

One Health is the concept that human health, environmental health, and animal health are all intricately connected and that by collaborating across disciplines we can accomplish more towards understanding and improving health. For many people the concept of One Health is intuitive, but applying the concept is much more difficult for many reasons.

One of the problems with creating one health events is money. Finding the funding for the events can be difficult and then once funding is found it can be difficult to convince people that the event is worth their time and money.

My idea is to use pre-existing conferences for the different disciplines, put them in the same place, at the same time, and then work with the conference coordinators to create opportunities for the two groups to interact. This might be a shared lecture session, social event, lunch meeting, discussion panel, poster session, day trip, etc. For example, a conference with the American Student Medical Association (ASMA) and American student veterinary association (SAVMA) could have a session with a Zoonotic theme. A conference with Society for Conservation Biology and National Wildlife Rehabilitators Association could have an overlapping session on wildlife health.

People would go to the conference for their field like they normally would, but the joint activities or sessions would allow them to network with people of different disciplines with similar academic interests. This idea could be applied to several combinations of conferences/events at various academic and professional levels. These joint meetings or shared social events could open the doors for new research opportunities, educate people and generate interest in One Health, allow for collaborations on projects or events, and it could create a space for people to have the One Health discussions that need to happen.

One Health is about collaboration. Creating new events to promote one health is important and necessary, but to move the field forward we need to utilize existing events to recruit people to our cause and start breaking down the silos that divide us so that we can reach as many people as possible.

Lauren Elizabeth Brierley-Shorter

CONTACT INFORMATION

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ACADEMIC INTERESTS AND GOALS

One Health with a special interest in endocrine disruptors, comparative toxicological pathology, and the effects of environmental disturbances on zoological disease distribution

EDUCATION

North Carolina State University- Raleigh, NC	2013-current
DVM Candidate at the College of Veterinary Medicine	
Purdue University- West Lafayette, IN	December 12, 2011
M.S. Biological Sciences	
Hope College- Holland, MI	May 4, 2008
B.S. Biology, Minor Chemistry	

RESEARCH EXPERIENCE

NIH Summer Veterinary Research Scholar , North Carolina State University College of Veterinary Medicine and Department of Biological Sciences ○ Drs. Robert Smart and Keith Linder	Summer 2015
Merial Summer Veterinary Research Scholar , North Carolina State University College of Veterinary Medicine and Department of Biological Sciences ○ Investigated the effects of flame retardant Firemaster 550 effects on gene expression in the arcuate nucleus of the brain using RNA sequencing data and RT-PCR under mentors Drs. Heather Patisaul and Robert Smart	Summer 2014
Volunteer Researcher , North Carolina State University, College of Veterinary Medicine ○ Assisted in the analysis of previously collected avian and tick data collected from Pine Island, NC under mentor Dr. Jay Levine	Winter 2011-Fall 2012
Graduate Student , Purdue University, Department of Biological Sciences ○ Investigating the impacts of habitat fragmentation on social behavior, vocal communication, and physiological stress response using Carolina chickadees ○ Effects of anthropogenic noise on red winged blackbird vocal communication ○ Comparison of the vocalizations and auditory capabilities in house finches, American tree sparrows, and dark-eyed juncos under advisor Dr. Jeffrey Lucas	Fall 2008-2011
Volunteer Researcher , Hope College Biology and Chemistry Departments ○ Investigated the effect of the algacide, copper sulfate, on algal species diversity in man-made lakes under mentors Drs. Gregory Murray & Graham Peaslee	Fall 2006 – Spring 2008
○ Monitored bird boxes and performed aggressive behavior observations on the Eastern bluebird under mentors Drs. Kathy Winnett-Murray & Gregory Fraley	May 2007
○ Investigated thermodehydration in rats under mentor Dr. Christopher Barney	Spring 2005
NSF REU fellow , Indiana University Center for Integrated Study of Animal Behavior ○ Researched mountain and lowland gorillas behavior and physiological difference to find evidence for different hypotheses on selective pressures causing high intermembral index in apes and bipedalism under mentor Dr. Kevin Hunt	Summer 2007
Summer Fellow , NOAA Great Lakes Environmental Research Station ○ Collected samples and analyzed Great Lake water samples to determine environmental factors that induce microcystin production by the cyanobacteria, <i>Microcystis aeruginosa</i> under mentor Dr. Gary Fahnensteil	Summer 2006
Independent Researcher , The Outdoor Discovery Center (Holland, MI) & Hope College Biology Department ○ Designed research experiment with help from a Biology professor on <i>Galerucella</i> beetles as biological control of purple loosestrife under mentors Dr. Kathy Winnett-Murray & Mr. Travis Williams	Summer 2005

