

# Conference Program



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#### Welcome to ICSE 2007



On behalf of the entire organizing committee, I welcome you to the 29th International Conference on Software Engineering. The theme of ICSE 2007 is "Developing Dependable Software", with which we acknowledge the increasingly crucial role that the engineering of software plays in business, healthcare, government and society at-large.

For ICSE 2007, we have created a comprehensive and varied program, including a wide variety of workshops, tutorials and collocated events, in addition to the main ICSE conference. Co-located events include the International Conference on Software Process, a symposium dedicated to recognizing the contributions of Professor Barry Boehm, a symposium for presentation of the work of doctoral students, and a day-

long seminar for new faculty to introduce them to the details of the academic profession.

Each day of the main conference begins with a keynote presentation by a leading expert in an area of software engineering. The keynote on Wednesday, by Steve Fisher from salesforce.com, provides details about the engineering of a major Web application. The Thursday keynote, by Professor Deborah Johnson of the University of Virginia, discusses the ethical challenges that we face in the software engineering field. Professor Bev Littlewood of City University in London presents the keynote on Friday, and he reviews the issues involved in assessing the dependability properties of software. Following the keynotes each day, the conference includes parallel tracks on research, education, research demonstrations, and experience reports.

With ICSE 2007 we introduce a new type of program element: "Portraits in Practice". The goal of these sessions is to promote a focused dialog between practitioners and researchers so that each can learn from the other. This dialog will allow researchers to gain insights about the challenges that practitioners face, and it will allow practitioners to acquire a more comprehensive view of current research. We hope that these sessions will kindle a continuing interaction between researchers and practitioners.

Software engineering faces many challenges and these are discussed in the conference track on the "Future of Software Engineering". This track features 25 presentations by leading experts, and it provides a comprehensive picture of what can be expected in the software engineering field in the near future.

The software engineering community can take great pride in the contributions that research has made to the practice of software engineering. The NSF-funded "Software Engineering Impact Project" is underway to determine the impact that research has had, and three panel presentations in the program provide an update on the state of this determination.

Research in software engineering is supported for the most part by funding agencies such as the National Science Foundation in the United States. Two conference sessions provide the community with an opportunity to learn about the plans and expectations of funding agencies from a number of countries.

Minneapolis is a major high technology area and the home of a large software industry. Minneapolis offers many opportunities for recreation including nearby lakes, the Mississippi river, many parks, and other natural areas. The city also offers many fine restaurants, shopping centers, museums, theaters and the nearby Mall of America. I encourage you to take advantage of all the opportunities that the city and the region have to offer.

Once again, on behalf of the entire organizing committee, I wish you an enjoyable and fruitful experience at ICSE 2007.

John Knight General Chair, ICSE 2007

#### **Organizing Committee**

#### General Chair

John Knight, U. of Virginia, USA

#### Research Program Chairs

Wolfgang Emmerich, University College London, UK Gregg Rothermel, U. of Nebraska at Lincoln, USA

#### Research Demos Track Chairs

Alex Orso, Georgia Tech, USA Elisabetta di Nitto, Politecnico di Milano, Italy

#### **Experience Report Track Chairs**

Frank Maurer U. of Calgary, Canada Michael Hirsch, Zuehlke Engineering AG, Germany

#### **SE Education Track Chairs**

Tim Lethbridge, U. of Ottawa, Canada André van der Hoek, U. of California Irvine, USA

#### **Future of SE Track Chairs**

Lionel C. Briand, Carleton U., Canada Alexander L. Wolf, Imperial College, UK

#### **Portraits in Practice Track Chair**

Robyn Lutz, Iowa State U. and JPL, USA

#### **Workshop Chairs**

Marsha Chechik, U. of Toronto, Canada Paola Inverardi, U. di L'Aquila, Italy

#### **Tutorial Chairs**

Anna Liu, Microsoft Australia Albert Zündorf, U. of Kassel, Germany

#### New Faculty Symposium Chairs

Leon J. Osterweil, U. of Massachusetts, Amherst, USA

#### **Doctoral Symposium Chairs**

Barbara G. Ryder, Rutgers U., USA David S. Rosenblum, University College London, UK

#### **Panels Chair**

David Evans, U. of Virginia, USA

#### Most Influential Paper Award Chair

Wilhelm Schaefer, U. Paderborn, Germany

#### **Proceedings Chair**

Myra Cohen, U. of Nebraska at Lincoln, USA

#### Webmaster

Licia Capra, University College London, UK

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Mats Heimdahl, U. of Minnesota, USA

#### **Student Volunteers Chair**

Eric Van Wyk, U. of Minnesota, USA

#### **Publicity Chairs**

Will Tracz, Lockheed Martin, USA Nenad Medvidovic, U. of Southern California, USA

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Kim Gregg, U. of Virginia, USA

#### **Executive Assistant**

Peggy Reed, U. of Virginia, USA

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John Knight, U. of Virginia, USA Hausi Müller, U. of Victoria, Canada Prem Devanbu, U. of California at Davis, USA

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Steve Easterbrook, U. of Toronto, Canada,

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Richard A. Kemmerer, U. California Santa Barbara, USA Jeffrey Kramer, Imperial College, UK Bev Littlewood, City University, London, UK Gail Murphy, University of British Columbia, Canada Amy L. Murphy, ITC-IRST, Italy & U. Lugano, Switzerland Kumiyo Nakakoji, U. of Tokyo/SRA-KTL Inc., Japan Harold Ossher, IBM T.J. Watson Research Center, USA Gian-Pietro Picco, University of Trento, Italy Atanas Rountev, Ohio State University, USA Mary Lou Soffa, University of Virginia, USA Kevin Sullivan, University of Virginia, USA Tetsuo Tamai, The University of Tokyo, Japan Peri Tarr, IBM T.J. Watson Research Center, USA Richard N. Taylor, University of California, Irvine, USA Walter Tichy, University Karlsruhe, Germany Willem Visser, RIACS/NASA Ames, USA



Image courtesy of Kevin Sullivar

#### **Additional Committees**

#### **Experience Report Committee**

Mikio Aoyama, Nanzan University, Japan

Robert Biddle, Carleton University, Canada Walter Bischofberger, Software Tomography Switzerland Daniela Damian, University of Victoria, Canada Andrea De Lucia, Università di Salerno, Italy Yvonne Dittrich, IT University of Copenhagen, Denmark Hakan Erdogmus, NRC, Canada Christiane Gresse von Wangenheim, U. do Vale do Itajaí Brasil Paul Gruenbacher, Johannes Kepler University, Austria John Grundy, University of Auckland, New Zealand Yanbo Han, Institute of Computing Technology and the Graduate School of Chinese Academy of Sciences, China Philippe Kruchten, UBC, Canada Filippo Lanubile, University of Bari, Italy Jürgen Münch, Fraunhofer Institut, Germany Donald Reifer, Reifer Consultants Inc, USA Markus Schacher, KnowGravity, Switzerland

Forrest Shull, Fraunhofer Center, Maryland, USA

Yun Yang, Swinburne University, Australia

Laurie Williams, North Carolina State University, USA

Pekka Abrahamsson, VTT Tech. Research Centre of Finland

#### SE Education Committee

Ban Al-Ani, University of California, Irvine, USA Nicolas Anguetil, Catholic University of Brasilia, Brasil Jocelyn Armarego, Murdoch University, Australia David Budgen, Durham University, UK Betty Cheng, Michigan State University, USA Joe Clifton, University of Wisconsin - Platteville, USA Sheryl Duggins, Southern Polytechnic State U., USA Robert Dupuis, Université du Québec à Montréal, Canada Sebastian Elbaum, University of Nebraska - Lincoln, USA Heidi Ellis, Trinity College, Connecticut, USA Michael Ernst, Massachusetts Institute of Technology, USA Robert France, Colorado State University, USA Jane Hayes, University of Kentucky, USA Orit Hazzan, Technion - Israel Institute of Tech., Israel Peter Henderson, Butler University, Indiana, USA Cem Kaner, Florida Institute of Technology, USA Philippe Kruchten, University of British Columbia, Canada Katsuhisa Maruyama, Ritsumeikan University, Japan Nancy Mead, Software Engineering Institute, USA Ana M. Moreno, Universidad Politecnica de Madrid, Spain Vladimir Pavlov, Microsoft Russia Mark Sebern, Milwaukee School of Engineering, USA Margaret-Anne Storey, University of Victoria, Canada Eleni Stroulia, University of Alberta, Canada Hans van Vliet, Vrije Universiteit, Netherlands Claudia Maria Lima Werner, Federal U. of Rio de Janeiro, Timo Wolf, Technical University of Munich, Germany

Andreas Zeller, Saarland University, Germany

Research Demos Committee

Jonathan Cook, New Mexico State University, USA
Prem Devanbu, University of California Davis, USA
Kokichi Futatsugi, Japan Advanced Institute of Science and
Technology, Japan
John Grundy, University of Auckland, New Zealand
Shrawan Kumar, Tata Consultancy Services Ltd., India
Tiziana Margaria, University of Potsdam, Germany
Cecilia Mascolo, University College London, UK
James Noble, Victoria U. of Wellington, New Zealand
Matteo Pradella, Consiglio Nazionale delle Ricerche, Italy
Martin Robillard, McGill University, Canada
Sebastian Uchitel, University of Buenos Aires, Argentina
and Imperial College, UK
Andreas Zeller, Saarland University, Germany
Jian Zhang, Chinese Academy of Sciences, China

#### **Workshops Committee**

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Ulrich Eisenecker, University of Leipzig
Ian Gorton, National ICT Australia
Stefan Tai, IBM TJ Watson Research
Liam O'Brien, Lero, the Irish Software Engineering
Research Centre
Grace Lewis, Software Engineering Institute, CMU
Hausi Muller, University of Victoria, BC Canada
John E. Collins, University of Minnesota
Nenad Medvidovic, University of Southern California
Albert Zündorf, University of Kassel, Germany
Anna Liu, Microsoft Australia

#### **Doctoral Symposium Committee**

Betty H.C. Cheng, Michigan State University, USA Jeff Magee, Imperial College, UK David Notkin, University of Washington, USA Mauro Pezze, Universita di Milano Bicocca, Italy David Rosenblum, University College London, UK Barbara G. Ryder, Rutgers University, USA Wilhelm Schäfer, University of Paderborn, Germany Mary Shaw, Carnegie Mellon University, USA

In addition, we thank the many other people, too numerous to name, who assisted with the review process for ICSE-2007.

