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Fwd: NSF Proposal Notification - Proposal No.-1901548

1 message

John Baez <baez@math.ucr.edu> Thu, Aug 1, 2019 at 9:03 PM
To: Brendan Fong <bfo@mit.edu>, David Spivak <dspivak@gmail.com>, Daniel Cicala <cicala.daniel@gmail.com>, Joseph Moeller <jmoel001@ucr.edu>, Jules <julian.hedges@cs.ox.ac.uk>

Hi -

Surprise, surprise - our NSF proposal for funding ACT2019 was declined.

Short summary of their reasoning: "This proposal was viewed as a high risk high reward project. [....] The program concurs with the panel's recommendation, and was convinced that the risk of the project is much higher than any possible reward".

This is more negative than last time, where we apparently failed due to a technicality. But they had some positive comments as well. The 3 reviewers ratings were Excellent/Very Good, Good, and Fair.

See below for details.

Best,
jb

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Dear Dr. Baez,

I regret to inform you that your proposal to the Mathematical Infrastructure Program was not recommended for funding.

The NSF Division of Mathematical Sciences (DMS) Mathematical Infrastructure Program received about 50 proposals (as well as several secondary proposals from other divisions) from an impressive group of researchers. Great care was taken to give each proposal the careful review it deserves. This proposal was reviewed by a panel of researchers with expertise representing the mathematical sciences in research and education. Panelists were asked to review the proposals on the basis of the two main NSF review criteria: Intellectual Merit and Broader Impacts, as well as to indicate proposal strengths in building the mathematical infrastructures.

Three or more panelists were assigned as reviewers to each proposal. Reviewers were asked to assess proposals with respect to the two main NSF review criteria (Intellectual Merit and Broader Impacts). A panelist scribe was appointed to write a summary of the panel discussion. Following discussion, the panel was instructed to place projects into one of two funding recommendations categories: (1) Competitive, and (2) Not Competitive.

The reviews, summary of panel discussion and panel recommendation, which are available through FastLane, constitute the panel review materials and provide the basis for the recommendation of the Mathematical Infrastructure Program. You are encouraged to read these comments carefully, since they may contain suggestions for the research and future proposal preparation. Please be aware that reviewers

address their comments primarily to the NSF. Irrelevant, non-substantive, or erroneous statements in reviews were not used in the evaluation of this proposal.

Given the demands placed on the Mathematical Infrastructure Program with large projects, the officers in the program decided not to recommend this proposal for an award. Competition for funding through the mathematical infrastructure program is extremely intense. A recommendation for declination of a proposal reflects only that a given proposal, which may be strong in many respects, was considered less compelling than other projects under review. Please feel free to contact me should you have any questions regarding this recommendation.

Sincerely,

Junping Wang
Program Director
Division of Mathematical Sciences

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The following is a brief review synopsis for your information:

Panel Ranking and Discussion: The panel ratings of this proposal are: E/V, G, and F. This proposal was among the projects placed in the category Competitive, but was ranked the lowest in the category.

Post-Panel Review: Following the panel meeting, the Infrastructure Program Officers met on May 24, 2019 to discuss the panel reviews, deliberations, rankings, and recommendations for all proposals considered by the panel. These deliberations were based on the documented evidence regarding both the main merit review criteria. The Program Officers decided to recommend awards for a subgroup of projects in the Competitive category, and decline all proposals in the Not Competitive category. This particular proposal was not selected for award recommendation by the program. Meeting minutes have been uploaded as Diary Notes for this proposal.

Project Overview: Funding was requested to support graduate students and postdocs from the US-based institutions to attend the Workshop in Applied Category Theory 2019 hosted by Bob Coecke at Oxford University. The requested support would bring together 30 senior researchers, 25 junior researchers, and 5 participants from industry to discuss progress in applied category theory, create community, and lay out a roadmap for future work. The workshop will feature lectures and discussion in areas throughout applied category theory: chemical reaction networks, distributed systems, information theory, functional programming, process calculi, database theory, biological networks, and measures of biodiversity.

Intellectual Merit: The panel felt that the proposed activities may promote meaningful academia-industry collaboration in the field of applied category theory. Some initial collaboration between the involved groups is already happening via virtual meetings. On the other hand, the panel questioned the significance of the outcome that would be resulted from the proposed workshop collaboration.

