

CITATION

For the Conferment of the
Distinguished Alumni Award
on

Prof. Alex Pothen

Prof. Alex Pothen received his M.S. Degree in Chemistry (five year program) from IIT Delhi in 1978. He received his Ph.D. in Applied Mathematics and Computer Science from Cornell University in 1984.

Prof. Pothen is currently a professor in the Computer Science Department and Director of the Computing Research Institute (CRI) at Purdue University. The CRI brings faculty from several colleges at Purdue together to collaborate across the disciplines to solve problems at the frontiers of science, engineering, and computation.

Prof. Pothen has held earlier academic appointments in the Computer Science Departments at Waterloo, Penn State, Wisconsin, Old Dominion, and ICASE, a research institute at NASA. He is also the Director of the CSCAPES Institute (involving Purdue, Ohio State, Sandia National Labs, and Argonne National Lab), which is funded through the Scientific Discovery through Advanced Computing (SciDAC) program of the U.S. Department of Energy, for enabling computational science and engineering (CSE) on extreme-scale computers.

Prof. Pothen is a research leader in combinatorial scientific computing (CSC), an area linking scientific computing with algorithmic computer science. He has made major algorithmic contributions to several problems in CSE by employing tools such as matchings, spectral graph theory, chordal graphs, hypergraphs and matroids. He has developed specialized graph coloring algorithms for enabling automatic differentiation, a modern software technology for differentiating mathematical functions. His thesis and papers are among the most frequently cited in the field for their pioneering contributions.

Prof. Pothen's work has been applied to modeling chromatographic separations in chemical engineering; controlling electric power grids; designing electronic circuits and devices; visualizing organs as they deform during surgery; identifying protein biomarkers for lung and prostate cancer; and understanding the proteomics of the human T-cell leukemia virus.

Prof. Pothen has helped to organize a research community in CSC, chairing the first three international workshops in the field, and serving as Chair of the CSC steering committee. He is an editor of several Society for Industrial and Applied Mathematics (SIAM) publications: SIAM Review, SIAM Journal on Scientific Computing, SIAM Monographs in Computational Science and Engineering, and SIAM Books.

Prof. Pothen has received the IIT Delhi Director's Silver Medal; the National Science Talent scholarship; a Cornell fellowship; an IBM University Research award; the Homeyer prize; and honors in the best paper competitions for the Householder prize, SIAM Activity Group on Linear Algebra prize, Supercomputing conference, and the Hampton Roads Research Expo. He has won most inspiring teacher awards from both graduate and undergraduate students, and several of his students have gone on to outstanding careers in academia, the national labs in the U.S., and industry.

In honouring Prof. Alex Pothen, IIT Delhi recognizes the outstanding contributions made by him as a Researcher, Scientist and Educator. Through his achievements, Prof. Alex Pothen has brought glory to the name of the Institute.