WILLIAM A. SANDOVAL

STEM Education Department
North Carolina State University
Raleigh, NC 27695
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EDUCATION

1998	Ph.D., Learning Sciences Northwestern University	Evanston, IL
1986	B.S., Computer Science University of New Mexico	Albuquerque, NM

PROFESSIONAL EXPERIENCE

2024 -	*Professor and Head* Department of STEM Education North Carolina State University
2023	*Research Professor, Education* School of Education & Information Studies, University of California, Los Angeles
2014 - 2023	*Professor, Urban Schooling* School of Education & Information Studies, University of California, Los Angeles
2005 - 2014	*Associate Professor, Psychological Studies in Education; Urban Schooling* School of Education & Information Studies, University of California, Los Angeles
1998 - 2005	*Assistant Professor, Psychological Studies in Education* School of Education & Information Studies, University of California, Los Angeles
2019 -2022	*Faculty Director, Educational Leadership Program* School of Education & Information Studies, University of California, Los Angeles
2015 - 2018	*Division Head, Urban Schooling* School of Education & Information Studies, University of California, Los Angeles
2007- 2009 2011- 2012	*Division Head, Psychological Studies in Education* School of Education & Information Studies, University of California, Los Angeles

HONORS & AWARDS

2021	Fellow (elected), American Association for the Advancement of Science
2020	Appointed Member, National Academy of Sciences, Engineering & Medicine, Study Committee on Enhancing Science and Engineering in preK through grade 5.
2019	Fellow (elected), International Society of the Learning Sciences
2018	President, International Society of the Learning Sciences (3-year term as president-elect, president, past-president; from 2016-19)
2013	Fellow (elected), International Society for Design and Development in Education
2011	Elected to Board of Directors, International Society of the Learning Sciences
2010	Greenfield Faculty Award for Applied Research in Learning and Achievement, UCLA
2008	Haytin Award for Outstanding Research on Teaching and Learning, UCLA
2008	Appointed Member, National Academy of Sciences Steering Committee for the Workshop on Exploring the Intersection of Science Education and the Development of 21st Century Skills.
2004	Appointed Member, National Academy of Sciences Study Committee on High School Science Laboratories: Role & Vision.
2000	Elected Program Chair, Special Interest Group – Education in Science & Technology, American Educational Research Assn.
1994	Northwestern University Cognitive Science Fellowship

REFEREED PUBLICATIONS

Graduate student authors listed in *italics*.

1. **Sandoval, W. A**., Kovach, J., Perez, L., Kim-John, L., & Kawasaki, J. (2023). Using argument to reason about science practice. *Science and Children, 60*(7). 42-45.

2. Modrek, A., Hass, R., *Kwako, A. J*., & **Sandoval, W. A.** (2021). Do adolescents want more autonomy? Testing gender differences in autonomy across STEM. *Journal of Adolescence, 92*. 237-246.

3. **Sandoval, W. A**., Kawasaki, J., & *Clark, H. F*. (2021). Characterizing science classroom discourse across scales. *Research in Science Education, 51*(1), 35-49. doi:10.1007/s11165-020-09953-7

4. *Clark, H. F*., **Sandoval, W. A**., & Kawasaki, J. (2020). Teachers' uptake of problematic assumptions of climate change in the NGSS. *Environmental Education Research, 26*(8), 1177-1192. doi:10.1080/13504622.2020.1748175

5. Modrek, A., & **Sandoval, W. A.** (2020). Can autonomy play a role in causal reasoning? *Cognitive Development, 54*. doi:10.1016/j.cogdev.2020.100849

6. Kawasaki, J., & **Sandoval, W. A.** (2020). Examining teachers' classroom strategies to understand their goals for student learning around the science practices in the next generation science standards. *Journal of Science Teacher Education*, *31*(4), 384-400. doi: 10.1080/1046560X.2019.1709726

7. Kawasaki, J., & **Sandoval, W. A.** (2019). The role of teacher framing in producing coherent NGSS-aligned teaching. *Journal of Science Teacher Education, 30*(8), 906-922. doi: 10.1080/1046560X.2019.1657765

8. **Sandoval, W. A**., Enyedy, N., Redman, E. H., & Xiao, S. (2019). Organising a culture of argumentation in elementary science. *International Journal of Science Education, 41*(3), 1848-1869. doi:10.1080/09500693.2019.1641856

9. **Sandoval, W. A**., *Kwako, A. J*., Modrek, A., & Kawasaki, J. (2018). *Patterns of classroom talk through participation in discourse-focused teacher professional development*. In Kay, J. & Luckin, R. (Eds.), *Rethinking Learning in the Digital Age: Making the Learning Sciences Count. Proceedings of the 13th International Conference of the Learning Sciences (ICLS) 2018* (Vol. 2, pp. 760-767) London: ISLS.

10. *Xiao, S*., & Sandoval, W. A. (2017). How do practices differ from inquiry in the science classroom. *Curriculum, Teaching Material and Method, 37*(12), 110–115. (in Chinese)

11. *Xiao, S*., & **Sandoval, W. A.** (2017). Associations between attitudes towards science and children's evaluation of information about socioscientific issues. *Science & Education, 26*(3), 247-269. doi:10.1007/s11191-017-9888-0

12. **Sandoval, W. A.**, Greene, J. A., & Bråten, I. (2016). Understanding and promoting thinking about knowledge: Origins, issues, and future directions of research on epistemic cognition. *Review of Research in Education, 40*, 457-496. doi: 10.3102/0091732X16669319

13. **Sandoval, W. A.**, Kawasaki, J., *Cournoyer, N*., & *Rodriguez, L*. (2016). Secondary teachers' emergent understanding of teaching science practices. In C. K. Looi, J. L. Polman, U. Cress, & P. Reimann (Eds.), *Proceedings of the Transforming learning, empowering learners: The international conference of the learning sciences (ICLS) 2016* (Vol. 2, pp. 737-744) Singapore: ISLS.

14. *Xiao, S*., & **Sandoval, W. A.** (2016). Resolving disagreements in evaluating epistemic and disciplinary claims in middle school science. In C. K. Looi, J. L. Polman, U. Cress, & P. Reimann (Eds.), *Proceedings of the Transforming learning, empowering learners: The international conference of the learning sciences (ICLS) 2016* (Vol. 2, pp. 835-838) Singapore: ISLS.

