Postdoctoral Fellowship Awards
in Dynamic & Multi-scale Systems

2021 Application Guidelines

Deadline to apply is June 11, 2021 15:59 CDT.

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Overview of the Program

JSMF’s Understanding Dynamic and Multi-scale Systems program was initiated to support scholarship and research directed toward the discovery and refinement of theoretical and mathematical tools contributing to the continued development of the study of complex, adaptive, nonlinear systems. From its inception, the program’s emphasis has been on topics on the development and application of the theory and tools used in the study of complex research questions and not on particular topics or fields of research per se. JSMF also supports projects attempting to apply complex systems approaches to coherently articulated questions in fields where such approaches are not yet standard but where such work could open new paths to progress. Currently, JSMF primarily funds research on dynamic and multiscale systems via its postdoctoral fellowship program.
The Fellowship

The fellowship is geared to students near the completion of their doctoral training and committed to acquiring new skills and experience in a multi-disciplinary field such as complex systems science. This fellowship is targeted towards students who wish to broaden their research experience and require protected time to acquire new knowledge and skills. Postdoctoral positions providing experiences that contribute new dimensions to a student’s doctoral education (adding theoretical skills to one’s experimental training or vice versa; pursuing work in a new topic or field) can be limited if the position is supported by institutional training grants or faculty research grants. Too often, the more traditional postdoctoral experience results in a postdoctoral fellow engaging in a research project dictated by the needs of the research grant (this is not a problem if the grant goals align with training goals) rather than providing the freedom for pursuing a creative and self-directed training program based on his or her interests or goals.

The James S. McDonnell Foundation 21st Century Postdoctoral Fellowship Award in Understanding Dynamic and Multi-scale Systems is intended to provide students in the final stages of completing a Ph.D. degree more autonomy in identifying and securing postdoctoral training opportunities and is designed for students who have already demonstrated maturity, independence of thought, and self-initiation.

Following a multi-phase review of applications, selected pre-doctoral students are granted “letters of intent to fund” that the student can use in negotiating with potential postdoctoral training institutions while the student is in the final phase of graduate school. The JSMF Fellowship is designed to provide students with opportunities to pursue postdoctoral training that might not be otherwise readily available. The Fellowships are intended to allow students to seek postdoctoral research opportunities aligned with the student’s interest and desire to obtain additional skills and experience that will further their pursuit of careers in complex systems science. If it is highly likely that you can pursue your postdoctoral training goals via a more traditional fellowship, we encourage you to reconsider applying for a JSMF fellowship.
Award Details

- $200,000 USD to be expended in no less than 2 and no more than 3 years. Recently, JSMF has experienced Fellows using less than 50% of the fellowship funds. If you do not believe that you are committed to pursuing 2-to-3-year postdoctoral research please reconsider applying.

- The cost of the full postdoctoral salary or stipend and fringe benefits must be paid in full from the fellowship.

- Institutions cannot request that other funding sources be used to cover the Fellow’s salary or stipend; the primary purpose of this fellowship is the independence of the postdoctoral fellow. JSMF does not consider dependence on institutional or research grant funding as commensurate with such independence. The fellowship is not intended to provide general support to a laboratory or department.

- If the institutional postdoctoral salary scales are set such that there are funds in excess of what is needed for stipend and benefits, the excess funds can be used by the institution to support the Fellow’s research.

**Important Note:** JSMF Fellowships are not awarded until the student applies to and is accepted as a postdoctoral fellow at a qualified institution and the institution submits an acceptable request to JSMF to initiate the grant.

Eligibility

The JSMF Fellowship is a unique opportunity for students with an interest in and an aptitude for complexity science who are in the final stages of completing their Ph.D. and looking to add new dimensions to their graduate training that will either be difficult or impossible without an independent source of funding. Students should anticipate completing their degree requirements and activating the Fellowship between May 2022 and April 2023.

In prior years, upwards of 70% of submissions were not advanced past the first review phase due to poor fit with the described goals of the program. JSMF requests that potential applicants and their advisors carefully consider the characteristics of this rather unusual Fellowship prior to applying.

**Important:** This Fellowship is not intended for individuals that already have completed a Ph.D. or students that have already identified a postdoctoral position and a postdoctoral mentor as traditional
funding mechanisms are better suited for such training positions. Such applications are ineligible for consideration.

Deadline

Applications can be submitted beginning March 2021. The deadline for applications and letters of support is **June 11, 2021, 15:59 CDT (20:59 UTC)**. All materials must be submitted electronically through [jsmf.smartsimple.com](http://jsmf.smartsimple.com). Applications submitted after the posted deadline are not accepted.

Decisions and Notification

Applications that meet the eligibility requirements will be reviewed by an expert advisory panel. The panel will use the quality and appropriateness of the proposed fellowship plan, the evidence of the applicant’s maturity, self-direction, and potential for conceiving original research. The information provided in the letters of support are seriously considered during the review process.

Final funding decisions will be announced at the end of October after the JSMF Board of Directors meets and considers the advisory board’s recommendations.