#### **Keynote Speakers**



#### Steve Fisher

Senior Vice President of AppExchange, Salesforce.com

The Architecture of the Apex Platform, salesforce.com's Platform for Building On-Demand Applications

On-demand computing has transformed enterprise software, lowering risk and cost while increasing user adoption and customer success. To be successful, an application must be designed for on-demand from the groundup, including core architectural elements such as multitenancy, availability, performance, security, metadata-driven customization, integration via web services, etc. As with any new paradigm, initial applications must design and implement all these core attributes, but ultimately platforms emerge that encapsulate core computing services, allowing application developers to focus on innovation and value, and not on reinventing the wheel. With the Apex platform, salesforce.com has delivered the first on-demand platform, allowing developers to easily develop and deliver the next generation of on-demand applications. In this talk, Steve Fisher discusses the technical architecture of the Apex platform.

#### **Biography**

Steve Fisher is senior vice president of AppExchange at salesforce.com. In this role Fisher leads the team responsible for building the business for AppExchange, salesforce.com's Web-based platform for business applications. Fisher is also chairman of salesforce.com's Technology Architecture Committee, which defines and ensures the integrity of the architecture for the salesforce.com service. With more than 16 years in the technology industry, Fisher has held positions with Apple Computer and AT&T Labs, where he served on the team responsible for architecting AT&T's VoIP and utility computing strategies. Fisher also founded NotifyMe Networks. an interactive voice-alerting platform application service provider and served as the company's first CEO. He has been named an inventor on 14 patents. Fisher graduated with a BS degree in Mathematical and Computational Science and an MS in Computer Science from Stanford University.



#### Deborah G. Johnson

Olsson Professor of Applied Ethics & Chair, Department of Science, Technology and Society, University of Virginia

Computer Professional Ethics in Theory and in Practice

The starting place for professional

ethics is with the idea that certain occupational groups have special expertise that leads to special responsibilities. The organization of the group into a profession with an organization that controls admission and promulgates a code of ethics is a mechanism for ensuring that the special expertise of members is deployed in ways that benefit the public (consumers, users, non-experts) or, at least, does not harm the public. Professional ethics involves both issues and responsibilities that fall to the profession as a collective unit, and issues and responsibilities that are a matter of individual behavior. Codes of conduct straddle this distinction for they are a collective expression of standards for individual

behavior. Codes of conduct are not, however, the be all and end all of professional ethics. Professions create a culture of responsible conduct, a culture that embraces values such as safety, reliability, elegance, etc. Professions create the culture of the profession through a variety of activities, including codes of conduct, accreditation standards for programs, ethics committees, hotlines, etc. In the case of computing the arguments for a strongly differentiated, organized profession that takes responsibility for creating a culture that addresses the quality of computing products and services available to the public is compelling. Computing is a critical component of our society (and other information societies) and citizens and consumers do not, and cannot be expected to, understand the computing on which they depend for vital life functions. They have no choice but to trust computer professionals. The major question that computer scientists must ask, then, is whether the field is organized so as to be worthy of the trust of the public. As an occupational group, computing has difficulty fitting itself into the paradigm of professions for several reasons. The field is diverse; loosely organized; and, there is a fuzzy relationship between academics and practitioners. Like many of the fields of engineering, computer science manages a tension between seeing itself as a profession and seeing itself as a group of individual agents working in the marketplace. The tension expresses itself in many forms. Computer scientists are evaluated by the criteria of computer science – by standards of quality, elegance, creativity -as well as by the criteria of the marketplace – what can reach the marketplace quickly and do the job adequately for the time being. The tension cannot be resolved; it must be acknowledged and managed. While strategies used by other professions can be adopted, computing poses special challenges that call for more than standard approaches.

#### Biography

Deborah G. Johnson is the Anne Shirley Carter Olsson Professor of Applied Ethics and Chair of the Department of Science, Technology, and Society in the School of Engineering and Applied Sciences of the University of Virginia. Professor Johnson received the John Barwise prize from the American Philosophical Association in 2004; the Sterling Olmsted Award from the Liberal Education Division of the American Society for Engineering Education in 2001; and the ACM SIGCAS Making a Difference Award in 2000.

Professor Johnson is the author/editor of four books: Computer Ethics (Prentice Hall, 1st edition 1984; second edition 1994; third edition, 2001); Computers, Ethics, and Social Values (co-edited with Helen Nissenbaum, Prentice Hall, 1995); Ethical Issues in Engineering (Prentice Hall, 1991); and Ethical Issues in the Use of Computers (co-edited with John Snapper, Wadsworth Publishing Co., 1985). Two new books are now in press. She has published over 50 papers in a variety of journals and edited volumes. She co-edits the journal, Ethics and Information Technology and co-edits a book series on Women, Gender, and Technology for University of Illinois Press. Active in professional organizations, Professor Johnson has served as President of the Society for Philosophy and Technology, President of the International Society for Ethics and Information Technology (INSEIT), Treasurer of the ACM Special Interest Group on Computers and Society, and Chair of the American Philosophical Association Committee on Computers and Philosophy. Currently she serves on the Executive Board of the Association for Practical and Professional Ethics.



#### **Bev Littlewood**

Centre for Software Reliability, City University, London Limits To Dependability Assurance - A Controversy Revisited

Professor of Software Engineering,

More than twenty years ago, as computers were introduced into safety-critical roles in civil aircraft, there was much debate about what claims could be made for their dependability. Much of the debate focused, naturally enough, on what could be claimed for the reliability of software. A famous example was the apparent need to claim a probability of failure of less than 10-9 per hour for some flight-critical avionics. Several authors (I was one) demonstrated that such claims were several orders of magnitude beyond what could be supported with scientific rigour. In this talk I shall revisit this debate, showing some advances that have been made in 'dependability cases', particularly involving formal notions of 'confidence' in dependability claims. However, I shall also show that the bottom line has not changed significantly: although some systems have been shown to have extremely high dependability - after the fact - (i.e. in extensive operational use), it still remains impossible to show - before using it - that a system will be extremely dependable in operation. The reason is an unforgiving law about the extensiveness of evidence needed to make very strong dependability claims. These limits to assurance should be of interest beyond the technical community: for example, they pose difficult questions for society in estimating the risks associated with the deployment of certain novel systems.

#### **Biography**

Bev Littlewood has degrees in mathematics and statistics, and a PhD in statistics and computer science. He founded the Centre for Software Reliability at City University, London, in 1983 and was its Director from then until 2003. He is currently Professor of Software Engineering at City University.

Bev has worked for many years on problems associated with the modelling and evaluation of dependability of software-based systems, and has published many papers in international journals and conference proceedings and has edited several books. He is a member of IFIP Working Group 10.4 on Reliable Computing and Fault Tolerance, of the BCS Safety-Critical Systems Task Force, of the UK Computing Research Committee; from 1990 to 2005 he was a member of the UK Nuclear Safety Advisory Committee. He is currently serving his second term as Associate Editor of the IEEE Transactions on Software Engineering, and is on the editorial boards of several other international journals. He is a Fellow of the Royal Statistical Society.

