NSF BIOGRAPHICAL SKETCH

NAME: Hickernell, Fred J.

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POSITION TITLE & INSTITUTION: Vice Provost for Research, Illinois Institute of Technology

(a) PROFESSIONAL PREPARATION

INSTITUTION	LOCATION	MAJOR / AREA OF STUDY	DEGREE (if applicable)	YEAR YYYY
Pomona College	Claremont, CA	Mathematics and Physics	BA	1977
Massachusetts Institute of Technology	Cambridge, MA	Mathematics	PHD	1981

(b) APPOINTMENTS

2018 - present	Vice Provost for Research, Illinois Institute of Technology, Chicago, IL
2005 - 2020	Professor, Illinois Institute of Technology, Department of Applied Mathematics, Chicago, IL
2005 - 2017	Department Chair, Illinois Institute of Technology, Department of Applied Mathematics, Chicago, IL
1999 - 2005	Professor, Hong Kong Baptist University, Department of Mathematics, Kowloon
1995 - 1999	Associate Professor, Hong Kong Baptist University, Department of Mathematics, Kowloon
1989 - 2002	Department Head, Hong Kong Baptist College/University, Department of Mathematics, Kowloon
1987 - 1995	Senior Lecturer, Hong Kong Baptist College, Department of Mathematics, Kowloon
1985 - 1987	Lecturer, Hong Kong Baptist College, Kowloon
1981 - 1985	Assistant Professor, University of Southern California, Mathematics, Los Angeles, CA

(c) PRODUCTS

Products Most Closely Related to the Proposed Project

1. Jiménez Rugama L, Hickernell F. Adaptive Multidimensional Integration Based on Rank-1 Lattices. Springer Proceedings in Mathematics & Statistics [Internet] Cham: Springer International Publishing; 2016. Chapter Chapter 20407-422p. Available from: http://link.springer.com/10.1007/978-3-319-33507-0_20 DOI: 10.1007/978-3-319-33507-0_20
2. Hickernell F, Jiang L, Liu Y, Owen A. Guaranteed Conservative Fixed Width Confidence Intervals via Monte Carlo Sampling. Springer Proceedings in Mathematics & Statistics [Internet] Berlin, Heidelberg: Springer Berlin Heidelberg; 2013. Chapter Chapter 5105-128p. Available from: http://link.springer.com/10.1007/978-3-642-41095-6_5 DOI: 10.1007/978-3-642-41095-6_5
3. Hickernell F. A generalized discrepancy and quadrature error bound. Mathematics of Computation of the American Mathematical Society. 1998; 67(221):299-322. Available from: http://www.ams.org/jourcgi/jour-getitem?pii=S0025-5718-98-00894-1 DOI: 10.1090/S0025-

5718-98-00894-1

4. Choi ST, Ding Y, Hickernell FJ, Jiang L, Jiménez Rugama L, Li D, Rathinavel J, Tong X, Zhang K, Zhang Y, Zhou X. GAIL: Guaranteed Automatic Integration Library. [revised 2021 May]. [Internet]. Version 2.3.1. Chicago, IL: Illinois Institute of Technology; 2020 May . Available from: http://gailgithub.github.io/GAIL_Dev/ DOI: 10.5281/zenodo.4780754
5. Choi ST, Hickernell FJ, Rathinavel J, McCourt MJ, Sorokin A. QMCPy: a quasi-Monte Carlo Python Library. [revised 2021 February]. [Internet]. Version 1.0. Chicago, IL: Illinois Institute of Technology; 2020 August . Available from: https://qmcsoftware.github.io/QMCSoftware/ DOI: 10.5281/zenodo.4747966

Other Significant Products, Whether or Not Related to the Proposed Project

1. Hickernell F. The Trio Identity for Quasi-Monte Carlo Error. Springer Proceedings in Mathematics & Statistics [Internet] Cham: Springer International Publishing; 2018. Chapter Chapter 13-27p. Available from: http://link.springer.com/10.1007/978-3-319-91436-7_1 DOI: 10.1007/978-3-319-91436-7_1
2. Hickernell F. Goodness-of-fit statistics, discrepancies and robust designs. Statistics & Probability Letters. 1999; 44(1):73-78. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0167715298002934 DOI: 10.1016/S0167-7152(98)00293-4
3. Gilquin L, Jiménez Rugama L, Arnaud É, Hickernell F, Monod H, Prieur C. Iterative construction of replicated designs based on Sobol' sequences. Comptes Rendus Mathematique. 2017 January; 355(1):10-14. Available from: https://linkinghub.elsevier.com/retrieve/pii/S1631073X16302576 DOI: 10.1016/j.crma.2016.11.013
4. Hickernell F, Müller-Gronbach T, Niu B, Ritter K. Multi-level Monte Carlo algorithms for infinite-dimensional integration on R^N. Journal of Complexity. 2010 June; 26(3):229-254. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0885064X10000191 DOI: 10.1016/j.jco.2010.02.002
5. Hickernell F. Uniform designs limit aliasing. Biometrika. 2002 December 01; 89(4):893-904. Available from: https://academic.oup.com/biomet/article-lookup/doi/10.1093/biomet/89.4.893 DOI: 10.1093/biomet/89.4.893

(d) SYNERGISTIC ACTIVITIES

1. Fellow of the Institute of Mathematical Statistics (elected 2007)
2. Recipient of the 2016 Joseph F. Traub Prize for Achievement in Information-Based Complexity
3. Mentored dozens of high school, BS, MS, MPhil, and PhD students
4. Editorial board member for various academic journals
5. Steering Committee and Program Committee member for the International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing