



THE SOCIETY FOR
MODELING & SIMULATION
INTERNATIONAL

SUMMERSIM

Summer Simulation Multi-Conference 2014

JULY 6-10, 2014

Hyatt Regency Monterey Bay; Monterey, CA



Welcome to SummerSim '14

We wish to express our warmest welcome to all participants and organizers of the tracks making up this 2014 Summer Simulation Multi-Conference 2014. All attendees are welcome to attend all of the sessions and activities unless otherwise noted in the agenda.

The Summer Simulation Multi-Conference 2014 (SummerSim'14) is SCS's premier international conference. The conference focuses on modeling and simulation, tools, theory, methodologies and applications and provides a forum for the latest R&D results in academia and industry. In addition, the tutorials, tracks and workshops are available. We are thrilled to be holding this year's conference at the beautiful Hyatt Regency Monterey Hotel in Monterey, California.

SummerSim'14 explores the potential of the technologies under the motto: *Between Now and the Future with Modeling and Simulation.*

Our technical program is rich and varied with 5 academic and industrial keynote speeches and multiple invited papers. Around 150 technical papers are split between 3 parallel oral sessions and poster sessions each day.

Besides, there are workshops and a tutorial program co-located. We also expect to provide technical demonstrations, and numerous opportunities for informal networking and professional socializing.

This year we have two new SCSC Tracks. The first new Track is on Cyber-Physical Systems and Internet of Things that were recently prioritized by the White House as these that can provide concrete, significant, growing socioeconomic benefits to create jobs and business opportunities. The second new Track is on Modeling and Simulation of Intelligent, Adaptive and Autonomous Systems that investigates modeling and simulation as a mechanism to engineer intelligent, adaptive and autonomous systems that now pervade our lives in a sociotechnical world.

We wish to thank the many individuals whose dedicated effort contributed to the success of the conference. In particular, our SCS colleagues and the Organizing Committees of ICBGM, SPECTS, and SCSC were of crucial significance. Also, the Program Chair of SummerSim proved to be irreplaceable with his admirable attention to detail.

Last but not least, our sincere appreciation goes to the outstanding keynote speakers, many chairs, authors, and attendees for making SummerSim 2014 an attractive and a can't-miss event!

Yours,

General Chair Dr. Justyna Zander **General Co-Chair** Dr. Saurabh Mittal

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Brought to you by: The Society for Modeling & Simulation International (SCS)

GENERAL INFORMATION

General Information

SummerSim'14 Organizing Committee

General Chair: Dr. Justyna Zander, MathWorks, Inc., USA

General Co-Chair: Dr. Saurabh Mittal, Dunip Technologies, USA

Honorary Program Chair: Dr. Andreas Tolk, SimIS, Inc.

Program Chair: Dr. Zhi Han, MathWorks, Inc.

Proceedings Chair: Dr. Eugene Syriani, University of Alabama

Publicity Chair: Prof. Gabriel Wainer, Carleton University

Local Logistics Chair: John F. Richardson, SPAWAR Systems Center PACIFIC

2014 Summer Computer Simulation Conference (SCSC 2014)

Chairs: Dr. Justyna Zander, MathWorks, Inc., USA and Dr. Saurabh Mittal, Dunip Technologies, USA

Symposia

- **Modeling, Simulation, and Test For Cyber Physical Systems**

Chair: Dr. Justyna Zander

- **M&S For Intelligent, Adaptive and Autonomous Systems**

Chair: Dr. Saurabh Mittal

- **M&S In Medicine**

Chair: Dr. Jerzy Rozenblit

- **M&S for Sustainability**

Chair: Dr. Bjorn Johansson

- **Agent-Directed Simulation**

Chairs: Dr. Tuncer Oren and Dr. Levent Yilmaz

- **Emergency Management Simulation**

Chair: Prof. Dr. Francesco Longo

- **Work in Progress Session**

Chair: Dr. Eugene Syriani

- **Computer Graphics for Simulation**

Chair: John F. Richardson

SCSC 2014 features varied tutorials, tracks, and workshops. The conference focuses on modeling and simulation, tools, theory, methodologies and applications, providing the latest R&D results in academia and industry.

General Information

International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS 2014)

Chair: Mario Marchese, University of Genoa

Honorary Chair: Mohammad S. Obaidat, Monmouth University

This annual international conference is a scientific forum for professionals and scientists involved in performance evaluation of computer and telecommunication systems. Performance evaluation of computer systems and networks has progressed rapidly in the past decade and has begun to approach maturity. Significant progress has been made in analytic modeling, simulation, and measurement approaches for performance evaluation of computer and telecommunication systems.

International Conference on Bond Graph Modeling and Simulation (ICBGM 2014)

Chair: Prof. Jose J. Granda, California State University Sacramento

Program Chair: Prof. Dean C. Karnopp, University of California, Davis

This conference will focus on Bond Graph modeling techniques for dynamic systems. Theoretical principles for electrical, mechanical, hydraulic, pneumatic, and control system applications will be presented. Leading industrial users of the method in automotive, aircraft, fluid power, kinematics, multibody systems, and social and biological systems have been invited.

Registration

Your registration for SCS's 2014 Summer Simulation Multi-conference (SummerSim'14) includes AM and PM breaks and lunch each day, the Monday evening reception and access to all sessions, tutorials and special presentations (unless otherwise noted). Please visit the SCS Registration Desk in the Regency Foyer South for any questions you have during the conference.

Registration Hours (Regency Foyer South):

Sunday, July 6th – 16:00pm-18:00pm

Monday, July 7th – 7:00am-17:00pm

Tuesday, July 8th – 7:00am-17:00pm

Wednesday, July 9th – 7:30am-15:00pm

General Information

Breakfast, Breaks and Lunches

Breakfast, Coffee Breaks & Lunch (Regency 4-6 unless otherwise noted):

Monday, July 7th :

Breakfast 7:30am-8:15am Breaks: 10:00am–10:30am | 15:00pm-15:30pm Lunch: 12:00pm-13:30pm

Tuesday, July 8th:

Breakfast: 7:30am-8:15am Breaks: 10:00am–10:30am | 15:00pm-15:30pm Lunch: 12:00pm-13:30pm

Wednesday, July 9th:

Breakfast: 7:30am-8:15am Breaks: 9:30-10:00am | 15:00pm-15:30pm Lunch: 11:30am-12:30pm,
Regency 1-3 (Lunch and Keynote Speaker)

Meetings

SCS Board of Directors Meeting—Sunday, July 6 at 9:00am in Cypress 3

Sunday Welcome Mixer

Attendees who are in town on Sunday are invited to mix and mingle with other attendees at our Welcome Mixer on Sunday, July 6 from 17:00pm-18:00pm in Regency Foyer South. Snacks and sodas will be provided.

