Cole Killian Deal

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EDUCATION

2021-present — PhD Student in Biology
Colorado State University – Fort Collins
Supervisor: Dr. Cory Williams
Research Focus: Seasonal changes in mammalian neuroendocrine circuits
GPA: 4.0

2021 — Masters in Biology
Memorial University of Newfoundland and Labrador
Supervisor: Dr. Hélène Volkoff
Research Focus: Neuroendocrine regulation of feeding in fish
GPA: 4.0

2018 — Bachelor of Science in Biology
Minor in Environmental Science
University of Alaska Southeast, Juneau, AK
2018 Outstanding Graduate in Biology
Research Focus: Physiology/Endocrinology of crustaceans
GPA: 3.68 *cum laude*

RESEARCH EXPERIENCE

2021-Present **PhD Student**

Colorado State University, Department of Biology, Fort Collins, CO
Research: Seasonal changes in appetite-related neuroendocrine circuits of a hibernating mammal (Advisor: Cory Williams)

2019-2021 **M.Sc. Student**

Memorial University of Newfoundland, Department of Biology, St. Johns, NL
Research: Investigating the role of the hypothalamus-pituitary-thyroid axis in the neuroendocrine regulation of appetite in goldfish, *Carassius auratus* (Advisor: Dr. Hélène Volkoff)

2015 - 2018 **Laboratory Technician/Undergraduate Researcher**

University of Alaska Southeast, Department of Natural Sciences, Juneau, AK
Research: Comparative physiology and endocrinology of marine invertebrates
(Advisor: Dr. Sherry Tamone)

2016 – 2018 **Undergraduate Research Assistant**

University of Alaska Fairbanks, College of Fisheries and Ocean Sciences, Juneau, AK
Research: Spatial and temporal trends in Steller Sea lion strandings in Alaska and the Pacific Northwest. Undergraduate research assistant to Janessa Esquible (M.Sc.).

AWARDS AND GRANTS

2021 -University of Alaska IDeA Network of Biomedical Excellence Graduate Research Award (2 years @ $28,000 annum) - **declined**
-Society for Integrative and Comparative Biology. Division of Comparative Endocrinology Aubrey Gorbman Best Student Paper Competition Finalist

2019 -Vice President of Research Special Award. Nature Masterclass
-Memorial University of Newfoundland School of Graduate Studies Fellowship ($8500.00 annum, awarded through 2021)

2018 -University of Alaska Southeast Outstanding Biology Graduate
-University of Alaska Southeast. Student Research Assistant Award

2017 -BLaST Travel Award. Travel grant awarded to attend and present a research poster at the 2018 Society for Integrative and Comparative Biology (SICB) Annual Meeting. ($1129.00)
-Undergraduate Research and Creative Activity, Icicle Seafoods Fisheries and Marine Science Research Endowment. Funds for research in molting hormones in Dungeness crab. ($1243.60)

PEER-REVIEWED PUBLICATIONS

1) **Deal, C.K.** and Volkoff, H. (2021). Effects of thyroxine and propylthiouracil on feeding behavior and the expression of hypothalamic appetite-regulating peptides and thyroid function in goldfish (*Carassius auratus*). *Peptides*. 142: 170578. https://doi.org/10.1016/j.peptides.2021.170578

2) **Deal, C.K.** and Volkoff, H. (2021). Response of the thyroid axis and appetite-regulating peptides to fasting and overfeeding in goldfish (*Carassius auratus*). *Molecular and Cellular Endocrinology.* 528: 111229. https://doi.org/10.1016/j.mce.2021.111229

3) **Deal, C.K.** and Volkoff, H. (2020). The role of the thyroid axis in fish. *Frontiers in Endocrinology.* 11: 861-861. https://doi.org/10.3389/fendo.2020.596585

PUBLICATIONS IN REVIEW OR IN PREP

Deal, C.K., Florant, G., Williams, C.T. (in prep). Control of feeding, appetite, and body weight in mammalian hibernators: new developments and future perspectives. *Journal in consideration.*

