

Curriculum Vitae Brian Robert Shmaefsky

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Education

Ed.D. (Science Education and Training). 1987. Southern Illinois University.
Ph.D. ABD (Plant Biochemistry – Environmental Physiology). 1983. University of Illinois.
MS. Biology (Plant Physiology). 1981. Southern Illinois University.
BS. (Biology). 1979. Brooklyn College of C.U.N.Y.

Additional Education:

Graduate courses in ecology, Rocky Mountain Biological Field Station. 1978.
Graduate courses in fisheries management - NWOSU. 1990-1992.
Undergraduate courses in Journalism – Kingwood College. 1996-2000.

Employment

- **1992-Current:** Professor of Environmental Science, Early College High School Instructor, and Chair IRB. Formerly, Service Learning Coordinator, Director and Faculty of Biotechnology Program. Kingwood College, Kingwood, Texas
- **2011 –Current:** Graduate Instructor, Human Anatomy & Physiology Society Institute (Alverno College, Milwaukee, Wisconsin)
- **1985-Current:** Independent Industrial Chemistry & Safety Consultant
- **2000- 2011:** Lead Facilitator – National Biotechnology Teacher/Leader Program
- **1993-2005:** Part-time reporter – Houston Community Newspapers
- **1988-1992:** Chairman of Biology, Director of Resource Awareness Program and Director of Safety. Northwestern Oklahoma State University, Alva, OK
- **1985-1988:** Visiting Assist. Professor of Biology and Teacher Education. Southern Illinois University
- **1985-1988:** Science Education Presenter Illinois and Missouri Public Schools
- **1985-1986:** Assistant Director of Student Activities. Southern Illinois University
- **1982-1985:** Adjunct Faculty in Biology. Southern Illinois University. McKendree College, Illinois
- **1982-1987:** Q.C. and Production Chemist. Sigma Chemical Co. St. Louis, MO. Publications,

Service

- 2017- Current: Mentor Scientist – Union of Concerned Scientists Science Network Mentor Program.
- 2017- Current: ASTM International Technical Committee F47 on Commercial Spaceflight.
- 2017 – Current: Environmental policy advisor, Commercial Space Flight Federation.
- 2016 – 2020: Founding Advisor of HOSA Chapter at LSC-Kingwood.
- 2016-Current: Advisory Council, NOAA Flower Gardens Bank National Marine Sanctuary.
- 2015- 2017: Mentor B2 Scholars Program for creating a culture of transformation within the two-year college biology community.
- 2014-2018: GRE and Texas Teacher Certification Exam Question Reviewer and Writer for the College Board.

- 2014-2018: MCAT question evaluator for the American Association of Medical Colleges.
- 2014-Current: East Fork – West Fork San Jacinto River TDML working group
- 2013-Current: Texas Wildlife Center Certified Oiled Wildlife Rescue Team
- 2013–Current: AAAS On-Call Scientist (Scientific Responsibility, Human Rights and Law Program (SRHRL)).
- 2009–Current: Houston–Galveston Area Council Bacterial Implementation Group
- 2008-2014 Gawad Kalinga, Philippines – Water quality consultant.
- 1996-Current: Houston-Galveston Area Council Natural Resources Advisory Council
- 1994-2001 Houston Environmental Foresight Group Toxins and Contaminants Working Group, co-author Recommendations for Environmental Improvement.

Current Professional Organizations

- Textbook & Academic Authors Association - Committee on Diversity, Equity, and Inclusion.
- American Society for Testing and Materials International – Committee work (F-47)
- American Association for the Advancement of Science – On-call Scientist
- American Institute of Biological Sciences – Reviewing and educational materials development
- Ecological Society of America – Environmental Justice Section member
- Houston Area Forestry Council
- Human Rights Educators USA
- National Association of Biology Teachers – Past Board of Directors officer and committee service
- National Science Teachers Association - Board of Directors officer, and committee service
- North American Association for Environmental Education
- Science Teachers Association of Texas
- Sigma Xi, The Scientific Research Honor Society
- Society for College Science Teaching - Past officer and committee service
- Texas Association for Environmental Education – Committee work
- Texas Community College Teachers Association
- United States Human Rights Network