15. **Sandoval, W. A.**, & *Redman, E. H*. (2015). The contextual nature of scientists' views of theories, experimentation, and their coordination. *Science & Education, 24*(9), 1079-1102.

16. Ryu, S., & **Sandoval, W. A.** (2015). The influence of group dynamics on collaborative scientific argumentation. *Eurasia Journal of Mathematics, Science and Technology Education, 11*(2), 335-351.

17. *Kawasaki, J.*, *DeLiema, D.*, & **Sandoval, W. A.** (2014). The influence of non-epistemic features of settings on epistemic cognition. *Canadian Journal of Science, Mathematics and Technology Education, 14*(2), 207-221.

18. **Sandoval, W. A.** (2014). Science education's need for a theory of epistemological development. *Science Education, 98*(3), 383-387.

19. **Sandoval, W. A.** (2014). Conjecture mapping: An approach to systematic educational design research. *Journal of the Learning Sciences, 23*(1), 18-36.

20. **Sandoval, W. A.**, Sodian, B., Koerber, S., & *Wong, J.* (2014). Developing children's early competencies to engage with science. *Educational Psychologist, 49*(2), 139-152.

21. *Xiao, S.*, & **Sandoval, W.** (2014). Orchestrating students' agency in scientific inquiry: A classroom interaction analysis. *Curriculum, Teaching Material and Method, 34*(7), 48-54. (in Chinese).

22. **Sandoval, W. A.** (2012). Situating epistemological development. In J. van Aalst, K. Thompson, M. J. Jacobson & P. Reimann (Eds.), *The future of learning: Proceedings of the 10th International Conference of the Learning Sciences* (Vol. 1, pp. 347-354). Sydney: International Society of the Learning Sciences.

23. Mika, K., Lin, T. Y., Ferreira, M., Lacson, J., Lee, C. M., Lin, C., O'Byrne, K., **Sandoval, W. A.** Thulsiraj, V., Jay, J. (2012). Incorporating service-learning in traditionally lecture-based environmental engineering courses through researching bacterial contamination at a local beach. *Global Journal of Engineering Education, 14*(2), 155-162.

24. *DeLiema, D.*, *Kawasaki, J.*, & **Sandoval, W. A**. (2012). High school students' epistemic engagement in producing documentaries about public science concerns. In J. van Aalst, K. Thompson, M. J. Jacobson, & P. Reimann (Eds.), *The future of learning: Proceedings of the 10th international conference of the learning sciences* (Vol. 2, pp. 311-315). Sydney: ISLS.

25. *Ryu, S.*, & **Sandoval, W. A.** (2012). Improvements to elementary children's epistemic understanding from sustained argumentation. *Science Education, 96*(3), 488-526.

26. **Sandoval, W. A.**, & *Çam, A.* (2011). Elementary children's judgments of the epistemic status of sources of justification. *Science Education, 95*(3), 383-408.

27. **Sandoval, W. A.**, & *Harven, A.* (2011). Urban middle school students' perceptions of the value of inquiry. *Journal of Science Education and Technology, 20*(1), 95-109.

28. *Ryu, S.*, & **Sandoval, W. A.** (2010). Listen to each other: How the building of norms in an elementary science classroom fosters participation and argumentation. In K. Gomez, L. Lyons & J. Radinsky (Eds.), *Proceedings of the 2010 Intl. Conference of the Learning Sciences* (pp. 1103-1110). Chicago, IL: ISLS.

29. **Sandoval, W. A.** (2009). In defense of clarity in the study of personal epistemology. *Journal of the Learning Sciences, 18*(1), 150-161.

30. *Wallis, J. C*., *Milojevic, S*., Borgman, C. L., & **Sandoval, W. A.** (2006). The special case of scientific data sharing with education. *Proceedings of the American Society for Information Science and Technology, 43*, 1-13.

31. **Sandoval, W. A.** (2005). Understanding students' practical epistemologies and their influence on learning through inquiry. *Science Education, 89*, 634-656.

32. **Sandoval, W. A.**, & *Millwood, K*. (2005). The quality of students' use of evidence in written scientific explanations. *Cognition & Instruction, 23*(1). 23-55.

33. **Sandoval, W. A.**, & Bell, P. (Eds.). (2004). Design-based research methods for studying learning in context [Special issue]. *Educational Psychologist, 39*(4).

34. **Sandoval, W. A.** (2004). Developing learning theory by refining conjectures embodied in educational designs. *Educational Psychologist, 39*(4). 213-223.

35. **Sandoval, W. A.**, & *Daniszewski, K*. (2004). Mapping trade-offs in teachers' integration of technology-supported inquiry in high school science classes. *Journal of Science Education and Technology, 13*(2). 161-178.

36. **Sandoval, W. A.**, & Reiser, B. J. (2004). Explanation-driven inquiry: integrating conceptual and epistemic supports for science inquiry. *Science Education, 88*. 345-372.

37. **Sandoval, W. A.** (2003). Conceptual and epistemic aspects of students' scientific explanations. *Journal of the Learning Sciences, 12*(1). 5-51.

38. **Sandoval, W. A.**, & *Morrison, K*. (2003). High school students' ideas about theories and theory change after a biological inquiry unit. *Journal of Research in Science Teaching, 40*(4), 369-392.

39. Design-Based Research Collective (2003). Design-based Research: an emerging paradigm for educational inquiry. *Educational Researcher, 32*(1). 5-8.

40. Tabak, I., Smith, B. K., **Sandoval, W. A.**, & Reiser, B. J. (1996). Combining general and domain-specific support for biological inquiry. In C. Frasson & G. Gauthier & A. Lesgold (Eds.), *Proceedings of Intelligent Tutoring Systems: Third Intl. Conference, ITS'96* (pp. 288-296). Montreal: Springer-Verlag.

41. **Sandoval, W. A.**, Trafton, J. G., & Reiser, B. J. (1995). The effects of self-explanation on studying examples and solving problems. In J. D. Moore & J. F. Lehman (Eds.), *Proceedings of 17th Annual Conference of the Cognitive Science Society* (pp. 253-258). Pittsburgh, PA: Erlbaum.

