

**Dr. William W. Cobern**  
**Curriculum Vitae**

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**PROFESSIONAL EXPERIENCE:**

2003/present	Professor of Science Education, The Mallinson Institute for Science Education
2003/2017	Director, The Mallinson Institute for Science Education, Professor of Biology & Science Education, Department of Biological Sciences. Supervisor for the Science Mathematics Program Improvement group.
2001/2003	Associate Dean for Academic Programs, College of Education
2000/present	Joint Appointment to the Mallinson Institute for Science Education
1999/2003	Professor of Science Education, Department of Teaching, Learning and Leadership
1996/1999	Associate Professor of Science Education (tenured); Western Michigan University, Michigan
1993/1996	Associate Professor of Science Education (tenured); Arizona State University, Phoenix, Arizona
1989/1993	Assistant Professor of Science Education; Arizona State University, Phoenix, Arizona
1985/1989	Assistant Professor of Science Education; Austin College, Sherman, Texas
1984/1985	Assistant Professor of Science; Judson Baptist College, The Dalles, Oregon
1984	Chemistry and General Science Teacher; El Cajon Valley High School; Grossmont Independent School District, El Cajon, California
1982/1983	Senior Lecturer in Science Education; University of Sokoto, Nigeria, West Africa
1979/1982	Lecturer in Science Education, University of Sokoto, Nigeria, West Africa
1976/1979	Teaching Assistant, Student Teacher Supervisor & Intern; Laboratory for Educational Research; School of Education, University of Colorado, Boulder, Colorado
Sum 1978	Abstract Writer - ERIC System; Social Studies Consortium, Boulder, Colorado
Sum 1977	Data Analyst and Consultant; Biological Sciences Curriculum Study (BSCS), Boulder, Colorado
1973/1976	Science Teacher (Biology, Chemistry and Physics); Christian High School of San Diego, El Cajon, California

**EDUCATION:**

1976/1979	University of Colorado, Boulder; Major: Science Education; Minor: Research and Evaluation Methodology; Other graduate work: 9 hours in Biology; Degree: Ph.D., 1979
1973/1975	
(part-time)	San Diego State University; Major: Education; Degree: M.A., 1975
1972/1973	San Diego State University; -one semester graduate work in Biology; two semesters in Education
	Credential: Secondary Teaching Credential for Biology, Chemistry and English
1967/1971	University of California, San Diego (Revelle College); Major: Biology; Minors: Literature and Chemistry; Degree: B.A., 1971

**ARTICLE, CHAPTER, & BOOK PUBLICATIONS:**

- Coburn, W. W., & Loving, C. C. (2018). The NOS card exchange: an introduction to the philosophy of science. In W. McComas (editor), *The nature of science in science education: Rationales and strategies* (in press). Dordrecht, Netherlands: Springer Academic Publishers.
- Nyutu, E. N., Coburn, W. W., Pleasants, B. A. (2018). Student engagement in direct instruction, undergraduate microbiology laboratories. *Journal of Biological Education*. (in press). <https://doi.org/10.1080/00219266.2018.1469535>
- Kariri, K., Coburn, W. W., & Bentz, Amy. (2018). Investigating the Use of Formative Assessment among Male Saudi Arabian High School Science Teachers. *International Journal of Environmental & Science Education*. 13(10):1-13. <https://www.ijese.net/makale/2096>.
- Erdas Kartal, E., Coburn, W. W., Dogan, N., Irez, S., Cakmakci, G., Yalaki, Y. (2018). Improving science teachers' nature of science views through an innovative continuing professional development program. *International Journal of STEM Education*. 5(1):30. <https://rdcu.be/285X>.
- Şahingöz, S., Coburn, W.W. (2018). Uygulamalı Bilim Eğitimi Kursuna Katılan Fen Bilimleri Öğretmenlerinin Araştırma-Sorgulamaya Dayalı Öğretime Göre Öğretim Tercihlerinin Değerlendirilmesi. *Kastamonu Eğitim Dergisi*, 26(4), 1371-1382. DOI: 10.24106/kefdergi.413586
- Schuster, D. G., Coburn, W. W., Adams, B., Undreiu, A., Skjold, B. (2018). Learning of Core Disciplinary Ideas: Efficacy Comparison of Two Contrasting Modes of Science Instruction. *Research in Science Education*. 48(2), 389-435.
- Calik, M. & Coburn, W. W. (2017). A cross-cultural study of CKCM efficacy in an undergraduate chemistry classroom [10.1039/C7RP00016B]. *Chem. Educ. Res. Pract.* 18, 691-709.
- Bahcivan, E., & Coburn, W. W. (2016). Investigating Coherence among Turkish Elementary Science Teachers' Teaching Belief Systems, Pedagogical Content Knowledge and Practice. *Australian Journal of Teacher Education*, 41(10).
- Baptista, G. C. S., Santos, R. d. S., & Coburn, W. W. (2016). Perspectives on the Origins of Life in Science Textbooks from a Christian Publisher: Implications for Teaching Science. *International Journal of Science and Mathematics Education*, 14(2), 309–326.
- Coburn, W. W. (2016). Beliefs. In R. Gunstone (Editor), *Encyclopedia of Science Education*. Dordrecht, Heidelberg, New York, London: Springer, (117).
- Coburn, W. W. (2016). Worldview. In R. Gunstone (Editor), *Encyclopedia of Science Education*. Dordrecht, Heidelberg, New York, London: Springer, (111).
- Coburn, W. W., Schuster, D. G., Adams, B., Skjold, B., Mugaloglu, E. Z., Bentz, A., & Sparks, K. (2014). Pedagogy of Science Teaching Tests: Formative Assessments of Science Teaching Orientations. *International Journal of Science Education*, 36(13), 2265-2288.
- Mataka, L. M., Coburn, W. W., Grunert, M. L., Mutambuki, J., & Akom, G. (2014). The effect of using an explicit general problem solving teaching approach on elementary pre-service teachers' ability to solve heat transfer problems. *International Journal of Education in Mathematics, Science and Technology*, 2(3), 164-174. <<http://ijemst.com/index.php?p=issue&id=9>>.

- Elmas, R., Ozturk, N., Irmak, M., & Cobern, W. W. (2014). An Investigation of Teacher Response to National Science Curriculum Reforms in Turkey. *Eurasian Journal of Physics and Chemistry Education*, 6(1), 2-33 <<http://www.eurasianjournals.com/index.php/ejpce/article/view/899>>.
- Cobern, W. W., Loving, C. C., Davis, E. B., & Terpstra, J. (2013). An Empirical Examination of the Warfare Metaphor with Respect to Pre-Service Elementary Teachers. *Journal of Science Education and Technology*, 22(4), 488-499.
- Liang, Y. & Cobern, W. W. (2013). Analysis of a Typical Chinese High School Biology Textbook Using the AAAS Textbook Standards. *EURASIA Journal of Mathematics, Science & Technology Education*. 9(4):329-336.
- Titrek, O., & Cobern, W. W. (2011). A comparison of pre-service teacher's scientific beliefs: a cross cultural study between the USA and Turkey. *International Journal of Science Education*, 33:(3), 401-421.
- Cobern, W. W., Schuster, D., Adams, B., Applegate, B., Skjold, B., Undreiu, A., Loving, C. C., & Gobert, J. D. (2010). Experimental Comparisons of Inquiry and Direct Instruction in Science. *Research in Science and Technology Education*, 28(1): 81-96.
- Cobern, W. W. (2009, February). Proselytizing For Atheism in the Science Education Community. *International History, Philosophy and Science Teaching Group NEWSLETTER*, 19-21.
- Cobern, W. W. (2008). The Competing Influence of Secularism and Religion on Science Education in a Secular Society. In A. Keysar, & B. A. Kosmin (editors) Secularism and Science in the 21<sup>st</sup> Century (89-103). Trinity College, Hartford, CT: Institute for the Study of Secularism in Society and Culture.
- Cobern, W. W., & Loving, C. C. (2007). An essay for educators: Epistemological realism really is common sense. *Science & Education*. (425-447)
- Cobern, W. W. (2007). The Competition of Secularism and Religion in Science Education. In ISSSC, Science & Secular Values: A Symposium. Trinity College, Hartford, CT: Institute for the Study of Secularism in Society and Culture: 5,10-11.
- Cobern, W. W. (2007). ID Hysteria says more about some people's freudian *ID* than about science. *Canadian Journal of Science, Mathematics and Technology Education*, 7(2/3): 257-262.
- Cobern, W. W., & Loving, C. C. (2006). Culturally important issues and science: A gender and science-interest investigation. *International Journal of Human Sciences*, 3(2), 1-22.<[www.InsanBilimleri.com/en](http://www.InsanBilimleri.com/en)>
- Schuster, D., Cobern, W. W., Applegate, B., Schwartz, R., Vellom, P., & Undrieu, A. (2006). Assessing Pedagogical Content Knowledge Of Inquiry Science Teaching: developing an assessment instrument to support the undergraduate preparation of elementary teachers to teach science as inquiry. Chapter in the Proceedings of the National STEM Assessment Conference on Assessment of Student Achievement (pp. 247-265). Alexandria, VA: National Science Foundation.
- Holm, G., & Cobern, W. W. (2006). Urban girls empowering themselves through education: The issue of voice. In D. E. Armstrong, & B. J. McMahon (editors), Inclusion in Urban Educational Environments (175-187). Greenwich, CT: IAP-Information Age Publishing, Inc.