#### **Awards**

On behalf of the entire ICSE community, we congratulate the following award recipients. *Note: All awards ceremonies are plenary sessions in Salon D.* 

#### Most Influential Paper Award - ICSE 1997 Thursday May 24th, 4:00PM

 $Designing\ Distributed\ Applications\ with\ Mobile\ Code$  Paradigms

Antonio Carzaniga, Gian Pietro Picco, Giovanni Vigna

# ACM SIGSOFT Distinguished Paper Awards – ICSE 2007

Thursday May 24, 4:00PM (Awards presentation only. Papers will be presented in the research paper track)

Tracking Code Clones in Evolving Software Ekwa Duala-Ekoko, Martin P. Robillard

Predicting Faults from Cached History
Sunghum Kim, Thomas Zimmermann,
E. James Whitehead Jr., Andreas Zeller

Matching and Merging of Statecharts Specifications Shiva Nejati, Mehrdad Sabetzadeh, Marsha Chechik, Steve Easterbrook, Pamela Zave

Refactoring for Parameterizing Java Classes Adam Kiezun, Michael D. Ernst, Frank Tip, Robert M. Fuhrer

#### ACM SIGSOFT Outstanding Research Award Wednesday May 23, 8:30AM

Elaine J. Weyuker, AT&T Labs - Research

# ACM SIGSOFT Distinguished Service Award Thursday May 24, 9:00AM

David Notkin, University of Washington

#### ACM SIGBED/SIGSOFT Frank Anger Memorial Award

Thursday May 24, 9:00AM Recipient To Be Announced

#### **ACM Fellows**

Thursday May 24, 9:00AM

Alexander L. Wolf, Imperial College Matthias Felleisen, Northeastern University

#### IEEE Computer Society Harlan D. Mills Award

Friday May 25, 9:00AM
Bev Littlewood, City University, London

IEEE-CS Fellows Friday May 25, 9:00AM Recipients To Be Announced

#### **WEDNESDAY MAY 23**

8:30 AM - 9:00 AM

**Opening Ceremony** 

Room: Salon D

9:00 AM - 10:30 AM

**Keynote Address: Steve Fisher** 

The Architecture of the Apex Platform, salesforce.com's Platform for Building On-Demand Applications

Room: Salon D

10:30 AM - 11:00 AM

**Break** 

11:00 AM – 12:30 PM

Research Papers: Program Analysis I

Room: Salon F

Session Chair: Atanas Rountev

Parallel Randomized State-space Search

Matthew B. Dwyer, Sebastian Elbaum, Suzette Person,

Rahul Purandare

Sequential Circuits for Relational Analysis

Fadi Zaraket, Adnan Aziz, Sarfraz Khurshid

A Sound Assertion Semantics for the Dependable Systems

Evolution Verifying Compiler

Patrice Chalin

Research Papers: Models

Room: Salon E

Session Chair: Tetsuo Tamai

Behaviour Model Synthesis from Properties and Scenarios

Sebastian Uchitel, Greg Brunet, Marsha Chechik

Feature Oriented Model Driven Development: A Case Study for

Portlets

Salvador Trujillo, Don Batory, Oscar Diaz

Matching and Merging of Statecharts Specifications (SIGSOFT Distinguished Paper)

Shiva Nejati, Mehrdad Sabetzadeh, Marsha Chechik,

Steve Easterbrook, Pamela Zave

Future of Software Engineering I

Room: Salon G

Session Chair: Lionel Briand, Alexander Wolf

A Future for Software Engineering?

Leon J. Osterweil

Improving Software Practice through Education: Challenges

and Future Trends

Timothy C. Lethbridge, Jorge Diaz-Herrera,

Richard J. LeBlanc Jr., J. Barrie Thompson

Research Collaborations between Industry and Academia

Dieter Rombach, Reinhold Achatz

Experience Reports: Agile Methods and Software Design

Room: Hennepin/Carver

Session Chairs: Frank Maurer, Michael Hirsch

An Empirical Study of the Evolution of an Agile-Developed

 $Software\ System$ 

Andrea Capiluppi, Juan Fernandez-Ramil, Julian Higman,

Helen C Sharp, Neil Smith

Agility and Experimentation: Practical Techniques for Resolving Architectural Tradeoffs

T.C. Nicholas Graham, Rick Kazman, Chris Walmsley

Usability Implications of Requiring Parameters in Objects' Constructors

Jeffrey Stylos, Steven Clarke

Portraits in Practice: Enterprise Architecture for Legal-Research Publishing at Thomson West

Room: Duluth

Session Chair: Martin Feather

Speakers: Mick Atton, Dave Hendricksen, Bob Sturm

12:30 PM - 2:30 PM

Lunch

Room: Salons A B and C

Food for Thought: Retrospectives on Peopleware

Room: Salon D

Panel Chair: Steven Fraser

Panelists: Barry Boehm, Fred Brooks Jr., Tom DeMarco,

Tim Lister, Linda Rising, Ed Yourdon

2:30 PM – 4:00 PM

Research Papers: Testing I

Room: Salon F

Session Chair: Giovanni Denaro

Regression Test Selection for AspectJ Software

Guoqing Xu, Atanas Rountev

Feedback-directed Random Test Generation

Carlos Pacheco, Shuvendu K. Lahiri, Michael Ernst,

Thomas Ball

Compatibility and Regression Testing of COTS Component-

based Software

Leonardo Mariani, Sofia Papagiannakis, Mauro Pezzè

Research Papers: Clone Detection and Removal

Room: Salon E

Session Chair: Harald Gall

DECKARD: Scalable and Accurate Tree-based Detection of

 $Code\ Clones$ 

Lingxiao Jiang, Ghassan Misherghi, Zhendong Su,

Stéphane Glondu

Very-Large Scale Code Clone Analysis and Visualization of

Open Source Programs Using Distributed CCFinder:

D-CCFinder

Simone Livieri, Yoshiki Higo, Makoto Matushita,

Katsuro Inoue

Using Server Pages to Unify Clones in Web Applications: A

Trade-off Analysis

Damith C. Rajapakse, Stan Jarzabek

Future of Software Engineering II

Room: Salon G

Session Chair: Lionel Briand, Alexander Wolf

 $Model-driven\ Development\ of\ Complex\ Systems: A\ Research\ Roadmap$ 

Robert France, Bernhard Rumpe

Software Engineering for Automotive Systems: A Roadmap Alexander Pretschner, Manfred Broy, Ingolf H. Krüger, Thomas Stauner

The Challenges of Building Advanced Mechatronic Systems Wilhelm Schäfer, Heike Wehrheim

#### **Education Papers: Pedagogy**

Room: Marquette/Lasalle Session Chair: Andreas Zeller

A Constructivist Approach to Teaching Software Processes Jayakanth Srinivasan, Kristina Lundqvist

Using Experiments in Software Engineering as an Auxiliary Tool for Teaching - A Qualitative Evaluation from the Perspective of Students' Learning Process Miroslaw Staron

On the Impact of a Collaborative Pedagogy on African American Millennial Students in Software Engineering Laurie Williams, Lucas Layman, Kelli M. Slaten, Sarah B. Berenson, Carolyn Seaman

#### **Experience Reports: Performance and** Metrics

Room: Hennepin/Carver

Session Chairs: Jürgen Münch, John Grundy Performance Evaluation and Prediction for Legacy Information Systems

Yan Jin, Antony Tang, Jun Han, Yan Liu

Software Development Environments for Scientific and Engineering Software: A Series of Case Studies Jeffrey C. Carver, Richard P. Kendall, Susan E. Squires, Douglass E. Post

Company-Wide Implementation of Metrics for Early Software Fault Detection

Lars-Ola Damm, Lars Lundberg

#### The Impact of Software Engineering Research on Industrial Practice

Room: Duluth

Session Chair: Leon J. Osterweil

Panelists: Alexander Wolf, Carlo Ghezzi, Jeff Kramer

#### Software Engineering Challenges - Software Services Industry Perspective

Room: Rochester

Speaker: Santonu Sarkar, Infosys

#### 4:00 PM - 4:30 PM

#### **Break**

#### 4:30 PM - 6:00 PM

#### Research Papers: Aspect-Oriented SE

Room: Salon F

Session Chair: Harold Ossher

Automated Inference of Pointcuts in Aspect-Oriented Refactoring

Prasanth Anbalagan, Tao Xie

A Formal Framework for Automated Round-trip Software Engineering in Static Aspect Weaving and Transformations Mikhail Chalabine, Christoph Kessler

Identifying Feature Interactions in Multi-Language Aspect-Oriented Frameworks

Sergei Kojarski, David H. Lorenz

#### **Research Papers: Maintenance**

Room: Salon E

Session Chair: Walter Tichy

Tracking Code Clones in Evolving Software

(SIGSOFT Distinguished Paper)

Ekwa Duala-Ekoko, Martin P. Robillard

Do Maintainers Utilize Deployed Design Patterns Effectively?

T. H. Ng, S. C. Cheung, W. K. Chan, Y. T. Yu

OPIUM: Optimal Package Install/Uninstall Manager

Chris Tucker, David Shuffelton, Ranjit Jhala, Sorin Lerner

#### **Future of Software Engineering III**

Room: Salon G

Session Chair: Lionel Briand, Alexander Wolf

Software Testing Research: Achievements, Challenges, Dreams Antonia Bertolino

Source Code Analysis: A Road Map

David Binkley

Formal Software Analysis: Emerging Trends in Software Model Checking

Matthew B. Dwyer, John Hatcliff, Robby, Corina S. Păsăreanu, Willem Visser

#### **Education Papers: Curricula & Course** Design I

Room: Marquette/Lasalle Session Chair: Claudia Werner

Bug Hunt: Making Early Software Testing Lessons Engaging and Affordable

Sebastian Elbaum, Suzette Person, Jon Dokulil, Matt Jorde Good practices for Educational Software Engineering Projects

Louwarnoud van der Duim, Jesper Andersson,

Marco Sinnema

Top SE: Educating Superarchitects Who Can Apply Software Engineering Tools to Practical Development in Japan Shinichi Honiden, Yasuyuki Tahara, Nobukazu Yoshioka, Kenji Taguchi, Hironori Washizaki

#### **Experience Reports: Modeling**

Room: Hennepin/Carver

Session Chairs: Mikio Aoyama, Michael Hirsch

Applying Template Meta-programming Techniques for a Domain Specific Visual Language - An Industrial Experience