42. Tabak, I., **Sandoval, W. A.**, Smith, B. K., Agganis, A., Baumgartner, E., & Reiser, B. J. (1995). Supporting collaborative guided inquiry in a learning environment for biology. In J. L. Schnase & E. L. Cunnius (Eds.), *Proceedings of 1st Conference on Computer Support for Collaborative Learning, CSCL'95* (pp. 362-366). Bloomington, IN: Erlbaum.

BOOKS & BOOK CHAPTERS
Graduate student authors listed in *italics*.

43. **Sandoval, W. A**. (2023). Epistemic cognition. In R. Tierney, F. Rizvi, & K. Ercikan (Eds.), *International encyclopedia of education* (4th ed., Vol. 6, pp. 162-167): Elsevier.

44. NASEM. (2021). *Science and engineering in preschool through elementary grades: The brilliance of children and the strengths of educators*. Washington DC: National Academies Press.

45. Kim-John, L., **Sandoval, W. A.**, Kawasaki, J., Perez, L., Kovach, J., & *Clark, H. F.* (2021). Equity-oriented science professional development. In A. Francois & K. H. Quartz (Eds.), *Preparing and sustaining social justice educators* (pp. 105-124). Cambridge, MA: Harvard Education Press.

46. Kuhn, D., Modrek, A., & **Sandoval, W. A.** (2020). Teaching and learning by questioning. In L. Butler, S. Ronfard, & K. Corriveau (Eds.), *The questioning child: Insights from psychology and education* (pp. 232-251). Cambridge, UK: Cambridge University Press.

47. Chinn, C. A., & **Sandoval, W. A.** (2018). Epistemic cognition and epistemic development. In F. Fischer, C. E. Hmelo-Silver, S. R. Goldman, & P. Reimann (Eds.), *International Handbook of the Learning Sciences* (pp. 24-33). New York: Routledge.

48. **Sandoval, W. A.** (2018). Situating practices of epistemic cognition. In T. Amin & O. Levrini (Eds.), *Converging perspectives on conceptual change: Mapping an emerging paradigm in the learning sciences* (pp. 253-260). New York: Routledge.

49. **Sandoval, W. A.** (2017). Linking practice to purpose in teacher professional development *Proceedings of the Korean Association for Science Education 71st General Meeting and International Conference* (pp. 45-52) Seoul, Korea: KASE.

50. Greene, J. A., **Sandoval, W. A.**, & Bråten, I. (Eds.). (2016). *Handbook of Epistemic Cognition*. New York: Routledge.

51. Greene, J. A., **Sandoval, W. A.**, & Bråten, I. (2016). An introduction to epistemic cognition. In J. A. Greene, W. A. Sandoval, & I. Bråten (Eds.), *Handbook of Epistemic Cognition* (pp. 1-15). New York: Routledge.

52. Greene, J. A., **Sandoval, W. A.**, & Bråten, I. (2016). Reflections and future directions. In J. A. Greene, W. A. Sandoval, & I. Bråten (Eds.), *Handbook of Epistemic Cognition* (pp. 495-510). New York: Routledge.

53. **Sandoval, W. A.** (2016). Disciplinary insights into the study of epistemic cognition. In J. A. Greene, W. A. Sandoval, & I. Bråten (Eds.), *Handbook of Epistemic Cognition* (pp. 184-194). New York: Routledge.

54. **Sandoval, W. A.** (2015). Epistemic goals. In R. Gunstone (Ed.), *Encyclopedia of Science Education* (pp. 393-398). Dordrecht: Springer.

55. **Sandoval, W. A.** (2014). Epistemologies, teacher and student. In D. C. Phillips (Ed.), *Encyclopedia of Educational Theory and Philosophy* (Vol. 1, pp. 284-286). Thousand Oaks, CA: SAGE.

56. **Sandoval, W. A.** (2013). Educational design research in the 21st century. In R. Luckin, J. Underwood, N. Winters, P. Goodyear, B. Grabowski & S. Puntambekar (Eds.), *Handbook of design in educational technology* (pp. 388-396). London: Routledge.

57. **Sandoval, W. A.** (2008). Design principles for effective laboratory instruction. In D. W. Sunal, E. L. Wright & C. Sundberg (Eds.), *The impact of the laboratory and technology on learning and teaching science K-16* (pp. 35-56). Charlotte, NC: Information Age.

58. **Sandoval, W. A.** (2008). Exploring children's understanding of the purpose and value of inquiry. In R. A. Duschl & R. E. Grandy (Eds.), *Teaching scientific inquiry: Recommendations for research and application* (pp. 157-163). Rotterdam, Netherlands: Sense.

59. **Sandoval, W. A.**, & *Millwood, K. A.* (2007). What can argumentation tell us about epistemology? In S. Erduran & M. P. Jiménez-Aleixandre (Eds.), *Argumentation in science education: perspectives from classroom-based research* (pp. 68-85): Springer.

60. National Research Council (2005). *America's Lab Report: Investigations in High School Science*. S. R. Singer, M. L. Hilton, & H. A. Schweingruber (Eds.). Washington, DC: Natl. Academies Press.

61. Kafai, Y. B., **Sandoval, W. A.**, Enyedy, N., *Nixon, A. S.*, & *Herrera, F.* (Eds.). (2004). *Proceedings of the 6th International Conference of the Learning Sciences, ICLS2004*. Mahwah, NJ: Lawrence Erlbaum Assoc.

62. **Sandoval, W. A.** (2003). The inquiry paradox: why doing science doesn't necessarily change ideas about science. In C. P. Constantinou & Z. C. Zacharia (Eds.), *Proceedings of the Sixth Intl. Computer-Based Learning in Science Conference* 2003 (pp. 825-834). Nicosia, Cyprus.

63. Reiser, B. J., Tabak, I., **Sandoval, W. A.**, Smith, B. K., Steinmuller, F., & Leone, A. J. (2001). BGuILE: Strategic and conceptual scaffolds for scientific inquiry in biology classrooms. In S. M. Carver & D. Klahr (Eds.), *Cognition and instruction: Twenty-five years of progress* (pp. 263-305). Mahwah, NJ: Lawrence Erlbaum.

OTHER PUBLICATIONS

64. **Sandoval, W. A**. (2017). *Design-based research in education*. Commissioned white paper for the Committee on Designing Citizen Science to Support Science Learning. National Academies of Science, Engineering, and Medicine. Board on Science Education.

65. Puntambekar, S., & **Sandoval, W.** (2009). Editors' Note: Design research moving forward. *Journal of the Learning Sciences, 18*(3), 323-326.