Monday Evening Reception

There will be a reception with drinks and appetizers in the Regency Foyer on Monday, July 7 from 17:30pm-19:00pm. All attendees and their guests are invited to attend.

Tuesday Evening Optional Paid Dinner Banquet

Join us for a night of fun and food at the Montrio Bistro in downtown Monterey! This optional pay-your-own-way dinner banquet will be held on Tuesday, July 8. The \$50 ticket fee includes a delicious 3-course meal and transportation to and from the restaurant, with time to walk around downtown Monterey and Fisherman’s Wharf afterward. Tickets are very limited and are first come, first served. Please see the SCS registration desk to see if there is any onsite availability. For those with tickets, please be in front of the Hyatt Regency Monterey at 17:45pm sharp on July 8. The return shuttle will pick up from the Montrio Bistro at 20:30pm sharp. If you have your own car, or want to take a taxi to/from the restaurant (a one-way ride to the bistro is approx. \$10), please be sure to be at Montrio Bistro by 18:00pm for our reservation time. Neither SCS nor the shuttle company is liable for those who miss the shuttle. The Montrio Bistro is located at 414 Calle Principal, Monterey, CA.

General Information

Tutorial

Learning the Bond Graph Method for Modeling and Simulation

Prof. Jose J. Granda

Department of Mechanical Engineering

California State University, Sacramento

Day: Sunday, July 6, 2014,

Time: 15:00pm-17:00pm

Location: Cypress 2

TUTORIAL ABSTRACT

This tutorial is designed to introduce the Bond Graph modelling method to those who have never used it or those who are curious what this technology is. The intention is to start at ground zero and give the audience a good start on bond graph modelling and simulation. Computer Models of Mechanical, Electrical, and Hydraulic systems play a central role on the design of current electromechanical devices. This introductory tutorial will present fundamental concepts of the different components and how with the aid of software such as CAMPG (Computer Aided Modeling Program), engineers and scientists can get information that reveals how computer models and simulation can predict the behaviour of dynamic systems in real life. The Bond Graph modelling method is ideal for Mechatronics systems since it can process systems in several energy domains mechanical, electrical, hydraulic, and thermodynamic or a combination of them.

TUTORIAL TOPICS

- What are bond graphs and how they relate to a real physical dynamic system.
- Basic Definitions. Bond Graphs, vs Block Diagrams
- Basic Physical Elements and fundamental laws
- Modelling and simulation in the time domain.
- Mechanical Systems
- Electrical Systems
- Hydraulic Systems
- Simulation of Models using the package CAMPG/MATLAB

Computer generated differential equations, transfer functions and state space form for the time and frequency domain.

General Information

Meeting Space Floor Plan

FLOOR PLAN
First Floor - Regency Grand Ballroom and Conference Center



General Information

Meeting Space Floor Plan

FLOOR PLAN
Second Floor—Regency Grand Ballroom and Conference Center



KEYNOTES

Keynote Speaker

TITLE: Constructive Models of Discrete and Continuous Physical Phenomena

AUTHOR: Dr. Edward A. Lee, EECS Department, UC Berkeley

DATE/TIME: Mon July 7, 8:30-10:00am in Regency 1-3

ABSTRACT:

This talk will describe an approach to modeling and simulating mixed continuous and discrete dynamics. Using examples such as rigid body collisions and switching in electronic circuits, I will show that combining generalized functions (specifically the Dirac delta function), superdense time, modal models, and constructive semantics yields a rich, flexible, efficient, and rigorous approach to modeling such systems. I will show that many physical scenarios that have been problematic in the past manifest as nonconstructive models, and that constructive versions of some of the models properly reflect uncertainty in the behavior of the physical systems that plausibly arise from the principles of quantum mechanics. I will argue that these modeling difficulties are not reasonably solved by more detailed continuous models of the underlying physical phenomena. Such more detailed models simply shift the uncertainty to other aspects of the model. Since such detailed models come with a high computational cost, there is little justification in using them unless the goal of modeling is specifically to understand these more detailed physical processes. I will show how these techniques have been implemented in the Ptolemy II modeling and simulation environment, and I will briefly discuss the consequences for the evolution of co-simulation standards such as FMI.



SHORT BIO:

Edward A. Lee is the Robert S. Pepper Distinguished Professor in the Electrical Engineering and Computer Sciences (EECS) department at U.C. Berkeley. His research interests center on design, modeling, and analysis of embedded, real-time computational systems. He is the director of the nine-university TerraSwarm Research Center (<http://terraswarm.org>), a director of Chess, the Berkeley Center for Hybrid and Embedded Software Systems, and the director of the Berkeley Ptolemy project. From 2005-2008, he served as chair of the EE Division and then chair of the EECS Department at UC Berkeley. He is co-author of nine books (counting second and third editions) and numerous papers. He has led the development of several influential open-source software packages, notably Ptolemy and its various spinoffs. He received the B.S. degree in Computer Science from Yale University, New Haven, CT, in 1979, the S.M. degree in EECS from the Massachusetts Institute of Technology (MIT), Cambridge, in 1981, and the Ph.D. degree in EECS from the University of California Berkeley, Berkeley, in 1986. From 1979 to 1982 he was a member of technical staff at Bell Telephone Laboratories in Holmdel, New Jersey, in the Advanced Data Communications Laboratory. He is a co-founder of BDTI, Inc., where he is currently a Senior Technical Advisor, and has consulted for a number of other companies. He is a Fellow of the IEEE, was an NSF Presidential Young Investigator, and won the 1997 Frederick Emmons Terman Award for Engineering Education.

For more information and photos, see <http://ptolemy.org/~eal/biog.html>

Keynote Speaker

TITLE: Technology in Medicine: Past and Future Prospectives

AUTHOR: Prof. Dr. Manuel Maynar, MD PhD

DATE/TIME: Tues, July 8, 8:30am in Regency 1-3

SHORT BIO:

Specialist in Endovascular Surgery

Full Professor of the University of Las Palmas de Gran Canaria (ULPGC) since 1997

Full Professor of the Louisiana State University, New Orleans (L.S.U.) 1994-1997. Gratis Faculty since 2000.

