



# The 11<sup>th</sup> Workshop on Domain-Specific Modeling

<http://www.dsmforum.org/events/DSM11>

SPLASH

23-24 October 2011

Portland, Oregon, USA

# Objectives

- Intensive collaborative sessions
- Attempt to discuss, share and solve challenging problems
- See others' work, DSM languages, tools etc.
- Have something to report to the community
- Have fun!

# About past workshops

- BOF at OOPSLA'00
- First DSVL workshop at OOPSLA'01
- ...
- 10th DSM workshop at SPLASH'10

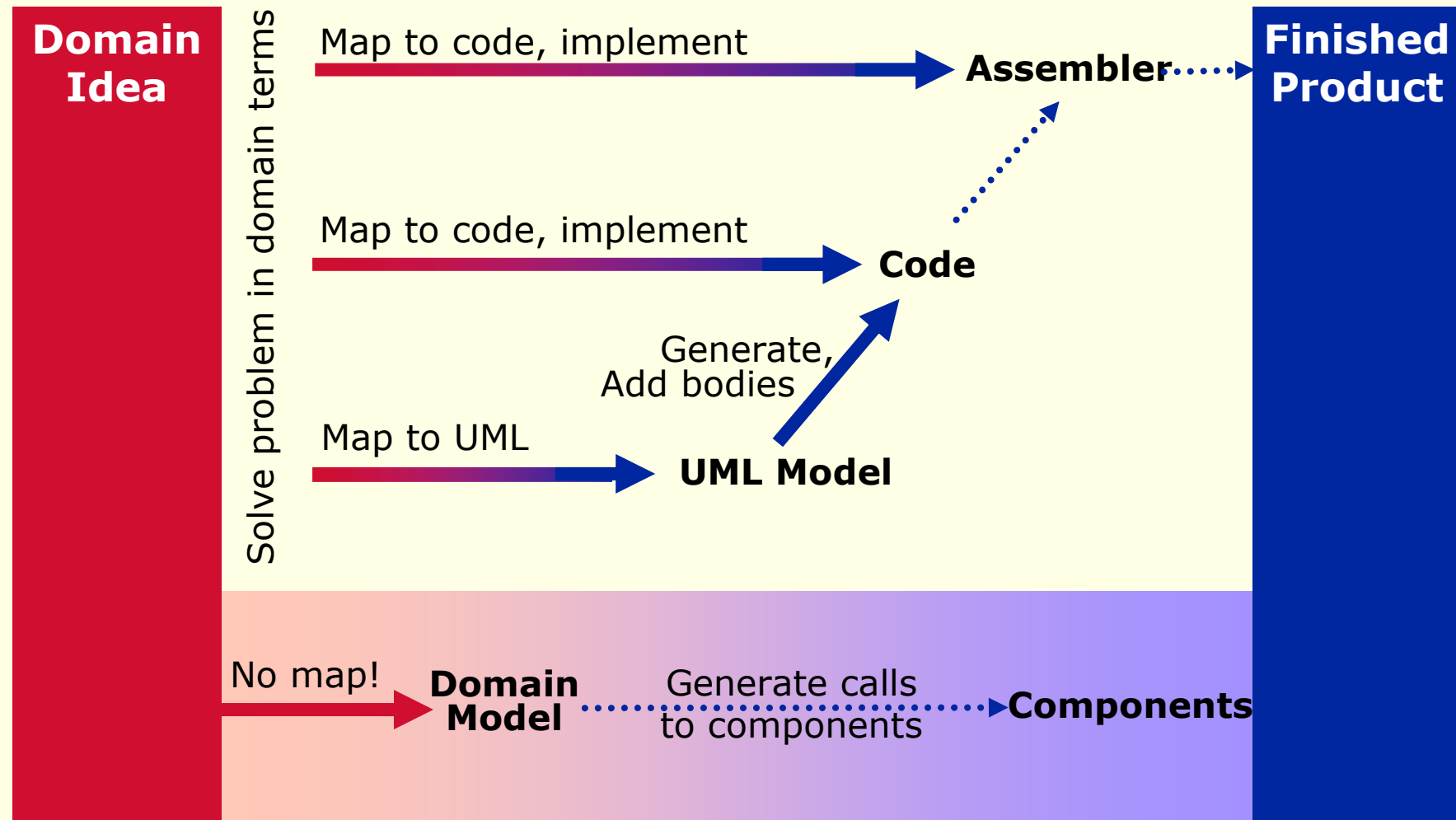


- Special issues on Domain-Specific Modeling
  - Journal of Visual Languages and Computing, Vol. 15., 3-4, 2004
  - IEEE Software, Jul/Aug, 2009
  - Software and Systems Modeling, coming 2012