Williams, C.T., Chmura, H.C., **Deal, C.K.,** Wilsterman, K. (in prep). Sex-differences phenology: a Tinbergenian perspective. *Integrative and Comparative Biology.*

PUBLICATIONS (Non-Peer Reviewed)

Wiersma, Y., Catto, N. **Deal, C.K.**, Edinger, E., Evans, R., Geissinger, E., Hearn, C., Lim, K.S., McCann, N., MacDonald, K., Meyer, A., Prosser, J., Quinn, D. Richmond, I.C., Rizzuto, M., Roncal, J., Swain, M. (2020). The classroom goes virtual – experiences at Memorial University. *https://nllandscapeecology.com/blog-post-teaching-and-learning-remotely-time-to-read-4-min-45-s/*

ACCEPTED/PUBLISHED ABSTRACTS

Deal, C.K. and Volkoff, H. (2021). Effect of thyroid hormones on feeding behavior and the expression of appetite-regulating neuropeptides in goldfish. North American Society for Comparative Endocrinology Virtual Meeting. May 25-27, 2021.

Deal, C.K. and Volkoff, H. (2021). Response of the thyroid axis and appetite-regulating peptides to fasting and overfeeding in goldfish, *Carassius auratus*. Society of Integrative and Comparative Biology Virtual Meeting, January 3-7, 2021.

Tamone, S.L., **Deal, C.K.**, Fester, M., Levy, T., Manor, R., Sagi, A. (2019). Development of an enzyme-linked immunosorbent assay for Northern spot shrimp *Pandalus platyceros* vitellogenin and its application for studies into sexual differentiation. Society of Integrative and Comparative Biology Tampa, FL January 3-7, 2019.

Deal, C.K. and Tamone, S. L. (2018). Purification and characterization of vitellogenin from the ovaries of the protandric shrimp *Pandalus platyceros* (poster). Society of Integrative and Comparative Biology San Francisco, CA January 3-8, 2018.

PRESENTATIONS

2021 — Effect of thyroid hormones on feeding behavior and the expression of appetite-regulating neuropeptides in goldfish. *North American Society for Comparative Endocrinology Biennial Meeting* **and** *Memorial University of Newfoundland Biology Graduate Student Symposium* (virtual)

2021 — Response of the thyroid axis and appetite-regulating peptides to fasting and overfeeding in goldfish, *Carassius auratus*. *Society of Integrative and*

Comparative Biology Virtual Meeting. **Aubrey Gorbman Best Student Paper Competition.** (virtual)

2018 Purification and characterization of vitellin from the ovaries of the protandric shrimp *Pandalus platyceros*. *University of Alaska Southeast Undergraduate Research and Creative Activity Symposium,* Juneau, AK

2018 Purification and characterization of vitellogenin from the ovaries of the protandric shrimp *Pandalus platyceros* (poster). *Society of Integrative and Comparative Biology*, San Francisco, CA

2017 Regulation of 20-Hydroxyecdysone in *Cancer magister*. How molting profiles differ in natural and artificial settings. *University of Alaska Southeast Undergraduate Research and Creative Activity Symposium,* Juneau, AK

TEACHING SKILLS

2020-2021 **Teaching Skills Enhancement Program (TSEP)**

Memorial University of Newfoundland Teaching Skills Enhancement Program. Non-credit certificate teaching program, teaches and prepares graduate students for instruction at the undergraduate levels. Comprised of weekly seminars focused on teaching and learning topics, and a semester long teaching apprenticeship.

- Apprenticed with Dr. Iain McGaw, taught two Environmental Physiology lectures; designed, carried out and graded an undergraduate term paper.

