1985). Exemplary science software. Presentation at the Science, Technology and Society Honors Workshop. Science Education Center, University of Iowa, July 31, Iowa City, IA.
- Lunetta, V. H., Huber, R., Krajcik, J. S. (1984). Computers in the science classroom. Presentation at Iowa Science Leadership Conference, December 3-4, Iowa City, IA.
- Krajcik, J. S., Anderson, D., Penick, J. P. (1984). Teaching strategies of exemplary chemistry programs. National Science Teachers Association, October 18-20, Minneapolis Area Convention.
- Krajcik, J. S. (1984). Conductivity of solutions. Presenter at the Make and Take Workshop at the National Science Teachers Association, October 18-20, Minneapolis Area Convention.
- Krajcik, J. S. (1983). The relationship between cognitive development of high school students and student achievement in chemistry. Presentation at the 25th Annual Convention of the Wisconsin Science Teachers. April 15-16, Milwaukee, WI.
- Krajcik, J. S. (April 1983). Demonstrations to stimulate interest. Presentation at the Spring 1983 Milwaukee Archdiocese Science Teacher Association Meeting, Milwaukee, WI.

Selected Media Presentations:

- Krajcik, J. and Schneider, B. (2021). Project-based Learning Deepens Science Knowledge in *Conversation*, reported on *Yahoo*, *Washington Post* and *Atlantic Journal Constitution*.

RESEARCH PROJECTS

- Exploring Students' Progression in developing Quantitative Knowledge-in-Use about Energy, August 1, 2023-July 31, 2027. Institute of Education Sciences. **\$1,999,773.**
- Evaluating Effects of Automatic Feedback Aligned to a Learning Progression to Promote Knowledge-In-Use, September 1, 2022 through August 31, 2026. National Science Foundation. **\$2,101,285.00.**
- Supporting Instructional Decision Making: The Potential of Automatically Scored Three-dimensional Assessment System, September 1, 2021-August 31, 2025, National Science Foundation. **\$404,463.00.**
- Understanding Adaptations in ML-PBL, September 1, 2020-August 31, 2022. George Lucas Educational Foundation. Krajcik, Joseph (PI), Schneider, Barbara (PI). **\$1,644,366.00.**
- RAPID: Making the transition to online science teaching and learning, July 1, 2020 through June 30, 2021, NSF grant subcontract from Concord Consortium. **\$83,447.00.**
- Collaborative Research: Building a Professional Learning Model to Support Middle School Teachers in Envisioning and Promoting 3-Dimensional Science Learning. National Science Foundation. September 1, 2019 through August 31, 2023. **\$825,651.**
- Health in Our Hands: Building and sustaining student engagement in genomic and environmental health sciences through a community-school partnership. NIH. May 1, 2019 through April 20, 2024. **\$1,350,000.**
- Collaborative Research: Scaffolding Computational Thinking Through Multilevel Systems Modeling, NSF 1842037. Joseph Krajcik (PI). September 15, 2018 through August 31, 2022. **\$1,272,353.**
- Equipping Middle School Teachers with Resources to Monitor the Progress of Their Student's Science Learning, December 1, 2018-June 30, 2021. Prime Sponsor: Silicon Valley Community Foundation (non-profit that Chan-Zuckerberg Institute uses for funding research), subcontract from University of Illinois Chicago. **\$249,999.71.**
- Collaborative Research: Connected Biology: Three-Dimensional learning from molecules to populations. NSF. January 1, 2018 through December 31, 2020. **\$1,181,214.**
- Promoting Productive Disciplinary Engagement and Learning with Open Problems and "Just-in-Time" Supports in Middle School Mathematics. NSF. May 16, 2017 through May 15, 2020. **\$1,497,275.**
- Designing, Developing and Testing Rigorous Project-based Learning Materials to Support 5th Grade Learners in Science, English Language Arts and Mathematics Supplement. George Lucas Educational Foundation with a subcontract to the University of Michigan. February 1, 2017 through December 31, 2020. **\$600,000.**
- PIRE: Crafting Optimal Learning in Science Environments, , Barbara L. Schneider, Joseph S. Krajcik. September 15, 2015 through August 31, 2020. **\$3,602,431.**
- Multiple Literacy in Project-Based Learning, Lucas Education Research, a division of the George Lucas Educational Foundation with a subcontract to the University of Michigan. January 1, 2015 through December 31, 2019. **\$5,417,441.**

