

3558 Ga Hwy 212 E  
Monticello, Georgia 31064

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**EDUCATION**

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- 2010            **Ph.D. Zoology/Biomechanics, Oregon State University**  
Dissertation: *The Role of the Vertebral Column during Jumping in Quadrupedal Mammals*  
Advisors: *John A. Ruben and Thomas J. Roberts*
- 2000            **M.S. Biomechanics/Bioengineering, Oregon State University**  
Thesis: *Application of Human Motor Control Principles to a Collective Robotic Arm*  
Advisors: *Gene Korienek*
- 1995            **B.S. Zoology, Michigan State University**  
Emphasis: *Animal Behavior, Ecology and Evolutionary Biology*  
Advisor: *Kay E. Holekamp*

**PROFESSIONAL EXPERIENCE**

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- 2016-present    **Jasper County High School, Career and Technical Education Department, Monticello, Georgia**  
High School Engineering & Technology Teacher & Gifted Education Coordinator (public school)
- 2006-2016      **Jasper County High School, Science Department, Monticello, Georgia**  
High School Science Teacher & Gifted Education Coordinator (public school)
- 2012-present    **Green Power Electric Membership Corporation, Sun Power for Schools Program, Tucker, Georgia**  
Science Education Consultant - Curriculum Design & Teacher Training
- 2012-2015      **Georgia Institute of Technology, Direct-to-Discovery Program, Atlanta, Georgia**  
Science Teacher Coordinator – Teleconferencing Education & Research Opportunities for Students
- 2010-2015      **Sonoma State University, NASA Education & Public Outreach Office, Rohnert Park, California**  
NASA Astrophysics Educator Ambassador
- Summer 2008    **U.S. Museum of Natural History, Smithsonian Institution, Departments of Vertebrate Biology & Paleontology, Washington, DC**  
Visiting Research Scientist  
Collected on skeletons of extinct and extant carnivores in relation to role of the vertebral column during jumping locomotion
- 2005-2006      **Stratford Academy, Science & Mathematics Departments, Macon, Georgia**  
High School Instructor (independent school)
- 2001-2004      **Oregon State University, Animal Locomotion Lab, Dept. of Zoology, Corvallis, Oregon**  
Graduate Research Fellow  
Conducted research (with Thomas J. Roberts, Ph.D.) on the roles of the vertebral column and hindlimbs in the storage of elastic energy and power contribution during jumping and fast running locomotion in quadrupedal and bipedal mammals.
- Spring 2002     **Michigan State University, Ecology and Evolutionary Biology Program, East Lansing, MI**  
Biomechanics Consultant to Kay E. Holekamp, Director of Spotted Hyena Project (Kenya)  
Designed, fabricated, assembled, and tested a force transducing device to measure the bite forces of juvenile and adult spotted hyenas (*Crocuta crocuta*) in the field in the Masai Mara National Reserve, Kenya.
- 2000 - 2001     **3 Sigma Robotics, Corvallis, Oregon**  
Research Scientist  
Founding partner of an innovative R&D startup company designing next-generation intelligent devices and robotic systems.
- 1998 - 2000     **Oregon State University, Biological Control Lab, Corvallis, Oregon**  
Assistant Director of Research  
Investigated the principles of emergent control structures in human motor control and operationalized them into control algorithms for biologically inspired robots with applications to space and prostheses.

