THE CLASS OF 2011

Doctor of Philosophy Degrees

College of Engineering and Mines

Dr. Douglas J. Goering, Dean

Abhishek Choudhury

Ph.D. Mineral Engineering: Interdisciplinary Program

B.E., Mangalore University (India), 2001. M.S., University of Alaska Fairbanks, 2005

Thesis: Multiphysics Modeling of Gaseous Contaminant Transport in Deep Open Pit Mines under Arctic Air Inversions

Air inversion, one of the major challenges in arctic open-pit mines, contributes to significant health problems, and is influenced by complex aerodynamic and thermodynamic processes. A 3-dimensional Eulerian CFD model was developed to study heat and pollutant transport in an arctic open-pit mine under inversion. Natural ventilation alone did not suffice to mitigate the problem.

Major Professor: Dr. Sukumar Bandopadhyay

Koui Kim

Ph.D. Engineering: Arctic Engineering

B.C.E., Niigata University (Japan), 2001. M.S., Hokkaido University (Japan), 2003

Thesis: Multi-Dimensional Frost Heave Modeling with SP Porosity Growth Function

The overall goal of this research was to develop a multi-dimensional frost-heave model by applying the SP concept and to verify the model with results from the observed field pipeline experiment using long-term creep properties. The UAF frost-heave experiment was used to validate the developed multi-dimensional frost-heave model.

Major Professor: Dr. Scott Huang

Anna K. Liljedahl

Ph.D. Hydrology: Interdisciplinary Program

M.S., Umea University (Sweden), 2005

Thesis: The Hydrologic Regime at Sub-Arctic and Arctic Watersheds: Present and Projected

Anna Liljedahl studied hydrological processes occurring in permafrost regions. She examined the impact of a tundra wildfire on the hydrology and permafrost on the Seward Peninsula. She analyzed a low-gradient watershed near Barrow to determine the influence of subtle terrain features and the possible response to a warmer climate.

Major Professor: Dr. Larry Hinzman

College of Liberal Arts

Dr. Burns Cooper, Interim Dean

Maryanne Allan

Ph.D. Indigenous Studies

B.A., Seattle University, 1972. M.A., Seattle University, 1976

Thesis: Young Native Fiddlers: A Case Study on Cultural Resilience in Interior Alaska

This study explores the resilience of Alaska Native youth by using a cultural lens to examine the interconnectedness between culturally healthy youth and a culturally nurturing community. The study focuses on the impact of a culturally based youth group (Young Native Fiddlers) on its members and on the participating community.

Major Professors: Dr. Raymond Barnhardt and Dr. Joan Parker Webster

Kathryn Berry Bertram

Ph.D. Science Education, Cross-Cultural Studies: Interdisciplinary Program

B.A., Wittenberg University (Ohio), 1980. M.P.A., Indiana University-Bloomington, 1983

Thesis: Preparing Culturally Responsive Teachers of Science, Technology, Engineering and Math Using the Geophysical Institute Framework for Professional Development in Alaska

Berry Bertram's dissertation focuses on a professional development framework for preparing culturally responsive teachers of science, technology, engineering, and math. Research on two framework-based programs conducted with Alaskan teachers who instruct primarily indigenous students shows the framework to be effective under diverse circumstances for preparing culturally responsive STEM teachers.

Major Professor: Dr. Raymond Barnhardt

Christine Rojas Cook

Ph.D. Counselor Education: Interdisciplinary Program

B.A., Whitman College (Washington), 1991. M.S., Western Washington University, 1993

Thesis: Exploring the Challenges of School Counseling: Voices from Rural Alaska

This research investigated the challenges experienced by rural school counselors in the state of Alaska, and provides a glimpse into the specific resources these counselors utilize to help them address concerns in their communities. Recommendations are made for school counselors, school districts, state organizations and counselor education training institutes.

Major Professor: Dr. Raymond Barnhardt

June Ann Cotter

Ph.D. Special Education, Autism, and Communication: Interdisciplinary Program

B.A., University of South Carolina-Columbia, 1995. M.S., University of Kansas, 1998

Thesis: Reading Comprehension Strategies in Children with High Functioning Autism: A Social Constructivist Perspective

This study evaluated reading comprehension abilities of students with autism using a strength-based approach. Students with this disorder can and do learn to read and need to for life success. A social constructivist lens was used as a foundation for understanding communication and reading-comprehension skills in students with autism.