Typically, JSMF can support up to 10 Fellowships each year.
Applying for the Letter of Intent to Fund Phase

It should be clear from the application the reasons why pursuing a post-doctoral position is qualitatively adding to the student’s skills, knowledge, and connection to scientific communities. Applications containing the two parts described below must be submitted through the JSMF application website:

Part 1: To be submitted by the student applicant

Applications and letters of support can be submitted beginning March 2021 and will be accepted up until the deadline of June 11, 2021, 15:59 Central Time (20:59 UTC). Late applications will not be reviewed. We recommend submitting applications at least 24 hours before the deadline to allow for unforeseen circumstances.

A complete application consists of the items below.

1. Applicant Contact Information
2. Application Title
3. Summary (500 word maximum)
   o A) The JSMF Fellowship is intended to provide students with the opportunity to broaden research experience and acquire additional skills prior to pursuing the next phase of their career. The summary should be explicit as to how the applicant intends to employ the JSMF fellowship to broaden their complex systems knowledge. Avoid bland generalities.
   o B) If awarded this fellowship, explain how the fellowship would significantly change the direction (field of study, model organism, theory vs experimental, etc.) of the student’s research. It should be clear to readers that to pursue the desired postdoctoral research direction requires more freedom than could be afforded by a typical postdoctoral position.
4. List of the top 2 contributions (articles, code, software, etc.) made by the student during the Ph.D. period.
5. Create a 1-page infographic or image that illustrates the student’s path for pursuing a postdoctoral position through a typical postdoctoral position compared to how this fellowship will allow the student to add new dimensions to their graduate training that will either be difficult or impossible without an independent source of funding.
6. A brief description of the student’s current research written in essay format (500 word maximum)

7. A description of the student’s postdoctoral research interests written in essay format (2500 word maximum)
   - Describe how the student’s interests, questions, and future plans require the flexibility of this fellowship.
   - Explain how the current and future research directions derive from and will contribute to complex systems science. Please avoid generalities and clichés.
   - Provide specific details about what the student intends to learn during postdoctoral training.
   - Finally, describe what is the student’s plan after the fellowship? Does the student plan to seek another fellowship, obtain employment in industry or government, pursue a faculty career in academia, or start a business? Note: All of these options are equally acceptable responses.

8. The student’s curriculum vita (2 page maximum) in PDF format

9. The student must identify and invite the two letter writers to submit letters of support.

Upon submission of an application, a confirmation email will be sent to the student indicating the application was received. The submitted application can also be viewed in the submission portal.

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**Part 2: To be submitted separately by the Ph.D. mentor and other faculty member**

Students must request two letters of support to be submitted that address the student’s qualifications and benefits anticipated to be gained during a period of postdoctoral training. Letters of support must be submitted independently, directly by the letter writer through the JSMF application system.

Letters of support should be submitted by the June 11, 2021, 15:59 Central Time (20:59 UTC) deadline. We recommend submitting letters of support at least 24 hours before the deadline to allow for unforeseen circumstances.

Letters of support must be submitted through the appropriate link in response to the request initiated by the student as part of the application. **The student must initiate this request as part of the application. Upon receipt of the email inviting you to submit a letter of support you must either**
sign in to your existing JSMF account or follow the instructions to create an account and submit the letter.

Advice for Letter Writers
Letters of support are an important component of the JSMF Fellowship application and are used as key information in the review and decision-making process. Letter writers should use their text to describe the student’s skills, abilities, achievements, and provide information that the advisory panel can use to evaluate the applicant’s fit with the unusual opportunity afforded by the JSMF Fellowship. It is advisable that students share the Fellowship guidelines, a draft of the application, and a copy of their bio/c.v. with those they have invited to write letters.

• LETTER 1: Letter of support from Ph.D. mentor
  o Must affirm that the student is appropriate and eligible for this fellowship and is on track to complete all Ph.D. degree requirements between May 2022 and April 2023 and able to begin a fellowship during this time.
  o Should state whether he or she reviewed and provided feedback on the student's application prior to submission to JSMF. Feedback is encouraged primarily with the goal of improving the readability of the application.
  o [up to 250 words] Tell us about what you see as the top 2 contributions (articles, code, software, etc.) made by the student during the Ph.D. period and why it is important.
  o [up to 750 words] Explain why this student is appropriate for the unique opportunity provided by the JSMF fellowship.
    ▪ Areas to consider including in the letter:
    ▪ Academic qualifications
    ▪ Perceived fit with the JSMF Fellowship (maturity and independence)
    ▪ Technical skills
    ▪ Inquisitive nature
    ▪ Collaboration
    ▪ Creativity
  o Text must be entered into the requested form fields. PDF uploads are not accepted.

