DR. KERSEY LAWRENCE, PH.D. (TRACKING)

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BACKGROUND

After a lifetime spent teaching and learning in the Northeastern forests of the USA, I currently practice and teach ecological literacy through the field of wildlife tracking. I do this internationally through my company, Original Wisdom, a USA-based LLC focusing on ecological and tracking intensives, many of them for organizations and universities in customized, immersive, study abroad programs in Africa. Original Wisdom has partnered with Nature Guide Training, a South African PTY LTD, as our provider on the ground in ecological education in South Africa since 2008, where I am a registered Professional Scientist with the South African Council for Natural Scientific Professions (SACNASP), and a Field- Guide and Professional Trails Guide with the Field Guides Association of Southern Africa (FGASA). I am an internationally certified Senior Tracker, the highest standard that can be earned, with CyberTracker Conservation, and the only woman in the world to currently hold this title (since 2016). I am also a qualified Evaluator of trackers on the CyberTracker standard in both the African and North American systems. With advanced degrees in natural resources, a certificate in education, and an award for teaching from the University of Connecticut (USA), I am uniquely qualified to teach tracking and research methods based on identifying, counting, and monitoring animals using the original skill of tracking, combined with modern survey methods and technologies, such as telemetry and camera trapping. Most recently, I co-authored The Tracker Mentoring Manual – Introduction to Tracking in Southern Africa (Cape Town, 2020), and released a comprehensive online tracking instruction company, Tracker Mentoring.

My goal is to make people observant, passionate, and knowledgeable about nature, and to help them develop critical and creative thinking skills that will position them as compassionate and inclusive team leaders in conservation and ecology.

CURRENT EMPLOYMENT (5+ YEARS full-time, part-time 2008-2015)

Name of company: Nature Guide Training (NGT PTY/LTD) contracted through Original Wisdom LLC

Position held: Ecologist at NGT, Owner at Original Wisdom

Employment Length: Oct 2015 to present

PREVIOUS EMPLOYMENT (10 YEARS) For the prior 10 years, from 2005 through 2015, I was employed in various lecturer (lead or sole instructor) and research positions, full-time, at the University of Connecticut (UCONN, U.S.A.).

Courses Developed and Taught at the University Level:

Introduction to Wildlife Management

Special Topics in Wildlife Management (Wildlife Observation and Tracking)

Special Topics in Wildlife Management (Wildlife, Habitats, and Humans)

Environmental Science

Introduction to Research

Peer Mentoring in Biology

Scientific Literacy and Instructional Pedagogy

Natural Resources Measurements

Natural Resources Planning & Management

The last two courses listed in bold, above, Natural Resources Measurements and Natural Resources Planning & Management, were required courses for Senior level undergraduate students to graduate. In addition to designing and leading bi-weekly lectures and labs for 60 BSc-level undergraduate students, I directly supervised four graduate-level (MSc and PhD) students as my teaching assistants.

The "Measurements" course required students to practice what they had been taught theoretically, in previous courses, in multiple aspects of collecting data for land, water, and air research and management. Examples of data collected and reported include; biodiversity and enumeration surveys for wildlife and vegetation, rapid bioassessments for stream quality, and weather and climate data. The "Planning & Management" course required students to use the knowledge gained from the Measurements course to conduct biological inventories and human dimensions surveys, culminating with writing an Environmental Impact Assessment for a proposed development project.

OTHER INSTUCTIONAL EXPERIENCE

- Work Integrated Learning (WIL) Mentor (Jan 2020 to present) Tshwane University of Technology,
 Department of Nature Conservation, Pretoria, South Africa. Provided logistical and field support
 and technical writing guidance for undergraduate students in a year-long, work-study program on
 our reserve in the Greater Kruger. The program includes ecological surveys, 30 practical
 conservation tasks, and culminates with students drafting a Conservation Management Plan for the
 area of operation. Dept. Head: Professor Brian Reilly
- **Guest Instructor/Workshop provider** (May 2008 Present) Field instructor and tracking evaluator in private reserves across South Africa, dates and hours varied with contract.
- Center for Excellence in Teaching and Learning (2011 2015) Graduate Associate supporting the
 Institute for Teaching and Learning's (ITL at UCONN) faculty development initiatives, including the
 development and delivery of presentations on pedagogy and best practices for teaching science,
 and in collection of data for the assessment and improvement of teaching, and in personalized
 instructional consultations. Supervisor: Daniel Mercier, Director of ITL.
- African Field Ecology (2009 2016) Field instructor and tracking team leader for undergraduate
 UCONN students at Entabeni and Djuma Private Game Reserves in South Africa. Students camped
 in a remote field location and participated in daily educational walks, game drives, and wildlife
 surveys. Supervisor: Lee Gutteridge.
- Two Coyotes Wilderness School (Dec 2012 to 2015). Field instructor in a nature immersion and community building program for children ranging from toddlers to 18 years old in Granby, CT. The inclusion of all ages, from mothers and fathers with babes-in-arms to elders who share their life stories and wisdom is considered an essential component to the program. Every Monday, 8 hours per day. Program Directors: Justin Pegnatero and Karianna Rosenberg.
- Outdoor Girls Program (Oct 2012 to May 2013). Teaching Assistant in White Pine Programs Outdoor Girls Program, Ogunquit, ME. One weekend per month, 8-10 hours per day in various field locations with 15 girls ranging in age from 8 to 14 years old.
- Tracking Apprenticeship (Oct 2011 May 2012). Teaching Assistant in White Pine Programs Tracking Apprenticeship, Ogunquit, ME. One weekend per month, 8-10 hours per day in various field locations.
- Independent Study Supervisor at UCONN for three undergraduate students in building an
 educational collaboration between the Town of Franklin Agriculture and Conservation Commission,
 The College of Agriculture and Natural Resources at UConn, and the Franklin Elementary school,
 Spring 2011, 10 hours per week. Students researched and reported on opportunities for Franklin
 residents in agriculture and conservation.
- **Scientific Writing Mentor**, University Writing Center at UCONN, Fall 2007 & Spring 2008, 10 hours per week. Tutored undergraduate and graduate students in scientific writing.

- Public Lands Management class (UCONN), Field Assistant, Summer Session 2006, 40 hours per week. A field course driving and camping across the USA, from Connecticut to South Dakota and back, with 18 upper-level undergraduate students in 20 days. Students toured national wildlife refuges and interviewed wildlife managers; Students were required to bring resumes and ask for feedback on their eligibility for employment. Instructor of Record: I.M. Ortega.
- Patagonia Expedition (UCONN) Field Instructor and tracking team leader for ten undergraduate students and five Chilean students per expedition in Torres del Paine National Park, Chile, South America, Winter Intersession 2005 & 2006, 40 hours per week. Students camped in a remote field location and participated in daily educational hikes and wildlife surveys. Instructor of Record: I.M. Ortega.
- **Pre-school Nature Studies Teacher** (Summer 1999). Dennison Pequotsepos Nature Center, Mystic, CT. 20 hours per week.