- Cobern, W. W., & Loving, C. C. (2005). Thinking about Science and Christian Orthodox Beliefs: a survey study of preservice elementary teachers. In M. Nott (editor), Proceedings of the 2005 International Conference on the History and Philosophy of Science Teaching. Leeds: International History, Philosophy, Sociology & Science Teaching Conference.  
<[http://www.ihpst2005.leeds.ac.uk/papers/Cobern\\_Loving.pdf](http://www.ihpst2005.leeds.ac.uk/papers/Cobern_Loving.pdf)>
- Cobern, W. W. (2005). Weltsicht, Wissenschaft und das Verständnis von Natur. M. Gebauer, & U. Gebhard (Hrsg), Naturerfahrung - Wege zu einer Hermeneutik der Natur (67-98). Zug/Schweiz: Die Graue Edition.
- Cobern, W. W. (2004). Apples and Oranges: A Rejoinder to Smith & Siegel. *Science & Education*, 13(6), 583-589.
- Cobern, W. W. (2004). Some good ideas Yes, but plagued by politicized institutional-deficit theorizing. *Canadian Journal of Science and Technology Education* 4(2), 275-278.
- Cobern, W. W. (2003). A reasoned approach to the teaching of evolution in the public's interest. In W. F. McComas (editor), Proceedings of the International History, Philosophy and Science Teaching Group (CD format). Dordrecht, Netherlands: Kluwer Academic Publishers.
- Cobern, W. W., & Loving, C. C. (2002). An investigation of preservice elementary teachers' thinking about science. *Journal of Research in Science Teaching*, 39(10), 1016-1031.
- Cobern, W. W. (2001). Debating the science curriculum of the future: Two views of the science curriculum- *William Cobern's View*. *ENC Focus*, 8(4), 19-20.
- Cobern, W. W. (2001). Re-examining the image of science in the school science curriculum. In G. Nagarjuna (editor), History and philosophy of science: Implications for science education (pp. 109-130). Mumbai, India: Homi Bhabha Centre for Science Education.
- Cobern, W. W., & Loving, C. C. (2001). Multiculturalism in science education and the question of universalism. In G. Nagarjuna (editor), History and philosophy of science: Implications for science education (pp. 49-68). Mumbai, India: Homi Bhabha Centre for Science Education. (reprint of Cobern & Loving, 2001)
- Cobern, W. W., & Loving, C. C. (2001). Defining 'science' in a multicultural world: Implications for science education. *Science Education*, 85(1), 50-67.
- Cobern, W. W. (2001). Talking about issues. *Science Education*, 85(1), 1-2.
- Cobern, W. W. (2001). Response to Benson. *Studies in Philosophy and Education*, 20, 453-454.
- Cobern, W. W., & Loving, C. C. (2000). *Enacted* scientific worldviews: A case study of four high school science teachers. *Electronic Journal of Science Education*, 5(1).
- Cobern, W. W. (2000, December). A sensible way to teach science: Derek Hodson's "Teaching and Learning Science." *Studies in Science Education*, 155-161.
- Cobern, W. W. (2000). The rhetoric of science education reform. *The Physics Teacher*, 38, 20-21.
- Cobern, W. W. (2000). Everyday thoughts about nature: An interpretive study of 16 ninth graders' conceptualizations of nature. Dordrecht, Netherlands: Kluwer Academic Publishers.
- Cobern, W. W. (2000). The nature of science and the role of knowledge and belief. *Science & Education*, 9(3): 219-246.

- Loving, C. C., & Cobern, W. W. (2000). Invoking Thomas Kuhn: What citation analysis reveals for science education. *Science & Education*, 9(1/2), 187-206.
- Cobern, W. W., Gibson, A. T., & Underwood, S. A. (1999). Everyday thoughts about nature: An interpretive study of 16 ninth graders' conceptualizations of nature. *Journal of Research in Science Teaching*, 36(5), 541-564.
- Cobern, W. W., & Loving, C. C. (1998). The card activity: Introducing teachers to the philosophy of science. In W. McComas (editor), The nature of science in science education: Rationales and strategies (pp. 73-82). Dordrecht, Netherlands: Kluwer Academic Publishers.
- Cobern, W. W. Editor, (1998). Socio-cultural perspectives on science education: an international dialogue. Dordrecht, Netherlands: Kluwer Academic Publishers.
- Cobern, W. W. (1998). The cultural study of science and science education. In W. W. Cobern (ed.), Socio-cultural perspectives on science education: an international dialogue (1-5) Dordrecht, Netherlands: Kluwer Academic Publishers.
- Cobern, W. W. (1998). Science and a social constructivist view of science education. In W. W. Cobern (ed.), Socio-cultural perspectives on science education: an international dialogue (7-24) Dordrecht, Netherlands: Kluwer Academic Publishers.
- Taylor, P. C. & Cobern, W. W. (1998). Towards a critical science education. In W. W. Cobern (ed.), Socio-cultural perspectives on science education: an international dialogue (203-207). Dordrecht, Netherlands: Kluwer Academic Publishers.
- Cobern, W. W. & Loving, C. (1998). The card activity: Introducing teachers to the philosophy of science. In W. McComas (ed.), The nature of science and science education (73-82). Dordrecht, Netherlands: Kluwer Academic Publishers.
- Cobern, W. W. (1997). Public understanding of science as seen by the scientific community: Do we need to re-conceptualize the challenge and to re-examine our own assumptions? In S. Sjøberg, & E. Kallerud (editors), Science, technology and citizenship: The public understanding of science and technology in science education and research policy (pp. 51-74). Oslo, Norway: Norwegian Institute for Studies in Research and Higher Education.
- Cobern, W. W. & Aikenhead, G. (1997). Culture and the learning of science. In K. G. Tobin, & B. Fraser (editors), The international handbook on science education (p. 39-52). Dordrecht, Netherlands: Kluwer Academic Publishers.
- Cobern, W. W. (1997). Distinguishing science-related variations in the causal universal of college students' worldviews. *Electronic Journal of Science Education*, 1(3).
- Jegede, O. Aikenhead, G., & Cobern, W. W. (1997). Cultural studies in science education. In M. Ogawa (editor), Effects of Traditional Cosmology on Science Education (p. 129-133). Mito, Japan: Ministry of Education.
- Cobern, W. W. (1997). Traditional culture and science education in Africa: Merely language games? In M. Ogawa (editor), Effects of Traditional Cosmology on Science Education. (p. 22-30). Mito, Japan: Ministry of Education.
- Cobern, W. W. (1996). Worldview theory and conceptual change in science education. *Science Education*, 80(5), 579- 610.
- Cobern, W. W. (1996). What's in a name? - Introducing the section for culture and comparative studies. *Science Education*, 80(5), 489-491.
- Cobern, W. W. (1996). Constructivism and non-Western science education research. *International Journal of Science Education*, 18(3), 295-310.

