

BIOLOGY 345 (10421)
ANIMAL BEHAVIOUR (Sept 2022)

Instructor: Dr. T. E. Reimchen,
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Lectures: Mon, Thurs 1130-1250

Lab Coordinator: Dr. Rossi M. Marx
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Evolutionary and Ecological Studies in Reimchen's Lab



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1: Brief canoe sequence of Drizzle Lake ([video](#))

2: Underwater video of nesting male stickleback and curious Common Loons in dystrophic (red-shifted) waters ([video](#)). see [Reimchen 1989](#) and [Marques et al. 2017](#).



Lab Members



Adaptive Radiation &
Functional Morphology



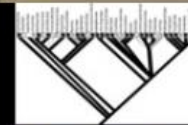
Haida Gwaii
Lake Biophysicals



Loon Research



Salmon Forest
Project



Molecular Studies



Publications

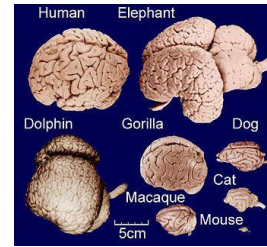
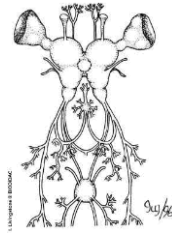


Diving photos

Supporting Agencies

General outline of lecture topics

- History of the study of behaviour
- Behavioural lateralization – left vs right biases in animal behaviour
- Nervous systems among animal phyla: anatomy, receptors, neurotransmitters



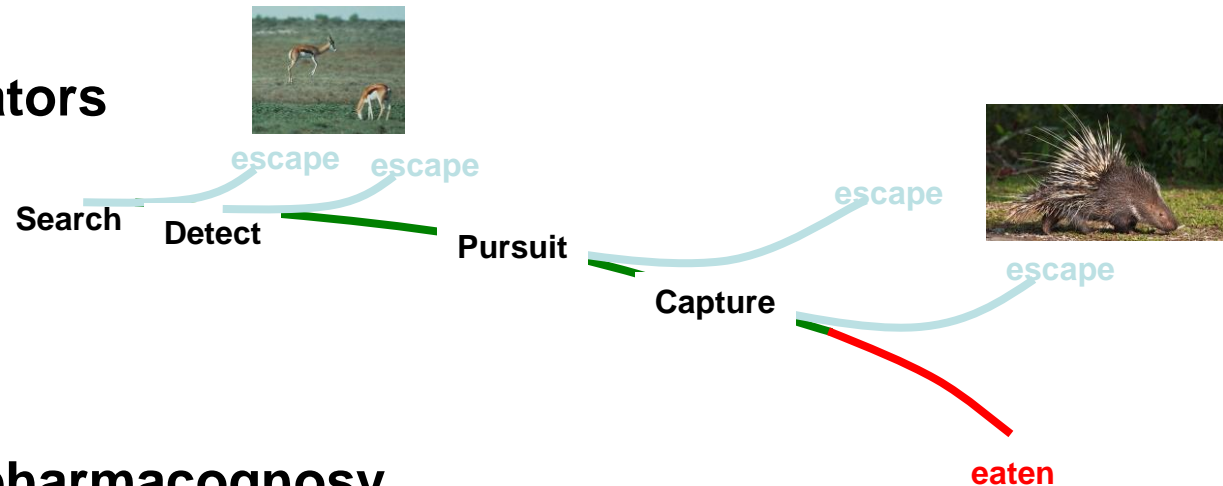
- Parsing behaviour: genetic, epigenetic, hormonal, environmental, evoevolutionary



Animal communication, sensory modes and sensory exploitation

Channels: Chemical, tactile, acoustical, visual, electrical

Defenses against predators



Optimal foraging, zoopharmacognosy

-quality, quantity, location, risks, benefits, self-medication

Habitat choice and territoriality –where and why?

Evolution of sex, mate choice and mating systems

-who to mate with, how many partners, why?



