

CAREER AWARDS AT THE SCIENTIFIC INTERFACE (CASI)

Pre-proposal deadline:

September 1, 2021

Invited full proposal deadline:

January 7, 2022

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FUND 

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KEY DATES

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| Grant application portal available | By July 15, 2021 |
| Pre-proposal applications due | September 1, 2021 |
| Invitation to submit a full proposal | By November 19, 2021 |
| Full proposal due | January 7, 2022, 4:00 pm EST |
| Finalist interviews | May 3-4, 2022 |
| Notice of award | By June 1, 2022 |
| Award start date | July 1, 2022 |
| Award end date | June 30, 2027 |

PROGRAM BACKGROUND

Recognizing the vital role cross-trained scientists will play in furthering biomedical science, the Burroughs Wellcome Fund developed the Career Awards at the Scientific Interface. These grants are intended to foster the early career development of researchers who are dedicated to pursuing a career in academic research. The specific target group are researchers who have transitioned from graduate work in the physical/mathematical/computational sciences or engineering into postdoctoral work in the biological sciences.

Career Awards at the Scientific Interface (CASI)

BWF's Career Awards at the Scientific Interface (CASI) provide \$500,000 over five years to bridge advanced postdoctoral training and the first three years of faculty service. These awards are open to U.S. and Canadian citizens, permanent residents, or temporary residents.

Scientific advances such as genomics, quantitative structural biology, imaging techniques, and modeling of complex systems have created opportunities for exciting research careers at the interface between the physical/computational sciences and the biological sciences. Tackling key problems in biology will require scientists trained in areas such as chemistry, physics, applied mathematics, computer science, and engineering.

Proposals that include deep or machine learning applications of artificial intelligence are particularly encouraged. Special consideration will also be given to proposals that investigate the connection between climate change and human health.

Special Considerations

- BWF strongly encourages applications from persons historically underrepresented in science, including, women, Blacks or African Americans, Hispanic or LatinX, and indigenous peoples of the Americas (Native American, Alaska Natives, Native Hawaiians, First Nations people).
- In addition to seeking participants from historically underrepresented groups, BWF is interested in increasing geographic diversity among candidates from the Central, Mountain and Southern States. We believe there is an ample amount of untapped talent at institutions that do not typically apply.
- BWF believes that a diverse scientific workforce is essential to the process and advancement of research innovation, academic discovery and public service.

ELIGIBILITY REQUIREMENTS

To understand the expectations of the Career Awards at the Scientific Interface program, it is important to read the eligibility requirements below, in addition to the proposal elements, terms of grant, and selection criteria prior to taking the eligibility quiz.

The FAQs may also provide eligibility clarification.

Candidates are expected to draw from their training in a scientific field other than biology to propose innovative approaches to answer important questions in the biological sciences. Examples of approaches include, but are not limited to, physical measurement of biological phenomena, computer simulation of complex processes in physiological systems, mathematical modeling of self-organizing behavior, building probabilistic tools for medical diagnosis, developing novel imaging tools or biosensors, developing or applying nanotechnology to manipulate cellular systems, predicting cellular responses to topological clues and mechanical forces, and developing a new conceptual understanding of the complexity of living organisms. Proposals that include experimental validation of theoretical models are particularly encouraged.

In addition:

- Candidates must hold a Ph.D. degree in one of the fields of mathematics, physics, chemistry, computer science, statistics, or engineering. This includes related areas of physical, mathematical, computational, theoretical, and engineering science. Exceptions will be made only if the applicant can demonstrate significant expertise in one of these areas, evidenced by publications, undergraduate major, or master's degree.
- Candidates whose Ph.D. is in biochemistry/biophysics/biology/cell biology/etc. may be eligible if significant accomplishment or competence in one of the areas of mathematics, physics, chemistry, computer science, statistics, or engineering can be shown (i.e., papers published, advanced coursework, or undergraduate major), and if the proposal draws on that background. Work must be interdisciplinary and make use of non-biological approaches.
- Candidates who hold an M.D. are eligible to apply if they hold both an M.D. and a Ph.D., and the Ph.D. is in one of the fields of mathematics, physics, chemistry, computer science, statistics, or engineering. This includes related areas of physical and computational science. Exceptions will be made only if the applicant can demonstrate significant expertise in one these areas, evidenced by publications, undergraduate major, or master's degree. In addition, the applicant cannot have spent more than 60 months in postdoctoral research since receipt of terminal degree. If the candidate holds an M.D. without also holding a Ph.D., the candidate is not eligible to apply to this program.
- Candidates who meet the other eligibility criteria must demonstrate that their work is truly interdisciplinary.
- Candidates must have completed at least **12 months but not more than 60 months** of postdoctoral research by the date of the full invited application deadline. Post Ph.D work experience in any scientific research field (including outside academia) cannot exceed 60 months. However, if a portion of the post Ph.D. work timeline was not in a science research field, and the total scientific work experience does not exceed 60 months, the candidate may be eligible but must gain prior approval from the BWF program officer. **No exceptions** to this requirement will be made.
- Candidates who are not titled "postdoctoral" fellows may be eligible if (1) work experience equals at least 12 months, but not more than 60 months of postdoctoral research experience, including time as, for example, a research associate, or non-tenure track research faculty, and (2) all other eligibility requirements are met.

- Candidates **cannot** hold nor have accepted, either in writing or verbally, a faculty appointment as a tenure-track assistant professor at the time of application –both pre-proposal and full application. This award cannot be made to a tenure-track faculty member because it is a transition award. If a faculty position is accepted after the full application deadline, the candidate may not start the new position until after the start date of the award.
- Candidates must be committed to a full-time career in research as an independent investigator at a North American degree-granting institution.
- Candidates must have at least one first-author publication in a peer reviewed journal, including papers on which “first authorship” is shared. Candidates who have submitted a first-author manuscript from graduate or undergraduate studies, but it has not yet been published, may apply if the manuscript is accepted for publication or in press. Candidates may include in their list of publications manuscripts that have been submitted and published in pre-print journals such as biorxiv or arXiv. However the one first author peer reviewed publication rule still applies.
- Candidates must be based at a non-profit *degree-granting* institution [501(c)(3) or equivalent] in the U.S. or Canada. A 501(c)(3) organization is an American tax-exempt, nonprofit organization. Candidates should check with institutional officials to confirm the institution’s classification.
- Candidate’s primary postdoctoral mentor must also hold an appointment at the same accredited, degree-granting institution in the U.S. or Canada. Two postdoc mentors are permitted; one must be designated as the primary mentor who will sign off on the pre-proposal application form. Mentors or institutions may not be changed after submitting a pre-proposal. Candidates moving to a new institution after submitting the pre-proposal will not be able to submit a full application, even if invited to do so.
- Citizens and non-citizen permanent and temporary residents of the U.S. and Canada who are legally qualified to work in the U.S. or Canada are eligible. Candidates who are temporary U.S. residents must hold a valid U.S. visa (J-1, H1B, F-1 or O-1 visas). Temporary Canadian residents must hold a valid Canadian visa (Study Permit, C-43, C44, C-10, or C-20 work permits/visas). If a grant is awarded and the candidate’s visa does not allow for such a stay, BWF may terminate the grant. BWF will not intercede on behalf of non-citizens whose stay in the U.S. may be limited due to their visa status. If invited to submit a full application, the postdoctoral institution must verify the candidate’s immigration status as part of the application.
- Candidates must not hold nor have accepted a K99 award from the U.S. National Institutes of Health.
- Candidates may apply from the U.S. National Institutes of Health (NIH) or HHMI’s Janelia Farm Research Campus, with the same restrictions listed above. The NIH/Janelia Farm will support these award recipients during the postdoctoral years.
- Candidates with a K01 award from the NIH may apply for this award as long as they meet all the remaining criteria, however, if granted a CASI award, the NIH will need to fund the postdoc portion and BWF will only fund the faculty portion of the award.
- Candidates may not submit more than one pre-proposal.