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- Fedock, P. M., Zambo, R., & Cobern, W. W. (1996). The professional development of college science professors as science teacher educators. *Science Education*, 80(1), 5-19.
- Cobern, W. W. (1995). An alternative view for constructivism and non-western science education research. In A. Hofstein, B. Eylon, and G. Giddings, (editors), Science Education: From Theory to Practice (pp. 395-404). Rehovot, Israel: The Weizmann Institute of Science.
- Cobern, W. W. (1995). Belief and knowledge: Unnecessary conflict in the science classroom. In F. Finley (editor), Proceedings of the History and Philosophy of Science and Science Teaching, Volume 1 (pp. 222-232). Minneapolis, MN: HPSST.
- Cobern, W. W. (1995). Constructivism for science teachers. *Science Education International*, 6(3), 8-12.
- Cobern, W. W. (1995). Thinking about alternative constructions of science and science education. In M. Glencross (editor). Southern African Association for Research in Mathematics and Science Education (SAARMSE) 1994 Proceedings (pp. 62-80). Durban, South Africa: CASME - University of Natal.
- Cobern, W. W. (1995). Science education as an exercise in foreign affairs. *Science & Education*, 4(3), 287-302.
- Cobern, W. W., Gibson, A. T., & Underwood, S. A. (1995). Valuing scientific literacy. *The Science Teacher*, 62(9), 28-31.
- Cobern, W. W. (1994). International science education - New vistas, new challenges. *Science Education*, 78(3), 217-220.
- Cobern, W. W. (1994). Point: Belief, understanding, and the teaching of evolution. *Journal of Research in Science Teaching*, 31(5), 583-590.
- Cobern, W. W. (1994). World view, culture, and science education. *Science Education International*, 5(4), 5-8.
- Cobern, W. W. (1993). College students' conceptualizations of nature: An interpretive world view analysis. *Journal of Research in Science Teaching*, 30(8), 935-951.
- Cobern, W. W. (1993). Contextual constructivism: The impact of culture on the learning and teaching of science. In K. G. Tobin (editor), The practice of constructivism in science education (pp. 51-69). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Cobern, W. W. (1993). Forward. In Southern African Association for Research in Mathematics and Science Education (SAARMSE) Proceedings (p. vii). Durban, South Africa: CASME - University of Natal.
- Pommerville, J., Williams, S., McKinley, M., & Cobern, W. W. (1993). The role of the community college/university in teacher preparation: The life science academies for pre-college teachers. *Visions '93*, 5(1), 22-26.
- Cobern, W. W. (1992). Constructivism. Journal of Educational and Psychological Consultation, 4(1), 105-112.
- Cobern, W. W. (1992). Science education and the external perspective on science. In S. Hills (editor), History & philosophy of science in science education, volume I: Proceedings of the second international conference on the history and philosophy of science and science teaching (pp. 175-186). Kingston, Ontario, Canada: The Mathematics, Science, Technology, and Teacher Education Group and the Faculty of Education, Queen's University.

- Cobern, W. W. (1991). Introducing teachers to the philosophy of science. *Journal of Science Teacher Education*, 2(3), 45-47.
- Cobern, W. W. (1991). World view theory and science education research, NARST Monograph No. 3. Manhattan, KS: National Association for Research in Science Teaching.
- Cobern, W. W. (1990). Understanding the world as others do. *AERA/SMKCC Newsletter*, (13), 5-7.
- Cobern, W. W. (1989). A comparative analysis of NOSS profiles on Nigerian and American preservice, secondary science teachers. *Journal of Research in Science Teaching*, 26(6), 533-541.
- Cobern, W. W. (1988). The integration of faith and science learning. *Perspectives on Science and Christian Faith*, 40(2), 98-100.
- Cobern, W. W. (1988). A values framework for teaching global science. *Perspectives on Science and Christian Faith*, 40(4), 204-209.
- Cobern, W. W., Umar, A., & Junaidu, M. I. (1984). Traditional education and folktales: a stimulus to literacy amongst the nomadic Fulani. *Durham and Newcastle Research Review*, X(52), 130-133.
- Cobern, W. W. (1983). The Fulani dilemma: Breaking the cycle. *West Africa*, (3426), 886-888.
- Cobern, W. W. (1983). The Fulani dilemma: Nomadism and education. *West Africa*, (3425), 832-834.
- Cobern, W. W. (1982). The church, education and development. *Journal of the American Scientific Affiliation*, 34(4), 236-239.
- Cobern, W. W., & Junaid, M. I. (1982). A functional analysis of two grade scale types. *Benin Journal of Education Studies (Nigeria)*, 2(1), 33-39.
- Cobern, W. W., Evans, E., & Junaid, M. I. (1981). Reflections on grading a repeated course. *Benin Journal of Education Studies (Nigeria)*, 1(1), 23-24.
- Cobern, W. W. (1977). How parents can help their children learn to read. *Guide Magazine*, 1(7), 2-3, 9.

**BOOKS SERIES EDITORSHIP: Science & Technology Education Library, Kluwer Academic Publishers**

- Kimball, R. & Stables, K. *Researching Design Learning*. Science & Technology Education Library. editor. William W. Cobern, 34. Dordrecht, Netherlands: Springer Academic Publishers, 2007.
- Wassell, B. A. & Stith, I. *Becoming an Urban Physics and Math Teacher*. Science & Technology Education Library. editor. William W. Cobern, 32. Dordrecht, Netherlands: Springer Academic Publishers, 2007.
- Taylor, P. C. & Wallace, J. *Contemporary Qualitative Research: Exemplars For Science And Mathematics Educators*. Science & Technology Education Library. editor. William W. Cobern, 33. Dordrecht, Netherlands: Springer Academic Publishers, 2007.
- Gilmer, P. *Transforming University Science Teaching Through Action Research: Utilizing Collaborative Learning and Technology*. Science & Technology Education Library. editor. William W. Cobern, 35. Dordrecht, Netherlands: Springer Academic Publishers, 2006.
- Nola, R., & Irzk, G. *Philosophy, Science, Education And Culture*. Science & Technology Education Library. editor. William W. Cobern, 32. Dordrecht, Netherlands: Kluwer Academic Publishers, 2006.