Select Honors, Awards, and Fellowships

- 2021 Textbook & Academic Author Association President’s Award for Service on Committee Diversity, Equity, and Inclusion.
- 2021 Fellow – Astronomical Society of the Pacific – On the Spot Feedback Workshop
- 2021 Fellow- CURENet Integrating Ethics/RCR Education
- 2021 Fellow – QUBES NEON Faculty Mentoring Network Fellow
- 2020 SciComm Make Award to Promote the Public Understanding of COVID-19
- 2019 American Association for the Advancement of Science Members Spotlight Recognition
- 2019 LSC-Kingwood Professional Development Fellow
- 2018 HHMI BioInteractive and QUBES Faculty Mentoring Network Fellow
- 2018 Fellow - QUBES Growing Quantitative Literacy Using Botany Faculty Mentoring Network
- 2016 LSC-Kingwood Innovators of the Year Award
- 2014 Association of American Medical Colleges MedEdPORTAL’s iCollaborative Editorial Team.
- 2014 Archive Vision and Change Scholar program Mentor Award- American Physiological Society & AAAS
- 2013 Archive Vision and Change Scholar - American Physiological Society & AAAS
- 2012 BioScienceEdNet (BEN) Scholar Fellows Awards – American Physiological Society & AAAS
- 2009 African American Students Association - Martin Luther King, Jr. Service Award
- 2009-2010 Lone Star College System Classroom Research Scholar
- 2008 LSC-Kingwood Innovators of the Year Award

- 2007 – 2008 LSCS Leadership Academy Fellow
- 2007 Southwestern & Rocky Mountain AAAS Balcomb Award for college teaching
- 2004-2005 National Council of Instructional Administrators - Exemplary Initiatives Award for service learning program
- 2005 Texas PTA Lifetime Membership Award
- 1993, 1994, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007 NHMCCD Writing Award
- 2008, 2009, 2013, 2015, 2021 Lone Star College System Writing Award
- 1996 Super Ideas sponsored by Teaching for Success, Pentronics Publications
- 1996 Exxon Education Award (The Genetics Revolution Conference Innovation Award)
- 1995 Texas Association of Environmental Education Recognition Award
- 1994 NISOD (National Institute for Staff & Organizational Development Teaching Excellence Award)
- 1994 Kingwood College Teaching Excellence Award
- 1994 National Association of Biology Teachers Biotechnology Teaching Award
- 1979 Nominated for Sigma Xi, The Scientific Research Society – Brooklyn College Chapter

Pertinent Professional Activities

Books

- Smallpox. 2021. Chelsea House Publishers (Facts on File); New York, NY.
- Streptococcus A. 2020. Chelsea House Publishers (Facts on File); New York, NY.
- Streptococcus B. 2020. Chelsea House Publishers (Facts on File); New York, NY.
- Phytoremediation: In-situ Applications (contributing editor). 2020. Springer; Cham, Switzerland.
- Understand Drugs: Anti-inflammatory Drugs. 2017. Infobase Learning; New York, NY.
- Applied Anatomy and Physiology: A Case Study Approach, Second Edition. 2017. EMC Publishing LLC; St. Paul, MN
- Service Learning Linked to Social Media and Virtual Worlds an Educational Strategy for Promoting Global Sustainability. 2014. In Educational Technology for the Global Village: Worldwide Innovation and Best Practices. Edited by Les Lloyd and Gabriel I. Barreneche. Information Today, Inc; Medford, NJ.
- Teaching to Aunt Tillie. 2014. Moments of Clarity: Anthology of Stories from Faculty Who Teach For Success. John H. Shrawder, Penny A. Shrawder, Melissa Alvarez Mangual and Jana McCurdy. Pentronics Publishing; Rio Rancho, NM.
- Transgenic Crop Plants: Volume 2: Utilization and Biosafety: Transgenic Crop Plants: Contributions, Concerns, and Compulsions. 2010. (eds: Chittaranjan Kole, Charles Michler, Albert G. Abbott). Springer; New York, NY.
- Rubeola and Rubella. 2009. Chelsea House Publishers (Facts on File); New York, NY.
- Yellow Fever. 2009. Chelsea House Publishers (Facts on File); New York, NY.
- Medicine in the News. 2007. Chelsea House Publishers; New York, NY.
- Biotechnology 101, 2006. Greenwood Publishers; Highlands Ranch, CO.
- Gonorrhea (with Linda Kollar), 2005. Chelsea House Publishers; Philadelphia, PA. (2nd Edition 2010)
- Biotechnology in the Farm and Factory: Agricultural and Industrial Applications (Agricultural and Industrial Applications), 2005. Chelsea House Publishers; Philadelphia, PA. Documentary version - <http://www.films.com/ecTitleDetail.aspx?TitleID=16109&r=>.
- Toxic Shock Syndrome, 2004, Chelsea House Publishers; Philadelphia, PA. (2nd Edition 2010)
- Meningitis, 2004, Chelsea House Publishers; Philadelphia, PA. (2nd Edition 2010)
- Favorite Demonstrations, 2004 (editor and author), NSTA Press; Arlington, VA.
- Syphilis, 2003, Chelsea House Publishers; Philadelphia, PA. (2nd Edition 2010)
- Building Student Safety Habits for the Workplace. 2000. (with Susan Gertz, James Kaufman, Mark Meszaros). Terrific Science Press; Miami, OH.