OTHER WORK EXPERIENCE

- Citizen Scientist, (2005-2015) Connecticut Audubon Society's Mammal Monitoring Project in collecting track-based data, seasonally four times a year, as well as participating in their Rapid Bioassessments, Stream Walks, Bird Banding, and Vernal Pool Inventory.
- Tracker, (Winter 2012-2013 and 2013-2014) White Pine Programs presence/absence track surveys for American Marten and Canada lynx for the state of New Hampshire in an Environmental Impact Assessment for a major power-line infrastructure project.
- Tracker, (Winter 2007) Keeping Track Collected and presented data in a series of forums between
 the departments of transportation and environmental agencies in Vermont, New Hampshire, and
 Maine on road-crossing hotspots for animals and coordinated road repairs with mitigation methods
 (wildlife road-crossing structures over-passes and underpasses) to reduce costs and
 injuries/deaths for humans and wildlife.
- **Technician,** (Summer 2007) State Map Project High-Accuracy GPS Surveying of the Gravitational Field in Connecticut, University of Connecticut, Storrs, CT.
- Undergraduate Recruiter/Public Relations Assistant, (Fall 2005 to Spring 2008) Department of Natural Resources Management and Engineering (NRME), University of Connecticut, Storrs, CT.
- Wildlife Ecologist & Mountain Lion Tracking Team Leader, (Winter Intersession 2005 & 2006). UCONN-Patagonia Scientific Expedition, Chile, South America.
- Initial Coordinator (various dates 2006-2010) for the establishment of the UCONN Chapter of the Wildlife Society Black Bear winter den monitoring with the Connecticut Department of Environmental and Energy Protection (CTDEEP).
- Hilo Project Manager & Student Intern, (2000-2005) Hawaii Army National Guard (HIARNG)
 Conservation Division, Honolulu, HI. Conducted endangered species surveys and invasive species
 eradication on the firing ranges of military bases across the Hawaiian Islands for the Conservation
 Division of the Hawaii Army National Guard and reported the results of those projects in
 compliance with the Federal National Environmental Policy Act (NEPA).

EDUCATION

Doctor of Philosophy degree (Dec 2020) at the University of Connecticut (UCONN), Department of Natural Resources & the Environment. The focus of my PhD research is the international CyberTracker system of evaluating wildlife trackers and on the accuracy and reliability of track-based data collected in ecological science. During my PhD research, I supervised and mentored five undergraduate students in field-based data collection, and in data entry and organization using my real-world data, collected in South Africa. They received credit for their work in for-credit independent study courses. Three of those five students have moved on to their own graduate research at other universities. Major Advisor: Professor Thomas H. Meyer.

Outstanding Teaching Award (Apr 2012) from the University of Connecticut. Stemming from a 2010 **Certificate in College Instruction** from the Institute for Teaching and Learning (UCONN). This was a five-course series: Fundamentals of Teaching and Learning; Reflections on Teaching Practices; Advanced Issues

in Teaching and Learning; the Teaching and Learning "Summer Institute;" and Environmental Education. Courses focused on the design, assessment and improvement of college-level courses, sharing of information and experiences to help develop a solid understanding of teaching and learning, and development of a personal philosophy defining my roles, responsibilities and behaviors as a teacher. A personal course portfolio for an Environmental Science course was developed, taught, and critiqued. Advisors: Daniel Mercier and Professor Keith Barker.

2005-2009. University of Connecticut, Department of Natural Resources Management and Engineering. **Master of Science Degree**. Thesis: Global Navigation Satellite Systems: Wildlife tracking collar positioning accuracy in the Patagonia region of Chile, South America, and in the eastern deciduous forests of North America. Major Advisors: I.M. Ortega, and Professor Thomas H. Meyer. GPA: 3.9/4.0

2001-2005. University of Hawaii at Manoa and Leeward Community College, HI. Non-degree student. Various classes completed in Ethnobotany, Zoology, Geographic Information Systems (GIS), Organic Chemistry, Biometry, Physics, Biochemistry, and Botany. Independent Study: Feral cat colony behavior in relation to spatial and temporal manipulations of supplementary feeding. GPA: 3.5/4.0 at Manoa campus and 3.8/4.0 at Leeward campus.

1997-1999. University of Connecticut. **Bachelor of Science Degree**. Natural Resources, concentrating in Wildlife Management. Adviser: D. Schroeder. Dean's List. GPA: 3.0/4.0

1994-1996. Mitchell College, CT. **Associate of Science Degree**. Life Science. High Honors - Phi Theta Kappa. GPA: 3.8/4.0

COMMITTEES / COMMUNTIY OUTREACH / EXTENSION SERVICE

Wildlife Rehabilitator, Connecticut Department of Environmental Protection (DEP), Hartford Wildlife Division, Hartford, CT., USA. Licensed yearly: 1993-2012.