- Yung, B.H.W. *Assessment Reform in Science*. Science & Technology Education Library, editor. William W. Cobern, 31. Dordrecht, Netherlands: Kluwer Academic Publishers, 2006.
- Aubusson, Peter, Allan Harrison & Stephen M. Ritchie (Eds). *Metaphor And Analogy In Science Education*. Science & Technology Education Library, editor. William W. Cobern, 30. Dordrecht, Netherlands: Kluwer Academic Publishers, 2005.
- Alsop, Steve (Eds). *Beyond cartesian dualism: Encountering affect in the teaching and learning of science*. Science & Technology Education Library, editor. William W. Cobern, 29. Dordrecht, Netherlands: Kluwer Academic Publishers, 2005.
- DeVries, Marc. *Teaching about Technology*. Science & Technology Education Library, editor. William W. Cobern, 27. Dordrecht, Netherlands: Kluwer Academic Publishers, 2005.
- Flick, Lawrence, and Norman G. Lederman, editors . *Scientific Inquiry and the Nature of Science: Implications for Teaching, Learning, and Teacher Education*. Science & Technology Education Library, editor. William W. Cobern, 25. Dordrecht, Netherlands: Kluwer Academic Publishers, 2004.
- Halloun, Ibrahim A. *Modeling Theory in Science Education*. Science & Technology Education Library, editor. William W. Cobern, 24. Dordrecht, Netherlands: Kluwer Academic Publishers, 2004.
- Wallace, Carolyn S., Brian Hand, and Vaughan Prain, editors. *Writing and Learning in the Science Classroom*. Science & Technology Education Library, editor. William W. Cobern, 23. Dordrecht, Netherlands: Kluwer Academic Publishers, 2004.
- Zohar, Anat. *Higher Order Thinking in Science Classrooms: Students' Learning and Teachers' Professional Development*. Science & Technology Education Library, editor. William W. Cobern, 22. Dordrecht, Netherlands: Kluwer Academic Publishers, 2004.
- Geelan, David. *Weaving Narrative Nets to Capture Classrooms : Multimethod Qualitative Approaches for Educational Research*. Science & Technology Education Library, editor. William W. Cobern, 21. Dordrecht, Netherlands: Kluwer Academic Publishers, 2004.
- Fensham, Peter J. *The Evolution of Science Education As a Field of Research Defining an Identity*. Science & Technology Education Library, editor. William W. Cobern, 20. Dordrecht, Netherlands: Kluwer Academic Publishers, 2003.
- Zeidler, Dana L., editor. *The Role of Moral Reasoning on Socioscientific Issues and Discourse in Science Education*. Science & Technology Education Library, editor. William W. Cobern, 19. Dordrecht, Netherlands: Kluwer Academic Publishers, 2003.
- Lawson, Anton E. *The Neurological Basis of Learning, Development and Discovery: Implications for Science and Mathematics Instruction*. Science & Technology Education Library, editor. William W. Cobern, 18. Dordrecht, Netherlands: Kluwer Academic Publishers, 2003.
- Gilbert, J. K., O. de Jong, R. Justi, D. F. Treagust, and J. H. van Driel, editors. *Chemical Education: Towards Research-Based Practice*. Science & Technology Education Library, editor. William W. Cobern, 17. Dordrecht, Netherlands: Kluwer Academic Publishers, 2003.
- Psillos, D., and H. Niedderer, editors. *Teaching and Learning in the Science Laboratory* . Science & Technology Education Library, editor. William W. Cobern, 16. Dordrecht, Netherlands: Kluwer Academic Publishers, 2003.
- Mayer, Victor J., editor. *Global Science Literacy*. Science & Technology Education Library, editor. William W. Cobern, 15. Dordrecht, Netherlands: Kluwer Academic Publishers, 2002.



## CONFERENCE PAPERS, REPORTS, WEBINARS & ERIC DOCUMENTS

- Cobern, W. W. (2017, November 6). Evaluation: coherent articulation with clarity and precision: the basic structure on which an evaluation plan operates. US Department of Education, OME, sponsored seminar presented at the 2017 National HEP CAMP Conference, Austin, TX.
- Cobern, W. W. (2017, November 6). Evaluation: coherent articulation with clarity and precision: some details on producing evidence of promise. US Department of Education, OME, sponsored seminar at the 2017 National HEP CAMP Conference, Austin, TX.
- Bentley, A. P. K., Adams, B. A. J., and Cobern, W. W. (2016). A qualitative analysis of individuals' motives for accepting or rejecting anthropogenic climate change. Paper presented at the annual meeting of the . Geological Society of American; Denver, CO.
- Irez, S., Erdas, E., Dogan, N., Cobern, W. W., Yalaki, Y., Cakmakci, G. & Altuner, Z. B. (2016). The Link Between Continuing Professional Development Program and Teachers' Nature of Science Views. Paper presented at the annual meeting of the National Association for Research in Science Teaching. Baltimore, MD.
- Kagumba, R. E., Cobern, W. W., & Schwartz, R. (2015). Uganda Science Teacher Educators' Views on Nature of Scientific Theories, Observations and Inferences. Paper presented at the annual meeting of the National Association for Research in Science Teaching Chicago IL.
- Cobern, W. W. (2015). Issues regarding use of Inquiry vs. Practices for the Next Generation Science Standards (NGSS): Best Advice on using the ideas. Webinar sponsored by AudioSolutionz.
- Guen, D., Muđalođu, Z. E., Küçük, Z. D. and Cobern, W. W. (2015). A study on teaching orientations of freshmen science education students. Paper presented at the annual meeting of the European Science Education Research Association; Helsinki, Finland.
- Sahingöz, S., & Cobern, W. W. (2015). An Exploratory Investigation of K-8 Pre-Service Teachers' Science Pedagogical Preferences. Poster presented at the annual meeting of the National Association for Research in Science Teaching. Chicago, IL.
- Petcovic, H., Voice, P., Cobern, B., Horvitz, B., Harrison, B., & Bentley, A. (2015). Involving Stakeholders in Developing Web-based Outreach Resources: An Example from the MGRRE Education Portal. Paper presented at the annual meeting of the North-Central Geological Society of America, Madison, WI.
- Pennock, P. & Cobern, W. W. (2015, January) African-American Girls and Scientific Argumentation: Lived Experiences, Intersecting Identities and their Roles in Constructing and Evaluating Claims. Poster presenting at International Conference of the Association for Science Teacher Education, Portland, Oregon
- Pennock, P. & Cobern, W. W. (2014, December) African-American Girls and Scientific Argumentation: Lived Experiences, Intersecting Identities and their Roles in Constructing and Evaluating Claims. Invited presentation at Calvin College, Grand Rapids, MI.
- Cobern, W. W. (2014). Contextualizing Science And Religion In The Science Classroom, The Colossians Forum Workshop, Grand Rapids, MI.

- Cobern, W. W. (2014). Epistemological Pluralism With Respect To Religion And The Teaching Of Science, The Colossians Forum Workshop, Grand Rapids, MI.
- Cobern, W. W. (2014). The Historical Development of Secondary School Biology Instruction: Colonial Days to 1890. Paper presented at the annual meeting of the . Michigan Academy; Oakland University, MI.
- Cobern, W. W., Schuster, D., Adams, B., Skjold, B., & Muğaloğlu, E. (2013). The Pedagogy of Science Teaching Test. Paper presented at the 3rd annual ASQ Advancing the STEM Agenda Conference.
- Adams, B., Schuster, D. G., Cobern, W. W., & Skjold, B. (2012). Assessing Pedagogical Content Knowledge of Inquiry Science Instruction Part 2: Operational Models. Paper presented at the annual meeting of the American Association of Physics Teachers.
- Mataka, L., Cobern, W. W., Grunert, M., Akom, G., & Mutambuki, J. (2012). Does an explicit general problem solving teaching strategy improve elementary pre-service teachers' ability to solve heat transfer problems? Paper presented at the annual meeting of the National Association for Research in Science Teaching.
- Mesci, G., & Cobern, W. W. (2012). Secondary School Science Teachers' Understanding of Nature of Science: A Study Using Q Methodology. Paper presented at the 28th Annual Q Conference.
- Schuster, D. G., Adams, B., Cobern, W. W., & Skjold, B. (2012). Assessing Pedagogical Content Knowledge of Inquiry Science Instruction Part 1: Operational Models. Paper presented at the annual meeting of the American Association of Physics Teachers.
- Schuster, D., Cobern, W. W., Adams, B. A., Skjold, B., Bentz, A., & Sparks, K. (2012). Assessing Pedagogical Content Knowledge of Inquiry Science Instruction. Paper presented at the annual meeting of the Association for Science Teacher Education. Clearwater Beach, FL
- Schuster, D. G., Cobern, W. W., Adams, B., Skjold, B., Bentz, A., & Sparks, K. (2012). Case-based Assessment of Science Teaching Orientations. Paper presented at the annual meeting of the American Educational Research Association Vancouver, British Columbia, Canada.
- Hong, H. H., & Cobern, W. W. (2011, September). How Beliefs Regarding the Nature of Science Interact with Worldview Presuppositions Held by Korean In-Service Science Teachers and Biologists. Paper presented at the Q Methodology Conference. Birmingham, UK. September 7-9, 2011.
- Cobern, W. W. (2011) Reconstructing the Inquiry Teaching of Science. Plenary lecture presented at the Science-Teacher Education Advanced Methods (S-TEAM) conference. Hageettepe University, Ankara, Turkey.
- Cobern, W. W. (2011). The Competing Influence of Secularism and Religion on Science Education in America's Secular Society: Lessons to be Learned. Plenary lecture presented at the Science-Teacher Education Advanced Methods (S-TEAM) conference. Hageettepe University, Ankara, Turkey.
- Cobern, W. W. (2011) Worldview Theory and Science Education Research. Public lecture presented at Böğazici University, Istanbul, Turkey.