The panelist who rated the proposal E/V wrote: "To the extent that the proposal is highly meritorious in its intellectual aspects, the issue of recruiting graduate students, postdocs, mentors, and participants from underrepresented groups becomes both an issue under intellectual merit as well as an issue under Broader Impacts."

Broader Impacts: The proposal has strengths in broader impact by involving personnel from underrepresented groups. The discussion on childcare support for participants was well received by the panel. On the other hand, the panel was concerned that the proposal lacks sufficient attention paid to diversity

and equity for participants.

Summary Statements: The Infrastructure Program was convinced that the proposal was adequately assessed for its intellectual merit and broader impact. The summary in the panel summary offers a sensible assessment of the proposal: "This proposal was viewed as a high risk high reward project. The panel discussed and valued the cutting edge research that could be produced out of the partnerships that would be created. Panelists felt this was a great proposal but questioned whether or not it fit best in the Infrastructure Program."

Program Recommendation: The program concurs the panel's recommendation, and was convinced that the risk of the project is much higher than any possible reward. The program, therefore, decided to recommend the proposal be declined for funding.

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Panel Summary

Panel Summary

This proposal would provide funding for 13 US mathematicians to travel to the UK in order to collaborate with industry and UK academics. While in the UK, participants will focus on advancing the field of applied category theory with applications in industry.

INTELLECTUAL MERIT

Strengths
- This proposal could advance the field of applied category theory with applications in industry.
- Initial collaboration between the groups is happening via an online seminar. Planned activities for the project include a one-week summer school followed by a one-week research workshop. The panel felt industry participation in the planned events was very positive.

Weaknesses
- Questions were brought up about whether or not outcomes would be substantially different if the US and UK teams worked individually and then a smaller cohort came together for collaboration.

BROADER IMPACTS

While minorities and women will be encouraged to apply for this support, there are no concrete attempts to broaden participation.

Strengths
- There are multiple subdisciplines in category theory so this project has the potential to impact the mathematical community in a substantial way.
- Online video lectures will be recorded from the summer school and research workshop and will be made available via the Oxford website.
- The panel felt resources allocated to childcare have the potential to increase participation for parents.

Weaknesses
- Multiple concerns were expressed about the lack of attention paid to diversity and equity for participants. Will participants be restricted to those currently participating in the online seminar course? The panel felt it is very important to attempt to increase diversity and equity in this group consisting of graduate students and junior faculty.
- Since this is an international collaboration, the panel suggests online video lectures posted by Oxford also

be posted by a US counterpart as well.

PRIOR NSF SUPPORT

PI has had NSF support in the past that resulted in publications related to the research topic of the proposal.

SUMMARY

This proposal was viewed as a high risk high reward project. The panel discussed and valued the cutting edge research that could be produced out of the partnerships that would be created. Panelists felt this was a great proposal but questioned whether or not it fit best in the Infrastructure Program.

The panel placed the proposal in the Competitive category.

The summary was read by/to the panel and the panel concurred that the summary accurately reflects the panel discussion.

PANEL RECOMMENDATION: Competitive

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PROPOSAL REVIEW 1

Rating:

Good

Review

Summary

In the context of the five review elements, please
evaluate the strengths and weaknesses of the proposal with respect to intellectual merit.

Strengths

Category theory is a tool for transferring techniques between pure mathematics disciplines, but according to the proposal, has recently become a useful tool in disciplines outside of mathematics (biochemistry, engineering, programming, and linguistics, for example).

There is a significant preparation component before the workshop/school that will likely increase the merits of the collaboration.

Weaknesses

It seems that a comparable level of research could be accomplished through a combination of domestic and online collaboration, and a smaller group of participants attending the UK events and then disseminating. It's unclear whether the intellectual merit is worth the cost of the project.

It is certainly not scalable without further NSF support as it is simply to support travel.

In the context of the five review elements, please
evaluate the strengths and weaknesses of the proposal with respect to broader impacts.

Strengths

The funding will allow the US-based 10 graduate students, 3 postdocs, 3 senior researchers, and 2 organizers to attend the school/workshop, and collaborate on category theory problems together with the other attendees to the UK workshop.

A small amount of funding is reserved for childcare, helping researchers who are also parents to participate. This funding seems to be reserved for senior researchers.

Weaknesses

It's unclear whether there are any concrete attempts to broaden the pool of participants. Grad students worldwide are encouraged to apply to be students of the school, and the proposal states that they will be chosen "with care taken to encourage diversity," but there are no concrete steps outlined to ensure that word is spread to a diverse pool (advertising steps). This limits participation to people who are already looped into the network.

