SUMMER 2026

Biomedical Research & Synthetic Biology Outset Program

Outset

Dates: July 12-17, 2026

Campus: UNC-Chapel Hill

Overview

Explore the frontiers of synthetic biology in a course led by UNC Biomedical Science students

Outset's Biomedical Research & Synthetic Biology Program is developed and taught by the UNC iGEM team. It immerses students in the fascinating field of synthetic biology and how it drives innovation in medicine. During the week, students participate in lectures, hands-on lab activities, and group projects covering genetic engineering, CRISPR, and synthetic biology applications in healthcare.

Small-group sessions give students a front-row view of how experiments are designed and analyzed. These sessions provide practical experience with real-world lab techniques and highlight the critical thinking skills needed for biomedical research.

In addition to classroom and lab experiences, students visit UNC labs and research facilities. These visits allow students to observe scientists at work, see how research impacts patient care, and understand how teams collaborate to solve complex medical problems.

By the end of the program, students gain hands-on experience, a deeper understanding of synthetic biology, and inspiration from the UNC research community, preparing them to explore future studies and careers in medicine and biotechnology.

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What to Expect in a Week of Outset Biomedical Research

Student-led Biomedical Research Course & Workshops at UNC-Chapel Hill

Students will learn how synthetic biology and biomedical research are conducted through lectures, workshops, guided projects, and interactive activities. Examples of activities may include*:

Experimental Techniques & Labs: Hands-on work with DNA modeling, plasmid design, and protein expression.

Medical Applications & Biotechnology: Explore diagnostics, therapies, and real-world synthetic biology solutions.

Team-Based Design Projects: Collaborate on small-group projects to tackle biomedical challenges.

Guest Speakers & Q&A with UNC Faculty or Researchers

Speakers will share firsthand perspectives on careers in synthetic biology and medicine, current discoveries, and the process of turning scientific ideas into real-world solutions. Example topics*:

- How synthetic biology research impacts healthcare and diagnostics
- Cutting-edge applications in genetic engineering, cell therapies, and medical biotechnology
- Ethical considerations and challenges in biotechnology and synthetic biology
- Pathways from high school and undergraduate study to research careers

Tours and Visits to UNC Labs and Research Facilities

Students will tour UNC laboratories and research facilities to see firsthand how biomedical research is conducted and applied. These visits provide a behind-the-scenes look at advanced techniques, ongoing studies, and collaborative research in action.

Our tour schedule is still being finalized, but students can expect visits to at least two research labs or centers, giving a direct view of the environment where synthetic biology innovations take place.

***Note: activities may vary.** Students receive final schedules closer to their program date.

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Example Day

Here's an example of a day in the Biomedical Research & Synthetic Biology program at Outset. Each day is packed with classroom sessions, workshops, and off-campus activities. We try to have both academics and fun!

8:00 – 8:45 AM	Grab breakfast in dining hall with other students.
9:00 – 9:45 AM	Classroom session introducing concepts in Synthetic Biology
10:00 – 10:45 AM	Biomedical Research Workshop (topic TBD)
11:00 – 11:45 AM	Team project: define a medical problem and a synthetic biology-based solution
12:00 – 2:00 PM	Enjoy lunch at the dining halls, then free time or staff-led activities around campus
2:00 – 5:00 PM	Hands-on lab experience in the UNC Department of Biomedical Engineering
5:00 – 6:00 PM	Grab dinner at a campus dining hall or nearby UNC restaurant with friends
6:00 – 9:00 PM	Enjoy a staff-coordinated evening activity in Chapel Hill!
9:30 – 11:00 PM	Relax in the student dorm with friends, shower, and wind down before lights out

Program FAQs

What kind of student is a good fit for Biomedical Research?

Students who are curious, motivated, and excited to explore medicine, biomedical research, and biotechnology. We look for applicants who demonstrate dedication, creativity, and a willingness to engage in a challenging, collaborative learning environment.

How competitive is the Biomedical Research program?

Biomedical Research is one of our more selective programs due to high academic and professional standards. If you're unsure about your fit, we encourage you to speak with your Admissions Representative for guidance.

Are there grade requirements for Biomedical Research?

Yes, the Biomedical Research program is for current 9th-12th graders.

Are there academic pre-requisites for this program?

We strongly recommend that a student has completed a high school Biology course before attending.

Can I switch program specialty later?

You can switch programs up to 2 months before your start date if there are still spots available in other programs on your campus. We cannot guarantee this, so please contact our Admissions team for more info.

Can I do back to back programs in different specialties?

Yes. Back to back programs are a great way to meet more peers, explore other specialties, and reinforce core learning. Note that if you stay on the same campus, activities may repeat and you will be participating in the "Path to Pre-Med" course again along with your new week's student cohort.

What if I'm not sure this is the right program for me?

