

Albert S. Byers, Ph.D.

STEM Education and Instructional Technology



Education

Virginia Tech
University
Curriculum and
Instruction: Science
Ed B.S., 1985

Virginia Tech
University
Curriculum and
Instruction: Science
Ed M.A., 1995

Virginia Tech
University
Curriculum and
Instruction:
Education / Instructional
Technology Ph.D., 2010

PROFESSIONAL EMPLOYMENT

**Research Assistant Professor, STEM Education,
Virginia Commonwealth University, School of
Education, Richmond, VA. 05/2018-Present**

- Design and implement high impact STEM experiences for highest need students, and the teachers who serve them in Central VA.
- Secure grants to support these STEM experiences
- Launched and direct the Center for Innovation in STEM Education.
- Secured Society for Science affiliation to lead Metro Richmond Science & Engineering Fair feeding the Regeneron International Fair.

**Associate Executive Director, Strategic
Development and Research National Science
Teachers Association, Arlington, VA. 05/2002-
01/2018**

- **NSTA E-Learning Consultant**
In 2001 directed NSF grant focused on the design and delivery of teacher training to support the effective use of web-based technologies for learning science.
- **Director of the NSTA Institute**
Hired full-time in 2002-2004 to lead NSTA's e-learning efforts as NSTA's initial foray into online learning.

- **Director of NSTA Professional Programs, NSTA**
Promoted in 2004 to oversee all of NSTA's teacher professional development efforts serving thousands of teachers through our corporate partnerships and federal grants.
- **Assistant Executive Director, NSTA Government Partnerships and e-Learning**
July 2005 -May of 2013. Served as chief architect of the NSTA Learning Center platform

with competitive funding from the Hewlett Foundation, the National Science Foundation, the US Department of Education, NASA, NOAA, FDA, and the GE and ExxonMobil Foundations. Led the design and evaluation of the following experiences:

- Synchronous instructor led-webinars, virtual conferences, and MOOCs in partnership with NASA, NSF, NOAA and MIT.
- Implemented an open professional learning community tied to users' personal profiles and moderated by trained online advisors that built a robust exchange of knowledge across 16 forums with over 240,000 users across hundreds of universities and school systems.
- Established a micro-credentialing/badging efforts recognize and drive collegial learning and intrinsically motivated contributions.
- Created and executed IEEE/Dublin Core metatagging schema to enhance discoverability of resources for National Science Foundation Digital Library.
- Led team for the selection and integration between Learning Content Management System, Learning Management System, and Association Membership Management System (iMIS). Establishing varied roles, permission and access for individuals (member, non-member for business to consumer models) and business-to-business models to district and universities.
- Managed third-party online course partnerships with selected external universities via the NSTA Institute and the NSTA Learning Center.
- Designed and managed NSTA instructor lead 6-week online short courses with optional university credit hours.
- Designed, developed, implemented and evaluated self-directed, on-demand SCORM compliant web modules called SciPacks and Science Objects (later converted to the ePUB3 standard for tablets and interactive Ebooks). Built on the latest in instructional system design theory and e-learning strategies that comply with section 508 accommodations for those with disabilities.
- Led effort to create self-directed online diagnostic assessment engine to recommend learning objects based on individuals' unique needs and learning preferences linked to their digital online portfolio tool to document and track learning goal achievement.
- Managed database effort for back-end learning analytics via on-demand front-end web dashboards for administrator feedback for various learning cohorts over 100 universities across the country, and online community of 240,000 users.
- Forged and deployed blended teacher training solutions for dozens of small and large districts across the country that in part included LA Unified Public Schools, Houston ISD Public Schools, Fairfax County Public Schools, Jefferson County Public Schools, and Chicago Public Schools.
- View impact now integrated in NSTA's website (awards, testimonials, publications), here: <https://drive.google.com/file/d/1n-vGsgF6E0rKxuJXWXJ8dsnHWxWr5Crb/view>

Associate Executive Director of Services, NSTA

In June 2013, promoted to one of three new divisions at NSTA. Provided executive oversight of NSTA's new Services Division that include responsibility for five conferences each year

- Collectively conferences reach up to 20,000 individuals across 16 days of annual

programming, initiated B2B “Teaming Up for STEM” conference strategy for district-wide partnership collaboration.

- Led national STEM competitions, e-learning efforts, and year-long teacher professional learning (PL) programs and summer teacher PL learning academies in partnership with Northrop Grumman, ExxonMobil, and General Electric.
- Executive oversight and responsibility for an annual training budget between \$14-16M (hard and soft money) and competitive grant awards to date in excess of \$40M.

These efforts were executed by an outstanding team of 30 individuals I led and inspired across the services division.

Associate Executive Director, Strategic Development and Research

In September of 2016, I was asked to lead this new division at NSTA.

