



School of Natural Sciences and Mathematics

Biology

BI 495 Research I

Eiben Hall 202, Mondays 5:30–6:20pm | Credits: 3 | Section: 01 | Term: Fall 2026

Instructor Information

Instructor	Dr. Michael Weichhaus
Email	michael.weichhaus@chaminade.edu
Phone	808.440.4286
Office Location	Wesselkamper Science Center, Room 107
Office Hours	MWF 12:00–2:00pm and TR 1:00–2:00pm, by sign-up: https://calendar.app.google/6x3kd3fb4F6yMmvUA
Virtual Office	Google Meet — the link is included in your booking confirmation.
Virtual Office Hours	Same sign-up as above. When you book, choose whether to meet in person in Wesselkamper 107 or online via Google Meet.

Communication

Canvas Inbox or email is the primary channel. I reply within 24–48 hours Monday–Friday; messages sent over the weekend are answered on Monday. For anything urgent about your research placement, contact your research mentor first and copy me.

School & Department

School	School of Natural Sciences and Mathematics
Location	Wesselkamper Science Center, Room 115
Phone	(808) 440-4204
Questions?	Contact your instructor or the School of Natural Sciences and Mathematics

Course Description & Materials

Catalog Description

Capstone research experience focused on data analysis, interpretation, and dissemination. Students apply statistical methods to evaluate experimental results and develop dissemination strategies including manuscript preparation, poster design, and oral presentation. Includes weekly research seminar and up to 10 hours per week of faculty-mentored research.

Co-/Pre-Requisites: Senior standing in the Biology (Biomedical Sciences track) program, and placement with a faculty research mentor.

Course Snapshot

Modality	Face-to-Face
Meeting Location	<i>Eiben Hall, Room 202</i>
Meeting Days/Times	<i>Mondays 5:30–6:20pm. Minisymposium: Thursday, December 3, 4:30–5:30pm.</i>
Time Commitment	<i>~11 hrs/week — 1 hr seminar plus up to 10 hrs/week of faculty-mentored research, and approximately 1–2 hrs/week on milestone deliverables.</i>
Required Materials	<i>None to purchase. You will need access to your project's data and to statistical software (R, SPSS, Prism or Excel — whatever your mentor's lab uses).</i>
Recommended Items	<i>A reference manager (Zotero or EndNote) and the Chaminade poster template, both linked in Canvas.</i>
Canvas	Course materials, announcements, milestone deadlines and grades are posted to Canvas (chaminade.instructure.com). The Weekly Research Progress Log is submitted in Canvas Discussions.

Learning Outcomes

Program Learning Outcomes (PLOs)

Upon completion of the B.S. in Biology, the student will be able to:

1. Explain fundamental biological concepts and their interrelationships across various levels of biological organization, from molecules to ecosystems, including cell biology, genetics, evolution, physiology, and ecology.
2. Perform laboratory and field techniques relevant to biological research, including accurate data collection, analysis, and interpretation.
3. Design and conduct scientific investigations using advanced methodologies, technologies, and resources, and communicate results effectively.
4. Make ethically informed decisions in biological research and practice, considering bioethics, environmental ethics, and relevant indigenous knowledge and practices.
5. Analyze societal challenges related to health and environment through the lens of biological science, recognizing how biological knowledge can contribute to studying, addressing and solving these challenges.

Course Learning Outcomes (CLOs)

Upon completion of BI 495 Research I, the student will be able to:

1. Analyze experimental data using statistical methods appropriate to the research question and data structure.
2. Interpret experimental results in the context of existing scientific literature and original research hypotheses.
3. Compose a scientific conference abstract and poster text suitable for submission to an undergraduate research symposium or comparable dissemination venue.
4. Design and deliver a scientific poster and oral presentation tailored to both professional and lay audiences.
5. Critique peer research presentations and written work using established criteria for scientific quality and effective communication.

Marianist Values

An education in the Marianist Tradition is marked by five principles. Reflect on how this course relates to one or more:

1. Education for formation in faith.
2. Provide an integral, quality education.
3. Educate in family spirit.
4. Educate for service, justice and peace, and integrity of creation.
5. Educate for adaptation and change.

This capstone is most directly an expression of providing an integral, quality education (Na'auao): you take a semester of your own research and learn to make it mean something to other people. The peer-critique work embodies family spirit ('Ohana) — your classmates' posters improve because you read them carefully, and yours improves for the same reason. Communicating your findings to a lay audience serves justice and peace (Aloha): research that only other specialists can understand cannot serve the community that hosted it.