2019-Present **Graduate Teaching Assistant**

Teaching assistant for undergraduate level courses. Lab demonstrating, marking and lecturing

Colorado State University

- Attributes of Living Systems Life 102 (Fall 2021) – Lab instructor
- Molecular and General Genetics (Spring 2022) – Recitation instructor/grader

Memorial University of Newfoundland

- Principles of Endocrinology (Fall 2019) - Marking
- Principles of Biology (Winter & Spring 2020) – Marking and lab instruction
- Principles of Marine Biology (Winter 2020) – Marking and lab instruction
- Special Topics: Marine Animal Acoustic (Spring 2020) - Marking
- Principles of Ecology (Fall 2020) – Question design for remote learning
- Comparative Animal Physiology (Fall 2020) – Marking and **guest lecturer**
- Histology (Fall 2020) – Marking

- Ecology and Evolution of Fishes (Winter 2021) – Marking and lab demonstrating
- Principles of Cell Biology (Winter 2021) - Marking

NOTABLE SKILLS

Laboratory Techniques. SDS and NATIVE PAGE, gradient PAGE, western blot analysis, enzyme-linked immunosorbent assays (ELISA), gel-filtration chromatography, spectrophotometry, RNA extraction/handling, RT-PCR, qPCR, precision brain micro-surgery, intraperitoneal drug injections.

Animal Husbandry. Experience in invertebrate and vertebrate husbandry. Knowledge of seawater and freshwater flow systems.

Coding and programming. Proficient in statistical computing and data analysis in R software, Python, and the Linux command line.

DIDSON and ARIS. Proficient in setting up and operating Dual Frequency Identification Sonar and Adaptive Resolution Imaging Systems for salmon escapement

Small boat operator. Canadian Pleasure Craft Operator License.

LEADERSHIP AND OUTREACH

2021-Present **Colorado State University Biology Graduate Student Representative**

Representative for Biology graduate students at CSU Fort Collins. Jobs include serving as a liaison between students and faculty, attending faculty, graduate executive and graduate student council meetings.

2020-2021 **Memorial University Biology Graduate Student Association**

Seminar Coordinator for weekly Biology departmental seminar series. Contacting, organizing and hosting weekly speakers at Memorial University of Newfoundland. Founder/creator and organizer of the Work in Progress Seminar Series (W.I.P.S.S), Memorial Universities only weekly graduate student seminar series.

2020, 2021 **Memorial University Biology Graduate Student Symposium**

Organizer for symposium exhibitions. Judge for undergraduate biology honors student talks and posters.

2016 - 2018 **Biology Tutor. Alaska Native Science and Engineering Program**.

Tutor for general biology, organic chemistry, biochemistry and animal physiology

2016 & 2018 **Service Learning. Yakutat, Alaska**

Developed a weeklong teaching curriculum to middle and high school students. Classes ranged from squid dissection to marine debris circulation in the Gulf of Alaska.

RELEVANT PROFESSIONAL EMPLOYMENT

2016-2019 **Oceanus Alaska. Auke Bay, Alaska.**

Worked as a biological technician along-side Michelle Ridgway, owner and operator of Oceanus Alaska. Obtained conductivity, temperature, and depth (CTD) data for the Auke Bay, Juneau region utilized for a time series data set on variation occurring in Auke Bay over the past 50 years. Analyzed settlement plates looking for the invasive colonial tunicate species *Didemnum vexillum* though a project funded by the Smithsonian Institute.

2016-2019 **ADF&G Fish & Wildlife Technician II**

Alexander Creek Pike Suppression (May 2019)
Reduce impact of invasive species on rearing salmonids by removal of spawning pike from Alexander Creek, a major tributary to the Susitna River in Western Cook Inlet. Collected morphometric data, stomach content analysis and otolith extraction.

Bristol Bay Herring Sampler (April 2019)
Sampling of Pacific Herring from the Bristol Bay Togiak commercial fleet. Based out of King Salmon, Alaska. Morphometric data and gonad condition measurements.

Nushagak River Sonar Site (2016- 2019)
Determining escapement of Chinook, Sockeye and Chum, Coho and Pink Salmon for the management of the commercial fishery through Adaptive Resolution Imaging System (ARIS). Used an in-river gillnetting test fishery to account for species apportionment based off DIDSON and ARIS escapement counts