Major Professor: Dr. Jean Richey

April Laktonen Counceller **

Ph.D. Language Planning and Indigenous Knowledge Systems: Interdisciplinary Program

B.A., Brown University (Rhode Island), 2002. M.A., University of Alaska Fairbanks, 2005

Thesis: Niugneliyukut (We Are Making New Words): A Community Philosophy of Language Revitalization

This study investigates Alutiiq terminological development as a strategy for language revitalization. It contextualizes the Kodiak Alutiiq New Words Council within wider heritage efforts, investigates the value and meaning of the NWC to participants and communities, and uses these findings to critically evaluate the claims of "invention of tradition" scholarship.

Major Professor: Dr. Patrick Marlow

Sarah Lynn Dewane *

Ph.D. Clinical-Community Psychology

B.A., Washington State University, 1991. M.A., University of Alaska Anchorage, 1998

Thesis: Alaskan Physicians' Knowledge, Attitudes, and Behaviors Related to Fetal Alcohol Spectrum Disorders

Alaskan physicians' knowledge, attitudes and practices related to fetal alcohol spectrum disorders were examined via 243 survey and 24 interview respondents. Findings revealed physicians are knowledgeable about risks of prenatal alcohol exposure, but they need more comprehensive training opportunities and healthcare systems supports to provide effective FASD prevention and intervention.

Major Professor: Dr. Christiane Brems

Sarah Doetschman

Ph.D. Cultural Studies: Interdisciplinary Program

B.A., University of Cincinnati (Ohio), 1993. M.A., Pennsylvania State University-University Park, 1995

Thesis: Margaret Keenan Harrais: A Biography in Four Voices

Narrative strategies available to biography are explored through the life of Margaret Keenan Harrais — teacher, educational administrator, judge and activist. Biography is a particular endeavor requiring flexible inquiry and creative presentation. Margaret is viewed through multiple lenses that explore personhood, encourage readers' introspection and imply the importance of the individual in history.

Major Professor: Dr. Richard Carr

Stacey A. Fritz **

Ph.D. Anthropology

B.A., University of Montana, 1993. M.A., University of Alaska Fairbanks, 2002

Thesis: DEW Line Passage: Tracing the Legacies of Arctic Militarization

Grounded within the context of modern American militarization, this dissertation is a descriptive, ethnohistorical and ethnographic study focusing on the impacts and legacies of the development, implementation and decommissioning of the western sector of the Distant Early Warning radar line in northern Alaska and Canada's western arctic.

Major Professor: Dr. David Koester

George Guthridge *

Ph.D. Teaching of Writing: Interdisciplinary Program

B.A., Portland State University (Oregon), 1970. M.F.A., University of Montana, 1972

Thesis: Appropriating Apotomos: Using the Enthymeme to Teach Introductory Fiction and Nonfiction Writing

This dissertation adds to recent scholarship advocating for reintroducing the enthymeme into a central place in composition pedagogy. It shows that instructors can use the enthymeme to teach impromptu fiction writing, a practice that in turn demystifies nonfiction writing by enabling English composition to be taught in precise increments.

Major Professor: Dr. James Ruppert

Paul Rudolph Krejci **

Ph.D. Anthropology and Music: Interdisciplinary Program

B.A., University of Alaska Fairbanks, 1989. B.A., University of Alaska Fairbanks, 1990. B.A., University of Alaska Fairbanks, 1990. M.A., University of Alaska Fairbanks, 1993. M.A., University of Sydney (Australia), 1994

Thesis: Skin Drums, Squeeze Boxes, Fiddles and Phonographs: Musical Interaction in the Western Arctic, Late 18th Through Early 20th Centuries

This dissertation explores the nature of early globalization in the Western Arctic with a focus on the effects of musical interaction between native and foreign populations during the late 18th through 20th centuries. Southern representation of northern indigenous peoples in music and dance constitutes a second part of this study.