- A New Genomic Framework for Schools and Communities. National Institute of Health. May 15, 2014 through February 28, 2020. **\$1,240,843.**
- Exploring Potential Learning Trajectories for the Energy Concept in Middle School, National Science Foundation (DUE-143172) with subcontract to IPN, Germany and the Weizmann Institute of Science Israel. September 1, 2014 through August 31, 2018. **\$1,499,285.**
- Collaborative Research: Supporting Secondary Students in Building External Models, National Science Foundation, DRL-1417900, October 1, 2014 through July 31, 2019. **\$1,084,194.**
- Collaborative Research: Designing Assessments in Physical Science Across Three Dimensions, National Science Foundations, DRL-1316908, August 2013 through July 2016. **\$757,335.**
- A Model for Preparing Teachers to Implement the New Standards (National Science Foundation DRL, RAPID), Joseph Krajcik (PI), **\$199,000.**
- Developing and Testing a Model to Support Student Understanding of the Sub-Microscopic Interactions that Govern Biological and Chemical Processes (National Science Foundation, DRL-1232388), Joseph Krajcik (PI), September 1, 2012 through August 31, 2016, **\$2,104,855.**
- Efficacy Study of Project-Based Inquiry Science, (DRL-1020407), to SRI (UM subcontract), Christopher J. Harris, Joseph S. Krajcik, William Penuel. August 15th, 2010 through July 31, 2015. **\$574,403.**
- "Zydeco: A Mobile "Nomadic Inquiry" System to Support and Bridge Science Inquiry Between Classroom and Museum Contexts," (DRL-1020027), Christopher Quintana, Joseph S. Krajcik. August 1, 2010 through July 31, 2013. **\$1,648,674.**
- Moving Beyond Conceptual Models: Developing Assessments to Validate and Study Learning Progressions, (NSF, DRL-0830931), Ravit Duncan, PI, Rutgers University, Joe Krajcik (co-PI). September 15, 2008 through April 30, 2010. **\$147,093.**
- Developing an Empirically-Tested Learning Progression for the Transformation of Matter to Inform Curriculum, Instruction and Assessment Design (NSF; DRL-0822038): Namsoo Shin (PI) & Krajcik (co-PI). **\$2,569,539.00.**
- Collaborative Research: Universal Design of Inquiry-Based Middle and High School Science Curriculum (NSF; DRL-0730348; 2007-2011); UM: LeeAnn Sutherland (PI) & Joe Krajcik (co-PI); CAST: David Rose (PI) & Boris Goldowsky (co-PI); EDC: Jackie Miller (PI) & June Foster (co-PI).
- Longitudinal Student Outcomes in a Scaling Urban Inquiry-Based Science Intervention (co-PI with Phyllis Blumenfeld). Spencer foundation, July 1, 2006 through June 30, 2008. **\$351,900.**
- A Learning Progression for Scientific Modeling, Brian J. Reiser (PI); Joseph S. Krajcik, Elizabeth Davis, Christina Schwarz, David Fortus (co-PIs). National Science Foundation, ESI-06281099, October 1, 2006 through September 30, 2008. **\$1,738,829.**
- Education for Community Genomic Awareness, from the National Institutes of Health (co-PI with Toby Citrin from Public Health), #1 R25 RR022703-01. **\$1,341,329.**
- National Center for Teaching and Learning in NanoScale Science and Engineering. National Science Foundation Center for Teaching and Learning (ESI-0426328), Joseph Krajcik (co-PI); Robert Chang, Northwestern University (PI).
- Collaborative Research: Developing the Next Generation of Middle School Science Materials -- Investigating and Questioning our World through Science and Technology. National Science Foundation. Award Number - ESI-0439352. Krajcik, PI. Collaborative grant with Northwestern (Brian Reiser), September 3, 2004 through October 1, 2009. **\$6,267,023.**
- Center for Teaching and Learning – Developing Leadership Capacity in Science Curriculum Development, Subcontract from American Association for the Advancement of Science, National Science Foundation, Award Number: ESI-0227557. September 2002 through August 2007. **\$2,438,316.**
- Middle School Science Curriculum Materials: Meeting Standards and Fostering Inquiry through Project-based Inquiry Science Units, National Science Foundation, Subcontract for 3 years from Georgia Institute of Technology, Janet Kolodner (PI); Joseph Krajcik (co-PI). Award Number: 0137807. **\$369,101.**
- Middle School Science Curriculum Materials: Meeting Standards and Fostering Inquiry Through Learning Technologies. Grant to develop a comprehensive set of middle grades science materials in collaboration with Northwestern University, the University of South Carolina, AAAS, and the Education Development Centers, Inc. (ESI-0101780). July 1, 2001 through October 31, 2004. **\$1,999,738.**
- Teaching Practices to Promote Science Understanding through Inquiry and Technology in Urban Schools. Grant to explore strategies for help urban student learn science. Krajcik (PI); Marx and Blumenfeld (Co-PIs), REC-0106959. Grant period is September 2001 through September 2004. **\$1,685,819.**
- Learning-Centered Design Methodology: Meeting the Nation's Need for Computational Tools for K-12 Science. E. Soloway (PI), Krajcik (co-PI). National Science Foundation, Education TR, 0085946. September 2000 through August 2003. **\$3,000,000.**

- Creating a Corpus of Learning-Situated Design Guidelines and Software Components: Foundation for Educational Software Research and Development (ASSESS project), E. Soloway (PI), Krajcik and Marx (co-PIs). National Science Foundation, REC 9980055. October 2000 through September 2003. **\$2,040,000.**
- Collaboration on Urban Systemic Change. Subcontract from the Detroit's Urban Systemic Initiative. Krajcik (PI), Marx (co-PI). July 1999 through June 2004. **\$1,431,951.**
- Extending the Primary Sources Network, USDOE/OERI. Principal Investigator: Ronald Marx; Participating Investigators: Phyllis Blumenfeld, Joseph Krajcik. May 1, 1999 through September 30, 2002. **\$3,986,978.**
- Community Health Investigator Project, Centers for Disease Control and Prevention. Principal Investigator: Toby Citrin; Investigators: Kathleen Ford, Joseph Krajcik. January 1999 through December 31, 1999. **\$374,999.**
- Studying Computational Technologies to Support Urban Middle School Students in Scientific Inquiry. Krajcik (PI), Blumenfeld, and Soloway (co-PIs), National Science Foundation. October 1, 1997 through September 31, 2000. **\$499,964.**
- Center for Learning Technologies in Urban School. Funded for 4 years. Gomez, L (Northwestern University), Marx, R (University of Michigan), Clay-Chambers, J. (Detroit Public Schools), and Burgess, C. (Chicago Public Schools) are the principals for the project. I served as a research scientist in the grant, helped developed the grant and was instrumental in final negotiations with the National Science Foundation. **\$6,000,000.**
- The Community Science Connection: A Model for K-12 Model for Science Education Reform, Office of the Provost, University of Michigan (with E. Soloway et al.). Received in 1996. **\$361,000.**
- Sub-Contract, Dade County, Bolt, Berankey & Newman. Krajcik, J. (PI). July 14, 1995 through June 30, 1996. **\$98,348.**
- Computational Support for Authentic Science Inquiry. Elliot Soloway, Project Director. Joseph Krajcik, Ron Marx, Phyllis Blumenfeld and Brian Coppola (co-PIs). National Science Foundation. April 1, 1996 through March 31, 2000. **\$1,739,538.**
- A Digital Library for Middle Schools: Supporting Authentic Science Investigations. Elliot Soloway, Project Director. Joseph Krajcik, Ron Marx, Roberta Johnson, Karen Drabenstott (co-PIs). National Science Foundation. October 1, 1995 through September 30, 1998. **\$1,413,000.**
- Teaching Learning and Curriculum Alignment Grant. Michigan Department of Education, Eisenhower, (Grant number, 94-0053). Krajcik, J. (PI). September 1993 through December 1994. **\$64,659;** September 1994 through December 1996. **\$49,000.**
- ScienceWorks: Making the Computational Science Methodology Accessible to Learners. Elliot Soloway, Project Director. Joseph Krajcik and Roy Pea (co-PIs). National Science Foundation (RED-9353481). September 1, 1993 through August 31, 1997. **\$1,343,521.**
- Edmonson Middle School Science Effort. Michigan Partnership. During the 1992-1993, 1993-1994, 1994-1995 school years. Approximately **\$100,000** each.
- Enhancing Achievement and Assessment in a University/Schools Program. Stuart Rankin (PI). Sam Meisels and Martin Packer (co-PIs). **\$143,219.**
- Enhancing the Teaching of Project-Based Science. Krajcik, J. (PI), P. Blumenfeld, E. Soloway, and R. Marx; National Science Foundation (TPE-9153759). Year 1991. **\$1,125,340.** Supplemental grant September 1, 1991 through August 31, 1993. **\$62,565.**
- Upper Elementary Science Teaching: Integrating the Knowledge Bases. Joseph Krajcik, Phyllis Blumenfeld and Elliot Soloway (co-PIs). National Science Foundation, (TPE - 9150020). Year 1991. **\$413,185.** Supplemental grant July 1992 through December 31, 1994. **\$82,512.**
- LabNet Training and Teaching at the University Michigan. Co-principal director with Carl Berger. Subcontract from the Technical Education Research Center from Primary Grant LabNet. Subcontract TPE 88510465, March 31, 1990 through August 31, 1990. **\$132,995.**
- University of Maryland Middle School Probeware Project. Joseph Krajcik and John W. Layman (co-PIs). National Science Foundation. April 1988. **\$326,629.**
- A study of students' conceptual changes that occur while interacting with instructional software. Center for Educational Research and Development, University of Maryland, College of Education. 1987-1988. **\$5,000;** 1988-1989, **\$3,000.**
- The influence of microcomputer-based laboratories on students' science concept formation, graphing skill acquisition and problem-solving development. Graduate Studies and Research, University of Maryland, 1987, **\$2,000.**
- A study of students' science concept development through the use of computer graphics. Center for Educational Research and Development, University of Maryland, College of Education, 1986-1987, **\$4,980.** Department of Curriculum and Instruction, 1986, **\$500.**
- Influence of microcomputer Based Laboratory Experiments on Junior High Students' Concept Development and Graphing Skills. Center for Education Research and Development, University of Maryland, College of Education in collaboration with Dr. J. W. Layman, October, **\$4,850.** Department of Curriculum and Instruction, 1986, **\$500.**