66. Spencer RTG Task Force (2009). *The preparation of aspiring educational researchers in the empirical qualitative and quantitative traditions: methodological rigor, social and theoretical relevance, and more*. Chicago: Spencer Foundation.

67. **Sandoval, W. A.** (2007). Review of the book *Education for Thinking*. *Science Education, 91*(3), 515-518.

68. **Sandoval, W. A.** (2001). Designing new literacies, designing new learners: are they the same? [Review of the book *Changing Minds*]. *Journal of Educational Computing Research, 25*(2), 196-203.

INVITED PRESENTATIONS (SELECTED)

Sandoval, W. A. (2023). *Teaching as science communication*. The epistemology of science communication: New directions. 2nd Applied Epistemology Project Workshop, University of North Carolina, Chapel Hill, NC. September 22-23.

Sandoval, W. A. (2021). *Community-oriented science education: bringing science to the people, for the people*. Keynote for digiGEBF21 (German Society for Empirical Education Research). October 13.

Sandoval, W. A. (2019). *Why, and for whom, are we studying learning?* Keynote address at the Waterbury Summit on the Learning Sciences, Pennsylvania State University, State College, PA. May 14-16.

Kienhues, D. & **Sandoval, W. A.** (2019). International approaches toward leveraging education research in a post-truth era. International session at the Annual Meeting of AERA, Toronto. April 6.

Sandoval, W. A. (2019). *The past, present, and emerging future of the learning sciences*. Consultation for the College of Education, University of Arizona, Tucson, AZ, January 18.

Sandoval, W. A. (2017). *Re-orienting science education toward people, not disciplines*. Presidential session on STEM, Diversity, and the Future of Teaching and Learning, at the Annual Meeting of the American Educational Research Assn., San Antonio, TX, April 28.

Sandoval, W. A. (2017). Linking practice to purpose in teacher professional development. Keynote for the Korean Association for Science Education 71st General Meeting and International Conference, Seoul, Korea. February 9-11.

Sandoval, W. A. (2016). Working teachers' challenges to thinking of science teaching differently. Science Education Research Series, Stanford University, Palo Alto, CA, October 28.

Sandoval, W. A. (2016). Emergent professional development: An approach to support learning of ambitious teaching practices. Department of Teacher Education and Learning Sciences: Visiting Lecture. North Carolina State University, Raleigh, NC, April 25.

Sandoval, W. A. (2014). The practical turn in U.S. science education policy: What it means to learn science in the 21st century. Fonian Distinguished Speaker Series in Education, East China Normal University, Shanghai, China, May 28.

Sandoval, W. A. (2014). Promoting a culture of argumentation in elementary science. Invited presentation, East China Normal University, Shanghai, China, May 27.

Sandoval, W. A. (2014). The practical turn in U.S. science education policy: What it means to learn science in the 21st century. Keynote, 16th Science Education Forum, China Association of Science & Technology, Kunming, Yunnan, China, May 24.

Sandoval, W. A. (2013). Promoting a culture of argumentation in elementary science. University of California, Irvine, Irvine, CA, February 25.

Sandoval, W. A. (2012). How, and why, to develop children's understanding of scientific argumentation. University of North Carolina, Chapel Hill, NC, March 19.

Sandoval, W. A. (2011). The practical turn in science education and what it means for learning environment design. Invited presentation, Board on Science Education, National Academies of Science, Irvine, CA, December 13.

Sandoval, W. A. (2011). Invited workshop, Design-Based Research Methods in Science Education. University of Helsinki, Helsinki, Finland, October 26-28.

Sandoval, W. A. (2011). Designing a culture of argumentation in elementary science. Invited keynote, Helsinki Math & Science Education Research Symposium, October 27.

Sandoval, W. A. (2011). Promoting norms for arguing with data in elementary science. Presidential Session, Natl. Association for Research in Science Teaching Annual Meeting. Orlando, FL.

Sandoval, W. A., D'Arcy, G., Redman, E., (2011). Making science: data modeling and argumentation in elementary science. CONNECT Research Presentation Series, UCLA Lab School, January 19.

Sandoval, W. A. (2010). Situating epistemological development within cultural practices. University of Colorado, Boulder, CO, June 14.

Phillips, D. C., **Sandoval, W. A.**, Floden, R. E., & Moje, E. B. (2010). Preparing researchers to face the complex educational settings of the 21st century: Insights from the Spencer RTG task force, Invited Presidential Session, Annual Meeting of the American Educational Research Assn. Denver, CO.

Sandoval, W. A. (2010). Situating epistemological development within disciplinary practices. Science education research symposium, Stanford University, Palo Alto, CA, May 14.

Sandoval, W. A. (2010). Designing environments to promote and study learning. iSchool/Education Colloquium. University of Maryland, College Park, MD. March 2.

Sandoval, W. A. (2009). Situating epistemic cognition: A view from science education. Invited keynote. European Network of Research on Epistemological Beliefs. Münster, Germany, December 9-11.

Sandoval, W. A. (2009). Studying children's ideas about knowledge in science classrooms. Inaugural speaker, Voices of Innovation Series, North Carolina State University, Raleigh, NC, August 24.

Sandoval, W. A. (2009). Argumentation studies in science education. Invited talk: CMNA09 Workshop on Computational Models of Natural Argument. Pasadena, CA, July 13.

Sandoval, W. A. (2008). How people learn and how we teach. Invited seminar: Huntington Park High School, Huntington Park, CA. September 16.

Sandoval, W. A. (2008). Scientific literacy as epistemic practice. Vanderbilt University, Nashville, TN, April 14.

Sandoval, W. A. (2007). Design-based research for cognitive technologies. Invited Workshop, École Polytechnique Fédérale Lausanne, Lausanne, Switzerland, June 20-22.

Sandoval, W. A. (2007). Development, learning, and instruction: the case of epistemological beliefs. Invited presentation, Division C Graduate Student Council, Annual Meeting of the American Educational Research Assn., Chicago, IL, April 9-13.

Sandoval, W. A. (2006). Crafting a scholarly voice in science education across the career trajectory. Invited presentation, annual meeting of the National Association of Research in Science Teaching, San Francisco, CA, April 3-6.

