



LOUISIANA STATE UNIVERSITY

## LSU Beckman Scholars Application

### LSU Beckman Scholars Program Application

The LSU Beckman Scholars program is a paid 15-month immersive leadership and research program within the College of Science. In addition to research experience, Beckman Scholars receive comprehensive professional development opportunities including personalized mentoring; community building; leadership development incorporating justice, equity, diversity, and inclusion (JEDI) principles; and expert guidance in science communication.

Two students will be selected per year for this prestigious program. Those selected will receive a stipend of **\$18,200** broken down as follows:

- First Summer - \$6,800
- Academic Year - \$4,600
- Second Summer - \$6,800

**Note:** This opportunity involves a full-time summer commitment beginning in summer 2024 and including summer 2025.

#### Minimum Criteria

- Good academic standing
- Completion of at least one semester with a declared major in biochemistry, biological sciences, chemistry, physics (medical physics concentration only), or microbiology.
- Full-time student
- Citizen or permanent resident of the U.S. or its possessions, or hold DACA recipient status
- Strong verbal, written, and interpersonal communication skills
- Plans to pursue a Ph.D., MD, MD/Ph.D., or another scientific career path

**Note:** The selection committee will implement a holistic review of applicants.

#### Application Requirements

1. Completion of this online application by **Friday, March 1, 2024**.
  - The application includes three essay questions. It may be useful to download a pdf of the application before you start. The pdf can be found at <https://www.lsu.edu/science/engagement/beckman-scholars.php>.
  - The application does automatically save, so you can come back and work on it later if you use the same computer.
2. Resume (uploaded with application)
3. Unofficial Transcript (uploaded with application)
4. Two Letters of Recommendation
  - You will be asked to provide the names and emails of your recommenders. We will reach out to them for the letters using a different form.

#### Mentor Research Areas

Beckman scholars will be matched with an individual mentor from biological sciences, chemistry, or medical physics. Specific mentor research areas are as follows:

- Ichthyology/Evolution: Evolution and biogeography of freshwater and marine fishes.
- Utilizing high-performance, multi-core computers (e.g., supercomputers) and machine learning techniques to understand the impact space radiation has on both the health of human spaceflight crews, and the resilience of space vehicle hardware systems.
- Mechanisms of organ formation during embryogenesis using *Drosophila*.
- Molecular-Cell Biology: Using *Drosophila melanogaster* to study nucleolar stress - when cells (especially neuroblasts) fail to produce sufficient ribosomes needed for protein synthesis
- Disease ecology and evolution, quantitative ecology: We examine how disease outbreaks and environmental variation influence populations focusing on host-pathogen interactions and population viability.
- Inorganic and Analytical Chemistry, Electrochemistry: Addressing challenges in environmental chemistry such as water purification, adsorption of contaminants and separation, energy storage, and solar fuels production and catalysis.
- Synthetic Organic Chemistry: Synthesis of complex molecules with diverse structural architectures that are suitable for high-throughput screening in drug discovery research.
- Marine physiology and ecology, evolutionary responses to climate change.
- Neuroendocrinology and Behavior: Understanding how different neurotransmitters and hormones help wild animals successfully cope with challenges from predators to disease.
- Organic Chemistry and Chemical Biology: Design and synthesis of artificial molecular machines to control cell function with light to treat diseases such as cancer and development of new photocatalysts.
- Neuroscience, Sensory Biology: Understanding the neural and molecular basis of natural social behaviors, including aggression and reproduction, and the mechanisms that underlie sensory, behavioral and neural plasticity.
- Medicinal Chemistry/Chemical Biology: Using natural products as probes to delineate mechanisms underlying metabolic processes relevant to human disease.

- Organic Chemistry: research involves the total synthesis of organic molecules that are colorful, the study of their spectroscopic properties, and their conjugation with biomolecules, such as proteins. These conjugates have potential applications in the detection and treatment of various cancers.
- Biochemistry: Investigating the chemical mechanisms used by plants and some microbes to convert solar energy to chemical energy through photosynthesis.

