ADVANCED INQUIRY PROGRAM
W+ Course Descriptions

AIP W+ Courses combine online course instruction from Miami University with the excitement of internships, field study, and experiential learning in person with San Diego Zoo Wildlife Alliance. Students in W+ Courses are uniquely supported online by Miami University instructors, who guide student work and oversee university requirements and grading. AIP site facilitators support student work online and engage face-to-face at AIP sites to guide place-based experiential learning and community engagement. AIP sites, by providing invaluable community connections, expertise, and environmental leadership, are at the heart of the AIP.

BIO 654: Foundations of Inquiry

Required Course: Year 1
Credits: 3
Term offered: Summer
In-Person Experiential Learning Dates: 5 consecutive days; M-F Mid-June

Course Description:

In this foundational course, students will explore inquiry not only as a tool for integrated learning, but as a powerful agent for student achievement, public engagement in science, and ecological stewardship. The course covers pre-inquiry assessment, development of critical-thinking skills and reflection, collaborative approaches, and the implementation of individual inquiry investigations. Students will learn to develop a comparative question, design an original inquiry-driven scientific study (which they may carry out at the San Diego Zoo and/or Safari Park), and enhance skills in scientific writing and research.

Course Themes:

- Use inquiry to drive learning in science and integrated topics.
- Develop a detailed understanding of the cycle of inquiry and types of inquiry questions
- Acquire research experience in the Life Sciences, e.g., on the structure, function, behavior and evolution of plants and animals.
- Use the San Diego Zoo, San Diego Zoo Safari Park, and the local community as learning resources.

Course Project:

Inquiry Project. An empirical investigation that addresses a comparative question through scientific research methods, including designing a study, collecting data, analyzing results, and drawing conclusions. The topics for this project can vary and you can focus on anything from animal-based to human-based questions, on topics ranging from exhibit usage to conservation, etc.

BIO 667: Conservation Research in Living Collections Institutions

Required Course: Year 1
Credits: 3
Term offered: Fall
In-Person Experiential Learning Dates: 4 days distributed across the term

Course Description:

This course provides students with an overview of conservation research conducted in zoological, reserve, aquaria and other ex situ settings. Students will explore key science concepts within the contexts of wildlife conservation, the imperative of in-situ conservation, the multidisciplinary nature of science, and hands-on conservation research. Participants will learn about current research in the fields of genetics, reproductive physiology, disease diagnostics, ecology, and animal behavior. Course themes explore sustainable population maintenance, wildlife health, bioresource banking, restoration ecology, reintroduction biology, and the role of zoos, reserves and aquaria in conservation.

Course Themes:

- Recognize the role of living collections institutions in the field of conservation.
- Understand the multidisciplinary nature of effective wildlife conservation.
- Engage with conservation practitioners around SDZWA expertise, including members of various Conservation Science and Wildlife Health focused teams.
- Synthesize key information and apply knowledge to community action.

Course Project:

Synthesis paper. Research a specific topic of your choice and integrate your own critical thoughts and perspectives that synthesize ideas about your topic into a paper. Then, use what you've learned from the readings, course content, and research for your Synthesis Paper to develop a Community Inquiry Plan (CIP) that engages one of your primary communities (or one you wish to work with in the future) with the topic of your paper in a way that inspires them to take conservation action.

BIO 655: Master Plan in Action

Required Course: Year 1
Credits: 3
Term offered: Spring
In-Person Experiential Learning Dates: 2 days + Virtual Meetings and Presentation

Course Description:

The Master Plan represents the personalized theme around which an AIP student will center their goals during their program. By writing a Master Plan, students are able to focus their AIP journey and visualize the actions and steps that they might take toward completing their master's degree during the 2.5- to 5-year timeframe. During this course, with guidance and input from peers and the AIP Advisor, students work on designing their Master Plans. Our strategic planning approach ensures that students have a workable plan that helps them anticipate ways to incorporate the projects they create as part of their AIP experiences into their professional and life goals. Students will also integrate the program tenets among the projects in this cohesive body of work, which ultimately becomes the framework from which they may design the master's capstone portfolio at the end of their degree.