Mika Karaila, Tarja Systä

Model-Based Security Engineering of Distributed Information Systems Using UMLsec

Bastian Best, Jan Jürjens, Bashar Nuseibeh

Reconceptualizing a Family of Heterogeneous Embedded

Systems via Explicit Architectural Support

Sam Malek, Chiyoung Seo, Sharmila Ravula, Brad Petrus, Nenad Medvidovic

#### NSF US SE Investigators Session

Room: Duluth

Session Chair: Sol J. Greenspan

#### **THURSDAY MAY 24**

#### 9:00 AM - 10:30 AM

#### **Keynote Address: Deborah Johnson**

 $Computer\ Professional\ Ethics\ in\ Theory\ and\ in\ Practice$ 

**Room:** Salon D

#### 10:30 AM - 11:00 AM

#### **Break**

#### 11:00 AM - 12:30 PM

#### Research Papers: Software Architecture

Room: Salon F

Session Chair: S.C. Cheung

Modeling Product Line Architectures through Change Sets and

Relationships

Scott A. Hendrickson, André van der Hoek

On Accurate Automatic Verification of Publish-Subscribe

Architectures

Luciano Baresi, Carlo Ghezzi, Luca Mottola

Supporting Heterogeneous Architecture Descriptions in an

Extensible Toolset

Matthieu Leclercq, Ali Erdem Özcan, Vivien Quéma,

Jean-Bernard Stefani

#### Research Papers: Program Analysis II

Room: Salon E

Session Chair: Jo Atlee

Adaptive Online Program Analysis

Matthew B. Dwyer, Alex Kinneer, Sebastian Elbaum

 ${\it Exception \ Chain \ Analysis: Revealing \ Exception \ Handling}$ 

Architecture in Java Server Applications

Chen Fu, Barbara G. Ryder

Path-Sensitive Inference of Function Precedence Protocols

Murali Krishna Ramanathan, Ananth Grama, Suresh Jagannathan

#### Future of Software Engineering IV

Room: Salon G

Session Chair: Lionel Briand, Alexander Wolf

 $Safety\ and\ Software\ Intensive\ Systems:\ Challenges\ Old\ and$ 

New

Mats Heimdahl

Software Reliability Engineering: A Roadmap

Michael R. Lyu

The Future of Software Performance Engineering

Murray Woodside, Greg Franks, Dorina C. Petriu

#### **Research Demos: Software Evolution**

Room: Marquette/Lasalle

Session Chair: Martin Robillard

Spotlight: A Prototype Tool for Software Plans

David Coppit, Robert R. Painter, Meghan Revelle

 $So Que T: Query-Based\ Documentation\ of\ Crosscutting$ 

Concerns

Marius Marin, Leon Moonen, Arie van Deursen

SoftGUESS: Visualization and Exploration of Code Clones in

Context

Eytan Adar, Miryung Kim

#### **Experience Reports: Testing**

Room: Hennepin/Carver

Session Chairs: Hakan Erdogmus, Jürgen Münch

'Good' Organisational Reasons for 'Bad' Software Testing: An Ethnographic Study of Testing in a Small Software Company

David Martin, John Rooksby, Mark Rouncefield,

Ian Sommerville

 $Enhancing\ Software\ Testing\ by\ Judicious\ Use\ of\ Code$ 

Coverage Information

Stefan Berner, Roland Weber, Rudolf K. Keller

Randomized Differential Testing as a Prelude to Formal

Verification

Alex Groce, Gerard Holzmann, Rajeev Joshi

#### Portraits in Practice: SE Practice and Research at Siemens Corporation

Room: Duluth

Session Chair: Jane Hayes

Speakers: Brian Berenbach, Juergen Kazmeier,

Daniel Paulish, Marlon Vieira

#### 12:30 PM - 2:00 PM

#### Lunch

Room: Salon D

#### Food for Thought: Agile Contracts

Room: Salons A,B

Speaker: Mary Poppendieck

#### **Student Reception**

Room: Salon C

#### 2:00 PM - 3:30 PM

#### Research Papers: Debugging and Fault

Correction

Room: Salon F

Session Chair: Margaret Burnett

GoalDebug: A Spreadsheet Debugger for End Users

Robin Abraham, Martin Erwig

A Technique for Enabling and Supporting Debugging of Field

*Failures* 

James Clause, Alessandro Orso

POLUS: A POwerful Live Updating System

Haibo Chen, Jie Yu, Rong Chen, Binyu Zang,

Pen-Chung Yew

#### Research Papers: Design I

Room: Salon E

Session Chair: Anthony Finkelstein

Supporting Generic Sketching Based Input of Diagrams in a

Domain-specific Visual Language Meta-tool

John Grundy, John Hosking

Fixing Inconsistencies in UML Design Models

Alexander Egyed

The Factory Pattern in API Design: A Usability Evaluation Brian Ellis, Jeffrey Stylos, Brad Myers

#### Future of Software Engineering V

Room: Salon G

Session Chair: Lionel Briand, Alexander Wolf

 $Global\ Software\ Engineering:\ The\ Future\ of\ Socio-technical\ Coordination$ 

James D. Herbsleb

# Wednesday at a Glance

8.30- 9.00			Openin	Opening Ceremony and Awards Salon D			
9.00-		"The Architectu	Keyr re of the Apex Platform, sale	Keynote Talk: Steve Fisher "The Architecture of the Apex Platform, salesforce.com's Platform for Building On-Demand Applications" Salon D	uilding On-Demand Applica	tions"	
10.30-				Break			
11.00-	Research Papers: Program Analysis I <b>Salon F</b>	Research Papers: Models Salon E	Future of Software Engineering I Salon G		Experience Reports: Agile Methods and Design Hennepin/Carver	Portraits In Practice: Enterprise Architecture for Legal-Research Publishing at Thomson West <b>Duluth</b>	tice: Enterprise Legal-Research homson West
12.30-		Lunch Salons A B and C			Food for Thought Panel: Retrospectives on Peopleware <b>Salon D</b>	anel: pleware	
14.30-	Research Papers: Testing I Salon F	Research Papers: Clone Detection and Removal Salon E	Future of Software Engineering II Salon G	Education Papers: Pedagogy Marquette/Lasalle	Experience Reports: Performance and Metrics Hennepin/Carver	Panel: Impact of SE Research on Industrial Practice <b>Duluth</b>	SE Challenges: Software Services Perspective <b>Rochester</b>
16.00- 16.30				Break			
16.30-	Research Papers: Aspect-oriented SE <b>Salon F</b>	Research Papers: Maintenance <b>Salon E</b>	Future of Software Engineering III <b>Salon G</b>	Education Papers: Curricula & Course Design I Marquette/Lasalle	Experience Reports: Modeling <b>Hennepin/Carver</b>	NSF US SE Investigators Session <b>Duluth</b>	tigators Session
18.00-			Informal   S <u>y</u>	Informal Demos / Posters Reception <b>Symphony Ballroom</b>			
19.30- 21.00			) SIS	SIGSoft Town Hall Meeting Marquette/Lasalle			

# Thursday at a Glance

# Friday at a Glance

9.00-		"Lin	Awards Keynote Talk: Bev Littlewood "Limits To Dependability Assurance - A Contro Salon D Break	Awards Keynote Talk: Bev Littlewood To Dependability Assurance - A Controversy Revisited" Salon D Break		
11.00	Research Papers:	Research Papers:	Future of SE VI Salon G	Future of Software	Demo Papers: Development,	Portraits In Practice:
12.30	Program Analysis III <b>Salon F</b>	Software Development Salon E	Research Papers: Design II Salon G	Engineering VII Marquette/Lasalle	Integration, and Maintenance Hennepin/Carver	Open-Source Sortware at IBM Rochester <b>Duluth</b>
12.30-		Lunch <b>Salon C</b>		Food for Tho	Food for Thought Talk: Modeling for Maintainability <b>Salons A,B</b>	ntainability
14.00-	Research Papers: Testing II Salon F	Research Papers: Refactoring and Resuse <b>Salon E</b>	Future of Software Engineering VIII Salon G	Education Papers: Evaluation Marquette/Lasalle	Demo Papers: Modeling <b>Hennepin/Carver</b>	Panel: The Impact of Research on Middleware Technology <b>Duluth</b>
15.30- 16.00			Break	ak		
16.00-	Research Papers: Security <b>Salon F</b>	Research Papers: Software Defects <b>Salon E</b>	Future of Software Engineering IX <b>Salon G</b>	Education Papers: Curricula & Course Design II Marquette/Lasalle		Panel: The Future of SE Research Funding <b>Duluth</b>
17.30-			Closing Session and Awards  Salon D	n and Awards n D		

Some Trends in Web Application Development Mehdi Jazaveri

 $\begin{tabular}{ll} Collaboration in Software Engineering: A Roadmap \\ {\tt Jim Whitehead} \end{tabular}$ 

Research Demos: Testing and Analysis

Room: Marquette/Lasalle Session Chair: Andreas Zeller

Kato: A Program Slicing Tool for Declarative Specifications

Engin Uzuncaova, Sarfraz Khurshid

Korat: A Tool for Generating Structurally Complex Test Inputs Aleksandar Milićević, Saša Misailović, Darko Marinov, Sarfraz Khurshid

Crisp - A Fault Localization Tool for Java Programs Ophelia C. Chesley, Xiaoxia Ren, Barbara G. Ryder, Frank Tip

## **Experience Reports: Software Development Processes**

Room: Hennepin/Carver

Session Chairs: Michael Hirsch, Frank Maurer

Can Requirements be Creative? Experiences with an Enhanced Air Space Management System

Neil Maiden, Cornelius Ncube, Suzanne Robertson

Applying ISO 9001:2000, MPS.BR and CMMI to Achieve Software Process Maturity: BL Informatica's Pathway Analia Irigoyen Ferreiro Ferreira, Gleison Santos, Roberta Cerqueira, Mariano Montoni, Ahilton Barreto, Andrea O. Soares Barreto, Ana Regina da Rocha

Maturity Status within Front-End Support Organisations
Mira Kajko-Mattsson

# The Impact of Assertion Research on Industrial Software Development

Room: Duluth

Session Chairs: Lori A. Clarke, David S. Rosenblum Panelists: James C. Browne, Gary T. Leavens, Bertrand Meyer, Nachi Nagappan, Sriram Sankar

#### 3:30 PM - 4:00 PM

#### **Break**

#### 4:00 PM - 5:30 PM

#### Most Influential Paper Award - ICSE 1997

Room: Salon D

Session Chair: Wolfgang Emmerich

 $Designing\ Distributed\ Applications\ with\ Mobile\ Code$  Paradigms

Antonio Carzaniga, Gian Pietro Picco, Giovanni Vigna.

