

# 2010 isee User Conference



## Conference Schedule

<b>Sunday, October 3, 2010</b>	
6:00–8:00 PM	Registration and Welcome Reception ( <i>Hotel Lobby</i> )
<b>Monday, October 4, 2010</b>	
7:30–8:30 AM	Registration ( <i>Third Floor Foyer</i> ) and Breakfast ( <i>South County</i> )
8:30–10:00 AM <i>Providence Ballroom</i>	<p><b>Opening Remarks and Presentation</b> <i>by Joanne Egner and Karim Chichakly, isee systems</i></p> <p><b>Business Tsunami: Understanding and Surviving Disruptive Supply Network Dynamics</b> <i>by Henk Akkermans, Tilburg University</i></p>
10:00–10:15 AM	Coffee Break
10:15–11:15 AM  <i>Breakout Sessions</i>	<p><b>Modeling the Impacts of Climate Change in the Connecticut River Basin (<i>Newport</i>)</b> <i>by Richard Palmer, University of Massachusetts Amherst</i></p> <p>During the past two decades, the impact of climate change on water resource systems has emerged as an important and active area of research and discussion. The findings of the Intergovernmental Panel on Climate Change’s Fourth Assessment Report conclude that there has been a change in climate and that it is very likely from human causes. Among the many impacts that are expected to occur, those associated with water resources are felt to be among the most important. In this session, Dr. Palmer will discuss how STELLA is currently being used to model climate change impacts in the Connecticut River basin. How water resource systems are characterized and modeled in STELLA, the process of modeling climate change and its impacts, and an on-going research project funded by the Nature Conservancy and the US Army Corps of Engineers will be discussed.</p>
	<p><b>Dementia and the Dynamics of Early Diagnosis (<i>Kent</i>)</b> <i>by Peter Lacey, The Whole Systems Partnership</i></p> <p>With aging populations in developed countries the challenge of supporting people with dementia is of growing concern. In the UK a National Dementia Strategy was launched in 2007 with an emphasis on planning and working toward improved services. The economic downturn, however, has made any talk of additional resources a ‘no-no’. The importance of early diagnosis and a more preventative approach to the progressive nature of this disease is therefore receiving attention. In the UK only 38% of the expected prevalence of dementia is currently diagnosed. In this session, Peter Lacey will share a simple modeling tool that explores the impact of earlier diagnosis that can also be embedded into wider system redesign modeling.</p>

