Jennifer I. Schmidt, Ph.D.

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Education

Ph.D. — Wildlife Biology
Dissertation: Social and Ecological Influences on Genetic Structure of Moose in Alaska
University of Alaska – Fairbanks
Graduation: August 2007 with distinction
G.P.A. 3.79 (4.0 scale)

B.S. — Ecology, Evolution, and Behavior
B.S. — Genetics and Cellular Biology
University of Minnesota – Twin Cities
Graduation: June 1999
G.P.A 3.41 (4.0 scale)

Profession Goals/Research Interests

I am interested in research and management of socio-ecological systems that help balance conservation efforts with the needs of society. My research topics include human dimensions of subsistence and sport harvest, land use, ecosystem management, ecosystem services, climate change, and wildfire. I enjoy using geographic information systems (GIS) as well as modeling and qualitative information to understand complex systems. Overall, I prefer topics that require an interdisciplinary approach and team, utilize biological and social data, and engage stakeholders to co-produce knowledge that can be used by a wide audience.

Assistant Professor of Natural Resource Management (2015- present) – Institute of Social and Economic Research (ISER), University of Alaska Anchorage (UAA), February 2015-present

My responsibilities include teaching classes that cover environmental sciences, geographic information systems, and field methods. My research interests vary, but all are interdisciplinary, require working with people within and outside my discipline, and are related to how society and the environment interact. Some examples include how technology has influenced subsistence and communities in rural Alaska, how climate change and changes in land use affect subsistence, trust of agencies and governance by residents in rural Alaska and Nunavut. Others range from assessing the effects of vegetation manipulation on moose habitat to estimating the economic consequences of climate change in Alaska, and adaptive capacity of communities in Alaska, economic effects of climate change in Alaska, invasive species, and the influence of management decisions on hunters and anglers.

With this job I have management experience by leading working groups, teaching and advising students, being a principal investigator on projects, service on graduate student committees, and supervising students and research professionals. Recently I was the lead for the urban forest and watershed team on the Anchorage Climate Action Plan which was adopted by

the Anchorage assembly. This involved leading a group of federal, state, and local government employees and academic researchers. Over the summer I led and supervised a group of students and a research professional who were conducting fieldwork in southcentral Alaska.

Visiting Scholar (2014-2015) – Institute of Social and Economic Research (ISER), University of Alaska Anchorage, August 2014 – January 2015

During my time at as a visiting scholar I built a spatial database of mines in the circumpolar Arctic and gathered socio-economic indicators to examine ripple effects from boom-bust activities. I also examined the economic and employment effects of mineral exploration activities on rural communities in Alaska. During this I successfully funded a project with the Alaska Department of Fish and Game, Division of Subsistence, US Fish and Wildlife Service, and US Geological Survey to examine how the perceptions, values, and use of the local environment have changed among residents of Aleutian Islands communities.

Researcher (2010- current) – University of Tromsø, Norway, September 2010 – January 2015

I am a member of an international research team that currently is funded by the Belmont Forum to examine how connectivity is affecting rural communities in the Arctic. My role has been to examine how technology is affecting communities, including subsistence. I also worked with a team to develop a conceptual model of tourism in the Arctic. My previous work with this team involved an interdisciplinary approach to examine how governance and socio-economic conditions influence subsistence harvest and land use. For this project I was the lead Alaska representative and worked with researchers from Norway, Russia, and Canada to plan, develop, and conduct research that evaluates wildlife management, harvest of game and plants, and land use in the Arctic. For this project I have collected, summarized, and analyzed subsistence harvest data and wildlife population trends in northern and western Alaska and used standard (e.g., Word, Excel, Access) and specialized computer software programs (e.g. SAS, ArcGIS, Fragstats, Dictate) to analyze these data. Lastly, I was part of a group of researchers who were working to contribute to the Conservation of Arctic Flora and Fauna (CAFF) program providing information to this international group on past, current, and potential future efforts in Alaska.

I also have traveled extensively during this work conducting interviews with subsistence hunters in the rural Alaska villages of Atqasuk, Noatak, Noorvik, and Brevig Mission. I spent extended time living in rural communities, working in challenging conditions, and traveling in small aircraft. During the interviews, participants were kind enough to share with me their experience of living in rural Alaska, trust in agencies and government, views of wildlife and natural resource management, and spatial and non-spatial land use and harvest activities. Ultimately, I provided community friendly written reports and oral presentations and am in the process of writing peer-review publications with the team of international researchers.