Director of Minimally Invasive Diagnostic and Therapeutic Institute (CDyTE), Hospital: HOSPITEN Rambla, Santa Cruz de Tenerife, Spain

Director of the Department of Endoluminal in the Minimal Invasive Surgery Centre, Animal Lab, Caceres, Spain

Director of MOTIVA (Research Project of the Canarian Agency of Investigation, Innovation and Information Society (ACIISI) "Minimally Invasive and Reconstructive Surgery"

EBIR (European Board of Interventional Radiology)

Scientific international contributions (update 2013)

Books/Syllabus: 10

Book Chapters: 77

Scientific Publications: 225 (94 indexed in pubmed)

Scientific Presentations: 442

Conferences as Invited Speaker: 536

Impact Factor Manuel Maynar: **257,324**

Citations received: 868

Factor H: 17

Investigative merit:

Sexenios: 4 Tramos: 1986-1991, 1992-1997, 1998-2003 y 2004-2009

Quinquenios: 3 Tramos: 1991-1999, 1999-2004, 2004-2009

The scientific experience includes: Research-projects, Membership of Scientific Societies, Founder of Scientific Societies, Honorary Member, Director of Courses, Director of Congresses, Director of Training Programs, Awards, Director of Thesis and Programs of Postgraduate Training, Responsible of Medical License Subject in 6th year and 1st year, Member of Editorial Committees, Chairman of Scientific Sessions. Reviewer of scientific journals (JVIR, CVIR, Stroke).

Background:

Pioneer in Endovascular Surgery in Spain: First peripheral PTA (1980), First TIPS (1991), First endovascular treatment of AAA by bifurcated graft (1994), First endovascular treatment of AAA by fenestrated graft (2003) and other diagnostic and therapeutic treatment based on: minimally invasive surgery, endoluminal surgery and interventional radiology.

View full CV online: <http://www.cdyte.com/es/cydtte/organigrama/manuelmaynar>



Keynote Speaker

TITLE: Simulation, Teaching and Learning

AUTHOR: Professor Ronald C. Rosenberg, Michigan State University

DATE/TIME: Wed. July 9, 8:30am in Regency 1-3

ABSTRACT:

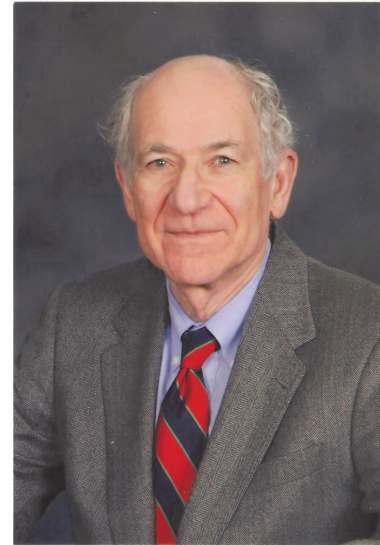
This plenary presentation will explore several aspects of simulation technology and its development as of now and what to expect in the future. An exploration of the opportunities combining the concepts on how we learn with digital technology will be presented. We need to consider the learner, our tried and true teaching technologies, our tried and true practice and our tried and true delivery combined with practice and digital technology. The presentation will discuss the economics of the practice cycle and how effective feedback is a key to learning, economics of practical simulation problems. What is the bond graph method? A historical perspective of its development and practical application will be presented.

Do engineers think as mathematicians? The answer is the key to the teaching and learning the simulation process. What does the future hold? We need to explore how interactive problem pools can be built and made available cost-effectively. What level of feedback capability would be useful? A sound approach to providing effective feedback digitally should allow for incremental growth of answer-processing intelligence. Digital tools make the capability available globally.

SHORT BIO:

Professor Ronald C. Rosenberg is emeritus Professor of Mechanical Engineering at Michigan State University. He is currently the Associate Dean for Special Initiatives, College of Engineering, and the Associate Director of the Applied Engineering Sciences Program. Prof. Rosenberg earned his B.S., M.S. and Ph.D. degrees in Mechanical Engineering from the Massachusetts Institute of Technology, the last in 1965. He was a student of Prof. Henry Paynter, the inventor of the Bond Graph technology. He helped to develop bond graph methods as a practical tool for engineering modeling and simulation. He also collaborated on developing teaching materials for making bond graphs widely available to the engineering community.

The results of his years of research in software development and teaching are summarized in several books and numerous research publications such as *Analysis and Simulation of Multiport Systems*, D.C.Karnopp and R.C.Rosenberg, MIT Press, 1968, *A User's Guide to ENPORT-4*, R.C.Rosenberg, Wiley-Interscience, 1974, *Introduction to Physical System Dynamics*, R.C.Rosenberg and D.C.Karnopp, McGraw-Hill, 1983, *YSKIT: Software Toolkit for Linear Systems*, R.C.Rosenberg and E.D. Goodman, McGraw-Hill, 1985, *System Dynamics: A Unified Approach*, D.C.Karnopp, D.L.Margolis, and R.C.Rosenberg, Wiley-Interscience, 2012 (5th edition). His current interest is in developing digital technology to facilitate the learning of statics, dynamics, thermodynamics and electrical circuits. Prof. Rosenberg is a member of the American Association for the Advancement of Science, American Society for Engineering Education, and a life member of the Institute of Electrical and Electronics Engineers. He is a fellow of the American Society for Mechanical Engineering.



Keynote Speaker

TITLE: Why Should You Care about Structured Data on the Web?

AUTHOR: Dr. Alon Halevy, Google

DATE/TIME: Wed. July 9, 11:30am in Regency 1-3



ABSTRACT:

For the first time since the emergence of the Web, structured data is playing a key role in search engines and is therefore being collected via a concerted effort. Much of this data is being extracted from the Web, which contains vast quantities of structured data on a variety of domains, such as hobbies, products and reference data. Moreover, the Web provides a platform that encourages publishing more data sets from governments and other public organizations. The Web also supports new data management opportunities, such as effective crisis response, data journalism and crowd-sourcing data sets. The emerging eco-system around structured data can have profound implications on various industries and open up new opportunities for the simulation community.

I will describe some of the efforts we are conducting at Google to collect structured data, filter the high-quality content, and serve it to our users. These efforts include providing Google Fusion Tables, a service for easily ingesting, visualizing and integrating data, mining the Web for high-quality HTML tables, and contributing these data assets to Google's other services.

SHORT BIO:

Alon Halevy heads the Structured Data Management Research group at Google. Prior to that, he was a professor of Computer Science at the University of Washington in Seattle, where he founded the database group. In 1999, Dr. Halevy co-founded Nimble Technology, one of the first companies in the Enterprise Information Integration space, and in 2004, Dr. Halevy founded Transformic, a company that created search engines for the deep web, and was acquired by Google. Dr. Halevy is a Fellow of the Association for Computing Machinery, received the Presidential Early Career Award for Scientists and Engineers (PECASE) in 2000, and was a Sloan Fellow (1999-2000). He received his Ph.D in Computer Science from Stanford University in 1993 and his Bachelors from the Hebrew University in Jerusalem. Halevy is also a coffee culturalist and published the book "The Infinite Emotions of Coffee", published in 2011 and a co-author of the book "Principles of Data Integration", published in 2012.