Native Hawaiian Values

Education is central to both Marianist and Native Hawaiian culture — both seek transformative, value-centered learning that serves the marginalized. This is reflected in the 'Ōlelo No'eau (Hawaiian proverbs) below:

1. **Educate for Formation in Faith (Mana):** E ola au i ke akua ('Ōlelo No'eau 364) — May I live by God.
2. **Provide an Integral, Quality Education (Na'auao):** Lawe i ka ma'alea a kū'ono'ono ('Ōlelo No'eau 1957) — Acquire skill and make it deep.
3. **Educate in Family Spirit ('Ohana):** 'Ike aku, 'ike mai, kōkua aku kōkua mai ('Ōlelo No'eau 1200) — Recognize others, be recognized, help others, be helped.
4. **Educate for Service, Justice and Peace (Aloha):** Ka lama kū o ka no'eau ('Ōlelo No'eau 1430) — Education is the standing torch of wisdom.
5. **Educate for Adaptation and Change (Aina):** 'A'ohe pau ka 'ike i ka hālau ho'okahi ('Ōlelo No'eau 203) — All knowledge is not taught in the same school.

Alignment of Course Learning Outcomes

	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5
Marianist Values	M2	M2	M2	M4	M3
PLOs	2, 3	1, 3	3	3	3
Native Hawaiian Values	Na'auao	Na'auao	Na'auao	Aloha	'Ohana
Gen Ed Outcomes (if applicable)	—	—	—	—	—

Attendance & In-Class Participation

Attendance Policy

This seminar meets only 14 times, so each session carries the weight of roughly a week of a daily course. Attendance at every session and at the Minisymposium is expected. Notify me in advance whenever you cannot attend; absences arranged in advance and supported by documentation are excused, and we will arrange how you make up the session's work. The Minisymposium on Thursday, December 3 is a fixed, required event and cannot be rescheduled.

In-Class Participation Expectations

Active, respectful engagement is essential. Students are expected to come prepared and contribute meaningfully to discussions, activities, and collaborative work.

Students are expected to:

- Come prepared — complete readings and activities before each session.

- Participate actively in discussions and group work, demonstrating critical thinking.
- Engage respectfully and honor diverse perspectives.
- Use personal devices for course purposes only unless otherwise directed.
- Submit work by established deadlines to support course pacing.

Participation is assessed through the Weekly Research Progress Log (14 points, one per week) together with your engagement in the in-class clinics and critique sessions. The log is graded on whether you report specifically and respond to the feedback you were given — not on whether the research itself went well. Experiments fail; reporting that clearly and early is exactly what a working scientist does.

Course Activities

In-Class Activities	<i>This seminar is a working studio, not a lecture course. Each session opens with a brief recap and is then spent applying it to YOUR project — test-selection clinics, figure critique, abstract workshops, poster review and presentation rehearsal. Come with your data, your draft or your questions.</i>
Homework / Assignments	<i>Milestone deliverables are due most weeks (see the schedule). Each is a component of the final poster and oral presentation, so nothing is busy-work and nothing can be left to December. The Weekly Research Progress Log is due every week.</i>
Quizzes / Exams	<i>None. This course has no quizzes or examinations.</i>
Projects	<i>Your faculty-mentored research project (up to 10 hrs/week in your mentor's laboratory) runs the whole semester and culminates in the poster and oral presentation delivered at the Minisymposium.</i>

Course Policies

Late Work	<i>Milestone deliverables lose 10% per calendar day late, to a maximum of 50%. If you are going to miss a deadline, tell me before it passes and we will make a plan — that conversation is always better than silence. Two deadlines cannot move for any reason: the Poster Draft (needed for the design clinic) and the Minisymposium itself.</i>
Make-Up Work	<i>In-class clinics and critique sessions cannot be replicated outside class. If you miss one with an excused absence, contact me within one week to arrange equivalent work.</i>
Extra Credit	<i>No extra credit is offered. The milestone structure is designed so that steady work through the semester, not a late rescue, produces a strong grade.</i>
Incomplete Grade	<i>An Incomplete may be granted only in accordance with university policy, and only when the research project is materially complete but circumstances beyond your control prevent finishing the dissemination work on time.</i>
Syllabus Changes	<i>The instructor reserves the right to modify this syllabus. Changes will be announced in class and posted to Canvas.</i>

Final Grades

Final grades are submitted to Self-Service (selfservice.chaminade.edu):

Grade	Range
A	90% and above
B	80–89%
C	70–79%
D	60–69%
F	59% and below

Important Information

Academic Honesty

Academic honesty is an essential aspect of all learning, scholarship, and research. It is one of the values regarded most highly by academic communities throughout the world. Violations of the principle of academic honesty are extremely serious and will not be tolerated.