IMPORTANT NOTES

- In determining eligibility, candidates may use either their Ph.D. defense date (or M.D. for M.D./Ph.D.) or the date their degree was conferred by the institution.
- Candidates who are postdocs at an independent research institute may be eligible if the research institute is a non-profit institution (501(c)(3) or equivalent) in the U.S. or Canada and the primary postdoctoral mentor holds an appointment at an accredited, degree-granting institution in the U.S. or Canada. If both criteria are met, the candidate is eligible to apply but must apply through the degree-granting institution. With the exception of eligible postdoctoral fellows at the National Institutes of Health, pre-proposals will not be accepted from federal facilities. These policies are non-negotiable.
- Grants can only be made to non-profit degree-granting institutions [501(c)(3) or equivalent] in the U.S. or Canada on behalf of the award recipient.
- Award recipients are required to devote at least 75 percent of their time to research-related activities.
- Indirect costs may not be charged against BWF grants.

Candidates with questions about their eligibility must contact BWF in advance of the proposal deadline. BWF will make no exceptions to its policies.

SELECTION PROCESS

The [Interfaces in Science Advisory Committee](#) will review all pre-proposals, select candidates to invite for submission of full applications, interview finalists, and make recommendations for awards to the [BWF Board of Directors](#).

Selection will be based on:

- Depth and rigor of training in a scientific discipline other than biology.
- Importance of biological questions identified in the proposal, and innovation in the approaches chosen to answer them. Candidates should present clear evidence of already beginning to tackle a biological problem.
- Interdisciplinary nature of the research plan, the degree to which non-biological methods are integrated, and the degree to which the proposed work will open new fields of inquiry.
- Potential of candidate to establish a successful independent research career, evidenced by productivity during the postdoctoral period prior to application.
- Quality of proposed collaborations.
- All eligibility requirements having been met.

Candidates selected to submit a full application will be notified by November 19, 2021. The full application deadline is January 7, 2022.

Candidates not selected may reapply in the next award cycle, provided they meet the eligibility requirements.

BWF does not provide critiques of unfunded proposals.

TERMS OF GRANT/ USE OF FUNDS

Indirect costs may not be charged against the grants.

BWF's Career Awards at the Scientific Interface (CASI) provide \$500,000 over five years to bridge advanced postdoctoral training and the first three years of faculty service. These awards are open to U.S. and Canadian citizens or permanent residents as well as temporary residents.

Grants are made to institutions on behalf of the named award recipients. The institutions must qualify as a degree-granting 501(c) (3) and the institution's most current U.S. Tax Determination Letter must be on file with the Burroughs Wellcome Fund (BWF). The institutions are responsible for disbursing the funds and for maintaining adequate supporting records and receipts of expenditures.

Award recipients must provide BWF with an annual progress report, and institutions must provide an annual financial report, using forms provided by BWF. Continued funding will depend on both the timely submission of these reports and their favorable review by BWF and its program advisory committee.

Award recipients may obtain funds from other sources for research in the same or similar areas as that conducted under these grants, so long as there is no conflict with meeting the terms of BWF's award. Award recipients may not hold concurrent BWF awards or NIH K99/R00 awards.

The support allocated for research is under the control of the award recipient and may be used flexibly for such items as equipment, consumable supplies, travel to scientific meetings, and laboratory personnel working with the award recipient. Prior approval by BWF is required when, within an award year, purchases of equipment exceed \$20,000 or travel costs exceed \$8,000.

During the award period, unused research funds may be carried over to the succeeding year. At the termination of the grant period, unspent grant funds that exceed 5% of the original grant awarded or \$25,000 (whichever is less) must be returned to BWF within 30 days, unless the named investigator transfers to a new institution. Award recipients may receive a no-cost extension for 12-24 months; requests explaining why an extension is needed must be submitted in writing at least four months prior to the end of the award.

Burroughs Wellcome Fund allows for an institutional allowance of up to 10% of the total award to support the cost of fringe benefits, such as health insurance premiums, vacation, or retirement for the named investigator. When the cost of fringe benefits exceeds the institutional allowance, the institution is expected to cover these costs as an indication of support for the named investigator. Any portion of the institutional allowance which is not used to support the named investigator's benefits will be added to the named investigator's research allowance.