#### **FRIDAY MAY 25**

#### 9:00 AM - 10:30 AM

#### **Keynote Address: Bev Littlewood**

Limits To Dependability Assurance - A Controversy Revisited

Room: Salon D

#### 10:30 AM - 11:00 AM

#### **Break**

#### 11:00 AM - 12:30 PM

#### Research Papers: Program Analysis III

Room: Salon F

Session Chair: Matt Dwyer

Overview and Evaluation of Constraint Validation Approaches in Java

Lorenz Froihofer, Gerhard Glos, Johannes Osrael, Karl M. Goeschka

Ownership and Immutability Inference for UML-Based Object Access Control

Yin Liu, Ana Milanova

Automatic Inference of Structural Changes for Matching Across Program Versions

Miryung Kim, David Notkin, Dan Grossman

# Research Papers: Human Aspects in Software Development

Room: Salon E

Session Chair: Kumiyo Nakakoji

Information Needs in Collocated Software Development Teams
Andrew J. Ko, Robert DeLine, Gina Venolia

The Social Dynamics of Pair Programming

Jan Chong, Tom Hurlbutt

Role Migration and Advancement Processes in OSSD Projects: A Comparative Case Study

Chris Jensen, Walt Scacchi

#### Research Papers: Design II and Future of Software Engineering VI

Room: Salon G

Session Chair: Pankaj Jalote

[FoSE Paper] Software Design and Architecture: The Once and Future Focus of Software Engineering

Richard Taylor, André van der Hoek

[Research Paper] The Role of Experience and Ability in Comprehension Tasks supported by UML Stereotypes Filippo Ricca, Massimiliano Di Penta, Marco Torchiano, Paolo Tonella, Mariano Ceccato

[Research Paper] Information Hiding and Visibility in Interface Specifications

Gary T. Leavens, Peter Müller

#### Future of Software Engineering VII

Room: Marquette/LaSalle

Session Chair: Lionel Briand, Alexander Wolf

 $\label{lem:approx} A\ Perspective\ on\ the\ Future\ of\ Middle ware-Based\ Software\ Engineering$ 

Valerie Issarny, Mauro Caporuscio, Nikolaos Georgantas

Self-Managed Systems: An Architectural Challenge Jeff Kramer, Jeff Magee

Software Deployment: Past, Present and Future Alan Dearle

#### **Education Papers: Evaluation [Short Papers]**

Room: Marquette/Lasalle Session Chair: David Budgen

A Leveled Examination of Test-Driven Development Acceptance David S. Janzen, Hossein Saiedian

Using Soloman-Felder Learning Style Index to Evaluate Pedagogical Resources for Introductory Programming Classes Imran A. Zualkernan Design and Evaluation of a Diagrammatic Notation to Aid in the Understanding of Concurrency Concepts

Shaohua Xie, Eileen Kraemer, R.E.K. Stirewalt

# Research Demos: Development, Integration, and Maintenance

Room: Hennepin/Carver Session Chair: John Grundy

 $Suade: \ Topology-Based \ Searches \ for \ Software \ Investigation$ 

Frédéric Weigand Warr, Martin P. Robillard

SYNTHESIS: a tool for automatically assembling correct and distributed component-based systems

Marco Autili, Paola Inverardi, Alfredo Navarra,

Massimo Tivoli

Presentations by Programmers for Programmers

Li-Te Cheng, Michael Desmond, Margaret-Anne Storey

# Portraits in Practice: Open-Source Software at IBM Rochester

Room: Duluth

Session Chair: Dan Berry

Speakers: Sam Ellis, Jeffrey Scheel, Marybeth Markland,

Tony Wells

#### 12:30 PM - 2:00 PM

Lunch

Room: Salon C

# Food for Thought: Modeling for Maintainability

Room: Salons A,B

Speaker: Andrew Watson

#### 2:00 PM - 3:30 PM

#### Research Papers: Testing II

Room: Salon F

Session Chair: Alex Orso

Using GUI Run-Time State as Feedback to Generate Test

Cases

Xun Yuan, Atif M. Memon

 $Automated\ Generation\ of\ Context\text{-}Aware\ Tests$ 

Zhimin Wang, Sebastian Elbaum, David S. Rosenblum

Hybrid Concolic Testing

Rupak Majumdar, Koushik Sen

#### Research Papers: Refactoring & Reuse

**Room:** Salon E

Session Chair: John Grundy

 $Refactoring\hbox{-}aware\ Configuration\ Management\ for\ Object-$ 

Oriented Programs

Danny Dig, Kashif Manzoor, Ralph Johnson,

Tien N. Nguyen

Refactoring for Parameterizing Java Classes

(SIGSOFT Distinguished Paper)

Adam Kiezun, Michael D. Ernst, Frank Tip,

Robert M. Fuhrer

Supporting the Investigation and Planning of Pragmatic Reuse

Tasks

Reid Holmes, Robert J. Walker

#### **Future of Software Engineering VIII**

Room: Salon G

**Session Chair:** Lionel Briand, Alexander Wolf Research Directions in Requirements Engineering

Betty H.C. Cheng, Joanne M. Atlee

 $Software\ Project\ Economics: A\ Road\ Map$ 

Martin Shepperd

The Future of Programming Environments: Integration,

Synergy, and Assistance

Andreas Zeller

# Education Papers: Curricula & Course Design II [Short Papers]

Room: Marquette/Lasalle

Session Chair: André van der Hoek

 $Creating\ a\ Computer\ Security\ Curriculum\ in\ a\ Software$ 

 $Engineering\ Program$ 

Bradley S. Rubin, Bhabani S. Misra

Introducing Accessibility Requirements Through External Stakeholder Utilization in an Undergraduate Requirements

Engineering Course Stephanie Ludi

Bringing the Systems Analysis and Design Course into 21st Century: A Case Study in Implementing Modern Software

Engineering Principles Christopher G. Jones

A Template for Real World Team Projects for Highly Populated

Software Engineering Classes

Burak Turhan, Ayşe Bener

#### Research Demos: Modeling

Room: Hennepin/Carver

Session Chair: Sebastian Uchitel

UML/Analyzer: A Tool for the Instant Consistency Checking of

UML Models
Alexander Egyed

Revel8or: Model Driven Capacity Planning Tool Suite

Liming Zhu, Yan Liu, Ngoc Bao Bui, Ian Gorton

Tool Support for Developing Advanced Mechatronic Systems: Integrating the Fujaba Real-Time Tool Suite with CAMeL-View

Sven Burmester, Holger Giese, Stefan Henkler,

Martin Hirsch, Matthias Tichy, Alfonso Gambuzza,

Eckehard Münch, Henner Vöcking

# The Impact of Research on Middleware Technology

Room: Duluth

Session Chairs: Wolfgang Emmerich, Mikio Aoyama Panelists: Francisco Curbera, Steven Reiss,

Santosh Shrivastava, Andrew Watson

#### 3:30 PM - 4:00 PM

#### **Break**

#### 4:00 PM - 5:30 PM

#### Research Papers: Security

Room: Salon F

Session Chair: Jens Jahnke

Mining Security-Sensitive Operations in Legacy Code using Concept Analysis

Vinod Ganapathy, David King, Trent Jaeger, Somesh Jha

Managing Impacts of Security Protocol Changes in Service-Oriented Applications

Halvard Skogsrud, Boualem Benatallah, Fabio Casati, Farouk Toumani

When Role Models Have Flaws: Static Validation of Enterprise Security Policies

Marco Pistoia, Stephen J. Fink, Robert J. Flynn, Eran Yahav

#### Research Papers: Software Defects

Room: Salon E

Session Chair: Victor Braberman
Predicting Faults from Cached History
(SIGSOFT Distinguished Paper)

Sunghum Kim, Thomas Zimmermann, E. James Whitehead Jr., Andreas Zeller

Detection of Duplicate Defect Reports Using Natural Language Processing

Per Runeson, Magnus Alexandersson, Oskar Nyholm

#### Future of Software Engineering IX

Room: Salon G

Session Chair: Lionel Briand, Alexander Wolf

New Frontiers of Reverse Engineering Gerardo Canfora, Massimiliano Di Penta

The Current State and Future of Search-Based Software Engineering

Mark Harman

The Future of Empirical Methods in Software Engineering Research

Dag I. K. Sjøberg, Tore Dybå, Magne Jørgensen

#### Panel: The Future of SE Research Funding

Room: Duluth

Session Chair: Carlo Ghezzi

Panelists: Sol Greenspan, NSF, Gerrit Sonntag DfG, Remy Chabot, NSERC, Claire Hincliff, EPSRC,

