THESIS PROPOSAL GUIDELINES AND TEMPLATE

A thesis proposal, signed and approved of by your mentor, should be submitted to the UHC main office of via webform. Paper proposals are typically **no more than 2 pages in length** and should contain the following elements:

TITLE

A short, descriptive title of your proposed thesis project – no need to be clever.

YOUR NAME

INTRODUCTION

A brief introductory statement of intent that explains your project and its goals to a general, educated reader (imagine your audience being other UHC students). This should be a general description of your thesis providing the contextualization necessary to explain why this topic is important and its larger implications for your discipline.

THESIS STATEMENT /HYPOTHESIS

Include a one-sentence statement of your thesis that sets the parameters of your project. This statement can take many different forms, depending on the discipline of your project: it might be a hypothesis, a research question, or goal statement. In all forms, the thesis statement should define a boundary for your thesis that clearly and simply states your overarching goal.

APPROACH/METHODOLOGY

How do you plan to complete your project? In this section, describe the approach you will take in completing your thesis research and analysis. What methods and materials will you use? How or where will you collect and analyze data? If you are producing a creative work, what themes and genres will it explore and what work process will you use? You might also note here any anticipated difficulties or pitfalls you expect to encounter and how you plan to address these. The content of this section will vary depending on the field of your thesis, so please consult your mentor.

APPROACH SUBSECTION (REQUIRED FOR ALL THESES): Does your thesis project involve human subject research requiring Institutional Review Board approval? If you are unsure, ask your mentor or consult the OSU Office of Research Integrity.

EXPECTED RESULTS/ANTICIPATED OUTCOME AND SIGNIFICANCE

Explain here what you expect to produce or learn through your project and what you anticipate your thesis will contribute to your scholarly field. It is also helpful here to set your project goals in a large context of significance.

SIGNATURE LINE

Mentor's Name (typed), Department, Date, and Signature. By signing, the mentor gives his/her assurance that he/she has read the proposal, sees it as a legitimate UHC research project, and is willing to serve as your thesis advisor for the proposed project.

SAMPLE 1

Response of *Electrophorus electricus* Electric Organ Discharge (EOD) to Captivity in the Pacific Northwest

Robin J. Cogitare

Introduction

The population of *Electrophorus electricus*, commonly known as electric eels, in captivity has been increasing in the past twenty years due to widespread public interest in these enigmatic sea creatures and refinements in artificial environmental technologies. This has provided opportunities for systematic observation and data collection across multiple generations that have revealed unusual responses to captivity. Of particular interest are variable affects on eels' Electric Organ Discharge (EOD), their eponymous ability to generate electric charges, central to both navigation and hunting, which is sustained by electrocytic organs. Anecdotal accounts have long held that captive eels experience some decline in EOD capabilities, and recent research has indicated that eels born in captivity experience increasing EOD deficiencies with each succeeding generation. Moreover, the magnitude of decline appears linked to unknown geographic factors, with eels in the Pacific Northwest especially susceptible to rapid loss in this vital ability.

Thesis Statement

We hypothesize that potassium and sodium content in the air and water in Pacific Northwest eel environments is linked to EOD development during eel gestation and that increasing content levels will reduce generational declines. Eels' native environment is high in both of these elements, and evidence indicates that they play a central role in electrocytic action.

Approach or Methodology

Working in the lab of Dr. Sten Bolt at the Hatfield Marine Science Center, I will establish a control and three closed experimental breeding populations of eels. The control group will be kept in conditions that mirror historical practices. Experimental group A will be placed in water with artificially augmented sodium and potassium levels; group B will experience atmospheric injections of sodium and potassium gas compounds; and in group C eels will be given potassium and sodium supplements orally. We will take regular measurements in all groups of sodium and potassium levels in the water, atmosphere, and eels' blood. We will also regularly measure EOD abilities in eel populations in each group using the well-established Hendricks Measurement scale.

Expected Results and Significance

We expect to find that sodium and potassium levels similar to eels' natural habitat will reduce, but not eliminate, the reduction in EOD potential across generations. Our data will have important consequences for both the understanding of eels' electrocytic organ development and for captivity and rehabilitation practices of eel management.

Does this project involve human subject research requiring IRB approval? No

Mentor: _____

Sten Bolt, Zoology Date

By signing, the Mentor gives his/her assurances that he/she has read the proposal, sees it as a legitimate UHC project, and is willing to serve as the student's thesis advisor for the proposed project.