Wildlife Biologist III (April – May 2013) – Alaska Department of Fish and Game, Division of Wildlife Conservation, April 2013 – May 2013

I designed a Microsoft Access database, which includes spatial data, to store approximately 2 dozen moose browse surveys conducted statewide by ADF&G since 2000. This database was created in a manner that, if needed, it can easily be converted into a geodatabase. Development of this complex database required strong development skills, GIS knowledge, excellent data management skills, and understanding of the biological and wildlife issues that underpin the data. During the process I assisted management and research staff with technical aspects of GIS, data collection, storage, and analysis of spatial and non-spatial data. I also provided GIS

technical expertise and helped staff to establish and maintain procedures and standards for documenting and archiving browse surveys and the associated geospatial data. Several ESRI GIS tools were used to manipulate and manage the data, such as assigning projections, overlaying spatial data, adding and calculating fields, etc. I also performed spatial analysis of data using filters and queries and assessed data for accuracy. Given the large and complex nature of the task I maintained detailed documentation and reported my actions to others. I also developed a set of suggestions for future collection, storage, and analysis of browse data. During this process I illustrated the ability to focus for long periods of time on computer work, dissected and prioritized a complex assignment, worked with a variety of staff members both formally and informally, and was self-motivated under general direction.

Post-Doctoral Fellow (2007- 2013) – University of Alaska Fairbanks, September 2007 – September 2013

I worked with little supervision on several different projects as a post-doctoral fellow at UAF, focusing on wildlife, harvest of game, and human impacts on wildlife and their habitats. I built, used, and maintained several spatial and nonspatial databases including geodatabases, relational data, interview data, literature reviews, etc. For one project, I worked as a wildlife researcher for Scenarios Network for Alaska Planning (SNAP) to model the effects of climate change, including fire, on big game species and birds. This included assessing and providing suggestions to mitigate environmental impacts on wildlife. While working for SNAP I mentored and supervised a post-doctoral fellow to ensure that work was completed in an effective manner and on time. I helped him formulate hypotheses, as well as study design, statistical analyses and technical aspects of scientific writing. Another project involved the analysis of spatial and temporal characteristics and trends of moose hunters in Alaska, including models of moose hunting rates, hunter success rates, harvest reporting, harvest density, and hunter density for Alaska. Part of this research was presented at several different conferences around the country (e.g., TWS, 46th Annual Moose Conference, American Indian Science & Engineering Society). The analyses were designed to have direct application to current wildlife management methods and improve approaches for biological and social wildlife research. This research helps to conserve, enhance, and provide public use of moose.

I also collaborated with researchers at Purdue University to spatially model the interactions between plant toxicity, herbivory, moose, and predators in the Tanana Flats near Fairbanks, Alaska. As the co-principal investigator, I had to monitor the progress of the project, ensure reports were submitted to NSF on time, and manage a budget. During this project I worked with other modelers to alter the climate/fire ALFRESCO model to include browsing by moose. My role was to be the wildlife biology expert and conduct spatial analyses. The ALFRESCO model produces spatial vegetation and age outputs which I then used Fragstats, ArcGIS, and R packages to examine landscape dynamics and potential consequences for moose and predator-prey interactions. This model can be used to examine how browsing by moose may influence vegetation and in turn moose density. Results from this project where orally presented to managers at the Alaska Department of Fish and Game and also published in a peer-review journal.

I also investigated reporting rates for moose hunters in Alaska, where non-reporting and partial reporting have had long-standing management problems for monitoring harvest trends. Wildlife managers can use the results of this research to manipulate policies and strategies with the goal of increasing reporting rates and better understanding the utilization of wildlife. A

congruent research project examines biases in hunter harvest data which will help better utilize existing data and improve temporal analysis of historical harvest data.

In another project, I worked with the Alaska Department of Fish and Game, Division of Wildlife Conservation to archive historic (1950 to 2001) moose survey data. This included development of a data storage system, conversion of physical data (i.e., maps, datasheets and notes) into electronic and GIS data, and analysis of wildlife data. I also supervised 2 undergraduates and provided technical training about using ArcGIS, ESRI tools, and database development. In the Spring of 2009 I helped conduct moose browse surveys in GMU 20A.