Peer Reviewed Publications (Select)

- Shmaefsky, B. (2020) Beginning a Courageous Journey: Connecting Science & Justice, Union of Concerned Scientists. <https://blog.ucsusa.org/science-blogger/connecting-science-justice>
- Shmaefsky, B. (2014, December 9). Embryology in Court. Retrieved from: <http://www.lifescitrc.org/resource.cfm?submissionID=8999>
- Environmental toxicology, its history & related disciplines. CHOICE: Current Reviews for Academic Libraries. v48 n 7 p1221- 1231. March 2011.
- A Simple Model of Hox Genes: Bone Morphology Demonstration. Journal of College Science Teaching, v37 n6 p12-13 Jul 2008
- Forensic Analysis Demonstration via Hawaii Five-O. Journal of College Science Teaching, v36 n1 p14-16 Sep 2006
- A Fruity Biochemistry Demonstration. Journal of College Science Teaching, v34 n6 p64-65 May-Jun 2005
- MOS: The Critical Elements of Doing Effective Classroom Demonstrations. Journal of College Science Teaching, v35 n3 p44 Nov-Dec 2005
- The Rules of Research: Keeping Your Favorite Demonstrations Safe. Journal of College Science Teaching, v32 n4 p282-83 Dec 2002-Jan 2003
- The Roles of Different Mobile Phases in Liquid Chromatography (with TD and KM Shmaefsky): A Moving Demonstration of Chemical Interactions. Journal of College Science Teaching, v30 n5 p344-45 Feb 2001
- Gas or No Gas: Challenging Deductive Reasoning Skills Using a Carbohydrate Digestive Enzyme Experiment. American Biology Teacher, v58 n2 p99-101 Feb 1996.
- Artificial Urine for Laboratory Testing: Revisited. American Biology Teacher, Vol. 57, No. 7, 1995
- Demonstrating the Principles of Column Chromatography: An Easy Introduction to a Useful Analytical Technique (with D Barnes and C Martin). Journal of College Science Teaching. Vol 25, No. 2. 1995.
- Artificial Urine for Laboratory Testing. American Biology Teacher, Vol. 52, No. 3, 1990
- Many biotechnology tech-transfer articles in ISB News Report. Information Systems for Biotechnology. Virginia Tech in Blacksburg, Virginia. 2000 – 2003
http://www.isb.vt.edu/2002menu/isb_news_report.cfm

Book and Media Reviews

- Choice Magazine – Academic Library Association
- American Biology Teacher – National Association of Biology Teachers
- Journal of College Science Teaching – National Science Teachers Association
- Science Books & Films – American Association for the Advancement of Science

Conference Presentations (solicited and invited presentations from 1986-Current):