- 1999 - 2000 **Oregon State University**, Biomechanics Lab, Dept. of Health & Human Sciences, *Corvallis, OR*  
Graduate Research Assistant  
 Investigated the effects of weight unloading using lower body positive pressure for rehabilitation of patients recovering from strokes or lower body injuries, and as training simulators for astronauts.
- Summers 1998 & 99 **NASA Ames Research Center, Life Sciences Division, Moffett Field, California**  
Research Biologist (GS-7), Altered Gravity Simulator Laboratory  
 Part of research team (PI: Robert B. Welch, Ph.D.) that designed and built a preflight adaptation trainer for astronauts to simulate both the visual and the bodily sensations of walking in the 0.38-g conditions of Mars.
- Summer 1998 **NASA Astrobiology Institute, NASA Ames Research Center, Moffett Field, California**  
Research Associate & Summer Academy Fellow  
 Member of summer institute of higher learning whose goals was to guide future leaders of the U.S. Space Program through interaction with scientists, engineers, leaders, and facilities in government, academia, and private sectors
- Spring 1998 **Michigan State University**, Department of Large Animal Medicine, *East Lansing, MI*  
Research Assistant  
 Conducted research (with PI: Natalie L. Trottier, Ph.D.) regarding amino acid and protein metabolism in lactating sows.
- 1997-1998 **Michigan State University**, Dept. of Botany and Plant Pathology, *East Lansing, Michigan*  
Assistant Curator & Interpretative Guide, Teaching and Research Greenhouses
- 1997-1998 **Michigan State University**, Veterinary Teaching Hospital, *East Lansing, Michigan*;  
Veterinary Technician
- 1995 - 1996 **Michigan State University**, Department of Zoology, *East Lansing, Michigan*  
Wildlife Biologist, NSF Spotted Hyena Project, Masai Mara National Reserve, Kenya  
 Managed study of free-living hyenas (*Crocuta crocuta*) for K.E. Holekamp, Ph.D. in her 9-month absence. Observed, recorded, & analyzed data for studies of rank inheritance, natal dispersal, behavioral endocrinology, and immunocompetence. Performed darting; tagging; handling; measuring; necropsy; radio telemetry by vehicle, foot & hot-air balloon; prey species censusing; blood, DNA & fecal sampling. Taught conservation to local/int'l school groups. Maintained vehicles, field camp, lab equipment, research clearance, & firearm permits. Cooperated with govt & wildlife officials; budgeted grant purchases.
- Fall 1994 **Michigan State University**, Department of Botany, *East Lansing, Michigan*  
Research Project Manager, Baker Woodlot Tree Diversity Survey  
 Designed and conducted a study of deciduous tree diversity sampling in a 20-acre campus woodlot. Performed statistical analysis of present data with 20 years' past data. Supervised by Dr. Peter Murphy (Dept of Botany).
- 1993 - 1994 **Michigan State University**, Communication Technology Lab, *East Lansing, Michigan*  
Research Assistant & Field Videographer, Virgin Islands Multimedia Education Project  
 Member of video production team on location for interactive CD-ROM about natural history of U.S. Virgin Islands, based on Michigan State Univ, "Natural Science in the Virgin Islands", supervised by Dr. L.C. Besaw (Dept of Entomology).
- Summer 1993 **School for Field Studies, Southern Colorado Rockies Field Site, Pagosa Springs, CO**  
Research Assistant, Gunnison's Prairie Dog Research Project  
 Researched (with D.M. Bruns-Stockrahm, Ph.D.) the population ecology and communication system of free-living Gunnison's prairie dogs (*Cynomys gunnisoni*) and established protocol for studying warning bark behavior.
- Spring 1993 **U.S. Department of Agriculture, Fruit & Tree Nut Research Lab, Byron, Georgia**  
Research Associate, Pecan Tree Biological Pest Control Study  
 Conducted laboratory growth-chamber studies (with Drs. B.W. Woods and W.L. Tedders) on long-term project manipulating photoperiod effects on sexual cycles of pecan tree aphids as method of biological pest control.
- Summer 1992 **Georgia Department of Natural Resources & Valdosta State Univ., Valdosta, Georgia**  
Research Assistant, Endangered Gopher Tortoise Project  
 Conducted population surveys and burrow census of endangered gopher tortoise (*Gopherus polyphemus*) in south Georgia.

## TEACHING EXPERIENCE

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### College & Teacher Education:

- 2012-present **Teacher Training & Education Consultant**, Georgia Sun Power for Schools Program, *Tucker, GA*  
Workshops: Alternative Energy Education in the Classroom Students: K-12 science/math teachers
- 2010-present **NASA Astrophysics Educator Ambassador**, Sonoma State University, *Rohnert Park, California*  
Workshops: NASA mission-funded activities for teacher use in classrooms Students: K-12 science/math teachers
- 2003-05 **Graduate Teaching Assistant**, Dept of Zoology, Oregon State University, *Corvallis, OR*  
 "Human Anatomy & Physiology Lab" (3-term series) Students: Undergraduate (upper-level)

- 1998-99 **Graduate Teaching Assistant**, College of Health & Human Sciences, Oregon St. Univ.  
 “Laboratory in Health and Fitness” Students: Undergraduate (all levels)
- 1996 **Teaching Assistant**, Dept of Biological Science, Michigan State Univ., *East Lansing, MI*  
 “Introductory Biological Science (Lecture)” Students: Undergraduate (freshmen)
- 1996 **Teaching Assistant**, Dept of Chemistry, Michigan State University, *East Lansing, MI*  
 “Organic Chemistry Laboratory” Students: Undergraduate
- 1995 **Teaching Assistant**, Department of Zoology, Michigan State University, *East Lansing, MI*  
 “Behavioral Ecology (Lecture)” Students: Undergraduate (upper-level)
- 1994 **Teaching Assistant**, Dept of Natural Science & Office of Overseas Study, Michigan St. Univ  
 “Field Course: Natural Science in the Caribbean” Students: Undergraduate (upper-level)