Sandoval, W. A., Millwood, K. A., & Cook, M. (2006). How can school inquiry become "authentic" science? Invited presentation at To Think and Act Like a Scientist, Texas Tech University, Lubbock, TX, February 10-11.

Sandoval, W. A. (2006). Ensuring student learning from GLOBE projects. Invited presentation at GLOBE in the City, Borrego Hot Springs, CA, January 15.

Sandoval, W. A. (2005). Making “science for all” really happen. Invited presentation to Superintendents Learning Community, UCLA Faculty Center, October 21.

Sandoval, W. A. (2005). Ability, ontology, and method: A commentary on Hammer, Russ, Mikeska, and Scherr. Invited paper presented at the Rutgers Conference on Inquiry, February 16-19, 2005. Rutgers, NJ.

Sandoval, W. A. (2004). Design-based research methods for studying learning in context. Invited seminar. Harvard Graduate School of Education. Cambridge, MA. December 7, 2004.

Sandoval, W. A. (2004). Practical epistemologies and their influence on learning science through inquiry. Invited seminar, Physics Education Research Group, University of Maryland, July 14, 2004.

Sandoval, W. A. (2003). The inquiry paradox: why doing inquiry doesn't necessarily mean doing science. Invited keynote address, 6th International Conference on Computer-Based Leaning in Science. July 5-10, Nicosia, Cyprus.

PRESENTATIONS

Modrěk, A. & **Sandoval, W. A.** (2023). *Can the effects of scientific explanations extend to judgment and decision making?* Paper presented at the Annual Meeting of AERA, Chicago, IL.

Clark, H. F., Tieu, D., & **Sandoval, W. A**. (2022). *Transforming disciplinary engagement through sociopolitically gapless explanations of climate change*. Paper presented at the Annual Meeting of AERA, Toronto.

Clark, H. F., Tieu, D., & **Sandoval, W. A**. (2022). *Teacher and student engagement in politicizing climate science and scientizing everyday climate experiences*. Paper presented at the Annual Meeting of AERA, Toronto.

Modrek, A., Smith, A., Clark, H. F., Kawasaki, J., & Sandoval, W. A. (2022). *Revisiting the relationship between epistemology and learning*. Paper presented at the Annual Meeting of AERA, Toronto.

Sandoval, W. A. (2022). *Conjecture mapping: New approaches to broadening processes of educational design research*. (discussant). Symposium at Annual Meeting of AERA. Toronto.

Clark, H. F., & **Sandoval, W. A**. (2020). *Making community experiences and knowledge visible in modeling local climate systems*. Paper presented at the NARST Annual Meeting, Portland, OR.

Clark, H. F., & **Sandoval, W. A**. (2020). *Designing climate change learning to support personal and local relevance in decision making*. Paper presented at the Annual Meeting of AERA, San Francisco, CA.

Kawasaki, J., *Clark, H. F.*, & **Sandoval, W. A**. (2020). *Teachers' challenges learning to teach coherent NGSS storylines*. Paper presented at the NARST Annual Meeting, Portland, OR.

Sandoval, W. A., *Clark, H. F.*, Kawasaki, J., *Kwako, A. J.*, & Modrek, A. (2019). Opportunities and obstacles to teacher change from discourse focused professional development. Paper presented at the Annual Meeting of NARST, Baltimore, MD.

Clark, H. F., Kawasaki, J., & **Sandoval, W. A**. (2019). The relationship between the NGSS and classroom practice in climate change instruction. Paper presented at the Annual Meeting of the American Educational Research Assn, Toronto.

Modrek, A., *Kwako, A. J.*, & **Sandoval, W. A**. (2019). Do girls want more from science? Exploring gender differences in autonomy across stem. Paper presented at the Annual Meeting of the American Educational Research Association, Toronto.

Sandoval, W. A., Kawasaki, J., Kovach, J., Perez, L., *Kwako, A. J*., *Clark, H. F*., Modrek, A., & Kim-John, L. (2019). Helping teachers conceptualize the radical re-organization of their practice. Paper presented at the Annual Meeting of the American Educational Research Association, Toronto.

Kawasaki, J., & **Sandoval, W. A**. (2018). *The role of teacher framing in producing coherent* NGSS*-aligned teaching*. Paper presented at the Annual Meeting of the American Educational Research Association, New York, NY.

Kwako, A. J., **Sandoval, W. A**., & Modrek, A. (2018). Struggles to organize productive discourse in secondary science. Paper presented at the NARST Annual Meeting, Atlanta, GA.

Modrek, A., & **Sandoval, W. A**. (2018). A role for autonomy in science on the development of reasoning skills. Paper presented at the Annual Meeting of the American Educational Research Association, New York, NY.

Kawasaki, J., **Sandoval, W. A.**, & *Rodriguez, L.* (2017). Teachers' ideas about teaching the science practices in the next generation science standards. Paper presented at the NARST Annual Meeting, San Antonio, TX.

Kawasaki, J., **Sandoval, W. A.**, *Rodriguez, L*., *Cournoyer, N*., & *Eggleston, N*. (2017). Instructional scaffolds to support teachers to develop NGSS-aligned lessons. Paper presented at the Annual Meeting of the American Educational Research Association, San Antonio, TX.

Modrek, A., & S**andoval, W. A.** (2017). "Let me learn, i want to know": A need for autonomy in the development of reasoning skills? Paper presented at the Association of Psychological Science 29th Annual Convention, Boston, MA.

Sandoval, W. A., *Cournoyer, N*., *Eggleston, N*., Modrek, A., & Kawasaki, J. (2017). Secondary teachers' struggles to create coherent NGSS instruction. Paper presented at the NARST Annual Meeting, San Antonio, TX.

Sandoval, W. A., *Chen, S.*, & Enyedy, N. (2016). Inscribing arguments in small group collaboration. Paper presented at the EARLI 2016 Joint SIG 20 and SIG 26 Meeting, Ghent, Belgium. August 22-24.

Kawasaki, J., & **Sandoval, W. A.** (2016). Identifying teachers' goals around the next generation science standards by coordinating between their described and observed classroom instruction. Paper presented at the AERA Annual Meeting, Washington, DC. April 8-12.

Kawasaki, J., & **Sandoval, W. A.** (2016). Identifying teachers' goals around the next generation science standards by coordinating between their described and observed classroom instruction. Paper presented at the AERA Annual Meeting, Washington, DC. April 8-12.