- Schuster, D. G., Cobern, W. W., & Applegate, B. (2011). Assessing Pedagogical Content Knowledge of Inquiry Science Instruction. Paper presented at the annual meeting of the National Association for Research in Science Teaching.
- Adams, B., Cobern, W. W., Schuster, D., & Skjold, B. (2010). An experimental comparison of direct versus inquiry based science education. Poster presented at the 2010 European Education Research Association Conference; Helsinki, Finland.
- Cobern, W. W., Schuster, D. G., & Adams, B. (2010) Experimental Comparison of Inquiry and Direct Instruction in Science. Society for Research on Educational Effectiveness.
- Cobern, W. W., Schuster, D., Adams, B., Applegate, B., Skjold, B., Undreiu, A., Loving, C. C., & Gobert, J. D. (2010). Teacher Effects in a Comparative Study of Direct and Inquiry Science Instruction Efficacy. Paper presented at the annual meeting of the National Association for Research in Science Teaching.
- Adams, B., Undreiu, A., Schuster, D., & Cobern, W. W. (2010). Lessons Designed To Test Relative Effectiveness of Inquiry VS Direct Instruction. Poster presented at the annual meeting of the National Association for Research in Science Teaching.
- Cobern, W. W., Schuster, D., Adams, B., Applegate, B., Skjold, B., Undreiu, A., Gobert, J. D., & Loving, C. C. (2010). Inquiry science instruction or direct? Experiment-based answers as to what practices best promote conceptual development of significant science content. Paper presented at the annual meeting of the American Education Research Association.
- Cobern, W. W., Schuster, D., Adams, B., Applegate, B., Skjold, B., Undreiu, A., Gobert, J. D., & Loving, C. C. (2009). Inquiry science instruction or direct? Experiment-based answers as to what practices best promote conceptual development of significant science content. Paper presented at the Annual Meeting of the European Science Education Research Association.
- Cobern, W. W., Schuster, D., Adams, B., Applegate, B., Skjold, B., Undreiu, A., Gobert, J. D., & Loving, C. C. (2009). Inquiry science instruction or direct? Experiment-based answers as to what practices best promote conceptual development of significant science content. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching.
- Cobern, W. W., Schuster, D., Adams, B., Applegate, B., Skjold, B., Undreiu, A., Gobert, J. D., & Loving, C. C. (2009). Inquiry science instruction or direct? Experiment-based answers as to what practices best promote conceptual development of significant science content. Paper presented at the Annual Meeting of the American Association for the Advancement of Science.
- Cobern, W. W. (2009). A New Perspective for Doctoral Studies in the Sciences. Paper presented at Chancellor's College, University of Malawi Zomba, Malawi.
- Cobern, W. W. (2008). Science Education Buffeted by the Gales of Fundamentalism and Relativism. Plenary Presentation at the 2008 Conference of Asian Science Education (CASE2008) Kaohsiung, Taiwan: Conference of Asian Science Education (CASE2008). Kaohsiung, Taiwan.
- Schuster, D. G., Cobern, W. W., Applegate, B., Schwartz, R., Vellom, P., Undreiu, A., & Adams, B. (2008). Design and development of an instrument to assess pedagogical content knowledge of inquiry science teaching. Paper presented at the annual meeting of the National Association for Research in Science Teaching.

- Adams, B., Undreiu, A., Schuster, D., & Cobern, W. W. (2008). Challenges in lesson design for testing relative effectiveness of inquiry vs. direct instruction. Paper presented at the annual meeting of the National Association for Research in Science Teaching National Association for Research in Science Teaching.
- Cobern, W. W. (2007). A New Perspective for Doctoral Studies in the Sciences. Paper presented at Chancellor's College, University of Malawi Zomba, Malawi.
- Cobern, W. W. (2007). The Competing Influence of Secularism and Religion on Science Education in a Secular Society. Paper presented at the Workshop on Science Education and Secular Values Trinity College, Hartford, CT: Institute for the Study of Secularism in Society and Culture.
- Schuster, D., Cobern, W. W., Applegate, B., Schwartz, R., Vellom, P., & Undrieu, A. (2006). Assessing Pedagogical Content Knowledge Of Inquiry Science Teaching: developing an assessment instrument to support the undergraduate preparation of elementary teachers to teach science as inquiry. Paper presented at the National STEM Assessment Conference on Assessment of Student Achievement National Science Foundation and Drury University. October 19-21.
- Adams, B. A. J., Undreiu, A., & Cobern, W. W. (2006). The presence of inquiry in science education: What do we know? ... and what don't we know yet? Paper presented at the annual meeting of the National Association for Research in Science Teaching San Francisco, CA: National Association for Research in Science Teaching.
- Cobern, W. W. (2006). Implementation of Randomized Trials and Experimental Research in Science Education. Symposium presented at the 2006 annual meeting of the American Association for the Advancement of Science, St. Louis, MO.
- Cobern, W. W., & Loving, C. C. (2005). Thinking about Science and Christian Orthodox Beliefs: a survey study of preservice elementary teachers. Paper presented at the 2005 International Conference on the History and Philosophy of Science Teaching. Leeds, UK.
- Cobern, W. W. (2005). Worldview, Science and the Understanding of Nature. Invited plenary paper presented at the annual meeting of the Swedish Association for Research in Science Education. Karlstadt, SW
- Cobern, W. W. (2005). *Enacted* scientific worldviews: A case study of four high school science teachers: SLCSPP Working Paper #139b. Paper presented at the Swedish Institute for Education . Stockholm, SW
- Holm, G., & Cobern, W. W. (2005). Urban Girls Empowering Themselves Through Education: The Issue of Voice. Paper presented at the annual meeting of the American Educational Research Association Montreal, CN.
- Holm, G., & Cobern, W. W. (2004). Urban Girls' Need to be Heard. Paper presented at the annual meeting of the American Educational Studies Association Kansas City, MO.
- Cobern, W. W., & Loving, C. C. (2004). Thinking about Science and Christian Orthodox Beliefs: a survey study of preservice elementary teachers. National Association for Research in Science Teaching National Association for Research in Science Teaching.