Lastly, I am frequently a guest lecturer at the University of Alaska, Fairbanks. I was invited speaker for an "Interdisciplinary Methods" course at UAF in 2009, 2010, and 2013 to lecture and provide technical assistance on database design and use. I was also invited to lecture on Carbon and Water balance for the "Ecosystem Ecology" course at UAF in 2009. I organized and conducted a laboratory session focusing on the use of genetic programs to analyze genetic data for Conservation Genetics course at UAF in 2008. During this session I provided technical assistance to graduate students. The graduate school at UAF also requested that I give a seminar on "How to Format your Thesis" in which I provided technical knowledge on Microsoft Word and Excel. I also supervised and mentored undergraduates on wildlife research which included GIS analyses and organization, approaches for archiving data, study design. I was asked by the Center for Global Change to review student proposals.

PhD. Student (2002- 2007) – University of Alaska Fairbanks, September 2007 – August 2010

While a graduate school student my research focused on examining social and ecological influences on moose populations in Alaska. I was responsible for formulating hypotheses, experimental design, and analysis of data during this the research. For this project I obtained and analyzed biological and ecological information on the current, present, and future of moose populations in Alaska. I spatially modeled catch-per-unit-effort (CPUE) which is a fundamental tool used by wildlife researchers and management to examine game population levels, hunter satisfaction, and harvest principals such as maximum sustained yield (MSY). The CPUE model that I developed provided a new tool to evaluate wildlife management and analyze hunter effort which was published in the Journal of Wildlife Management. In this process I also produced a spatially correlated (kriged) moose density map for interior Alaska with the use of ADF&G moose survey data. Another component of my research examined the effects of moose population density and guiding on antler size in Alaskan moose, published in Wildlife Biology. This research directly assessed the environmental and human impacts on wildlife and addressed the controversy of whether hunting causes negative impacts on wildlife. Lastly, part of my research examined whether moose in Alaska were one genetic population or several independent populations. The answer to this question is of utmost importance for wildlife researchers and management tasked with conservation of small populations. During this portion of my research I worked in a laboratory, documented scientific procedures used, ordered supplies, and statistically analyzed genetic data. Results from my research inform harvest strategies and management plans developed by managers in Alaska. In addition, I examined the role of landscape on genetic connectivity of populations. All the research topics listed were geared toward influencing conservation, enhancement, and use of wildlife populations. During my 5 years of graduate research and coursework I learned thorough knowledge of principles and procedures used in wildlife biology research, data analysis and evaluation. Throughout my graduate work, I used standard and specialized computer software programs to analyze scientific data. Lastly, I

presented components of my research to a diverse audience via posters and presentations one of which was noticed by the governor of Wyoming.

Teaching Assistant (2004-2006) – University of Alaska Fairbanks,

As a teaching assistant I taught and provided technical assistance to undergraduates on the subjects of genetics, community ecology, and human anatomy and physiology. I helped develop laboratory procedures, organize and setup laboratory sessions for a diverse group of students. I also facilitated communication between the students, professor, and teaching assistants. Lastly, I graded assignments and tests and also helped compose tests.

Wildlife Intern (2005) – Alaska Department of Fish and Game, Fairbanks, Alaska, June 2005 – December 2005

While working at ADF&G I supervised by Dr. Kimberlee Beckmen and was assigned the task of organizing and archiving thousands of mammal serum, whole blood, and other miscellaneous samples collected in the past by the Division of Wildlife Conservation and stored the office in Fairbanks. I also assisted with the storage and record-keeping for serum, whole blood, and hair samples received from on-going projects. During this process I built a Microsoft Access database so that researchers and biologists could easily access samples which helped facilitate use and wildlife management research.

Interdisciplinary Graduate Research and Education (IGERT) Fellowship (2002-2004)
Department of Biology and Wildlife, University of Alaska – Fairbanks

IGERT is a graduate training program in Regional Resilience and Adaptation (RR&A) to train scholars, policy-makers, and managers to address issues of regional sustainability in an integrated fashion.

Wildlife Intern (2003) – Alaska Department of Fish and Game, Fairbanks, Alaska, June 2003 – September 2003

I was supervised by Dr. Jay Ver Hoef and we produced a model to better predict moose density, success, and CPUE for interior Alaska. During my internship I used ArcView 3.2, ArcGIS 8.0, and ArcGIS Spatial Analyst to produce maps for interior Alaska of moose density and moose catch per unit effort (CPUE).

Lab Supervisor (2001-2002) – University of Minnesota-Duluth School of Medicine, January 2001 – August 2002

As a laboratory supervisor I oversaw and provided technical assistant to undergraduates and graduates, used genetic protocols included; DNA/RNA isolation and analysis, SDS-PAGE, PCR, cloning, and sequencing, ran gene expression experiments using a flow cytometer, and was responsible for basic laboratory upkeep, stocking/ordering, and organization.

Biological Intern (2000-2001) – Tall Timbers Research Station, Tallahassee, Florida, September 2000 – January 2001

As an intern I collected, counted, and identified butterflies and insects in relation to burning. I also mapped the den locations of gopher tortoises which required the use of GIS software and ArcView. Other miscellaneous job duties included banding bobwhite quail, and determining location and size of quail coveys

Peace Corps - Agriculture and Forestry Volunteer (2000) – Zimbabwe, Africa, February 2000 – May 2000

I acted as an agriculture and forestry volunteer in which I helped to promote environmentally friendly practices amongst landowners, local schools, and the NGOs working in the area. I participated in extensive cross-culture, language, and technical training, surveyed local villagers concerning their use of scarce natural resources, and facilitated the planting and protection of indigenous trees. My service in Zimbabwe was interrupted due to political evacuation.

Teaching Experience

- **2018 Teacher:** Environmental Field Methods
- **2018-2019 Teacher:** Environmental Applications of Geographic Information Systems (GIS)
- **2015-2017 Teacher**: Earth and Environment: the science and geography of the natural environment. University of Alaska Anchorage
- **2012 Guest Lecturer**: Ecosystem Management. University of Tromø, Tromsø, Norway
- **2010-2015 Guest Lecturer**: Research Methods for Interdisciplinary Research course. University of Alaska – Fairbanks
- **2009 Guest Lecturer**: Ecosystem Ecology. University of Alaska – Fairbanks
- **2007 Workshop Instructor**: Developed and presented a workshop entitled "MS Word to Format your Thesis/Dissertation" for the Graduate School at the University of Alaska – Fairbanks
- **2004-2006 Teaching Assistant**: Human Anatomy and Physiology, Genetics, Community Ecology (see Professional Experience for details)
- **1996-1997 Student Leader and Planner**: Introduced 10 to 13 incoming students interested in biology or related majors to various potential employment opportunities. Also planned weekly events such as arranging speakers, tours of labs, or other biology related events. University of Minnesota – Twin Cities.

Students

- Co-Advisor for Daniel Schramm, Masters Student at the University of Alaska Anchorage, "Evaluation of Change in Physical Activity in Alaska Native Youth Through Enculturation".
- Co-Advisor for Sara Conyers, Masters Student at the University of Alaska Anchorage, "Inventory and assessment of state food policy legislation with potential for adaptation to the Alaska food production and distribution systems".

Funding Awarded

- **National Science Foundation**: NNA Track 1: Collaborative Research: Arctic Urban Risks and Adaptations (AURA): a co-production framework for addressing multiple changing environmental hazards, 2019 – 2023, $1,128,919/$2,252,214.
- **National Institute of Health**: Community engaged development of cancer education for Alaska Native Youth, 2019 – 2020, $49,500.
- **National Science Foundation**: INFEWS/T3: Coupling infrastructure improvements to food-energy-water system dynamics in small cold region communities: MicroFEWs, 2018 – 2023 $146,705/ $2,488,121.

- **Experimental Program to Stimulate Competitive Research (EPSCoR)**: Experimental Informed Decision Making: Effects of Management Decisions on Anglers in the Kenai River, 2016, $43,468.
- **North Pacific Research Council (NPRB)**: Adapting to Environmental Change: Shifts in Values, Beliefs and Practices in Three Aleutian Island Communities. 2015 – 2018, $89,477
- **Belmont Forum:** Global Connections and Changing Resource Use Systems in the Arctic, 2015 – 2020, $85,978.
- **Norwegian Research Council:** Funding to build a spatial database of mining in the Arctic. University of Tromsø, Norway, 2014 – 2015, $70,000.
- **NSF**: DMS-0920828 Collaborative Research: Plant-herbivore interactions mediated by toxin-determined functional response, 2009 – 2012, $50,812.
- **U.S. Fish and Wildlife Service**: Population Dynamics of Moose Dispersal and Boreal Forest Fire: A Genetic Assessment Using Microsatellites and Single Nucleotide Polymorphisms (SNPs), 2005.
- **Natural Resources Fund Seed Grant:** A Genetic Assessment Using Microsatellites and Single Nucleotide Polymorphisms (SNPs), 2003.

