

CURRENT AND PENDING (OTHER) SUPPORT INFORMATION

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person.

*NAME: Bruce, Juliette

*POSITION TITLE: Assistant Professor

*ORGANIZATION AND LOCATION: Dartmouth College, Hanover, NH, United States

Proposals/Active Projects

***Proposal/Active Project Title:** Tropicalizations of Shimura Varieties

***Status of Support:** Pending

Proposal/Award Number: N/A

***Source of Support:** National Science Foundation (NSF)

***Primary Place of Performance:** Dartmouth College, Hanover, NH

***Proposal/Active Project Start Date: (MM/YYYY):** 05/2025

***Proposal/Active Project End Date: (MM/YYYY):** 04/2027

***Total Anticipated Proposal/Project Amount:** \$346,222

* **Person Months per budget period Devoted to the Proposal/Active Project:**

Year	Person Months
2026	2
2027	2

***Overall Objectives:** This proposal develops new connections between homological algebra, algebraic geometry, and combinatorics by developing a theory of tropicalizations of Shimura varieties. Broadly there are four projects: (i) constructing an abstract theory of tropical Shimura varieties via toroidal compactifications, (ii) giving a combinatorial interpretation of the tropical Shimura varieties analogous to the connection between metric graphs and the tropical moduli space of curves, (iii) using the tropical moduli spaces to study the cohomology of Shimura varieties and arithmetic groups, and (iv) constructing homological structures on the cohomology of Shimura varieties.

***Statement of Potential Overlap:** N/A

Certification:

I certify that the information provided is current, accurate, and complete. This includes but is not limited to current, pending, and other support (both foreign and domestic) as defined in 42 U.S.C. § 6605.

I also certify that, at the time of submission, I am not a party to a malign foreign talent recruitment program.

Misrepresentations and/or omissions may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§ 287, 1001, 1031 and 31 U.S.C. §§ 3729-3733 and 3802.

Certified by Bruce, Juliette in SciENcv on 2024-10-04 22:11:41