Proposal Panel 1 : 2321227

Back to Proposal

Agency Name: National Science Foundation

Agency Tracking Number: **2321227**

Panel Summary

Panel Summary

Description of Project

This proposal is about making property-based testing more usable and easier to adapt at larger scales. It builds on a formative study done at Jane Street and proposes several activities to take PBT to the next level: needs-finding, improving random generators, looking into more kinds of PBT, improving interactive use, and increasing dissemination. The broader impact is in software, education, and industrial outreach.

Intellectual Merit

Strengths:

+ This is an intellectually interesting topic.

+ The topic has growing industrial importance.

+ The proposal is very clearly written.

+ The collection of proposed areas is rich and diverse.

+ The combination of programming languages and HCI is attractive.

Weaknesses:

- It was unclear how effectively the PIs could proceed from their Jane Street knowledge to more broad populations. Though the proposal explicitly talks about this, it isn't clear that they will be able to get a truly representative sample--especially when they are relying so heavily on their industrial contacts and when the people recruited over social media are necessarily a self-selected group, early adopters (who are not representative of general populations), etc.

- It was unclear how the different parts interact. In particular, would broader needs-finding invalidate some of the later proposed components? If not, then this is really a collection of disjoint proposals, lacking the deeply integrated feel that the Large program is designed for.

- Techniques like model-based testing seem to be widely known in industry, which suggests the PIs may not be fully aware of the broader software engineering world.

- It was difficult to tell exactly what programming languages were being proposed in each place, and it was unclear why the proposal was vague about these.

- The overall topic felt narrow and lacking the "bold new ideas" mandate of the Large program.

Thus, the IM felt strong but not transformative.

Broader Impacts

Strengths:

+ The software plans are attractive.

+ The student-facing plan is good.

+ The industrial outreach will be good.

Weaknesses:

- The increasing diversity plan needed more definition.

Additional Solicitation-specific Review Criteria
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1. Project Scope:

The proposal is in scope in terms of area, but did not feel sufficiently scoped for a Large. This could comfortably have been a Medium or pair of Smalls.

2. Coordination Plan:

While this is fine, the proposal felt like a collection of distinct projects that did not actually require much coordination.

3. Broadening Participation in Computing (BPC):

The plan was meaningful in terms of the five items.

Data Management Plan

The plan was meaningful and includes relevant information.

Post Doc Mentoring Plan

N/A

Overall Justification for Rating

The core "problem" with the proposal was that it was did not feel like it meet the criteria of a Large: the program solicitation expects "bold new ideas" and encourages research on problems whose scope requires a large team and investment, and the panel did not feel the proposal had these characteristics.

The panel placed this proposal in the following category:
___Highly Competitive
___Competitive
_X_Low Competitive
___Not Competitive

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

PANEL RECOMMENDATION: Low Competitive