*K-12 Education:*

- 2016-present **Teacher, Engineering and Technology & Gifted**, Jasper County High School, *Monticello, Georgia*  
Course: “Energy & Power Foundations” Dates: 2016-17 Students: 9-10<sup>th</sup> Graders  
Course: “Engineering Concepts” Dates: 2016-17 Students: 10-11<sup>th</sup> Graders  
Course: “Engineering Applications” Dates: 2016-17 Students: 11-12<sup>th</sup> Graders  
Course: “STEM Enrichment (Gifted)” Dates: 2010-15 Students: 9-12 Graders  
Extracurricular Activities (Advisor/Coach): Technology Student Association (2016-),  
 Beta Club (2016-), Academic Quiz Team (2016-)
- 2006-2016 **Teacher, Science & Gifted**, Jasper County High School, *Monticello, Georgia*  
Course: “AP Environmental Science” Dates: 2011-15 Students: 11-12<sup>th</sup> Graders  
Course: “AP Biology” Dates: 2008-09, 2010-11 Students: 11-12<sup>th</sup> Graders  
Course: “Gifted Internship/Mentorship” Dates: 2014-15 Students: 11-12<sup>th</sup> Graders  
Course: “Chemistry” Dates: 2006-15 Students: 11<sup>th</sup> Graders  
Course: “Honors Chemistry” Dates: 2014-15 Students: 10-11<sup>th</sup> Graders  
Course: “Environmental Science” Dates: 2006-11, 2015-16 Students: 11-12<sup>th</sup> Graders  
Course: “Biology” Dates: 2006-07, 13-14,15-16 Students: 10<sup>th</sup> Graders  
Course: “Honors Biology” Dates: 2011-12 Students: 9-10<sup>th</sup> Graders  
Course: “Honors Physics” Dates: 2012-13 Students: 9-12<sup>th</sup> Graders  
Course: “Physical Science” Dates: 2007-08, 2015-16 Students: 9<sup>th</sup> Graders  
Course: “STEM Enrichment (Gifted)” Dates: 2010-15 Students: 9-12 Graders  
Extracurricular Activities (Advisor/Coach): Science Club (2006-16), Science Olympiad (2006-13), Beta Club (2015-16)  
 Georgia Envirothon (2009-), Speech & Debate Team (2008-), Academic Quiz Team (2007-16),  
 Mock Trial Team (2008-10), Math Team (2010-11), Physics Team (2013-16), School Recycling Director (2007-15)
- Summers 2013-16 **Program Director & Instructor**, Explorers Enrichment Camp, *Monticello, Georgia*  
Class: “Natural History (ecology, wildlife, soils, aquatics, forestry)” Students: 5<sup>th</sup>-7<sup>th</sup> Graders
- 2005-2006 **Teacher, Science**, Stratford Academy, *Macon, Georgia*  
Course: “Anatomy and Physiology” Students: 11<sup>th</sup>12<sup>th</sup> Graders  
Course: “Biology” Students: 9<sup>th</sup> Graders  
Course: “Algebra” Students: 9<sup>th</sup> Graders  
Extracurricular Activities (Advisor): Ultimate Frisbee, Ecology Club, Math Team, Film Club
- 2003-2004 **Instructor**, Saturday Academy, Oregon State Univ., *Corvallis, Oregon*  
Workshop: “Techniques in Animal Locomotion” Students: 9-12<sup>th</sup> Graders
- Summer 2003 **Instructor**, Apprenticeships in Science & Engineering, Oregon St Univ., *Corvallis, Oregon*  
Workshop: “Techniques in Animal Locomotion” Students: 9-12<sup>th</sup> Graders
- Summer 2002 **Instructor**, Adventurers in Learning Program, Oregon State Univ., *Corvallis, Oregon*  
Class: “How Animals Move (& How Robots Might)” Students: 7<sup>th</sup> & 8<sup>th</sup> Graders
- Summer 2001 **Co-Instructor**, Adventurers in Learning Program, Oregon State Univ., *Corvallis, Oregon*  
Class: “Explorations in Robotics.” Students: 7<sup>th</sup> & 8<sup>th</sup> Graders
- Fall 1999 **Co-Instructor**, Saturday Academy, Oregon State University, *Corvallis, OR*  
Class: “Gravity and the Mission to Mars.” Students: 7<sup>th</sup> & 8<sup>th</sup> Graders
- Summer 1997 **Program Counselor**, Philmont Scout Ranch, Boy Scouts of America, *Cimarron, NM*  
Classes: “Ecology” and “Astronomy.” Students: 8<sup>th</sup> to 12<sup>th</sup> Graders
- 1996 **Visiting Naturalist**, Woldumar Nature Center, Dept. of Parks and Recreation, *Lansing, MI*  
Classes: “Ecology” and “Wildlife Interpretation.” Students: Children and Adults
- April 1996 **Student/Group Leader**, National Outdoor Leadership School, Mt. Kenya Nat’l Park, *Kenya*  
Subject: “Wilderness First Aid & Mountaineering.” Students: High School & College
- 1995-1996 **Interpretative Guide**, NSF Spotted Hyena Project, Masai Mara National Reserve, *Kenya*  
Subject: “Conservation & Hyena Biology” Students: International school groups
- 1994-1996 **Volunteer Demonstrator**, Dept of Chemistry, Michigan State University, *East Lansing, MI*  
Subject: “Experiments in Chemistry” Students: Public audiences