HONORS & CITATIONS

- 2022 Honorary Doctoral Degree in Educational Studies, University of Tartu, Estonia.
- 2022 Distinguished Professor, University of Johannesburg, South Africa.
- 2021 Distinguished Professor, Michigan State University.
- 2021 Recipient of the 2021 International Society for Design and Development in Education (ISDDE): The ISDDE Prize for Excellence in Design for STEM Education.
- 2020 Recipient of the 2020 McGraw Price in K-12 Education.
- 2019 Elected as a National Academy of Education Member.
- 2019 Visiting Professor, Beijing Normal University.
- 2015 Invested as the Lappan-Phillips Professor of Science Education, College of Natural Science, MSU.
- 2014 George G. Mallinson Award for excellence of contributions to science education at the local, state and national level over a significant period of time, Michigan Science Teachers Association.
- 2011 Recipient of the Provost Teaching Innovation Prize (IDEA Institute).
- 2010 Recipient of the Distinguished Contributions to Science Education Through Research Award from the National Association of Research in Science Teaching.
- 2010 Recipient of the University of Michigan Faculty Award for Distinguished Graduate Mentoring.
- 2009 Distinguished Professor, Ewha Womans University, Institute for Global Science, Society and Technology Education, Seoul, South Korea.
- 2009 Inducted as a Fellow of the American Educational Research Association.
- 2008 Inducted as a Fellow of the American Association for the Advancement of Science.
- 2005 Weston Visiting Professor of Science Education, Weizmann Institute of Science, Rehovot, Israel (January – July 2005).
- 2004 Recipient Urban Impact Award, Council of the Great City Colleges of Education, with Detroit Public Schools and research colleagues Professors Blumenfeld, Fishman, Marx and Soloway for university school district partnerships that improve the education of urban children.
- 2003 Recipient of the Class of 1923 Teaching Award, School of Education, University of Michigan.
- 2002 – 2007 Guest Professor, Beijing Normal University, Beijing, China.
- 2002 Inducted as a Fellow of the American Association for the Advancement of Science.
- 2000 Recipient of the 2000 NARST Outstanding Paper Award for a paper presented at the 1999 meeting entitled Assessing the Nature of Learners' Science Content Understandings as a Result of Utilizing On-Line Resources, with Joseph Hoffman.
- 1999 - 2000 President of the National Association of Research in Science Teaching.
- 1983-1988 Assistantships awarded to pursue graduate studies in Science Education, University of Iowa.
- 1976 Award of Outstanding Tutorial Performance; University of Wisconsin-Milwaukee, Department of Learning Skills and the Division of Student Services, Spring.
- 1975 National Science Foundation Scholarship recipient; University of Wisconsin-Milwaukee, Department of Chemistry.

PROFESSIONAL PUBLIC SERVICE*Editorial Work:*

- 2021 Editorial Team of *Research in STEM Education*.
- 2020-2021 Guest editor for *Disciplinary and Interdisciplinary Science Education Research* on a special issue on Project-based learning.
- 2009 - 2012 Lead writer for the physical science disciplinary core ideas for the Framework for K – 12 Science Education, National Research Council.

- 2011 - 2013 Lead writer for the physical science standards for NGSS and member of the NGSS leadership team, Achieve.
- 2010 - 2015 Co-Editor, *Journal of Research in Science Teaching*.
- 2007 - 2010 Editorial Board, *Science Education*, Section Editor, Learning.
- 2006 - 2004 Editorial Board, *Science Education*.
- 2006 -1998 Editorial Board, *Journal of Learning Sciences*.
- 2006 - 2003 Editorial Board, *International Journal of Science and Mathematics Education*.
- 2006 - 2002 Editorial Board, *Research in Science Education*.
- 2006 - 2005 Reviewer for AERJ.
- 2003 Editor for special issue for *Research in Science Education*, The Value and Challenges of Using Learning Technologies to Support Students in Learning Science, 32(4).
- 2002 Reviewer for special issue on curriculum design for *Science Education*.
- 2001 - 2000 Associate Editor for the *Journal of Research in Science Teaching*.
- 2004 & 2001 Reviewer for the *Educational Researcher*.
- 2000 - 1994, 1992 & 1987 Reviewer, Journal of Research in Science Teaching.
- 1998 & 1991 Reviewer, *Interactive Learning Environments*.
- 1998 Reviewer, National Evaluation Systems, Michigan Test for Teacher Certification – Physics.
- 1996 Reviewer, Spencer Foundation.
Reviewer, National Institute of Health.
- 1992 - 1996 Contributing Editor, Research Notes, Journal of Computers in Mathematics and Science Teaching.
- 1996 - 1994 Editorial Board, Interactive Learning Environments.
- 1998 - 1999 Reviewer, Science Education.
- 1989 & 1996 Reviewer, American Educational Research Journal.
- 1988 - 1991 Editorial Board Member, Journal of Research in Science Teaching.
- 1986 Reviewer for Iowa Testing Service. Science examination questions. University of Iowa, Iowa City, IA., Spring.
- 1985 Reviewer for the Iowa Academy of Science and the Iowa Science Foundation.