- Sulikowski, M., Loving, C. C., & Cobern, W. W. (2003). Improving Undergraduates' Views of the Relationship Between Science and Culture: Two Approaches in Chemistry. Paper presented at the 2003 meeting of the International History Philosophy & Science Teaching Group. Winnipeg, CN: International History Philosophy & Science Teaching Group.
- Cobern, W. W. (2002, April), Cultural Issues and Science: A Gender and Science-Interest Investigation. Paper presented at the annual meeting of the National Association for Research in Science Teaching. New Orleans: National Association for Research in Science Teaching.
- Cobern, W. W., & Loving, C. C. (2001, November). In Defense of Realism: It Really *Is* Commonsense. Paper presented at the tri-annual meeting of the International History, Philosophy and Science Teaching Group Denver, CO.
- Cobern, W. W. (2001, November). A Reasoned Approach to the Teaching of Evolution in the Public's Interest. Paper presented at the tri-annual meeting of the International History, Philosophy and Science Teaching Group Denver, CO.
- Cobern, W. W. (2000, April). The influential books I have read. Paper presented at the annual meeting of the National Association for Research in Science Teaching New Orleans: National Association for Research in Science Teaching.
- Cobern, W. W. (2000, April). The rhetoric of science education reform. Paper presented at the annual meeting of the National Association for Research in Science Teaching New Orleans: National Association for Research in Science Teaching.
- Cobern, W. W., & Loving, C. C. (2000, April). The Thinking about Science Survey Instrument (TSSI): An Instrument for the Quantitative Study of Socio-Cultural Sources of Support and Resistance to Science. Paper presented at the annual meeting of the National Association for Research in Science Teaching New Orleans: National Association for Research in Science Teaching.
- Cobern, W. W. (1999). The cultural nature of the concept "scientific worldview". Paper presented at the annual meeting of the National Association for Research in Science Teaching Boston, MA: National Association for Research in Science Teaching.
- Loving, C. C., & Cobern, W. W. (1999). Invoking Thomas Kuhn: What citation analysis reveals for science education. Paper presented at the annual meeting of the National Association for Research in Science Teaching Boston, MA: National Association for Research in Science Teaching.
- Cobern, W. W. (1999). Defining science in a multicultural world. Paper presented at a workshop on History of science: Implications for science education Mumbai, India: Homi Bhabha Institute for Science Education.
- Cobern, W. W. (1999). Re-examining the Image of Science in the School Science Curriculum. Paper for presentation to the International Workshop on History of Science: Implications for Science Education, Homi Bhabha Centre for Science Education Mumbai, India: Homi Bhabha Centre for Science Education.
- Cobern, W. W., & Loving, C. C. (1998). Defining 'science' in a multicultural world: Implications science education. Paper presented at the annual meeting of the National Association for Research in Science Teaching, San Diego, CA: National Association for Research in Science Teaching.
- Cobern, W. W. & Fager, J. (1998). The *Thinking about Science* Survey Instrument (TSSI). Kalamazoo, MI: Scientific Literacy and Cultural Studies Project (<http://www.wmich.edu/slscsp/TSSI.html>).

- Coburn, W. W. (1998). Culture and the learning of science. Paper presented at the annual meeting of the American Education Research Association San Diego, CA: American Education Research Association.
- Coburn, W. W., & Loving, C. (1997). The card activity: Introducing teachers to the philosophy of science. Paper presented at the annual meeting of the National Association for Research in Science Teaching.
- Coburn, W. W. (1997). A Response to Bunga: Science and religion in conflict. Paper presented at the annual meeting of the National Association for Research in Science Teaching.
- Bizzo, N., & Coburn, W. W. (1996). Science teaching and human values: Focus on the teaching of evolution. Paper presented at the 8th meeting of the International Organization of Science and Technology Education Edmonton, Alberta, Canada.
- Coburn, W. W. (1996). Belief, knowledge and science teaching. Paper presented at the 1996 annual meeting of the National Science Teachers Association St. Louis, MO.
- Coburn, W. W. (1996). Reaching consensus on the nature of science - Implications for the classroom: Beliefs, worldviews & science content. Paper presented at the 1996 annual meeting of the National Association for Research in Science Teaching St. Louis, MO.
- Coburn, W. W. (1996). Traditional Culture and Science Education in Africa: Merely Language Games? Paper presented at the meeting for Traditional Culture, Science and Technology, and Development: Toward a New Literacy for Science and Technology. Tokyo Institute of Technology, Meguro-ku, Tokyo, Japan
- Coburn, W. W., Gibson, A. T., & Underwood, S. A. (1996). The different worlds of biology and physics science teachers. Paper presented at the 1996 annual meeting of the National Association for Research in Science Teaching St. Louis, MO.
- Coburn, W. W., Gibson, A. T., & Underwood, S. A. (1996). Leaving elementary school with a sense of order in nature. Paper presented at the 1996 annual meeting of the National Association for Research in Science Teaching St. Louis, MO.
- Coburn, W. W., Gibson, A. T., & Underwood, S. A. (1996). Ninth graders talk about conservation and the environment. Paper presented at the 1996 annual meeting of the National Association for Research in Science Teaching St. Louis, MO.
- Jarrell, R., Coburn, W. W., & Rillero, P. (1996). Factors influencing the self-efficacy of elementary preservice teachers as science educators: Science education methods courses, current knowledge of science, and subjective. Paper presented at the 1996 annual meeting of the National Association for Research in Science Teaching St. Louis, MO.
- Lunetta, V., Lynch, J. F., van den Berg, E., & Coburn, William W. (1996). Promoting graduate program sensitivity to the needs of international students. Panel presentation at the NAFSA 48th Annual Conference Phoenix, AZ.
- Rillero, P., & Coburn, W. W. (1996). Preservice teachers' views of nature and the natural world. Paper presented at the 1996 annual meeting of the National Association for Research in Science Teaching St. Louis, MO.
- Coburn, W. W. (1995). Traditional Culture and Science Education in Africa: Merely Language Games? Paper presented at the meeting for African Science and Technology Education Towards the Future: Practice, Policy and Priorities. University of Durban-Westville, Republic of South Africa
- Coburn, W. W., Gibson, A. T., & Underwood, S. A. (1995). Everyday thoughts about nature: An interpretive study of 16 ninth graders' conceptualizations of nature - Working paper no. 127 of the

- Scientific Literacy and Cultural Studies Project (SLCSP). Paper presented at the annual meeting of the National Association for Research in Science Teaching ERIC #ED381401: San Francisco, CA.
- Cobern, W. W., Gibson, A. T., & Underwood, S. A. (1995). Scientific literacy is a life-time skill. Paper presented at the annual meeting of the National Association of Biology Teachers Phoenix, AZ.
- Cobern, W. W., Gibson, A. T., & Underwood, S. A. (1995). Scientific literacy is a life-time skill. Paper presented at the annual meeting of the National Science Teachers Association San Antonio, TX.
- Cobern, W. W., Gibson, A. T., & Underwood, S. A. (1995). World view: reality as viewed by students: A synopsis of methodology, Working Paper No. 101 of the Scientific Literacy and Cultural Studies Project (SLCSP); Originated 1991, Phase One completion, 19th April, 1995. Paper presented at the annual meeting of the National Association for Research in Science Teaching San Francisco, CA.
- Cobern, W. W. (1994). Final evaluation report: 1993 summer life science academy for teachers. Phoenix, AZ: Comprehensive Regional Center for Minorities.
- Cobern, W. W. (1994). Language, culture, and science education. Invited plenary address at the Physical Science Education Conference - "The Role of the Science Teacher in a Society in Transition" Durban, South Africa: SAARMSE/CASME.
- Cobern, W. W. (1994). Student belief in cultural context. Paper presented at the Science Education Seminar Series University of Auckland, Auckland, New Zealand: Science Education Seminar Series.
- Cobern, W. W. (1994). Thinking about alternative constructions of science and science education. Invited plenary address at the second annual meeting of the Southern Africa Association for Research in Mathematics and Science Education Durban, South Africa: SAARMSE.
- Cobern, W. W. (1994). Worldview theory and conceptual change in science education. Paper presented at the annual meeting of the National Association for Research in Science Teaching 1994: Anaheim, CA.
- Taylor, P. C. S., Tobin, K. G., & Cobern, W. W. (1994). The classroom as a sociocultural site: Toward more insightful understandings of ways of knowing and acting. Symposium presented at the annual meeting of the National Association for Research in Science Teaching Anaheim, CA.
- Cobern, W. W. (1993). Epistemology, metaphysics, and world view. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching Atlanta, GA. ERIC # 361204.
- Cobern, W. W. (1993). A cooperative research group for the study of culture and science education in culture and science education in developing countries. Paper presentation at the UNESCO International Conference on Science Education in Developing Countries Jerusalem: UNESCO.
- Cobern, W. W., Fedock, P., & Zambo, R. (1993). Final evaluation report: 1992 summer life science academy for teachers. Phoenix, AZ: Comprehensive Regional Center for Minorities.
- Fedock, P. M., Zambo, R., & Cobern, W. W. (1993). The professional development of college science professors as science teacher educators. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching Atlanta, GA.
- Cobern, W. W. (1992). African science, feminist science, Islamic science, or just plain science? Working Paper No. 103, Scientific Literacy and Cultural Studies Project. Phoenix, AZ: SLCSP.