**Monday, October 4, 2010**

<p><i>Breakout Sessions (Continued)</i></p> <p>10:15–11:15 AM</p>	<p><b>Communicating Complex Issues Using Storytelling (Bristol)</b>  <i>by Chris Soderquist, Pontifex Consulting</i></p> <p>Storytelling may be the most underutilized feature in the STELLA and <i>iThink</i> software. In this session, Chris Soderquist will demonstrate how you can use this powerful feature to:</p> <ul style="list-style-type: none"> <li>– Extrapolate and communicate the "structural essence" of a model you've created.</li> <li>– Facilitate learning by linking dynamics to structural assumptions.</li> <li>– Engage students and adult learners in an interactive "storytelling" lecture.</li> <li>– Generate buy-in for organizational initiatives through the sharing of strategic assumptions.</li> <li>– Build systemic understanding "around the world" through ISEE NetSim.</li> </ul>
<p>11:15–11:30 AM</p>	<p>Coffee Break</p>
<p><i>Breakout Sessions</i></p> <p>11:30–12:30 PM</p>	<p><b>Informing Society's Search for Sustainability: Simulation Modeling with ALCES (Newport)</b>  <i>by Matt Carlson, ALCES Group</i></p> <p>Planning for sustainability requires strategic understanding of long-term ecological and socioeconomic trade-offs associated with development options. Application of the ALCES land use simulation model helps build the requisite understanding by demonstrating potential positive and negative impacts of a range of management strategies. The STELLA-based model has been used to inform land-use planning in numerous jurisdictions due to its capacity to track the cumulative effects of a wide range of land uses to diverse indicators over large spatial and temporal scales. A case study in the province of Alberta, Canada will be presented to demonstrate the model, as well as insights achievable through a systems approach to land-use planning.</p> <hr/> <p><b>Case Study: A Clinical Breakthrough via Dynamic Modeling – Part 1 (Kent)</b>  <i>by Jim Rogers and Ed Gallaher, Advance Management Group</i></p> <p>The recognition of a previously obscured dynamic behavior pattern provides the foundation for an insightful model leading to breakthroughs in patient outcomes, reduced costs, and value delivery. In this two part session, Jim Rogers and Dr. Ed Gallaher will describe a dynamic modeling project for a major healthcare provider in the Midwest that has delivered excellent results.</p> <hr/> <p><b>Using Array Functionality to Capture Flow Dynamics (Bristol)</b>  <i>by Corey Peck, Lexidyne LLC</i></p> <p>The <i>iThink</i>/STELLA software is frequently used to map, model, and simulate multi-stage flow processes which often contain resource and/or capacity constraints. The software's versatile array capabilities make implementing, altering, and testing such structures much more efficient by effectively "collapsing" complex flow dynamics into a single arrayed stock structure. In this session, Corey Peck will demonstrate how the array functionality in <i>iThink</i>/STELLA can be used to elegantly model these types of process flow situations, and detail how resource allocation formulations are more productively implemented using this approach.</p>
<p>12:30–1:45 PM</p>	<p>Lunch and Roundtable Discussions (<b>Waterplace II</b>)</p>

**Monday, October 4, 2010**

<p style="text-align: center;"><i>Breakout Sessions</i></p> <p>1:45–2:45 PM</p>	<p><b>A System Dynamics Approach to Modeling Energy Systems in Alaska (Newport)</b>  <i>by David Hoffman, University of Alaska Anchorage</i></p> <p>In rural villages of Alaska, a gallon of gas or heating fuel can be as much as \$9 per gallon. There is now some very exciting research in both alternative sources of energy and conservation. Wind, river current, geothermal, tidal, fish oil, and many other sources are being implemented. Along with that, there are now new designs for rural housing that are engineered to be transportable, durable and efficient. In this session, David will share a model used to determine the basic supplies and demands for energy in remote areas and to better evaluate the trade-offs of adding alternative sources of energy.</p>
	<p><b>Case Study: A Clinical Breakthrough via Dynamic Modeling – Part 2 (Kent)</b>  <i>by Jim Rogers and Ed Gallaher, Advance Management Group</i></p> <p>In part 2 of the story, Jim Rogers and Dr. Ed Gallaher will demonstrate a generalization of biophysical dynamics and associated modeling techniques. You will see how the dynamic modeling process surfaces new questions, proposes testable hypotheses, and leads to a breakthrough solution for a potential 350,000 patients.</p>
	<p><b>The Dynamics of Financial Statements: Patterns Caused by Balance Sheet and Income Statement Interactions (Bristol)</b>  <i>by Mark Paich, Lexidyne LLC</i></p> <p>The endogenous perspective is an integral part of the system dynamics method. In this session, Mark applies the endogenous viewpoint to the issue of business fluctuations in capital spending, profitability and growth. The presentation uses a very simple <i>iThink</i> model that includes lenders, the firm, and the equity market. The model is calibrated to match 25 years of data for a highly successful firm. Dr. Paich will show that with reasonable parameter values, the interactions between lenders, the firm, and the equity market are sufficient to cause oscillations in a typical firm. General mechanisms relevant to the current and possible future economic situation will be discussed.</p>
<p>2:45–3:00 PM</p>	<p>Coffee Break</p>
<p>3:00–4:30 PM  <b>Providence Ballroom</b></p>	<p><b>Education for an Interdependent World: Developing Systems Citizens</b>  <i>by Peter Senge, Society for Organizational Learning (SoL) and MIT</i></p> <p><b>Tracing Connection: Voices of Systems Thinkers— Recognition of Authors</b></p>
<p>5:00–7:00 PM</p>	<p>Poster Presentations and Cocktails/Appetizers (<b>Waterplace II</b>)</p>