Major Professor: Dr. David Koester

Nathaniel Vincent Mohatt

Ph.D. Creative Writing and Community Psychology: Interdisciplinary Program

B.A., Colorado College, 1999. M.F.A., St. Mary's College of California, 2004

Thesis: *Shudder*: Poems and Essay on Cancer, Care, and Healing

Shudder chronicles a son's experience with his father's chronic lymphocytic leukemia. The introduction describes receiving cancer care at the MD Anderson Cancer Center in Houston, Texas. The poems weave together the MD Anderson trip and life after the father's death with a variety of images, memories, characters and spirits.

Major Professor: Dr. Derick Burleson

Josh Wisniewski

Ph.D. Anthropology

B.A., University of Alaska Anchorage, 2002. M.A., University of Alaska Anchorage, 2005

Thesis: Come On Ugzruk, Let Me Win: Experience, Relationality and Knowing in Kigiqtaamiut Hunting and Ethnography

This ethnography of marine mammal hunting explores linkages between personal experiences and shared understandings of ecological phenomena among a group of Kigiqtaamiut hunters in Shishmaref, Alaska. It examines the relationships between Kigiqtaamiut hunters' experiences in the world and how the experienced world is brought into being through hunters' ways of knowing.

Major Professor: Dr. Peter Schweitzer

College of Natural Science and Mathematics

Dr. Paul W. Layer, Dean

Travis L. Booms *

Ph.D. Biological Sciences: Zoology

B.S., University of Wisconsin-Stevens Point, 1999. M.S., Boise State University (Idaho), 2002

Thesis: Gyrfalcon Breeding Biology in Alaska

This dissertation includes an authoritative summary of current literature, a model that predicts the breeding distribution of Gyrfalcons across Alaska, a study that documents and measures detection probability, and a study that documents, for the first time in North America, dispersal, nest site fidelity and turn-over rates in breeding Gyrfalcons.

Major Professors: Dr. Falk Huettmann and Dr. Kevin McCracken

Amy Lynn Breen *

Ph.D. Biological Sciences: Botany

B.A., College of the Atlantic (Maine), 1994. M.A., University of Missouri-Columbia, 2000

Thesis: From Forest to Tundra: Historical Biogeography, Floristic Diversity and Nucleotide Variation in Balsam Poplar

Climate fluctuations drove major migrations in the history of the boreal forest. The paleobotanical record supports the presence of a balsam poplar refugium within Beringia. The genetic consequences of this refugium, however, were minimal due to a massive migration following deglaciation that swamped standing variation in balsam poplar populations today.

Major Professor: Dr. Matthew Olson

Elvin Brown **

Ph.D. Biochemistry and Molecular Biology

B.S., University of California-Berkeley, 1974

Thesis: ATP-Dependent Chromatin Remodeling Complexes in Xenopus Development

A central question in the study of vertebrate development is how genes direct the creation of the organs of the vertebrate embryo during development. I demonstrate a role for the protein CHRAC17 in development by visualizing its expression and by ablating its function in *Xenopus laevis* embryos.

Major Professors: Dr. Kelly Drew and Dr. Jocelyn Krebs

Mariana Bulgarella **

Ph.D. Biological Sciences: Biology

B.S., Universidad Nacional de la Patagonia San Juan (Argentina), 2004

Thesis: Ecogeographical, Adaptive and Phylogenetic Variation in the Crested Duck (*Lophonetta specularioides*) and their Hemoglobins in the Andes

I investigated genetic differentiation between highland and lowland populations of Crested Duck (*Lophonetta specularioides*) using molecular markers, evaluated morphological differences between the two subspecies to better understand the forces shaping morphology in the different environments, and provided information on the taxonomic relationships and natural history of the Crested Duck.

Major Professor: Dr. Kevin McCracken

Fred John Calef III *

Ph.D. Geology

B.S., University of Massachusetts Boston, 1992. M.S., Ohio University, 1998

Thesis: Investigating the Retention of Bright and Dark Ejecta from Small Rayed Craters on Mars

Small rayed impact craters form across the surface of Mars. Ejecta retention, the time span and ability of excavated material to remain around a crater rim, records a lineage of recent surface activity. SRC ejecta morphology and spatial distribution were examined to estimate retention age and evaluate dominant surface processes.