• LETTER 2: Letter of support from a faculty member familiar with, but not directly involved in supervising, the student and the student’s research.
  o [up to 500 words] Should address the student’s qualifications and the benefits anticipated to be gained during a period of postdoctoral training pertinent to the goals of the JSMF Fellowship.
    ▪ Text must be entered into the requested form fields. PDF uploads are not accepted.
Requirements for both letters of support:

- Text must be entered into the requested form fields. PDF uploads are not accepted.
- Letters of support that are emailed, faxed, or sent by physical mail will not be processed.
- Letters of support must be submitted through the appropriate link in response to the email letter request initiated by the student’s application. **The student must initiate this request as part of the application. Upon receipt of the email inviting you to submit a letter of support you must follow the instructions to create an account and upload your letter.**

Frequently Asked Questions

Last updated March 10, 2021

**Am I eligible to apply for a JSMF fellowship award?**

This fellowship is intended for students in their penultimate year of graduate studies. For the 2021 competition, students that will be completing their Ph.D. coursework and requirements approximately May 2022 through April 2023 are appropriate candidates.

There are no geographic restrictions for applicants.

**I applied to the program in a prior year. Am I eligible to apply again this year?**

No. Once you have applied to the JSMF Postdoctoral Fellowship program you are not eligible to apply again in future years.

**I’ve already decided the institution I want to go to for my postdoc position. How can I explain this in the application?**
If you’ve already made a decision on where you are going for a postdoc then you are not eligible to apply for this fellowship. This fellowship is not intended for individuals that already have a Ph.D. or students that have already identified a postdoctoral position and a postdoctoral mentor as there are traditional funding mechanisms available for these students.

For various reasons, should I receive a letter of intent to fund I would like to stay at my doctoral institution or the medical school associated with my doctoral institution for a postdoctoral position. Is that acceptable?
No. The intent of this program is to allow students to broaden their training and experience. The fellowship cannot be used to pursue postdoctoral research at the same institution where the applicant received a Ph.D. Requests to do so will be denied and result in the forfeiture of the fellowship.

I’m considering applying for the JSMF Fellowship, but if I receive a letter of intent to fund

- I am unable to commit to activating it, or
- I am unable to commit to a 2–3-year postdoctoral fellowship.

Applying to the JSMF Fellowship is highly competitive. By applying for a letter of intent to fund, the student indicates his or her strong intention to activate the award, if received, over a 2–3-year period. Students should not apply or should withdraw their submitted application from further review if at any time this is no longer true.

What topic areas are funded for this program?
Past recipients of the letters of intent to fund awarded under this program represent a breadth of topics in complexity science. However, more important than the topic area are the questions and directions the applicant plans to pursue. The foundation hopes fellows will pursue interesting projects asking intriguing questions. By intriguing questions we do not mean that the questions derive from whatever is the current reigning trend nor do the questions need to be way “out there”.

I have a question about font, margin, page requirements, references, image captions, etc.
There are no specific guidelines related to these types of questions. Use your best judgment and
understand that the application file submitted needs to be easily readable. References and image captions are not included in word counts.

I have more than one Ph.D. mentor. Should I have each mentor submit a letter of support?
No. Only one Ph.D. mentor letter of support will be included with your application file. If you have more than 1 mentor please ask them to write a joint letter through the application system.

Will you accept a late application?
No. All materials must be received on or before the official deadline. Late applications will not be reviewed. It is up to the applicant to verify with the letter writers that letters of support are submitted prior to the deadline.

If I apply and receive a letter of intent to fund, when can I activate the award?
We anticipate that letters of intent awarded in 2021 may be activated between May 2022 and April 2023.

What institutions can be used for a JSMF Postdoctoral Fellowship Award?
Please note that due to changes in U.S. Treasury regulations, the Foundation no longer maintains a list of grantee institutions on file.

If awarded a letter of intent to fund, applicants must select a postdoctoral position at a qualified institution. Any U.S. or foreign institution with IRS 501(c)(3) tax-exemption status qualifies. Domestic or foreign institutions that are instruments of the government (supported financially by the state or national government) also qualify. In all cases, potential grantee institutions require supporting documentation of the institution’s tax status.

I haven’t received an email confirmation for submitting an application or a letter of support that I know was submitted.
Log into your application submission account to check the status of the materials. Students are able to see the status of letters of support.
Check your spam folder to see if the confirmation email was mistakenly classified as spam. Verify that the email address entered on the form was not entered incorrectly.

- I'm having a problem with the application or a particular program guideline.
- I made a mistake that I’d like to correct, and the submission deadline has not passed.

How do I correct the error?
Log into your account, under "My Applications" select the "Submitted" option, click the "Open" button on your submitted application, then click the "Notes" menu option on the left-hand side. Click the + icon to create a message to send to JSMF with a question or requesting the application be returned for revisions.

Important Dates

March 2021 - Application guidelines posted on the website. Applications and letters of support can be submitted via the website

June 11, 2021 15:59 CDT (20:59 UTC) Deadline to submit all materials

June 12 September Applications will be reviewed during this time

October 1 Advisory panel will meet to discuss the finalists

October 11 Notification of decisions will be sent by email on or before this date. If you do not receive notification on this date first check your spam filter and then contact info@jsmf.org.

Late October JSMF Board of Directors will consider the advisory panel's recommendations

May 2022 – April 2023 Applicants will complete their graduate degree requirements during the May 2022-April 2023 time period and will then be able to activate the award at a qualified institution.

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