**Tuesday, October 5, 2010**

7:30–8:30 AM	Breakfast <i>(South County)</i>
8:30–10:45 AM <b>Providence Ballroom</b>	<p><b>Learning and Teaching System Dynamics Modeling: A 20 Year Journey</b> <i>by Diana Fisher, Wilson High School</i></p> <p><b>Generating Understanding of Social, Economic and Climate Dynamics in Interaction</b> <i>by Matthias Ruth, University of Maryland</i></p>
10:45–11:00 AM	Coffee Break
10:50–3:20 PM	<p>isee Lab <i>(Washington)</i></p> <p>Staffed by members of the isee development team, the lab will be open for demonstrations of the latest software development and to ask specific questions about software features and operations. Please sign-up for an appointment in advance.</p>
<p><i>Breakout Sessions</i></p> <p>11:00–12:15 PM</p>	<p><b>Using Models to Teach Math and Science (Newport)</b> <i>by Mark Clemente, National Institute of Aerospace /VA Beach City Public Schools; Dee Baker, Ocean Lakes High School; Jim Batterson, NASA Retiree</i></p> <p>Modeling and simulation is a key 21st century research and development tool and a promising pedagogical approach to engage students. Through the use of models, simulations, and visualizations teachers can develop student-centered instruction that promotes student growth in the key 21st century skills of creativity and innovation; critical thinking and problem solving; and communication and collaboration. Dee Baker, a math teacher with Virginia Beach City Public Schools; Jim Batterson, a retired NASA engineer and former Senior Advisor to the Commonwealth of Virginia for STEM Initiatives; and Mark Clemente, Educator in Residence at the National Institute of Aerospace in Hampton, VA will discuss their efforts to bring modeling into standards-based instruction.</p>
11:00–12:15 PM	<p><b>Dynamic Truck Allocation for Concrete Distribution (Kent)</b> <i>by Rafael Bourguet-Diaz, ITESM; Jorge Garza and Pablo Vargas, CEMEX</i></p> <p>This session will present the general architecture and model structure of SIMUL©, a model designed and currently operating for the resource allocation process in the CEMEX-Concrete Business Unit in Mexico. The general modeling process of the operations and the advantages of testing different parameters in the supply chain setting will be discussed. The model is the preliminary result of an ongoing research project between the University Monterrey Tech and the building materials company CEMEX. The process uses a system dynamics approach, which is operated online and has a direct impact on customer satisfaction. Results show that potential tacit knowledge has to be considered due to the high complexity and connectivity of the logistic decision making process.</p>