Course Themes:

- Understand the role of strategic planning
- Development of a personal Strategic Plan for student's Master's degree
- Apply project and time management skills
- Critically review primary literature
- Develop peer review skills

Course Project:

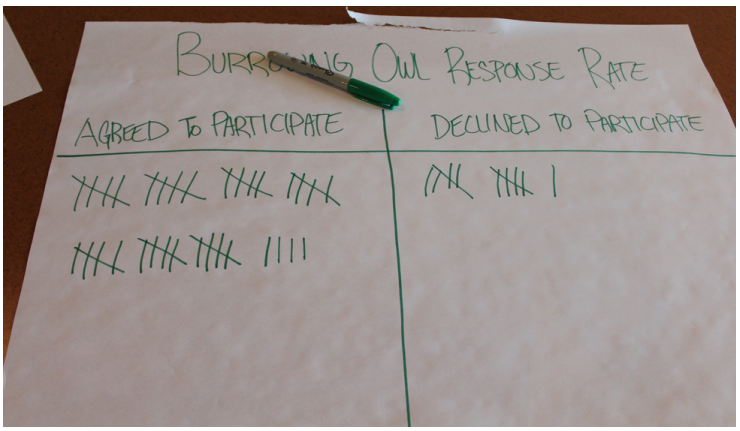
Master Plan. This assignment includes two components: a strategic plan and a timeline. Each student will create a strategic plan framework that is tied to their identified vision. This will be used to generate a timeline that includes specific projects/initiatives, collaborations and evaluation that will be completed as part of your degree.

BIO 623: Human Dimensions of Conservation

Elective Course: Year 2+
Credits: 3
Term offered: Summer
In-Person Experiential Learning Dates: 4 consecutive days; Late May / Early June

Course Description:

Conserving wildlife is a complex endeavor that requires the integration of sound science from both the social and natural sciences. This course will explore how the social sciences can inform conservation. A growing field of study that draws from several of the social sciences is human dimensions of wildlife. This course will examine how human dimensions emerged as a field of scientific inquiry and why it is important. It will provide an overview of the social science concepts and methods that are the foundation of human dimensions. Students will consider how current conservation issues can be addressed through an understanding of human thought and action. Students will use the human dimensions approach to address a current conservation issue and by the conclusion of the course, they will be able to identify tools, frameworks, and concepts that can be used to influence human behavior to effectively conserve wildlife.



Course Themes:

- Understand the role of applied social science in conservation
- Discuss the human dimensions of wildlife, including conflicts and solutions
- Apply social science methodology to real world issues
- Explore the impact of conservation initiatives on local communities and vice versa
- Apply social science research and methods to project-based learning

Course Project:

Students choose one of two project paths. Both paths include a literature review of a human dimensions topic of choice. Option 1 further develops the literature review into a synthesis paper and critical analysis. Option 2 uses the literature review to inform the development of a social science study with proposed methods and development of a data collection tool (i.e., survey).

BIO 662: Animal Behavior & Conservation

Elective Course: Year 2+
Credits: 3
Term offered: Summer
In-Person Experiential Learning Dates: 4 consecutive days; T-F Late June

Course Description:

Investigations of animal behavior comprise a rich field of study. Animals are ideal for observational studies on topics ranging from complex behaviors and adaptations to public engagement with conservation. Students in this course investigate animal behavior through direct observation of the zoo's diverse animal collection, or of native fauna, to explore key questions about how and why species act the way they do in different situations. This course will provide a foundation for understanding ethological research methods and animal conservation issues that can be applied and adapted to increased understanding about animal welfare and wildlife conservation in a wide range of settings. This is a Miami University online course with experiential learning on-site at an affiliated Dragonfly Advanced Inquiry Program (AIP) institution.

