

Michelle B. Buchanan

Conway, AR 72034
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- Certification:** National Board Certification: Early Adolescence (ages 11-15) – Science, Secondary Science Certification-Secondary Chemistry, Physics, and General Earth Sciences (AR, LA)
Gifted and Talented (grades K-12, AR)
Middle-Level Science (grades 4-8, AR)
Comprehensive Elementary grades 1-8 (LA & TX)
Louisiana Systemic and Initiatives Program Louisiana Teacher Assistance and Assessment Program
- Education:** University of Central Arkansas - 2015, University of Arkansas at Little Rock - 2014, University of Alaska, Fairbanks - 2013, Louisiana College, May 2010 – Master of Arts in Teaching, University of North Texas, 1998- Bachelor of Science; University of Rhode Island – 2005, University of Louisiana, Lafayette – 2003 & 2011, Northwestern State University – 2001, Dallas Community College – 2000 (all postgraduate science and education courses)
- Current Position:** UCA STEMteach Master Teacher and Science Program Coordinator, University of Central Arkansas, develop UTeach program at UCA (instructor, recruiting, developing curricula and syllabi, social media manager)

Teaching Experience:

- Fall 2014-Present, University of Central Arkansas, Conway, AR – STEMteach Program: Educational Pedagogy, Classroom Differentiation and Diversity, and Project-Based Instruction
- Fall 2014 - Fall 2016, University of Central Arkansas, Conway, AR - Middle Level Program: Middle-Level Teaching Strategies
- Spring 2013-Spring 2014, University of Arkansas at Little Rock, Little Rock, AR – Undergraduate Middle and Secondary Level Integrated Science Methods and Elementary Science Methods
- Fall 2006-May 2012, Pineville Junior High, Pineville, LA – 7th & 8th grade gifted sciences (life, earth, space, environmental), Project Lead The Way's Introduction to Engineering
- Summer 2008-Spring 2011, Louisiana College, Pineville, LA – MAT Graduate Assistant (Methods of Instruction for Science and Mathematics, National Board Professional Teaching Standards)
- Fall 2001-Spring 2006, Alexandria Middle Magnet, Alexandria, LA – 8th grade science (earth, space, environmental), Physical Science Carnegie unit, gifted students included
- Spring 2001, Pineville Junior High, Pineville, LA – 7th & 8th grade gifted English
- Spring 1999-Spring 2000, DeSoto East Junior High, DeSoto, TX – 8th grade science (integrated science)

Synergistic Activities:

- Buchanan participates in a variety of activities aimed at directly improving K-12 education. Buchanan served on the Next Generation Science Standards (NGSS) Arkansas Broad-Based Committee where she reviewed, assessed and rewritten the NGSS components. Buchanan also served as a board member of NSTA's Science Matters Advisory Board (2013-2016, Chair 2014-2015) to emphasize the importance of why strong science and mathematics skills are essential for student success and to bring content, news and information that supports quality science education to teachers nationwide. Buchanan has participated with numerous state-level educational initiatives aimed at improving science teaching and student learning: Centers of Ocean Sciences Education Excellence Advisory Council as a teacher member for Louisiana from 2005 – 2007, Region IV Science Fair board member as Awards Chair from 2004-2012. Buchanan is the Secretary for the National Association of Gifted Children: Science Education Committee, and she serves as the College Liaison for the Arkansas Science Teachers Association. She volunteer teaches at Maumelle High School in the teacher education elective course to encourage others to enter the education profession. As the STEMteach as UCA STEMteach Science Education Liaison, collaborate with Science staff associated with course delivery to gather and select student data related to CAEP requirements.
- Buchanan works with science professionals from around the world to promote excellence and innovation in science teaching and learning for all. As a member of the Antarctic Geologic Drilling Program (ANDRILL),

on the Southern McMurdo Sound Project (a NSF funded project), Buchanan designed and implemented climate change activities for middle school science teachers based on ANDRILL's engineering innovations and scientific discoveries. While participating with the Toyota International Teacher Program to the Galapagos Islands, she developed a variety of sustainability inquiry activities with Galapagos educator.

- Buchanan's activities also include sharing her awarded teaching expertise, such as provided several professional development for Little Rock area school districts and University of Central Arkansas STEM Institute teacher professional development programs. The Louisiana Teacher Assistance and Assessment Program accredited Ms. Buchanan to mentor new teachers. She traveled around Louisiana providing district professional development for K-12 science teachers. She development provided strategies for integrating literacy strategies into science curriculum and presented at national conferences her experience and written activities associated with the investigations. As a pre-service instructor, Buchanan receives high praises from course evaluations for teaching strategies and expertise in the field.

