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## OBJECTIVE

To promote science education, heighten science awareness, and facilitate an interest in the sciences through innovative, interactive techniques while utilizing highly developed scientific and communication skills.

## EDUCATION

*Capella University, Minneapolis, MN*

Ph.D. in Education, August 2005

Emphasis: Professional Studies in Education

Ph.D. Dissertation: "A Comparison of In-service Elementary Teachers' Conceptions of Selected Standards-Based Force and Motion Concepts Before and After Instruction"

*University of Kentucky, Lexington, KY*

Master of Science in Physics, August 1994

Master's Thesis: "Laser Raman Spectroscopy of Hydrogen Adsorbed on p-Si(111)"

*Ohio University, Athens, OH*

Bachelor of Science in Physics, June 1991

Minor: Mathematics

## WORK EXPERIENCE

*University of Pikeville, Pikeville, KY*

**Chair, Division of Mathematics and Natural Sciences**, 2009 - Present

As a Division chair, I am responsible for the following:

- Providing effective leadership of the division
- Supervising the academic advising within the division
- Preparing and overseeing the division budget
- Evaluating and making recommendations concerning the need for new faculty in the division, leaves, promotions, and non-retentions to the appropriate committees
- Coordinating the master schedule of course offerings within the division
- Summarizing student evaluations of faculty within the division and meeting with individual faculty members to discuss student evaluation results and teaching performance

*University of Pikeville, Pikeville, KY*

**Professor of Education & Physics, 2007 - Present**

**Associate Professor of Education & Physics, 2006 - 2007**

**Associate Professor of Physics, 2000 - 2006**

**Assistant Professor of Physics, 1995 - 2000**

**Physics Instructor, 1994 - 1995**

Lecture courses taught: Science in the Elementary School and the Middle School, Introduction to Physics, General Physics, Engineering Physics, Modern Physics, Introduction to Astronomy and Astrophysics, Introduction to Physics and Astronomy, and Introduction to Earth Science and Chemistry.

Laboratories taught: Introduction to Physics, General Physics, Engineering Physics, Introduction to Astronomy and Astrophysics, and Introduction to Earth Science and Chemistry.

Special topics course taught: MCAT Review and Problems, Computer Simulations in Physics, Amusement Park Physics, Complexity Theory, Medical Physics, An Introduction to String Theory, Introduction to Robotics, and Digital Electronics.

Seminar classes taught: Black Holes and Time Travel, Chaos Theory, and The Science in Science Fiction.

- I teach with as much use of available technology as possible. For lectures this includes, but is not limited to, the use of Symposium smart monitors and Apple TV modules that allow iPad screen mirroring.
- I have written the laboratory manuals used in my physics courses and as such am able to tailor the specific learning activities to the lecture material covered. In addition, where applicable, the use of technology (computers and real-time data acquisition) is heavily incorporated into these laboratories.
- I have completely revised the introductory physics course from the traditional lecture/laboratory format to a hands-on course based on inquiry-oriented teaching and learning methodologies. Learners now meet in small groups as they work through guided inquiry-oriented physical science activities. Enrollment for this particular course consists of elementary education majors, middle grades science education majors, and the general population of non-science majors.
- My science methods course places a heavy emphasis on the use of inquiry-based techniques and engineering practices; ahead of the next generation science standards,
- I made "Introduction to Astronomy and Astrophysics" the first University course to be completely web-enhanced. All course materials are available online. Online resources include: course syllabi, sample tests, discussion boards, grade book, lecture notes, images, animations, Internet links, and homework assignments. Current sections of the course are offered using video projection in a classroom lecture setting. Participants are shown real-time animations of concepts and links to current course information. Lecture notes are updated as new advances / discoveries are reported. In addition, beginning in the summer of 2007, "Introduction to Astronomy and Astrophysics" lecture and laboratory was the first University laboratory science course to be offered online via the University's CMS.