Course Themes:

- Engage with and assess multiple data collection instruments and behavioral methodologies
- Determine how ethology helps in maintaining animal health in captive environments, aids in wildlife management, and helps determine conservation needs in the wild
- Conduct a behavioral studies inquiry investigation or design a behavioral workflow to provide opportunities to express species-specific behavior
- Engage in reflective and evaluative peer review in face-to-face environments and on the web to provide colleagues with personal insight, new perspectives or analyses, ideas for useful applications, and connections to other research and projects.

Course Project:

Students choose one of two project paths: 1) create a behavioral inquiry that examines an aspect of animal behavior as it relates to conservation; or 2) create a behavioral workflow with a desired behavioral outcome and use it to design an enriched experience for an animal in managed care that provides the opportunity for an animal to elicit that behavior. Both paths require that students craft a plan to educate others (e.g., class, neighbors, wildlife care specialists, etc.).

BIO 656: Environmental Stewardship in My Community

Elective Course: Year 2+
Credits: 3
Term offered: Fall
In-Person Experiential Learning Dates: 4 days; Two 2-day experiences in Sep & Oct

Course Description:

In response to current environmental threats and the loss of biodiversity, education and outreach are essential for connecting people to these issues. This course explores strategies for development, implementation, and evaluation of conservation education programs, with main emphasis on inquiry-driven learning and participatory methods. Students investigate environmental stewardship, research science and conservation opportunities and solutions in their local communities, practice inquiry-based learning, develop a conservation project to be used in their classroom or community, and reflect on ecological and carbon footprints. At the end of this course, students will have a solid understanding of community-based conservation, with a particular emphasis on current issues facing local habitats in the communities where they live.

Course Themes:

- Connecting the dots: local and global conservation issues – causes, impacts and solutions.
- Developing tools for measuring and understanding the impact of educational initiatives .
- Applying strategies for engaging communities and groups in conservation action.

Course Project:

In the continued spirit of inquiry and conservation action, your project will require you to either craft a lesson plan with evaluative components or develop a community-based social marketing campaign that centers around theory and application on which we focus in this class. Your project will require you to define learning objectives, and employ specific tools or strategies directed towards your learning focus.

BIO 695: Plants & People

Elective Course: Year 2+
Credits: 3
Term offered: Fall
In-Person Experiential Learning Dates: 4 days distributed across the term

Course Description:

This course explores the ecological roles of plants as well as the history of human-plant relationships (e.g., cultural context, ethnobotany, symbolism). Students implement a research project that engages their community in environmental action. This course occurs in Dragonfly's web-based learning community.

Course Themes:

- Knowledge of and appreciation for plants with emphasis on local species and urban spaces.
- Ethnobotany and historical-cultural uses of plants.
- In situ and ex situ plant conservation.
- Community engagement and action.

Course Project:

Students will design and implement a project that highlights an aspect of plant ecology and conservation and its connection to humans while also engaging the community in environmental action.

BIO 657: Regional Ecology

Elective Course: Year 2+
Credits: 3
Term offered: Spring
In-Person Experiential Learning Dates: 4 days distributed across the term, including an overnight camping trip

Course Description:

Through field-based experiences, this course explores regional wildlife conservation issues and field investigation techniques that scientists and citizens can use to study and conserve biodiversity in the California Floristic Province. Students will be exposed to observational and experimental approaches and will practice field investigation techniques that can provide rigorous, engaging inquiry experiences. Student-conducted investigations will be used to contribute to local ecological knowledge by describing natural systems, noting differences in habitats, and identifying environmental trends and issues. This course focuses on different ecoregions in the area and highlights different conservation issues or themes based on each ecoregion.

Course Themes:

- Using scientific inquiry to solve local wildlife conservation issues.
- Field methods in biodiversity assessment and monitoring.
- Current issues and solutions for Southwest wildlife and habitat conservation.
- Techniques for engaging students and community members in outdoor science exploration.

Course Project:

Students choose one of two project paths. Both paths include a literature review on an aspect of biodiversity within the Southwest US region and methods that have been used to measure it. Option 1 further develops the design of an original ecological field inquiry, including data collection and analysis in the form of a small-scale pilot study to communicate to a community of choice. Option 2 further develops the project using interpretive storytelling techniques to communicate an aspect of the biodiversity topic to a target audience of choice. For both paths, students use a form of Inquiry to increase the Local/Regional Understanding on the focal topic and create a connection to nature within a community of choice.