- **Parental care, tactics, brood parasitism, relative investment, infanticide**

Sponges
Cnidarians
Annelids
Molluscs
Crustaceans
Echinoderms
Insects
Cephalopods
Reptiles
Amphibians
Fishes
Hymenoptera
Birds
Mammals

- **Aggression, conflict, warfare, sociality, altruism**
- **Evolution of play**
- **Self-awareness, consciousness, empathy, animal rights**



- **Overview: continuity of process**

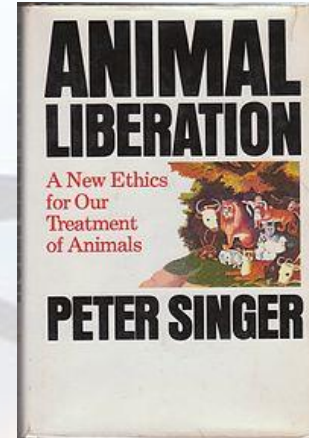
Course Text: suggested but not essential:

Rubenstein and Alcock: *Animal Behavior*(11th edition-2019)

J. Alcock: *Animal Behavior* (any edition)

- **Some thought-provoking reading:**

- P. Singer 1975-2015 (first to last edition): *Animal Liberation*
- B. Heinrich 1999: 'Mind of the Raven'
- D. Griffin 2001: 'Animal Minds: beyond cognition to consciousness'
- M. Bekoff, Jessica Pierce 2009: 'Wild Justice: The Moral Lives of Animals'
- F. deWaal, 2009: 'The Age of Empathy'
- 2016: 'Are we smart enough to know.....'
- J. Rachels 1983: 'Created from Animals'
- T. Regan 1983: 'The Case for Animal Rights'
- 2004: 'Empty Cages'
- Excellent documentaries
 - David Attenborough- The Life of Birds, The Life of Mammals,
 - Life in the Undergrowth, Planet Earth, Life in Cold Blood,
 - Blue Planet II, Life, The Hunt, The Cove,



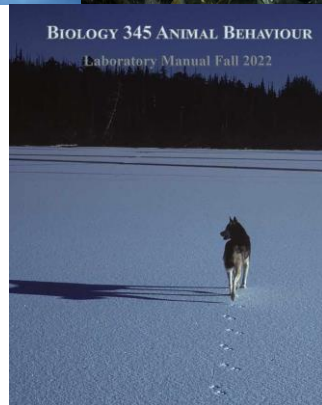
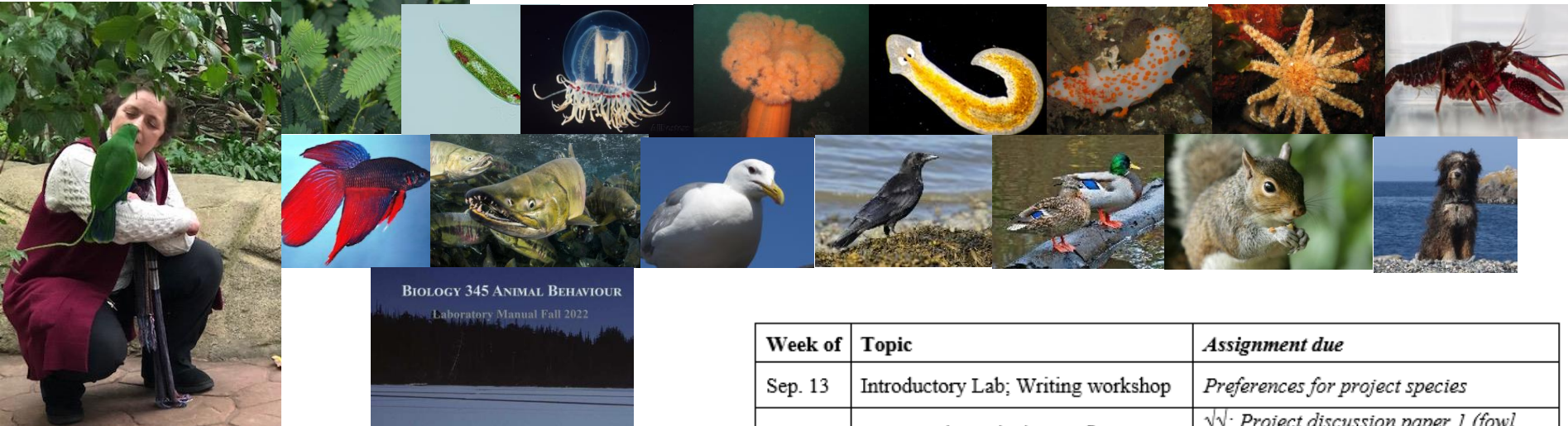
Lecture Evaluation