TEACHING EXPERIENCE

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| Biology Department TA , Purdue University | Fall 2008-Spring 2011 |
| <ul style="list-style-type: none"> ○ Teacher's assistant for basic biology and ecology courses ○ Responsibilities included teaching labs and review classes, grading papers, homework assignments, quizzes, and tests, writing exam questions, holding office hours, self, peer, and student teaching assessments, and weekly TA meetings. | |
| Gifted Education Resource Institute Teacher , Purdue University | Fall 2008-Spring 2011 |
| <ul style="list-style-type: none"> ○ Designed lesson plans and taught specialized science, math, and chemistry courses to elementary age students on weekends. | |
| Undergraduate Research Mentor , University of Notre Dame (UNDERC) | Summer 2010 |
| <ul style="list-style-type: none"> ○ Mentored two students on independent research projects which assessed the effects of noise pollution on behavior. | |
| Undergraduate Research Mentor , Purdue University | Fall 2009-Spring 2010 |
| <ul style="list-style-type: none"> ○ Mentored six undergraduate in independent projects related to bird vocal communication and behavior research. Mentorship also included grant/research proposal training, critically looking at literature, and data analysis | |
| Biology Tutor, Hope College , Academic Support Center | Fall 2006 – Spring 2008 |
| <ul style="list-style-type: none"> ○ Tutored three introductory biology courses. Met with tutees weekly, answered questions, reviewed lecture material, wrote practice exam questions. | |
| Biology Department TA , Hope College | Fall 2005 – Spring 2008 |
| <ul style="list-style-type: none"> ○ Teacher's assistant for four introductory biology courses. Responsibilities included: attended weekly lab meetings, proctored exams and quizzes, answered questions about lab material, graded quizzes, restocked lab tables, and ran weekly helps sessions. | |

WORK EXPERIENCES

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| Animal Volunteer Coordination, North Carolina State University, College of Veterinary Medicine Office of Veterinary Continuing Education | January 2014-present |
| <ul style="list-style-type: none"> ○ Coordinate animal volunteers and preparation for continuing education ultrasound course 5 weekends per year | |
| Veterinary Assistant , Carrboro Plaza Veterinary Clinic, Carrboro, NC | July 2011-present |
| <ul style="list-style-type: none"> ○ Vet Assistant, kennel technician (as needed), and receptionist (as needed), check in patients and collect medical history, hold animals for doctors, heartworm tests, pull up vaccines, trim nails, draw blood, animal care | |
| Veterinary Assistant , Quail Corners Animal Hospital, Raleigh, NC | August 2012- 2013 |
| <ul style="list-style-type: none"> ○ Vet Assistant during emergency clinic hours: help collect patient histories, collect samples, take radiographs, care for hospitalized patients | |
| Summer Intern , Triangle Wildlife Rehabilitation Clinic, Durham, NC | May 2011-July 2011 |
| <ul style="list-style-type: none"> ○ Volunteer 40+ hrs/week at the rehabilitation clinic. Duties include: assessing health of new patients, answering phones, hand feeding baby birds, fecals, feeding medications, cleaning cages and preparing food, facility sanitation. | |
| Bird Banding Intern , University of Montana, Happy Jack, AZ | Summer 2008 |
| <ul style="list-style-type: none"> ○ Banded >250 birds in the Coconino National Forest in Northern Arizona (accessed health/sex of birds, took measurements, bled birds) and nest searching. | |
| Intern , The Outdoor Discovery Center, Holland, MI | Summer 2005-2008 |
| <ul style="list-style-type: none"> ○ Performed office responsibilities, educated visitors, and provided care for wildlife (birds of prey, elk, deer, pheasants, amphibians, snakes, turtles, and fish). | |

