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 -(see PAPPG Chapter II.C.2.f.(a))

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 -(see PAPPG Chapter II.C.2.f.(b))

2018 - present Vice Provost for Research, Illinois Institute of Technology, Chicago, IL

2005 - 2022 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

1995 - 2005 Associate Professor, Professor, Hong Kong Baptist University, Department of Mathematics, Kowloon

1989 - 2002 Department Head, Hong Kong Baptist College/University, Department of Mathematics, Kowloon

1985 - 1995 Lecturer, Senior Lecturer, Hong Kong Baptist College, Department of Mathematics, Kowloon

1981 - 1985 Assistant Professor, University of Southern California, Mathematics, Los Angeles, CA

(c) PRODUCTS -(see PAPPG Chapter II.C.2.f.(c))

Products Most Closely Related to the Proposed Project

1. Tong X, Choi ST, Ding Y, Hickernell FJ, Jiang L, Jiménez Rugama L, Rathinavel J, Zhang K, Zhang Y, Zhou X. Guaranteed Automatic Integration Library (GAIL): An Open-Source MATLAB Library for Function Approximation, Optimization, and Integration. Journal of Open Software Research. 2022 July 29; 10(1):7. Available from: http://doi.org/10.5334/jors.381 DOI: 10.5334/jors.381
2. Choi ST, Hickernell FJ, Jagadeeswaran R, McCourt MJ, Sorokin AG. Monte Carlo and Quasi-Monte Carlo Methods: MCQMC, Oxford, England, August 2020. Keller A, editor. Cham: Springer; 2022. Quasi-Monte Carlo Software; p.23–50. DOI: 0.1007/978-3-030-98319-2_2
3. Jagadeeswaran R, Hickernell F. Fast automatic Bayesian cubature using lattice sampling. Statistics and Computing. 2019 September 10; 29(6):1215-1229. Available from: http://link.springer.com/10.1007/s11222-019-09895-9 DOI: 10.1007/s11222-019-09895-9
4. 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

5. Hickernell F, Woźniakowski H. Integration and approximation in arbitrary dimensions. Advances in Computational Mathematics. 2000; 12(1):25-58. Available from: http://www.scopus.com/inward/record.url?eid=2-s2.0-0041638501&partnerID=MN8TOARS DOI: 10.1023/A:1018948631251

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, 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, 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
4. 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
5. 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

(d) SYNERGISTIC ACTIVITIES -(see PAPPG Chapter II.C.2.f.(d))

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