- Cobern, W. W. (1992). Breadth vs. depth: a comparison of student and professor conceptualizations of nature. Paper presented at the annual meeting of the National Association for Research in Science Teaching Cambridge, MA.
- Cobern, W. W. (1992). Constructivism and non-western science education, Working Paper No. 102, Scientific Literacy and Cultural Studies Project. Phoenix, AZ: SLCSP.
- Cobern, W. W. (1992). A cultural constructivist approach to the teaching of evolution, Working Paper No. 112, Scientific Literacy and Cultural Studies Project. Phoenix, AZ: SLCSP.
- Cobern, W. W. (1992). Science Education and the External Perspective on Science. Paper presented at the annual meeting of the 2nd International Conference on the History and Philosophy of Science in Science Teaching Kingston, Ontario, Canada.
- Cobern, W. W. (1992). The impact of constructivist epistemology on classroom practice: The problem of knowledge and belief. Paper presented at the annual meeting of the American Educational Research Association San Francisco, CA.
- Cobern, W. W. (1991). The natural world as understood by selected college students: a world view methodological exploration. Paper presented at the annual meeting of the National Association for Research in Science Teaching, ERIC #344 745 Lake Geneva, WI.
- Cobern, W. W. (1991). Theoretical bases for science education research: Contextual constructivism - The impact of culture on the learning and teaching of science. Paper presented at the annual meeting of the National Association for Research in Science Teaching, ERIC # 338488 The Abbey, Fontane, WI.
- Cobern, W. W. (1991). World view - reality as viewed by students: A synopsis of methodology, Working Paper No. 101, Scientific Literacy and Cultural Studies Project. Phoenix, AZ: SLCSP (ERIC ED# 344 745).
- Cobern, W. W., Ellington, J., & Schores, D. (1990). A logico-structural, worldview analysis of the interrelationship between science interest, gender, and concept of nature. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching (ERIC #329426).
- Cobern, W. W. (1989). Distinguishing science-related variations in the causal universal of college students' world views. Paper presented at the annual meeting of the National Association for Research in Science Teaching, ERIC # 304346 San Francisco, CA.
- Cobern, W. W., & White, J. E. (1988). Science teacher training in a five-year developmental liberal arts program. Paper presented at the annual meeting of the Southwest Regional Division of the Association for the Education of Teachers in Science
- Cobern, W. W. (1986). A BASIC microcomputer program for estimating test reliability. ERIC Document # 272 532.
- Cobern, W. W., & Junaidu, M. I. (1986). Educational developmentalism in Nigeria: education for the masses or just mass education. Paper presented at the University of Sokoto, Nigeria, Seminar Series ERIC # 269343.
- Cobern, W. W. (1984). Culture and education: a look at Nigeria and the USA. Paper presented at the Education Department Seminar Missouri: Rockhurst College.
- Cobern, W. W. (1983). The science education dilemma in Sokoto State: teachers and students. Sokoto, Nigeria: University of Sokoto Report.
- Cobern, W. W. (1983). A study of factors affecting the academic performance of the university's science students. Sokoto, Nigeria: University of Sokoto Report.



- Cobern, W. W. (1983). University of Sokoto, Nigeria: student evaluations of university teaching. Paper presented at the University of Sokoto Seminar Series. ERIC # 290 402. Sokoto, Nigeria.
- Cobern, W. W. (1980). The science education dilemma in Sokoto State: Teachers and students. Paper presented at a departmental seminar of the Department of Education, University of Sokoto. Sokoto, Nigeria : Department of Education, University of Sokoto.
- Cobern, W. W. (1980). Teaching methods. Paper presented at a Nigerian Association of Christian Religious Knowledge Teachers Workshop Sokoto, Nigeria.
- Cobern, W. W. (1980). A proper attitude toward science. Paper presented at the annual meeting of the Science Teachers Association of Nigeria Sokoto, Nigeria.
- Cobern, W. W. (1979). Information processing theory. Paper presented at a West Africa Examinations Council Seminar, Lagos, Nigeria.
- Robinson, J. T., & Cobern, W. W. (1978). Validity of How's Your Logic? Human Sciences Program. Boulder, CO: BSCS.
- Robinson, J. T., Martin, S., & Cobern, W. W. (1977). Evaluation of Change, a Level III Human Sciences Module. Human Sciences Program. Boulder, CO: BSCS.

#### **SUPERVISION OF BACHELOR DEGREE HONORS THESES (Nigeria):**

- Nwaigwe, R.O. (1983). *Careers Through Chemistry with a B.Sc. Degree*. University of Sokoto, Nigeria.
- Shehu, A.A. (1983). *An Analysis of Attitude Towards Modern Education among the Traditional People of Sabon Birni, Sokoto*. University of Sokoto, Nigeria.
- Birnin-Kebbie, I.U. (1982). *A Study of Blacksmithing and Modern Education in Birnin Kebbi*. University of Sokoto, Nigeria.
- Gaya, Al-Amin M.A. (1982). *Organization and Administration of Koranic Schools in Kano*. University of Sokoto, Nigeria.
- Gusau, I.B. (1982). *Pottery: As Traditional Education in Kofar Mani and Kofar Jange of Gusau*. University of Sokoto, Nigeria.
- Magaji, D.S. (1982). *A Survey of Science Teaching in Dabai*. University of Sokoto, Nigeria.
- Mamman, Z.W. (1982). *A Study of the Attitude of Indigenous Pastors in Sokoto State towards Modern Education*. University of Sokoto, Nigeria.
- Tudun Wada, A.A. (1982). *The Effect of Modern Education on Traditional Herbalism in Tudun Wada*. University of Sokoto, Nigeria.
- Tuko, P.D. (1982). *A Study of the Attitude of Parents to Formal Education in Fakai*. University of Sokoto, Nigeria.
- Umar, A. (1982). *Pastoral Fulani Folktales: A Technique for Traditional Education*. University of Sokoto, Nigeria.
- Kangiwa, U.G. (1981). *A Survey of Parental Attitudes Towards Primary Education among the Arawa and Hausa of Kangiwa*. University of Sokoto, Nigeria.
- Junaid, M.I. (1980). *A Comparative Study of the Reactions of Preservice Teachers and Secondary School Students to the Current Discipline Codes in the Secondary Schools of Sokoto City*. University of Sokoto, Nigeria.

## **SUPERVISION OF MASTERS THESES:**

- Listiani, NFN (2014). *Translating and Adapting the POSTT for Formative Assessment of Indonesian Preservice Science Teachers' Pedagogical Orientations*. Unpublished master's thesis, Western Michigan University, Kalamazoo, MI.
- Mesci, G. (2011). *Secondary School Science Teachers' Understanding of the Nature of Science: A Study Using Q Methodology*. Unpublished master's thesis, Western Michigan University, Kalamazoo, MI.
- Richardson, P. (2004) *Does Access to a Manipulative Model Assist Student Learning of DNA Processes?* Unpublished master's thesis, Western Michigan University, Kalamazoo, MI.
- Cox, L. (2003) *Incorporating coloring activities into the science classroom and its impact on content retention*. Unpublished master's thesis, Western Michigan University, Kalamazoo, MI.