See our overview of other program specialties on the next page. You can also visit our website to explore other programs.

Contact Us

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FAQs Cont'd

Admissions deadline & process?

There is no deadline! We have rolling Admissions. We have a simple 4-step Admissions process. You can learn more how it works by **clicking here**.

What is the cost?

Tuition and housing for our programs is $2,950, including 24/7 staff, dorms, meals, 20+ hours of academics, speakers, evening activities, and activity transport. Travel to and from campus is not included.

Is there financial aid?

Yes, if you need financial aid please indicate this on your application and fill out the aid request information. We are not able to guarantee aid but we do take every aid request seriously.

How do I apply? How competitive?

Applying online is easy: **click here**. You'll hear from us within 2 business days. Outset is competitive and we look for motivated students with strong grades and a genuine interest in medicine or healthcare.

Are students monitored 24 hours a day?

Outset maintains a 7:1 student-to-staff ratio, with ACA-trained staff providing 24/7 supervision. Our programs meet strict safety standards, and campuses are monitored to ensure students are safe at all times.

What is accommodation like?

Outset partners with student residence halls. Rooms are shared by 1–2 students of the same gender, with shared bathrooms. Single rooms are available ($300–400). Dorms usually have common areas to socialize.

More Info

Hear from our alumni

What to expect in a week with Outset:

Have fun as you grow

Perfect balance of fun and education. My daughter made some great friends here, and it really solidified her passion for and decision to go into medicine.

~Outset Parent, 2025

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Trustpilot

TrustScore 4.7 | 105 reviews

Trustpilot checks reviews

The trusted leader for teen career exploration.

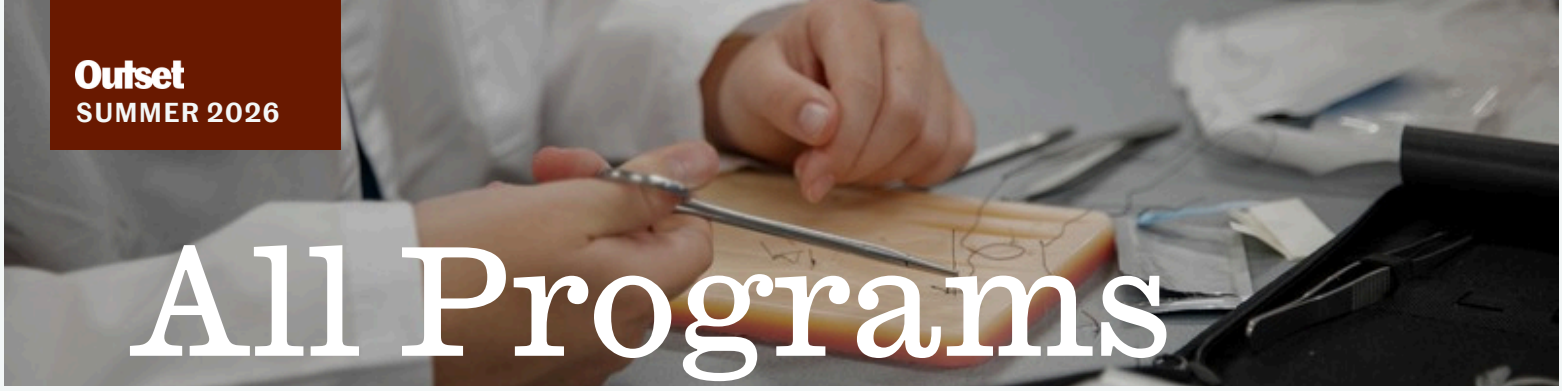
Outset is trusted by 1,000+ families each summer for high-quality teen summer programs. Read our reviews and see why we're the leading brand for summer education.

hosa future health professionals

BBB ACCREDITED BUSINESS

NCHSE National Consortium for Health Science Education

Read Reviews



All Programs

**Not sure if Biomedical Research is the right program for you?
Check out some of our other MD path specialties:**

Orthopedic Surgery	Study musculoskeletal system care, bones, joints, and injuries.
General Medicine	Explore the fundamentals of care, diagnosis, and treatment.
Cardiology	Explore surgical care for the brain, spine, and nervous system.
Psychiatry	Focus on mental health assessment and treatment.
Anesthesiology	Learn how anesthesia supports surgeries and patient safety.
Pediatrics	Focus on healthcare of children from infancy to adolescence.
Dentistry	Study oral health, dental procedures, and patient care.
General Surgery	Explore surgical principles and patient care for procedures.
Emergency Medicine	Understand fast-paced care for urgent and acute conditions.
Dermatology	Study skin health, conditions, and treatments.
AI in Medicine	Explore AI applications in healthcare and medicine.

See All Programs

Ready for your week at Outset?

Apply Now

Have questions or need to follow-up on your admissions process? Schedule time with our Admissions Team

Schedule Call