THE CLASS OF 2012

DOCTOR OF PHILOSOPHY DEGREES



College of Engineering and Mines r. Douglas J. Goering, Dean

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Ph.D. Engineering: Environmental Engineering

B.Eng., University of Pretoria (South Africa), 2001.

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Va , , M. G d

Clinical-Community Psychology Ph.D.

(Awarded jointly by the University of Alaska Fairbanks and the University of Alaska Anchorage) B.A., University of Alaska Fairbanks, 1997; M.S.W., Yeshiva University (New York), 2001.

COLLEGE OF NATURAL SCIENCE AND **M**ATHEMATICS

Dr. Paul W. Ll1U1Q2p)-16(1.111 Tr3(a)-125DeJ \$2p)9 JTJET Q

^{*} Summer degree recipient ** December degree recipient

J. ca A. C. A a Ph.D. Biological Sciences: Wildlife Biology

B.S., Davidson College (North Carolina), 1994; M.S., University of Florida, 1998.

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Capti e and eld studies were conducted to determine the ph. siological and ecological adaptations of the North American porcupine (Erethizon dorsatum) to winter in Alaska. Porcupines were able to efficiently digest low quality forage and conserted energy, by maintaining lower eld metabolic rates, while utiliting fat stores to conserte lean tissue.

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Ma, a M. Da , /-W, > *

Ph.D. Biochemistry/Molecular Biology

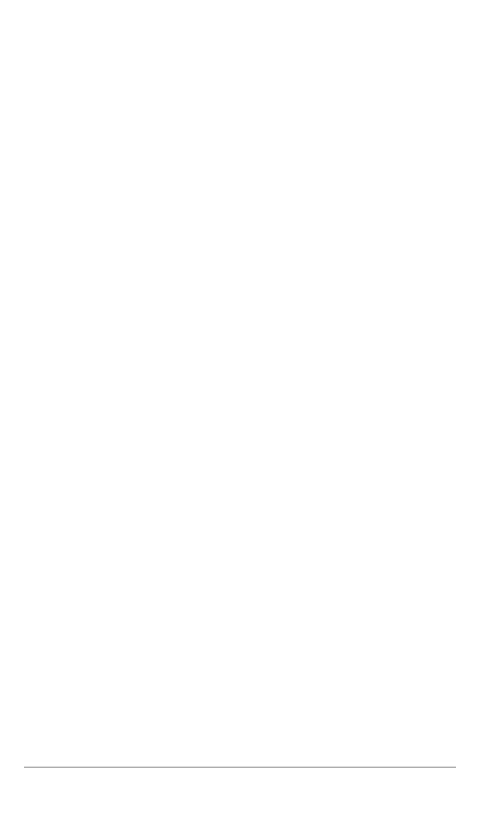
B.S., University of Alaska Fairbanks, 2006.

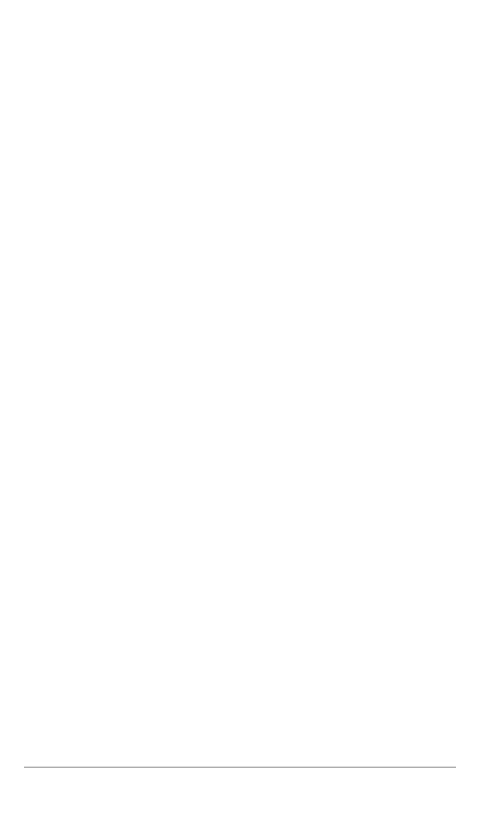
D. sregulation of neuronal nicotinic acet. Icholine receptors (nAChRs) can lead to pathologies including Al heimer's disease, autism and nicotine addiction.

New therapeutic a enues are positi e allosteric modulators (PAMs). This thesis in estigates the PAMs desform. I ustrabromine and 4-(2-h. dro . eth. I)-1-pipera ineethanesulfonic acid) (HEPES) interactions with alpha and alpha 4 and alpha 4 beta 2 nAChRs. Disco eries will facilitate the de elopment of therapeutic ligands.

