Joseph Samplecv

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University Education

1986 – 1990 *Oxford University* *D.Phil., Mathematics (numerical analysis), 1990*

- Dissertation: *Aspects of the Finite Volume Method*. Supervisor: Prof. K. W. Morton.
- The M.Sc. qualifying dissertation: *Solutions of a Nonlinear Elliptic Boundary Value Problem with a Discontinuous Nonlinearity*. Supervisor: Dr. J. Norbury.

1975 – 1977 *Imperial College, Univ. of London* *M.Sc., D.I.C., Nuclear Engineering, 1977*

- Thesis: *Variance Reduction in Monte-Carlo*. Supervisor: Dr. J. Woods.

1970 – 1974 *Carnegie-Mellon University* *B.S. Chemical Engineering, 1974*

- Undergraduate research on coatings and paints with PPG Industries under Dr. Dent.

Academic Experience

1993 – 2004 *University of Southern Mississippi* *Associate Professor, Mathematics*

- Taught a comprehensive range of courses supporting the mathematics B.S. and M.S. programs, and the Applied and Computational Mathematics (ACM) Ph.D. programs in the Department of Mathematics. Teach doctoral topics course in computational science for Departments of Computer Science and Mathematics.
- Supervise M.S. students in mathematics and Ph.D. students in Program in Scientific Computing (to 2004) and Applied and Computational Mathematics (after 2004).
- Taught doctoral courses in applied mathematics/computational fluid dynamics in the Program in Scientific Computing 1993–2004.
- Taught four week graduate mini-course in Numerical Methods at Nanjing University for Aeronautics and Astronautics, Nanjing, PRC, June 2002.
- Awarded NASA-ASEE Summer Faculty Fellowships in 1994 and 1995 to study modeling of chemically reacting flows in rockets involving finite rate chemistry.
- Taught on Gulf Coast campus of USM from 1993 to 1997, and at the Hattiesburg campus from 1998 to the present.

1991 – 1993 *University of Florida* *Assistant Professor, Mechanical Engineering*

- Taught numerical analysis, engineering and computational mathematics at the graduate level at the Center for Advanced Studies in Engineering, West Palm Beach Campus. These classes were done jointly by video with UF, Gainesville.
- Supported industrially sponsored research at the Center for Advanced Studies in Engineering in combustion modeling.

1987 – 1989 *Oxford University* *Tutor/Teaching Assistant*

- Tutored undergraduates in mathematics while doctoral student at Oxford University (six terms for St. Hilda's College). Assisted in computer lab teaching (one term at the Oxford University Computing Laboratory).

Computational and technical background

Systems

Extensive experience on Unix/Linux platforms, including system installation, software customization and support, and administration. Responsible for the development of a computational mathematics laboratory used by computational science graduate students and faculty in the Department of Mathematics at USM, and most recently implemented the Department's Linux network and computational server in the Department of Mathematics at UNH.

Developed and support the Standard Desktop (SD) for installing a customized Mate/Compiz based user desktop on a standard Ubuntu 16.04 installation, along with the automated install of a large suite of scientific and computational software and user scripts suitable for research and teaching. Available at math/kolibal/downloads.

Faculty adviser to the USM Linux Users Group (student organization) from 1999 to 2009.

Scientific Computing

Experienced with large radiation transport codes including Monte Carlo and discrete ordinates methods; large computational fluid dynamics codes using finite difference, finite volume, and finite element methods; and, mesh generation. Experienced with image file formats and compression tools for image file manipulation.

Comprehensive experience in large scale computing and high performance computing environments, particularly in support of industrial and engineering models. These include developing, using and modifying nuclear radiation transport and analysis codes, computational fluid dynamics codes, as well as developing software for post-processing and analysis.