Kawasaki, J., & **Sandoval, W. A.** (2016). Examining the alignment between teachers' classroom instruction and the Next Generation Science Standards. Paper presented at the NARST Annual Meeting, Baltimore, MD.

Sandoval, W. A. (2016). *Epistemic cognition within and about the disciplines*. Paper presented at the AERA Annual Meeting, Washington, DC.

Sandoval, W. A., Enyedy, N., Xiao, S., & Redman, E. H. (2016). *Developing a climate of hgh-quality epistemic discourse in elementary science*. Paper presented at the AERA Annual Meeting, Washington, DC.

Wong, J., & **Sandoval, W. A.** (2016). Effects of goal priming on high school students' use of mechanism and evidence information in a science media text. Paper presented at the AERA Annual Meeting, Washington, DC. April 8-12.

Sandoval, W. A., Xiao, S., Redman, E. H., & Enyedy, N. (2015). *Encouraging argument as the connective discourse of scientific practice*. Paper presented at the NARST Annual Meeting, Chicago, IL.

Wong, J., & **Sandoval, W. A.** (2015). *Evaluating a science claim versus making decisions: Effect of goals on high school students' requests for evidential and explanatory information*. Paper presented at the NARST Annual Meeting, Chicago, IL.

Xiao, S., & **Sandoval, W. A.** (2015). *Functional roles of inscriptional evidence in children's written arguments about socioscientific issues*. Paper presented at the NARST Annual Meeting, Chicago, IL.

Sandoval, W. A., Redman, E. H., Xiao, S., & Enyedy, N. (2014). *Organizing a culture of argumentation in science classrooms*. Paper presented at the Annual Meeting of the American Educational Research Assn., Philadelphia, PA.

Kawasaki, J., & **Sandoval, W. A.** (2013). *Teachers' ideas about the purpose and value of science education*. Paper presented at the AERA Annual Meeting. San Francisco, CA.

Xiao, S., & **Sandoval, W. A.** (2013). How attitudes toward science affect sixth-graders' evaluation of information in the context of socioscientific issues. Poster presented at the AERA Annual Meeting. San Francisco, CA.

Ryu, S., & **Sandoval, W. A.** (2012). Coordination of discursive practice and material resources: Leveraging students to engage in epistemic discussions. Paper presented at the NARST Annual Meeting. Indianapolis, IN.

Xiao, S., & **Sandoval, W. A.** (2012). Influences on teachers' capacities to use educative curriculum materials as intended. Paper presented at the NARST Annual Meeting. Indianapolis, IN.

Enyedy, N., Redman, E. H., & **Sandoval, W. A.** (2011). Building a culture of argument in elementary school science. Paper presented at the 41st Annual Meeting of Jean Piaget Society. Berkeley, CA.

Redman, E. H., **Sandoval, W. A.**, & Enyedy, N. (2011). A comparison of teaching strategies for promoting argumentation in elementary science, Annual Meeting of the Natl. Assn. for Research in Science Teaching. Orlando, FL.

Çam, A., & **Sandoval, W. A.** (2010). Elementary children's preferences for causal justification, Paper presented at the Annual Meeting of the Natl. Assn. for Research in Science Teaching. Philadelphia, PA.

Redman, E. H., & **Sandoval, W. A.** (2010). Examining professional scientists' epistemological views of science, Poster presented at the Annual Meeting of the Natl. Assn. for Research in Science Teaching. Philadelphia, PA.

Ryu, S., & **Sandoval, W. A.** (2010). The appropriation of argumentation norms in an elementary science classroom, Paper presented at the Annual Meeting of the American Educational Research Assn.. Denver, CO.

Wong, J., Cook, M., & **Sandoval, W. A.** (2010). Exploring college students' everyday experiences with science, Paper presented at the Annual Meeting of the American Educational Research Assn. Denver, CO.

Redman, E. H., Enyedy, N., & **Sandoval, W. A.** (2009). Promoting argumentation within elementary science inquiry, Poster presented at the Annual Meeting of the Natl. Assn. for Research in Science Teaching. Garden Grove, CA.

Redman, E. H., **Sandoval, W. A.**, & Enyedy, N. (2009). Spontaneous student science arguments in an elementary classroom. Paper presented at the Annual Meeting of the American Educational Research Assn., San Diego, CA

Wong, J., & **Sandoval, W. A.** (2009). College students' perspectives of science in their everyday lives. Paper presented at the Annual meeting of the Natl. Assn. for Research in Science Teaching. Garden Grove, CA.

Cook, M., Wong, J., & **Sandoval, W. A.** (2008). "We're going to be doing actual science": teachers' and students' positioning moves in inquiry-oriented science classrooms. In Proceedings of the International Conference of the Learning Sciences. Utrecht, Netherlands: Erlbaum.

Ryu, S., & **Sandoval, W. A.** (2008). Interpersonal influences on collaborative argumentation during scientific inquiry, Paper presented at the Annual Meeting of the American Educational Research Assn. New York, NY, March 24-28.

Sandoval, W. A. (2007). Discussant: What progresses in a learning progression?, Annual Meeting of the American Educational Research Assn., Chicago, IL, April 9-13.

Thadani, V., Cook, M., Millwood, K. A., Harven, A., Fields, D., Griffis, K., et al. (2006). Eyes on the prize: Considering how design research can lead to sustainable innovation. Paper presented at the Annual Meeting of the American Educational Research Assn., San Francisco, April 7-12.

Sandoval, W. A., & Millwood, K. A. (2006). What can argumentation tell us about epistemology? Paper presented at the annual meeting of the American Educational Research Assn., San Francisco, CA, April 7-12.

Harven, A., & **Sandoval, W. A.** (2006). Student interest in inquiry tasks in a novel learning environment, Paper presented at the Annual Meeting of the American Educational Research Assn. San Francisco, April 7-10.

Cook, M., **Sandoval, W. A.**, & Bockert, J. (2006). Effects of content knowledge on students' socioscientific reasoning, Paper presented at the Annual Meeting of the Natl. Assn. for Research in Science Teaching. San Francisco, April 3-6.

Cook, M., Fields, D., & **Sandoval, W. A.** (2006). Understanding local teacher adaptations of a complex learning environment, Paper presented at the Annual Meeting of the American Educational Research Assn. San Francisco, April 7-10.