Paolo Bresciani, EU Framework VII

#### **Committee Meetings**

#### **ICSE Steering Committee Meeting**

Room: Rochester

Tuesday May 22, 6:30PM

#### SIGSoft Executive Committee Meeting

Room: Board Room 1

Wednesday May 23, 12:30PM

#### **ESEC Steering Committee Meeting**

Room: Board Room 1

Wednesday May 23, 6:00PM

## Editorial Board Meeting of Empirical Software Engineering Journal

Meeting point: Springer Exhibit

Wednesday May 23, 6:00PM

#### TSE Board Meeting

Room: Board Room 2

Wednesday May 23, 6:30PM

#### SigSoft Town Hall Meeting

Room: Marquette/Lasalle Wednesday May 23, 7:30PM

#### ICSE 2008 Organizers Committee Meeting

Room: Board Room 2

Thursday May 24, 12:30PM

#### **TOSEM Editorial Board Meeting**

Room: Board Room 1

Thursday May 24, 12:30PM

#### ICSE 2008 Program Committee Meeting

Room: Board Room 1 Friday May 25, 12:30PM

#### **ICSE 2007 Post Mortem Meeting**

Room: Symphony IV Saturday May 26, 9:00AM

#### **ICSE 2007 Exhibitors**

Auerbach Publications Cambridge University Press

Elsevier

**InfoSys** 

John Wiley & Sons, Ltd

Semmle Ltd.

Springer

Tech Excel

#### Speaker's Facilities

ICSE 2007 Speakers' Breakfast

Room: Rochester Wednesday 7:30-8:30 am Thursday 8:00-9:00 am Friday 8:00-9:00 am

Session chairs shall meet their presenters for breakfast at the speakers' breakfast on the day of their session.

#### Speakers' Ready Room

Room: Board Room 3

Times: Tuesday evening and during the day on Wednesday, Thursday, and Friday of the conference

Available for speakers to prepare presentations and make sure that the presentation works with the equipment provided in the actual meeting rooms.

# Workshops, Tutorials and Co-located Events at a Glance

Sup May 27	,	Self-Managing //S)										
Sat May 26		(W22) SE for Adaptive and Self-Managing Systems (SEAMS) Symphony II	(W18) SE for Automotive Systems (SEAS) Marquette	(W19) SE for High Perform. Computing Apps (SE-HPC) Carver	(W20) SE for Pervasive Computing (SEPCASE) Hennepin	(W21) Automation of Software Test (AST) Lasalle		(F7) Aspect-Oriented Design in Java/AspectJ and Ruby Ramsey	(F8) Variability Management in Software Product Line Engineering Nicollet			
						3-52	ram May 2	Main Prog	ICSE			
Tue May 22	Md		(W13) Realising Evidence- Based SE (REBSE) Conrad C	(W14) Dynamic Analysis (WODA) Conrad D	(W15) S/W Technologies for Ultra-Large-Scale Sys (ULS) Marquette	(W16) Incorporating COTS into S/W Systems (IWICSS) Carver	(W17) Assessment of Contemp. Modularization Technqs (ACoM) Conrad B	(F4) Migration of Legacy Assets to SOA Environments Hennepin	(F5) Agile Methods: Crossing the Chasm Lasalle	(F6) Cost-Benefit Analysis of Software Development Techniques Ramsey	(H8) Developing Secure Embedded Systems Nicollet	Symposium on The Legacy of Barry W. Boehm <b>Duluth</b>
Tue	АМ	(W12) Aerospace SE (AeroSE) Conrad A	(W13) Reali Based S Cor	(W14) Dyn (W Cor	(W15) S/W T Ultra-Large-9	(W16) Incorpor S/W Syste Ca	(W17) Assess Modularization Co	(F4) Migration to SOA E	( <b>F5)</b> Agi Crossing <b>La</b>	(F6) Cost-Be Software I Tecl Ra	(H7) Languages for Safety-Critical Software	Symposium or Barry \
Monday May 21	PM	(W12) Aerospa	(W7) Early Aspects (EA) Conrad C	(W8) Scenarios and State Machines (SCESM) Carver	(W9) Software Quality (WoSQ) Marquette	(W10) Systems Development in SOA (SDSOA) Conrad B	(W11) Emerging Trends in FLOSS (FLOSS) Conrad D	(F3) Safety & Security Requirements for Software Intensive Systems Lasalle	(H6) Mining SE Data Ramsey		Doctoral Symposium <b>Directors Row 4</b>	Faculty Symposium <b>Duluth</b>
Monda	МА		(W7) Early Con	(W8) Scena Machines Ca	(W9) Software		(W11) Emery FLOSS Con	(F3) Safet Requiremen Intensive	(H5) Architecture Knowledge Mgmt Ramsey		Doctoral 9	New SE Fact
Sun May 20	PM	s (MSR)	al Knowledge	items (SESS)	E (MiSE)	(W5) Predictor Models in SE (PROMISE) Conrad D	(W6) Economics of Software and Computation (ESC) Conrad C	(F1) Evaluating Dependability of Component-Based Specs Ramsey	(H3) Empirical Methods in SE Research Nicollet	(H4) Lean Software Developmnt Duluth		re Process
Sun	AM	(W1) Mining Software Repositories (MSR)  Marquette	(W2) SHAring and Reusing architectural Knowledge (SHARK/ADI) Hennepin	(W3) SE for Secure Systems (SESS) Carver	(W4) Modeling in SE (MiSE) Lasalle	(W5) Predict (PR(PR)	(W6) Eo Software an (E	(F1) E Depen Component	(H1) Reqts Eng. So Things Don't Get Ugly Nicollet	(H2) Testing Concurrent Java Components Duluth		International Conference on Software Process Conrad A and B
Sat May 19	PM	Mining Softwa	ring and Reus (SH <i>I</i> Hel	(W3) SE	(W4)							ional Confere <b>Conra</b>
Sat N	AM	(W1)	(W2) SHA									Internat

#### **Tutorials**

#### **SUNDAY 20 MAY**

# (F1) Evaluating Dependability Attributes of Component-Based Specifications

Room: Ramsey Full Day

Presenters: Ivica Crnkovic, Lars Grunske

# (H1) Requirements Engineering So Things don't Get Ugly

Room: Nicollet Half Day (Morning) Presenter: Deb Jacobs

#### (H2) Testing Concurrent Java Components

Room: Duluth Half Day (Morning)

Presenters: Paul Strooper, Luke Wildman

# (H3) Empirical Methods in Software Engineering Research

Room: Nicollet Half Day (Afternoon)

Presenters: Walter F. Tichy, Frank Padberg

#### (H4) Lean Software Development

Room: Duluth

Half Day (Afternoon)

Presenters: Mary Poppendieck, Tom Poppendieck

#### **MONDAY 21 MAY**

#### (F3) Engineering Safety and Security Related Requirements for Software Intensive Systems

Room: Lasalle Full Day

Presenter: Donald G. Firesmith

# (H5) Architecture Knowledge Management: Challenges, Approaches and Tools

Room: Ramsey Half Day (Morning)

Presenters: Ian Gorton, Ali Babar

#### (H6) Mining Software Engineering Data

Room: Ramsey

Half Day (Afternoon)

Presenters: Tao Xie, Jian Pei, Ahmed E. Hassan

#### **TUESDAY 22 MAY**

#### (F4) Migration of Legacy Assets to Service-Oriented Architecture Environments

Room: Hennepin Full Day

Presenters: Dennis Smith, Grace Lewis

#### (F5) Agile Methods: Crossing the Chasm

Room: Lasalle Full Day

Presenters: Frank Maurer, Grigori Melnik

#### (F6) Cost-Benefit Analysis of Software Development Techniques and Practices

Room: Ramsey Full Day

Presenter: Hakan Erdogmus

# (H7) Languages for Safety-Critical Software: Issues and Assessment

Room: Nicollet Half Day (Morning) Presenter: Ben Brosgol

# (H8) Developing Secure Embedded Systems: Pitfalls and How to Avoid Them

Room: Nicollet

Half Day (Afternoon)
Presenter: Jan Jürjens

#### **SATURDAY 26 MAY**

# (F7) Aspect-Oriented Design in Java/AspectJ and Ruby

Room: Ramsey Full Day

Presenter: Dean Wampler

# (F8) Variability Management in Software Product Line Engineering

Room: Nicollet Full Day

Presenters: Klaus Pohl, Andreas Metzger

#### Workshops

#### **SATURDAY 19 MAY**

#### (W1) 4th Workshop on Mining Software Repositories (MSR'07)

Room: Marquette

Note: Two day workshop, starts 9am, May 19 Co-Chairs: Harald Gall, Michele Lanza

# (W2) 2nd Workshop on SHAring and Reusing architectural Knowledge - Architecture, rationale, and Design Intent (SHARK/ADI'07)

Room: Hennepin

Note: Two day workshop, starts 9am, May 19 Organizers: Paris Avgeriou, Paul S. Grisham, Philippe Kruchten, Patricia Lago, Dewayne E. Perry

