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Webb-Waring Biomedical Research Awards

Early-Career Investigator Application 2022

Revised 11/2021

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Webb-Waring Biomedical Research Awards Early-Career Investigator Application Packet

Executive Summary

Colorado can only be a leader in scientific innovation if its most dynamic scientific minds are supported at early stages in their work. The Boettcher Foundation's Webb-Waring Biomedical Research Awards program aims to support scientific innovation in Colorado by providing biomedical research funding for Early-Career Investigators at the state's research institutions.

Created in July of 2008, the Webb-Waring Biomedical Research Awards program is the result of an innovative agreement among the Boettcher Foundation, the Webb-Waring Foundation for Biomedical Research and the University of Colorado. This document serves to describe the program, articulate the major goals of the program, and provide guidelines to research institutions and eligible applicants.

The Boettcher Foundation's Board of Trustees has determined that the proceeds of the Webb-Waring Biomedical Research Awards program will be directed to support Early-Career Investigators engaged in biomedical sciences in Colorado. Grants of \$235,000 covering up to three years of research activity are funded with the intent to provide independent research opportunities to promising and talented investigators. Successful projects will lead to independent research, thus making investigators competitive for major awards from federal agencies and private foundations. Early-Career Investigators (ECI's) are faculty members who are four years or fewer from their first academic appointment. This program is designed to help recruit, retain and advance scientific talent within Colorado and is implemented in partnership with public and private nonprofit institutions that have significant biomedical research programs. The grants are anticipated to support the work of the "best and brightest" within the cohort of ECI's in Colorado. This work is significant in scope and impact, and the grants provide support for major efforts in biomedical science. Eligible investigators apply through competitive processes established within their individual institutions.

The foundation, its trustees, and institutional partners deliberated for more than two years on the best way to acknowledge and celebrate the scientific and public service legacy of the Webb and Waring families. This program ensures that these legacies live on in the discovery of new knowledge that improves human health and in the advancement of talented young scientists. The program enhances the mission of the Boettcher Foundation, which invests in the promise of Colorado and the potential of Coloradans.

On an annual basis, the foundation announces the establishment of pre-allocated grant amounts to: University of Colorado, National Jewish Health, Colorado State University and a pool from which other eligible Colorado institutions can apply. The proceeds of the funding area within the foundation are used primarily to create these pools, which are essentially limits against which each institution is invited to submit proposals for funding to the Boettcher Foundation. In order to guarantee the excellence and quality of funded programs, each institution will manage a competitive internal process characterized by the time-honored peer review process. The approach that employs a pre-allocation to research institutions is somewhat novel and is explained in detail in these guidelines.

Program description

Definition of Biomedical Research

There is no single definition of biomedical research that is generally accepted by the entire research community. Therefore, an important component of the work of the foundation was to provide some precision to the meaning of the terms within the context of the principles and objectives. Therefore, the following definition has been adopted:

The biomedical research supported pursuant to this grant program will be designed to find ways to prevent disease and improve human health through basic and applied biomedical research. The intent of the program is to fund meritorious research *that has the potential for new discoveries or advances a discovery to the proof of its potential value as an application to improve human health.* This research will improve the understanding, treatment and prevention of human disease.

Early-Career Investigator Awards

Early-Career Investigators – At the beginning of the biomedical research continuum, these promising researchers have spent their early years working in the laboratories of senior scientists, and they are ready to contribute original work to the biomedical knowledge base. It is difficult to compete for significant independent federal or private grants without the reputation and experience of senior researchers. This is causing Early-Career Investigators to leave the academic setting out of frustration about the lack of career advancement and to turn to industry for opportunities. Funding for early-career research opportunities is scarce. The federal agencies do sponsor some early-career grants, but the funding is minimal. Relatively small grants to the most promising early-career researchers could catapult a career and open new important areas of inquiry.

For purposes of this program, an eligible ECI is defined as:

An investigator who is within four years of appointment to his/her career-track academic position, and who has not previously received a major independent research award as of May 1 of the selection year. It is preferable that applicants be either currently or recently involved in a mentored grant program. A signed letter of offer is acceptable documentation for appointment to a career-track academic position.

In general, the ECI will have received a terminal degree or completed his/her medical residency within the 10 years preceding the application; however, individual institutions can accommodate exceptions on the basis of individual review and consultation. For purposes of calculating eligibility, the ECI's career-track appointment should have occurred no earlier than four years prior to January 1 of the year in which the program is announced. For example, a program announced in November 2021, and in which awards are funded in May 2022, will

include ECI's whose career-track appointments began no earlier than January 1, 2017.