VETERINARY EXTRACURRICULAR LEARNING EXPERIENCES**Conferences attended:**

NC One Health Symposium(2013), NCVS (2013, 2014), SAVMA (2014), NIH-Merial Summer Research Symposium (2014), ACVP (2014), CDC Day for Veterinary Students (2014)

NCSU Wetlabs:

Canine Dental Extraction, Bone Plating, SA Chiropractic Medicine, Turtle Necropsy, SA necropsy, Raptor Bandaging, Mouse Vasectomy, Poultry Necropsy

Seminar Series/CE/Self Education:

VIN CE courses: General Necropsy (2014), LA necropsy (2014)

North Carolina One Health Intellectual Exchange Group (2012-present)

University of Michigan- University Laboratory Animal Medicine Veterinary Externship program (December 2014)

VOLUNTEER WORK

North Carolina State University Veterinary Medicine Turtle Team	August 2011-present
o Lieutenant 2014-2015	
Triangle Wildlife Rehabilitation Clinic Volunteer Intern	July 2011-August 2011
Volunteer Lily Nature Center, West Lafayette, IN	Spring 2010- 2012
Volunteer Banding for Barney Dunning of Purdue University	Spring 2009-Fall 2010
Volunteer Almost Home Animal Shelter	Summer 2009
Purdue FNR Summer Program Volunteer TA	June 4-10, 2009/2010
Recent Single Event Volunteer Experiences:	
NCSU CVM Speaker's Bureau- Anatomy Lesson to Kindergarten	October 2014
NCVC Registration Volunteer	November 2013, 2014
NCSU CVM New Student Orientation	August 2014
Second Chance Animal Shelter Tuesday Clinic	June 2014
Raleigh Coop de Tour Volunteer	April 2014
NCSU Open House	March 2012, 2014
NCSU K9 College	Fall 2013-Spring 2014
Veterans 5K volunteer	September 2013
NCSU CVM Dog Olympics	October 2013
NCSU SCAVMA volunteer: hills product distribution, t-shirt sales, registration/ID checking for events	

COMMUNITY INVOLVEMENT

NCSU CVM club memberships with active involvement:	Fall 2013-current
o NCSU DVM Class of 2017 One Health Coordinator (2013- present)	
o Event planner for One Health Volleyball Tournament and Social Event	
o Helped establish CVM campus gym	
o Helped establish CVM apiary and community gardens	
o Assisted in planning and running the Students for One Health First Online Meeting through the One Health Commission	
o Veterinary Student Public Health and One Health Club (VSPHC)-Secretary and Open House Coordinator (Fall 2014-current)	
o NCSU Chapter of International Veterinary Student Association (IVSA)-Open House Coordinator (Fall 2014-current)	
Women in Science Program (WISP) at Purdue University	Fall 2008-Spring 2012
Graduate Student Ecology and Evolution Journal Club Organizer	Fall 2009-Spring 2010
Biology Club/ βββ National Honor Society	Fall 2004-Spring 2008
o Chapter President (Fall 2007-Spring 2008)	
o Chapter Historian (Fall 2005-Spring 2007)	

SCIENTIFIC SOCIETY MEMBERSHIPS

Sigma Xi (Associate Member)	March 2010-2011
Animal Behavior Society	August 2007-2011
Society for Conservation Biology	2007-2008, 2010-2011
Wildlife Disease Association	June 2010-June 2011
AAAS/Science	2008-2009

PROFESSIONAL SERVICES

Reviewer for the Journal of Conservation Biology	2010
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AWARDS AND HONORS

Charles River Short Course Scholarship	March 2015
Zoetis Veterinary Student Scholarship	March 2015
Merial Veterinary Scholars Research Program	April 2014
Sigma Xi (Hope College Chapter) Research Award	May 2008
Hope College Biology Department Service Award	May 2008
NSF Research Experience for Undergraduates	Summer 2007
Hope College Presidential Scholarship	2004-2008
PCB Trust Scholarship	2004-2008
Hope College Dean's List (5 semesters)	2004-2008