Notes

Notes

Agendas

Agendas At a Glance

	SCSC 3 2014	SPECTS 2014	ICBGM 2014
Monday	Windjammer 3	Cypress 2	Cypress 3
0830 – 1000			
1000 – 1030			
1030 – 1200			
1200 – 1330			
1330 – 1500			
1500 – 1530			
1530 – 1700			
1730 – 1900			
Tuesday			
0830 – 1000			
1000 – 1030			
1030 – 1200			
1200 – 1330			
1330 – 1500			
1500 – 1530			
1530 – 1700			
Wednesday			
0830–0930			
0930–1000			
1000–1130			
1130–1230			
1230–1330			
1330–1500			
1500–1530			
1530–1700			

SCSC 1 2014 Agenda

Monday, 7 July 2014

8:30-10:00 **Regency 1-3 Opening Session and Keynote Speech (Plenary)**

Session 1: Modeling, Simulation, and Test for Cyber Physical Systems 1

10:30-12:00 **Windjammer 1**

- *Dynamic Structural Analysis for DAEs* by Christopher Hoger
- *An Approach to Parallelizing the Simulation of Complicated Modelica Models* by Joshua D. Carl, Gautam Biswas, Sandeep Neema and Ted Bapty
- *A Symbolic Simulator for Hybrid Equations* by Pablo Nanez, Nathalie Risso and Ricardo G. Sanfelice
- *Co-Simulating Event-Based and Continuous Models via FMI* by Vitaly Savicks, Michael Butler and John Colley

Session 2: M&S For Intelligent, Adaptive and Autonomous Systems

13:30-15:00 **Windjammer 1** **Chair: Saurabh Mittal**

- *Multi-Objective Optimization and Analysis of the Inventory Management Model* by Tehseen Aslam, Amos H.C. Ng and Sunith Bandaru
- *A Mathematical Model for Representing Farmer Decision Processes* by Kasi Bharath Vegesana and Frederic McKenzie
- *Human Modeling for Multi Coalition Joint Operations* by Agostino Bruzzone, Francesco Longo, Marina Massei and Letizia Nicoletti

Session 3

15:30-17:00 **Windjammer 1** **Chair: Marvin Nakayama**

- *Using Sectioning to Construct Confidence Intervals for Quantiles When Applying Antithetic Variates* by Marvin Nakayama
- *Performance Evaluation of Variable Bucket Size Coding with TCP for Multimedia Streaming Over MANET Routing Protocols* by Gokul Bhat and Janise McNair
- *Incorporating Reflection for Real-Time Multi-Configuration Haptic-Interactive Virtual Environments* by Mohammad F. Obeid, Krzysztof J. Rechowicz and Frederic D. McKenzie

SCSC 1 2014 Agenda

Tuesday, 8 July 2014

8:30-10:00 **Regency 1-3 Keynote Speech (Plenary)**

Session 4: Modeling, Simulation, and Test for Cyber Physical Systems 2

10:30-12:00 **Windjammer 1** **Chair: Justyna Zander**

- *Scenario Pattern Matching in Large Sensor Recordings with Simulation Models for Cyber-Physical Systems* by Christian Berger
- *Two bare-bones simulations of human-controlled systems* by Walid Nasrallah
- *Modular multi-domain Co-simulation for rail vehicle testing with ETCS scenario control* by Daniel Ludicke, Florian Eßer, Tobias Marchand and Torsten Dellmann
- *The Optimal Cloud Services Portfolio Simulation in Matlab Environment* by Aleksandra Varfolomeeva, Eugeniya Blinnikova and Victor Romav Romanov

Session 5: Agent-Directed Simulation 1

13:30-15:00 **Windjammer 1** **Chair: Levent Yilmaz**

- *Toward Model-Driven Engineering Principles and Practices for Model Replication* by Levent Yilmaz
- *Towards a Hybrid Agent-based Model for Mosquito Borne Disease* by Susan Mniszewski, Carrie Manore, Christopher Bryan, Sara Del Valle and Doug Roberts
- *Disaggregation and Refinement of System Dynamics Models via Agent-based Modeling* by James Nutaro, Ozgur Ozmen and Jack Schryver

Session 6: Agent-Directed Simulation 2

15:30-17:00 **Windjammer 1** **Chair: Levent Yilmaz**

- *Computational Modeling of the Effects of Counterfeit Components* by Vishakha Sharma, Adriana Compagnoni and Jose Emmanuel Ramirez-Marquez
- *Mechanistic Agent-based Damage and Repair Models as Hypotheses for Patterns of Necrosis Caused by Drug Induced Liver Injury* by Andrew Smith, Glen Ropella, Neil Kaplowitz, Murad Ookhtens and C. Anthony Hunt
- *Exploring Norm Establishment in Organizations Using an Extended Axelrod Model with Two New Metanorms* by Vivek Balaraman

SCSC 1 2014 Agenda

Wednesday, 9 July 2014

8:30-9:30 **Regency 1-3** **Keynote Speech (Plenary)**

Session 7: Work in Progress 2

10:00-11:30 **Windjammer 1** **Chair: Fortune S. Mhlanga**

- *Toward a Predictive Model Ecosystem for Interpersonal Violence* by Fortune S. Mhlanga, E.L. Perry and Robert Kirchner
- *An Agent-based Transit Signal Priority Simulation Using Bus Health Data* by Shu-Yuan Wu, Theodore Brown, Theodore Orosz, Eric Beaton and Darnell Tyson
- *A survey of Rate Adaptation Algorithms for Vehicular Network Simulation* by Kenneth Sorle Nwizege and Mauro Bottero
- *SIFT's Scale-Space Extrema Detection on GPU for Real-Time Applications* by Raghu Raj Prasanna Kumar, Suresh Muknahallipatna and John McInroy

11:30-12:30 **Regency 1-3**

Keynote Speech (Plenary)

Session 9: Work in Progress 3

15:30-17:00 **Windjammer 1** **Chair: Jinho Ahn**

- *How to Lift SBML's Limitation on Fault-tolerance Based on Group-based Communications Links* by Jinho Ahn
- *Emerging Modeling and Simulation Technologies Needed to Implement Cultural Familiarization Training in Virtual Environments* by Mikel Petty and Walter Barge
- *Infrared Target Recognition Modeling and Simulation* by Ying Huang, Hong Zheng, Hao Yang and Tianxiao Wen

SCSC 2 2014 Agenda

Monday, 7 July 2014

8:30-10:00 **Regency 1-3 Opening Session and Keynote Speech (Plenary)**

Session 1: M&S in Medicine 1: Logistics and Health Analytics

10:00-11:30 **Windjammer 2** **Chair: M. Valenzuela**

- *Reverse Logistics in Health* by Sandra Vicente, Daniel Martin, Oliver Vicente, Manuel Doblaz and Manuel Maynar
- *A Predictive Analytics Toolbox for Medical Applications* by Michael Valenzuela, Jerzy Rozenblit and Allan Hamilton
- *Health Gamification* by Oliver Vicente, Sandra Vicente, Daniel Martin, Miguel Angel Rodriguez-Florido and Manuel Maynar
- *I will prescribe you an app* by Daniel Martin, Oliver Vicente, Sandra Vicente, Jorge Ballesteros and Manuel Maynar Rodriguez-Florido

Session 2: M&S in Medicine 2: Classification and hybrid modeling

13:30-15:00 **Windjammer 2** **Chair: A. Attenberger**

- *Simulation of Tomographic Medical Image Data for Training of Generic Segmentation Models Utilizing Multivariate Feature Classification* by Gerald Zwettler and Werner Backfrieder
- *Wireless Real-Time Processing and Visualization of EMG Data* by Andreas Attenberger and Klaus Buchenrieder
- *Simulation of Brain-skull Development Utilizing a Hybrid Model* by Jing Jin, Sandrine de Ribaupierre, Sidney Fels and Roy Eagleson
- *Technology Assembly for Education in Health with a Smartphone-based Immersive Environment* by Jorge Ballesteros, Manuel Maynar, Rafael Melian and Miguel Angel Rodriguez-Florido

SCSC 2 2014 Agenda

Monday, 7 July 2014 & Tuesday, 8 July 2014

Monday, 7 July 2014

Session 3: M&S in Medicine 3: Applications in cardiology and data driven models

15:30-17:00 **Windjammer 2** **Chair: G. Wainer**

- *Cardiac Arrhythmia Visualization in a Virtual Heart for Electrophysiology Education* by Dong Xing, Jerzy Rozenblit, Samantha Bernau and Peter Ott
- *Computational Fluid Dynamic Cellular Discrete-Event Simulation of Coronary Heart Disease* by Gabriel Wainer, Michael Van Schyndel, Rhys Goldstein and Azam Khan
- *Using Cadaver Simulation to Improve Communication and Economy of Movement as Evidence of Progress with the Trans-catheter Aortic Valve Implantation (TAVI) Learning Curve* by Saman Parvaneh, Sugam Bhatnagar, Robert Poston and Bijan Najafi
- *The Reference Model for Disease Progression—Data Quality Control* by Jacob Barhak

Tuesday, 8 July 2014

8:30-10:00 **Regency 1-3** **Keynote Speech (Plenary)**

Session 4: M&S in Medicine 4: Surgical training: models and simulation techniques I

10:30-12:00 **Windjammer 2** **Chair: J. Rozenblit**

- *A novel augmented reality simulator for minimally invasive spine surgery* by David Furst, Marianne Hollensteiner and Andreas Schrempf
- *The Computer Assisted Surgical Trainer: Design, Models, and Implementation* by Jerzy Rozenblit, Chuan Feng, Mario Riojas, Liana Napalkova, Allan Hamilton, Minsik Hong, Pierre Berthet-Rayne, Piotr Czapiewski, George Hwang, Jan Nikodem, Akash Shankaran and Aakarsh Rao
- *Surgical Navigation Pointer Facilitates Identification of Targets in a Simulated Environment* by Hannes Prescher, Jerzy Rozenblit, Carlos Galvani, David Biffar and Allan Hamilton

SCSC 2 2014 Agenda

Tuesday, 8 July 2014

Session 5: M&S in Medicine 5: Surgical training: models and simulation techniques II

13:30-15:00

Windjammer 2

Chair: D. Biffar

- *Video-guided versus Direct Laryngoscopy: Considerations for Using Simulation to Teach Inexperienced Medical Students* by Hannes Prescher, David Biffar, Laura Meinke, John Jarred, Aubrey Brooks and Allan Hamilton
- *Movement Analysis in Laparoscopic Surgery Training* by Tobias Haug, Jerzy W. Rozenblit and Klaus Buchenrieder
- *The Comparison of High Definition versus Stereoscopic display on Standardized Fundamental Laparoscopic Skill Procedures* by Hannes Prescher, David Biffar, Jerzy Rozenblit and Allan Hamilton

Session 6: M&S in Medicine 6: Models in diabetes prevention and surgical treatment

15:30-17:00

Windjammer 2

Chair: M. Bharara

- *Thermography for In-Vivo Wound Healing Models* by Ersilia Anghel, Manish Bharara, David Armstrong, Ronald Heimark, Gurtej Singh Grewal and Oostur Raza
- *Conceptual Model for Angiosomes of the Diabetic Feet for Monitoring Disease Progression* by Manish Bharara, Erin Boulger, Gurtej Singh Grewal, Jeffrey Schoess and David Armstrong
- *Open-Source Simulation of Complex Surgeries: Press 'Print' to Disrupt* by Nicholas Giovinco, John Miller, Bijan Najafi and David Armstrong

SCSC 2 2014 Agenda

Wednesday, 9 July 2014

8:30-9:30 **Regency 1-3** **Keynote Speech (Plenary)**

Session 7: 11:30-12:30 **Regency 1-3**

Keynote Speech (Plenary)

Session 8: Work in Progress 1

15:30-17:00 **Windjammer 2** **Chair: Jinyong Wang**

- *A Study on Software Reliability Prediction based on Triple Exponential Smoothing Method* by Jinyong Wang
- *Augmented Reality Technology in U.S. Army Training* by Jonathan Stevens and Latika Eifert
- *An Accurate, Nonlinear Model and Control of Hybrid Actuation System* by Dianliang Fan, Yongling Fu, Juan Chen and Xinxue Sun

Notes

SCSC 3 2014 Agenda

Monday, 7 July 2014

8:30-10:00 **Regency 1-3 Opening Session and Keynote Speech (Plenary)**

Session 1

10:30-12:00 **Windjammer 3** **Chair: Eugenia Gabrielova**

- *Nonlinear Modeling and Analysis of Electromechanical Actuator* by Yongling Fu and Deyi Wang
- *Transient analysis of railway tracks for low frequency vibrations—the bridge end problem (WIP)* by Juliusz Solkowski
- *Impact of Event Filtering on OpenSimulator Server Performance* by Eugenia Gabrielova and Cristina Lopes

Session 2

13:30-15:00 **Windjammer 3** **Chair: Fu Zhang**

- *Large Scale Network Simulation Based on Hi-Fi Approach* by Vitaly Antonenko, Ruslan Smelyanskiy and Audrey Nikolaev
- *Service-oriented model composition* by Jie Liu, Lin Zhang and Fei Tao
- *Jacobian Pattern Synthesis and Application for Dynamic System Ensembles Using Boolean Linear Fraction Transformation* by Fu Zhang, Zhi Han and Pieter Mosterman