Participating institutions will post the series of titles that are considered "career track," but in general these are faculty appointments with significant expectations regarding research, and/or teaching, and/or clinical activities and may be tenure-track or non-tenure track. ECIs should consult with their institutional contact if there are questions about eligibility. Post-doctoral appointments are not considered career-track appointments.

The definition of independent research awards are discussed in the "Application Requirements" section. An ECI remains eligible for this program if an independent award has not been received before the ECI's application is forwarded to the foundation.

The intent of the program is to allow the investigator to generate data to be competitive for a major independent research award within three years. The Webb-Waring Biomedical Research Awards program is designed to move the investigator from a mentored grant program to this competitive position.

INTERNAL REVIEW

An institution's internal review process will be appointed, managed and convened by the office of the most senior executive (e.g. chancellor, president, CEO) of the institution. For multi-campus institutions, the office of the system executive will be responsible for the internal review process. In general, the application and review process should be highly competitive, open, transparent and based on merit. The internal review process must have the following attributes:

- Appointment of a review committee comprised of at least five senior scientists who are acknowledged as distinguished within their fields and institutions. These individuals will commonly have distinguished titles, national awards, leadership positions, and successful scientific laboratories under their supervision.
- All applications that meet minimum eligibility criteria will be reviewed by the committee. A summary of the comments of the reviewers will be provided to each applicant at the end of the review process.
- Criteria to be considered by the review committee includes, but is not limited to:
 - › The scientific merit of the proposed work
 - › The extent to which the research has the promise to contribute directly to improving human health
 - › The preparation of the ECI and his/her ability to conduct independent research
 - › The likelihood that the ECI will be more competitive and move into an independent research career after conclusion of the grant
 - › The likelihood that the ECI will produce publications, be promoted, or contribute new technology disclosures will be considered
 - › The reasonableness of the budget and the appropriateness of the timeframe proposed
 - › Other criteria developed by the review committee that are commonly applied in a peer review process.

EARLY-CAREER INVESTIGATOR DEADLINES

The annual calendar presented below displays the anticipated events throughout the year. Specific dates will be provided by the foundation each year as a new program cycle begins.

ACTIVITY	DATE/MONTH	RESPONSIBLE ORGANIZATION
Announcement of Program by Research Institutions	No earlier than October 30	All Eligible Research Institutions
Proposals from ECI's Submitted to Their Institutional Process	No later than March 11	ECI's and All Eligible Research Institutions
Internal Review Committees Convened and Proposals Ranked	No later than April 22	All Eligible Research Institutions, Internal Review Committees
All Research Institutions Submit Proposals to the Foundation (It is the responsibility of the institutions to ensure that investigator candidates are still eligible).	By April 25	Program Executive of the Participating Research Institution
Foundation Convenes Review Committee for Proposals Submitted from Small Institutions	N/A in 2022	Boettcher Foundation
Orientation for Selected Boettcher Investigators	May 18	Boettcher Foundation
Approved Proposals Announced by the Foundation	May 25	Boettcher Foundation
Grant Funds Available for Approved Programs	June 1	Boettcher Foundation and All Research Institutions with Funded Programs
Annual Reports on Projects Funded June 1 - May 31 of the Previous Year	August 31	Boettcher Investigators
Annual Recognition Event	To Be Determined	Boettcher Foundation with Assistance from Participating Research Institutions and Boettcher Investigators

Early-Career Investigator Application Requirements

The following program parameters are established to provide direction for each proposal. Exceptions will be considered on a case-by-case basis during the consultation process described in these guidelines.

- ECIs will apply through the process established by the institution at which they are employed.
Note: Each participating institution must identify a single point of contact for the program and direct all applicants and potential applicants to that contact for all program information and institution-specific requirements of the program.
- All applicants are encouraged to review all posted institutional information about the program before completing an application.
- The foundation expects significant work to be accomplished through each funded proposal and, therefore, has set an award amount of \$235,000.
- The period of the award is at least one year and up to three years.
- Allowable expenses include, but are not necessarily limited to:
 - › An investigator's salary and benefits
 - › Other salaried personnel
 - › Professional services
 - › Hourly compensation for laboratory personnel, including students
 - › Supplies and materials
 - › Equipment not to exceed \$5,000 cost for each piece
 - › 50% of equipment exceeding \$5,000 in cost
 - › Services of core laboratories
 - › Professional travel
- The maximum Indirect Cost Recovery (ICR) rate is 8% and must be budgeted in each proposal at the level established by the institution up to 8%. Institutions are encouraged to waive the ICR requirement or establish an amount less than 8%. The ICR is counted as a component of total costs and will not be paid over and above the pre-allocated amount provided to each institution.

APPLICATION COMPONENTS

The application outline should be followed for all projects that are submitted by an institution to the foundation. An institution may require additional information from an ECI in the internal application process, but this information should not be forwarded to the foundation.

Cover Letter. This correspondence should include an explanation of the goals of the research project that is suitable for a lay audience and how the project will advance the career of the ECI. The letter should not exceed one page.

Section 1. Relevance to Human Health - half page maximum. Briefly describe the potential relevance/impact of the proposed research to human health in simple layperson terms.

Section 2. Scientific Abstract - one page maximum.

Section 3. Investigator Information - six pages maximum and must follow the biographical sketch template provided in the application package as a Word document file. Instructions for completing the biographical sketch are included as Appendix 1.

For purposes of identifying past and current research projects as “mentored” or “supervised” as compared to “independent,” the following guidance is offered, but is not exhaustive. Questions should be forwarded to the institution’s contact person for the ECI program.

When completing research support section, be sure to include the total grant amount, the start and end dates of the grant and a declarative statement as to whether the grant was mentored or independent.

- A major independent research award is determined to be a National Institutes of Health [NIH] RO1 or similar grant which provides independent research support of at least \$125,000 **net of indirect costs** (either single-year or multiple-year award), and which was awarded through a rigorous peer review process conducted by a public or private institution. Multiple independent awards that are, as of a May 1, 2022 award funding date, each less than \$125,000, but that total more than \$125,000 will not impact eligibility.
- Training grants, mentored/supervised grants, and career development grants are not considered to be independent awards. There is no limit on the amount of these types of awards that an ECI can receive to maintain eligibility.
- NIH “K” series grants are generally mentored grants, however, the R00 grant, which can follow the K99 grant is an independent award. Holders of K-99s and R00s are not eligible.
- NIH R01 grants are independent awards and holders are not eligible.

Section 4. Research Plan - Six pages maximum.

- **Background:** The Background and Significance section must not exceed one page. This section should state the hypothesis to be tested and specific aims of the planned work. It should include a brief background for the work and its significance to the biomedical sciences. Long term objectives, including specific plans for application to human health should be described.
- **Specific Plan:** This section should include a description of research design and methods, including use of animals and human subjects, if applicable. Indicate if the research project relies on pilot data or will generate pilot data. If pilot data exists, provide synopsis.
- References are not included in the six-page maximum for this section. References are limited to 50 and must demonstrate: knowledge of the literature, scientific capability of the investigator, and feasibility of the proposed project.

Section 5. Budget - Two pages maximum

- Show anticipated expenditures by category in a chart that shows annual increments. Include ICR as directed by the institution. Sample:

	Year 1	Year 2	Year 3	Total Budget Request	Institutional Match
Salary and Benefits					
Travel					
Research Supplies					
Large Equipment					
Small Equipment					
ICR up to 8% (determined by institution)					
Total					

Note: Your institution may provide a budget template which will replace this sample.

- Provide a brief narrative demonstrating how the budget supports the research plan.
- Although matching funds are only required for major equipment, please list any institutional match that is being provided in other budget categories.

Section 6. Assurances

- **Applicant.** The applicant will sign and date the following assurance: “I will conduct research supported by the Webb-Waring Biomedical Research Awards program to the highest scientific and ethical standards and in compliance with all applicable regulations and policies regarding protection of human research subjects, humane care and use of laboratory animals, and laboratory safety. I am responsible for the conduct of research and the preparation of research results for publication within the established guidelines of _____ (employer).”
- **Institution.** The institution will provide an assurance that it has policies and procedures in place to provide oversight, regulatory control and other policies necessary for the ethical and legal conduct of biomedical research, including policies governing scientific misconduct and conflict of interest. In addition, the institution will submit a statement, indicating that adequate space and related infrastructure will be allocated for the research project, and that it is the intent of the institution to employ the ECI through the term of the project.

Letters of Reference. Provide the following letters of reference with application: a letter from your department chair, dean or other academic authority. This letter must clearly state the department’s commitment and nature of commitment to the applicant’s research program. You may also include a letter from your mentor (if applicable) or advisor, and at least one but not more than two additional letters from researchers outside your institution who can address the merits of the science. A maximum of four letters of reference will be accepted.