- Executive oversight fostered and maximized collaboration with government partners, such as NASA, NOAA, FDA, leading institutions of higher education and major corporate foundations that include GE, Shell, Toshiba, ExxonMobil and Northrop Grumman.
- Executive oversight and judging of sponsored STEM competitions at NSTA, e.g., US Army e-Cybermission, Toshiba Exploravision, and Northrop Grumman Fab SchoolsLab. Approximately 19 direct reports. Teacher and student STEM competitions reach nearly 50,000 students, 10,000 teachers, and over 2,500 virtual judges on an annual basis as distributed teams work to generate innovative solutions to locally relevant, authentic challenges in their region.
- Generated and forged new programming efforts:
 - Executive oversight for GE foundation effort as lead for Integrated STEM support for Boston Public Schools and Leadership Summits.
 - Two-year Northrop Grumman Teacher Academy and Fabrication (FAB) SchoolsLab leading their national selection of STEM competition effort.
 - Designed and managed effort leveraging inter-university STEM efforts across nine universities sponsored by Monsanto. Cross-department undergraduate collaboration between Agricultural Science and Engineering departments and the Science Education departments included the following institutions: Texas A&M University, Virginia Tech, New Mexico State University, Shippensburg University, George Mason University, James Madison University, the University of Wisconsin, and the Ohio State University.
 - Managed NASA collaboration across NSTA in 2018 that included featured astronaut keynote speaker live from the International Space Station (ISS) and the Associate Administrator for NASA Education at our national conference. Included pre-recorded video messages and STEM education videos aboard the ISS, and on-going NSTA Blog posts that solicited teacher testimonials of their educational opportunities with NASA.

NASA Aerospace Education Specialist (AESP), Goddard Space Flight Center, Greenbelt, MD. 07/1995-08/1998.

- Detailed as a contractor full time to the Goddard Space Flight Center in Greenbelt Maryland.

- Helped design, implement and evaluate NASA education support curriculum and professional development related to the same.
- Trained thousands of educators throughout the United States for NASA as an instructor for Oklahoma State University within the Aerospace Education Services Program.
- Served as the NASA state systemic liaison for both Connecticut and Maine. Worked closely with each state science, mathematics and technology department of education supervisors in the effective coordination of NASA education support resources and programming for their respective states' needs.
- Helped conceptualize and develop the first virtual Maine Educator Resource Center (ERC), aligning NASA support curriculum to Maine's state standards given the geographic challenges of teachers reaching a physical ERC in Maine.
- Served as educational liaison to the Space Telescope Science Institute at John Hopkins University in last year at NASA Goddard. Helped create and implement NASA Amazing Space support curriculum and design and deliver teacher adult professional development supporting their award-winning education materials.
- Microgravity flight opportunity competitively awarded and flew aboard the KC-135 conducting experiments analyzing the effects of fluid flow and magnetism in reduced gravity environments and how this would translate for K12 learning opportunities.

Physical Science Educator, Robious Middle School, Chesterfield County Public Schools, Chesterfield, VA. 09/1991-06/1994.

- Sixth and eighth grade physical science educator. Daily preparation, delivery and evaluation of lesson plans to inspire and facilitate the learning of approximately 120 students a day in support of the Virginia Standards of Learning.
- Designed authentic hands-on, inquiry-based learning experiences to engaged students in critical thinking and ignited their desire to learn science and its application to their daily lives within a cohesive, conceptual framework. Selected teacher of the year for Robious Middle School in third- year of teaching.
- Taught gifted students at the Virginia Governor's School for the Gifted located at the Richmond Mathematics and Science Center in Richmond, Virginia (Rocketry and Cray Supercomputer 3-D modeling courses). During master's internship with the Chesterfield County Science Supervisor, Wally Pendleton, helped administer countywide science fair competition, middle-level textbook adoption process, science safety standards, and district-wide multi-day county in-service training for science teachers. Reviewer for the Virginia Governor's school site selection committee.

PUBLICATIONS DOCUMENTING RESEARCH IMPACT

Peer-Reviewed and Edited Journals

- Karam, R., Straus, S. G., Byers, A., Kase, C., and Cefalu, M. (Sept 2017). The role of online communities of practice in promoting sociotechnical capital among science

teachers. *Education Technology Research and Development*.

- Angle, J., Ivey, T., Byers, A., Marks, S., & Tingler, P. (2012). Science teachers we have digital academic liftoff. *Science Scope*, February 2012, Vol. 36, n. 6. pp.57-62.
- Byers, A.; Koba, S.; Sherman, G.; Schepcke, J.; Bolus, R. (2011). Developing a Web-Based Mechanism for Assessing Teacher Science Content Knowledge. *Journal of Science Teacher Education*.
- Sherman, G.; Byers, A., Rapp, S. (2008). Evaluation of Online, On-Demand Science Professional Development Material Involving Two Different Implementation Models. *Journal of Science Education and Technology*, February, Vol. 17, pp. 19-31.
- Byers, A.; Lockee, B., Janosik, S. (2002). Distance Education Policy: Facing the Issues of Access. *Journal of Higher Education Policy and Management*, Vol. 11, n. 1, pp. 46-58.
- Fitzgerald, M.; Byers, A. (2002). A Rubric for Selecting Inquiry-Based Activities. *Science Scope*, September 2002, Vol. 26, n.1. pp. 22-25. EJ659971.
- Byers, A., Fitzgerald, M. (2002). Network for Leadership, Inquiry, and Systemic Thinking: A New Approach to Inquiry-based Learning. *Journal of Science Education and Technology*, March 2002, Vol. 11, n.1, pp. 81-91. Eric Document EJ643811.
- Byers, A. (2000). Uncovering Teachers' Perceptions of the Internet. Al Byers. *Virginia Society for Technology in Education Journal*. Fall, vol. 15, number 1, p.3-8.
- Byers, A. (1999). "Intra-university distance Education: The added impact of collaboration." *Open Learning Systems: The Voice of Open Learning*, September (69): 42-43.