Incentive Awards

- Promoted from visiting scholar at the Institute of Social and Economic Research to Assistant Professor (2015)

Papers in Peer Reviewed Journals

- Berman M., Loeffler B. and **Schmidt J.I**. (2020) Long-Term Benefits to Indigenous Communities of Extractive Industry Partnerships: Evaluating the Red Dog Mine. Resources Policy.
- Schwoerer, T. Little, J. **Schmidt, J.I.**, and Borash, K. (2019). Hitchhikers on floats to Arctic freshwater: Private aviation and recreation loss from aquatic invasion. Ambio: 1-13. doi.org/10.1007/s13280-019-01295-7
- Sisneros-Kidd, A.M., Monz, C., Hausner, V., **Schmidt, J.I.**, and Clark, D. (2019) Nature-based tourism, resource dependence, and resilience of Arctic communities: Framing complex issues in a changing environment. Journal of Sustainable Tourism, 27 (8). https://doi.org/10.1080/09669582.2019.1612905
- Whitney, E. Schnabel, W.E., Aggarwal, S., Huang, D., Wies, R.W., Karenzi, J., Huntington, H.P., **Schmidt, J.I.**, and Dotson, A.D. (2019) MicroFEWs – A Food-Energy-Water (FEW) Systems Approach to Renewable Energy Decisions in Islanded Microgrid Communities in Rural Alaska. Environmental Engineering Science, 36 (7) https://doi.org/10.1089/ees.2019.0055
- Berman M. and **Schmidt J.I.** (2019). Economic effects of climate change in Alaska. Weather, Climate and Society. 11(2): 245-2583 https://doi.org/10.1175/WCAS-D-18-0056.1
- Fauchald P., Hausner V.H., **Schmidt J.I.,** and Clark D.A. (2017) Transitions of social-ecological subsistence systems in the Arctic. International Journal of the Commons, 11.
- **Schmidt J.I.**, Kellie K.A. and Chapin III F.S (2015) Detecting, estimating, and correcting for biases in harvest data: moose hunting in Alaska. Journal of Wildlife Management, 79:1152-1162.
- **Schmidt J.I.**, Aanesen M., Klokov K., Khrutschev S., and Hausner V.H. (2015) Demographic and economic disparities among Arctic regions. Polar Geography. dx.doi.org/10.1080/1088937X.2015.1065926

- Beaman J., Vaske J., **Schmidt J.I.**, and Huan T.C. (2015) Measuring and correcting response heaping arising from the use of prototypes. Human Dimensions of Wildlife, 20:167-173.
- **Schmidt J.I.** and Chapin III F.S. (2014) Relationship of Community Characteristics to Harvest Reporting: Comparative Study of Household Surveys and Harvest Tickets in Alaska. Human Dimensions of Wildlife 19:334-346.
- Gustine D., Brinkman T., Lindgren M., **Schmidt J.I.**, Rupp T., and Adams L. (2014) Simulated climate-driven effects of fire on winter habitat for migratory tundra caribou in the Alaskan-Yukon Arctic. PLOS ONE, 9:1-11.
- Feng Z., Alfaro-Murillo J.A., DeAngelis D.L., **Schmidt J.I.,** Barga M., Zheng Y., Ahmad Tamrin M.H.B, Olson M., Glaser, T., Kielland K., Chapin III, F.S., and Bryant, J. (2012) Plant toxins and trophic cascades alter fire regime and succession on a boreal forest landscape. Ecological Modeling, 244:79-92.
- Kofinas G.P., Chapin F.S. III, BurnSilver S., **Schmidt J.I**., Fresco N.L., Kielland K., Martin S., Springsteen A., Rupp T.S. (2010) Resilience of Athabascan subsistence systems to Interior Alaska's changing climate. Canadian Journal of Forest Research, 41:1347-1359.
- **Schmidt J.I.**, Hundertmark K.J., Bowyer R.T., and McCracken K.G. (2009) Population structure and genetic diversity of moose in Alaska. Journal of Heredity, 100:170-180.
- **Schmidt J.I.**, Ver Hoef J.M., and Bowyer R.T. (2007) Antler size of Alaskan moose: effects of population density, hunter harvest, and use of guides. Wildlife Biology, 13:53-65.
- **Schmidt J.I.**, Ver Hoef J.M., Maier J.A.K., and Bowyer R.T. (2005) Catch per unit effort for moose: a new approach using Weibull regression. Journal of Wildlife Management, 69:1112-1124.