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Ma. La + d D., c \(\tilde{C} \) c \(c \) c \(81, 82895 \) 10\(\tilde{M} 6 \(\tilde{M} 129 \) \(\tilde{M} 1850 \) \(\tilde{M} 30 \) 9 5.940.4 3\(\tilde{M} 3 \) 7\(\tilde{M} 3 \)





L a Ka O

Ph.D. Geology

B.A., University of Alaska Fairbanks, 1969; M.S., University of Alaska Fairbanks, 1971.

Chemical and isotopic anal, ses of pore atter from permafrost cores taken from the dr. lake bed of ancient Lake Atna in the Copper Ri er Basin and from an upland loess deposit northeast of Fairbanks, Alaska, re eal information about the local past en ironments not a ailable b. other means.

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Ph.D. Geology

B.S., Sambalpur University (India), 2001; M.S., Indian Institute of Technology Roorkee (India), 2003.

The stud, employed a combination of eld data and remote sensing techniques to generate a near surface permafrost map for a part of the Alaska High a corridor. It also modeled the effects of past and future changes in air temperature and inter snow precipitation on permafrost temperature and active-later thickness.

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Ph.D. Geology

B.S., Bemidji State University (Minnesota), 1996; M.S., New Mexico Institute of Mining and Technology, 1999.

A study of the chemistry and morphology of airborne ash collected from three

^{*} Summer degree recipient

Mac G. Ś ń **Ph.D. Geology**

R b LEd a d W / *

Ph.D. Biological Sciences: Biology

B.S., University of Minnesota Twin Cities, 1997.

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(Anas cyanoptera) - (A. discors)

Heterogeneit, in selection pressures resulted in morphological and genetic differentiation among South American Cinnamon Teal subspecies. The recentldierged Cinnamon Teal and Blue-Minged Teal are distinct morphologicalland genetically Paraphaletic populations suggest multiple North America coloniations by Cinnamon Teal, enabling the formation of Blue-Minged Teal and North American Cinnamon Teal.

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Ja · Z

Ph.D. Atmospheric Sciences

B.E.E., Southeast University (People's Republic of China), 1985; M.E.E., Nanjing Aeronautical Institute (People's Republic of China), 1988.

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Cirrus clouds are in estigated globall, in terms of their macro and bulk-micro ph. sical properties, as mell as the linear depolari ation ratios deri ed from the Cloud Aerosol Lidar and Infrared Path nder Satellite Obser ation dataset. The radiati e effects of cirrus clouds are e aluated using a radiati e transfer model.

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SCHOOL OF EDUCATION

Dr. Allan Morotti, Interim Dean David M. QHerbert Ph.D. Educated Cameron and Qinn s types of organizational culture —hierarchelan, and adhocracy. Participants (47) completed the Anticipant Organizational Culture Assessment Instrument. No statistic correlations were found. Major Professor: Dr. Gary Jacobsen

^{*} Summer degree recipient

Mca Aa J

Education and Intercultural Studies: Interdisciplinary Program

B.A., Columbia International University (South Carolina), 1994; M.A., Columbia International University (South Carolina), 1997.

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An e ploration of h. Ahtna Athabascans ha e chosen not to become public school teachers used atcross-cultural mi ed-method approach including a non-formali ed sur e, and phenomenological inter iens. A thematic analysis identif ed barriers such as negati e K-12 e periences, f nancial disincenti es, and the lack of culturall, appropriate guidance counseling programs.

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SCHOOL OF FISHERIES AND OCEAN SCIENCES

Dr. Michael A. Castellini, Dean

B . . . A A ... Ph.D. **Fisheries**

B.A., College of the Atlantic (Maine), 1981; M.S., University of Maine, 1992.

ss r s r s (Oncorhynchus S Irscc keta)

Climate shifts and interspecific interactions in the Russian pink and Asian chum salmon in uenced chum salmon growth. Warmer ocean temperatures led to faster rst-lear scale growth, but Asian chum salmon abundance negati el. affected third ...ear growth. These results suggest competition among salmon, potential L_1 affecting chum fecundit L_2 b 3 percent.