Major Professor: Dr. Robert Herrick

Anna Godduhn

Ph.D. Environmental Health: Interdisciplinary Program

B.S., University of Alaska Fairbanks, 1996. M.A., University of Alaska Fairbanks, 2003

Thesis: The Northway Wild Food and Health Project: Confronting the Legacy of Toxic Waste along the ALCAN

Collective local knowledge in Northway makes important implications regarding endocrine disruption via multiple historic and unquantifiable exposure pathways. Community-based participatory research has significant capacity to improve local and scientific understanding of the repercussions of chronic low-dose exposures to toxic waste in rural communities, despite deep complexity and inherent uncertainty.

Major Professor: Dr. Lawrence Duffy

David D. Gustine **

Ph.D. Biological Sciences: Wildlife Biology

B.A., University of Oklahoma, 1994. B.S., Colorado State University, 2000. M.S., University of Northern British Columbia (Canada), 2005

Thesis: Protein Status of Muskoxen and Caribou in Late Winter

Nitrogen isotopes were used to assess the protein status of muskoxen and caribou. Foraging constraints decreased the amount of body proteins available for reproduction. Although challenges remain to applying isotopic proxies as a monitoring tool, nitrogen isotopes may be used to evaluate environmental constraints for northern ungulates at small scales.

Major Professor: Dr. Peregrine Barboza

Troy Michel Hegel *

Ph.D. Biological Sciences: Wildlife Biology

B.S., University of Montana, 1999. M.S., University of Calgary (Canada), 2004

Thesis: Spatio-Temporal Recruitment Dynamics of Mountain-Dwelling Caribou in the Yukon Territory, Canada

Factors influencing recruitment were investigated for mountain-dwelling woodland caribou in Yukon Territory, Canada. Recruitment was influenced by Pacific-based climate during the winter and calving seasons, and the interaction between climatic conditions and wolf density. By assessing spatial synchrony of recruitment, it was determined terrain factors also play a role in recruitment.

Major Professor: Dr. Falk Huettmann

Deanna M. Huff **

Ph.D. Environmental Chemistry

B.S., Michigan Technological University, 1996

Thesis: The Role of Ice Surfaces in Affecting Nighttime Removal of Nitrogen Oxides in High Latitude Plumes

Nitrogen oxide removal from the atmosphere occurs via nitric acid formation, which leads to acidification and nitrogen fertilization. In this work, we measured the deposition velocity of N_2O_5, a first-time measurement. Our studies demonstrated higher mixing ratios and longer lifetimes of N_2O_5 aloft than near the Earth's surface.

Major Professor: Dr. William Simpson

Anastasia G. Ilgen **

Ph.D. Environmental Chemistry

M.S., Kamchatka State Technical University (Russia), 2001

Thesis: Controls on Antimony and Arsenic Speciation Via Sorption and Redox Chemistry at the Clay Mineral – Water Interface in Natural and Laboratory Settings

This study details the sorption and redox behavior of arsenic and antimony in clay-rich natural and laboratory systems. The role of clay, structural iron and aqueous iron (II) in redox transformations of arsenic and antimony is determined. Antimony inner-sphere sorption complexes on amorphous aluminum oxide and clay minerals are described.

Major Professor: Dr. Thomas Trainor

Tulasi Ram Jinka **

Ph.D. Veterinary Neuroscience and Animal Research Compliance: Interdisciplinary Program

B.S., Acharya N.G. Ranga Agricultural University (India), 2000

Thesis: Central Nervous System Regulation of Metabolic Suppression in Arctic Ground Squirrels

My dissertation reports that sensitization to the effects of endogenous adenosine serves as a seasonally regulated switch facilitating A1AR mediated torpor in arctic ground squirrels (*Urocitellus parryii*), peripheral/circumventricular NMDAR are involved in arousal in arctic ground squirrels, dietary restriction sensitizes rat's A1AR mimicking a torpor-like decrease in metabolism and temperature, and discusses ethical aspects of hibernation research.