Session 3

15:30-17:00 **Windjammer 3** **Chair: Vadim Butakov**

- *A Tool for Estimating the Hurst Parameter and for Generating Self-Similar Sequences* by Diogo Fernandes, Miguel Neto, Liliana Soares, Mario Freire and Pedro Inacio
- *Global Parameter Estimation for a Eukaryotic Cell Cycle Model in Systems Biology* by Tricity Andrew, Brandon Amos, David Easterling, William Baumann and Layne Watson
- *Progressive Shifting Geographic Midpoint—An Enhanced Constraint-based Trail Routing Protocol for All-Optical Networks* by Khaled Maamoun and Hussein Mouftah
- *Mapping of Data Obtained on Driving Simulator to Reality Based on Simulator Validation Results* by Vadim Butakov and Petros Ioannou

SCSC 3 2014 Agenda

Tuesday, 8 July 2014

8:30-10:00 **Regency 1-3** **Keynote Speech (Plenary)**

Session 4: M&S for Intelligent, Adaptive and Autonomous Systems 2

10:30-12:00 **Windjammer 3** **Chair: Marco Luetzenberger**

- *New Insights on River Crossing Operation using Rafts by Modeling and Simulation* by Chungjo Jung, Woo-Seop Yun and Tae-Eog Lee
- *Solving the Problem of Efficient Gas Delivery with Aid of Decision Support System BPsim.DSS based on Simulation Modeling* by Konstantin Aksyonov, Eugene Bykov and Olga Aksyonova
- *Current Frontiers in Reproducing Human Driver Behavior* by Marco Luetzenberger and Sahin Albayrak

Session 5: M&S For Sustainability

13:30-15:00 **Windjammer 3**

- *Agile Simulation Based Analysis for Acquisition* by Scott Rosen, Huang Tang and Samar Guharay
- *Simulation Model for energy assessment in ISP and Web Search Engine collaboration* by Veronica Gil-Costa, Erika Rosas, Nicolas Hidalgo and Mauricio Marin
- *Contaminating crowds' emotional states* by Jeremie Bordas and Fabien Tschirhart

Session 6: Emergency Management Simulation/M&S for Sustainability

15:30-17:00 **Windjammer 3**

- *Interactive Deep-first Algorithm for Oil Transportation Emergency Response Planning* by Victor Romanov, Ilya Moskovoy and Kseniya Grigoryeva
- *Simulation Experiments: Better Insights by Design* by Susan Sanchez, Paul Sanchez and Hong Wan

SCSC 3 2014 Agenda

Wednesday, 9 July 2014

8:30-9:30 **Regency 1-3 Opening Session and Keynote Speech (Plenary)**

Session 7

10:00-11:30 **Windjammer 3** **Chair: Paulo Sampaio**

- *AMEDS-Tool: An Automatic Tool to Model and Simulate Large Scale Systems* by Veronica Gil-Costa, Jair Lobos, Roberto Solar and Mauricio Marin
- *Simulation of OpenFlow Scenarios based on NSDL and NS-3* by Talita Pinheiro, Paulo Sampaio, Ramon Fontes and Eduardo Marques
- *Authoring of OpenFlow Networks with Visual Network Description (SDN Version)* by Ramon R. Fontes, Andre L.C. Oliveira, Paulo N.M. Sampaio, Talita R. Pinheiro and Rui A.R.B. Figureira

11:30-12:30 **Regency 1-3**

Keynote Speech (Plenary)

Notes

SPECTS 2014 Agenda

Monday, 7 July 2014

8:30-10:00 **Regency 1-3 Opening Session and Keynote Speech (Plenary)**

Session 1: Software Defined and Delay Tolerant Networks **Session Chair: Marina Eskola**

10:30-12:00 **Cypress 2**

- *Optimization of Low-efficiency Traffic in OpenFlow Software Defined Networks* by Jose Saldana, Fernando Pascual, David de Hoz, Julian Fernandez-Navajas, Jose Ruiz-Mas, Diego R. Lopez, David Florez, Juan A. Castell and Manuel Nunez
- *Low Latency Packet Processing in Software Routers* by Torsten M. Runge, Daniel Raumer, Florian Wohlfart, Bernd E. Wolfinger and Georg Carle
- *Predicting Performance in the Presence of Software and Hardware Resource Bottlenecks* by Subhasri Duttagupta, Rupinder Virk and Manoj Nambiar
- *A Partially Centerlized Control Scheme Using Star Topology in Delay and Disruption Tolerant Networks* by Shoki Oiyama, Hiroki Nishiyama and Nei Kato
- *Performance Evaluation of a Multi-frame Persistent Neighbor Discovery Strategy based on Sift-Distribution in DTN RFID networks* by Danilo Amendola, Nicola Cordeschi, Mohammad Shojarfar, Vincenza Abate and Floriano De Rango

Session 2: Wireless Communication and Networking **Session Chair: Torsten Runge**

13:30-15:00 **Cypress 2**

- *An Efficient traffic management protocol based on IEEE802.11p standard* by Amilcare Francesco Santamaria, Cesare Sottile, Andrea Lupia and Pierfrancesco Raimondo
- *Detection of short-term radio signal disturbances in Industrial Wireless Sensor Networks* by Marina Eskola and Tapio Heikkila
- *Sensor Localization for Indoor Wireless Sensor Networks* by Mengmeng Gai and Azad Azadmanesh
- *Tactical Data Link with Cognitive Anti-Jamming Capability and its Simulator* by Sangho Choe, Euny Ko and Janghyuk Lee

SPECTS 2014 Agenda

Monday, 7 July 2014

Session 3: Resource Management & Policies

Session Chair: Hiroki Nishiyama

15:30-17:00

Cypress 2

- *Resource Management Techniques for Handling Errors in User Estimated Job Execution Times* by Shikaresh Majumdar, Phuong Huang, Marzia Zaman, Pradeep Srivastava and Nishith Goel
- *Resource Management Techniques for Handling Requests with Service Level Agreements* by Norman Lim, Shikharesh Majumdar and Peter Ashwood-Smith
- *Self-Adapting Load Balancing for DNS* by Jorg Jung, Sebastian Menski, Bettina Schnor and Simon Kiertscher
- *QoE Prediction Model for Multimedia Services in IP Network Applying Queuing Policy* by Miroslav Voznak, Jaroslav Frnda and Lukas Sevcik

SPECTS 2014 Agenda

Tuesday, 8 July 2014

8:30-10:00 **Regency 1-3 Keynote Speech (Plenary)**

Simulations, emulations and connected graphs generation in wireless sensor and ad hoc networks by Prof. Ivan Stojmenovic (University of Ottawa, Canada)