Students are responsible for promoting academic honesty at Chaminade by not participating in any act of dishonesty and by reporting any incidence of academic dishonesty to an instructor or to a University official. Academic dishonesty may include theft of records or examinations, alteration of grades, plagiarism, **and unauthorized and/or undisclosed AI usage**, in addition to more obvious dishonesty. See catalog section *Student Use of Artificial Intelligence in Academic Work* for further information.

Questions of academic dishonesty in a particular class are first reviewed by the instructor, who must make a report with recommendations to the Director of the Academic College. Punishment for academic dishonesty will be determined by the instructor, Director, and the Dean of Academic College and may include an “F” grade for the work in question, an “F” grade for the course, academic notice, or dismissal from the University.

AI (Artificial Intelligence) Statement

Chaminade University recognizes the increasing role of artificial intelligence (AI) technologies in academic and professional environments. AI encompasses, but is not limited to, generative AI platforms, automated writing or content generation software, coding assistants, and similar tools. Students must ensure all submitted work genuinely reflects their knowledge and effort. Using AI to produce or significantly complete graded assignments, exams or other academic tasks – defined as use that substitutes for or substantially replaces a student’s own analysis, reasoning or written expression – without explicit instructor approval is considered academic misconduct and will be dealt with according to the University’s Academic Honesty Policy.

If an instructor has reasonable grounds to question whether submitted work genuinely reflects a student’s own knowledge, authorship, or mastery of course material — or whether it meets the course’s expectations for AI use — the instructor may require the student to provide additional or alternative evidence of authorship and content mastery. Such evidence may include drafts, notes, revision history, source materials, process explanations, oral discussion, in class work, or completion of an alternative assessment. A student’s refusal or inability to provide such evidence may be considered, along with other available information, in evaluating whether the work meets course requirements and stated learning outcomes. Instructors will not rely solely on AI detection software or other automated tools in making grading or academic integrity determinations. Such determinations will be based on the totality of the available information and handled in accordance

with applicable University policies and procedures. See the catalog section *Student Use of Artificial Intelligence in Academic Work* for further information.

Title IX and Nondiscrimination

Chaminade University of Honolulu is committed to providing a learning, working and living environment that promotes the dignity of all people, inclusivity and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking. As a member of the University faculty, I am required to immediately report any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator. For pregnant and parenting students, I am also obligated to provide you with similar resources for support and protections available to you. My goal is to make sure that you are aware of the range of options available to you and have access to the resources and support you need.

Contact information and reporting options: chaminade.edu/titleix/nondiscrimination/. File a report via the [Campus Incident Report Form](#).

Nondiscrimination Policy and Notice of Nondiscrimination

The university is committed to comply with all State and Federal statutes, rules, and regulations which prohibit discrimination. The university is committed to a policy of nondiscrimination on the basis of race, sex, gender identity and expression, age, religion, color, national origin (including shared ancestry and ethnic characteristics), ancestry, citizenship, disability, genetic information, marital status, breastfeeding, arrest and court record (except as permissible under State law), sexual orientation, or status as a covered veteran. Inquiries about Title IX or general Civil Rights concerns may be referred to the University's Title IX Coordinator, the U.S. Department of Education's Office for Civil Rights, or both and contact information may be found [HERE](#). *On-campus Confidential Resources may also be found here at [CAMPUS CONFIDENTIAL RESOURCES](#).*

The University's Nondiscrimination Policy and Grievance Procedures can be located on the University webpage at: <https://chaminade.edu/compliance/title-ix-nondiscrimination-policies-procedures/>.

To report information about conduct that may constitute sex discrimination or make a complaint of sex discrimination under Title IX, please refer to the [Campus Incident Report form](#). Chaminade University of Honolulu prohibits sex discrimination in any education program or activity that it operates.

The NOTICE of NONDISCRIMINATION can be found here: [Notice of Nondiscrimination](#).

Student with Disabilities Statement- Kōkua 'Ike

Accessibility Services recognizes disability as a valued aspect of diversity and ensures equal access to the educational environment in accordance with Section 504 of the Rehabilitation Act; the Americans with Disabilities Act, as amended; and the principles and professional standards of the Association on Higher Education and Disability. Access is supported through reasonable accommodations and referrals to campus and community resources.