*University of Pikeville, Pikeville, KY*

**Director, Math/Science Resource Center, 1994 - 2006**

The Center provided outreach support to the county and surrounding school systems in an attempt to further science and mathematics education in the region. As director, I was responsible for outreach activities including educational workshops (student and teachers versions), visiting lectureships, science tours, physics petting zoos, math & science Olympics, and science & math camps. I not only expanded our offerings to many additional surrounding counties, as well as two additional states, but personally conducted science and mathematics programs with more than 30,000 public school students and more than 1,000 public school teachers. These programs are usually hands-on, inquiry-based projects designed to increase literacy about science and mathematics.

*Big Sandy Community and Technical College, Prestonsburg, KY*

**Adjunct Instructor of Astronomy, Spring 2006 - Present**

Responsible for the development and instruction of a survey course for non-science majors related to stars, galaxies, and the universe. The lecture course included online resources such as course syllabi, sample tests, grade book, lecture notes, images, animations, Internet links, and homework assignments. Learners are shown real-time animations of concepts and links to current course information. Lecture notes are updated as new advances / discoveries are reported.

- Current sections of these courses for BSCTC are now being offered completely online via the College's CMS. All resources and learner support are managed through the CMS; including research papers, exams, and discussions

**Adjunct Instructor of Physics, Fall 2008**

Responsible for the development and instruction of a science major's course in general physics; topics include motion, Newton's Laws, properties of solids, heat & thermodynamics, and waves/vibrations. The lecture component of the course included online resources such as course syllabi, sample tests, grade book, lecture notes, images, animations, Internet links, and homework assignments. The laboratory component of the course employed an instructor developed, hands-on experience with the concepts related to the lecture material.

*Morehead State University, Morehead, KY*

**Adjunct Professor of Astronomy, Spring 2006 - Spring 2009**

Responsible for the development and instruction of a survey course for non-science majors related to stars, galaxies, and the universe. The lecture course included online resources such as course syllabi, sample tests, grade book, lecture notes, images, animations, Internet links, and homework assignments. Learners are shown real-time animations of concepts and links to current course information. Lecture notes are updated as new advances / discoveries are reported. The lecture included observation sessions and access to the planetarium.

*Pike County Board of Education, Pikeville, KY*

**Project-Based Learning Program Director, 2006**

I provided introduction to the project-based learning environment for local educators and professionals. This was a start-up venture between the Pike County school system and area professionals in the sciences. The program offered after-school, project-based learning environments for local school children. These projects were supervised by participating educators and involved local science professionals as resource agents. The goal was to increase science literacy and awareness by allowing small groups of students the opportunity to research areas within science that are of critical importance to them and to their community. As director of the program, my responsibilities included developing materials for the supervising teachers, running training sessions for both the teachers and professional partners, conducting site visits during the extent of the program, and acting as a guide and a resource for both the supervising teachers and the professional partners.

*KAPLAN Educational Testing Services, Pikeville, KY*

**Physics Review Instructor, 1999 - 2003**

I provided introductory and physics review for those students wishing to prepare to take the MCAT examination. I taught a three-hour introduction to the KAPLAN process and a nine-hour review of the complete general physics curriculum, with emphasis on problem solving techniques and strategies.

*Richard Bland College, Petersburg, VA*

**Adjunct Professor of Physics, Summers, 1998 & 1999**

I developed and taught a teacher re-certification course designed for teaching science with a "hands-on" approach at the elementary, middle and high school levels. I incorporated the National Science Standards and the Virginia Standards of Learning into the specific content area demonstrations that were developed throughout the course. Participants developed and constructed demonstration activities, improved their confidence and skills in teaching physics, and became better equipped to incorporate science standards into their daily curriculum.

## PROFESSIONAL DEVELOPMENT

Pearson Assessment Training Institute, Lexington, KY  
Two day training entitled "Classroom Assessment for Student Learning: Doing It Right-Using It Well." Certificate awarded January 2011.