Session 4: Simulation and Emulation **Session Chair: Kalyan Perumalla**

10:30-12:00 **Cypress 2**

- *Accelerating Vehicle Network Simulations in Urban Scenarios through Caching* by Sergio Martinez, Carlos Tavares Calafate, Juan-Carlos Cano and Pietro Manzoni
- *Simulating Billion-Task Parallel Programs* by Kalyan Perumalla and Alfred Park
- *Hybrid Simulated-Emulated Platform for Heterogeneous Access Networks Performance Investigations* by Igor Bisio, Alessandro Delfino, Stefano Delucchi, Fabio Lavagetto, Mario Marchese, Giancarlo Portomauro and Sandro Zappatore
- *Application of Discrete-Event Simulation in Acute Care's Capacity Analysis* by Hongbiao Yang, Rupy Sawhney and Wolday Abrha

Session 5: Routing & Traffic Management **Session Chair: Subhasri Duttagupta**

13:30-15:00 **Cypress 2**

- *A Reactive Routing Protocol for VANETs Based on Composite Metrics Concept* by Cesare Sottile, Amilcare Francesco Santamaria and Salvatore Marano
- *Performance Evaluation of Trust based Secure AODV under an Energy aware Point of View* by Andrea Lupia and Floriano De Rango
- *Shared Segmented Upload in Mobile Networks using Coordinated Multipoint* by Misagh Tavangour, Mohammad Moallemi, Gabriel Wainer, Jan Mikhail, Gary Boudreau and Ronald Casselman
- *On a mechanism of detection of coalitions for reputation systems in P2P networks* by Grzegorz Orynczak and Zbigniew Kotulski

SPECTS 2014 Agenda

Tuesday, 8 July 2014

Session 6: Demo Routing & Traffic Management

Session Chair: Floriano De Rango

15:30-17:00

Cypress 2

- *Practical Demonstration of: Predicting Performance in the Presence of Software and Hardware Resource Bottlenecks* by Subhasri Duttagupta, Rupinder Virk and Manoj Nambiar

ICBGM 2014 Agenda

Sunday, 6 July 2014 & Monday, 7 July 2014

Sunday, 6 July 2014

Tutorial Session I

15:00-17:00 Cypress 2

Learning the Bond Graph Method for Modeling & Simulation of Mechatronic Systems by Jose J. Granda (California State University, Sacramento)

Monday, 7 July 2014

8:30-10:00 Regency 1-3 Opening Session and Keynote Speech (Plenary)

Session 1: Bond Graph Theory I

10:30-12:00 Cypress 3 Chair: Wolfgang Borutzky, Germany

- *Dynamics of Degradation from Bond Graphs* by Michael Bryant
- *Hybrid Bond Graphs for Contact, using Controlled Junctions and Dynamic Causality* by Rebecca Margetts and Roger Ngwompo
- *Optimized system equations in bond graph models* by Jesus Felez

Session 2: Vehicles and Transportation Systems

13:30-15:00 Cypress 3 Chair: Jesus Felez , Spain

- *Control of an active energy-regenerating air-suspension utilizing multiple sliding surfaces* by Layne Clemen and Don Margolis
- *Computational Analysis of Railway Vehicle on Irregular Tracks* by Vivek Kumar, Vikas Rastogi and P.M. Pathak
- *Optimal Control of Vehicle-road Interactions Using Bond Graphs* by Zachary Sabato and Donald Margolis

ICBGM 2014 Agenda

Monday, 7 July 2014 & Tuesday, 8 July 2014

Monday, 7 July 2014

Session 3: Mechanical Systems

15:30-17:00 **Cypress 3** **Chair: Eilif Pedersen, Norway**

- *Bond Graph model of a New Reciprocating Finned Air Compressor* by Mahbod Heidari and Alfred Rufer
- *Understanding Soft Contact Interaction between a Non Circular Rigid Body and a Soft Material Using Multibond Graph* by Anil Kumar Narwal, Anand Vaz and K.D. Gupta
- *Modeling of Tapered Cantilever Beams for Simulation of Utility Pole Vibration* by Geoff Rideout and Oliver Whelan

Tuesday, 8 July 2014

8:30-10:00 **Regency 1-3** **Keynote Speech (Plenary)**

Session 4: Robotics

10:30-12:00 **Cypress 3** **Chair: Donald Margolis, USA**

- *Trajectory Control of Single Arm Underwater Flexible Welding Robot Using Bond Graphs* by Sunil Kumar, Vikas Rastogi and Pardeep Gupta
- *Reduction in Body Disturbance of Quadruped Robot using Two Moving Appendage* by M.M Gor, P.M. Pathak, A.K. Samantaray, J.M. Yang and S.W. Kwak
- *A Bond Graph Approach for Modelling of Robotic Manipulators* by Borge Rokseth and Eilif Pedersen

ICBGM 2014 Agenda

Tuesday, 8 July 2014

Session 5: Control Systems and Electronics

13:30-15:00 **Cypress 3** **Chair: Loucas Louca, Cyprus**

- *CAMPG in Control System Design Computer Generated Transfer Functions and State Space Models* by Jose J. Granda
- *Wheelchair and Electric Drive Add-On A whole Bond Graph Modelling* by Abdennasser Fakri and Japie Petrus Vilakazi
- *A Hysteresis Tracking Model Reference Feedback Controller to Improve Steering Feel in Electric Power Steering Systems: A Bond Graph Approach* by Jose Velazquez Alcantar, Donald Margolis and Olugbenga Anubi

Session 6: Bond Graph Theory II

15:30-17:00 **Cypress 3** **Chair: Geoff Rideout, Canada**

- *Multibody Systems Dynamical Modeling and Visualization based on IPC Technique* by Vjekoslav Damic, Maida Cohodar and Drazen Damic
- *Complexity of Distributed Parameter Bond Graph Models* by Loucas Louca
- *New Concept of Junction Activity in a Bond Graph Model: Application for Fault Identification* by Mayank Shekhar JHA, Genevieve Dauphin-Tanguy and Belkacem Ould Bouamama

ICBGM 2014 Agenda

Wednesday, 9 July 2014

8:30-9:30 **Regency 1-3 Keynote Speech (ICBGM-SCS Plenary)**

Session 7: Thermodynamics and Energy

10:00-11:30 **Cypress 3** **Chair: Joe Juarez, USA**

- *Improved Simulation of Thermodynamic and Other Systems Using a New Graphical Interface* by Forbes T. Brown
- *Application of a true bond graph formulation for incompressible thermofluid duct flows* by S.P. Pellegrini and J.L. Balino

11:30-12:30 **Regency 1-3**

Keynote Speech (Plenary)

Session 8: Fluidics

13:30-15:00 **Cypress 3** **Chair: Michael D. Bryant, USA**

- *Modeling Hydraulic Winch System* by Stian Skjong and Eilif Pedersen
- *Bond Graph Model Analysis of an Offshore Wind Farm* by Noe Barrera-Gallegos, Genevieve Dauphin-Tanguy and Xavier Guillaud
- *Modeling and Simulation of a Mud Pump for Pulsation Control* by DL Margolis and ZM Sabato