## PUBLICATIONS

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- Lundquist, K., Herndon, C, **Harty, T.H.**, and J.C. Gumbart. (2016). Accelerating the use of molecular modeling in the high school classroom with VMD lite. Invited paper for *Biochemistry and Molecular Biology Education* Innovative Lab Series of Molecular Dynamics, January/February 2016.
- Harty, T.H.**, Potts, D.L, Potts, D.F., and J.Y. El-Jourbagy. (2005). Handling transboundary, indirect, and cumulative effects in SEA. In: *Implementing Strategic Environmental Assessment*. Eds. M. Schmidt, E. Joao, and E. Albrecht. Berlin: Springer-Verlag.
- El-Jourbagy, J.Y. and **Harty, T.H.** (2005). Improved decision-making through SEA: Expectations and Results in the United States. In: *Implementing Strategic Environmental Assessment*. Eds. M. Schmidt, E. Joao, and E. Albrecht. Berlin: Springer-Verlag.
- Harty, T.H.**, Korienek, G.G., Leddon, C., and A.B. Bautista. (2001). Biologically-Inspired Collective Control for an Autonomous Robotic Arm. *Autonomous Robots* 11(3):299-304.
- Korienek, G.G., **Harty, T.H.**, and Bautista, A.B. (2001). Sensory Interactions with the Environment: Insights and Concepts from Ecological Psychology. Biological Control Lab Research Brief (Oregon State University). Submitted to: *Artificial Life (Special Issue on "Evolution of Sensors in Nature, Hardware, and Simulation")*.
- Harty, T.H.** (2000). *The Application of Human Motor Control Principles to a Collective Robotic Arm*. M.S. Thesis. Oregon State University, Corvallis, Oregon.
- Korienek, G. G., Bautista, A. B., **Harty, T.H.**, and C. Leddon. (2000). The use of biologically-inspired rules to control a collective robotic arm. *Distributed Autonomous Robotic Systems 4*. Berlin: Springer-Verlag.
- Harty, T.H.** (2000). A Code of Medical Ethics for the New Millennium. *Reflections: Newsletter of the Program for Ethics, Science, and the Environment* Vol 7(1). Oregon State University.
- Aho, M.D., Bruns-Stockrahm, D.M., Adolf, S.L., Steffan, B.L., **Harty, T.H.**, and T.M. Workman. (1994). Warning barks and alarm behaviors of Gunnison's prairie dogs (*Cynomys gunnisoni*) in Colorado. *Proceedings of the North Dakota Acad. of Sci.* 48:70.

## AWARDS AND FELLOWSHIPS

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2015	STEM Georgia Educator Laureate Award, Georgia Department of Education, Atlanta, GA
2013	ING Unsung Hero Teaching Award, ING US Financial Services, New York, NY
2011	College Board AP Environmental Science Fellows Scholarship, College Board, <i>New York, NY</i>
2009	STAR Teacher (System Level), Professional Association of Georgia Educators
2007	College Board AP Biology Fellows Scholarship, College Board, <i>New York, NY</i> .
1999-2003	National Science Foundation Graduate Research Fellowship.
1999	National Defense Science and Engineering Graduate Fellowship (declined for NSF GRF)
1994	All-University Academic Award, Department of Zoology, Michigan St Univ, <i>East Lansing, MI</i>
1993-1995	Professorial Assistantship Award for Undergraduate Research, Michigan State Univ, <i>East Lansing, MI</i> .
1993-1997	Alumni Distinguished Scholarship, Michigan State University, <i>East Lansing, MI</i> .
1993	United States Presidential Scholar, U.S. Department of Education, <i>Washington, DC</i>
1993	National Science Scholar, U.S. Department of Education, <i>Washington, DC</i>

## GRANTS FUNDED

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2016-17	"Bringing student creative design to life with a school MakerSpace" (\$7750), <i>Community Foundation of Central Georgia</i> , Macon, GA
2016-17	"Bringing student creative design to life with a school MakerSpace" (\$5000), <i>Best Buy Foundation</i> , Princeton, NJ
2016-17	Georgia Audio-Video, Film & Technology Equipment Grant (~\$15,000), <i>ESE Networks</i> , Ray City, GA
2016-17	"Implementing a new Energy and Power career pathway for high school students" (\$1500), <i>Central Georgia EMC Operation Round-Up Grant</i> , Jackson, GA
2016-17	"Building a Generation of Makers Who Understand Materials" (\$500), <i>ASM Materials Education Foundation K-12 Teacher Grants</i> , Materials Park, OH
2015-16	"Energizing the middle and high school science curriculum" (\$50,836), <i>University of Georgia Improving Teacher Quality Grant</i> for a 50-hour teacher workshop (with Sharmistha Basu-dutt, Dept. of Chemistry, Univ. of West Georgia)
2016	"Exploring the STEM Careers in Energy and Aerospace," (\$700), <i>Target Field Trip Grant</i> (\$700), for high school students to visit Southface Energy Institute and Lockheed Martin Aerospace.