BIO 640: Graduate Research: Internship

Elective Course: Year 2+
Credits: 1, 2, or 3
Term offered: Spring, Summer, or Fall
In-Person Experiential Learning Dates: Arranged with Mentor/Supervisor

Course Description:

This option provides AIP students with the opportunity to work on a specific topic of interest that is not offered through the course curriculum. When pursuing an internship, the student works one-on-one with zoo professionals and/or community leaders in a way that directly contributes in specific ways to the student's Master Plan and overall skill set. The experience is intended to be pragmatic, and the student is expected to take on significant independent responsibilities within the chosen trajectory. Information and skills learned should fall outside the normal day-to-day tasks conducted at the student's workplace. The internship experience should also be distinctly different than work used in other Advanced Inquiry Program courses, including Master Plan in Action, Masters Capstone, Leadership Challenges, Community Engagement Labs, etc. A "deliverable" project may, but need not be a component of the internship. Internships may be held on SDZWA grounds (e.g., working with a visitor engagement initiative at the zoo), community organization (e.g., Boys & Girls Clubs, YMCA, Parks Department), or both. They may also combine work onsite with independent work on a deliverable project.



Course Themes:

Students will develop the "real-world" skills needed to be productive contributors to their chosen fields of study. Depending on the student's Master Plan, each student will develop a unique set of skills that will enhance their Master Plan objectives. These skills may include, but are not limited to, the following:

- Develop solutions to complex conservation and/or education problems.
- Network and work collaboratively with professionals in their chosen fields.
- Explore career opportunities and develop a more informed plan for post-graduation success.
- Identify and refine student-created goals in light of the experience.

Course Project:

In the Internship, you will document your day-to-day tasks and experience but there is not a required course-based project. You will be expected to submit assignments documenting and reflecting on your experience, you will complete an annotated bibliography with literature that supports the experience, and you will submit midterm and final reports detailing your progress.

BIO 677.W: Independent Study

Elective Course: Year 2+
Credits: 1, 2, or 3
Term offered: Spring, Summer, or Fall
In-Person Experiential Learning Dates: n/a (Arranged with Mentor/Supervisor if applicable)

Course Description:

This option provides AIP students with the opportunity to work on a specific topic of interest that is not offered through the course curriculum. When pursuing an Independent Study (BIO 677.W), the student selects a research topic, structures a course of study and designs an associated project. The work may be performed independently under the supervision of the graduate advisor and instructor, or as a collaborative partnership with a person or organization. The work must directly contribute in specific ways to the student's Master Plan and overall skill set. The course is intended to be pragmatic, and the student is expected to take on significant independent responsibilities within the chosen trajectory. Information and skills learned should fall outside the normal day-to-day tasks conducted at the student's workplace. These should also be distinctly different than work used in other Advanced Inquiry Program courses, including Master Plan in Action, Masters Capstone, Leadership Challenges, Community Engagement Labs, etc. Examples of projects for the Independent Study include, but are not limited to, analyzing information to share with a public audience, designing a new community outreach initiative, and developing community conservation or education programs.

Course Themes:

Students will develop the "real-world" skills needed to be productive contributors to their chosen fields of study. Depending on the student's Master Plan, each student will develop a unique set of skills that will enhance their Master Plan objectives. These skills may include, but are not limited to, the following:

- Develop solutions to complex conservation and/or education problems.
- Network and work collaboratively with professionals in their chosen fields.
- Explore career opportunities and develop a more informed plan for post-graduation success.
- Identify and refine student-created goals in light of the experience.

Course Project:

In the Independent Study, you have the freedom to design a project of your choosing (and format). You will be responsible for submitting assignments that document and reflect on your experience, you will complete an annotated bibliography with literature that supports the project, and you will submit drafts and your final project for assessment.