IPDPS 2001 Mini Workshop

To be held Wednesday, April 25, 2001
At the Hyatt Regency San Francisco Airport
As part of the IEEE Computer Society's
International Symposium on Parallel & Distributed Processing

Forum on the
NSF Next Generation Software Program

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This forum will provide an opportunity for an overview, project presentations and discussion of the research fostered and funded by the NSF Next Generation Software Program. The program was first announced in October of 1998, with a second call for proposals in August of 2000, and supports research in two broad technical thrusts: One is developing Performance Engineering Technology for the Design, Management and Control of Computing Systems. The other thrust seeks to create new system software including an advanced compiler architecture and tools for the development, runtime support and dynamic composition of complex applications executing on complex computing platforms, such as Computational Grids Platforms as well as future petaflop (Grids-in-a-Box) platforms. The majority of the projects supported in the program involve multidisciplinary research, in that they span more than one research sub-areas in computer sciences, and in addition there is emphasis in driving and validating the CS advances with end-user applications. The program announcement can be found at: http://www.nsf.gov/cgi-bin/getpub?nsf00134

Forum Agenda
– See on-site schedule for time & location –

Session 1

- Overview of the NSF Next Generation Software Program
  F. Darema, CISE Directorate, NSF

- Model-based Management of Adaptive Programs on the Computational Grid
  PI/co-PIs: James Browne-University of Texas; Vikram S. Adve, Univ of Illinois-Urbana-Champaign;
  Rajive Bagrodia, Univ of California-Los Angeles; Elias Houstis, John Rice-Purdue Univ;
  Mary K. Vernon, Univ of Wisconsin

- TMO Based Modeling & Design of Reliable Next-Generation Complex Software
  PI/co-PIs: **Kane Kim,** Phillip Chen Y Sheu; Michael Franz **-** Univ of California-Irvine

- A Simulation Platform for Experimentation and Evaluation of Distributed-Computing Systems (SPEED-CS)
  PI/co-PIs: **Suvrajeet Sen**, Bernard P. Zeigler, Frank W. Ciarallo, Hessam Sarjoughian, Richard D. Schlichting - University of Arizona

- Supporting Complex Application Requirements in Metasystems
  PI/co-PIs: Andrew Grimshaw, **Marty A Humphrey** -Univ of Virginia-Charlottesville

Session 2

- Grid Application Development Software(GrADS**)**
  PI/co-PIs: **Ken Kennedy**-Rice University; Andrew Chien, Keith Cooper, Francine D. Berman, Jack Dongarra, Dennis Gannon, Ian Foster, Carl Kesselman, Daniel A Reed

- An Integrated Framework for Performance Engineering and Resource-Aware
  PI/co-PIs: **Constantine D. Polychronopoulos**, William H. Sanders; Thomas Huang - Univ of Illinois

- Compiling for Speculative Distributed Microarchitectures
  PI/co-PIs: **Rudolf Eigenmann**-Purdue University; Babak Falsafi, VijayKumar, T.N.

- Adaptive, Performance-Portable Software for Next-Generation and Immersive Applications
  PI/co-PIs: Kai Li, Jaswinder P. Singh, Thomas A. Funkhouser -Princeton University

Session 3

- Logistical QoS Through Application-driven Scheduling of Remote Storage
  PI/co-PIs: **James S. Plank, Jack Dongarra**, Micah D. Beck, Richard Wolski -Univ of Tennesse**;** Francine D. Berman - UCSD

- A Collaborative Problem Solving Environment for Modeling of Broadband Wireless Communication Systems
  PI/co-PIs: Theodore S. Rapport, Clifford A. Shaffer, Layne T. Watson, **Naren Ramakrishnan** -VA Polytechnic Inst & University

- SmartApps: Smart Applications for Heterogeneous Computing
- PI/co-PIs: **Lawrence Rauchwerger**, Nancy M. Amato -Texas Engineering Station; Josep Torrelas - UIUC

- Prophesy: A Performance Modeling Framework for the Analysis of Complex Applications and Systems
- PI/co-PIs: **Valerie E. Taylor**-Northwestern University; Rick L. Stevens – U. of Chicago and Argonne Nat'l Lab