*National Radio Astronomy Observatory, Green Bank, WV*  
Chautauqua short course entitled "A Radio View of the Universe and the New Green Bank Telescope." Certificate awarded May 2000.

*National Radio Astronomy Observatory, Green Bank, WV*  
Chautauqua short course entitled "Teaching Introduction to Astronomy." Certificate awarded May 1998.

*Millersville University, Millersville, PA*  
"Teaching Introductory Physics Using Interactive Teaching Methods and Computers" held at Dickinson College, July 1997. Graduate credit awarded July 1997

*University of Dayton, Dayton, OH*  
Chautauqua short course entitled "Multimedia Laboratory & Classroom Simulations: Instructional tools for the Sciences." Certificate awarded June 1997.

*James Madison University, Harrisonburg, VA*  
"Physics Demonstrations Using Simple Apparatus" held at the Virginia Military Institute. Graduate credit awarded July 1996.

*University of Dayton, Dayton, OH*  
Chautauqua short course entitled "Inexpensive Interfacing of Undergraduate Laboratory Experiments." Certificate awarded May 1996.

## COMPUTER SKILLS

- Accustomed to using PC (Windows), Apple, and similar computing hardware
- Competent in word processing, communications, spreadsheets, databases and a variety of other application software
- Proficient in HTML and Web authoring
- Experienced in JAVA and CGI (Perl)
- Experienced with WebCT, Angel, Blackboard and Moodle/Joule Course Management Systems
- 144 hour Novell 3.1x Certified Netware Engineer (CNE) training. Certificate awarded December 1995 by *Big Sandy Telecommuting Services, Inc., Pikeville, KY*

## GRANT CONSULTING

### Science Leadership Support Network

- The Science Leadership Support Network (SLSN) is a three year Math and Science Partnership awarded through a Kentucky Department of Education grant to support the Eastern region of the state. Participants are focused on the Science Program of Studies, Instructional Rigor and Student Engagement, Learning Climate, and Classroom Assessment. Additionally, they are studying the Framework for K-12 Science Education, focusing on translating the practices and crosscutting concepts into instruction, and integrating engineering to foster the learning of science content; in preparation for the release of the Next Generation Science Standards (NGSS).
- My involvement includes:
  - Assist with the planning and facilitation of all cadre meetings, 2010 - Present
  - Assist with the planning and facilitation of all summer sessions, 2010 - Present
  - Assist with constructing the pre/post test for teachers and their students for concepts addressed within the designed or identified curriculum, 2010 - Present
  - Serve as the liaison to the University of Pikeville Education Division faculty to keep them abreast of changes to practice and curriculum pre-service preparation, 2010 - Present

### Appalachian Rural Dental Education Program

- The Appalachian Rural Dental Education Program was a grant funded by the Appalachian Rural Commission. The University of Kentucky College of Dentistry, the KOHN, Morehead State University, and the University of Pikeville partnered to design and implement a program to improve the placement of dental graduates in rural practice locations through regional recruitment of Kentuckians.
- My involvement included:
  - Team leader for the UPIKE Program Design Team, 2011-2012

### Appalachian Mathematics and Science Partnership

- The Appalachian Mathematics and Science Partnership (AMSP) was funded by a five-year grant from the National Science Foundation. The AMSP involved elementary, middle, secondary, and university personnel in a coordinated effort to improve mathematics and science education in Appalachia.
- My involvement included:
  - Science Advisory Council, 2003 - 2004
  - Science Course Development Group (Elementary, Middle, and High School), 2003 - 2005
  - Elementary Institute Instructor, 2003
  - Middle School Institute Instructor, 2004, 2005 & 2006
  - Coordinator, Physical Science Development Group, 2006
  - Letcher County PEP Grant Member, 2006

### National Girls Collaborative Project

- The goal of the National Girls Collaborative Project is to maximize access to shared resources within projects and with public and private sector organizations and institutions interested in expanding girls' participation in STEM. Through a mini-grant, I partnered with Dorton Elementary School's Girls in Science and Research Club to bring female students informal hands-on science education. These "Super Science Saturdays" continued over five Saturdays with fun and engaging hands-on activities.
- My involvement included:
  - Program Developer/Presenter, 2009-2010

### Girl in Science

- Funded through the National Science Foundation, Girls in Science encouraged girls entering seventh grade to pursue careers in science, math, engineering and technology. The Girls in Science program included five Saturday academies throughout the school year at participants' local colleges.
- My involvement included:  
Program Developer/Presenter, 2005-2007

### East Kentucky Regional Gear-Up Program

- GEAR UP was a six-year grant program that is funded by the U.S. Department of Education 2000-2006. GEAR UP stands for Gaining Early Awareness and Readiness for Undergraduate Programs. GEAR UP provided rigorous educational services to help students plan, apply and pay for education and training beyond high school.
- My involvement included:  
Physics Consultant, 2001 - 2006  
Program Presenter, 2003 - 2006

### Math and Science Regional Cadre

- The Math and Science Regional Cadre was a grant funded program from The Eisenhower Consortium for Math and Science at Appalachia Educational Laboratory (AEL). The Consortium at AEL provided training and technical assistance through a cadre of trainers in each of its states. These highly skilled educators underwent extensive training on specialized resources identified or developed by key mathematics and science specialists at state Departments of Education in KY, TN, VA, and WV. The Cadre provided professional development on standards-based curriculum, assessment, and instruction to teachers across the states, including rural areas.
- My involvement included  
Regional Team Leader, 2001 - 2003

### Eastern Kentucky Goals 2000 Development Project

- The Goals 2000: Educate America Act provided resources to states and communities to ensure that all students reach their full potential. It was based on the premise that students will reach higher levels of achievement when more is expected of them. Goals 2000 establishes a framework in which to identify world-class academic standards, to measure student progress, and to provide the support that students may need to meet the standards.
- Through Goals 200 funding, the Appalachian Rural Systemic Initiative (ARSI) played a significant part in helping Pikeville Elementary School, Pikeville, KY align the math and science curriculum and elevate test scores. The alignment of the science curriculum was the beginning of many positive changes in the entire district. It affected every content area as teachers realized the need for the necessary changes.
- My involvement included:  
Higher Education Consultant, 1996 - 1999  
Science Camp Consultant and Co-coordinator, 1998 -1999

## AFFILIATIONS

American Association of Physics Teachers  
Member, 1997 - Present

Association for Science Teacher Education, Mid-Atlantic Region  
Member, 2005 - Present

Challenger Learning Center of Kentucky  
Board of Directors, 2002 - 2007

East Kentucky Science Center  
Chair, Advisory Council, 2008 - Present  
Board of Directors (Founding Member), 1996 - 2008  
Planetarium Technician, 2004 - 2008

Kentucky Academy of Sciences  
Member, 2002 - Present

Kentucky Association of Physics Teachers  
Member, 1995 - Present

Kentucky Department of Education, Region 8 Service Center  
Advisory Board, 1995 - 2000; Chair 1999 - 2000

National Association for Research in Science Teaching  
Member, 2005 - 2008

National Association of Rocketry  
Senior Member, 2003 - 2006

National Science Teachers Association  
Member, 1996 - Present  
University of Pikeville Student Chapter, Founder and Faculty Advisor, 2003 - Present

Pike County Student Technology and Leadership Program  
Advisory Board, 1998 - 1999

Sigma Zeta, Beta Xi chapter, National Science and Mathematics Honor Society,  
Founding Chapter Member, 1999 - Present

Society of College Science Teachers  
Member, 1996 - Present



## PROFESSIONAL ACTIVITIES

Bayer/NSF Awards Program  
Semifinalist Judge, 2002

Crawford Engineering  
Physics Consultant, 1997 - 1998

Educational Testing Service  
AP Physics Reader, 2012

Intel International Science and Engineering Fair  
Grand Awards Judge, 2002, 2003, 2006, 2008 and 2012