Please evaluate the strengths and
weaknesses of the proposal with respect to any additional solicitation-specific review criteria, if applicable

There is little here beyond requesting travel funds. It does not seem scalable, and there is little to assess success of the project included in the proposal.

Summary Statement

The proposal requests funding for 10 graduate students, 3 postdocs, 3 senior researchers, and 2 organizers to travel to the Applied Category Theory 2019 summer school and workshop in the UK for two weeks. It does not seem to be a good fit for this program.

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PROPOSAL REVIEW 2

Rating:

Fair

Review

Summary

In the context of the five review elements, please
evaluate the strengths and weaknesses of the proposal with respect to intellectual merit.

This proposal is for funding the attendance of the U.S. subset of participants for a series of conference and workshops in applied category theory (10 graduate students, 3 postdocs, 3 senior researchers, and 2 organizers). It begins with an online school and then in the summer, a 7-day research school in oxford with time specific to collaborative research, and then subsequent 7-day workshop discussing recent developments followed by talks. There is well-defined activities for research and has strong potential to advance knowledge in this rising field.

The main weakness in the proposal is that it does not have the sense that it will foster the community as a whole. There was no mention of how the grad students, postdocs, researchers are selected or how a member of the broader community can participate in such an event. No measurable outcomes for this project nor evaluation of success regarding the intellectual merits of the proposal.

In the context of the five review elements, please
evaluate the strengths and weaknesses of the proposal with respect to broader impacts.

One of the strengths of the proposal is that all the activities are very well-defined. I believe the first component, the online school, is currently in-progress. It is a timely proposal as both the topic is gaining traction in the community and that the conference will be happening soon.

There is no specific mention of any efforts to broaden participation. No plans to recruit and involve a diverse participant group.

Please evaluate the strengths and
weaknesses of the proposal with respect to any additional solicitation-specific review criteria, if applicable

Since it is a proposal for a series of conferences (an online component and two 7-day workshops in England) I believe this should be submitted to the Meetings and Conferences solicitation.

Summary Statement

For an Infrastructure Program, I do not believe this proposal merits the award as there are critical components missing. Therefore I do not recommend funding for the proposal.

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PROPOSAL REVIEW 3

Rating:

Multiple Rating: (Excellent/Very Good)

Review

Summary

In the context of the five review elements, please
evaluate the strengths and weaknesses of the proposal with respect to intellectual merit.

Strengths:

1. The proposed agenda is concisely and clearly presented. The goal of bringing Category Theory to bear on the problems of industry is definitely a highly desirable goal. The events will be informed by the participation of several industrial representatives and the industrial experiences and collaborations of several of the members of the leadership team.

2. The work to be accomplished will be submitted for publication. The expectations are that the joint venture (graduate students, postdocs, and mentors) of working on solving some of the conjectures posed during the initial stages of the events, will result on publishable work.

3. The sequence of a pre-conference online seminar followed by the research school and then the workshop is well thought-out and it is concisely and clearly presented.

Weaknesses:

1. To the extent that the proposal is highly meritorious in its intellectual aspects, the issue of recruiting graduate students, postdocs, mentors, and participants from underrepresented groups becomes both an issue under intellectual merit as well as an issue under Broader Impacts. The statement: -- 'Members of underrepresented groups are encouraged to participate, and a relatively large fraction of the mentors, speakers, and participants listed above are from these groups' û appears perfunctory. It would have helped if those members that the statement is referring to were identified.

In the context of the five review elements, please
evaluate the strengths and weaknesses of the proposal with respect to broader impacts.

Strengths:

1. Recording of lectures for public viewing and dissemination.
2. Mentoring and training of a new cadre of young mathematicians at the intersection of Category Theory and Problems in Industry.

Weaknesses:

1. It appears that the recordings will be paid by Oxford University. Can the recordings then be simultaneously uploaded to another archive in case Oxford decides to disable access?
2. Recruiting of members of underrepresented groups is briefly discussed but no clear strategy for recruitment is fleshed-out.

Please evaluate the strengths and
weaknesses of the proposal with respect to any additional solicitation-specific review criteria, if applicable

Summary Statement

Summary:

This is a conference proposal on the applications of Category Theory. The applications consist of contributions to solving problems in industry with the participation of several industrial representatives. The program is well thought-out with an online pre-conference course for participants, followed by a research school, and finally a 7-day workshop