# What is Domain-Specific Modeling

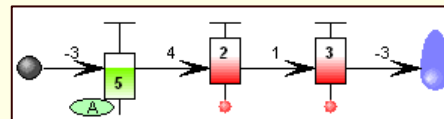
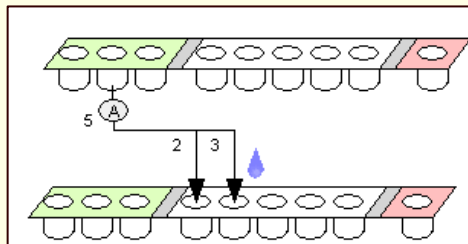
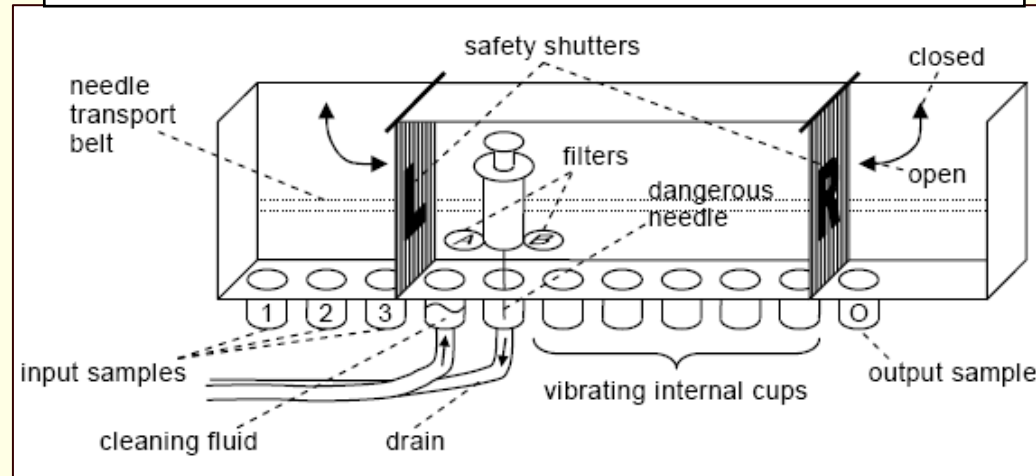
- Captures domain knowledge (as opposed to code)
  - Uses domain abstractions
  - Applies domain concepts and rules as modeling constructs
  - Narrow down the design space
  - Focus on single range of products
- Lets developers design products using domain terms
  - ➔ Apply familiar terminology
  - ➔ Solve the RIGHT problems!
  - ➔ Solve problems only ONCE!
- Often aims at generation of full production code

# Modeling domain vs. modeling code



# How specific is domain-specific?

## Example: Medicine mixing



```

move(-3); filt(1);
suck(5); move(4);
filt(0); blow(2);
move(1); blow(3);
move(-3); suck(30);
move(1); blow(30);
    
```

