Dear Selection Committee:

I am Xinsong Du, a third-year Ph.D. student from University of Florida focusing on research regarding metabolomics and reproducibility. I am writing this letter to apply travel award.

**Regarding how important this travel award for me:** I submitted two abstracts to this conference, I am first and presenting author for one of them while the second author for the other one. This travel award is important for me to attend the meeting since my advisor does not provide funding for me to attend the meeting. The budget is about $970 for me to attend the meeting, including registration ($270), lodging ($402=134\*3) and transportation from University of Florida to Georgia Tech ($298=$0.445 per mile \* 335 mile \* 2). I have applied a travel award from the university, which provides up to $350 if approved, and I am still waiting for the decision.

**For my contribution:** I am using Nextflow to build a reproducible pipeline for metabolomics data analysis. Currently reproducibility is a big issue for research community. For the same code released by a research paper, even a slight difference in running environment (e.g. version of software or operating system) can lead to different result. Moreover, the size of metabolomics data is large and enabling parallelization can speed up the analysis significantly. However, most of the existed tools for processing metabolomics data were designed for single desktop users and lack high-throughput scalability and reproducibility. Software containers are able to package all codes and dependencies of an application to ensure portability, infrastructure flexibility and reproducibility. Applications running in the container will depend on the environment pre-built in the container regardless of the environment in the host machine. Nextflow is a pipeline development tool supporting containerization and high performance computing, which improves the scalability and reproducibility of bioinformatics research. By applying the tool to analyze metabolites for human milk, I did not only get important results regarding human milk (e.g. we found the metabolites in fat milk is quite different from skim and whole, and "Creatine-D3" and "Glutathione" were identified to have significant higher volume in fat milk than the other two), but also make the result highly reproducible (i.e. researchers will identify the exact same metabolites when running my pipeline on any UNIX-like system.)

Furthermore, attending the conference is an excellent opportunity for me to do networking and pave my way for my future career, since I stepped into this area for about only half a year, my advisor as well as many of our collaborators will go to the meeting. We may sit in a café and discuss about how to advance this research area in an effective way. I am a Ph.D. student for now but probably will pursue a faculty job or postdoc after graduation, so the attending the conference is also a good way to find my future “boss”.

In the end, I want to thank you for organizing such an amazing conference, which provides us a wonderful opportunity to share our research. I also want to thank you for taking time to read my application letter and evaluate my eligibility. Hope you have a wonderful day, and see you in Atlanta!

Sincerely,

Xinsong Du

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