Major Professor: Dr. Kelly Drew

Cassandra Marie Kirk **

Ph.D. Biological Sciences: Wildlife Biology and Conservation

B.A., Bard College (New York), 1998

Thesis: Sentinels of Arctic Ecosystem Health: Polar Bear and Arctic Fox

Climate change impacts human, wildlife and ecosystem health in the Arctic. Sentinel species can be used to monitor and therefore intervene to prevent adverse health outcomes before they manifest at the population level. This dissertation demonstrates the utility of polar bears and arctic foxes as sentinels for arctic ecosystem health.

Major Professor: Dr. Todd O'Hara

Samuel Aaron Lazerson *

Ph.D. Space Physics

B.S., Embry-Riddle Aeronautical University (Florida), 2002

Thesis: Magnetic Reconnection as a Chondrule Heating Mechanism

The origin of chondrules (proto-solar relics) remains today an open question despite over a century of examination. They are the oldest solids in the solar system. Magnetic reconnection in a dusty plasma is forwarded as a chondrule heating mechanism. Through numerical simulations this process is examined.

Major Professor: Dr. Heinz M. Wiechen

Dong-Chang Lee *

Ph.D. Space Physics

B.S., Fort Lewis College (Colorado), 2001. M.S., University of Kansas, 2003

Thesis: Neural Network Approach to Classification of Infrasound Signals

A neural network is examined for automatic classification of mountain-associated waves and high-trace velocity signals against spurious signals with common characteristics. The trained network is designed to replace an expert analyst. In addition, it is robust, resistant to errors and the biases of human operators.

Major Professor: Dr. Curt Szuberla

Sara Kristen Moses *

Ph.D. Biological Sciences: Wildlife Biology

B.A., College of the Holy Cross (Massachusetts), 1999

Thesis: Nutrient and Contaminant Dynamics in the Marine Food Web of Kotzebue Sound (Alaska)

This dissertation describes nutrient and contaminant levels in select fish and mammals of the Kotzebue Sound marine food web, investigates the physical-chemical drivers of bioaccumulation and observed nutrient and contaminant patterns, and tests several assumptions associated with the chemical tools used to characterize nutrient and contaminant dynamics within food webs.

Major Professor: Dr. Todd O'Hara

Jonathan Andrew O'Donnell **

Ph.D. Biological Sciences: Biology

B.S., Elizabethtown College (Pennsylvania), 2000. M.S., University of Alaska Fairbanks, 2005

Thesis: The Effects of Permafrost Degradation on Soil Carbon Dynamics in Alaska's Boreal Region

I examined the effects of permafrost thaw on soil organic carbon dynamics in boreal ecosystems of Interior Alaska. In upland forests, severe wildfires may enhance permafrost and soil carbon loss to the atmosphere. In lowland forests, permafrost thaw initiates bog formation and soil carbon loss from recently thawed soil horizons.

Major Professor: Dr. A. David McGuire

Jennifer K. Rohrs-Richey **

Ph.D. Biological Sciences: Biology

B.A., University of Colorado-Boulder, 1999. M.S., University of Alaska Fairbanks, 2004

Thesis: Biotic Pest Damage of Green Alder (*Alnus fruticosa*): Susceptibility to a Stem Disease (*Valsa melanodiscus*) and Functional Changes Following Insect Herbivory

My dissertation evaluates how the boreal shrub *Alnus fruticosa* minimizes the functional impacts of biotic damage. Following biotic attack, *A. fruticosa* increases the physiological efficiency of the remaining leaf area, increases the potential for carbon gain and regulates leaf water status. These mechanisms are coordinated to maintain physiological homeostasis.

Major Professor: Dr. Christa Mulder

Elena Suleimani

Ph.D. Geophysics

B.S., Gorky State University (Russia), 1988. M.S., University of Alaska Fairbanks, 1996

Thesis: Numerical Studies of Tectonic and Landslide-Generated Tsunamis Caused by the 1964 Great Alaska Earthquake

The focus of the thesis is on the complex source of tectonic and landslide tsunami waves generated by the 1964 Great Alaska Earthquake. Numerical modeling is used to study waves caused by large-scale submarine slope failures, and to improve the source function of the tectonic tsunami.