# (W3) 3rd Workshop on SE for Secure Systems (SESS'07)

Room: Carver

Note: 1½ day workshop, starts 2pm, May 19

Organizers: Danilo Bruschi, Bart De Win, Seok-Won Lee,

Mattia Monga

#### (W4) Workshop on Modeling in SE (MiSE'07)

Room: Lasalle

Note: 1½ day workshop, starts 2pm, May 19 Organizers: Joanne Atlee, Robert France, Geri Georg, Ana Moreira, Bernhard Rumpe, Steffen Zschaler

#### **SUNDAY 20 MAY**

# (W5) 3rd Workshop on Predictor Models in SE (PROMISE'07)

Room: Conrad D

Organizers: Gary D. Boetticher, Tim Menzies, Tom Ostrand

# (W6) Workshop on the Economics of Software and Computation (ESC'07)

Room: Conrad C

Organizers: Rick Kazman, Kevin Sullivan, Mary Shaw,

Barry Boehm, Jyrki Kontio

#### **MONDAY 21 MAY**

#### (W7) Early Aspects at ICSE: Workshop in Aspect-Oriented Requirements Engineering and Architecture Design

Room: Conrad C

Organizers: Ruzanna Chitchyan, Ana Moreira, Awais Rashid, Bedir Tekinerdogan, Elisa Baniassad, João Araújo, Paul Clements

# (W8) 6th Workshop on Scenarios and State Machines (SCESM'07)

Room: Carver

Co-Chairs: Wolfgang Grieskamp, Nicolas Kicillof

# (W9) 5th Workshop on Software Quality (WoSQ'07)

Room: Marquette

Organizers: Barry Boehm, Sunita Chulani, June Verner,

Bernard Wong

# (W10) Workshop on Systems Development in SOA Environments (SDSOA)

Room: Conrad B

Organizers: Grace Lewis, Dennis Smith,

Kostas Kontogiannis, Stefan Schuster, Marin Litoiu

# (W11) Workshop on Emerging Trends in FLOSS Research and Development (FLOSS'07)

Room: Conrad D

Organizers: Andrea Capiluppi, Gregorio Robles,

Walt Scacchi, Brian Fitzgerald, Joe Feller, Karim Lakhani,

Scott Hissam

# (W12) Workshop on Aerospace SE (AeroSE'07)

Room: Conrad A

Note: Two day workshop, starts 9am, May 21 Organizers: Mats Heimdahl, Henry Muccini

#### **TUESDAY 22 MAY**

#### (W13) 2nd Workshop on Realising Evidence-Based SE (REBSE'07)

Room: Conrad C

Co-Chairs: David Budgen, Pearl Brereton, Barbara Kitchenham, Mark Turner

# (W14) Workshop on Dynamic Analysis (WODA'07)

Room: Conrad D

Co-Chairs: Alessandro Orso, Andreas Zeller

#### (W15) Workshop on Software Technologies for Ultra-Large-Scale Systems (ULS'07)

Room: Marquette

Organizers: Richard P. Gabriel, Rick Kazman, Linda Northrop, Douglas C. Schmidt, Kevin Sullivan

#### (W16) 2nd Workshop on Incorporating COTS Software into Software Systems (IWICSS'07)

Room: Carver

Co-Chairs: Alexander Egyed, Hausi Müller, Dewayne E. Perry, Dennis B. Smith, Scott Tilley

#### (W17) Workshop on Assessment of Contemporary Modularization Techniques (ACoM.07)

Room: Conrad B

Co-Chairs: Elisa Baniassad, Alessandro Garcia,

Cristina Videira Lopes, Christa Schwanninger, Jianjun Zhao

#### **TUESDAY 22 MAY**

# (W18) 4th Workshop on SE for Automotive Systems (SEAS'07)

Room: Marquette

Organizers: Alexander Pretschner (chair),

Christian Salzmann, Bernhard Schätz, Thomas Stauner

#### (W19) 3rd Workshop on SE for High Performance Computing Applications (SE-HPC'07)

Room: Carver

Organizers: Jeffrey Carver, Philip Johnson, Adam Porter,

Walter Tichy, Lawrence Votta

#### (W20) Workshop on SE for Pervasive Computing Applications, Systems and Environments (SEPCASE'07)

Room: Hennepin

Organizers: Anand Tripathi, Roy Campbell, Liviu Iftode, Paolo Bellavista

# (W21) 2nd Workshop on Automation of Software Test (AST'07)

Room: Lasalle

Co-Chairs: Hong Zhu, Eric Wong, Amit Paradkar

# (W22) Workshop on SE for Adaptive and Self-Managing Systems (SEAMS'07)

Room: Symphony II

Note: Two day workshop, starts 9am, May 26

Organizers: Betty Cheng, Rogério de Lemos, Stephen Fickas, David Garlan, Marin Litoiu, Jeff Magee, Hausi A. Müller,

Richard Taylor

#### **Co-located Events**

#### SAT 19 MAY - SUN 20 MAY

**International Conference on Software** Process (ICSP'07)

Room: Conrad A and B

General Chair: David M. Raffo, Portland State University, USA

**Program Co-Chairs:** 

Dietmar Pfahl, University of Calgary, Canada

Qing Wang, China

**MONDAY 21 MAY** 

**New Software Engineering Faculty** Symposium

Room: Duluth

9:00 Welcome, Introductions, Overview

9:30 Mapping out a Research Agenda

10:00 Publication Strategies

10:30 BREAK

 $11:00\ Ethics$ 

11:30 Teaching and Mentoring Students

12:00 LUNCH Obtaining Research Funding (breakout groups by nationality)

1:00 How to (improve the chances that you will) get a paper accepted at ICSE/FSE/ASE

1:30 How to get Promoted

2:00 Time Allocation: Balancing Research, Teaching, and Service

2:30 Networking

3:00 BREAK

3:30 How to Have a Life as Well as a Career--and Why!

4:00 A view from the trenches -- Panel of successful young faculty members

4:45 Summary and final advice

**Doctoral Symposium** 

Room: Directors Row 4

On Sufficiency of Mutants

Akbar Siami Namin

Testing and Analysis of Access Control Policies

Evan E Martin

A Context-Oriented Framework for Software Testing in

Pervasive Environment

Heng Lu

A Data Model to Support End User Software Engineering Christopher Scaffidi

Ajaxifying Classic Web Applications

Ali Mesbah

A Discreet, Fault-Tolerant, and Scalable Software

Architectural Style for Internet-Sized Networks

Yuriy Brun

Handling Safety-related Feature Interaction in Safety-Critical Product Lines

Jing (Janet) Liu

Toward Applying Information Hiding Modularity On Dynamic Adaptation

Yuanyuan Song

Adaptive Probabilistic Model for Ranking Code-Based Static Analysis Alerts

Sarah Smith Heckman

Stakeholder Value Driven Threat Modeling for Off The Shelf Based Systems

Yue Chen

Mining Object Usage Models

Andrzej Wasylkowski

Modular-like Transformations and Style Checking for

Crosscutting Programming Concepts

Macneil Charles Shonle

Assessing Changeability by Investigating the Propagation of Change Types

Beat Fluri

Using Software Model Checking for Software Component Certification

Ali Taleghani

Understanding and Aiding Code Evolution By Inferring

Change Patterns

Miryung Kim

A Quality-Driven Approach to Enable Decision-Making in Self-

Adaptive Software

Mazeiar Salehie

#### **TUESDAY 22 MAY**

#### Software Engineering: The Legacy of Barry W. Boehm

Room: Duluth

Symposium Organizer:

Richard Selby, Northrop Grumman Space Technology, USA

Introduction. Biography of Barry W. Boehm

Richard Selby

Software Architecture and Quality

Larry Bernstein

Software Economics

Richard Selby

Software Tools

Art Pyster

Software Process: Early Spiral Model

Walker Royce

Software Risk Management

Tom DeMarco

Software Process: Emerging Extensions

Lee Osterweil

Software and Systems Management

Fred Brooks

Software Engineering State-of-the-Art/Practice

Vic Basili

Value-Based Software Engineering

Kevin Sullivan

Thoughts for the Future

Barry Boehm

#### **Meals and Social Events**

#### **WEDNESDAY MAY 23**

# Food for Thought: Retrospectives on Peopleware

Room: Salon D Starts 12:45pm

The first of our "food for thought" sessions, new at ICSE this year. Since its publication twenty years ago "Peopleware Productive Projects and Teams" (Dorset House, 1987) by Tom DeMarco and Tim Lister has enlightened software professionals and non-professionals alike. Peopleware introduced among other topics - team jell, design patterns, and the "Furniture Police" - to the software engineering community and suggested that "sociology matters more than technology or even money". Plan to attend this unique session with the pioneers of our profession to learn, reflect, and share experiences - looking forward to the future. Panelists include Barry Boehm, Fred Brooks Jr., Tom DeMarco, Tim Lister, Linda Rising, and Ed Yourdon. Collect a plate of food from the buffet lunch served in Salons A,B,C, and bring it to Salon D to join in this remarkable panel session.

#### ICSE Poster Session and Reception

Room: Symphony Ballroom Starts 6pm

Meet and chat to ICSE friends, old and new, while wandering among posters presented by authors of the research demo papers and the students from the Doctoral Symposium.

#### SIGSOFT Town Hall Meeting

Room: Marquette/Lasalle

Starts 7:30pm

Come hear what ACM SIGSOFT – a sponsor of ICSE – is doing for the community, and let the SIGSOFT leadership know about your concerns and how they can better serve you. Refreshments and libations provided.