## **SUPERVISION OF DOCTORAL DISSERTATIONS:**

- Adams, Betty (2017). *Metaphysics in Science Education: Balancing Between Religious and Physicalist Extremism*. Unpublished doctoral dissertation, Western Michigan University, Kalamazoo, MI.
- Şchingöz, Selçuk (2017). *An Investigation of Turkish Middle School Science Teachers' Pedagogical Orientations Towards Direct and Inquiry Instructional Approaches*. Unpublished doctoral dissertation, Western Michigan University, Kalamazoo, MI.
- Pennock, Phyllis (2015). *African-American Girls and Scientific Argumentation: Intersecting Identities and their Role in Constructing and Evaluating Claims*. Unpublished doctoral dissertation, Western Michigan University, Kalamazoo, MI.
- Kagumba, Robert (2014). *Ugandan Science Teacher Educators: A Concurrent Mixed Methods Investigation of Nature of Science, Pedagogy, and Classroom Environment Perspectives*. Unpublished doctoral dissertation, Western Michigan University, Kalamazoo, MI.
- Bentz, Amy (2014) *Using Case Method To Explicitly Teach Formative Assessment In Preservice Teacher Education*. Unpublished doctoral dissertation, Western Michigan University, Kalamazoo, MI.
- Kits, K. (2011). *An Exploration of Worldview and Conceptions of Nature of Science Among Science Teachers at a Private Christian High School*. Unpublished doctoral dissertation, Western Michigan University, Kalamazoo, MI.
- Udongo, B. P. (2009). *Science Education Policy for Emergency, Conflict and Post-Conflict: An Analysis of Trends and Implications for the Science Education Program in Uganda*. Unpublished doctoral dissertation, Western Michigan University.
- Rienzo, Thomas (2006) *Conceptual Change Resulting From Experiential Learning With Business Enterprise Software*. Unpublished doctoral dissertation, Western Michigan University, Kalamazoo, MI.
- Meyer, Pat (2005) *A study of how five precursor key concepts for organic chemistry success are introduced to and understood by first –year chemistry students*. Unpublished doctoral dissertation, Western Michigan University, Kalamazoo, MI.
- Keys, Robert (2004). *Ecological and religious worldviews: A study of impact on environmental attitudes*. Unpublished doctoral dissertation, Western Michigan University, Kalamazoo, MI.

Schramm, Keith (2002). *A study of expert problem-solving in qualitative organic analysis using computer simulation*. Unpublished doctoral dissertation, Western Michigan University, Kalamazoo, MI.

In Progress: Joao Amadeiu, Khalid Karirri, Adam Chanell, Raquib Khan, Eva Ngulo, Asghar Gill, Esty Haryani

## **GRANTS:**

Dr. Cobern has been the PI or co-PI on over \$7M in externally funded grants, including:

NSF-ASA Supplement Award (~\$35,450) co-PI– project "Assessing Pedagogical Content Knowledge of Inquiry Science Teaching" (2005-2013).

NSF-IERI Supplement Award (\$136,000) PI– Doctoral student support (2010-2011)

NSF-S-STEM (\$460,000) co-PI – "Improving the STEM workforce by improving community college science teachers" (2008-2013).

NSF-ASA Supplement Award (~\$40,000) PI– International Extension of “Assessing pedagogical content knowledge of inquiry science teaching– developing an assessment instrument in support of the undergraduate preparation of elementary teachers to teach science as inquiry” into China, Malawi, Turkey & Uganda (2007-2009)

NSF Discovery Research (DR-K12) program (\$1.3M/5 years). Co-PI– “Assessment for Learning” (2007-2012)

Waksman Foundation for Microbiology (\$5,000) Co-PI– Creating a Microbiology Unit for Pre-Service Elementary Education Students. (2006-2007).

NSF-ASA Award (~\$400,000) Co-PI– Assessing pedagogical content knowledge of inquiry science teaching– developing an assessment instrument in support of the undergraduate preparation of elementary teachers to teach science as inquiry (2005-2008).

NSF-IERI Award (~1.9m) PI-- An experimental efficacy study of science achievement and attitude development amongst 8<sup>th</sup> grade urban students using an *inquiry*, integrated science-mathematics-engineering model of instruction (2004-2009).

NSF-STEP Award (~2.0m) Co-PI with Tsang & Ginsberg. Student and Faculty Learning Communities to Increase Graduation Rates in STEM Disciplines (2004-2009).

NSF Award (\$90,000) Bridging Engineering and Education (2002). Two Co-PIs on the project

NSF Award (\$899,000) Enlist, Equip, Empower: A project to develop middle school science teachers (2002-2005). Four Co-PIs on the project.

Young Women’s Leadership Charter School Evaluation (\$88,800; 2001-2004).

Eisenhower Professional Development State Grant (\$61,314; 2001-2002). Schoolyard Ecology & Science.

ASU West Campus Summer Research Grant (\$8,000; Spg 1996), a study of conceptualizations of nature among urban ninth graders.

National Science Foundation (\$139,592; 1993/96): Student Belief in Cultural Contexts: a Logico-Structural, World View Investigation of Belief and Culture among Secondary Science Students.

Comprehensive Regional Center for Minorities and Science and the Peoria Unified School District (\$10,000; 1993/94), a grant to work with Glendale Community College biology professors and local school districts on the evaluation of new approaches to elementary science teacher enhancement.

Comprehensive Regional Center for Minorities and Science (\$1,000; 1992/93), a grant to work with Glendale Community College biology professors and local school districts on the evaluation of new approaches to elementary science teacher enhancement.

Comprehensive Regional Center for Minorities and Science (\$4,000; Sum 1992), a qualitative and quantitative evaluation of a conceptual physics science academy for inservice teachers.

Comprehensive Regional Center for Minorities and Science (\$8,000; Sum 1992), a grant to work with Glendale Community College biology professors and local school districts on the evaluation of new approaches to elementary science teacher enhancement.

Eisenhower Grant (\$30,000; 1/92-6/93), a research and implementation grant involving the *Family Math* program.

ASU West Campus Summer Research Grant (\$4,447; Sum 1991), a study of biology professor's conceptualizations of nature.

ASU Faculty Grant in Aid - (\$5,500; 1991), to support travel to Nigeria and Lesotho for the purpose of initiating cooperative research projects in those countries.

Research Incentive Award - ASU (\$10,200; Spr 1990), socio-cultural studies in science education.

ASU West Campus Summer Research Grant (\$5,000; Sum 1990), preparation for a Nigeria & American world view study.

Richardson Foundation Grant (\$850; Fall 1987), continuation of my world view research.

Richardson Foundation Grant (\$1,500; Summer 1987), a study of philosophical and historical materials relevant for use in secondary science teaching, done as a Visiting Scholar at New College, Berkeley.

Richardson Foundation Grant (\$900; Spring 1986), for the testing of an instrument designed to assess preference for scientifically acceptable types of explanation.

Richardson Foundation Grant (\$850; Fall 1986), an assessment of scientific world view orthodoxy among Austin College freshmen.

Eisenhower Grant (\$27,000; Fall 1985), for an in-service workshop on computer-aided-instruction for secondary science and math teachers.

University of Sokoto Research Grant (\$2,000; 1982-83), for a study of factors influencing university science students' achievement.

#### **EDITORIAL REVIEW:**

Associate Editor (2017-present), *Journal of Research in Science, Mathematics and Technology Education*  
 Editorial Board Member (2015-present), *International Journal on Lifelong Education and Leadership*  
 Editorial Board Member (2014-present), *International Journal of Psychology and Educational Studies*  
 Guest Editor (2013-14), *International Journal of Education in Mathematics, Science and Technology*  
 Section Editor (2010-2016), Springer *Encyclopedia of Science Education*.  
 Book Series Editor (2000-2004), Kluwer Academic Publishers, *Science and Technology Library*  
 Review Board Member (2003-2009), *American Education Research Journal*  
 Board Member (1996-2005), *Science Education*

Section Editor (1993-2003) for Culture and Comparative Studies, *Science Education*  
Review Board Member (1996-2002), *Electronic Journal of Science Education*  
Charter Board Member, *Canadian Journal of Science and Technology Education*  
Occasional reviewer for: *International Journal of Science Education*, *Journal for Research in Science Teaching*, *Science & Education*, *Science Education*, *The Public Interest in Science*, *European Journal of Educational Psychology*.

## HONORS

1987 (Sum)	Visiting Scholar; New College Berkeley, Berkeley, California
1994 (June)	Visiting Professor of Science Education; University of Auckland, Auckland, New Zealand
1995 (July)	Visiting Professor of Science Education; Curtin University of Technology, Perth, Australia
1996	Elected Fellow, American Scientific Affiliation
2005	Elected Fellow, American Association for the Advancement of Science
2008	Named Fellow, American Educational Research Association
2008	Named Distinguished University Professor, Western Michigan University
2011	Named Fulbright Fellow to Turkey