

# Biology Major with the Research Concentration

## General Information

Revised: April 2019

The Research Concentration is a challenging track within the Biology major, specifically designed for highly motivated students. The Research Concentration consists of a number of courses and experiences designed to prepare students to pursue a career in scientific research in graduate school, industry, government, medical school, or science education. Most students enter the program as sophomores or juniors.

## Graduation Requirements

To complete the Research Concentration the following requirements are added to the basic requirements for the B.S. or B.A. degree in Biology:

- Enroll. Complete the Declaration of Major and/or Change of Advisor Form by checking the Research Concentration Box, and return it to the Dean's Office. The declaration form must be completed and signed by your academic advisor prior to admission into the program.
- Participate in a significant research experience. This means working on an independent research project for the equivalent of 4 credits. Enrolling in the Research Concentration does not guarantee a research experience. It is the student's responsibility to secure a research position. This requirement can be fulfilled in the lab of a GU faculty member or, with prior permission, at a different institution.
- Present your research at Zag Fam Weekend as well as the scientific community beyond Gonzaga. There are many opportunities to present your work in poster or oral format, for example, the annual Murdock Research Conference, or other regional undergraduate or national society meetings.
- Enroll in BIOL 484: Biology Research Seminar. You are expected to attend 12 seminars prior to graduation and upload a seminar reflection for each one. Completion of BIOL 484 will fulfill most of this requirement.
- Take math classes.
  - 1) a college calculus course (MATH148: Survey of Calculus or MATH157: Calculus and Analytic Geometry I)
  - AND
  - 2) a statistics course (MATH121: Introductory Statistics, MATH321 Statistics for Experimentalist, or BIOL305: Biological Data Analysis)
- Write up your research results.
- Take BIOL or CHEM 295: Science Outreach.

When you graduate, your degree will be granted as a Bachelor of Science or Bachelor of Arts in Biology with the Research Concentration.

## People to Know

- Dr. Nancy Staub – Director of the Research Concentration Program  
Office: HU207, Phone: 313-6336, Email: [staub@gonzaga.edu](mailto:staub@gonzaga.edu)
- Angie Hinz – Research Coordinator  
Office: HU241, Phone: 313-5889, Email: [hinz@gonzaga.edu](mailto:hinz@gonzaga.edu)
- Jiana Stover – Outreach Coordinator  
Office: HB147, Phone: 313-6642, Email: [stoverj@gonzaga.edu](mailto:stoverj@gonzaga.edu)
- Your Research Mentor – a Gonzaga faculty member, or with prior approval, a researcher outside of Gonzaga University.

## Website Resources

Relevant forms, detailed information and updates on student research are all available here. <http://www.gonzaga.edu/undergradresearch> Click on "Biology Research Concentration"

## Additional Program Details

### Performing independent research

Enrollment in the research concentration does not guarantee a research experience. It is the responsibility of the student to secure a research position.

To fulfill the research requirement, you must have *an equivalent* of 4 credits. For reference, one summer of full-time research (40 hours per week) is equivalent to 5 credits; one semester of research (5 hours per week) is equivalent to 1 credit.

Research positions are limited and can be very competitive. For example, the total number of positions varies by semester, and the average placement is 75%. Your chances of obtaining a position are greatly enhanced if you (1) are genuinely interested in a research topic and can communicate that interest to a potential faculty mentor, and (2) can show you are a strong candidate with solid grades in your science classes. Sometimes paid research positions are difficult to come by, in which case consider volunteering in a lab or working for credit.

### Important dates for paid research positions at Gonzaga

	Fall Semester	Spring Semester	Summer
Applications Available	Late August	First week of November	Middle of January
Applications Due	Second week of classes	Just prior to Thanksgiving Break	Middle of February

### Important dates for paid research positions at other institutions

Although deadlines do vary, most summer internship programs at other research institutions have deadlines in January and February. For a partial list of research positions at other institutions, see the Undergraduate Research webpage.

### Presenting your research

Research students are expected to participate in the ZagFam Weekend Poster Session. In addition, Research Concentration students must present their research at a venue outside of Gonzaga. Conferences and meetings are a great way to meet others in your field of study, and will often help you decide how and where to take your career once you graduate from Gonzaga. Some of the most commonly attended conferences are listed below.

- The Murdock College Science Research Conference is held each year in early November at a university in the Pacific Northwest. Typically, approximately 26 Gonzaga students and faculty travel to the conference together.
- The Spokane Intercollegiate Research Conference is held each April at a Spokane-area university.
- Additional presentation concentrations include other regional undergraduate research conferences as well as the national meetings of professional societies. Travel grants of approximately \$400 are available to assist students attending regional and national conferences through the Center for Undergraduate Research and Creative Inquiry.

### Learning about the research of others

As a member of a research community, you are responsible for informing yourself of the vast amount of research taking place on our campus and elsewhere. Therefore, attendance at biology-related seminars is a required component of the Research Concentration. You will provide feedback on 12 seminars prior to graduation. Seminar announcements are posted on bulletin boards in Hughes and emailed to biology students through the biology student listserv.

### K-12 Science Outreach

Participation in science education outreach can be incredibly fulfilling. Our outreach program focuses on bringing engaging, interesting, and age-appropriate science into K-12 classrooms in the Spokane Public Schools. Each GU student enrolled in the Research Concentration is required to do science education outreach through *Science in Action!* or a similar program, for a total of 16 hours in a single semester. Participation in these programs fulfills the Gonzaga Service Learning requirement for some classes.