Book Chapters and White Paper

- Sherman, G., & Byers, A. (2010). Electronic portfolios in the professional development of educators. In D'agustino, Steven (Ed.), *Adaptation, Resistance, and Access to Instructional Technologies: Assessing Future Trends in Education*.
- Byers, A., & Mendez, F. (2016). Blended professional learning for science educators: The NSTA learning center. In A. Hartley, C. Dede & A. Eisencraft (Eds.), *Professional Development and Teacher Learning in the Digital Age: Models related to STEM Education*. Boston: Harvard Press.
- Developing a Virginia STEM Network: A Cross-university Collaboration. 4-VA Advancing the Commonwealth Grant. Byers, A., Cresawn, K.O., Edmondson, E., Jones, R.M., Maeng, J.L., Magliaro, S.G., Newbill, P., Seshaiyer, P., Webb, A.W., and Wheeler, L.B.

Conference Proceedings

- Karam, R., Straus, S. G., and Byers, A. (April, 2014). *The Role of Online Communities of Practice in Promoting Sociotechnical Capital among Science Teachers*. American Educational Research Association (AERA), Philadelphia, PA.
- Straus, S. G., Byers, A., Karam, R., Lewis, M., Kase, C., and Rudnick, M. (March 2014). Connecting with Colleagues: Influences of Social and Technical Systems in Online Communities of Practice (CoPs) for Science Educators. National Association for Research in Science Teaching (NARST), Pittsburgh, PA.
- Byers, A. (November, 2014). Blended Professional Learning for Pre-Service and In-Service Science Educators: The NSTA Learning Center. National Science

Foundation, Online Teacher Professional Development Summit, University of Massachusetts, Boston, MA.

- Byers, A., Mendez, F. Developing Large Scale Effective Online Teacher Learning Communities at the National Science Teachers Association. (March 2014). Ninth Annual International Conference on Networked Learning, Edinburgh, United Kingdom. Invited "Hot Seat" panelist.
- Straus, S.; Karam, R.; Bikson, T.K.; Byers, A. (July, 2013). Sociotechnical Capital and Situated Knowledge in Online Communities of Practice. The Eighth Annual INGRoup Conference, Interdisciplinary Network for Group Research: Using research to advance the understanding of group behavior, dynamics, and outcomes, Atlanta, GA.
- Perez-Lopez, K; Cambridge, D; Byers, A. (January, 2012). Simple and Computational Heuristics for Forum Management in the NSTA Learning Center: A Role for Learning Analytics in Online Communities of Practice Supporting Teacher Learning. Hawaii International Conference on System Sciences, Maui, Hawaii.
- Byers, A. (2002). Selecting and using online content for science instruction. National Conference on Online Learning: Best Practice in Using Online Learning for Teachers. The University of Alabama, Tuscaloosa, AL.
- Byers, A. (2000). Interaction: The Key to Successful Distance Learning. EdMedia 2000, World Conference on Multimedia, Hypermedia and Telecommunications, Montreal Canada. ED458870.
- Byers, A.; Halpin, D.; Smith, T. (2001). Creating virtual labs to teach middle school astronomy principles: The NASA Connect education program series. WEBNET 2001, World Conference on the WWW and Internet, Orlando, Florida. Eric Document: ED466578.
- Byers, A.; Halpin, D. (2000). Expert review at a distance: A hybrid approach. EdMedia, World Conference on Educational Multimedia, Hypermedia and Telecommunications, Montreal, Quebec. ED458869.

RESEARCH & GRANT AWARDS

- Principal Investigator, Bivalves as Sustaining Ecosystems Treasures (BEST) in Bay Watersheds, **three-year \$447,747**. 2019-2022. NOAA B-WET Grant: NA19NMF4570081.
- Principal Investigator, Aces over ACSE: A Winning Combination for Advancing Computer Science Education in Virginia (AOAVA), **three-year \$375,000**. 2020-2022. Virginia Department of Education Grant.
- Co-Principal Investigator, Development of a Blueprint for the Virginia STEM Ecosystem, **one-year \$44,481**. 4VA Grant. Hosted statewide STEM Ed Leadership Summit 10/11/2019.
- Principal Investigator, K12 Curriculum Mapping Project, **one-year \$44,890**. 2019-2020. Virginia Department of Education Grant.
- Principal Investigator, Army Education Outreach Program Cooperative Agreement, e-Cybermission Competitions and Gains in the Education of Mathematics and Science, **three-year grant: \$12,900,000**. 2015-2018. US Army Research, Development and Engineering Command: W911SR-15-2-0001.
- Principal Investigator, Brighter Schools Competition, **two-year \$500,000**. National Sleep Foundation. 2014-2016.
- Principal Investigator, Igniting Student Interest and Learning in Engineering:

- Integrating Northrop Grumman R&D with NSTA Professional Learning Solutions for Teachers, **two-year \$662,000** award. Northrop Grumman. 2015-2017.
- Project Director, Toshiba Exploravision Competition, **\$1,000,000/yr award** (re-competed each year). Toshiba, Inc. 1992-2015.
 - Principal Investigator, NOAA **one-year \$36,000 grant**: National Web Seminars and Symposia between NSTA and NOAA National Ocean Service. 2012.
 - Project Director, GE Foundation **\$3,056,370 three-year grant**. The NSTA Learning Center and SciPacks: Building Content Knowledge. 2012-2013.
 - Co-Principal Investigator, NSF **three-year \$399,564 grant**: Use of Web 2.0 Technologies to Build Distributed Communities of Practice among K-12 Science Educators (Solicitation: NSF 11-501: Virtual Organizations). 2011-2013.
 - Principal Investigator, NASA **two-year \$1,500,000 grant**: Integrating NASA Digital Educational Assets (IDEA). NASA Grant NNX07AU68G S09. 2009-2011.
 - Principal Investigator, NASA **\$6,000,000 grant**: Explorer Schools: Project Management and Professional Development Expertise. NASA Grant NNG05GH24G. 2007-2012.
 - Principal Investigator, California Institute of Technology, Jet Propulsion Laboratory, three-year **\$757,000 grant**. Mars Public Engagement Professional Development: Addressing Scale and Sustainability. 2006-2008. Prime Contract NAS7-003001.
 - Co-Principal Investigator, NSF **\$857,000 grant**: Connecting NSTA K-16 Science Content to the NSDL. 2005-2007. NSF Grant 0506535.
 - Principal Investigator, NSF **\$67,000 grant**: The International Polar Year: An Interagency Collaboration between NSF, NOAA, and NASA. 2007. NSF ARC 0645895.
 - Project Director, Hewlett Foundation **\$800,000 grant**: Addressing Open Access through Scalable and Sustainable Electronic Professional Development for Science Educators. 2006- 2007. Grant: 2005-662.
 - Principal Investigator, US Food and Drug Administration **\$359,729 two-year grant**: Building and Distributing SciGuides, SciPacks, and Symposia. 200-2008.
 - Principal Investigator, National Aeronautics and Space Administration, **two-year \$8,300,000 grant**: NASA Explorer Schools: Maximizing the Impact of NES Professional Development Opportunities. NES1-0000-0039. 2005-2007.
 - Principal Investigator, National Oceanic and Atmospheric Administration **\$463,000 two-year Environmental Literacy grant**: Building and Distributing SciGuides and Science Objects. NOAA: NA05SEC4691006. 2005-2007.
 - Principal Investigator, University of Massachusetts **\$142,190 three-year grant**: Online Education for Secondary Science Teachers: An Integrated Approach to Food Safety Training. UM-03-001889-A-00. 2002-2005.
 - Principal Investigator, National Aeronautics and Space Administration **\$5,287,200 three-year grant**: NASA Explorer Schools: Project Management and Professional Development Expertise. NCC5-742. 2003-2005.
 - Project Director, National Science Foundation **\$1,300,000 three-year grant**: WebWatchers, 2001-2003.

INTERVIEWS, BLOGS, & PANEL MODERATION

US Department of Education Interviews

- Connected Educators Online (2013): <https://bit.ly/3hMtYFk>
- NSTA Learning Center (2012): <http://bit.ly/2Ej3A24>

NSTA Blogs

- Teacher Professional Learning: Transforming Teacher Practice (2016) Pt 1 <https://bit.ly/2NhIMNW>
- Teacher Professional Learning: Transforming Teacher Practice (2016) Pt 2 <https://bit.ly/2PbxgEP>

National Academy of Sciences, Engineering, & Medicine Workshop

Sharing the Adventure with the Student—Exploring the Intersections of NASA Space Science and Education. Panel Moderator: Supporting Science and Engineering Teachers through Professional Development (2014).

CONFERENCE PRESENTATIONS

- Advancing Computer Science Education in Virginia, SPARK Talk, Virginia Commonwealth University, School of Education, Research and Professional Development Virtual Session Series: Equity, Privilege and Power in Education, Richmond, Virginia, March 26, 2021.
- Structuring sustainable large-scale STEM learning experiences for middle school teachers and students Invited Speaker: STEM Leadership Alliance, Virtual Conference, July 14, 2020
- Innovation in STEM Education for Secondary Classrooms, Virtual [NASA Educator Workshop](#), NASA Langley Research Center and NASA Wallops Flight Center, VCU Center for Innovation in STEM Education, July 28-July30, 2020.
- [Virginia STEM Leadership Summit](#), Opening Plenary Host and K12 STEM Education Panel Moderator: Virginia Commonwealth University, Richmond, VA, September 20, 2019.
- Bivalve Ecosystems Sustaining Treasures (BEST) in Bay Watersheds, [NOAA B-WET Educator Workshop](#), VCU Rice Rivers Center, Charles City County, Virginia, October 18-19, 2019.
- America's Lab Report 2.0: Perspectives from NSTA on Professional Learning and Science Investigations, National Academies of Science, Engineering and Medicine, Washington, DC, May 2017.
- Enhancing Teachers' Voices in Education Policy Making in Science & Engineering Education, National Science Teachers Association National Conference, Los Angeles, CA, March 2017.
- More Powerful Than We Can Imagine: Blended Learning Management Systems, Council of Science Supervisors Annual Meeting, Los Angeles, CA, March, 2017.
- Turning Ideas into Reality: Developing Blended Models for Effective and Sustainable Learning Communities. NASA Armstrong Flight Research Center, NASA BEST Engineering Education Summit, Palmdale, CA, February, 2017.