Sandoval, W. A., & Millwood, K. A. (2005). Practical epistemologies: how students perceive and pursue scientific argumentation in the classroom. Presented at the 1st Conference of the Intl. Society of Cultural Activity Research, Seville, Spain, September 20-24.

Deneroff, V., & **Sandoval, W. A.** (2005). Urban science teachers' learning in discourse-based professional development, Paper presented at the Annual Meeting of the American Educational Research Assn. Montreal, Canada, April 11-15.

Deneroff, V., & **Sandoval, W. A.** (2005). Urban science teachers talking about California state content standards: implications for discourse-based professional development about curriculum, Paper presented at the 2005 NARST Annual Meeting. Dallas, TX, April 4-7.

Tabak, I., & **Sandoval, W. A.** (2005). The extent to which different configurations of students, teachers, and materials foster a sense of agency, Paper presented at the Annual Meeting of the American Educational Research Assn. Montreal, Canada, April 11-15.

Millwood, K. A. & **Sandoval, W. A.** (2004). A comparison of students' beliefs about school science and professional science. Paper presented at the Annual Meeting of AERA 2004. April 12-16, San Diego.

Deneroff, V., **Sandoval, W. A.**, & Franke, M. L. (2003). From activity-centered to inquiry-centered discourse through professional development. Paper presented at the Annual Meeting of NARST 2003, March 23-26, Philadelphia.

Sandoval, W. A., Crawford, V. M., Bienkowski, M., Hurst, K., & Millwood, K. (2003). Effects of explanation support on learning genetics. Paper presented at the Annual Meeting of NARST 2003, March 23-26, Philadelphia, PA.

Sandoval, W. A. (2002). Tracing effects to causes in design experimentation: What's design got to do with it? Paper presented at the 6th Conference of the International Society for Cultural Research and Activity Theory, ISCRAT02. Amsterdam.

Sandoval, W. A. (2002). Learning from designs: learning environments as embodied hypotheses., Paper presented at the Annual Meeting of the American Educational Research Assn. New Orleans, LA. April 1-5.

Sandoval, W. A. (2002). Technical and social supports for epistemic practices of scientific argumentation. Invited Symposium. 24th Annual Conference of the Cognitive Science Society. August 8-10, Fairfax, VA.

Sandoval, W. A., Deneroff, V., & Franke, M. L. (2002). Teaching, as learning, as inquiry: moving beyond activity in the analysis of teaching practice., Paper presented at the Annual Meeting of the American Educational Research Assn. New Orleans, LA. April 1-5.

Crawford, V. M., **Sandoval, W. A.**, Bienkowski, M., & Hurst, K. (2002). Mediation of genetics learning by phenomenological and discursive representations, Paper presented at the Annual Meeting of the American Educational Research Assn. New Orleans, LA. April 1-5.

Deneroff, V., & **Sandoval, W. A.** (2002). Pedagogical awakenings: how four high school biology teachers came to problematize photosynthesis. Paper presented at the 2002 NARST Annual Meeting, April 7-10, 2002, New Orleans.

Deneroff, V., **Sandoval, W. A.**, & Franke, M. L. (2002). Learning the discourse of inquiry: how in-service high school science teachers come to understand themselves as listeners. Lessons from Samantha., Paper presented at the Annual Meeting of the American Educational Research Assn. New Orleans, LA. April 1-5.

Sandoval, W. A., Millwood, K. A., Bienkowski, M., & Crawford, V. M. (2002). Technical and social supports for epistemic practices of scientific argumentation, *Panel Symposium on "Inquiry, Technology, and Cognition: Theory and Practice"*. 24th Annual Conference of the Cognitive Science Society, Fairfax, VA, August 8-11.

Sandoval, W. A. (2001). Students' uses of data as evidence in scientific explanations., Paper presented at the Annual Meeting of the American Educational Research Assn. Seattle, WA, April 10-14.

Sandoval, W. A., & Morrison, K. (2000). Effects of an inquiry curriculum on high school students' beliefs about the nature of science., Paper presented at the Annual Meeting of the American Educational Research Assn. . New Orleans, April 24-28.

Sandoval, W. A., Bell, P., Coleman, E., Enyedy, N., & Suthers, D. (2000). Designing knowledge representations for epistemic practices in science learning, Paper presented at the Annual Meeting of the American Educational Research Assn. . New Orleans, April 24-28.

Sandoval, W. A. (1999). Epistemic supports for collaborative science inquiry, Poster presentation at CSCL'99, Computer Supported Collaborative Learning Conference. Palo Alto, CA, Dec. 12-15.

Sandoval, W. A., Daniszewski, K., Spillane, J., & Reiser, B. J. (1999). Teachers' discourse strategies for supporting learning through inquiry, Paper presented at the Annual Meeting of the American Educational Research Assn. . Montreal, April 19-23.

Sandoval, W. A., & Reiser, B. J. (1998). Iterative design of a technology-supported biological inquiry curriculum, Paper presented at the Annual Meeting of the American Educational Research Assn. San Diego, CA, April 13-17.

Tabak, I., **Sandoval, W. A.**, Smith, B. K., Steinmuller, F., & Reiser, B. J. (1998). Reflection as a vehicle toward local and global understanding, Paper presented at the Annual Meeting of the American Educational Research Association . San Diego, CA, April 13-17.

Sandoval, W. A., & Reiser, B. J. (1997). Evolving explanations in high school biology, Paper presented at the Annual Meeting of the American Educational Research Assn. Chicago, IL, March 24-28.

Tabak, I., Smith, B. K., **Sandoval, W. A.**, Agganis, A., & Reiser, B. J. (1996). BGuILE: Supporting inquiry in a learning environment for biology. Paper presented at the Annual Meeting of the AERA, New York, April 8-12.