- 2015 “Reaching for the Sky: Exploring Aviation History and Careers,” (\$700), *Target Field Trip Grant* (\$700), for high school students to visit Museum of Aviation & NASA Education Center at Robins Air Force Base, Warner Robins, GA & Middle GA Regional Airport (incl. HAECO & Boeing)
- 2013-14 “Imagine the Possibilities: Putting Polymers into Perspective” (\$1498), *ACS-Hach High School Chemistry Grant, American Chemical Society*
- 2013 “Electronic Probeware for Environmental Education Fieldwork” (\$1500), *Central Georgia EMC Operation Round-Up Grant*, Jackson, GA
- 2013 "Seeing the Invisible: Student Discovery of Hidden Worlds of Motion and Light" *ING Unsung Heroes Award* (\$2000), Scholarship Management Services, St. Peter, MN
- 2013 Chemical & Physical Changes Equipment Grant (\$500) for Chemistry high school outreach program to 5<sup>th</sup> graders, *Jasper County Board of Education*, Monticello, GA
- 2012-13 “The Chemistry of Alternative Energy” (\$1498), *ACS-Hach High School Chemistry Grant, American Chemical Society*
- 2012 Alternative Energy Education Equipment Grant (\$500) for AP Environmental Science high school outreach program to 3<sup>rd</sup> graders, *Jasper County Board of Education*, Monticello, GA
- 2012 Target Field Trip Grant (\$700) for high school participation in U.S. Forest Service Landscape Restoration Project, Dyar Pasture Recreation Area, Oconee National Forest, Madison, GA
- 2011-12 “Gardens for Teaching and Learning” (\$4310), *Toolbox for Education Grant, Lowe's Charitable and Educational Foundation*
- 2011 “Installation of Demonstration 1.2kW Photovoltaic Panel” (\$15,000) at Jasper County High School, *Sun Power for Schools Program (Georgia Green Power EMC)*, Atlanta, GA
- 2011 “Planting of Trees for Shade and Energy Conservation” (\$2000) at Jasper County High School, *Georgia Power*, Atlanta, GA
- 2011 *Target Field Trip Grant* (\$700) for high school students to Georgia Power Plant Scherer, Juliette, GA  
Lloyd Shoals Hydroelectric Dam, Jackson, GA
- 2009-11 “Energy Related Laboratory Equipment” grants (~\$200,000 surplus equipment), *U.S. Dept of Energy*
- 2009 “Recycling Bins for School & Community” (\$30,000 with City of Monticello), *Georgia Department of Community Affairs & Alcoa Corporation*, Pittsburgh, PA
- 2007 High Technology Classroom Grant, *Jasper County High School*, Monticello, GA
- 2006-08 Distance Diagnostics through Digital Imaging Program (web-based scientist-student interaction), *University of Georgia Agricultural Extension*, Athens, GA
- 1995 Honors College Research Fund Travel Grant: “*Discovering Our Environment: A Case Study in the Virgin Islands (CD-ROM)*”, Michigan State University, East Lansing, MI. \$1,000.
- 1994 “Research Experience for Undergraduates” Supplement Grant to NSF Grant IBN9309895  
“Rank and Reproduction in free-living spotted hyenas.” (1993), PI: K.E. Holekamp.  
*National Science Foundation, Washington, DC.* \$4,000.

## PRESENTATIONS & WORKSHOPS

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- Harty, T.H.** (2016). *Sun Power for Schools Solar Energy Modules: Exploring the fundamentals of waves, energy, circuits, and solar cells.*: Georgia Science Teachers’ Assoc Conf. Stone Mountain, GA. 5 Feb 2016.
- Harty, T.H.** and Seehorn, J. (2016). *Georgia Envirothon: an Outdoor Natural Resource Middle and High School Competition.* Georgia Science Teachers’ Association Annual Conference. Stone Mountain, GA. 5 February 2016.
- Harty, T.H.** and Seehorn, J. (2015). *Georgia Envirothon: an Outdoor Natural Resource Competition for Middle and High School.* Georgia STEM Forum. Athens, GA. 27 October 2015.
- Harty, T.H.** (2015). *Green Power EMC Sun Power for Schools Lesson Modules: Physical Sciences (6-12).* Georgia STEM Forum. Athens, GA. 27 October 2015.
- Harty, T.H.** (2015). *NASA Powers of Ten: Scaling the Universe.* NASA-sponsored Workshop at: Georgia STEM Forum. Athens, GA. 26 October 2015.
- Harty, T.H.** (2015). *Exploring the Electromagnetic Spectrum with NASA.* Invited workshop at: Georgia NASA STEM Day. NASA Regional Educator Resource Center, Museum of Aviation, Robins Air Force Base, 12 September 2015.
- Harty, T.H.** and Basu-dutt, S. (2015). *Building a solar cell in the high school classroom.* Teacher workshop funded by the Improving Teacher Quality State Grants Program, Elementary & Secondary Education Act, Title II, Part A. Held September 19, 2015 at Jasper County High School, Monticello, GA.
- Harty, T.H.** and Basu-dutt, S. (2015). *Energizing the middle and high school curriculum.* Teacher workshop funded by the Improving Teacher Quality State Grants Program, Elementary & Secondary Education Act, Title II, Part A. Held June 29-July 2, 2015 at Jasper County High School, Monticello, GA.