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S. A Linba d Da

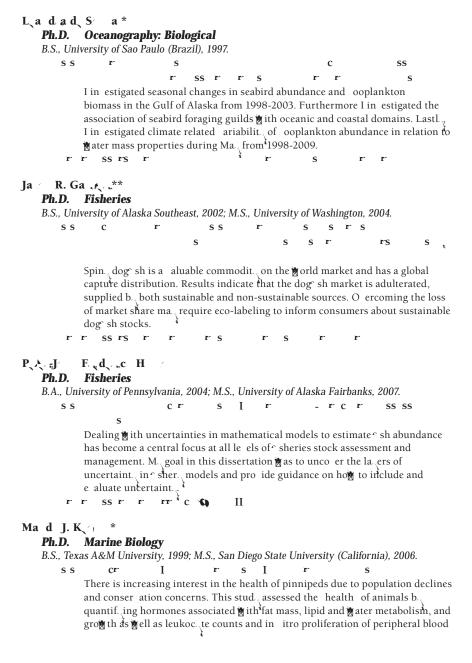
Oceanography: Physical

B.S., Lehigh University (Pennsylvania), 1990; M.S., University of Alaska Fairbanks, 1996.

SS s

Somoptic, seasonal and inter-annual ariations in the Bering shelf temperature, salinit, and circulation elds are dri en b, the Aleutian Long position and strength. Wind-dri en surface Ekman di ergence reorgani es currents into to opposing modes of circulation. These results ha e implications for the ad ection of oceanic contaminants, heat, fresh ater, nutrients, and plankton.

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^{*} Summer degree recipient

Sa a E ab M .*

Ph.D. Fisheries

B.A., University of Colorado Boulder, 2000; M.S., University of Alaska Fairbanks, 2007.

When stabilit was below a erage within Prince William Sound, the relationship between she condition and sur i alwas positie. Our ndings were similar between the upwelling and downwelling domains, but differed by the distance offshore. Marine sur i al rates increased for pink salmon that e perienced below-a erage stability on the inner shelf during early marine residence.

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D S S O pa Ph.D. Fisheries

B.S., California State University Long Beach, 1987; M.S., California State University Stanislaus, 1995.

The in uences of incubation temperature and genetics on hatching time and de elopment of otoliths and gill rakers were e amined in nati e and h. brid pink salmon. Their de elopment was in uenced b. temperature. Hatching had weak genetic in uences. Otolith de elopment was canali ed. H. bridi ation prolonged de elopment times but did not alter gill raker de elopment.

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Ta a Ma , S. , , a d **

Ph.D. Marine Biology B.A., Western Washington State University, 1971; M.S., University of Alaska Anchorage, 1988.

This stud, determined how changing en ironmental conditions due to glacial melting affect subarctic nearshore kelp bed communit, structure and organisms tness. Kelps showed some resilience to glacial melt stressors through phenot, pic plasticit, within a geneticall, so ed seasonal growth cocle, but o erall communit, composition declined.

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Fisheries

B.S., Bangalore University (India), 1997; B.S., Florida Atlantic University, 2002.

(Gadus macrocephalus), c (Theragra

chalcogramma), rr c c (Clupea pallasii)

Nucleic acid ratios (RNA/DNA) were used to compare growth between fed and star ed Pacif c herring, and Pacif c cod and Malle e pollock lar ae. Changes in herring RNA/DNA indicated terminal star ation and resource allocation. Colder temperatures increased RNA/DNA in cod and pollock. Cod nucleic acid patterns mere used to identif, grom th stan as.

Nara Lads a ***

Marine Biology Ph.D.

B.A., Carleton College (Minnesota), 1996.

SS I c rc

Sea otters forage selectiel, in a ariet, of nearshore habitat types in Alaska. The focus of this dissertation was to e amine the in uence of benthic habitat comple it ,, pre, qualit ,, and predator a oidance on sea otter foraging site selection in populations inhabiting the Aleutian Islands and Lower Cook Inlet.



SCHOOL OF NATURAL RESOURCES AND AGRICULTURAL SCIENCES

Dr. Carol E. Lewis. Dean

Ed adP

Natural Resources and Sustainability

B.A., Rochester Institute of Technology (New York), 1973; M.P.A., University of Alaska Southeast, 1994.

ssc rs

This stud, sought to identify the conditions for facilitating implementation and use of communit, sustainabilit, indicator programs. Through an analysis of sustainabilit, acti ities in sample cities across the United States and a case stud, of Juneau, Alaska, conditions for effecti e sustainabilit, indicator implementation and use mere disco ered.

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A Z a *

High Latitude Agriculture: Interdisciplinary Program

B.S., Shanxi Agricultural University (People's Republic of China), 2002; M.S., China Agricultural University, 2005.

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The stud, was to nd suitable methods to predict potentiall, minerali, able organic N*(PMN) for subarctic Alaska soils. Results showed that PMN in these soils can be estimated by a double e ponential model with ed rate constants and unknown pool si e, hot (80 C) water e tractable or 1 M NaOH h, drol, sable organic N.

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