Advisory Boards:

- 2021 NSF CAREER Science Discourse Project, Advisory Board Member.
- 2021 The Learning Partnership, Advisory Board Member.
- 2021 Innovations in Classroom-Based Assessments of Science and Mathematics (ETS), Advisory Board Member.
- 2019-2021 WeatherX (Education Development Center), Advisory Board Member.
- 2017-2021 M-PLANS, Advisory Board Member.
- 2017-2021 InquirySpace (Concord Consortium), Advisory Board Member.
- 2017-2021 Van Andel Education Institute, Advisory Board Member.
- 2017-2019 NGSS@NSTA Advisory Board Chair.
- 2010 Merck Institute for Science Education, Advisory Board Member.
- 2009 Sangari, Brazil, International Advisory Board.
- 1998 - 2000 PASCO Scientific, Middle School Advisory Board.
- 2007 - 2010 Advancement of Instructional Materials in Science Project (AIMS), Taiwan, National Science Council (NSC).

Synergistic activities:

- 2022-2023 2028 NAEP Leadership team and Developmental and Steering Panels to develop the NAEP Framework to guide the 2028 NAEP test.
- 2020 - 2026 Member of the PISA expert group for the tests in 2025, where science will be the principal focus of the tests.

- 2018 - current Editorial board, Disciplinary and Interdisciplinary Science Education Research.
 2017 – 2019 Member of Committee on Science Investigations and Engineering Design Experiences in Grades 6–12, a consensus study reports published by the National Academies of Sciences, Engineering, and Medicine.
 2017-2019 NGSS@NSTA Advisory Board Chair.
 2011-2013 Lead writer for the physical science standards for NGSS and member of the NGSS leadership team, Achieve.

Service to professional organizations, universities and school districts:

- 2022-2023 Search chair for the AI in Education search.
 2022-2023 Committee member for the Measurement and Quantitative Methods search
 2020-2021 Serving on Michigan State University Committee and Subcommittee on Curriculum and MSU College of Education Curriculum Committee.
 2017 Chair of an International Review Committee to evaluate the Science and Engineering Education Program (science, math, and technology education) at the Technion in Israel. A committee appointed by the President of the Technion, January 2017.
 2011 Reviewer, National Research Council. Successful STEM Education: A Workshop Summary. Committee on Highly Successful Schools on Programs for K – 12 STEM Education. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.
 2010 Reviewer, National Research Council. Preparing teachers: Building evidence for sound policy. Committee on the Study of Teacher Preparation Programs in the United States, Center for Education. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.
 2006 & 2007 Member, Planning Committee for the Annual Meeting, American Association for the Advancement of Science.
 Reviewer, Israel Science Foundation.
 Reviewed 5 tenure and promotion cases.
 2006 Chair of an International Review Committee to evaluate the Science Education Program (science, math, and technology education) at the Technion in Israel. A committee appointed by the President of the Technion, April 23 – 27, 2006.
 Reviewed fellowships for the Ford Minority Graduate and Post-doctoral fellowships program for the National Academy of Science (March 16 – 18th, 2006).
 Reviewed 2 tenure and promotion cases.
 2005 Chair, nomination committee, Section Q (science education), American Association for the Advancement of Science.
 Reviewed 5 tenure and promotion cases.
 2003 - 2005 Member on National Academy Committee, the Committee on Test Design for K-12 Science Achievement.
 Reviewed tenure and promotion cases.
 Member, National Science Teachers' Association Awards, Nomination and Research Committees.
 Member, National Science Teachers' Association Nomination and Research Committees.
 Member, nomination committee, Section Q (science education), American Association for the Advancement of Science.
 2002 - 2003 Served on a special committee on Science Education, National Academy of Science, November 9th – 10th.
 Served as an external dissertation evaluator for the Weizmann Institute of Science, Science Education Group.
 Served as an external evaluator for five national promotion cases from assistant to associate professor.
 Member, National Science Teachers' Association Awards, Nomination and Research Committees.

- Member, Science and Diversity Synthesis Team, Center for Research on Education, Diversity, and Excellence (CREDE) and the National Center for Improving Student Learning and Achievement (NCISLA) in Mathematics and Science.
Program committee Member for the International Conference of the Learning Science. Seattle, WA. October 23- 26.
- 2003 - 2000 Member, NSTA's Awards Committee.
- 2003 - 1996 Reviewer and/ or site visitor for the National Science Foundation.
- 1994 & 1990,
& 1986
- 2002 - 2001 Reviewer for The National Research Council of Taiwan to evaluate their national educational web project.
- 2002 Served as an external evaluator for four national promotion cases from associate to full professor and one from assistant to associate.
Annual conference reviewer: NARST annual conference and the International Conference of the Learning Sciences.
- 2001 Served as an external evaluator for two national promotion cases.
- 2000 Served as an external evaluator for 3 national and 2 international promotion and tenure cases.
- 2000 - 1997 President-elect, President, Immediate Past-President of the National Association for Research in Science Teaching.
- 1999, 1998 External tenure review report: Wrote external review for tenure and promotion.
- & 1996 - 1994
- 1996 Section Chair, American Educational Research Association, Division C, Science.
- 1996 - 1993 Executive Board Member, National Association for Research in Science Teaching.
- 1993 - 1996 Chairperson, Outstanding Paper Award Committee -- National Association for Research in Science Teaching.
- 1993 - 1996 Reviewer for various divisions and groups of the American Education Research Association meetings including Division C, Division K and Subject Matter Knowledge and Conceptual Change.
- 1989 - 1991 Member, National Association of Research in Science Teaching, Research Committee.
- 1990 - 1991 Reviewer, Teaching Education.
- 1988 - 1990 Member, National Association of Research in Science Teaching, Awards Committee.
- 1989 Member, Prince George's County Public Schools, Prince George's County, MD, Middle School Task Force.
- 1987 Member, Selection Committee for the Search for Excellence in Science Supervision, Maryland State Department of Education.
- 1987 Co-chairperson, Local Arrangements Committee. National Association for Research in Science Teaching, 60th National Convention, Washington, D.C. April 23-26, 1987.
- 1986 Member of Steering Committee; Wisconsin Junior Academy; LeRoy R. Lee, WJA Director; Madison, WI.
- 1983 Member of OP-84 Advisory Committee; Milwaukee School of Engineering; William Gorman Director; Milwaukee, WI.
- 1982 - 1983 Vice-president (president elect) Milwaukee Archdiocese Science Teacher Association. Milwaukee Archdiocese, Milwaukee, WI.