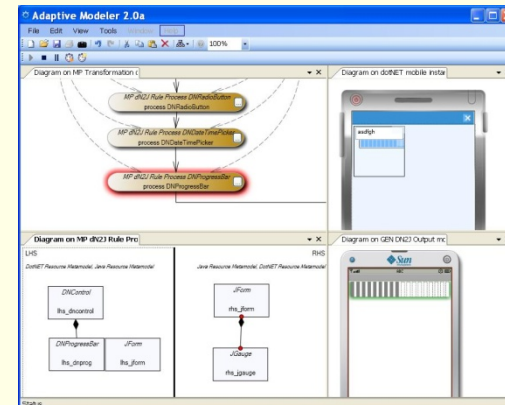
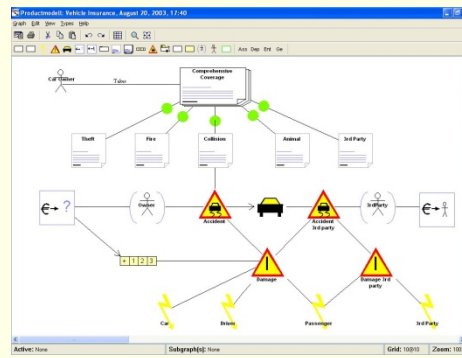
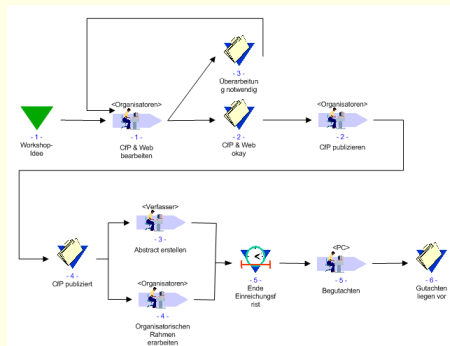
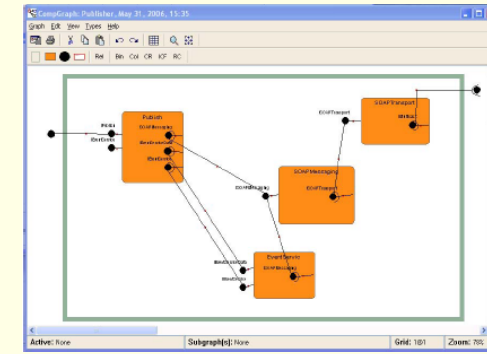
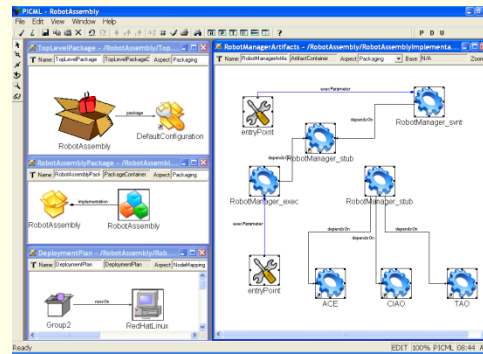
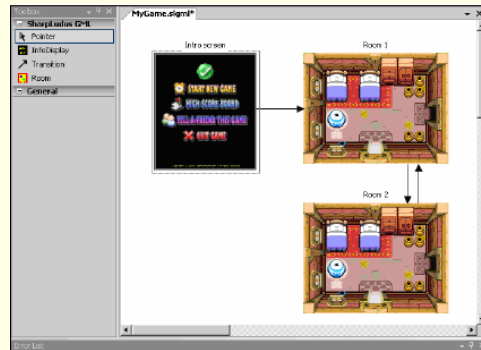
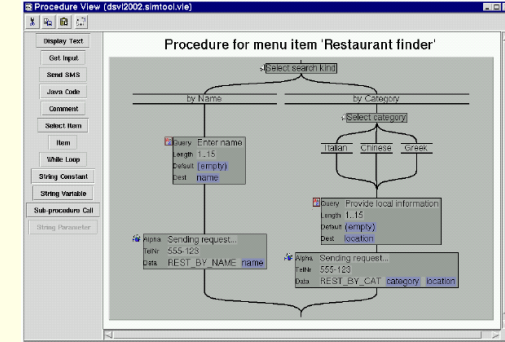
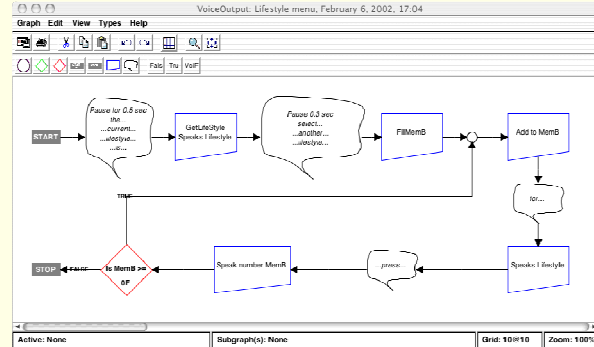
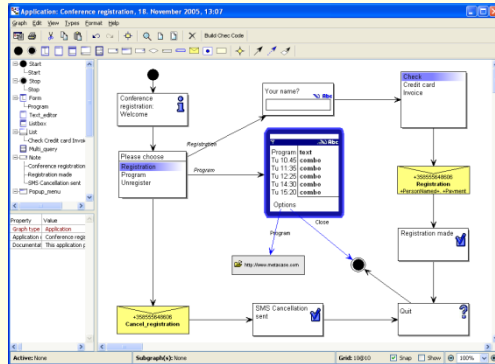
```

1010
1110
0110
0011
1111
....
    
```