- Building Meaningful Partnerships. The Council of State Science Supervisors Annual Meeting, Nashville, TN, March 2016.
- Teachers benefit from opportunities to learn from and with each other: Insights into Professional Learning Communities and Teacher Learning. The 100K in 10 Annual Summit, NASA Space Center, Houston, TX, April 2016.
- Research Insights into Professional Learning Communities and Teacher Learning Online. National Science Teachers Association (NSTA), Nashville, TN, April, 2016.
- Turning Ideas into Reality, the Iditarod STEM Opportunity. The Iditarod Education Conference, Anchorage, AK, March 2016.
- Using the NSTA Learning Center as an Online Textbook for Teaching Science Pre-Service Teachers, Association of Science Teacher Educators. Reno, NV, January 2016.
- Shifting to Integrated STEM: Experiences of Three School Districts NSTA Virtual Conference, November, 2015.
- NSTA Digital Badges: Inspiring Online Professional Community Engagement and High Impact Learning. Open Badges in Higher Education, Online Webinar, October, 2015.
- Going All In! Leveraging Blended Professional Learning Solutions. National General Electric National STEM Conference, Cocoa Beach, FL, July 2014.
- Helping Tens of Thousands of Educators Improve Their Confidence and Competence in the Science Subjects They are Charged to Teach: A Scalable Partnership. 100K in 10 Annual Summit. San Francisco, CA, May 2014.
- Developing Large Scale Effective Online Teacher Learning Communities at the National Science Teachers Association. Ninth Annual International Conference on Networked Learning, Edinburgh, United Kingdom, March 2-8, 2014. Invited "Hot Seat" online expert panelists: Byers, A. Mendez, F.
- Straus, S. G., Byers, A., & Karam, R. (2013, June). Online Communities of Practice for Professional Development: What's In It for Us? International Society for Technology in Education (ISTE), San Antonio, TX.
- Invited Keynote: Developing Large Scale Effective STEM Teacher Learning Communities. Global STEMx Education Conference, Sept 19-21, 2013.
- A Tool to Develop Pre-service Teachers: The NSTA Learning Center. National Science Teachers Association, San Antonio, Texas, April 13, 2013.
- Invited Symposium Panelist: Teacher Professional Learning in the Digital Age. Panelists: Albert Byers, NSTA; Janet Carlson, BSCS; Sue Doubler, TERC; Arthur Eisenkraft, University of Massachusetts; Lauren Goldenberg, EDC; Jackie Miller, EDC; Rob Steiner, American Museum of Natural History. Annual International Conference, National Association for Research in Science Teaching (NARST), April 6, 2013, San Juan, Puerto Rico.
- Invited Keynote: Blending Online and Onsite Professional Development: Applying What the Research Says for Effective and Sustainable Learning Communities, Virginia Science Education Leadership Association, Williamsburg, Virginia, November 7, 2012.
- Invited Keynote: Self-Directed Online Teacher Professional Development: Applying the Research for Effective and Scalable Learning Communities, Educational Technology Leadership Conference, Roanoke, Virginia, November 5, 2012.
- Invited Panelist: Badges For Learning: Dialogue and Demonstrations Exploring

Online Achievement Systems. Panelists: Richard Culatta, US Department of Education; Sunny Lee, Mozilla Foundation; Marc Lesser, MOUSE Inc.; Moderator, An-Me Chung, MacArthur Foundation. ISTE International Conference, San Diego, California, June 27, 2012.

- Invited Symposium Panelist: Digital Resources to Support Science Instruction: Research, Development and Practice. Panelists: Chad Dorsey, Concord Consortium; Lauren Goldenberg, EDC; Mimi Recker, Utah State University; Alice Anderson, EDC; Commentator: Eric Wiebe, The North Carolina State University. Annual International Conference, National Association for Research in Science Teaching (NARTS), Indianapolis, Indiana, March 2012.
- Invited Panelist: Online Communities of Practice:, FL, January, 2012. Professional Development Institute: Blending Online and Onsite Professional Development: Applying What the Research Says for Effective and Sustainable Learning Communities. Annual Conference, National Science Education Leadership Association, Indianapolis, IN, March, 2012.
- Session Presenter: Social Network Analysis of Affiliation Networks to Promote Online Communities of Practice for Science Education. Annual meeting of the International Network for Social Network Analysis, Sunbelt XXXII, Redondo Beach, CA, March 2012.
- Session Presenter: The NSTA Learning Center. A Tool to Develop Preservice Teachers. National Conference, National Science Teachers Association, Indianapolis, IN, April 2012.
- Invited Panelist: Improving Educator Effectiveness—Teachers as Co-learners. State Educational Technology Directors Association Leadership Summit, Washington, DC, November 2011.
- Invited Speaker: Online Professional Development: Applying What the Research Says for Effective Scalable and Sustainable Learning Communities. 35th Annual SECME Summer Institute (Diversity in STEM Education). University of Alabama, Tuscaloosa, AL, June, 2011.
- Immersive Environments for Science Education: Hyper-learning or Over Hyped Learning, ISTE National Conference, Philadelphia, PA, June, 2011.
- Invited Keynote Speaker: Online Professional Development: Applying What the Research Says for Effective Learning. Next Step Institute-Navigating the Landscape of STEM Conference, Dover, DE, May, 2011.
- Online Professional Development: Research on Teacher Perceptions, Learning Preferences, and Learning Outcomes for Self-directed NSTA Web Courses. National Conference, National Science Teachers Association, San Francisco, CA, March, 2011.
- Invited Speaker. Developing Online Learning Communities at Scale. National Science Foundation-sponsored STEM Summit, Longwood University, Farmville, Virginia. February, 2011.
- Developing Sustainable Online Learning Communities at Scale to Accommodate Diverse Learning Preferences and Needs. National Science Foundation. National Science Digital Library Annual Meeting, Washington, DC, November, 2010.
- Invited Expert. Building Scalable and Sustainable Learning Centers. Always. Learning Web Seminar Series with host Bryan Chapman. July, 2010.