Session 9: Energy Generation

15:30-17:00 **Cypress 3** **Chair: Vikas Rastogy, India**

- *Bond Graph Modeling of Rotordynamic Systems with a Flexible Shaft Including Shear Correction* by Eilif Pedersen and Drazen Polic
- *Dynamic Model of a Wave Energy Converter with Linear Permanent Magnet Generator for Oceanographic Buoys* by Mihajlo Curcic, Geoff Rideout and Ralf Bachmayer

Things to Do in Monterey

Monterey Bay Aquarium

Discover life in Monterey's bay without leaving dry land at the Monterey Bay Aquarium. Dedicated to marine research and conservation, the Monterey Bay Aquarium is known throughout the world for its interactive exhibits and ability to present marine life on a truly grand scale. It's been called "one of America's most captivating aquariums" by ForbesTraveler.com

886 Cannery Row, Monterey, CA 93940

(831) 648-4800

www.montereybayaquarium.org

Cannery Row

In January 1958, the City of Monterey officially renamed Ocean View Avenue "Cannery Row" in honor of John Steinbeck. Today's Cannery Row is anchored by the Monterey Bay Aquarium and features restaurants, hotels, specialty shops, local artists' galleries and wine tasting rooms, all stretching along the historic streets and waterfront. Visitors can take in the wonders of Monterey Bay National Marine Sanctuary by scuba diving, kayaking, or bike riding along the Monterey Bay Coastal Recreational Trail.

www.canneryrow.com

Fisherman's Wharf

Fisherman's Wharf in Downtown Monterey should be on the "must-do" list of every visitor to the area. This is a great place to take in the sights, sounds and smells of Monterey. Because neighboring Wharf 2 is the heart of the area's thriving fishing industry, you can usually watch the working trawlers unloading the catch of the day—just look for all of the seagulls hoping for a handout to know who's had a successful day on the Bay! Stroll down the wharf with a cup of hot clam chowder, or stop by one of several restaurants featuring fresh Monterey Bay seafood. You can photograph sea lions and otters frolicking in the calm inner harbor waters, or if you're feeling more adventurous, take to the waters with a glass bottom boat tour, deep sea fishing trip or whale watching tour in season.

#1 Old Fishermans Wharf, Monterey, CA 93940

www.montereywharf.com

Things to Do in Monterey

Pebble Beach

With eight championship golf courses, gourmet restaurants, a top-rated spa, top-flight shopping and one of the most scenic drives in the world, Pebble Beach isn't just a community; it's an attraction all its own. Journey along 17-Mile Drive by car or bicycle, then stop at the renowned Lodge at Pebble Beach for shopping, a meal or a round of golf.

www.seemonterey.com/regions/pebble-beach/

Scenic Drives

17-Mile Drive in Pebble Beach is one of the best-known scenic drives in the world. It takes visitors past dream homes and the world's greatest golf courses, as well as miles of scenic coastline and the serene majesty of Del Monte Forest. Highway One from Monterey through Big Sur is "the road trip of a lifetime." It's a State Scenic Highway and has been declared an All-American Road by the U.S. Department of Transportation's National Scenic Byways Program.

www.seemonterey.com/things-to-do/attractions/scenic-drives/

Historic Sites

Monterey County, once the capital of Alta California, is the epicenter of California history. Explore the heritage of the California mission era at Monterey's three historic missions. Walk the Path of History to learn about the Mexican era, as well as the area's early literary history. Immerse yourself in the artistic legacy of Central California at the Monterey Museum of Art. Experience the works of Nobel Prize-winning author John Steinbeck and the agricultural history of Monterey County at the National Steinbeck Center in Salinas. Learn about the region's flora and fauna at the Pacific Grove Museum of Natural History.

Regional, State and Federal Parks and Beaches

Monterey County's hundreds of thousands of acres of parks range from the "mini-Yosemite" of Pfeiffer Big Sur State Park to the austere beauty of Pinnacles National Park, the coastal beauty of Point Lobos State Reserve and everything in between. If you are an ocean lover, whether you're looking for the quintessential sandy California surfing beach, stunning cliffs, or a picture-perfect rocky shoreline, you'll find it all along Monterey County's coast.

Upcoming SCS Conferences

2015 Spring Simulation Multi-Conference

April 12-15, 2015

Westin Alexandria; Alexandria, VA, USA (Washington, DC area)

The 2015 Spring Simulation Multi-Conference (SpringSim'15) is an annual conference sponsored by The Society for Modeling and Simulation International which covers state-of-the-art developments in computer simulation technologies, as well as scientific, industrial, and business applications. Areas covered include high-performance computing technologies, models and algorithms, GUI visualization technologies, communications and much more. Application disciplines covered include advanced telecommunication; computer systems; aviation and aerospace; environment, energy, and other industries. The conference includes keynote speeches presented by technology and industry leaders, technical sessions, professional development tutorials and seminars, as well as vendor exhibits. Scientists, engineers, managers, educators, and business professionals who develop or use computer simulation methodologies and tools are invited to participate and present original papers. Proposals are solicited for papers, posters, panels, tutorials, workshops, seminars, exhibits, social activities and for other presentation, discussion and sponsorship formats. People are always welcome to benefit by taking an organizing role. SpringSim'15 offers many ways to promote simulation products and to enhance corporate images. You are invited to use the Spring Simulation Multi-Conference in ways that best serve your interests.

SpringSim'15 is composed of the following symposia:

- Annual Simulation Symposium (ANSS)
- Theory of Modeling and Simulation (TMS)
- Simulation for Architecture and Urban Design (SimAUD)
- Agent-Directed Simulation (ADS)
- Communications and Networking Simulation Symposium (CNS)
- High-Performance Computing Symposium (HPC)
- Poster Session, Student Colloquium, and Modeling & Simulation App Competition

Please visit www.scs.org for key dates and deadlines, or call the SCS office at (858) 277-3888

Upcoming SCS Conferences

2015 Summer Simulation Multi-Conference

July 26-29, 2015

Palmer House Hilton; Chicago, IL, USA

The 2015 Summer Simulation Multi-Conference (SummerSim'15) is SCS's premier international conference. The conference focuses on modeling and simulation, tools, theory, methodologies and applications and provides a forum for the latest R&D results in academia and industry. The SummerSim conference provides a forum for academia, industry, business, and government covering a wide variety of disciplines and domains that utilize M&S technology to present their work in a unique setting.

Topics may include:

- Modeling, Simulation, and Test for Cyber Physical Systems
- M&S for Intelligent, Adaptive and Autonomous Systems
- M&S in Medicine
- M&S for Sustainability
- Agent-Directed Simulation
- Emergency Management Simulation
- Work in Progress
- Computer Graphics for Simulation
- SPECTS

Please visit www.scs.org for key dates and deadlines, or call the SCS office at (858) 277-3888