Appointments with the Accessibility Services Coordinator are available through Stellic at <https://chaminade.stellic.com> and may be held virtually or in person. Drop-in appointments are also welcome.

Students seeking support must meet with the Accessibility Services Coordinator as early as possible, even if they are unsure whether they have appropriate documentation of their disability or its impacts. The Accessibility Services Coordinator prioritizes listening to students's experiences and will discuss any documentation needs during the initial intake meeting. Students may seek support at any time.

Learn more at <https://chaminade.edu/ada-accommodations>

Assessment of Student Work

Chaminade University may use student work anonymously to assess achievement of course, program, and institutional learning outcomes as part of ongoing quality improvement efforts.

Campus Resources & Support Services

The following resources are available to all Chaminade students. Reach out early — these services exist to support your success.

Resource	Description	Contact / Website
Accessibility Services (Kōkua 'Ike)	Accommodations under Section 504 and ADA. Contact early — appointments via Stellic, virtual or in person.	ada@chaminade.edu chaminade.edu/ada-accommodations
Tutoring & Academic Coaching (Kōkua 'Ike)	Tutoring and Academic Coaching Services support students' progression toward their academic, personal, and professional goals with clarity and intention. Services include individualized support in English, math, nursing, sciences, and social sciences, as well as guidance in developing goals and study strategies.	chaminade.edu/tutoring-academic-coaching-services
Career Services	Career Services supports students throughout their career journeys. Services include individualized job search strategy coaching, resume reviews, job interview coaching, and access to career-related resources and opportunities.	chaminade.edu/career-services
Basic Needs Resources	Support for food insecurity, housing instability, and other basic needs.	chaminade.edu/basic-needs/
Title IX / Nondiscrimination	Reporting and support for sex discrimination and gender-based violence. Campus Incident Report Form available online.	chaminade.edu/titleix/resources-and-support/
Hazing Prevention	Confidential support, crisis intervention, and reporting for any type of abuse including hazing.	hazingpreventionnetwork.org/athlete-helpline/
Campus Safety / SafeSwords	Security escort service for anyone who feels unsafe walking alone on campus at any time of day. Call security and a professional will escort you to your destination.	chaminade.edu/student-life/security/campus-safeswords-program/
CUH Alert Emergency Notification	Emergency text system. Register your cell number via the Chaminade portal and confirm the text to complete enrollment.	chaminade.edu

Weekly Course Schedule

Note: The instructor reserves the right to modify this schedule. Changes will be announced in class and posted to Canvas.

Wk of	Theme	Topics / Readings	Due Dates
8/17	Launch	Session 1 — The capstone arc: from data to dissemination. Mentor agreements; what you will produce.	Weekly Progress Log 1
8/24	Framing	Session 2 — Question & hypothesis clinic: state and defend your own.	Project Charter (Fri 8/28); Log 2
8/31	Framing	Session 3 — Your design and data structure: what will your data actually look like?	Log 3
9/7	—	No class — Labor Day.	Log 4
9/14	Ethics	Session 4 — Ethics audit of your own project: consent, approvals, data management, authorship.	Ethics & Integrity Audit (Fri 9/18); Log 5
9/21	Analysis	Session 5 — Test-selection clinic: match YOUR data to the right statistical test.	Data & Test Plan (Fri 9/25); Log 6
9/28	Analysis	Session 6 — Analysis working session: run it, check assumptions, troubleshoot.	Log 7
10/5	Analysis	Session 7 — Figures and tables that carry an argument.	Figures v1 (Fri 10/9); Log 8
10/12	—	No class — Columbus Day.	Log 9
10/19	Interpretation	Session 8 — Interpreting your results against the literature.	Data Analysis Report (Fri 10/23); Log 10
10/26	Dissemination	Session 9 — Writing a conference abstract.	Conference Abstract (Fri 10/30); Log 11
11/2	Peer review	Session 10 — Structured peer critique of abstracts.	Abstract Critique (Fri 11/6); Log 12
11/9	Dissemination	Session 11 — Poster anatomy and design principles.	Results-in-Context Memo (Fri 11/13); Log 13
11/16	Lay audience	Session 12 — Communicating to non-scientists; societal implications.	Research Snapshot (Fri 11/20); Log 14
11/23	Dissemination	Session 13 — Poster design clinic (bring a full draft).	Poster Draft v1 (before class)
11/30	Delivery	Session 14 — Presentation dry run and peer critique of talks. MINISYMPOSIUM — Thursday 12/3, 4:30–5:30pm.	Practice Talk + Peer Critique; FINAL POSTER & ORAL (Thu 12/3)