- The NSTA Learning Center: Scalable and Sustainable e-Professional Development. International Society for Technology in Education National Conference, Denver, Colorado, June, 2010.
- On-Demand Self-directed Electronic Professional Development that reaches Scale and Sustainability. Hewlett Open Educational Resources Annual Meeting Cambridge, Massachusetts (Yale University), April, 2010.
- The NSTA Learning Center: Supporting NSTA Regional District Directors and State Science Teacher Association Chapters. National Congress on Science Education (NCSE), Indianapolis, Indiana, July 11, 2008.
- The NSTA Learning Center: Meeting the Needs of Teachers in Texas. Fourteenth Annual Meeting of the Texas Regional Collaboratives for Excellence in Math and Science, Austin, Texas, July 11, 2008.
- Impacting Business Through E-learning Initiatives: National Science Teachers Association. E- Learning Summit, 2008. Web Seminar Presentation. May 8, 2008.
- E-Professional Development: Science Objects, SciPacks, and The NSTA Learning Center, Education to Achieve 21st Competencies and Skills for All: Respecting the Past to Move Toward the Future Symposium, Xi'an, China, January 15-17, 2008.
- Training Trainers and Networking Networks: Approaches to Strategic Partnerships, National Science Foundation. National Science Digital Library Annual Meeting, Arlington, Virginia, November 7, 2007.

AWARDS & HONORS

NSTA Learning Center National Recognition

- US Department of Education. District Toolkit: Expanding the Circle, Closing the Loop. NSTA Learning Center featured in nationally distributed product (2013).
- US Department of Education. Exploratory Research on Designing Online Communities. NSTA Learning Center featured platform exemplar (2014).
- eSchool 2012 Media Readers' Choice Award, Honorable Mention. The NSTA Learning Center. eSchool Media, Inc.
- 2009 Golden Lamp Awards Finalist, Category: Professional Development, The Association of Educational Publishers. For The NSTA Learning Center.
- 2007 Training Technology in Action Award—Learning Content Management Project of the Year: The NSTA Learning Center, Training Magazine.
- 2007 Learning Leader: Organizational Management Excellence for the NSTA Learning Center, Bersin & Associates.

Personal Recognition

- 2011 Outstanding Graduate Student, Virginia Polytechnic Institute and State University, Instructional Design and Technology, School of Education, College of Liberal Arts and Human Sciences for Ph.D.
- 2010 National Group Achievement Award, National Aeronautics and Space Administration, John H. Glenn Research Center, Cleveland, OH for work on the NASA Explorer Schools National Education Project.

- 2008 Center for Food Safety and Applied Nutrition (CFSAN), 2008 Annual Honor Awards. US Food and Drug Administration, Leveraging Collaboration Award.
- Omicron Delta Kappa, academic achievement honor society member 2002.
- National Graduate Student Research Program Fellowship, National Aeronautics and Space Administration, Langley Research Center, Hampton, VA, 1998-2002.
- 2000 Best Instructional Technology Graduate Student Multimedia Archive, Awarded across an eight university consortium: Northern Illinois University, The University of Georgia, The University of Minnesota, Texas A&M University, Virginia Tech, The University of Houston, The University of Michigan, and Utah State University.
- 1997 National Group Achievement Award, National Aeronautics and Space Administration, Goddard Space Flight Center, Greenbelt, MD. For work on the Space Experiment Module Project flying student experiment payloads in space.
- Special Recognition Award for outstanding and distinguished service to the state of Connecticut, Connecticut Science Supervisors Association, Hartford, CT, 1997.
- 1993-1994 Teacher of the Year, Robious Middle School, Chesterfield County Public Schools, Richmond, Virginia.
- National Educator Grant Award Recipient, National Science Foundation, University of California, Berkeley and the Lawrence Hall of Science, Berkeley, CA. 1994.

ADVISORY PANELS, EXPERT REVIEW PANELS, INVITED GUEST LECTURER

- Appointed Governor Ralph Northam's Virginia Science, Technology, Engineering, and Math (STEM) Education Commission. 2019-2020.
- NSF grant funded TERC STEM Teacher Leadership Network. Senior Advisory Panel. 2018-2019. Video: <https://stemtlnet.org/video-showcase/beyond-these-walls-your-next-move>.
- National Science Foundation, STEM for All Video Showcase, Research and Design for Impact, Facilitator/Evaluator, May 2017. <http://stemforall2017.videohall.com/>.
- SIIA CODiE Awards Expert Judge, Best Corporate Learning Solution, April, 2017.
- National Science Foundation Grant, Expert Judge Advisory Panel, Presidential Awards in Mathematics and Science, STEM Teacher Ambassador. Managed by NSTA and NCTM, March-April, 2017.
- Invited Guest Lecturer, Online Learning Communities: Transforming Education through Emerging Technologies. Harvard Graduate School of Education, Boston, MA, November 2016, 2015 and 2014.
- Invited Panelist: State Education Technology Director's Association Leadership Summit— Innovation in Education: Shifting the Learning Model, National Harbor, Maryland, October 17, 2016.
- Invited Guest Lecturer, Building Sustainable Blended Professional Learning Communities for Teacher Learning. Learning in the Digital Age. Harvard Graduate School of Education, Boston, MA, October 2015.
- Invited Contributor: National Science Foundation: Advancing Data-Intensive Research in Education, Arlington, VA May 31-June 2, 2015.
- Invited Sponsored Attendee. National Science Foundation: Learning Sciences and Online Learning Symposium, Massachusetts Institute of Technology, Cambridge, MA, May 21-21, 2015.

