

Vanderbilt Workshop
 New Visions for Software Design & Productivity:
 Research & Applications
 December 13-14, 2001
 Vanderbilt University, Nashville, TN

(updated November 2002)
 Participant White Papers

The following are the position papers of the invitees. The individual papers can be obtained by clicking on the title, or a zip of ALL position papers can be obtained by clicking [here](#).

Industry and Academic Contributions	
First Author Name	Title
Rajeev Alur	Model-Based Design of Embedded Software
Don Batory	ExCIS: An Integration of Domain-Specific Languages and Feature-Oriented Programming
Ira Baxter	Breaking the Software Development Roadblock: Continuous Software Enhancement By Design Maintenance
Barry Boehm	Value Based Software Engineering
Karl Crary	Modularity Matters Most
Joseph Cross	Patterns, Classes, and Derivation
Gary Daugherty	A 'substrate' for dynamically behavior in high assurance, embedded, real-time systems
Premkumar Devanbu	Evolution in Distributed Heterogeneous Systems
Laura Dillon	Automated Development and Run-time Adaptation of Interactive Distributed Applications
Tzilla Elrad	Aspect-Oriented Operating Systems
R. Gamble	Beyond Documentation
Susan Gerhart	Software Research and Education: Meet the SIMS!
Paul Hudak	Declarative Real-World Abstractions
Jim Hugunin	The Next Steps For Aspect-Oriented Programming Languages (in Java)
Daniel Jackson	Micromodels of Software
Ralph Johnson	Program Restructuring
Philip Johnson	You can't even ask them to push a button: Toward ubiquitous, developer-

	centric, empirical software engineering
Samuel Kamin	Dynamically reconfigurable software components
Gabor Karsai	Models, Patterns, and Generators for Embedded Systems
George Kasai	New Directions in Avionics Software Design and Productivity
Gregor Kiczales	Aspect-Oriented Programming - The Fun Has Just Begun
Kane Kim	High-Level High-Precision Design and Programming of Real-Time Distributed Computing Components
Mieczyslaw Kokar	Self-Controlling Architecture Structured Agents
Shriram Krishnamurthi	Scalable Composition, Evolution and Verification Through Feature-Oriented Programming
Robert Laddaga	Tolerant Software
James Larus	A New Generation of Systematic Programming Tools
Insup Lee	Integrating Formal Techniques for the Development of Embedded Software
Karl Lieberherr	Coupling Mechanisms in Aspect-Oriented Software
Joe Loyal	Software Directions for Network Centric Distributed Computing Systems
Tommy McGuire	Correctness Preserving Transformations for Network Protocol Compilers
Nenad Medvidovic	Programming-in-the-Many: A Software Engineering Paradigm for the 21st Century
Michael Mislove	Component Technologies and Fundamental Research in Interoperability
Priya Narasimhan	Middleware-Based Software Infrastructures for the Transparent Composition of System Properties
Bob Neches	Community-Based Software Development Under Time Pressure: New Jersey and San Diego in the 21st Century
Dewayne Perry	An Empirical Approach to Design Metrics and Judgments
Calton Pu	Self-Regulating Software: Scalable, Predictable, Composable Distributed Systems
William Pugh	Evaluating Research on Software Design and Productivity
John Reekie	Some Research Directions in the Ptolemy Project
Steven Reiss	Consistent Software Evolution
Robert Riemenschneider	Dependability Co-Design
Martin Rinard	Program Analysis and Implementation Techniques for Real-Time and Embedded Software Interoperability

Paul Robertson	Perceptually Enabled Software
Paul Robertson	Self Adaptive Software
David Sharp	Software Line Technologies for Military Systems
Kang Shin	Performance Modeling for Software Integration
Charles Simonyi	Intentional Programming: Asymptotic Fun?
Douglas Smith	Software Productivity through Automation and Design Knowledge
Scott Smolka	Embedded Software Design Automation
David Stewart	Miniature Software for Large Pervasive Computing Applications
Richard Taylor	Function Follows Form: Architecture and 21st Century Software Engineering
Brian Williams	A Reactive Model-based Programming Language for Robotic Space Explorers

Government Contributions	
First Author Name	Title
Abdullah Aljabri	Model Checking for Mission Critical Software Validation
David Hislop	From Programming to Software Engineering
Michael Masters	Challenges for Building Complex Real-time Computing Systems
Steve Ray	The Future of Software Integration: Self-Integrating Systems