

https://science.utah.edu/students/student-research/beckman-scholars/

31 January 2024

Dr. Luisa Whittaker–Brooks and Dr. Andrew G. Roberts

JANUARY 15, 2024 – THE COLLEGE OF SCIENCE AT THE UNIVERSITY OF UTAH IS PROUD TO BRING THE BECKMAN SCHOLARS PROGRAM, SUPPORTED BY THE ARNOLD AND MABEL BECKMAN FOUNDATION, BACK TO THE UNIVERITY OF UTAH!

what is this opportunity?

https://www.beckman-foundation.org/about-foundation/arnold-and-mabel-beckman/

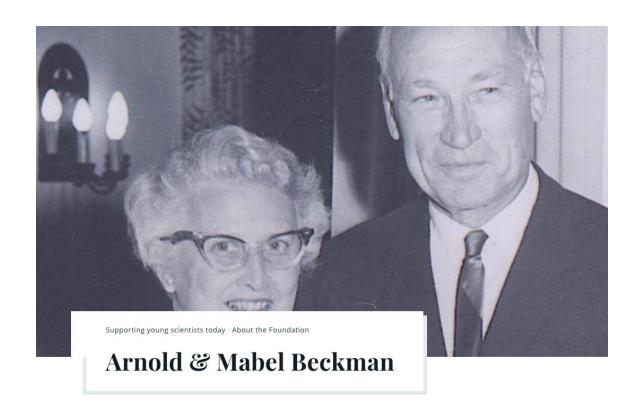
The Beckman Scholars Program is a 15-month mentored research experience for exceptional undergraduate students in chemistry, biological sciences, or interdisciplinary combinations thereof.

This generous institutional award, provided by the Arnold and Mabel Beckman Foundation to the University of Utah College of Science, spans three years (2024 – 2027), and will enable the funded support of six scholar–faculty mentor pairs. Each internally selected scholar will receive a \$21,000 research stipend to facilitate 15-months of mentored research (nine academic calendar months, two three-month summers), in addition to \$5,000 provided for the mentor-directed research.

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Dr. Arnold O. Beckman, founder of Beckman Instruments, Inc., created devices that revolutionized the study and understanding of chemistry and human biology. Dr. Beckman often said, "There is no satisfactory substitute for excellence." This philosophy, combined with his personal integrity and love for science, guided his life and helped shape both his company and his highly decorated career.

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The success of the Beckman Scholars Program will be measured by its impact on the College of Science as well as the individual Beckman Scholars. At an institutional level, a successfully executed program should result in <u>increased applications</u> for the undergraduate research programs throughout the College of Science.

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An illustrative case for a desirable individual outcome is Dr. Reshma Shetty, BSP alumnae from the University of Utah (award year 2000), who performed research with Prof. Olivera in Biology. After publishing with Prof. Olivera, she obtained a Ph.D. in Bioengineering from MIT, and then went on to co-found Ginkgo Bioworks, Inc., a synthetic biology start-up company.

RESEARCH ARTICLE

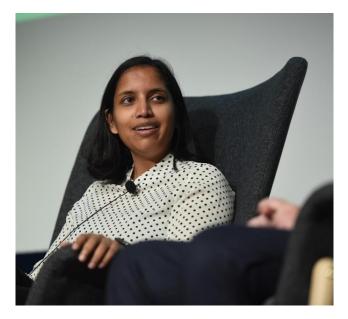
γ-Glutamyl carboxylation: An extracellular posttranslational modification that antedates the divergence of molluscs, arthropods, and chordates



PNAS February 5, 2002 99 (3) 1264-1269; https://doi.org/10.1073/pnas.022637099

Communicated by John R. Roth, University of Utah, Salt Lake City, UT (received for review September 20, 2001)





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Beckman Scholars at the U, 2020 - 2021

(read more here: https://science.utah.edu/beckman/):