BWF acknowledges that most postdoctoral fellows will receive offers from and will move to new institutions to begin their independent research careers; therefore, this award is "portable." Written approval from BWF is required, however, in order for the grant to be transferred to the new institution. Requests must be received at least four months prior to any move, and approval will be based on whether the move will enhance the award recipient's scientific growth and development, and whether the hiring institution demonstrates adequate commitment to the award recipient's career. Award recipients who change institutions may take with them any equipment or supplies purchased under the award. The balance of any unused award funds will need to be sent back to BWF and then will be transferred to the new institution. The awardee must transfer to a degree granting in the U.S. or Canada for the faculty portion of the award.

When hiring a BWF award recipient to a tenure-track faculty position, the hiring institution must state in writing its intention to support an application for permanent residency if requested by the award recipient and if the permanent residency would take effect during the period of employment by the institution.

BWF prefers that award recipients do not move from one institution to another during their three years of faculty service. Special training opportunities that require faculty-level award recipients to spend up to a year away from their base institution may be considered; award recipients must submit to BWF a written request that explains why the training is needed.

Scientific publications or presentations that result from these awards must acknowledge the award recipient's receipt of a Burroughs Wellcome Fund Career Award at the Scientific Interface. Copies of journal articles and other publications should be sent to BWF along with the annual progress report.

Award recipients should follow their institutions' patent, copyright, and intellectual property policies regarding discoveries that result from research conducted under these awards. Award recipients are expected to adhere to all federal, state, and local regulations regarding the participation of human subjects, and the use of animals, radioactive and hazardous materials, and recombinant DNA in their research projects. BWF expects that appropriate federal, state, and local guidelines with regard to scientific misconduct are in place and enforced at all institutions with which BWF award recipients are affiliated.

Award recipients should share scientific findings in a timely manner via the standard means of scientific communication, including publications and/or presentations in scientific forums. BWF encourages, but does not require, that awardees publish in open access journals. BWF will not retain any rights to published results, intellectual property, or patents that result from the research.

INSTRUCTIONS ON HOW TO PREPARE AND SUBMIT A COMPLETE PROPOSAL

Application Process

Applying for this award is a two-stage process:

1. Pre-proposals. Interested candidates who meet the eligibility criteria will need to submit one online pre-proposal through BWF's Grant Application System by **September 1, 2021, 4:00 pm EDT**. The grant application portal will be available by July 15, 2021. In brief, the pre-proposal includes applicant information (to be completed within the grant portal), a pre-proposal form with a lay abstract, and a confidential primary postdoctoral mentor letter of recommendation.

2. Full proposals. Submission of full proposals will be *by invitation only* after review of pre-proposals. By November 19, 2021, a selected group of applicants will be invited to submit a full application. Instructions on how to prepare a full research proposal (elements listed below) will be provided by email with the invitation to participate. Full proposals will be due **January 7, 2022 by 4:00 pm EST**.

Invited Full Proposal Elements:

- Graduate Advisor Recommendation Letter (confidential)
- NIH Biosketch
- Personal Statement (1-page limit)
- Scientific Abstract (1-page limit)
- Research Plan (6-page limit)
- Bibliography (optional)
- Submitted Reprints (1 required, 2 optional)
- Collaboration Statements (2 optional)
- Institutional Certification Form (template)

All communications, including the invitation to submit a full proposal and declinations, will be made through email or through the grantee portal.

BWF does not provide critiques or written comments of unfunded proposals.

How to Submit an Online Pre-proposal Application

To begin a pre-proposal submission on or after July 15th, please visit the BWF website for instructions on how to access the site: [submission](#)

All proposals must be submitted through the Burroughs Wellcome Fund Grant Application System.

To access the application, you will need to complete an eligibility quiz. If all eligibility criteria are met, access will be granted to the application form.