- Harty, T.H.** (2015). *Alternative Energy in the Classroom with Green Power EMC*. Invited workshop at: Lafayette Christian Schools, LaGrange, GA. 28 May 2015.
- Harty, T.H.** (2015). *NASA Powers of Ten: Scaling the Universe*. Workshop at: Georgia Association of Gifted Children Annual Conference. Athens, GA. 10 March 2015.
- Harty, T.H.** (2015). *Mechanisms of Solar Energy: Exploring the fundamentals of waves, energy, circuits, and solar cells*. Workshop at: Georgia Association of Gifted Children Annual Conference. Athens, GA. 10 March 2015.
- Harty, T.H.** (2015). *NASA Powers of Ten: Scaling the Universe*. Workshop at: Georgia Science Teachers' Association Annual Conference. Macon, GA. 6 February 2015.
- Harty, T.H.** and Basu-Dutt, S. (2015). *Mechanisms of Solar Energy: Exploring the fundamentals of waves, energy, circuits, and solar cells*. Workshop at: Georgia Science Teachers' Assoc Conference. Macon, GA. 5 February 2015.
- Harty, T.H.** and Seehorn, J. (2015). *Georgia Envirothon: an outdoor natural resource high school competition*. Workshop at: Georgia Science Teachers' Association Annual Conference. Macon, GA. 6 February 2015.
- Harty, T.H.** (2014). *NASA Powers of 10: Scaling the Universe*. Workshop at: National Science Teachers' Association Area Conference on Science Education. Orlando, FL. 7 November 2014.
- Harty, T.H.** and Seehorn, J. (2014). *Georgia Envirothon: an outdoor natural resource high school competition*. STEM Competitions Strand Workshop at: 1<sup>st</sup> Annual Georgia STEM Forum. Athens, GA. 20 October 2014.
- Harty, T.H.** (2014). *How big is big? How small is small?* NASA-sponsored Workshop at: 1<sup>st</sup> Annual Georgia STEM Forum. Athens, GA. 20 October 2014.
- Harty, T.H.** (2014). *Alternative Energy and Electricity, Magnetism Demonstrations*. Invited workshop to middle & high school science/math teachers, Sun Power for Schools Workshop, Savannah, GA. 17-20 June 2014.
- Harty, T.H.** (2014). *Mechanisms of Solar Energy*. Invited workshop to middle & high school science/math teachers, Sun Power for Schools Workshop, Savannah, GA. 17-20 June 2014.
- Harty, T.H.** (2014). *NASA Powers of Ten: Scaling the Universe*. Workshop at: 76<sup>th</sup> Annual International Technology and Engineering Educators' Association Conference. Orlando, FL. 29 March 2014.
- Harty, T.H.** (2014). *Scaling the Universe with NASA*. Workshop at: 34<sup>th</sup> Annual Georgia Association for Gifted Children Convention. Athens, GA. 10 March 2014.
- Harty, T.H.** (2014). *Hands-On Newton's Laws of Motion with NASA*. Workshop at: Georgia Science Teachers' Association Annual Conference. Macon, GA. 7 February 2014.
- Harty, T.H.** (2013). *Scaling and Seeing our Invisible Universe with NASA*. Workshop at: National Association of Biology Teachers' Annual Conference. Atlanta, GA. 23 November 2013.
- Harty, T.H.** (2013). *Chemical and Physical Changes Demonstrations for 5<sup>th</sup> Graders*. Invited workshop at: Jasper County Elementary School. Monticello, GA. 22 October 2013.
- Harty, T.H.** (2013). *Supporting Nutrition through Environmental Science Projects*. Invited Presentation at: Georgia School Nutrition Association 10<sup>th</sup> District Fall Meeting. Monticello, GA. 5 October 2013.
- Harty, T.H.** (2013). *Powers of Ten: Scaling the Universe with NASA*. Workshop at: South Carolina Science Council Regional Conference. Aiken, GA. 16 March 2013.
- Harty, T.H.** (2013). *Hands-On Newton's Laws of Motion with NASA*. Workshop at: Alabama Science Teachers' Association Annual Meeting. Huntsville, GA. 14 February 2013.
- Harty, T.H.** (2012). *Sun Power for Schools Teacher Training*. Invited workshop at: Jasper County High School. Monticello, GA. Coordinated by Green Power Electric Membership Cooperative, Atlanta, GA. 7 November 2012.
- Harty, T.H.** (2012). *Solving the Mysteries in the Heart of a Supernova Explosion*. Workshop at: National Science Teachers' Association Area Conference on Science Education. Atlanta, GA. 3 November 2012.
- Harty, T.H.** (2012). *Powers of 10: Scaling the Universe with NASA*. Workshop at: National Science Teachers' Association Area Conference on Science Education. Atlanta, GA. 1 November 2012.
- Harty, T.H.** (2012). *Seeing the Invisible Universe with NASA*. Workshop at: Florida Association of Science Teachers Annual Meeting. St. Petersburg, FL. 27 October 2012.
- Harty, T.H.** (2012). *Powers of Ten: Scaling the Universe with NASA*. Workshop at: Florida Association of Science Teachers Annual Meeting. St. Petersburg, FL. 26 October 2012.
- Harty, T.H.** (2012). *NASA in Your Classroom: High-Energy Astrophysics Activities*. Workshop at: Science/Mathematics Alliance for Regional Teachers summer training, Georgia College & St Univ, Milledgeville, GA. 30 August 2012.
- Harty, T.H.** (2012). *Alternative Energy Demonstrations for 3rd Graders*. Invited workshop at: Jasper County Elementary School. Monticello, GA. 15 May 2012.
- Harty, T.H.** (2012). *Gamma Ray Bursts: The Cosmic Zoo and Seeing the Universe*. Workshop at: Science/Mathematics Alliance for Regional Teachers training, Georgia College & St Univ, Milledgeville, GA. 14 April 2012.
- Harty, T.H.** (2012). *Seeing the Invisible Universe with NASA*. Workshop at: Georgia Science Teachers' Association Annual Conference. Atlanta, GA. 17 February 2012.