A: 2 quizzes : a) Oct 3 (10%) b) Nov 3 (15%) composed of short answer questions (40 minutes duration presented at the beginning of the lectures (1130 hrs). Unauthorized absence from the quiz will receive no marks.

B: Final exam(TBA) (30%) - combination of short answers and essay.

Laboratory

Simple and complex behaviours across a diversity of taxonomic groups including protists, jellies, sea anemones, flatworms, bivalves, nudibranchs, crabs, crickets, crayfish, sea cucumbers, urchins, and fighting fish. Students will undertake a field project with an option of studying either crows, ducks, gulls, squirrels or dogs. Students are encouraged to visit any salmon spawning stream during October or November to watch spawning activity (eg. Goldstream near Victoria, Ayum Ck near Sooke).



Distribution of Marks

| | |
|----------------------------|------------|
| Checkmarks and pop quizzes | 12% |
| Tutorials (3@3%) | 9% |
| Project | 24% |
| Paper discussions | 3% |
| Interim results | 2% |
| Final results | 4% |
| Presentation | 5% |
| Report | 10% |
| Total | 45% |

| Week of | Topic | Assignment due |
|---------|--|---|
| Sep. 13 | Introductory Lab; Writing workshop | <i>Preferences for project species</i> |
| Sep. 20 | From Taxis to Shadow Reflex | √√; <i>Project discussion paper 1 (fowl, individual assignment)</i> |
| Sep. 27 | Learning Experiments Part 1 | √√; <i>Tutorial 1</i> |
| Oct. 04 | Learning Experiments Part 2 | √√; <i>Project discussion paper 2 (squirrels)</i> |
| Oct. 11 | Thanksgiving – No labs | Oct. 12: Project interim results |
| Oct. 18 | Predator - Prey Interactions | √√; <i>Project discussion paper 3 (dogs)</i> |
| Oct. 25 | Agonistic Behaviour in Crayfish | √ + <i>ethograms</i> ; <i>Tutorial 2</i> |
| Nov. 01 | Interactions in Siamese Fighting Fish | √ |
| Nov. 08 | Reading Break – No labs | |
| Nov. 15 | Statistics Workshop; Project mentoring | <i>Tutorial 3</i> |
| Nov. 22 | Presentation Workshop; Project mentoring | Nov. 22: Project final results |
| Nov. 29 | Project Presentations | <i>Powerpoint presentation;</i> Nov. 29: Project report |
| TBA | Optional Field Trip: <i>Goldstream Park for Salmon Migration</i> | |

Important Dates

Sept 08: First day of classes

Sept 20: last day for 100% reduction of tuition fees for standard first term and full year courses. 50% of tuition fees will be assessed for courses dropped after this date

Sept 23: Last day for adding courses that begin in the first term

Sept 30: Last day for paying first term fees without penalty

Oct 3: First lecture midterm exam

Oct 11: Last day for 50% reduction of tuition fees. 100% of tuition fees will be assessed for courses dropped after this date

Oct 31: Last day for withdrawing from first term courses without penalty of failure

Nov 3: Second lecture midterm exam

Nov 9-11: Reading break

Dec 05: Last lecture

Dec 07: Examinations begin for all faculties

Get vaxed

Learn lots, study hard, and enjoy the course