PROFESSIONAL SERVICE

2023	Member, Best Paper Award Committee, Journal of the Learning Sciences
2021 – 2022	Reviewer, Large Grants Program, Spencer Foundation
2020 – 2023	Editorial Board, Journal of Research in Science Teaching
2020	Chair, Best Paper Award Committee, Journal of the Learning Sciences
2014 – 2016	Standing Review Panel Member, US Dept. of Education, Institute of Education Sciences.
2014 - 2019	Member, Finance Committee, International Society of the Learning Sciences
2011-2019	Member (elected), Board of Directors, International Society of the Learning Sciences
2011-2015	Associate Editor, Journal of the Learning Sciences.
2010	Mentor, Doctoral Consortium, 9th International Conference of the Learning Sciences, Chicago, IL, June 29-30.
2009 – 2017	Chair, Conference Committee, International Society of the Learning Sciences
2009 -10	Co-Editor, Design Research Strand, Journal of the Learning Sciences.
2011 - present	Editorial Board, Educational Psychologist
2008 - present	Editorial Board, Cognition & Instruction
2005 - 2022	Editorial Board, Science Education
2004 – 2022	Editorial Board, Journal of the Learning Sciences
2007 – 9	Executive Review Panel Member, AERA, Division C, Section 4 (Science)

2008	Editorial Board, Review of Research in Education, 32.
2008-9	Member, Task Force of the Spencer Foundation Research Training Grant Institutions on Graduate Research Training in Education
2008	Member, Steering Committee, National Academies of Science Workshop on Exploring the Intersection of Science Education and 21st Century Skills
2006	Coordinator, Early Career Workshop, 7th Intl. Conference of the Learning Sciences (ICLS 2006), Bloomington, IN
2005 - 2010	Member, Education & Community Outreach Advisory Board, LIFE Center, Stanford University
2004	Co-Chair, 6th Intl. Conference of the Learning Sciences (ICLS 2004), June 22-26, 2004, Santa Monica, CA.
2002	Program Committee, Intl. Conference of the Learning Sciences (ICLS)
2000-1	Program Chair, AERA Special Interest Group – Education in Science & Technology
1999	Program Committee, M/SET 99, Intl. Conference on Mathematics/Science Education & Technology

UNIVERSITY & COMMUNITY SERVICE

2021-22	Co-Chair, Search Committee, Environmental Justice Cluster, Dept. of Education, SE&IS, UCLA
2017-20	Co-Founder, Foothill Progressives Community Organization
2017	Ad-hoc Hiring Committee, Dept. of Education, GSE&IS, UCLA
2017-18	UCLA Scientific Inquiry General Education Committee
2016-17	UC Faculty Work Group to Review Area "d" Admissions Requirement
2015-16	Ad-hoc Faculty Search Committee, Dept. of Education, SE&IS, UCLA
2014-15	Ad-hoc Faculty Search Committee, Dept. of Education, SE&IS, UCLA
2014-16	School Site Council, La Crescenta Elementary School, La Crescenta, CA
2012-13	Team Lead (w/ P. DeLeon) UCLA Community School Dreamfund Science Team
2012-14	UCLA Lab School CONNECT Research Review Committee
2011-12	Chair, Faculty Executive Committee, SE&IS, UCLA
2010-11	Chair-elect, Faculty Executive Committee, SE&IS, UCLA
2010-11	Ad-hoc Faculty Search Committee, Macarthur Chair in Digital Media & Learning, Dept. of Education, SE&IS, UCLA

2015-18 2011-12, 2007-9	Education Executive Committee, Dept. of Education, SE&IS, UCLA
2022-23, 2019-21, 2013-15, 2010-12 2003-7	Academic Personnel Committee, Dept. of Education, SE&IS, UCLA
2010	Search Committee, Lead Secondary Science Teacher, UCLA Community School
2004-7	Department Representative, UCLA Legislative Assembly
2004-5	Ad-hoc Faculty Search Committee, Urban Reading & Literacy, Dept. of Education, GSE&IS, UCLA
2004-5	Blended-Instruction Course Study, Assessment Steering Committee, UCLA
2004-5	Science Chair, Curriculum Committee, Ocean Charter School
2001-2	Ad-hoc Space Allocation Committee, Dept. of Education, SE&IS, UCLA
2000-1	Ad-hoc Faculty Search Committee, Cognitive Development, Dept. of Education, SE&IS, UCLA
2007–2009, 1999-2001	Committee on Degrees, Admissions, and Standards, Dept. of Education, SE&IS, UCLA
1999-2000	Ad-hoc Faculty Search Committee, Cognitive Development, Dept. of Education, SE&IS, UCLA
1998-99	Corinne Seeds University Elementary School Research Committee

GRANTS

2015-19	Developing teachers' capacity to promote argumentation in secondary science. National Science Foundation, PI (w/J. Priselac), $2,770,500.
2012-13	Leveraging argumentation for elementary science learning. Spencer Foundation, PI, $39,650.
2011	Conference Proposal to NSF: Public Understanding and Public Engagement with Science. National Science Foundation, co-PI (PI: Susan Goldman, w/ Anne Britt), $82,146.
2007 – 10	Making science: Data modeling and argumentation in elementary science. National Science Foundation, PI (w/ N. Enyedy), $299,853.
2004 – 8	CENSNet: An architecture for authentic web-based science inquiry in middle and high school. National Science Foundation, PI (w/ C. Borgman), $1,673,189.
2003 - 4	Developing teacher-leaders and school capacity for science education reform. Arthur Vining Davis Foundations, PI, $136,637.

2001 - 2 Beyond final form science: teaching and learning scientific inquiry, Arthur Vining Davis Foundations, PI (w/ M. Franke), $167,000.

2001 - 2 Beyond final form science: teaching and learning scientific inquiry, UCLA Faculty Career Development Grant, PI, $3,000.

2000 - 2 Talking about genetics: using representations and language to understand complex science, Contract #51-000211 from SRI, International, $52,000

2000-2001 The Learning, Design, and Technology Underground: A Collaborative Institute for Early-Career Scholars on Design-Based Research Methods, co-PI (PI: C. Hoadley), Spencer Foundation, $167,150.

1999 - 2000 Designing knowledge representations to support epistemic practices in science learning, Center for Innovative Learning Technologies Seed Grant, PI (w/ P. Bell, E. Coleman, N. Enyedy, & D. Suthers), $8,896.

1999 - 2000 Developing a curricular framework to support enactment of technology-supported inquiry, UCLA Academic Senate, Council on Research, PI, $3,500

1999 - 2000 Developing a curricular framework to support enactment of technology-supported inquiry, Urban Education Studies Center Seed Grant, PI, $5,081

PROFESSIONAL MEMBERSHIPS

American Educational Research Association

International Society of the Learning Sciences

International Society for Design and Development in Education

National Association for Research in Science Teaching

American Association for the Advancement of Science