KAA District Governor's Cup Academic Competition  
Officiating Judge, 1997 - 1998

Kentucky Science Support Network  
Science Mentor, 2003 - Present

Mad Scientist Network  
Science Mentor, 2001 - Present

National Public Radio  
Science Mentor, 1997

NSF Global Science and Technology Week  
"Ask a Scientist or Engineer" Mentor, 2002

Phelps Elementary Outdoor Classroom Project  
Grant Advisor, 1997 - 1998

Region 8 Service Center Education Round Table  
Panel Speaker, 1997

Region 8 Middle School Summer Science Academy  
Consultant and On-site Coordinator, 2001  
Consultant, Summer Science Academy - Elementary Emphasis, 1999

Regional Science Olympiad  
Event Coordinator, 1997 - 2006.  
Regional Director, 2007 - Present  
State Board of Directors, 2009 - Present

State Science Olympiad  
Event Coordinator, 1996 – 2001 and 2011

University of Louisville  
Science Assessment & Scoring Rubrics Reviewer, 2004 - 2005

## PUBLICATIONS

Arts, R. (2007). "Traditional versus Guided Inquiry Instruction in the Undergraduate Physics Laboratory." Society of College Science Teachers Quarterly, Issue XXXXI, No.2, Summer 2007.

Arts, R. (2005). *A Comparison of In-service Elementary Teachers' Conceptions of Selected Standards-Based Force and Motion Concepts Before and After Instruction* (Doctoral dissertation, Capella University, 2005). UMI.

Arts, R. (2005). Chapter problem set editor/reviewer. For J. Walker, *Physics*, 3<sup>rd</sup> ed. Upper Saddle River, NJ: Prentice Hall.

Arts, R. (2005). *Introduction to astronomy and astrophysics: Laboratory activities manual*. Pikeville, KY: Author.

Arts, R. (2004). Laboratory activity writer and field tester. In M. Wyssession, D. Frank, & S. Yancopoulos, *Laboratory manual: Physical science concepts in action with earth and space science*. Upper Saddle River, NJ: Prentice Hall.

Arts, R. (2004). Laboratory activity writer. In M. Wyssession, D. Frank, & S. Yancopoulos, *Physical science concepts in action with earth and space science*. Upper Saddle River, NJ: Prentice Hall.

Arts, R. (2002). *Laboratory physics, part II* (5th ed.). Pikeville, KY: Author.

Arts, R. (2001). *Laboratory physics, part I* (4th ed.). Pikeville, KY: Author.

Arts, R. (2001). *Laboratory astronomy and astrophysics* (1st ed.). Pikeville, KY: Author.

Arts, R. & Parsons, J. (2000). *Laboratory physics: Instructor's edition, part II* (Rev. ed.). Pikeville, KY: Author.

Arts, R. & Parsons, J. (2000). *Laboratory physics: Instructor's edition, part I* (Rev. ed.). Pikeville, KY: Author.

Arts, R. (1997). *Film canister rocket*. U.S. Copyright No. VAu-411-794.

Arts, R. (1997). Workshop physics for the pre-medical student: The impact forces on the human foot. *Proceedings of the Teaching Introductory Physics Using Interactive Teaching Methods and Computers Workshop*. Carlisle, PA: Dickinson College.

Arts, R. (1993). Laboratory 19: The oscilloscope and the series RC circuit. In B. D. Kern, *Laboratory manual for general physics: Part two*. Dubuque, IA: Kendall/Hunt.

## PRESENTATIONS GIVEN

"Using the Science Olympiad as an Educational Tool." Mid-Atlantic Region Annual Conference of the Association for Science Teacher Education, Mountain Lake, VA, September 27-29, 2012.

"Hands-on, Minds-on Science Activities." Mid-Atlantic Region Annual Conference of the Association for Science Teacher Education, Carter Caves, KY, September 29-October 1, 2011.