Workshops and other Inservice activities (sample):

- 2022 Krajcik, J., Shin, N., He, P., NGSS Assessment Workshop, with support from Counseling, Educational Psychology and Special Education (CEPSE), for area teachers, teacher leaders, and district science coordinators.
- 2019 Krajcik, J., The 17th Annual SAARMSTE Research School for Mathematics, Science and Technology Education, University of Pretoria, presenter and mentor, July 3-6, 2019.
- 2014 Krajcik, J. NGSS 101. One day professional development institute held at NSTA Annual meeting, Boston, April 2014.

- 2013 Krajcik, J. Designing and Assessing Evidence-based Explanations. Leading the Way for the Next Generation, National Science Education Leadership Association, Professional Development Institute, San Antonio, TX, April 10, 2013 (3-hour workshop).
- 2011 - 2013 Krajcik, J. & Calebrese-Barton, A., Pre-Conference Workshop, Developing High Quality Reviews for the Journal of Research in Science Teaching. National Association for Research in Science Teaching, Philadelphia, PA, March 24 – 29, 2010 & Orlando, FL, April 2 – 4, 2011.
- 2012 & 2013 Krajcik, J. & Starr, M. Working on the Framework and NGSS Aligned Science Teaching National Science Teachers Association, National Conference, San Antonio, TX, April 2013 and Regional Conferences in Atlanta, GA, November 1st, 2012 and Phoenix, AZ, December 6, 2012.
- 2010 Detroit Public School District, Detroit, Michigan, Spring, 2010. Conducted a professional development workshop for K-12 teachers to build their content knowledge of nanoscale science and help develop strategies for incorporating these ideas into their classroom teaching (with Shawn Steven).
- 2008 Krajcik, J., McNeill, K. L., & Novak, A. (2008, March). Assessing middle school students' content knowledge and scientific reasoning through written explanations. Workshop to be presented at the National Science Teachers Association Conference on Science Assessment, Boston, MA.
Krajcik, J. & McNeill, K. L. (2008, March). Designing learning progressions in science education. Workshop presented at National Taiwan Normal University, Taipei, Taiwan, March 3 – 5, 2008 as part of the International Conference of Professional Development and Student Learning for Innovative Science Curriculum.
- 2007 McNeill, K. L. & Krajcik, J. (2007, August). Assessing students' content knowledge and scientific reasoning through written explanations. Workshop presented at the Geneticist-Educator Network of Alliances (GENA) summer workshop, Bethesda, MD.
Krajcik, J. & McNeill, K. L. (2007, March). Assessing middle school students' content knowledge and scientific reasoning through written explanations. Workshop presented at the National Science Teachers Association Conference on Science Assessment, St. Louis, MO.
- 2006 Investigating and Questioning Our World through Science and Technology, Summer Professional Development Institute; University of Michigan, Ann Arbor, MI.
Krajcik, J.S, & Schank, P. (2006, June). Workshop to Identify and Clarify Nanoscale Learning Goals; SRI, Menlo Park, California, SRI, (funded through NSF).
Krajcik, J. & McNeill, K. L. (2006, April). Assessing middle school students' content knowledge and scientific reasoning through written explanations. Workshop presented at the National Science Teachers Association Conference on Science Assessment, Anaheim, CA.
- 2005 Krajcik, J. & McNeill, K. L. (2005, November). Assessing middle school students' content knowledge and scientific reasoning through written explanations. Workshop presented at the National Science Teachers Association Conference on Science Assessment, Chicago, IL.
Sutherland, L.M., McNeill, K.L., Krajcik, J. & Colson, K. (2005, April). Supporting students in creating scientific explanations. Workshop presented at the National Science Teachers Association Conference on Linking Science and Literacy in the Classroom, Dallas, TX.
- 2002 Detroit Urban Systemic Program: A Summer Institute to Promote Change, Integrating Technology into High School Chemistry, July 30th – August 1st.