Additional Requirements. Participating institutions may issue additional application requirements or clarify their expectations about required sections. All applicants should access this information through the institution's designated contact person.

Technical Instructions. All pages must be no larger than 8.5 x 11 inches, have at least a one-inch margin on all four sides, single spaced, Arial font should be used, and font size should be at least 11. A header is not required on every page, but pages need to be numbered.

Boettcher Investigators

- Early-Career Investigators who receive a Webb-Waring Biomedical Research Award will have the title of "Boettcher Investigator." This is an honorary title, intended to convey excellence in research and outstanding personal achievement. The foundation will require ongoing career information from awardees during and after the completion of the supported research project. This information will include, but not be limited to information regarding: promotions, awards, honors, publications, independent research awards and grants, technology disclosures, patents and licenses.
- In order to create a visible and distinguished cohort of Boettcher Investigators, the Boettcher Foundation will supply laboratory signage and laboratory garb identifying the Boettcher Investigator. The Boettcher Investigator will use the title in biographical information and signature blocks. Appropriate credit for the Webb-Waring Biomedical Research Award will be applied to publications, research reports and other documents, as appropriate. The wording to be used is: "This research was supported by funds from the Boettcher Foundation."
- Boettcher Investigators will be required to participate in an annual recognition and education event during the term of their Webb-Waring Biomedical Research Award.

Annual Reporting Requirements

The Boettcher Foundation will publish the date that annual reports are due from all currently funded Boettcher Investigators when it releases the annual program calendar. No later than this published date, each Boettcher Investigator will provide an annual report comprised of information requested by the foundation in a format provided by the foundation, and which will include, but not be limited to:

- A summary of scientific progress on the research project, including changes in scope or direction, significant findings and other relevant information.
- A status report that includes information from the last year regarding: promotions, publications, technology disclosures, patents, licenses, academic presentations and new grants received.
- A status report on grant expenditures with a forecast of expenditures through the term of the grant. Deviations from the approved budget on any single budget item between 10% and 25% must be highlighted and justified. Note, changes of more than 25% on any one line item require prior approval from the foundation.
- During the year in which a project is completed, the annual report will include a final report

for the project that is full and complete and covers the manner in which all grant funds were spent and the progress made in accomplishing the purpose of the grant.

- Additionally, the Boettcher Foundation will request that Boettcher Investigators update an online profile as part of their annual reporting requirements.

Additional Requirements

REQUESTS FOR CHANGES IN PROJECT SCOPE AND/OR BUDGET

During the conduct of a research project, the foundation recognizes that Boettcher Investigators may need to request changes in the project scope or project budget based on new developments and opportunities. If the scope change is significant, the investigator will submit a written rationale for the change directly to the foundation. Significant changes can only be implemented upon the approval of the foundation. The definitions of changes that are “significant” include those that redirect the purpose of the research or significantly expand or contract the research plan. Budget changes that are deemed “significant” are those that reallocate more than 25% of a line item in the budget to another item in the budget. The foundation will aim for a timely response to requests for changes, but in some cases may take up to 60 days to make a final determination.

RELOCATION OR CHANGE IN STATUS OF THE BOETTCHER INVESTIGATOR

If a Webb-Waring Award recipient moves out of Colorado or if the status of the investigator is changed such that a research project cannot be completed, the institution and the investigator will consult with the foundation. This consultation process will determine the best disposition of the project, which may include:

- Terminating the project
- Allowing the investigator to move the project out-of-state and complete it at another institution with continued support from the grant
- Assigning the project to a colleague involved in the project
- Reducing the scope of the project so that it can be completed earlier than planned

The foundation reserves the right to make the final determination regarding the disposition of the project after consulting with the institution.

RECOGNITION EVENT

The foundation may sponsor or co-sponsor an annual recognition event in order to celebrate the legacy of the Webb and Waring families and the accomplishments of the Boettcher Investigators. The participating institutions may be expected to attend and assist in programming the event, and the Boettcher Investigators are expected to attend and assist with presentations.

DISBURSEMENT AND MANAGEMENT OF FUNDS

The foundation will normally send award letters in May of the program year and grant payments will be issued in June. Conditions on the use of funds and prohibitions will be specified in the award letter.