Animal Behavior Society Turner Travel Award
Alpha Eta Chapter of the National Biology Honor Society (βββ)

July 2007
April 2005

GRANTS RECEIVED	
NCSU Sustainability Fund Grant (\$7,282)	April 2014
Purdue University Incentive Grant (\$250)	May 6, 2010
Indiana Academy of Science Grant (\$2,991)	May, 12, 2009
Purdue University Incentive Grant (\$500)	January 2009
POSTERS	
L. Brierley , B. Horman, R. Smart, and H. Patisaul. August 1, 2014. Rats exposed to Flame retardant Firemaster 550 show Differential Gene Expression in the Hypothalamus. Meril NIH Veterinary Scholars Symposium (Ithaca, NY).	
L. Brierley and J. Lucas. October 27, 2010. Anthropogenic noise affects red-winged blackbird (<i>Agelaius phoeniceus</i>) vocal communication. Purdue University Ecology and Engineering Symposium (West Lafayette, IN).	
L. Brierley and J. Lucas. Impacts of habitat fragmentation from forest management on social behavior, vocal communication, and physiological stress in Carolina chickadees (<i>Poecile carolinensis</i>). <ul style="list-style-type: none"> o American Ornithological Union Conference (Philadelphia, PA)- August 13, 2009 o CISAB Animal Behavior Conference (Bloomington, IN)- April 10, 2009 o Hardwood Ecosystem Experiment Annual Meeting (Brown County State Park, Nashville, IN)- March 26, 2009 	
L. Brierley , K.D. Hunt, and E.E. Sarmiento. Are Ape Limb Proportions Adaptations for Physical Aggression or Arboreality? <ul style="list-style-type: none"> o Hope College Research Symposium (Holland, MI)- January 2008 o Western MI Undergraduate Research Conference (Grand Rapids, MI)- October 2007 o SROP Conference, Purdue University (West Lafayette, IN)- July 2007 	
L. Brierley , K.G. Murray, G. Peaslee. January 2007. Effects of Copper Sulfate Treatment on Algae Density and Species Composition in Local Man-Made Lakes. Hope College Research Symposium (Holland, MI).	
L. Brierley , K. Winnett-Murray. January 2006. Leaf Damage of Invasive Purple Loosestrife (<i>Lyrthrum salicaria</i>) by the Leaf Beetles <i>Galerucella californiensis</i> & <i>Galerucella pusilla</i> . Hope College Research Symposium (Holland, MI).	
ORAL PRESENTATIONS	
L. Brierley , B. Horman, R. Smart, and H. Patisaul. July 10, 2014. Rats exposed to Firemaster 550 show differential gene expression in the arcuate nucleus of the hypothalamus. NCSU Veterinary Scholars Program, Raleigh, NC.	
L. Brierley . January, 26, 2011. Can you hear me now?: The effects of noise pollution on wildlife. Wednesdays in the Wild, Lilly Nature Center, West Lafayette, IN.	
L. Brierley and J. Lucas. November 17, 2010. Can you hear me now?: An investigation of how anthropogenic noise affects vocal communication in animals. Eco-lunch, Purdue University, West Lafayette, IN.	
L. Brierley and J. Lucas. July 26, 2010. Effects of anthropogenic noise on red-winged blackbird communication. Society of Animal Behavior Conference, Williamsburg, VA.	
L. Brierley . March 4, 2010. A sensory ecology approach to conservation: understanding the effects of anthropogenic noise on avian communication. Graduate Research in Progress Seminar, Purdue University, West Lafayette, IN.	
L. Brierley . April 15, 2009. Frogs, herbicides, and qualifiers oh my!: population level implications for atrazine exposure. Eco-lunch, Purdue University, West Lafayette, IN.	
L. Brierley and J. Lucas. December 8, 2008. How does habitat fragmentation effect vocal communication and social behavior in birds? Frankfort Middle School, Frankfort, IN, Visiting Scientist Series.	
L. Brierley . January 9, 2008. Broader Learning: Field Research Opportunities that Involve Community Collaborations. Hope College (Holland, MI).	
L. Brierley , K.D. Hunt, and E.E. Sarmiento. July, 27, 2007. Are Ape Limb Proportions Adaptations for Physical Aggression of Arboreality? CISAB REU Presentation, Indiana University (Bloomington, IN).	
PUBLICATIONS	
Brierley, L. , M. Gall, and J. Lucas. (In review) Vocalizations match auditory processing in the American tree sparrow (<i>Spizella arborea</i>), dark-eyed junco (<i>Junco hyemalis</i>), and house finch (<i>Carpodacus mexicanus</i>).	
Jukema, J., J.B. Dunning, P. Vlat, L. Brierley , P. Brooks. (in revision). Morphological variation in spring migrant American Golden-Plovers (<i>Pluvialis dominica</i>).	
Gall, M., L. Brierley , and J. Lucas. (2012) The sender-receiver matching hypothesis: support from the peripheral coding of acoustic features in songbirds. <i>The Journal of Experimental Biology</i> .	
Gall, M., L. Brierley , and J. Lucas. (2011). Sex differences in frequency-specific auditory processing in brown-headed cowbirds and red-winged blackbirds: implications for vocal processing. <i>Animal Behavior</i> (81): 973-982.	