- National Academy of Sciences, Engineering, Medicine. Space Studies Board Workshop Planning Committee Member: Sharing the Adventure with the Student: Exploring the Intersections of NASA Space Science and Education, Dec 2-3, 2014.
- Invited Summit Member and Chapter Author. Models of Online Teacher Professional Development, National Science Foundation grant hosted by Harvard University and the University of Massachusetts. August 2014.
- Invited Committee Member. Primary Technical Working Group: US Department of Education Grant: Educational Technology-Focused Online Communities of Practice. (Solicitation: ED- PEP-10-R-0053). October 2010-2015.
- American Museum of Natural History, the NY State Department of Education, and the NY State Board of Regents. Master's degree program for teacher preparation in Earth/Space science, online learning with in-state residency experiences, and mentoring for teachers in high urban areas. NSF DRK-12 Award. Senior advisory panel. 2012-Present.
- Invited Guest Editorial Reviewer: The Journal of Science Teacher Education (JSTE). John Staver and Lynn Bryan, Editors-in-Chief. 2012-2015.
- National Science Foundation, National Science Digital Library STEM EXCHANGE working group. Invited member. Discussing how to leverage digital assets for more effective learning as part of community. Washington, D.C. 2010-2011.
- National Science Foundation, Center for Ocean Sciences Education Excellence-Ocean Systems (COSEE-OS). External Advisory Board Member for the University of Maine. Assist in visioning for online learning and e-professional development. January 2010-2012.
- National Science Foundation, e2Biology Symposium. Invited symposium contributor. Assist in developing vision and strategic plan for an electronic introductory biology program with a focus on evolution for undergraduates. North Carolina State University, Durham, NC. January, 2010.
- National Science Foundation, Planning for the Future of Geo-Cyberlearning. Invited contributor. January, 2010. Washington, D.C.
- Invited Expert Review Panel, National Education Technology Standards for Teachers, International Society for Technology in Education, Washington, D.C., March, 2008.
- Invited Expert Reviewer, US Department of Education. Doing What Works web site. Washington, D.C., March 2008.
- Invited delegate/speaker. US Department of Education Asian Pacific Economic Cooperation Summit, Education to Achieve 21st Competencies and Skills for All. Xi'an, China. January 2008.
- Review Panel. NAEP Science Framework Prioritization Expert Review Panel. Sponsored by the US Department of Education's National Center for Education Statistics. April 2008.
- Science Learning through Cyber Resources: Senior Advisory Council. National Science Foundation grant awarded to Stephen's Institute of Technology, League for Innovation in the Community College, and the National Association of Community College Teacher Education Programs. 2008.
- Invited Grant Panelist, National Oceanic and Atmospheric Administration, Office of Education. Environmental Literacy Grant Review Panel, 2006. Committee Member:

National Board for Professional Teaching Standards, “Adolescence and Young Adulthood/Science Standards Review Committee.” 2002-2004.

- National Aeronautics and Space Administration, Space Telescope Science Institute, Peer Review Grant Panel, Hubble Space Telescope Cycle 12 Education and Public Outreach, John Hopkins University, Baltimore, MD, September 2003.
- Invited Expert Review. NASA Explorer Schools Web Jam Design Symposium, Marshall Space Flight Center, Huntsville, AL, May, 2003.
- Invited Reviewer. Senior Advisory Review Grant Panel, “Anticipating the Role of Emerging Technologies in Science Education,” National Science Foundation. October 2002.
- Invited Expert Reviewer, National Aeronautics and Space Administration Ralph Steckler/Space Grant Colonization Research and Technology Opportunity, Peer Review Grant Panel, June 2002.
- Senior Technology Advisory, Networking for Leadership, Inquiry, and Systemic Thinking, Council of State Science Supervisors under a grant from the National Aeronautics and Space Administration. 1999-2001.

VOLUNTEER EXPERIENCE

Selection Committee Member—American Academy for the Advancement of Science (AAAS)

December 2017 – March 2021. Cause: Science

Invited. The Selection Committee reviews and scores applications, interview candidates, and selects the Science and Technology Policy scientists and engineers to serve across the congressional, judicial and executive branches of the federal government. I served on the committee for the executive branch. The full year fellowship aims to generate policy-savvy scientists as effective leaders in science, technology and policy.

<https://www.aaas.org/program/science-technology-policy-fellowships>.

Social Media Delegation—NASA Social Media Crew

December 2019. Cause Education

Selected to attend and promote the Orbital Flight Test of the Boeing Starliner CST-100 passenger capsule atop an Atlas V rocket from NASA Kennedy Space Center to dock with the International Space Station. Shared educational perspectives.

