

Prepare & Submit Proposals Administration Awards & Reporting Manage Financials My Desktop

## Proposal Review 2:2152988

## Back to Proposal

Agency Name:	National Science Foundation	
Agency Tracking Number:	2152988	
Organization:		
NSF Program:	CDS&E-MSS	
PI/PD:	Hickernell, Fred	
Application Title:	Collaborative Research: Quasi-Monte Carlo for Efficient Simulation	
Rating:	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 me	rit.	

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

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

Summary Statement

This proposal considers quasi-Monte Carlo (QMC) simulations. QMC is known as low discrepancy sampling that enjoys better theoretical convergence and practical performance properties than Monte Carlo (MC) simulations (based on identically distributed sampling). Both MC and QMC are widely used in practical applications. The PIs intend to develop an open-source QMC Python software library. They also plan to investigate variation/variance reduction methods, automatic stopping criteria, big data subsampling methods, and low-discrepancy Bayesian sampling in QMC.

Broader impacts have strength in software package development for the QMC community and the broader scientific community.

This is a very solid proposal. It is timely to develop the proposed open-source QMC Python software library that will have big impact on the QMC community. It is important to investigate the proposed theoretical and methodological problems on QMC, and the PIs will likely produce interesting results. Giving that QMC has been extensively investigated over the years, it is reasonable to expect that the QMC Python software library will be more significant than the theoretical part particularly in terms of research impact on the QMC or even broader scientific community. The proposal is ranked among the middle third of the proposals that I reviewed for this panel.



**About Services Account Management** Award Cash Management Service (ACM\$) Notifications & Requests **Project Reports Proposal Status** Public Access

**NSF** Award Highlights Research Spending & Results Contact

Contact Help Desk

News & Discoveries News Discoveries Multimedia Gallery

National Science Foundation

Funding & Awards **Recently Announced Funding Opportunities Upcoming Funding Opportunity Due Dates** A-Z Index of Funding Opportunities Find Funding **Award Search** 

Proposal & Award Policies & Procedures Guide (PAPPG)

**Publications & About NSF Publications** About the National Science Foundation Careers **Staff Directory** 