Papers in Progress for Reviewed Journals

- Hahn M.B., Kemp C., Ward-Waller C., Donovan S., and **Schmidt J.I.** (submitted) Collaborative climate mitigation and adaptation planning with university, community, and municipal partners: A case study in Anchorage, Alaska. Local Environment.
- Schwoerer T, **Schmidt J.I.**, Holen, D. (submitted) Predicting the food-energy nexus of wild food systems: Informing energy transitions for isolated indigenous communities. Ecological Economics
- Berman M., **Schmidt J. I.**, and Kofinas, G. (submitted) Adaptive capacity and resilient communities: theory and evidence from Alaska's North Slope. Frontiers in Ecology and Environment.
- **Schmidt J.I.**, Berman, M. and Marchioni M. (in prep) Observations of social-ecological change in the Aleutian Islands: Subsistence, climate, and society.
- **Schmidt J.I.**, and Berman M. (in prep) Institutions and Adaptive Capacity: Navigating climate variability and fisheries enclosures in three small, remote island communities.
- **Schmidt J.I.**, Monz C., Hausner V. (in prep) Building adaptive capacity in a changing Arctic by use of technology.
- **Schmidt J.I.**, Byrd A., Curl J., Brinkman T., and Heeringa K. (in prep) Renewable energy and sustainable futures in the Arctic: biomass and subsistence in Tanana Alaska.

Technical Reports

- **Schmidt J.I.** and Berman M. (2018) Adapting to Environmental and Social Change: Subsistence in Three Aleutian Communities.

- Loeffler B. and **Schmidt J.I.** (2017) Local Jobs and Income from Mineral Exploration. January 2017.
- **Schmidt J.I.** (2015) Land use in the Arctic. TUNDRA project final report. The Norwegian Research Council, (#S192040/S30).
- **Schmidt J.I.** (2015) Mining in the Arctic. TUNDRA project final report. The Norwegian Research Council, (#S192040/S30).
- **Schmidt J.I.** (2015) Community Dynamics in the Arctic. TUNDRA project final report. The Norwegian Research Council, (#S192040/S30).
- **Schmidt J.I.** (2015) Wildlife Management in Rural Alaska. TUNDRA project report. The Norwegian Research Council, (#S192040/S30).

Professional and Community Talks/Posters

- Alaska Food Festival and Conference, Homer, Alaska, March 8th – 9th, 2019. Gave a talk entitled "Planting the Seeds to Examine Food Security Challenges in the Alaska Food-Energy-Water Nexus"
- Community meeting, Tanana, Alaska, October 8th, 2018. Gave a talk entitled "Renewable Energy, Community, and Culture: Tanana"
- Arctic Frontiers, Tromso, Norway, January 24th, 2019. Gave a talk entitled "Fuel, Wood Use, and Subsistence"
- Arctic Frontiers, Tromso, Norway, January 24th, 2019. Gave a talk entitled "Can my GPS lead me to a sustainable future? The role of technology and lessons from three remote Arctic communities"
- Alaska Marine Science Symposium, Anchorage, Alaska, January 23rd –27th 2017 Gave a talk entitled: "Adaptation to Environmental Change in Three Aleutian Island Communities"
- Alaska Fish and Game managers, Fairbanks, Alaska November 2016, "Influence of society, climate, and landscape on moose harvests: case study north of Fairbanks"
- Alaska Chapter of The Wildlife Society, Anchorage, Alaska, March 30th – March 31st 2016 Gave a talk entitled: "Biases in Human Survey Data: ways to assess and correct"
- Arctic AAAS, Anchorage, Alaska October 2nd – October 3rd 2015. Gave a talk entitled: "Mining in the Arctic: A Social License Perspective"
- Arctic AAAS, Anchorage, Alaska October 2nd – October 3rd 2015. Gave a talk entitled: "Harvest and Land Use in the Arctic: What is the Role of Governance and Socio-Economic Conditions?"
- Invited speaker to a UAA Campus Bookstore event entitled "Addressing Local Needs amid Global Attention to the Changing Arctic", September 1st, 2015
- Invited speaker to a lecture series at the University of Alaska Anchorage "Understanding Alaska". Title of the talk "TUNDRA: drivers of change in circumpolar tundra ecosystems", January 30th 2014.
- Alaska Chapter of The Wildlife Society, Fairbanks, AK April 3rd – April 5th 2013. Gave a talk entitled: "Relationship of community characteristics to harvest reports by Alaskan moose hunters"
- Alaska Chapter of The Wildlife Society, AK April 3rd – April 5th 2013. Gave a talk entitled: "Future climate change impacts on boreal forest habitat for three resident birds in Alaska"
- 46th Annual Moose Conference, Jackson Hole, Wyoming. May 23rd - 26th, 2011. Presented a talk on "Effects of landscape characteristics on population connectivity of Alaskan moose".

- 46th Annual Moose Conference, Jackson Hole, Wyoming. May 23rd - 26th, 2011. Presented a talk on "Relationship of Community Characteristics to Harvest Reports by Alaskan Moose Hunters".
- LTER monthly meeting entitled "Ecosystem Services" November 13th 2008. Gave a talk entitled, "Trends of Interior Alaska Moose Hunters and Hunts"
- Alaska Chapter of The Wildlife Society, Juneau, AK. April 22nd – April 24th 2008. Gave a talk entitled, "Moose Hunting in Alaska: Statewide Trends in Hunter Travel and Access"
- Alaska Chapter of The Wildlife Society, Juneau, AK. April 16th – April 19th 2007. Gave a talk entitled, "Population Genetics of Moose in Alaska"
- American Indian Science & Engineering Society, Fairbanks, AK. October 24th 2007, Gave a talk entitled, "Population Dynamics and Hunter Harvest Characteristics for Moose in interior Alaska"
- The Wildlife Society 13th Annual Conference, Anchorage, AK September 23rd – September 27th 2006. Presented a poster titled: "Effects of Capture Method on Blood Parameters in Caribou: Evaluation of Physical and Chemical Immobilization Techniques"
- 84th American Society of Mammalogists Annual Meeting-Arcata, CA. June 12th – June 16th 2004. Presented a poster titled: "Success of moose hunters: A new approach for assessing CPUE".
- International Congress of Arctic Social Sciences (ICASS V)-Fairbanks, AK May 19th – May 23rd 2004. Presented a poster titled: "Success of moose hunters: A new approach for assessing CPUE "
- 39th Annual North American Moose Conference & Workshop-Jackson Hole, WY May 18th – May 22nd 2003. Presented a poster titled: "Effects of effort and motivation on success in interior Alaska moose hunters"
- Joint and Annual Northwest Section and Alaska Chapter of The Wildlife Society- Girdwood, AK, May 1st – May 3rd 2003, Presented a poster titled: "Success of moose hunters: A new approach for assessing CPUE"

Committees

- Lead for the Urban Forest and Watershed team on the Anchorage Climate Action Plan, 2018-2019.
- Graduate School Academic and Advisory Committee – University of Alaska Fairbanks, November 2009 – August 2010.
- Review and approve graduate courses, curriculum and graduate degree requirements, and other academic matters related to instruction and mentoring of graduate students.
- Advise the Dean of the Graduate School and the Provost on administrative matters pertinent to the operation and growth of graduate studies at the University of Alaska Fairbanks.

Professional Organizations

- The American Geophysical Union, 2019 - present
- The Wildlife Society member, 2007- present

GIS and Analytical Coursework

- Attendance at the Geostat course in Bergen, Norway. Geostats is a series of summer schools organized by R and OS GIS developers and enthusiasts. GEOSTAT aims at PhD students and R-

sig-geo enthusiasts in a range of environmental and GIS sciences, with a special focus on analyzing spatio-temporal gridded data in R and connected OS GIS software.

- Digital Image Processing in the Geosciences (Audited Fall 2019, UAF)
- Geoscience Applications of Remote Sensing (Audited Spring 2019)
- Natural Resource Applications of Remote Sensing (Audited Spring 2018, UAF)
- Python (Fall 2017, UAA)
- ESRI Going Places with Spatial Analysis
- ESRI Field Data Collection and Management Using ArcGIS
- ESRI Transitioning to ArcGIS Pro
- ESRI Creating and Sharing GIS Content Using ArcGIS Online
- ESRI ArcGIS Pro Basics
- ESRI Geoprocessing with ArcGIS Desktop
- ESRI Distance Analysis Using ArcGIS
- ESRI Creating and Integrating Data for Natural Resource Applications
- Using Python in ArcGIS Desktop 10
- Summer School on the "Modeling of Arctic Climate" at the International Arctic Research Center (IARC), University of Alaska Fairbanks
- ESRI Introduction to ArcView 3.2
- ESRI Basics of Geostatistical Analysis
- ESRI Learning ArcGIS I (for ArcView 8, ArcEditor 8, and ArcInfo 8)
- ESRI Creating and Maintaining Metadata Using ArcGIS Desktop
- ESRI Creating, Editing, and Managing Geodatabases for ArcGIS Desktop (for ArcGIS 9.0-9.1)
- ESRI Basics of the Geodatabase Data Model
- ESRI Understanding Map Projections and Coordinate Systems
- ESRI Cartographic Design Using ArcGIS 9
- ESRI Exploring the VBA Environment
- ESRI Introduction to ArcGIS 9 Geostatistical Analyst
- "GIS Programing" course at UAF, 2009
- "Experimental Design" statistical course at UAF, 2008

NOTE: To calculate the credit hours for ESRI courses, 1 credit semester hour is defined as 1 hour per week for a semester. At UAF semesters are 10 weeks so 10 hours of training would be the equivalent to 1 credit semester hour.