- LETUS Summer Institute, Detroit Urban Systemic Program 'How to build computer-based models', Aug 5th – 8th.
- 2001 National Science Teacher Association; with Ann Novak and Chris Gleason. Model-It training session. Two three-hour sessions, San Diego, March 27 –30, 2002.
- 1998 Detroit Public Schools – Workshops on Project-based learning in conjunction with the Center for Learning Technologies in Urban Schools.
- 1996 Helped coordinate and run summer workshop for the Science Learning in Context project, Concord Consortium. July 1996.
- 1995 Project-based Science Workshop. Summer, Detroit Public Schools, Detroit, MI.
- 1995 Project-Integration Visualization Tool Workshop. Summer, Dade County, Florida School System.
- 1995 & 1994 Project-based Science Institutes. Summer and school year. University of Michigan, Ann Arbor Michigan.
- 1994 Use of Microcomputer Research: Advanced Analysis and Dialog of Results, with Carl Berger, 1994, NARST Annual Meeting, Anaheim CA.
- 1993 & 1994 Berger, C., Krajcik J. S. & Jackson, D. 'Use of microcomputers in science education research: Data gathering and analysis'. Pre-session workshop conducted at the 1993 Annual Meeting of the National Association for Research in Science Teaching, April 15-19, Atlanta, GA.
- August 1992 Benefits and Challenges of Project-Based Learning, One day Inservice for Edmonson Middle School with Barb Ladewski and Bob Geier, Ann Arbor, MI.
- June 1992 Use of Concept Mapping in Unit Planning, one day Inservice for Operation Physics Workshop, Western Michigan University, Kalamazoo, MI.
- May 1991 Presentation for the Ann Arbor Public Schools Middle School Curriculum Committee on state-of-the-art curriculum initiative in science education, Ann Arbor, MI.
- June 1991 Participating member in the King/Chavez/Parks Summer Institutes sponsored by the Office of Minority Affairs, University of Michigan, Ann Arbor, MI.
- Feb. 1989 Microcomputer-Based Laboratory Workshop; two and half day Inservice for middle school science teachers; Prince George's Public Schools.
- Sept. 1988 Prince George's County Public School, Elementary Science Coordinators' Meeting. One day Inservice on problem solving in elementary science.
- March 1988 Using the Microcomputer in the Science Classroom; half-day Inservice for science teachers; University of Maryland - Northwestern High School (Prince George's Public Schools) Collaborative Program.
- Nov. 1987 Short Course with John Layman; Laboratory Computer Interfacing Workshop; National Science Teacher Association: Pittsburgh, PA; Nov. 5, 1987.
- July 1987 Workshop leader with John Layman; University of Maryland-Montgomery County Public Schools Probeware Project Summer Workshop; Montgomery County Public Schools, Montgomery County, MD; three days.
- Aug. 1986 Workshop leader "Problem Solving in Science", Summer Institute for Science Teachers, 1 1/2 days, College of St. Thomas, St. Paul, Minnesota. Sponsored by Minnesota Environmental Service Foundation, Inc.
- May 1986 One day workshop on uses of the microcomputer in science teaching. Kankakee School District III, Kankakee, Illinois.
- Jan. 1986 Three-hour workshop/presentation on current trends in science education. Decorah Community Schools, Decorah, IA.
- Oct. 1985 Workshop leader for the evaluation of the BSCS ENLIST MICRO Computer Workshop. 1 day, Science Education Center, University of Iowa, Iowa City, IA.
- Jan. 1985 Learning from Exemplars, 1/2 day, Iowa Public Schools Inservice for Science Teachers, Iowa City, Iowa.
- May 1984 Workshop leader with Dr. V. Lunetta; 1 day. Talented and Gifted Program, Dubuque Public Schools, Dubuque, IA.

Consultancies:

2022-2023	Steering and Development Panels, NAEP Science Assessment Framework.
2021-2024	Member of the PISA Science Expert Group (SEG), OECD.
2011	Chair physical science team to develop the Next Generation of Science Standards being orchestrated by Achieve. Member leadership team for the Next Generation of Science Standards.
2010 & 2011	National Research Council, Conceptual Framework, New Science Education Standards, Design Team Lead, Physical Science.
1996 - 1997	Concord Consortium, Science Learning In Context project.
1996 & 1997	Project MOST, Missouri Science Teachers, University of Missouri, James Laffey Project Director, 1996 & 1997.
1996	American Association for the Advancement of Science (AAAS), Project 2061, review and critique chemistry curriculum to determine if the match AAAS' Benchmarks, June & July 1996.
1996	3M Chemistry, Oakland University, Chemistry Department, Dr. Joel Russell, Oakland, MI.
1991 & 1992	Technical Education Research Center, Cambridge, MA. LabNet.
1990 & 1991	West Bloomfield School District, West Bloomfield, MI, Science Curriculum Consultant.
Summer, 1989	Conduit. Interfacing software workshop and software consultation.
1988 & 1989	MacMillan Publishing Company. Workshops and Professional Presentation on how to use the Journey Through Science Curriculum materials.

Organization memberships:

Since 2010	Michigan Science Teacher Association
Since 1983	National Association for Research in Science Teaching.
Since 1977	National Science Teacher Association.
Since 1986	American Educational Research Association.
Since 1999	American Association for the Advancement of Science.
1989 & 1994	Association for the Education of Science Teachers.
1993	Sigma Xi, The Scientific Research Society (Member).
1996 - 1998	Council of Scientific Society Presidents (member, representing NARST).

UNIVERSITY SERVICE at the University of Michigan*University*

2001 - 2002	Served on Chemistry Promotion and Tenure committee for one faculty member going up for promotion to full professor.
2001	Co-chair with Brian Coppola, Instructional Sub-Committee for the Life Sciences "L-Shaped Building".
2000 - 2001	Served at Rackham representative on three proposal defenses in chemistry. Served on the promotion committee for a chemistry faculty member.
1993 - 1994	Member Search Committee, Environmental Education, School of Natural Resources.
1993 - 1994	Member, Faculty Task Force on Instructional Technology.

School

2006 - 2011	Associate Dean for Research.
2002 - 2004	Member, Executive Committee.
2001 - 2002	Promotion and Tenure Committee and Special Committee for reviewing performs of one instructor going up for review.
2000 - 2001	Member, Executive Committee. Member, Provost Teaching Seminar Planning Group.
1998 - 2000	Chair, Instructional Technology Planning. Promotion and Tenure committee.
1997	Member, Graduate Affairs Committee.
1997 - 1994	ITD/School of Education Liaison Person.
1992 - 1995	Member, Executive Committee.

1994 & 1995 Co-chair, Search Committee for Educational Technology Position

Program

1998 - 2004 Unit Coordinator – Science Education and Educational Technology.
 2002 - 2003 Search Chair – Learning Technologies.
 2001 - 2002 Search Chair – Science Education.
 1998 - 2000 Executive Committee, Educational Studies Program.
 1997 - 1998 Chair, Science Education Search Committee.
 1997 - 1998 Member, Secondary Teacher Education Program.
 1995 - 1997 Science Education Coordinator.
 1995 - 1997 Member, Search Committee (Science Education and Educational Technology).
 1992 - 1993 Chair, Science Education Search Committee.
 1992 - 1993 Co-chairperson, Teacher Education Committee.
 1991 - 1992 Member, Teacher Education Committee.
 1990 - 1991 Chair, Science Education Search Committee.
 1990 - 1991 Member, Center for Research on Learning and Schooling Advisory Board.
 1990, Winter Member, Search Committee.