"AMSP Changed My Life: An overview of my 5+ year involvement; highlighting information from institutes, college course redesign, and dissertation research." Voices of AMSP Reflective Conference, Lexington, KY, December 3-4, 2010.

"Physics Challenge Labs." Annual meeting of the Kentucky Association of Physics Teachers, Western Kentucky University, March 17, 2012. Mid-Atlantic Region Annual Conference of the Association for Science Teacher Education, Johnson City, TN, September 23-25, 2010.

"Using a Universal Qualitative Analysis Writing Assignment (UQAWA) to Stimulate and Assess Critical Thinking in the Physics Classroom." Annual meeting of the Kentucky Association of Physics Teachers, Western Kentucky University, March 17, 2012. Mid-Atlantic Region Annual Conference of the Association for Science Teacher Education, Shawnee, OH, September 18-19, 2009.

Damron, K. M., R. W. Arts, and J. C. Whittaker. "Responses of salamanders to simulated environmental vibration." The 2009 Sigma Zeta National Convention. Pikeville, KY, April 2009. Appalachian College Association's Annual Summit XII. Abingdon, VA, October 2009. 95th Annual Meeting of the Kentucky Academy of Science, Highland Heights, KY, November 2009. 53rd Annual Southeastern Region Meeting of Beta Beta Beta held jointly with the 18th Annual meeting of the Association of Southeastern Biologists, Asheville, NC, March 2010. Covering the Ohio River Valley: A Convergence of Scientists and the Media. Louisville, KY, November 2010. The 2010 Sigma Zeta National Convention. Campbellsville, KY, April 2010 (\* Best Poster Award). The 18th Annual Animal Behavior Conference. Bloomington, IN, March 2011.

"The FCI: Then & Now." Mid-Atlantic Region Annual Conference of the Association for Science Teacher Education, Lake Lure, NC, September 12-13, 2008.

"Traditional versus Guided Inquiry Instruction in the Undergraduate Physics Laboratory." Society of College Science Teachers/NSTA National Meeting, St. Louis, MO, March-April, 2007. Mid-Atlantic Region Annual Conference of the Association for Science Teacher Education, Ansted, WV, September 2007. ACA Summit, Abington, VA, October 2008.

"The Pros and Cons of an Extracurricular Project Based Learning Program: Perceptions of Students, Teachers & Professionals." Mid-Atlantic Region Annual Conference of the Association for Science Teacher Education, Marion, VA, October 2006.

"A Comparison of In-service Elementary Teachers' Conceptions of Selected Standards-Based Force and Motion Concepts Before and After Instruction." Mid-Atlantic Region Annual Conference of the Association for Science Teacher Education, Breaks Interstate Park, KY/VA, October 2005. National Association for Research in Science Teaching Conference, San Francisco, CA, April 2006.

"Online Homework: A Comparison and Overview." Appalachian College Association Technology Summit IV, Johnson City, TN, October 2001.

"The CGI Script." Appalachian College Association Technology Summit III, Knoxville, TN, October 2000.

"Data Acquisition for the Sciences." Science Strand Meeting at the Appalachian College Association Technology Summit III, Knoxville, TN, October 2000.

"Teaching Introductory Astronomy using HTML and the Internet." Technology in Teaching Conference, Berea, KY November 1998. Appalachian College Association Technology Summit, Knoxville, TN, October 1999. Kentucky Association of Physics Teachers meeting, Lexington, KY, April 2000. Poster Session of the Technology Interchange at the ACA Technology Summit III, October 2000.

"Inexpensive Computer Interfacing for the Sciences." Appalachian College Association Technology Summit, Knoxville, TN, October 1998. Technology in Teaching Conference, Berea, KY November 1998.

"Math and Science Resources for your Classroom." Pike County Schools Regional Title I Conference, Pikeville, KY, December 1997 and November 1998.

"Technology in Math and Science Instruction." East Region Association Technology Conference and Region 8 Technology Showcase, Shelby Valley, KY, January 1998.

