Dustin Kapraun, Mathematical Statistician, in EPA's National Center for Computational Toxicology

Mailing Address

kapraun.dustin@epa.gov

Area of Expertise: Dr. Kapraun contributes mathematical and statistical expertise to the NCCT, utilizing exposure and dosimetry models in conjunction with chemical-specific gestational PBPK models in order to assess chemical safety in the context of in utero human development. He also synthesizes exposure models and data, concentration-response models for individual chemicals, pattern mining techniques, and machine learning in order to prioritize chemical mixtures for high-throughput screening. Another important part of his work is assessing interval estimation methods for toxicity parameters through computationally intensive parallel processing of multidimensional simulated data sets.

Select Publications:

H.T. Banks, D.F. Kapraun, C. Peligero, J. Argilaguet, and A. Meyerhans, "Evaluating the Importance of Mitotic Asymmetry in Cyton-Based Models for CFSE-Based Flow Cytometry Data," CRSC Technical Report TR15-02, North Carolina State University, February 2015; Int. J. Pure and Applied Mathematics, February 2015. Exit

D.F. Kapraun, Cell-Proliferation Models, CFSE-Based Flow Cytometry Data, and Quantification of Uncertainty, Ph.D. Dissertation, Department of Mathematics, North Carolina State University, July 2014. Exit

H.T. Banks, D.F. Kapraun, K.G. Link, W.C. Thompson, C. Peligero, J. Argilaguet, and A. Meyerhans, "Analysis of Variability in Estimates of Cell Proliferation Parameters for Cyton-Based Models Using CFSE-Based Flow Cytometry Data," CRSC Technical Report TR13-14, North Carolina State University, November 2013; J. Inverse and Ill-posed Problems, accepted. Exit

H.T. Banks, D.F. Kapraun, K.G. Link, W.C. Thompson, C. Peligero, J. Argilaguet, and A. Meyerhans, "Experimental and Biological Variability in CFSE-based Flow Cytometry Data," CRSC Technical Report TR13-10, North Carolina State University, September 2013. Exit

View more research publications by Dustin Kapraun.

Education:

- B.S., North Carolina State University, Raleigh, NC; Mathematics, 1998
- M.S., North Carolina State University, Raleigh, NC; Physics, 2002
- Ph.D., North Carolina State University, Raleigh, NC; Applied Mathematics, 2014

Professional Experience:

- Travel Award, Rocky Mountain Summer Workshop on Uncertainty Quantification, 2015
- ORISE Postdoctoral Fellowship, Oak Ridge Institute for Science and Education, 2014-2015
- Research Training Group Fellowship, National Science Foundation, 2012-2013
- Lord Fellowship, Center for Research in Scientific Computation, 2011-2012