- Harty, T.H.** (2012). *Powers of Ten: Scaling the Universe with NASA*. Workshop at: Georgia Science Teachers' Association Annual Conference. Atlanta, GA. 16 February 2012.
- Harty, T.H.** (2011). *Seeing the Invisible Universe*. Workshop at: Science/Mathematics Alliance for Regional Teachers Institute, Georgia College & St Univ, Milledgeville, GA. 6 July 2011.
- Harty, T.H.** (2011). *Powers of Ten: Scaling the Universe*. Workshop at: Science/Mathematics Alliance for Regional Teachers Institute, Georgia College & St Univ, Milledgeville, GA. 5 July 2011.
- Harty, T.H.** (2011). *Gamma Ray Bursts - The Cosmic Zoo*. Workshop at: Georgians Experience Astronomy Research in Schools (GEARS) - Spring Teachers' Workshop. Marietta, GA. 30 April 2011.
- Harty, T.H.** (2011). *NASA Powers of Ten: Scaling the Universe*. Workshop at: Georgia Science Teachers' Association Annual Conference. Atlanta, GA. 17 February 2011.
- Harty, T.H.** (2011). *You are Here: Sizing and Seeing our Invisible Universe*. Workshop at: Space Exploration Educators' Conference. NASA Johnson Space Center, Houston, TX. 3 February 2011.
- Harty, T.H.** (2010). *Black Holes - The Other Side of Infinity*. Workshop at: Georgians Experience Astronomy Research in Schools (GEARS) - Fall Teachers' Workshop. Kennesaw State Univ, Kennesaw, GA. 6 November 2010.
- Harty, T.H.** (2005). *The Contribution of the Back Muscles to Vertical Jumping in the Domestic Cat*. Seminar at: 63rd Oregon Academy of Science Annual Meeting. Corvallis, Oregon. 26 Feb 2005.
- Harty, T.H.** (2003). *Experiences of Strategic Environmental Assessment: Case Studies in the United States*. Invited Lecture at: Strategic Environmental Assessment Workshop, Nov 23-26, 2003. Brandenburg Technical University, Cottbus, Germany.
- Harty, T.H.** (2002). *Mighty Mice: Amazing Jumping Power from the Pacific Jumping Mouse*. Seminar at: OSU Graduate Student Conference, April 12, 2002. Oregon State Univ., Corvallis. Received 2nd Place Award, Oral Presentation.
- Harty, T.H.** (2002). *Elastic Mechanisms During Jumps from the Pacific Jumping Mouse*. Seminar at: 16<sup>th</sup> Annual Biology Graduate Student Symp., Feb 22-23, 2002. Hatfield Marine Science Center, Newport, OR.
- Harty, T.H.**, and Roberts, T.J. (2002). *Mighty Mice: Amazing Jumping Power from the Pacific Jumping Mouse*. Poster at: Society of Integrative and Comparative Biology Conference, January 2-6, 2002. Anaheim, CA.
- Korienek, G. G., **Harty, T.H.**, and C. Leddon. (Nov 2000). *Emergent Behavior of a Robotic Limb: An Example of a Biologically Inspired Collective Control Architecture*. Poster at: NASA Workshop on Biomimetic Robotics, August 14 - 16, 2000. NASA Jet Propulsion Lab, Pasadena, CA.
- Korienek, G.G., **Harty, T.H.**, Leddon, C, and A.B. Bautista. (Feb 2000). *Emergent Behavior of a Robotic Limb: An Example of a Biologically Inspired Collective Control Architecture*. Poster at: Space & Robotics 2000, Albuquerque, NM.
- Welch, R.B., Korienek, G.G., Schwandt, D., Leddon, C., **Harty, T.H.**, and C. Vanyo. (Feb 2000). *Adapting to Simulated Altered Gravity*. Poster at: Space & Robotics 2000, Albuquerque, NM.
- Korienek, G.G., Leddon, C, & **T.H. Harty**. (Feb 2000). *"Mars Pants": A Lower Body Pressure Differential Approach to Locomoting in Simulated Altered Gravity*. Poster at: Space & Robotics 2000, Albuquerque.
- Harty, T.H.** (April 1999). *The Application of a Biologically Inspired Collective Control Architecture to a Robotic Limb*. Seminar at: Graduate Student Conference 1999, Oregon State Univ., Corvallis, OR.
- Welch, R.B., Korienek, G. G., Aratow, M., Schwandt, D., **Harty, T.H.**, Bhatia, N.L., Whalen, R., and Boda, W. (July 1998). *Adapting to Simulated Altered Gravity*. Poster at: Life Sciences Division Research Division, NASA Ames Research Center, Moffett Field, CA.