"The Laser Spirograph." Kentucky Association of Physics Teachers meeting, Bardstown, KY, March 1997.

## **WORKSHOPS PRESENTED**

"Mini-Olympiad: The Spaghetti Bridge." Gear-Up sponsored program for the Betsy Layne Elementary School, November 2012.

"Fun with Elastic Energy." AAPT Physics Day Workshop presented at that NSTA Regional Conference, Louisville, KY, October 2012.

Millard School Science Night. Hosted two Parent/Student mini workshops on Cartesian divers and foam rockets. Assisted by eight University science major. November 2011.

Virgie Middle School Boys-only Science Program. Hands-on workshop on rockets sponsored by Gear-Up. March 2011.

After-School Science Academy. Gear-Up sponsored program for Belfry Middle & High School. Worked on engineering design challenges (geodesic domes, catenary arches, bridges, and towers) during a series of ten after school workshop sessions. 2009-2010.

"All about Light." Hosted at the East KY Science Center and sponsored by the local Girls in Science group. October 2009.

Science Saturday Program. Presented a series of hands-on science programs for the local Girls in Science Group as a continuation of the "All about Light" program hosted at the EKSC. Four additional Saturday programs were hosted in the University physics laboratory: Weather, Rockets, Pressure, and Electricity. 2009-2010.

Virgie Middle School Science Night. Hosted a Parent/Student mini workshops on foam rockets. Assisted by two University education major. November 2008.

"Hands-on Science." Series of programs (Heat & Temperature, Light, Motion & Forces, and Pressure) offered at Belfry Middle School & Harold Whitaker Middle School. 2008-2009.

"Fun with Force and Motion." Pike County Schools Summer Program for Teachers, June 2008.

"Father Child Initiative: Robotics." East Kentucky Science Center, April 2008.

"Discovery Saturday Program: Electricity and Magnetism." East Kentucky Science Center, March 2008.

"Fun with Forensic Science." Pike County Schools Summer Program for Teachers, June 2007.

"Hands-On Science Olympic Events & Outreach Opportunities For Your Classroom." Pike County Schools Professional Development Conference, August 2007.

"Logger Pro and the Basics of Real-time Data Acquisition." Letcher County Central High School Professional Development Workshop, Whitesburg, KY, December 2006.

"Science Magic." Pike County Schools Regional Title I Conference, Pikeville, KY, December 2006.

"Fun with Color." Pike County Schools Regional Title I Conference, Pikeville, KY, December 2005.

"Phascinating Fizzix." Jenkins High School Professional Development Workshop, Jenkins, KY, March 2005.

"Fun with Electricity and Magnetism." Pike County Schools Regional Title I Conference, Pikeville, KY, December 2004.

"The Nuts and Bolts of the Physics Petting Zoo." Eastern Kentucky Physics Alliance, Pikeville, Kentucky, November 2004

"Introduction to Holography." Eastern Kentucky Physics Alliance, Pikeville, KY, April 2004.

"The Madagascar Hissing Cockroach." Eastern Kentucky Physics Alliance, Pikeville, KY, April 2003.

"Teaching Physics with Toys." Eastern Kentucky Physics Alliance, Pikeville, KY, November 2000.

"The Wonders of Air Pressure." Eastern Kentucky Physics Alliance, Pikeville, KY, March 2000.

"Hands-On Astronomy Activities." Eastern Kentucky Physics Alliance, Pikeville, KY, November 1999.

"Hands-On Demonstration Activities." Pike County Schools Regional Title I Conference, Pikeville, KY, December 1999 and November 2000.

"Hands-On Science Activities." Kentucky Educational Development Corporation (KEDC) summer workshop series. Hosted at Pikeville College, Pikeville, KY, July 1999.

"Physical and Environmental Science Activities." Johnson County Middle School, July 1998.

"Hands-On Science Activities." Lookout Elementary, April 1998.

"Electricity & Magnetism." Eastern Kentucky Physics Alliance, Pikeville, KY, November 1997.