Publications:

- Buchanan, M. (In progress). A Triad of Instructional Coaching: Changing Classroom Practices. In D. Dailey & P. Kohler-Evans (Eds.), *Coaching for Classroom Change: Embedded Support using Traditional and Virtual Formats*, Lanham, MD: Rowman and Littlefield
- Buchanan, M., & Dailey, D. (2016). Integrating Engineering Design Processes into Classroom Curriculum. In D. Dailey & A. Cotabish (Eds.), *Designing Innovative Engineering Instruction for High Ability Learners in K-8 Classrooms*. Waco, TX: Prufrock Press.
- Buchanan, M. (2013). *Gridiron Physics*. TED-Ed Lessons Worth Sharing. [Lesson and Script]. Retrieved from <http://youtu.be/nF5S0FLp19Y>
- Buchanan, M. (2013). *Feasting on Faults*. PolarTREC Online Polar Professional Development resource. Retrieved from <http://bit.ly/17ZpIrx>
- Buchanan, M. B., & Demers, W (2010). Louisiana Public Broadcasting Global Climate Change Challenge. Retrieved from http://beta.lpb.org/index.php/STEM/stem_resources/
- Comprehensive Curriculum. (2008). *Eight Grade Comprehensive Curriculum Component*. Baton Rouge, LA: Louisiana Department of Education.

Awards:

- 2012-2013 & 2013-2014 UALR Academy for Teaching and Learning Excellence Distinguished Teaching Fellow
- 2012 TED-Ed Distinguished Educator
- 2011 PBS Innovative Teacher Award, 2nd place winner
- 2011-2012 Louisiana Computer Using Educators (LaCUE) *Regional Middle School Teacher of the Year Award*
- 2008-2009 Toyota International Teacher Program Galapagos Islands Participant
- 2008-2009 Pineville Junior High *Teacher of the Year*
- 2007-2008 Edward C. Roy *National Teacher of the Year*
- 2007 National Association of Geoscience Teachers *Outstanding Earth Science Teacher of the Year* for Louisiana
- 2006 U.S. Department of Education's *Star Teaching Award* for Louisiana
- 2006 LA Earth Science Teacher's Association *Louisiana Earth Science Teacher of the Year*
- 2005 Regional Sam's Club *Teacher of the Year*
- 2005 Alexandria Middle Magnet *Teacher of the Year*
- 2003 Alexandria Sylvan Learning Center's *My Favorite Teacher Award*
- November 2003 *Teacher of the Month*, Alexandria Middle Magnet
- 2000's *Most Creative Teacher*, DeSoto East Junior High, DeSoto, TX

Professional Involvement:

- Member of the National Science Teacher's Association, Science Matters Advisory Board, June 2013-June 2016, Chair 2015
- Member of the Arkansas Next Generation Science Standards (NGSS) Arkansas Broad-Based Committee, reviewed and assessed NGSS for national committee, 2012-2013.
- Member of the Louisiana Public Broadcasting Global Climate Change Challenge, worked on the instructional design plan for this project including the web-based instructional module and wrote the original instructional content and incorporate web resources and prepare a paper prototype for the instructional module and website, 2010.
- Member of the Louisiana Dept. of Education Curriculum Writing Team, 8th grade earth science course, 2007-2008

- Louisiana College Masters of Arts in Teaching Guest Professor, Science/Mathematics Methodology and National Board Professional Teaching Standards (designed syllabi and taught courses) 2008-present
- Manager of Services for People with Disabilities for NSTA 2009 Conference – LA Chair
- Antarctic Geologic Drilling Program (ANDRILL), Southern McMurdo Sound Project, 2005
- People to People Primary Delegation Leader, 2005 – 2007
- ARMADA Project Master Teacher, 2005 – 2006
- COSEE Advisory Council, teacher member for Louisiana, 2005-2007
- Louisiana Teacher Assistance and Assessment Program (LaTAAP) mentor 2006-2012
- State Grade Level Expectations Committee, grades 5-8 science representative, 2003-2004 iLEAP Item Review State Committee, 2003-2005
- Region IV Science Fair board member, 2004 to 2012 – Awards Chair
- Pineville Jr. High Science Department Chair 2006-2012
- National Science Teachers Association – member since 2000
- National Council of Teachers of Mathematics – member since 2012
- Arkansas Science Teachers Association – member since 2012, College Liaison 2016-2018
- Arkansas Society for Technology in Education, Inc. – member since 2012
- Louisiana Science Teachers Association – member since 2001-2012, Board Member since 2002, Region VI Representative 2002 – 2007, Secretary 2007 – 2009

Presentations:

- CEC: Council for Exceptional Children Convention, 2016, 2017
- Excellence in Elementary School Science, Arkansas STEM Institute, 2016
- NAGC: National Association of Gifted Children, 2015, 2016
- AAGEA: Arkansas Association of Gifted Education Administrators, 2014, 2017
- Little Rock School District: VICTER Power Box Workshop, 2014, Integrated Middle School Science: 2014,
- SEED: Science Education through Engineering Design NCLB workshop (teachers of grades 4-8 using Engineering is Elementary and Engineering is Everywhere)
- Arkansas Curriculum Conference: 2013, 2014, 2015
- Jack Kilby Science Day, Barton County Community College in Great Bend, Kansas, Key Note Speaker: 2007
- 2008-2009 statewide presentations at school districts to education teachers about Louisiana's Comprehensive Curriculum and integration of Literacy Strategies into science and math
- Louisiana Science Teachers Association: 2002, 2004, 2006, 2009, 2010
- National Science Teachers Association: 2006, 2007, 2013, 2014
- National Council of Teachers of Mathematics: 2013
- Louisiana Association of Computer Using Educators: 2006
- Louisiana Middle School Association: 2002, 2003, 2006