Sonia Sehgal Mentor: Martin Horvath



Horvath Structural Biology & Biochemistry



Rory Weeks Mentor: Luisa Whittaker-Brooks



Whittaker-Brooks Organic-Inorganic Hybrid Electronics

Sonia Sehgal, Pl: Dr. Martin Horvath
Finding the role of biological probes on MUTYH activity

Rory Weeks, Pl: Dr. Luisa Whittaker–Brooks

Mechanistic understanding of a model solid electrolyte/electrode interface for advancing electrochemical energy storage application

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Beckman Scholars at the U, 2021 – 2022

(read more here: https://science.utah.edu/beckman/):









Sahar Kanishka, Pl: Dr. Gagnon Lineage tracing in zebrafish with CRISPR prime editing

Rachel Jones, Pl: Dr. Hollien

Role of p62 in alternative degradation of Hungtingtin protein

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Beckman Scholars at the U, 2022 – 2023

(read more here: https://science.utah.edu/beckman/):





Max Austin, Pl: Dr. Roberts
Antimicrobial Peptide Stabilization and Natural Product Scaffold Mimicry Using
Triazolinedione-Based Cyclization Methods

Mina Done, PI: Dr. Burrows
Comparative Quantification of Oxidative Damage in the Genome, Telomere, and mtDNA using qPCR





Maxwell J. Austin Beckman Scholar

Andrew G. Roberts Laboratory
University of Utah Department of Chemistry

Chemoselective, Oxidation-Induced Macrocyclization of Tyrosine-Containing Peptides

E. Dalles Keyes, Marcus C. Mifflin, Maxwell J. Austin, Brighton J. Alvey, Lotfa H. Lovely, Andriea Smith, Tristin E. Rose, Bethany A. Buck-Koehntop, Jyoti Motwani, and Andrew G. Roberts*

Journal of the American Chemical Society, Articles ASAP (Article) Subscribe Publication Date (Web): April 29, 2023



Full tex

PDF

open URL

Roberts Lador tory the Department of Chemis most ecentric in the Department of Chemis most ecentric in the Department of Chemis most ecentric in the Department of Chemis with the Departm

New Strides in Peptide Chemist

Austin is a senior at the University of Utah, studying stry with an emphasis in math.

from the chemis for research and cresaid. "I knew there we have controlled and he became inteafter seeing the commake peptide compdevelopment."

"In our research a antibiotic de velor velor ed pla

chow ch will ex medicinal chemistry is working to make s after he graduates.

— by Mary Allen

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eligibility: Prospective scholars must apply with one of fifteen internally selected UoU Beckman Scholars Program mentors. For participating faculty research mentors, see *Figure 1* (next slide)

In addition, a prospective scholar must:

- 1. Be a full-time student and a declared science major;
- 2. Merit, diversity, equity, and inclusion should are given equal weight during Scholar selection (please make clear/emphasize these things in your application)
- 3. Beckman Scholars must be citizens or permanent residents of the United States or its possessions or hold status as DACA recipients
- 4. Be a freshman, sophomore, or junior;
- 5. Commit to an <u>independent research project</u> that will last two summer semesters and the the entire academic year in between.

application details: Please attend the 2024 information session. Prof. Andrew Roberts will provide a UoU Beckman Scholars Program overview and detail the application process. See **Table 1** (next slides) for details and deadlines on the application and selection process.

program faculty mentors:

fifteen internally selected UoU Beckman Scholars Program mentors (Figure 1)



Biological Sciences



Armentrout analytical & physical chemistry



Bischak materials chemistry



Caron sensory representation



Gagnon developmental genetics



Hammond biochemistry & synthetic biology



Jorgensen biochemistry & instrumentation



Karasov biology & systems immunity



Minteer analytical chemistry & biochemistry



Molinero physical chemistry



Noriega physical chemistry & spectroscopy



Puri biological chemistry & natural products



Roberts organic synthesis & peptide therapeutics



Sigman organic synthesis & catalysis



Vershinin single molecule biophysics & soft matter



Whittaker-Brooks organic-inorganic hybrid electronics

additional details about the Arnold and Mabel Beckman Foundation and the Beckman Scholars Program can be found here:

The Arnold and Mabel Beckman Foundation Mission Philosophy
The Beckman Scholars Program

Table 1. Activity timeline for UoU Beckman Scholar recruitment and selection

Date	activity (2024 - 2027, recurring annually)
January 31, 2024	information session (today) and solicitation
March 31, 2024	application deadline: March 31, 2024 at 6:00 p.m. MST, see application guidelines and submission information
mid-April late April	finalists selected for interviews finalist interviews scheduled/conducted
May 1, 2024 May 15, 2024 June 2024	scholars selected report submitted to Beckman Foundation BSP start for 2024 – 2025 period

application guidelines and submission information

https://science.utah.edu/uncategorized/beckman-application/

application deadline: March 31, 2024, at 6pm MST.

required from applicant

application form: https://forms.gle/nj9Xjwa4r35JZKbp9

Please email <u>roberts@chem.utah.edu</u> with any questions.

research interest and eligibility form: The form will ask for declared major, U.S. citizen or permanent resident status, selected BSP faculty mentor from the list of approved mentors, research area, and career goal statement. Students should also be ready to commit to a research project that will last two summer semesters and the entire academic year in between. As such, applicants currently need to be a freshman, sophomore, or junior.

in addition: The applicant must upload the following information in a single combined PDF using the filename [last name of applicant]_BSP2024 using the Google Form.

e.g., roberts_BSP2024.pdf

Application deadline: March 31, 2024, at 6pm MST.

in addition: The applicant must upload the following information in a single combined PDF using the filename [last name of applicant]_BSP2024 using the Google Form.

e.g., roberts_BSP2024.pdf

- curriculum vitae (2 pages maximum): The CV should include research and work experiences, awards, extracurricular activities.
- unofficial copy of applicant's academic transcript: Academic information must include full-time student status, coursework.
- research proposal: NSF fellowship format research proposal (2 pages).
- short essay: Students will be given "The Legacy of Arnold O. Beckman" (page 9 of Terms and Conditions) to read and asked to write a 250-word essay explaining which one of Dr. Beckman's rules they would embody as a UoU Beckman Scholar.

required from mentor

letter(s) of support: One letter is required from a person that can assess the student's potential for independent research (research mentor); an additional letter is optional. Mentors should submit the letter(s) of support as a PDF to uoubeckmanscholarsprogram@gmail.com

Application deadline: March 31, 2024, at 6pm MST.

in addition: The applicant must upload the following information in a single combined PDF using the filename [last name of applicant]_BSP2024 using the Google Form.

research proposal: NSF fellowship format research proposal (2 pages).

format: https://www.nsf.gov/pubs/2019/nsf19081/nsf19081.jsp#q50

The statements must be written using standard 8.5" x 11" page size, 12-point, Times New Roman font, 1" margins on all sides, and must be single-spaced or greater. References, footnotes, and figure captions must be no less than 10-point Times New Roman. Failure to follow any of these guidelines will result in an application being returned without review.

resource: NSF GRFP examples

• **short essay:** Students will be given "The Legacy of Arnold O. Beckman" (page 9 of Terms and Conditions) to read and asked to write a 250-word essay explaining which one of Dr. Beckman's rules they would embody as a UoU Beckman Scholar and explain your short (1-2 years) and long-term (10 years) career goals.

https://www.beckman-foundation.org/about-foundation/7-rules-success/

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https://www.beckman-foundation.org/about-foundation/7-rules-success/

- 1. There is no satisfactory substitute for excellence.
- 2. Absolute integrity in everything.
- 3. Everything in moderation, including moderation itself.
- 4. Hire the best people then get out of their way.
- 5. Don't be afraid of making mistakes. If you're not making mistakes, you're probably not doing very much.
- 6. Acquire new knowledge and always ask why.
- 7. Rule #7: Don't take yourself too seriously.

application form: https://forms.gle/nj9Xjwa4r35JZKbp9