- Sigma Xi – The Scientific Research Honor Society
- American Association for the Advancement of Science
- Ecological Society of America
- Next-Generation Suborbital Researchers Conference
- DREAM Conference - Achieving the Dream
- FIME Medical Trade Fair & Congress
- China-U.S. Relations Conference at Peking University: A New Look at Transgenic Crop Plants
- BIO International
- BioMonterrey – Mexico
- UNESCO – Sustainability in Higher Education - Mexico
- Sustainable Education Conference – University of the Philippines
- Alaska Governor’s Health and Safety Conference

- Alabama Governor’s Health and Safety Conference
- Pacific Rim Governor’s Health and Safety Conference (Hawaii)
- Human Anatomy and Physiology Society Conference
- Northeast Winter Safety Conference
- Science Teachers Association of Texas Convention
- South Texas Environmental Conference
- National Association of Biology Teachers Annual Convention
- National Science Teachers Association National Convention
- NSTA Global Summit on Science and Science Education
- Science Teachers of Ontario Association
- American Chemical Society Biennial Conference on Chemical Education
- Southern Institute on Service Learning
- The Literacy Task Force Conference
- CELS: Successful Teaching and Learning in Undergraduate Life Sciences Conference.
- Society for College Science Teaching Annual Conference
- Southwest Association for the Education of Teachers of Science Annual Meeting
- Annual Rural and Small Schools Conference
- Annual Humanities, Science and Technology Conference
- Texas Community College Teachers Association
- Oklahoma Academy of Science
- Illinois State Academy of Science

Grants

- Kathleen Frame. National Science Foundation Grants, High Quality Biotechnology Education (DUE 9553720). Served as content area consultant, curriculum developer, writer, and trainer. Co-wrote “Biotechnology on Shoestring” laboratory many as part of project.
- Jean Whileyman. Integration of Multidisciplinary Computer-based Problem Solving into the Undergraduate Science Curriculum: A Model for Cross-Curricular Technology Transfer (DUE 9950920) Lone Star College System College. Role was field testing and curriculum development.
- Cherith Letargo and Brian. R. Integrated Waste and Water Management Project (IWWMP) – Batangas, Philippines Shmaefsky. U.S. EPA. National Center For Environmental Research. SU833938. Integrated Waste and Water Management Project (IWWMP) – Batangas, Philippines. 2008 - 2009. Role in grant: was PI on project in which students designed sustainable wastewater management systems for rural poor communities in the Philippines.
- Yolanda George, BioSciEd.Net (BEN) Software as a Service for BEN Collaborators. [DUE 0085840 / DUE 0226185 / DUE 0532797 / DUE 0734995]. American Association For Advancement Science, Washington, DC (BEN Fellow and Collaborator). Role in grant was fellow and content scholar.
- Lawrence S. Blumer and Christopher W. Beck. Bean Beetle Project. National Science Foundation Grants, DUE-0535903, DUE-0815135, and DUE-0814373 to Morehouse College and Emory University, Atlanta, Georgia (Scholarship and Collaborator). Role in grant is fellow and content developer.
- Michael Hacker, et al. Articulated Technological Education Pathways (ATEP). NSF DUE-1104253 to Hofstra University, Hempstead, NY (Collaborator)
- Michael Hacker, et al. Engineering for All (EfA). NSF DRL 1316601 1104253 to Hofstra University, Hempstead, NY (Collaborator and Advisory Board)
- Sam Donovan. Collaborative Research: Cyberlearning at Community Colleges (C3): Faculty Scholarship, E-science, and Open Curriculum. DUE- 0937791. University of Pittsburgh, Pittsburgh, PA (Collaborator). Role in grant is consultant and trainer for dissemination phase.
- Quantitative Undergraduate Biology Education and Synthesis. National Science Foundation under DBI 1346584, DUE 1446269, DUE 1446258, and DUE 1446284. Faculty mentor and workgroup member.

Patent and Tech Transfer Consulting

- Consultant for Method for the preparation of a material with high water and salt solutions absorbency, United States Patent 6027536
- Referenced by Test strip, a test kit and a method for detection of endotoxin in food, United States Patent US 20130078665 A1.
- Technology Transfer Assessment and Reporting for Information Systems for Biotechnology <http://www.isb.vt.edu>.