CLICK THE FORWARD ARROW TO BEGIN THE APPLICATION

First Name

Middle Name

Last Name (Surname)

Preferred Name

Preferred Pronouns

Date of Birth (mm/dd/yyyy)

LSU 89# (89-xxx-xxxx)

LSU email

Alternate email

Cell Phone Number

Gender Identity

Woman

Man

Open response

Prefer not to identify

Race/Ethnicity (Select all that apply)

American Indian/Alaskan Native

Asian

Black/Non-Hispanic

Latino/Latina

Native Hawaiian/Pacific Islander

White/Non-Hispanic

Open response

Prefer not to Identify

Please select your major(s) below. (Select all that apply)

Biochemistry

Biological Sciences

Chemistry

Geology

Mathematics

Microbiology

Physics

Other

Do you have an academic concentration within your major?

Yes (please specify)

No

Do you have an academic minor?

Yes (please specify)

No

Current Classification Status

In what semester and year did you enroll to LSU? (e.g. Fall 2020)

Expected Graduation (e.g. Fall 2021)

Cumulative GPA

Please select your top **three (3)** areas of research interest.

Note: These correspond to the mentor research areas previously described.

Ichthyology/Evolution: Evolution and biogeography of freshwater and marine fishes.

Utilizing high-performance, multi-core computers (e.g., supercomputers) and machine learning techniques to understand the impact space radiation has on both the health of human spaceflight crews, and the resilience of space vehicle hardware systems.

Mechanisms of organ formation during embryogenesis using *Drosophila*.

Molecular-Cell Biology: Using *Drosophila melanogaster* to study nucleolar stress - when cells (especially neuroblasts) fail to produce sufficient ribosomes needed for protein synthesis

Disease ecology and evolution, quantitative ecology: We examine how disease outbreaks and environmental variation influence populations focusing on host-pathogen interactions and population viability.

Inorganic and Analytical Chemistry, Electrochemistry: Addressing challenges in environmental chemistry such as water purification, adsorption of contaminants and separation, energy storage, and solar fuels production and catalysis.

Synthetic Organic Chemistry: Synthesis of complex molecules with diverse structural architectures that are suitable for high-throughput screening in drug discovery research.

Marine physiology and ecology, evolutionary responses to climate change.

Neuroendocrinology and Behavior: Understanding how different neurotransmitters and hormones help wild animals successfully cope with challenges from predators to disease.

Organic Chemistry and Chemical Biology: Design and synthesis of artificial molecular machines to control cell function with light to treat diseases such as cancer and development of new photocatalysts.

Neuroscience, Sensory Biology: Understanding the neural and molecular basis of natural social behaviors, including aggression and reproduction, and the mechanisms that underlie sensory, behavioral and neural plasticity.

Medicinal Chemistry/Chemical Biology: Using natural products as probes to delineate mechanisms underlying metabolic processes relevant to human disease.

Organic Chemistry: research involves the total synthesis of organic molecules that are colorful, the study of their spectroscopic properties, and their conjugation with biomolecules, such as proteins. These conjugates have potential applications in the detection and treatment of various cancers.

Biochemistry: Investigating the chemical mechanisms used by plants and some microbes to convert solar energy to chemical energy through photosynthesis.

Please complete the next three (3) essay questions.

What inspires your interest in science and/or math and how does that relate to your future career goals? (500 words max)

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Please share your perspectives on the importance or value of diversity, inclusion, and collaboration in the STEM disciplines and research. (500 words max)

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Describe any activities/teams/committees/groups, in or out of school in which you have taken on a leadership role, a role of responsibility or a role of importance. Discuss the skills that you have developed from these roles. (500 words max)

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Please upload the following as attachments.

Resume

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Unofficial Transcript

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Letters of Recommendation

Please provide the name and email address of two recommenders.

Recommender #1

Name

Email

Recommender #2

Name

Email

I am on good academic standing and not on any type of academic or disciplinary probation.

Yes

No

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I am a U.S. Citizen or Permanent Resident or hold DACA recipient status.

Yes

No

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I authorize the College of Science to review my records, grades and disciplinary status with the submission of this application.

I authorize

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I authorize that all information provided on this form, including any and all personal, employment, and academic data may be shared with the LSU Police Department, LSU ITS, the approval authority within your department, and Analytics Partners to facilitate your request. This data will be securely retained indefinitely. To learn more about privacy at LSU, please see the [LSU Privacy Statement](#).

I authorize

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Thank you for completing this application. Once you click the forward arrow, your application will be submitted for review.