#### **THURSDAY MAY 24**

#### Food for Thought: Agile Contracts

Room: Salons A,B Starts 12:45pm

The second of our lunchtime food for thought sessions features at talk by Mary Poppendieck, managing director of the Agile Aliance. In the mid 1980's Toyota came to the US and showed Detroit how to work with suppliers on a win-win basis. In just five years, Toyota was the most trusted automaker among all automotive suppliers, had the lowest procurement costs, and the highest contribution of innovation from supplier companies. What does Toyota know about working with contracts that we can learn? For starters, they know that trust lies in specific actions, not interpersonal relationships. They understand the 'game' of contracting, and know how to structure relationships so both sides are motivated to contribute to the common good. There's much we can learn from Toyota about how to change the contracting game in software development for the benefit of both parties.



#### ICSE 2007 Banquet

Location: Nicollet Island

Beginning with departures from the Hilton hotel at 5:30pm, buses will be providing a round-trip shuttle service between the hotel and Nicollet Island approximately every 15 minutes until 10:30 p.m.

The ICSE 2007 banquet will be held at the Island Pavilion, on Nicollet Island. Buses will be available to transport attendees to and from the island. The banquet will include a chance to try out an island tour on a Segway, try your hand at fishing for trout, cook s'mores on a campfire, wander through displays of authentic teepees, join a traditional tribal camp, toss a tomahawk, try archery with a traditional bow, and listen to the Native American elders tell stories. Native dancers and drummers will entertain us, as we dine from bountiful buffets, featuring local favorite dishes.

#### FRIDAY MAY 25

# Food for Thought: Modeling for Maintainability

Room: Salons A,B Starts 12:45pm

The last of our food for thought sessions features a talk by Andrew Watson, of the OMG. Software maintenance is the Cinderella of Software Engineering. The cost of creating a long-lived application is dwarfed by the cost of maintaining, updating and porting it over a lifetime sometimes measured in decades, yet few software engineers plan for maintainability. The only alternative to maintenance is to routinely reimplement working systems to a revised specification, but this is an even more expensive proposition. In fact, as the deployed software base continues to grow, we may already have reached the point where it's economically impossible to replace working applications, and there's no alternative to maintaining them. Fortunately, recent studies show that model-driven development methods (such as OMG's Model Driven Architecture) not only help develop quality applications quickly and cheaply in the first place, but also yield dramatic savings in the time and effort needed to maintain them. Use of modeldriven techniques may literally be the only way businesses can afford to keep their software infrastructure running over the next few decades.

#### **Local Excursions at ICSE-07**

Welcome to the Local Excursions Program for the International Conference on Software Engineering.

- Excursions include trips for shopping, museums, dancing, walking, and a pedal-cart tour.
- · Register for excursions (and pay for those requiring advance payments) at the conference registration desk.
- Each trip has a minimum size and maximum capacity; trips not meeting the minimum size will be canceled and money refunded.
- All trips will depart from in front of the registration desk.
- Many trips will use public transportation—our Metro area light-rail and/or bus.
- Each trip will be escorted to its destination by a member of the conference volunteer staff; for most trips, a return escort will be provided as well.

We have scheduled the following events (Consult schedule in front of registration desk for trip details):

Date	Time	Туре	Location	Advance Payment	URL
	PM	Historic site	Fort Snelling	No	www.mnhs.org/places/sites/hfs/
Sun 20th	PM	Walk	Mpls historic areas	No	www.geocities.com/tcvwalking
Duli 20011	Evening	Meal & Dance	Loring Pasta bar	No	loringpastabar.com
Mon 21st	Day	Museum	Science Museum Minnesota	No	www.smm.org
	Day	Shopping	Mall of America	No	www.mallofamerica.com
Tue 22nd	Day	Museum	Minnesota History Museum	No	www.mnhs.org/historycenter/
Tue 22mu	Evening	Walk	Mpls historic areas	No	www.geocities.com/tcvwalking
	Evening	Drama	Guthrie Theater	Yes	www.guthrietheater.org
	D	M	XX7 11 A / 3/F	3.7	info.walkerart.org
	Day	Museum	Walker Art Museum	No	inio.waikerart.org
Wed 23rd	Day Day	Museum Shopping	Mall of America	No No	www.mallofamerica.com
Wed 23rd					
Wed 23rd	Day	Shopping	Mall of America	No	
	Day Evening	Shopping Pedal Bus	Mall of America Mpls historic areas	No Yes	www.mallofamerica.com
Wed 23rd Thurs 24th	Day Evening Evening	Shopping Pedal Bus Drama	Mall of America Mpls historic areas Jeune Lune Theater	No Yes Yes	www.mallofamerica.com www.jeunelune.org
	Day Evening Evening Day Late	Shopping Pedal Bus Drama Museum Dance:	Mall of America Mpls historic areas Jeune Lune Theater Mill City Museum Tapestry Folk Dance	No Yes Yes No	www.mallofamerica.com  www.jeunelune.org  www.millcitymuseum.org
Thurs 24th	Day Evening Evening Day Late Evening	Shopping Pedal Bus Drama Museum Dance: Swing	Mall of America Mpls historic areas Jeune Lune Theater Mill City Museum Tapestry Folk Dance Center	No Yes Yes No No	www.mallofamerica.com  www.jeunelune.org  www.millcitymuseum.org  www.tapestryfolkdance.org
	Day Evening Evening Day Late Evening Day	Shopping Pedal Bus Drama Museum Dance: Swing Museum	Mall of America Mpls historic areas Jeune Lune Theater Mill City Museum Tapestry Folk Dance Center Minneapolis Ins. Art	No Yes Yes No No	www.mallofamerica.com  www.jeunelune.org  www.millcitymuseum.org  www.tapestryfolkdance.org  www.artsmia.org
Thurs 24th	Day Evening Evening Day Late Evening Day Day	Shopping Pedal Bus Drama Museum Dance: Swing Museum Shopping	Mall of America Mpls historic areas Jeune Lune Theater Mill City Museum Tapestry Folk Dance Center Minneapolis Ins. Art Mall of America	No Yes Yes No No No	www.mallofamerica.com  www.jeunelune.org  www.millcitymuseum.org  www.tapestryfolkdance.org  www.artsmia.org  www.mallofamerica.com

In addition, visits to the Charles Babbage Institute for the History of Information Technology will be arranged upon request. The Charles Babbage Institute is an archives and research center dedicated to preserving the history of information technology and promoting and conducting research in the field (http://www.cbi.umn.edu/).

Prior to the conference, direct any questions to Paul Stachour via email at Pstachour@acm.org, or leave a telephone messages at 952-884-5977



#### 30TH INTERNATIONAL CONFERENCE ON SOFTWARE ENGINEERING ® LEIPZIG, GERMANY 10-18 MAY 2008

#### **DRIVING WORLD BUSINESS**

Mark your calendars for the 30<sup>th</sup> International Conference on Software Engineering on 10-18 May, 2008 in Leipzig, Germany!

Opportunities for professional engagement include workshops, tutorials, research demonstrations, exhibits, paper tracks on research and education, and special tracks on telecommunications, automotive, and medical systems. In the doctoral symposium and new faculty symposium, researchers gain a head start in their chosen profession.

In addition to a strong technical program, expect cultural highlights such as a concert with the world-renowned Gewandhaus Orchestra, a visit to Bach's long-time workplace and Goethe's favorite pub, and a walk in the footsteps of Germany's peaceful revolution.

General Chair: Program Co-Chairs: Wilhelm Schäfer (University of Paderborn) Matt Dwyer (University of Nebraska), Volker Gruhn (University of Leipzig)

http://icse08.upb.de

Research Papers, Special Tracks: 14 Sep 07
Education Papers, Tutorial Proposals,
Workshop Proposals: 12 Oct 07
Research Demonstrations: 30 Nov 07
Doctoral Simposium: 14 Dec 07

圖職教件工程大会 (IGSE)

東比锡大學实用电子譜法/电子商务系文 2000年前在本市等行前336届国际经历 经人会员面 国民,而目的不只是为参划 看提供专业的大会基础设施。由且还可 1百年末宽比锡城和增加更上第一次的 1百年末宽比锡城和增加更上第一次纳州仓级补 精冲生活以极大的标识。详明东英联特 两森里,赫成果身份和大学,并以有一次被 被、来和尼然。改成,北美州和尼索特 使,一个大学,是这里的一个大学,就是一个大学,就是一个大学,

会议大厅、旅馆、交通枢组和名胜古途位 经历史古城旁边、周围有一条综色林荫大 近。1989年秋莱比锡市民企此为和平茶血 举行了大众游行并且这成为推动德国格 的力量。尽管本地组织已经开始准备工 作。但是在未业的两年大金贵员会还是有 程多工作。直到2008年国际软件工程大会 在兼归443年













**Westin Bayshore Hotel** 







**Organizing Committee**: Stephen Fickas (General Chair), Jo Atlee (PC Co-Chair), Paola Inverardi (PC Co-Chair)

www.cs.uoregon.edu/events/icse2009

Special New Event: Student Contest in Software Engineering (http://score.elet.polimi.it).

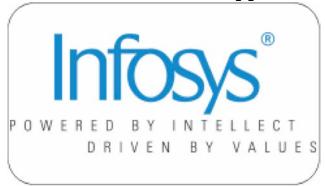
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