Workshops Attended & Additional Course work

- One Health, University of Alaska Fairbanks, March 2019.
- Greening and browning of the Arctic, Proceedings of the National Academy of Science, Washington, D.C., December 2018.
- 2018 Data Science Training for Arctic Researchers, August 13th – 17th, 2018, Santa Barbara, CA. NSF Arctic Data Center.
- Alaska Fire Science Consortium Remote Sensing, University of Alaska Fairbanks, April 2017.
- The Food-Energy-Water Nexus in Islanded Communities and High Latitudes: Issues, Pathways and Implications, University of Alaska Fairbanks, September 2016.

- Completed an online statistical course entitled "Statistical Learning" through Stanford University, April 2015.
- Web Map API training, January 2010
- Analyzing Animal Space Use: New Approaches to Studies of Home Range, Habitat Selection and Movements. June 28 29, 2009
- Scientific Teaching, May 2009
- Participated in a climate change workshop in Venetie, AK in the winter of 2008.
- Moose Management Workshop at the Alaska Chapter of The Wildlife Society meeting, Juneau, AK. April 18th 2007.
- Conservation Genetics Workshop at the Alaska Chapter of The Wildlife Society meeting, Juneau, AK. April 16th 2007.

Community Outreach and Service

Becoming an Outdoors Woman (BOW) volunteer, August 2009 - present
- Assist instructors teaching workshops and logistics.
- Volunteer at local community banquets and fundraisers.

Annual Alaska Department of Fish and Game Kids Fun Day volunteer, May 2009 – 2013
- Taught children and their parents how to identify animal tracks and pelts.

Educator at Wood River Elementary School, September 2010- January 2011
- Conducted snowshoe hare feeding trials with 5th graders,
- Teach the students about snowshoe hare biology and assist them as they actively participate in field work, data collection and analysis.

Tutor for the Alaska Literacy Council, September 2009 – September 2011
- Teach English as a second language which involves lesson planning and preparing materials.
- Act as a mentor and help familiarize them with local culture and info structure.

Emergency Medical Technician (EMT) Volunteer, Steese Area Volunteer Fire Department, May 2004-March 2007
- Worked weekly shifts and attended weekly training sessions.

Moose Hunter Check Station Volunteer at Ella's Cabin, September 2004, 2005, & 2008
- Spent a week each fall at a remote cabin in Western interior Alaska and issued hunting licenses and harvest tickets.
- Checked in and out hunters, answered their questions, and if an animal was harvested checked to ensure requirements of the hunt were met and collected biological data on the animal.

Volunteer Pharmacy and Computer Technician – Tabaka, Kenya, Africa, February 2005 – March 2007
- Helped dispense medicine and catalog current medicines the hospital possessed. Statistically analyzed various hospital data and helped local hospital employees with their computer skills.

Teacher's Assistant – Stowe Elementary School, Duluth, Minnesota, January 2002 –August 2002
- Conservation is a main theme of this elementary school. I helped a graduate student teach watershed conservation to mentally and physically challenged children.

Youth Mentor – Duluth YMCA, Duluth, Minnesota, February 2001 –August 2002
- This is the YMCA's version of a Big Brother/Sister program. Spend time with my child at least once a week doing various activities such as playing chess, racquetball, or anything exciting and/or educational.

Teacher's Aide –Y-Tutors, University of Minnesota – Twin Cities, September 1999 – January 2000

- Acted as a teacher's aide for a 9th grade biology class.

Youth Mentor – Y-Scholars, University of Minnesota - Twin Cities, September 1998 – June 1999

- Met with a group of inner-city middle school children once a week. Providing children a place to be after school and a chance to learn about the college.

Academic Tutor – Ronald McDonald House, Minneapolis, Minnesota, September 1998 – December 1998

- Tutored a terminally ill child with leukemia once a week.