**Tuesday, October 5, 2010**

<p><i>Breakout Sessions (Continued)</i></p> <p>11:00–12:15 PM</p>	<p><b>Dynamics of Growth from Diffusion: A WPI Video Presentation by John Morecroft (Bristol)</b>  <i>by Karim Chichakly, iese systems</i></p> <p>In this session, we will explore the dynamics of growth with the Bass diffusion model as it applies to new product growth strategy in consumer electronics, as well as the diffusion of broadband and iPods. We will then discuss various enhancements to the Bass model that make it more broadly applicable and suitable for strategy evaluation — often with surprising results. A video lecture from the Worcester Polytechnic Institute (WPI) distance learning course “Strategic Modeling and Business Dynamics” taught by John Morecroft will be shown. Karim Chichakly, a graduate of the WPI Masters Program in System Dynamics and a recent student in the course, will facilitate the discussion and share his experience with the approach of using small models to help interpret real-world examples.</p>
<p>12:15–1:15 PM</p>	<p>Lunch (<b>Waterplace II</b>)</p>
<p><i>Breakout Sessions</i></p> <p>1:15–2:15 PM</p>	<p><b>The Role of STELLA in Facilitating the Design of a Public Toilet in Ghana (Newport)</b>  <i>by Stephen Mecca, Providence College</i></p> <p>Like so many science and engineering faculty, we have used STELLA as a tool in classes on problem solving, modeling and system dynamics and in research efforts to advance our understanding of complex dynamic systems. Sometimes we lose sight of the fact that rather ordinary design problems can be facilitated with tools such as STELLA. This session will overview the context of a developing world problem in sanitation, discuss a prototype public toilet solution and show the role of STELLA in determining some of the design elements for this system. The facility will be built in a village in Ghana in the spring of 2011.</p> <p><b>Exploring the Structure of Healthcare Models (Kent)</b>  <i>by Mark Heffernan, Dynamic Operations P/L</i></p> <p>In this session, Mark Heffernan will present the structure of a diverse range of health care models including disease specific, SIR, patient flow, drug usage, and even a bit of pharmacokinetics to show the range of things that are possible. It will be a one-man poster session with each poster (both onscreen and physical) demonstrating how to start off with a simple model structure and gradually add more detail.</p> <p><b>Economic Development, Creative Destruction and Urban Dynamics: Rethinking Developmental Agendas (Bristol)</b>  <i>by Khalid Saeed, Worcester Polytechnic Institute</i></p> <p>Are developing economies nascent systems on their way to maturity? Or should they be viewed as mature systems in a low-welfare homeostasis reached under resource constraints? When seen as mature systems, the transformation of the existing mix of economic activity into one that can yield better lives for people takes precedence over the widely advocated objectives of growth, productivity improvement, structural transformation, specialization for export, privatization and other such agendas that will not change the tendency towards low-welfare homeostasis. Viewing developing countries as mature economies also calls for seeking as a part of the development strategy the accelerated decay of the obsolete and irrelevant baggage that might fill the landscape, so room is created for replacing it with more appropriate infrastructure. Schumpeter’s concept of creative destruction and Forester’s Urban Dynamics model are explored as alternative frameworks for economic development.</p>

**Tuesday, October 5, 2010**

2:15–2:30 PM	Coffee Break
<p><i>Breakout Sessions</i></p> <p>2:30–3:30 PM</p>	<p><b>Introducing Drug Dynamics Using SD Models (<i>Newport</i>)</b>  <i>by Diana Fisher, Wilson High School</i></p> <p>Simple pharmacokinetic models provide an enriched experience for students in Biology, Health, and Math classes. The model design components are quite basic, but the drug dynamics are interesting and provide a source of excellent questions for students as they build and analyze these models. In this session, Diana Fisher will demonstrate the models and questions used in a sequence of lessons with 10th grade second year algebra students. The lessons could easily be adapted for other age levels.</p>
	<p><b>Business Cycle Dynamics: A Case Study of Philips Semiconductors (<i>Kent</i>)</b>  <i>by Henk Akkermans, Tilburg University</i></p> <p>Business cycles are a fact of life for many industries. Market demand peaks one year only to plummet a year or two later. In this session, a case study of a semiconductor business will be presented. Using an online simulation created with ISEE NetSim, Henk will explore and discuss different policy options for order handling, production planning and capacity management to reduce oscillation and improve system performance.</p>
	<p><b>Business Model Dynamics (<i>Bristol</i>)</b>  <i>by Oliver Grasl, transientis consulting</i></p> <p>Every firm has to answer the question "How do we make money in this business?" Due to the continuously and rapidly changing economic environment and increasing pressure from stakeholders, it is not enough to answer this question just once at startup — it has to be considered again and again during the life cycle of every firm. Making a firm's value creation logic or "business model" transparent to customers and investors is actually quite difficult. The description needs to be conceptual enough to show "the magic", but also detailed enough to make quantitative predictions. System dynamics models are very well suited to solving this dilemma. In this session, Oliver Grasl will show how the essence of a firm's business model can be captured using a causal loop diagram. He will then illustrate how to refine this "blueprint" into a quantitative stock and flow model that can be used to analyze the business model's dynamic behavior.</p>
3:30–3:45 PM	Coffee Break
<p>3:45–4:45 PM  <b>Providence Ballroom</b></p>	<p><b>The Youth Violence Systems Project</b>  <i>by Steve Peterson, Lexidyne LLC; Paul Bothwell and Khary Bridgewater, Youth Violence Systems Project</i></p>
6:00–8:00 PM	"Pool" Party ( <i>Dave &amp; Buster's</i> )