SKILLS

Computer Skills:

Scientific/Statistical: SAS, Statistica, Systat, Minitab, SPSS, Matlab, Stella, PC-ORD,, Raven Pro, Cool Edit Pro, Avisoft Bioacoustics, JWatcher, Praat

Veterinary: Intravet, Avimark, VIN

General: Microsoft Office Suite, Google Earth, Prezi, Social Media Sites, Wordpress

Field and Lab Skills:

Bird vocalization analysis, bird banding and catching (mist nets and walk-in traps), point counts, ELISA, rat castration and ovariectomy, filtering water samples, algae identification, photoplankton analyzer to quantify photosynthesis, line transects, auditory processing using auditory evoked potentials (critical ratios, audiograms, filters), RT-PCR, RNA/DNA extraction, Western blots, cryostat and micropunching of brains, basic RNA sequencing analysis, comfortable using microscope

Veterinary Skills:

Collect history and TPR, record medical records, proper animal restraint (small animal), administer IM/IV/SQ injections, capture SA radiographs (digital and film), basic surgery skills and anesthesia monitoring, basic SA physical exam, basic necropsy, fecal floatation, urine collection, blood collection from multiple locations, oral medication administration, drug dosage calculation, IV catheter placement, endotracheal tube intubation, Rabies Vaccinator Certificate through NCSU, basic wound care and bandaging, IV and SQ fluid administration, client communications including appointment scheduling and product/services sales, estimate drafting, provide basic client pet care education, sample slide preparation, SA bathing, SA nail trims, anal gland expression, fecal collection, and ear cleaning, surgery and ultrasound patient prep, maintain and care for boarding animals, turtle shell repair

PERSONAL INTERESTS AND GOALS

Exercise, spending time with family, travel, reading, cooking and baking, outdoor activities

Life Goals: extensive international travel, establish a family, write a book, run a marathon, live a happy and healthy life, volunteer time internationally, have a successful career (mentally stimulating, positive work environment, personal satisfaction, and contribution to the greater good).

REFERENCES

Name	Email	Phone	Professional Association	Relation
Dr. Kathy Winnett-Murray	Winnetmurray@hope.edu	616-395-7719	Hope College, Department of Biology	Undergraduate research and academic advisor 2004-2008
Dr. John B. Dunning	jdunning@purdue.edu	765-494-3565	Purdue University, Department of Forestry and Natural Resources	Master's committee member 2008-2011
Dr. Sheri Randell	Nutterdvm@bellsouth.net	919-929-0031	Carrboro Plaza Veterinary Clinic	Employer 2011-current
Dr. Jay Levine	Jay_levine@ncsu.edu	919-513-6397	North Carolina State University, College of Veterinary Medicine	