Major Professor: Dr. Roger Hansen

Audrey Rebecca Taylor

Ph.D. Biological Sciences: Wildlife Biology and Conservation

B.S., Cornell University (New York), 1997. M.S., Colorado State University, 2002

Thesis: Postbreeding Ecology of Shorebirds on the Arctic Coastal Plain of Alaska

I studied large-scale distribution, community characteristics, movement patterns and residence time of postbreeding shorebirds along the coast of northern Alaska, from Kasegaluk Lagoon to the Canadian border. I also investigated whether physiological indicators could be used to evaluate variation in habitat quality at individual postbreeding sites.

Major Professor: Dr. Abby Powell

Gregory Scott Van Doren *

Ph.D. Indigenous Science Education: Interdisciplinary Program

B.S., Washington State University, 1981. M.S., Washington State University, 1983.
M.A.T., Heritage University (Washington), 2008

Thesis: Science Education in Rural America: Adaptations for the Ivory Tower

The National Science Foundation Self-Assessment of Learning Gains measured science learning gains in Native American communities. A long-term faculty commitment to place-based informal science education (not short-term exhibits or programs) was determined as a crucially needed initiative if relationships between universities and Native American communities are to improve.

Major Professor: Dr. Lawrence Duffy

Johann Walker

Ph.D. Biological Sciences: Wildlife Biology

B.S., University of Montana, 2001. M.S., University of Alaska Fairbanks, 2004

Thesis: Survival of Duck Nests, Distribution of Duck Broods, and Habitat Conservation Targeting in the Prairie Pothole Region

The Prairie Pothole Region provides important habitat for large populations of breeding ducks. Using multi-year, landscape-scale sampling designs, I observed that nest survival was related to both current and recent environmental conditions, wetland occupancy by broods was related to habitat features, and the area of habitat protected had declined annually.

Major Professors: Dr. Mark Lindberg and Dr. Jay Rotella

School of Education

Dr. Eric C. Madsen, Dean

Heather-Lee M. Baron *

Ph.D. Reading Education and Linguistics: Interdisciplinary Program

B.A., Edinboro University of Pennsylvania, 1996. M.Ed., Edinboro University of Pennsylvania, 2001

Thesis: The Influence of Positive Mother-Child Verbal Interactions On Adolescent Mothers' Literacy

This study examined the influences a family literacy program based on mother-child verbal interactions would have on the participating adolescent mothers' literacy skills. The participants' reading levels improved, there was a relationship between the participants' attitude and motivation scores and their participation, and environmental factors may have influenced participant participation.

Major Professor: Dr. Melissa Rickey

Samantha McMorrow *

Ph.D. Counselor Education: Interdisciplinary Program

B.A., Spring Arbor College (Michigan), 2004. M.Ed., University of Alaska Fairbanks, 2006

Thesis: Alaska Elementary School Counseling: Current Practices And Future Directions

The American School Counseling Association and the Alaska Department of Education and Early Development recommend implementation of a comprehensive counseling program. This survey research analyzed data from elementary school counselors in Alaska. The data indicated that Alaska elementary school counselors are facing many challenges not addressed by the national model.

Major Professors: Dr. Allan Morotti and Dr. Anthony Strange

Britton Niles

Ph.D. Multi Cultural Counseling Psychology: Interdisciplinary Program

B.A., University of Alaska Fairbanks, 2003. M.A., University of Alaska Fairbanks, 2005

Thesis: Differences Between Frequency of Diagnosis, Diagnosis Extremity, and Global Assessment of Functioning Score in a Euro-American and Alaska Native Client

Randomly assigned counseling students viewed a video recording of either a Euro-American or Alaska Native client's mock mental health intake session. Except for ethnicity, the intake sessions were identical. Significant quantitative and substantial qualitative differences were identified between participants' assessments of the Alaska Native and the Euro-American client.