INSTRUCTION AND ADVISING

Courses taught at the Michigan State University:

CEP 930: Educational Inquiry
 ED 834: Designing Science Education Learning Environments
 TE 991: Introduction to the Learning Sciences and Design-based Research
 TE 936: Topics in Research on Teaching and Learning Science – The Learning Sciences and Design-based Research: Designing Optimal Learning Environments in Science
 TE 407: Learning to Teach Science in Diverse Contexts
 TE 408: Crafting Teaching Practice
 TE 403: Teaching Science to Diverse Learners

Courses taught at the University of Michigan:

ED 713* Seminar in Science Education.
 ED 728* Designing Multimedia Materials.
 ED 833** Developing Expertise in Science Teaching.
 ED 831* Theory and Research on Learning and Instruction in Science (originally, ED 625).
 ED 737** Designing Science Education Learning Environments.
 ED 831 Theory and Research on Learning and Instruction in Science.
 ED 421* Elementary Science Methods.
 ED 832** Technology in Science Teaching.
 ED 528* Workshop in Elementary Science Methods.
 ED 422** Teaching Science in Secondary Schools.

* Courses developed

** Course revised

Doctoral Committee Chairperson:

1. Selin Akgun, Michigan State University, Teacher Education, 2024, Chair.
2. Tingting Li, Michigan State University, Counseling, Educational Psychology and Special Education, 2024, Chair.
3. Jonathan Bowers, Michigan State University, Teacher Education, 2024, Chair.
4. Leonora Kaldaras, Michigan State University, Teacher Education and Counseling, Educational

- Psychology and Special Education, co-chair with Dr. William Schmidt.
5. Li Ke, Michigan State University, Teacher Education, 2018, co-chair with Dr. Christina Schwartz.
 6. Angela Kolonich, Michigan State University, Teacher Education, 2017, co-chair with Dr. Gail Richmond.
 7. Kristin Mayer, Michigan State University, Teacher Education, 2016, co-chair with Dr. Alicia Alonzo.
 8. Consuelo Morales, University of Michigan, Educational Studies, 2016, co-chair with Donald Freeman from UM.
 9. Ibrahim Delen, Michigan State University, Teacher Education, 2015, Chair.
 10. Ingrid Sanchez, University of Michigan, Science Education, 2014, Chair.
 11. Nirit Glazer, University of Michigan, Science Education, 2011, Chair.
 12. Molly Yunker, Ph.D, University of Michigan, Science Education, 2010, Chair (Post-doctoral Fellow, Weizmann Institute of Science, Fullbright).
 13. Joi Merrit, Ph.D., University of Michigan, Science Education, 2010, Chair (Post-doctoral Fellow, Michigan State University).
 14. Eric Fretz, Ph.D., University of Michigan, Combine Program Psychology and Education, 2010, Chair (Instructor, University of Michigan).
 15. Jay Fogleman, Ph.D., University of Michigan, Science Education, 2009, Chair, (Assistant Professor University of Rhode Island).
 16. Nonye Alozie, Ph.D., University of Michigan, 2010, Science Education, co-chair with Elizabeth Moje (Post-doctoral Fellow, Wayne State University).
 17. Anna Switzer, Ph.D., University of Michigan, 2009, Science Education, Chair (School Designer, Expeditionary Learning Schools).
 18. Alan Kiste, Ph.D., University of Michigan, Chemistry and Science Education, 2009, co-Chair with Brian Coppola, Chemistry (Instructor University of Michigan).
 19. Cesar Delgado, Ph.D., University of Michigan, Science Education, 2009, Chair (Assistant Professor, University of Texas – Austin).
 20. Phil Piety, Ph.D., University of Michigan, Learning Sciences, 2008, co-Chair with Pamela Moss (Research scientist, independent employment).
 21. Jeff Nordine, Ph.D., University of Michigan, Science Education, 2007, Chair (Associate Professor, IPN, Germany).
 22. Hsin-Yi, Chang, Ph.D. University of Michigan, Science Education and Learning Technology, 2007, Co-Chair with Chris Quintana (Assistant Professor, Graduate Institute of Science Education, National Kaohsiung Normal University, Taiwan).
 23. Meilan Zhang, Ph.D. University of Michigan, Learning Technology, 2007, Co-chair with Chris Quintana (Assistant Professor, University of El Paso).
 24. Charles Dershimer, Ph.D. University of Michigan, Science Education, 2007, Co-chair with E. Moje (Assistant Director, Center for Research on Learning and Teaching University of Michigan)
 25. Kate McNeill, Ph.D., University of Michigan, Science Education, 2006, Chair (Assistant Professor, Boston College).
 26. Barbara Ladewski, Ph. D. University of Michigan, Science Education, 2006, Co-chair with Annemaria Palincsar.
 27. Julie Plummer, Rackham Ph. D. Degree in Astronomy and Education, University of Michigan 2006, Co-chair with Mario Mateo, Astronomy (Assistant Professor of Education, Arcadia University).
 28. Christopher Harris, University of Michigan, Combine Program Psychology & Education, Ph.D., 2006, (Co-Chair with R. Marx) (Research Scientist, SRI).