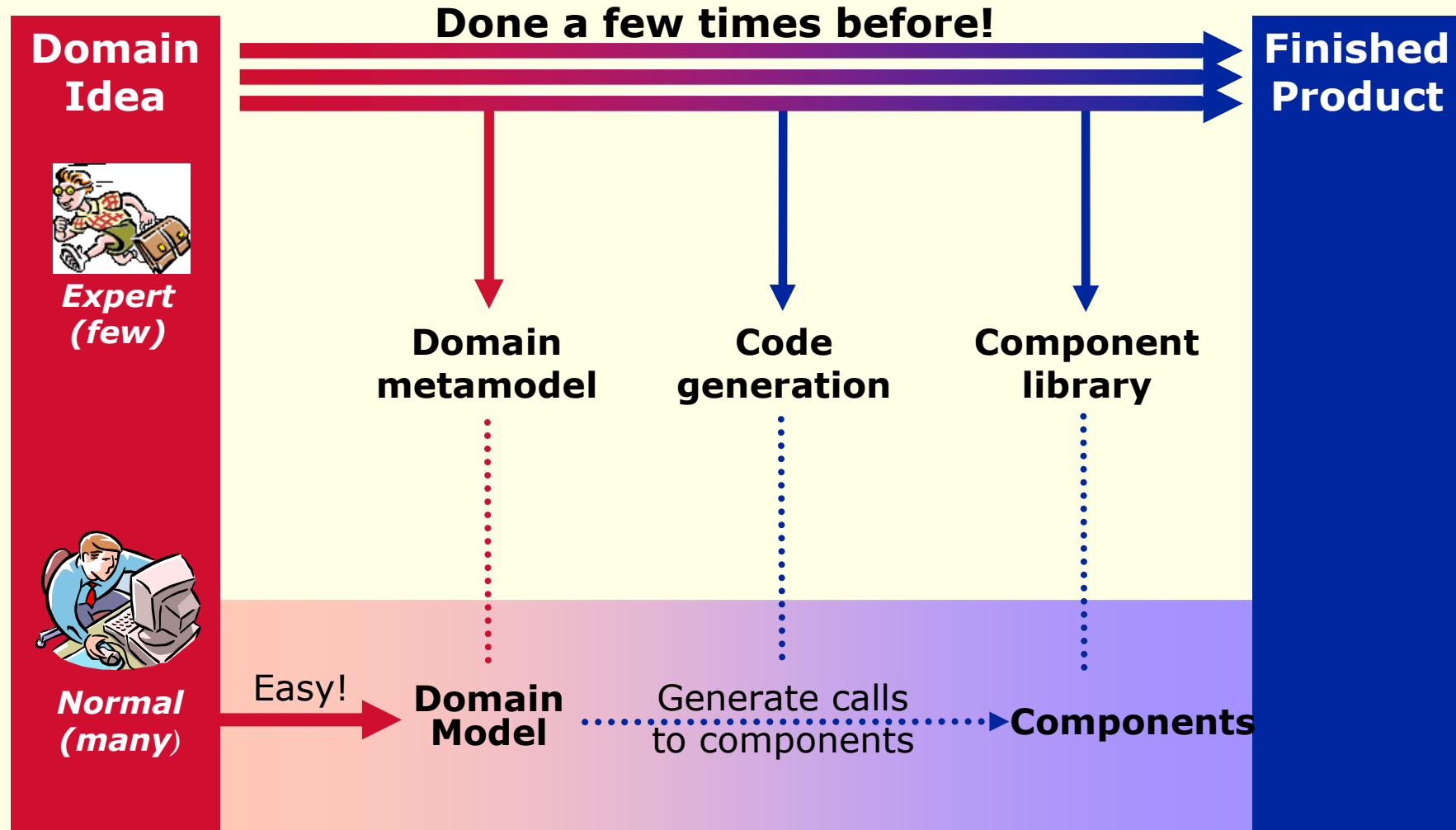
**Problem domain**

**Solution domain**

# Some demonstrated languages



# How to implement languages, generators, frameworks





# About submissions

- 16 submissions
- 46 authors
- From 10 countries
- 13 accepted
- 50 registered attendees

country	authors	submitted
Brazil	6	2.00
France	2	1.00
Germany	9	3.00
Japan	4	1.00
Norway	3	1.00
Slovenia	1	0.33
Switzerland	2	1,25
Turkey	4	1.00
United Kingdom	3	0.75
United States	12	4,67

# DSM'11 PC

- Pierre America, Philips
- Robert Baillargeon, Panasonic Automotive Systems, USA
- Krishnakumar Balasubramanian, The Mathworks Inc
- Peter Bell, SystemsForge
- Jorn Bettin, Sofismo
- Philip T. Cox, Dalhousie University
- Krzysztof Czarnecki, University of Waterloo
- Abhishek Dubey, Vanderbilt University
- Brandon Eames, Sandia National Laboratories
- Ethan Jackson, Microsoft
- Jürgen Jung, DHL
- Steven Kelly, MetaCase
- Gunther Lenz, Microsoft
- Shih-Hsi Liu, California State University, Fresno
- Birger Moller-Pedersen, University of Oslo
- Bernhard Rumpe, RWTH Aachen University
- Arturo Sanchez, University of North Florida
- Keng Siau, University of Nebraska-Lincoln
- Kari Smolander, Lappeenranta University of Technology
- Andreas Svendsen, Sintef
- Massimo Tisi, INRIA
- Markus Völter, independent consultant
- Jing Zhang, Motorola Research