## Wednesday, October 6, 2010

7:30–8:30 AM	Breakfast <i>(South County)</i>
8:30–12:00 PM	<p>isee Lab – Open <i>(Washington)</i></p> <p>Staffed by members of the isee development team, the lab will be open for demonstrations of the latest software development and to ask specific questions about software features and operations.</p>
Workshops 8:30–10:00 AM	<p><b>Quick Introduction to STELLA, <i>iThink</i> and the Modeling Process <i>(Newport)</i></b> <i>by Steve Peterson, Lexidyne LLC</i></p> <p>In this hands-on session, Steve Peterson will introduce you to essential features of the software as well as key aspects of an effective process for building dynamic models. Designed for beginners, this workshop will help you gain a basic facility with the software as you construct and extend a simple dynamic model.</p>
	<p><b>Feedback Forum: A Preview of <i>iThink</i> and STELLA Version 10 <i>(Kent)</i></b> <i>by Karim Chichakly, isee systems</i></p> <p>Intended for experienced <i>iThink</i> and STELLA users, this session will provide an opportunity to see and interact with new features in Version 10. Come share your feedback about our latest software developments.</p>
	<p><b>Creating Interfaces for <i>iThink</i> and STELLA Models <i>(Bristol)</i></b> <i>by Peter Lacey, The Whole Systems Partnership and Joanne Egner, isee systems</i></p> <p>The <i>iThink</i> and STELLA software offers a rich set of features designed to help communicate and share models. By interacting with a model interface, others can learn through experimentation how a system works or the impact of a decision or policy change. In this hands-on workshop we'll walk through the mechanics of creating a simple model interface including input and output devices, navigation buttons and storytelling.</p>
10:00–10:30 AM	Coffee Break
Workshops 10:30–12:00 PM	<p><b>Building Models with <i>iThink</i> and STELLA <i>(Newport)</i></b> <i>by Oliver Grasl, transentis consulting and Joanne Egner, isee systems</i></p> <p>Designed for people who are new to dynamic modeling or do not have experience with Version 9.1, this workshop will provide a hands-on tutorial for building models using the latest features of the software. We'll demonstrate how to use modules to create a high-level map and build a simple model. Please bring a laptop computer.</p>
	<p><b>Advanced Techniques using <i>iThink</i> and STELLA <i>(Kent)</i></b> <i>by Mark Heffernan, Dynamic Operations P/L</i></p> <p>Intended for experienced <i>iThink</i> and STELLA users, this workshop will focus on applying some of the more advanced features in the software. If you've ever wanted to learn more about Arrays or Queues, this session is for you!</p>

<p><i>Workshops (Continued)</i></p> <p>10:30–12:00 PM</p>	<p><b>Exploring Options for Creating Online Simulations (<i>Bristol</i>)</b> <i>by Michael Bean, Forio Business Simulations and Jeremy Merritt, isee systems</i></p> <p>Come see how easy it is to create web-based simulations and learning environments. Learn how to design interfaces for the web using <i>iThink</i>/STELLA and Forio Simulate. We'll explore publishing tools, hosting options and social networks. No prior experience required. Please bring a laptop computer.</p>
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