

## **Swarthmore Biology Summer 2024 research opportunities information**

The Biology department will hold our Summer Research Opportunities information session on Friday November 17th, at 4:30 in Singer 33. Please come by to ask questions about summer research and to hear your fellow students share their Swarthmore and external research experiences.

Deadlines for both internal and external research programs are in February or early March, so now is the time to get started identifying opportunities!

Information about Swarthmore funded summer research opportunities can be found at the [College Summer Research Opportunities website](#). Here, you can find information about [submission dates](#) (Feb. 13th) as well as the [Summer Research Guidebook](#) which contains information about the application process and expectations and rules associated with Swarthmore funded research stipends.

### **Research opportunities overview**

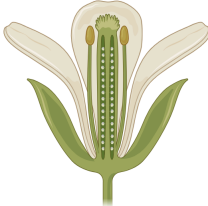
[These slides](#) provide an overview of Swarthmore and non-Swarthmore research opportunities. Please look them over carefully or attend the Research Opportunities session so that you have a firm understanding of the opportunities that are available and how to apply for them.

## Individual Swarthmore Biology faculty research summaries, presentations, and open house dates

Individual Biology faculty have recorded short videos introducing you to their research programs. The videos are linked to their research descriptions. If you are interested in learning more about working with a faculty member, attend their lab open house or contact them directly.

Faculty Member	Research Description	Contact information/open house schedule and link
Carolyn Bauer	I use my captive rodent colony to test potential ways of mitigating the stress of parent-child separation. I also conduct <a href="#">field work in Chile</a> , where I am interested in how environments during pre- and post-natal development affect adult phenotypes. I generally measure endocrine stress phenotypes, but I'm exploring metabolism and water balance physiology, too.	<a href="mailto:cbauer1@swarthmore.edu">cbauer1@swarthmore.edu</a>  I will be doing on-campus research during the Summer of 2024 (late May through late July). This captive animal project will involve a team of students, yet each student will have their own part of the project. There may be opportunities to work in Chile this June or July as well. If you're interested in either opportunity, please send me an email explaining your interest, along with your resume.
Alex Baugh	My lab studies how animals resolve tradeoffs. One major focus is how behavioral plasticity enables tradeoff resolution and the neuroendocrine systems that underlie this plasticity and also constrain its limits. We use frogs in the lab and field as our model organisms and experimental approaches to shed light on how hormones interact to shape behavioral and life history plasticity. Learn more at the <a href="#">Baugh Lab</a> website and see <a href="#">this video</a> .	<a href="mailto:abaugh1@swarthmore.edu">abaugh1@swarthmore.edu</a>  Interested students should reach out to me by email.
Dawn Carone	<a href="#">My lab</a> studies misregulation of noncoding RNA in cancer cells using	<a href="mailto:dcarone1@swarthmore.edu">dcarone1@swarthmore.edu</a>

	<p>a variety of molecular techniques including fluorescence microscopy, genome editing using CRISPR, and deep sequencing. A variety of projects are ongoing in the lab to uncover the function of noncoding RNAs and their contribution to uncontrolled cell growth.</p>	<p><b><i>The Carone lab will not be accepting research students in the Summer of 2024.</i></b></p>
Itzue Caviedes-Solis	<p>The <a href="#">Conservation Biology Lab</a> studies the genetic, ecological and evolutionary mechanisms that drive frogs' microbial diversity. The lab has local projects in PA and projects abroad in Mexico and Ecuador. Students who join the lab for summer research will have the opportunity to travel abroad to do fieldwork, lab work and outreach.</p>	<p><a href="mailto:icavied1@swarthmore.edu">icavied1@swarthmore.edu</a></p> <p>To be eligible to join the lab you need to take Conservation Biology BIOL 037. If selected you are required to take 0.5 credits of BIOL 094 during Spring 2024.</p>
Karen Chan	<p><a href="#">Our plankton ecology lab explores the interactions between individuals, their fluid environments, and their population-level consequences in a changing world.</a> The ongoing projects include marine heatwaves and ocean acidification impact on early development and the swimming biomechanics of larval invertebrates.</p>	<p><a href="mailto:kchan1@swarthmore.edu">kchan1@swarthmore.edu</a></p> <p>Interested students can get in touch with me by email on or before Dec 1.</p> <p>Long-term commitment is preferred.</p>
Eva-Maria Collins	<p><a href="#">My lab</a> studies how the brain controls <a href="#">behavior</a> and how chemicals affect brain development and function, using <a href="#">high-throughput behavioral screening</a> in planarians. Read a short synopsis about our latest projects <a href="#">here</a>. We are also interested in aging and tissue mechanics. We use tools from biology, physics/engineering, and CS.</p>	<p><a href="mailto:ecollin3@swarthmore.edu">ecollin3@swarthmore.edu</a></p> <p>Email me if you're interested.</p> <p>Long-term commitment is required to be considered for summer research in my group.</p>
Bradley Davidson	<p>Our research focuses on cell signaling in developing embryos. We are particularly interested in the interplay between cell division and signaling and how this interplay contributes to the onset of cancer. We also explore how neural signals</p>	<p><a href="mailto:bdavids1@swarthmore.edu">bdavids1@swarthmore.edu</a></p> <p>Interested students can get in touch with me by email.</p> <p>I will also host an open house on Friday December 8th at</p>

	regulate stem cell division in the growing heart. Additionally, we employ comparative genomics to explore evolutionary changes in developmental gene networks. <a href="#">Link to video</a> .	3:00pm. Please come by my lab (Singer 336) at this time to hear more about our research. I look forward to meeting you and answering your questions!
Vince Formica	The goal of my research is to understand how animal societies evolve in nature. We approach this goal with a combination of field biology, experimental manipulations, and molecular biology. <a href="#">Link to my website</a>	<a href="mailto:vformic1@swarthmore.edu">vformic1@swarthmore.edu</a> Please email me with questions. <b><i>The Formica lab will not be accepting research students in the Summer of 2024.</i></b>
Nick Kaplinsky	<a href="#">My lab</a> investigates plant responses to high temperatures using genetic, molecular, and cellular approaches. 	If you are interested in performing research in my lab, please complete <a href="#">this form</a> so that I can invite you to a research open house in early December.  My email is <a href="mailto:nkaplin1@swarthmore.edu">nkaplin1@swarthmore.edu</a>
Jose-Luis Machado	We are evaluating the role of invertebrates and the microbial communities in soil aggregation formation, litterfall decomposition, carbon sequestration, and nutrient cycling in the context of anthropogenically induced changes such introduction of non-native plants in temperate forest communities (Crum Woods) and of conversion of land to potato cultivation in high altitude tropical grasslands (Colombia).	Please contact me by email <a href="mailto:jmachad1@swarthmore.edu">jmachad1@swarthmore.edu</a> if you are interested in doing research in my lab. We can schedule a meeting with the current team to share past, present, and future experiences.
Rebecca Clements	<a href="#">My lab</a> is interested in answering fundamental questions about the cell biology of a uniquely important, yet neglected, cell type: red blood cells. Red blood cells are the most abundant cell in the body, yet basic aspects of their cell biology remain elusive. Due to their lack of organelles, red blood cells are	<a href="mailto:rclemen1@swarthmore.edu">rclemen1@swarthmore.edu</a>  Our lab will be hosting an open house in late November/early December. Please fill out <a href="#">this form</a> to request more details.

	commonly neglected by immunologists. Our lab is broadly interested in understanding more about the interplay between infection, inflammation, and red blood cell biology.	