The following will be required for the pre-proposal:

- Applicant Information
- Applicant Demographics
- Institutional Information (degree-granting only)
- Proposal Information
- List of Publications
- Lay Abstract

A confidential recommendation letter is required for the pre-proposal. Note that it is the responsibility of the applicant to ensure that the confidential letter is submitted by the deadline due date. An application will not be considered complete without this confidential recommendation letter. The mentor will be able to upload the letter into the BWF grants management system and information will be provided in the application instructions on July 15, 2021.

Proposals that are not in compliance with instructions will be rejected out of fairness to all applicants.

Additional details on the application process will be posted on the BWF website on July 15, 2021.

Questions?

Please review our online [Frequently Asked Questions](#) first. Eligibility inquiries should be directed in advance to BWF program staff by contacting:

Melanie Scott, Senior Program Associate
mescott@bwfund.org, 919-991-5107

Postdoc to Faculty Transitioning Information

The Postdoctoral/Fellowship Portion of the Award

Career Awards at the Scientific Interface provide the following levels of support during the postdoctoral/fellowship portion of the award:

Year 1: \$70,000

Year 2: \$70,000

- Should last a minimum of one year and a maximum of two years.
- Provides maximum salary support of \$55,000 in year one and \$60,000 in year two. Awardee salary may be supplemented from other sources. BWF expects that support must meet or exceed the NIH pay scale appropriate to the trainee's level of experience. BWF does not set or cap the salary level of its awardees, nor does it require a minimum amount of the award be used for salary.
- Requires that any equipment purchased by the award recipient be transferable to the institution providing the faculty appointment.
- Encourages award recipients to use funds for advanced course work in biology (at any institution). Applicants should present a training plan in the proposal if they intend to use award funds for this purpose.
- Allows the unpaid balance of the postdoctoral portion of the award to be added to the faculty portion of the award if an award recipient moves to a faculty position in less than two years.

The Faculty Portion of the Award

The award provides the following levels of support during the faculty portion of the award:

Year 3: \$120,000

Year 4: \$120,000

Year 5: \$120,000

- Will be \$500,000 minus the portion used during the postdoctoral year(s).
- Normally will be five years minus the postdoctoral portion of the award.
- Up to 20 percent of the annual amount may be applied towards the named investigator's salary, including fringe benefits. BWF does not set or cap the salary level of its awardees, nor does it require a minimum amount of the award be used for salary.
- Allows awardees demonstrating adequate progress to be granted no-cost extensions up to the time they are reviewed for tenure.

Salary and Fringe Benefits

- If an institution's salary scale for the position is higher than the salary amounts provided by the award, then the institution must supplement the awardee's salary.
- It is anticipated that institutions will make a contribution to the awardee's salary to maximize the amount that can be used for research.
- Burroughs Wellcome Fund allows for an institutional allowance of up to 10% of the total award to support the cost of fringe benefits, such as health insurance premiums, vacation, or retirement for the named investigator. When the cost of fringe benefits exceeds the institutional allowance, the institution is expected to cover these costs as an indication of support for the named investigator. Any portion of the institutional allowance which is not used to support the named investigator's benefits will be added to the named investigator's research allowance.
- The balance of the award is to be used to cover research expenses, at the discretion of the award recipient. These funds may be used flexibly for items such as equipment, consumable supplies, travel to scientific meetings, or laboratory personnel.

Faculty Appointments

- Most award recipients will accept a faculty position at a different institution.
- Before approving the faculty portion of the award, BWF requires the hiring institution to make a significant commitment to the award recipient's career development as represented by the financial and professional situation offered.
- BWF strongly prefers tenure-track faculty appointments, accompanied by salary support and support for starting up a laboratory or research group.
- If an award recipient chooses to accept a faculty position at a research institute, the research institute must be closely affiliated with a degree-granting institution, and the degree-granting institution must offer the award recipient a joint tenure-track faculty position with some commitment to the award recipient. Funds are awarded to the degree-granting institution.
- If the institutional commitment to the award recipient is deemed inadequate, BWF reserves the right to terminate the faculty portion of the grant.
- Award recipients must be given the opportunity to take an adjunct or joint appointment in a second department, if desired.
- The institution must name at least one tenured faculty member in a discipline complementary to the award recipient's primary discipline who is willing to serve as a faculty mentor.