## ENDORSEMENTS AND SPECIAL TRAININGS

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Oct 25, 2015	Georgia STEM Leadership Institute, Georgia Dept of Education, Athens, GA
Oct 3, 2015	MakEdu: Making in Education Conference, Maker Faire Atlanta, Decatur, GA
Oct 11, 2013	AP Environmental Science Regional Workshop, Georgia Dept of Education, Conyers, GA
July 2012	NASA Astrophysics Educator Ambassador training, NASA Education & Public Outreach Office, Sonoma State University, Rohnert Park, CA
June 2012	"Plant Families of Georgia" and "Summer Tree Identification," State Botanical Garden of Georgia, University of Georgia, Athens, GA
Sep 12-13, 2011	Forensic Science and Molecular Biology Workshop, Georgia State University, Atlanta, GA
Aug 27, 2011	LEGO Robotics Symposium: Teaching STEM with Robotics, Georgia Tech, Atlanta, GA
June 20-24, 2011	"AP Environmental Science Summer Institute," College Board, Dept of Biology, Univ of Georgia
2009-2011	Gifted Education Endorsement, Georgia Department of Education
June 7-16, 2010	"Georgians Experience Astronomy Research in Schools (GEARS)", High School Physical Science Professional Development Workshop, Georgia Southern Univ, Statesboro

Jan 20, 2010	“Schooling by Design” by Grant Wiggins, STAR Teacher Leadership Institute, Professional Association of Georgia Educators and University of Georgia, Athens
Oct 31, 2009	“Farm to School Workshop” by Georgia Organics, Univ of Ga Botanical Gardens, Athens
Sept 21, 2009	“Schooling by Design” by Jay McTighe, STAR Teacher Leadership Institute, Professional Association of Georgia Educators and University of Georgia, Athens
June 23, 2009	“Green Chemistry: An Interactive Lab Workshop”, West Ga RESA, Grantville
Oct 3, 2008	“AP Biology Content Workshop,” College Board, Rockdale Co High School, Conyers, GA
Sept 9, 2008	“Hazardous Waste Training Seminar,” Milledgeville
June 24-29, 2007	“AP Biology Summer Institute,” College Board, Department of Biology, Univ of Georgia
June 13-15, 2007	“Secondary Level Differentiated Instruction Workshop”, Ga Coll St Univ, Milledgeville
August 24, 2006	“Distance Diagnostics through Digital Imaging,” Jasper County/Univ of Ga Extension Service
Nov 7, 2005	“AP Biology One-Day Workshop,” Greater Atlanta Christian Schools (Atlanta, GA)

## **PROFESSIONAL & SERVICE ACTIVITIES**

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2015-16	Host Teacher for Master of Arts in Teacher (MAT) Science Teacher Candidate, Georgia College and State University (18-week practicum)
2015-present	Gifted Education Coordinator, Jasper County High School, Monticello, GA
2015	Judge, Northeast Georgia Regional 9-12 Science & Engineering Fair, Athens Technical College, GA
2014	NASA Education Reviewer for <i>NuSTAR Educator’s Guide</i> , Sonoma State University, CA
2013-present	Co-chair, Advanced Placement/Honors Committee, Jasper County High School, Monticello, GA
2013-present	Co-chair, Gifted Education Committee, Jasper County High School, Monticello, GA
2013-14	Gifted Education Advisory Board, Jasper County Schools, Monticello GA
2013-14	Plagiarism/Turnitin.com Task Force, Jasper County High School, Monticello, GA
2012-present	Vice-President (2015-), Board Member (2012-), Georgia Envirothon Council, Athens, GA
2012	Reviewer for WestEd Consulting (WestEd.org), Cosmology Course at Sonoma State University’s NASA Education & Public Outreach Group, Rohnert Park, CA
2012	Teacher Workshop Trainer, Sun Power for Schools Program, Georgia Green Power EMC, Atlanta, GA
Spring 2010	Coordinator, STEM Grant Development Committee, Jasper County Schools, Monticello, GA
2008-10	Teacher Coach, Jasper County Mock Trial Team, Monticello, GA
2008	Board Member, Special Committee on Zoning Ordinance Revision, Jasper County, GA
2007-present	School Recycling Coordinator, Jasper County High School, Monticello, GA
2007-present	Percussion Section, Monticello Community Band, Monticello, GA ( <a href="http://monticellocommunityband.blogspot.com">monticellocommunityband.blogspot.com</a> )
2007-09	Board Member, Parks & Recreation Committee, City of Monticello, GA
2007	Participant, Leadership Jasper Training Program for County/City Government, Jasper County, GA
2006-present	Director of Academic Teams, Jasper County High School, Monticello, GA
2006-present	Jasper County Historical Foundation, Monticello, GA; Vice-Pres. 2009-11; Secretary 2011-13, 2007-09
2006-present	Coordinator, Jasper County Ultimate Frisbee League, Jasper County, GA
2005-08	Volunteer, Jasper County High School Marching Band, Monticello, GA
2005-present	National Science Teachers Association, Washington, DC
2005-present	Georgia Science Teachers Association, Atlanta, GA
2004	Reviewer, <i>Animal Behavior</i>
2001-05	Oregon Academy of Sciences
1998-present	NASA Academy Alumni Association
1994	Co-Founder, Tropical Awareness Organization & Ecology Students Group, Michigan State University
1993-95	Undergraduate Representative to Faculty, Zoology Students’ Association, Michigan State University
1992-93	Youth Advisory Board, City Clean Community Recycling Commission, Warner Robins, Georgia