"The Optical Telescope and Physics Demonstrations." Kentucky Association of Physics Teachers / Partnership for Reform Initiatives in Science and Mathematics, Eastern Kentucky Physics Alliance, November 1996 & April 1997.

"The Stomp Rocket and the Hot Air Balloon." Kentucky Association of Physics Teachers meeting, Bardstown, KY, March 1997.

"The Calculator-Based Laboratory." Eisenhower Math/Science Consortium at the Appalachian Education Laboratories (Eastern Kentucky hosted workshops), October - November, 1996.

"Projectile Motion." Kentucky Association of Physics Teachers / Partnership for Reform Initiatives in Science and Mathematics, Eastern Kentucky Physics Alliance, June 1996.

## **TEACHING/PRESENTATION AWARDS**

"William Wade & Helen Record Walker Teaching Excellence Award." University of Pikeville. 1st place recipient, 2010-2011

"Best Science Presentation." Appalachian College Association Technology Summit, Knoxville, TN, October 1998.

"Best Presentation." Technology in Teaching Conference, Berea, KY, November 1998.

"Highest Speaker Evaluations." Pike County Schools Regional Title I Conference, Pikeville, KY, December 1997.

## GRANT/FUNDING AWARDS

### GEAR UP

2012-2013: \$13,000 to support the Regional Science Olympiad program and Summer Science & Math Day Camp

2011-2012: \$13,000 to support the Regional Science Olympiad program and Summer Science & Math Day Camp

2010-2011: \$14,000 to support the NGCP Summer workshop, the Regional Science Olympiad program and Summer Science & Math Day Camp

2009-2010: \$13,000 to support the Regional Science Olympiad program and Summer Science & Math Day Camp

2008-2009: \$11,500 to support the Regional Science Olympiad program and Summer Science & Math Day Camp

2006-2007: \$10,000 to support the Summer Science & Math Day Camp

2005-2006: \$10,000 to support the Summer Science & Math Day Camp

2004-2005: \$10,000 to support the Summer Science & Math Day Camp

2003-2004: \$10,000 to support the Summer Science & Math Day Camp

2002-2003: \$13,000 to support outreach programs and the Summer Science & Math Day Camp

### EQT

2010-2011: \$20,000 to support the Summer Science & Math Day Camp

2009-2010: \$20,000 to support the Summer Science & Math Day Camp

### National Girls Collaborative Project (NGCP)

2010-2011: \$1,000 to support a hands-on summer workshop for girls

## REFERENCES

Dr. Thomas R. Hess  
Vice President for Academic Affairs & Dean of the College  
University of Pikeville  
147 Sycamore Street, Pikeville, KY 41501  
606-218-5475 (Office)  
ThomasHess@upike.edu

Current Dean of the College & my direct supervisor. Former Division Chair for Math & Science. Former chemistry colleague. 18 year association

Dr. Wallace Campbell (Retired)  
Vice President for Academic Affairs & Dean of the College  
University of Pikeville  
1308 Vineyard Court, Berea, KY 40403  
859-985-8850 (Home)  
859-248-5799 (Cell)  
wjcampbell@roadrunner.com

Former Dean of the College. 15 year association.

Dr. John Christopher (Retired)  
Professor of Physics  
University of Kentucky  
175 Woodlark Rd, Versailles, KY 40383  
859-873-8790 (Home)  
jchris.john@gmail.com

Worked on a variety of science education projects with Dr. Christopher over a 20 year association.

Ms. Teresa Lockhart  
Pike County Public Schools, Instructional Supervisor (Retired)  
University of Pikeville, Director P-20 Initiatives and Academic Outreach  
526 Northmonte Woods, Pikeville, KY 41501  
606-454-1494 (Home)  
teresalockhart@upike.edu

Worked on a variety of education projects for the county school system for which Ms. Lockhart was employed. She currently serves as the Dual Credit coordinator for the University where I continue to work close with her regarding the math and science programs/personnel under that umbrella. 15 year association.