## **Organizing committee:**

- Juha-Pekka Tolvanen, MetaCase
- Jonathan Sprinkle, University of Arizona
- Matti Rossi, Aalto Univ. of School of Economics
- Jeff Gray, University of Alabama

# Schedule and format

## Day 1

- 08:30 – Overview and introductions
- 09:00 – Paper presentations: **Metamodeling**
- 10:30 – Paper presentations: **Language development support**
- 12:00 – Lunch, group photo
- 14:00 – Paper presentations continue...
- 15:00 – **Group work**
- 17:00 – **Group work reporting and discussion**
- 17:30 – First day ends

## Day 2

- 08:30 – Introduction
- 09:00 – Paper presentations: **Experiences on DSM**
- 11:00 – Paper presentations: **Cases**
- 12:00 – Lunch, group photo
- 14:00 – Paper presentations continue...
- 14:30 – **Group work**
- 16:30 – **Group work reporting and discussion**
- 17:00 – Wrap-up and closing
- 17:30 – Workshop ends

# Publishing results

- Workshop web-site
  - [www.dsmforum.org/events/DSM11](http://www.dsmforum.org/events/DSM11)
  - Papers
  - Presentations
  - Workgroup results
  - Photos
- Twitter: #dsm11
- ACM DL, bibliography dbs

# Day 1: Sunday October 23

## Metamodeling

8:30 Introduction

### Metamodeling

9:00 **Towards a Comparative Analysis of Meta-Metamodels**

*Heiko Kern, Axel Hummel and Stefan Kuehne*

9:30 **Models for Forms**

*Daniel Abler, Charles Crichton, James Welch, Jim Davies and Steve Harris*

10:00 Break

### Language development support

10:40 **Towards Integration of Policies into DSMLs**

*Frank Hernandez and Peter J. Clarke*

11:10 **Design Patterns for Metamodels**

*Hyun Cho and Jeff Gray*

11:40 **A DSML for reversible transformations**

*Mickael Kerboeuf and Jean-Philippe Babau*

12:00 Lunch, Group photo

...continues

# Day 1: Sunday October 23

## Language Development Support

...continues

### Language development support

14:00 **A Pattern-based Approach to DSL Development**

*Christian Schäfer, Thomas Kuhn and Mario Trapp*

14:30 **Bottom Up Creation of a DSL Using Templates and JSON**

*Claude Petitpierre*

15:00 **Group work topic selection**

15:30 Break

16:00 **Group work**

17:00 **Group work reporting and discussion**

17:30 First day ends

# Day 2: Monday October 24

## Experiences

8:30 Introduction to the second day

### Metamodeling

9:00 **Advancing Generic Metamodels**

*Henning Berg, Birger Møller-Pedersen and Stein Krogdahl*

### Experiences on DSM

9:30 **SharpLudus revisited: from ad hoc and monolithic digital game DSLs to effectively customized DSM approaches**

*Andre Furtado, Andre Santos and Geber Ramalho*

10:00 Break

10:30 **Guidance for Domain Specific Modeling in Small and Medium Enterprises**, *Henning Agt, Ralf-Detlef Kutsche and Timo Wegeler*

...continues

# Day 2: Monday October 24

## Cases

### Cases

- 11:00 **autoVHDL: A Domain-Specific Modeling Language for the Auto-Generation of VHDL Core Wrappers**  
*Erica Jones and Jonathan Sprinkle*
- 11:30 **A Domain Specific Language for Enterprise Grade Cloud-Mobile Hybrid Applications**  
*Ajith Ranabahu, Michael Maximilien, Amit Sheth and Krishnaprasad Thirunarayan*
- 12:00 Lunch, Group photo
- 14:00 **LattesMiner: a Multilingual DSL for Information Extraction from Lattes Platform**  
*Alexandre D. Alves, Horacio Yanasse and Nei Y. Soma*
- 14:30 **Group work topic selection**
- 14:50 **Group work**
- 15:30 Break while working ;-)
- 16:00 **Group work continues**
- 16:30 **Group work reporting and discussion**
- 17:00 Wrap-up and closing