Award funds may be used only for expenditures necessary to carry out the approved research or related work. Recipient institutions are required to maintain accounts, records and other evidence pertaining to costs incurred.

RETURN OF UNEXPENDED FUNDS AND EXTENSION OF WORK

During all but the final year of a research project, unexpended funds may be carried forward to a new program year. At the termination of the research project, all unexpended funds will be returned to the foundation; however, we request that you contact us prior to making refund arrangements.

If a project is not completed at the end of the final year of a project, the investigator may request an extension for up to one year from the foundation. The request should specify both the amount of funds involved in the extension and the scope of work to be completed in the extension period. The foundation will review the request and make a final determination.

Contact Information

All inquiries from potential applicants (Early-Career Investigators) should be sent to the research institution at which the potential applicant is employed.

Early-Career Investigator Application

Appendix 1: Biographical Sketch Instructions

Provide the following information for the Early-Career Investigator. Information is not to exceed SIX PAGES.

NAME	POSITION TITLE
CURRENT EMPLOYMENT - COLORADO INSTITUTION, AND COLLEGE OR SCHOOL	EFFECTIVE DATE OF CURRENT POSITION
EMAIL	PHONE

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)

INSTITUTION AND LOCATION	DEGREE (IF APPLICABLE)	MM/YY	FIELD OF STUDY

Follow the formats and instructions below. A blank form is available as a Word document.

A. Personal Statement and Career Plan (one page)

Briefly describe why your experience and qualifications make you particularly well-suited for your role in the project that is the subject of the application. Include a thorough explanation of your career goals and how your current research and potential award are advancing those aims.

B. Positions and Honors

List in chronological order previous positions over the past 10 years, concluding with the present position. List year and month for both the beginning and end of each appointment. Also provide explanations for any gaps of time in work experience such as a personal leave or sabbatical. For each appointment, indicate whether the appointment was a "career-track" appointment. Note that post-doctoral fellowships are not considered career-track appointments. If previous positions and employment included appointments at foreign institutions, please indicate the equivalent title for that position at your current institution.

Positions and Employment
Other Experience and Professional Memberships
Honors

C. Leadership and Community Service

Describe your current leadership roles and community-service commitments, both career- and non-career related.

D. Peer-Reviewed Publications

List all peer-reviewed publications, divided by “related to this application” and “other publications.” Do not include manuscripts submitted or in preparation.

Related to this application (newest to oldest)
Other publications (newest to oldest)

E. Research Support

List current, pending and completed research projects. List projects chronologically, beginning with the most recent. List project title, award number (if applicable), effective dates, funding entity, and total direct costs awarded. Briefly indicate the overall goals of the projects and responsibilities of the key person identified on the Biographical Sketch. For each project awarded to the investigator, list whether the project was awarded as a “mentored” or “supervised” project or an independent research project. For purposes of identifying past and current research projects as “mentored” or “supervised” as compared to “independent,” the following guidance is offered, but is not exhaustive. Questions should be forwarded to the institution’s contact person for the ECI program.

- A major independent research award is determined to be a National Institutes of Health [NIH] RO1 or similar grant which provides independent research support of at least \$125,000 **net of indirect costs** (either single-year or multiple-year award), and which was awarded through a rigorous peer review process conducted by a public or private institution. Multiple independent awards that are, as of a May 1, 2022 award funding date, each less than \$125,000, but that total more than \$125,000 will not impact eligibility.
- Training grants, mentored/supervised grants, and career development grants are not considered to be independent awards. There is no limit on the amount of these types of awards that an ECI can receive to maintain eligibility.
- NIH “K” series grants are generally mentored grants, however, the R00 grant, which can follow the K99 grant, is an independent award.
- NIH R01 grants are independent awards.

Active Research Support

Project Title, Award #

Effective Dates

Funding Entity, Total Direct Costs Awarded

Type of Award: Mentored, Supervised or Independent

Brief description of overall goal(s) of project and responsibility of ECI

Pending Research Support

Project Title

Effective Dates

Funding Entity, Total Direct Costs Applied For

Type of Award: Mentored, Supervised or Independent

Brief description of overall goal(s) of project and responsibility of ECI

Anticipated Notification Date

Completed Research Support

Project Title, Award #

Effective Dates

Funding Entity, Total Direct Costs Awarded

Type of Award: Mentored, Supervised or Independent

Brief description of overall goal(s) of project and responsibility of ECI

F. Residency Status

Indicate that the ECI is either U.S. Citizen or a Permanent Resident.