Major Professor: Dr. Allan Morotti

School of Fisheries and Ocean Sciences

Dr. Michael A. Castellini, Dean

Douglas H. Dasher **

Ph.D. Environmental Sciences: Interdisciplinary Program

B.S., Montana State University-Bozeman, 1975. M.S., Texas Tech University, 1979

Thesis: Development and Application of a Methodology to Estimate Regional Natural Conditions for Trace Metals in Marine Sediments of Southcentral Alaska's Coastal Region

Responsible environmental management of resource activities along Alaska's Southcentral coastline requires statistical methodologies for assessing spatial distribution of sediment trace metals and their background conditions. The statistical methodologies applied in the dissertation show that overall sediment trace metals along this coastline reflect background rather than human inputs.

Major Professor: Dr. John Kelley

Lei Guo **

Ph.D. Marine Biology

B.S., Ocean University of China (People's Republic of China), 2003

Thesis: Describing Forage Fish Availability in Coastal Waters of the Kodiak Archipelago, Alaska

To better understand local trophic interactions and their role in regional apex predator population fluctuations, forage fish diets, distribution patterns and energy density were assessed in coastal waters of the Kodiak Archipelago. Results are important for developing trophodynamic models and ecosystem-based fishery management plans in the North Pacific Ocean.

Major Professors: Dr. Robert Foy and Dr. Kathleen Wynne

Jeremy Lucas Kasper **

Ph.D. Oceanography

B.A., Reed College (Oregon), 1999

Thesis: Idealized Modeling of Circulation Under Landfast Ice

Idealized analytical and numerical models are used to elucidate the effects of a spatially variable landfast ice cover on under-ice circulation. Models are configured to resemble the Alaska Beaufort Sea shelf, and results show that the inclusion of landfast ice means shelf response is substantially different from an ice-free shelf.

Major Professor: Dr. Thomas Weingartner

Christine Kondzela **

Ph.D. Fisheries

B.S., Humboldt State University (California), 1983. M.S., University of Alaska Southeast, 1986

Thesis: The Colonization Mechanism of Pink Salmon Populations in Glacier Bay, Alaska, Based on Genetic Data

Genetic signals were used to elucidate the colonization mechanisms of pink salmon in Glacier Bay, Alaska, following retreat of the last glacial advance. Colonists were from nearby sources; few donor sources and a moderate number of colonists were involved in colonization; and gene flow following initial colonization was limited.

Major Professor: Dr. A.J. Gharrett

Jodi L. Pirtle **

Ph.D. Fisheries

B.S., Western Washington University, 2001. M.S., Washington State University, 2005

Thesis: Habitat Function in Alaska Nearshore Marine Ecosystems

This research demonstrates how habitat structures subtidal communities and supports individual species in Alaska nearshore marine ecosystems. This was accomplished through a case study of Southeast Alaska coastal regions, and an in-depth investigation of the early-life-stage ecology and nursery habitat of red king crab, *Paralithodes camtschaticus*.

Major Professors: Dr. Ginny Eckert and Dr. Jennifer Reynolds

Cindy Ann Tribuzio *

Ph.D. Fisheries

B.S., Central Washington University, 1999. M.S., University of Washington, 2004

Thesis: Life History, Demography, and Ecology of the Spiny Dogfish (*Squalus acanthias*) in the Gulf of Alaska

Spiny dogfish are small sharks common in coastal waters which are often commercially harvested. In the Gulf of Alaska, they are not targeted, but catch can be high. This study examined the biology of dogfish relevant to current catch levels and potential future harvest, and provided critical information for fisheries management.

Major Professor: Dr. Gordon Kruse

Jason N. Waite **

Ph.D. Marine Biology

B.S., Virginia Polytech State University, 1997. M.S., Texas A & M University, 2000

Thesis: Resource Partitioning Among Sympatric Steller Sea Lions and Northern Fur Seals on Lovushki Island, Russia

Steller sea lions and breeding and non-breeding northern fur seals occur on Lovushki Island. Resource partitioning was examined using scats, isotopes, fatty acids and telemetry. Steller sea lion and breeding northern fur seal partitioning reflected differences in pups' fasting abilities. Due to significant dietary overlap and continued population growth, non-breeding northern fur seals could competitively exclude Steller sea lions.

Major Professors: Dr. Russell Andrews and Dr. Michael Castellini