29. Valerie Talsma, Ph.D. University of Michigan, Science Education 2004 (Chair).
30. Bob Geier, Ph.D. University of Michigan, Science Education, 2004, (Co-Chair with P. Blumenfeld) (Research Associate, University of Michigan).
31. Jake Foster, University of Michigan, Science Education, 2004 (Co-chair with Lesley Rex) (Science Coordinator, Massachusetts).
32. Baohui Zhang, University of Michigan, Learning Technology, 2003 (Chair), (Research Scientist, National Institute of Education, Singapore).
33. David Fortus, Ph.D., University of Michigan, Science Education 2003 (co-Chair with Ron Marx) (Assistant Professor, Weizmann Institute of Science).
34. Ann Rivet, Ph.D., University of Michigan, Science Education 2003 (Chair) (Associate Professor, Columbia University).
35. Rebecca Schneider, Ph.D., University of Michigan, Science Education 2002 (co-Chair with P. Blumenfeld) (Professor, University of Toledo).
36. Hsin-Kai Wu, Ph.D., University of Michigan, Science Education 2002 (Chair); (Professor, Graduate Institute of Science Education, National Taiwan Normal University, Taiwan).
37. April Luehmann, Ph.D. University of Michigan, Science Education (dual degree with Engineering) 2002 (co-chair) (Assistant Professor, University of Rochester).
38. Joe Hoffmann, Ph.D. University of Michigan, Science Education 1999 (Chair) (Science and Technology Director, West Bloomfield Schools, MI).
39. Neil Skov, Ed.D. University of Michigan, Science Education, 1999, (Co – Chair with Carl Berger).
40. Michele Wisnudel-Spitulnik, Ph.D University of Michigan, Science Education, 1998 (Chair) Director for the Center of Science Education, CCJDS.
41. Tim Breen, Ph.D University of Michigan, Science Education, 1998 (Chair).
42. Mark Templin, Ph.D., University of Michigan, Science Education, 1998 (Co-chair with P. Moss) (Associate Professor, University of Toledo).
43. Nathan Bos, Ph.D., University of Michigan, Combine Program in Education & Psychology, 1998 (Chair) (Senior Research Associate, Johns Hopkins Applied Physics Laboratory).
44. Karen Mills, Ph.D University of Michigan, Science Education, 1997 (Chairperson).
45. Steve Stratford, Ph.D. University of Michigan, Learning Technologies, 1996 (Chair) (Professor, Director of Institutional Research, Maranatha Baptist College).
46. Carla Zembal, Ph.D. University of Michigan, Science Education, 1996 (Co-chair with P. Blumenfeld) (Professor, Penn State).
47. Barbara Crawford, Ph.D., University of Michigan, Science Education, 1996 (Co-chair with Ron Marx) (Professor, Cornell University).
48. Mary Starr, Ph.D. University of Michigan, Science Education, 1996 (Chair) (Research and Outreach coordinator, IDEA Institute, University of Michigan).
49. Shirley Magnusson, Ph.D., University of Maryland, Science Education, 1991 (Co-chair with Hilda Borko).
50. Mary Nakhleh, Ph.D., University of Maryland, Science Education, 1990 (Chair) (Professor, Purdue University).
51. Fred Klappenberger, Ph. D. University of Maryland, Educational Technology, 1989 (Chair).
52. Christian Clermont, Ph.D., University of Maryland, Science Education, 1989 (Chair).

Doctoral Committee Membership:

1. Chris Klager, June 2020, Michigan State University
2. Olivia Crandell, March 2020, Michigan State University
3. Christopher Minter, April 2019, Michigan State University, Chair, Melanie Cooper.

4. Oscar Judd, December 2018; Michigan State University, Chair, Melanie Cooper.
5. Carrie Beyer, University of Michigan, Science Education, Chair, Betsy Davis, Committee Member.
2. Randon Walker, Ph.D., University of Michigan, Chemistry, Chair, Mark Banaszak Holl.
3. Beth Kubitskey, Ph.D., University of Michigan, Science Education, 2006, Chair, Barry Fishman Committee Member.
4. Debbie Pettish, Ph.D., University of Michigan, Science Education, 2004, Chair, Betsy Davis, Committee Member.
5. Ryan Sweeder, Ph.D. University of Michigan, Chemistry, May 2003, Mark M. Banaszak-Hol, Chair, Cognate Member
6. Hee-Sun Lee – Ph.D. University of Michigan, Educational Studies, May 2003, Nancy Songer, Chair; member.
7. Matthew Braun – Ph.D. University of Michigan, Chemistry, October 2001, Omar M Yaghi, Chair, Cognate Member.
8. Cory Steffek – Ph.D., Ph.D. University of Michigan, Chemistry, October 2001, Omar Yahi Chair, Cognate member.
9. Chris Quintana, Ph.D., University of Michigan, Computer Science, spring 2001, Elliot Soloway, chair, Cognate member.
10. Raven Wallace, University of Michigan, Ph.D. Summer, 2000, Committee Member.
11. Shari Jackson, Ph.D., University of Michigan, Computer Science. 1999, Graduate School Representative.
12. Barbara Fife, Ph.D., University of Michigan, Spring 1997, Committee Member - Acting Chair.
13. Kenneth Williams, Ph.D., University of Michigan, Spring 1997, Committee Member.
14. Carolyn Keys, Ph.D., University of Michigan, Spring 1994, Committee Member.
15. James Hovick, Ph.D., Chemistry University of Michigan, Spring 1993, Graduate School Representative.
16. John Butler, Ph.D., University of Michigan, Spring 1993, Committee Member.
17. Mary Louise Bellamy, Ph. D., University of Maryland, August 1990, Committee Member.
18. Helen Flagg, Ph. D., University of Maryland, August 1990, Committee Member.
19. Elizabeth Teles, Ph.D., University of Maryland, May 1989, Committee Member.
20. Todd Trout, Ph.D., Chemistry, University of Maryland, May 1989, Graduate School Representative.

Post-Doctoral Fellows

1. Steven Bennett (MSU, 2023-present)
2. Emanuel Eidin (MSU, 2019-2023)
3. Hildah Makori (MSU, 2021-2023)
4. Peng He (MSU, 2019-2023)
5. Cory Miller (MSU, 2018-2022)
6. Consuelo Morales (MSU, 2017-2022)
7. Israel Touitou (MSU, 2016-2021)
8. Leonora Kaldaras (MSU, 2020-2021)
9. Xiaoming Zhai (MSU, 2019-2020)
10. Angela Kolonich (MSU, 2018-2019)
11. Kellie Finnie (MSU, 2016-2019)
12. Tom Bielik (MSU, 2015-2020)
13. Idit Adler (MSU, 2016-2019)
14. Samuel Severance (MSU, 2016-2019)
15. Phyllis Pennock (MSU, 2015-2019)

16. Sebastian Opitz (MSU, 2016-2017)
17. Kongju Mun (2011-2013)
18. Andrew Falk (2008-2010)
19. Yael Bamberger (2008-2010)
20. Jennifer Eklund (2006-2009)
21. Shawn Stevens (2005-2008)
22. Namsoo Shin (2005-2008)
23. Yael Schwartz (2005-2007)
24. Bob Geier (2005-2008)
25. Aaron Rogat (2003-2006)
26. Rachel Mamluk-Naaman
27. Jonathan Singer
28. Tali Tal (2000-2002)
29. Barbara Hug
30. Megnia George (2004-2005)

Accomplishments of Former doctoral students and Post-Doctoral Fellows

Outstanding Doctoral Dissertation Award from the National Association for Research in Science Teaching

- 2003 Hsin-Kai Wu Joseph Krajcik
- 2004 David L. Fortus Ronald Marx and Joseph Krajcik
- 2007 Julia Plummer Joseph S. Krajcik

Early Career Research Award

- Mary B. Nakhleh
- 2008 Hsin-Kai Wu
- 2011 Katherine McNeill

Masters Advisees

Gretchen Hahn
Teresa Wiltse
Amy Wefel (Graduated, Spring 2001)

October 2023