Representative, Graduate Student Council, College of Agriculture and Natural Resources, UCONN, CT., USA. 2007/2008.

Board Member, Town of Franklin Agriculture and Conservation Commission, CT., USA. 2009 to 2015. **Citizen Scientist** - The Audubon Society: Mammal Monitoring Project, Rapid Bioassesments, Stream Walks, Bird Banding, and Vernal Pool Inventory. CT., USA. 2007 to 2015.

Merit Badge Councilor, Boy Scouts of America. Merits badges include: Environmental Science, Wilderness Survival, Tracking (100-year anniversary badge), Citizenship in the Community, Citizenship in the Nation, and Citizenship in the World. CT., USA. 2005 to 2015.

Board Member, Advancement Board of Review, Boy Scouts of America. CT., USA. 2015 to present. **Regional Coordinator** for the Connecticut Chapter of the Art of Mentoring, a deep immersion nature program for all ages designed to spark creativity, invigorate respect for elders, and reconnect people with the essential components of their culture. 2011 until 2014. CT., USA.

Board Member, Canyon Game Reserve Home Owner's Association, Hoedspruit, South Africa. Present.

GRANTS & SCHOLARSHIPS

The Norcross Wildlife Foundation, Inc.	\$5000	2012
Ellen Bishop Carder Scholarship	\$6000 & \$3000	2011 and 2006
Center for Environmental Sciences and Engineering	\$8000 & \$5000	2010 and 2008
James V. Spignesi Jr. Memorial Scholarship	\$10,000	2008
Duval Fellowship of Keeping Track	\$500	2008
New England Outdoor Writers Association Scholarship	\$3000	2007
Connecticut Agricultural Experiment Station	\$1000	2007
The French Foundation	\$3000	2006

AWARDS & SUPPLEMENTARY TRAINING

Compliance, Diversity Awareness, And Sexual Harassment Prevention training, UCONN, 2018

Graduate Student of the Year (PhD category) – Department of Natural Resources & the Environment, UConn (awarded Feb 2013 for the year 2012)

Teaching Institute (The "Winter Institute" - A Teaching Workshop) annually at UConn, 2009-2013 **Brown Bag Seminars** on Teaching and Learning, incl. Teaching International Students (multiple dates in

2013-2015)
Safe Capture Chemical Immobilization of Animals (Fall 2011)

Responsible Conduct in Research (Fall 2010)

Field Guide Assoc. of S. Africa Trail's Guide Qualification —Entabeni Field School, South Africa. 2010 **Advanced Rifle Handling Qualification** —Entabeni Field School, South Africa, 2010

Field Guide Assoc. of S. Africa Level 1 Guide Qualification—Entabeni Field School, South Africa. 2008 **Backcountry First Aid & CPR** - South Africa – 2008, Renewed 2011, 2015, 2018

CITI Ethical Use of Human Subjects in Research, May 2010, renewed Feb. 2013

Habitats & Highways Programs with Keeping Track, VT., N.H., & ME., A series of workshops bringing together representatives from state transportation departments, and state environmental agencies, with mammal tracking and herpetile identification experts to identify significant animal habitats spanning road crossings and discuss ways to minimize human and animal damages. Winter Intersession 2008

Northeast Regional Teaching Workshop, UConn, Storrs, CT. 2007

UConn Geospatial Technology Program, CT. Certifications include: Intro to GIS and Intro to GPS. 2006 **Connecticut State Permit to Carry Pistols and Revolvers**, licensed since 2000

Graduate of the NRA Basic Firearm Training Program, 1999

Graduate of the CT. Conservation Education/Firearms Safety Course, 1999.Graduate of the CT.