Judge—Conrad Spirit of Innovation Challenge

December 2017 – December 2018. Cause: Education

The Conrad Challenge brings together a dynamic community of innovators and entrepreneurs driving a collaborative movement to develop extraordinary solutions to benefit the world. Competition challenges uses STEM innovation and entrepreneurship, to create a more sustainable world for this and future generations. <http://www.conradchallenge.org>

Judge—Math Science Innovation Center

January – February 2017. Cause: Education

The MRSF affords students a unique opportunity to conduct research. This endeavor helps

to build a strong understanding of and appreciation of how science works (scientific method/scientific inquiry). The Metro Richmond STEM Fair (MRSF) is Central Virginia's regional qualifying event for the Intel International Science and Engineering Fair. I reviewed the first phase of online submissions to feed the second tier for presentation.

Judge— Northrop Grumman Fab Schools Lab

2016 – 2017. Cause: Education

The Northrop Grumman Foundation is on a mission to get students excited about STEM. The Fab School Labs program made five grants of up to \$100,000 each available to public middle schools.

REFERENCES

For written recommendations please review my LinkedIn profile (<https://www.linkedin.com/in/albyers/>)

Education Associations

- Dr. Gerald Wheeler, Executive Director Emeritus, National Science Teachers Association, gwheeler@nsta.org, (406) 451-4288.
- Dr. David Barnes, Associate Executive Director, Research, Learning and Development, National Council Teachers of Mathematics, dbarnes@nctm.org, (703) 795-0002.
- Frank Owens, Associate Executive Director, Professional Programs, NSTA, 2004-2008. Associate Administrator, Education, National Aeronautics and Space Administration (1996-2002), frank.c.owens@gmail.com, (352) 270-9064
- Dr. Steve Barbato, Executive Director, International Technology & Engineering Educators Association, 2003-2021. iteea.barbato@gmail.com, (717) 305-8493.
- Dr. Rossane White, Executive Director, Technology Student Association, rwhite@tsaweb.org, (703) 860-9010.
- Dr. Tom Keller, Senior Research Scientist, Maine Mathematics and Science Alliance. Senior Program Officer, National Academy of Sciences (2007-2015), Past President Council of State Science Supervisors, Maine State Science Education Supervisor, tom.keller.me@gmail.com, (207) 350-6106.

Government Agencies

- Dr. Shelley Canright, Senior Advisor, STEM Education Integration and Accountability, National Aeronautics and Space Administration (1999-2017), shelley.canright@hotmail.com, (803) 521-1136.
- Leland Melvin, Astronaut, STS-122/STS-129 (ret.), Associate Administrator, Education, National Aeronautics and Space Administration (2010-2014), leland@lelandmelvin.com, (713) 829-4797.
- Louisa Koch, Director Office of Education, National Oceanic and Atmospheric Administration, Louisa.Koch@noaa.gov, (301) 351-0861.

- Peg Steffen, Explorer Schools Program Manager, National Aeronautics and Space Administration (2002 – 2006), National Ocean Service Education Coordinator, National Oceanic and Atmospheric Administration (2006-2018), Peg.Steffen@gmail.com, (301) 412.7890.
- Louie Lopez, Director, Department of Defense, STEM, United States Department of Defense, louie.r.lopez.civ@mail.mil, lrlouie@gmail.com, (410) 278-9858.
- Dr. Peter McLaren, Past President of the Council of State Science Supervisors, previous Rhode Island Department of Education, State Science Supervisor. Currently Director, Next Gen Education, LLC, mclarenpeterj@gmail.com, (401) 419-8785.
- Dr. Stephen Pruitt, Executive Director, Southern Region Education Board, Past President Council of State Science Supervisors, previous Georgia Department of Education, State Science Supervisor, stephenlpruitt@gmail.com, (404) 875-9211.

Universities

- Dr. Kathleen Rudasill, Associate Dean, Faculty Development and Research, Virginia Commonwealth University, kmrudasill@vcu.edu, 804-827-2655.
- Dr. James Vonesh, Assistant Director, Center for Environmental Studies, Virginia Commonwealth University, jrvonesh@vcu.edu, (804) 426-8553.
- Dr. John Burton, Professor Emeritus, Learning Sciences and Technology, College of Liberal Arts and Human Sciences, Virginia Tech, Doctoral Advisor, jburton@vt.edu, (540) 250-1119.
- Dr. Barbara Lockee, Professor, Learning Sciences and Technology, College of Liberal Arts and Human Sciences, Virginia Tech, Doctoral committee, lockeebb@vt.edu, (540) 392-1902.
- Dr. Chris Dede, Timothy E. Wirth Professor in Learning Technologies, Technology, Innovation, and Education Program. Harvard Graduate School of Education, chris_dede@gse.harvard.edu, (617) 495-3839.
- Dr. Cary Sneider, Associate Research Professor, Portland State University, carysneider@gmail.com, (503) 891-9263.
- Dr. Greg Sherman, Associate Professor, Instructional Design and Educational Technology, Radford University, gsherman2@radford.edu, (540) 831-6859.
- Dr. Michael Odell, Roosth Endowed Chair, Professor STEM Education, University of Texas, Tyler, modell@uttyler.edu, (208) 301-0542.
- Barbara Morgan, Astronaut, STS-118 (ret.), NASA (1985-2008), Distinguished Educator in Residence, Emeritus, a dual appointment to the college of engineering and education, Boise State University, barbaramorgan@boisestate.edu, (208) 266-2752.
- Dr. Barry Fishman, Professor, School of Information, School of Education, University of Michigan, fishman@umich.edu, (734) 647-8027.