Conservation Education/Bow Hunting Course, 1999

SCIENTIFIC PUBLICATIONS

- **Lawrence-Apfel, K.**, Meyer, T. H., Arifuzzaman, K., and Ortega, I. M. (2012), "An accuracy assessment of global navigation satellite system wildlife-tracking collars in the southern Chilean Patagonia," Anales Instituto Patagonia (Chile), 40(1):105-113.
- Yan, J., Chen, Y., **Lawrence-Apfel, K.**, Ortega, I. M., Pozdnyakov, V., Williams, S. C., and Meyer, T. H. (2013), "A Moving-Resting Process with an Embedded Brownian Motion for Animal Movements," Population Ecology, DOI: 10.1007/s10144-013-0428-8.

PRESENTATIONS & WORKSHOPS

- Sally Dobyns and **Kersey Lawrence**, (31 May 2014) Teaching Exemplars Network (TEN): Capitalizing on Excellent Teaching Faculty, The Teaching Professor Conference, Boston, MA.
- **Lawrence, K.** (3 Dec. 2013) "Her Story" a presentation about my life and work designed to inspire women to pursue their dreams in natural science and sustainability, at Unity College, ME.
- **Lawrence, K.** (6 Apr. 2013) The Wildlife Society's Northeast Student Conclave: a field workshop on using tracking in science.
- R. Scott Semmens and **Kersey Lawrence**, (16-17 Mar. 2013). Tracking/teaching support for the workshop "Scientific Inquiry and Animal Ecology through reading Tracks and Sign," New Hampshire Science Teachers Association Winter Conference.
- **Lawrence, K.** (Spring 2011). CyberTracker Tracker Evaluations, a new twist on Citizen Science: Increasing observer reliability for ecological research, and employing non-literate indigenous trackers with expert knowledge of the environment. The Audubon Society Citizen Science Program, Pomfret, CT.
- **Lawrence, K.,** T.H. Meyer, I.M. Ortega, and D.L. Civco. (Fall 2010). Assessing performance & positional accuracy of Televilt[®] wildlife-tracking GPS collars in a Connecticut deciduous forest. 17th Annual Wildlife Society Conference, Snowbird, UT.
- **Lawrence, K.,** T.H. Meyer, I.M. Ortega, and D.L. Civco. (Fall 2010). GPS Collar Accuracy in Connecticut Forested Habitats, Implications for Wildlife Management. Connecticut Conference on Natural Resources, Storrs, CT.

Lawrence, K., (Spring 2007). What's in your backyard? How to identify animal species by indirect sign on private lands in Connecticut. New Roxbury Land Trust, Woodstock, CT.

POSTERS

- **Lawrence, K.** (Fall 2010) Cyber Tracking Leopards in South Africa: Using Modern Science to Validate an Ancient Skill. University of Connecticut College of Agriculture and Natural Resources Cornucopia Festival, Storrs, CT.
- **Lawrence, K.,** T.H. Meyer, I.M. Ortega, and D.L. Civco. (Fall 2007). GPS Collar Accuracy in Connecticut Forested Habitats, Implications for Wildlife Management. 14th Annual Wildlife Society Conference, Tucson, AZ.

PROFESSIONAL AFFILIATIONS

INTERNATIONAL

- The International Society of Professional Trackers
- The Tracker Association
- CyberTracker Conservation
- International Society for the Scholarship of Teaching and Learning (International)
- The Society for Conservation Biology (Working groups: African Region, North American Region, and Young Women Conservation Biologists)

AFRICA

- Southern African Wildlife Management Association (SAMWA)
- South African Council for Natural Scientific Professions (SACNASP)
- The Field Guides Association of Southern Africa (FGASA)

NORTH AMERICA

- The National Center for Case Study Teaching in Science
- The American Society of Mammalogists
- The Wildlife Society- National, Regional & UConn Chapter member (Working groups: Spatial Ecology and Telemetry, Student-Professional, Native Peoples' Wildlife Management, and Human Dimensions)