

# 2<sup>nd</sup> Annual U.S. CAPE-OPEN Meeting

*Co-Sponsors*  
*National Energy Technology Laboratory*  
*CAPE-OPEN Laboratories Network*  
*Fluent Inc.*



**CO LaN**

**National Energy Technology Laboratory**  
**Morgantown, West Virginia**  
**May 25-26, 2005**



# Previous CAPE-OPEN Meetings

- **1<sup>st</sup> Annual U.S. CAPE-OPEN Meeting**

- August 25-26, 2004
- Hosted by U.S. EPA
- Cincinnati, OH
- 35 participants



- **CO-LaN 2005 Annual Meeting**

- February 16-17, 2005
- Como, Italy
- 30 participants
- 10<sup>th</sup> Anniversary of CAPE-OPEN!



# 2<sup>nd</sup> Annual U.S. CAPE-OPEN Meeting

- **Co-sponsors**
  - NETL, CO-LaN, Fluent
- **Morgantown, WV**
- **May 25-26, 2005**
- **50 Participants**
  - 14 Government
    - 11 NETL
    - 3 Other
  - 13 University
  - 10 Software/Services
  - 6 Industry
  - 4 Consultants
  - 3 Research Institutes



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## *Acknowledgements*

- **CO-LaN**

- **Bertrand Braunschweig**, President (also Expert Director, IFP)
- **Michel Pons**, Chief Technology Officer
- **Kerry Irons**, Director, Management Board (also Dow Chemical)

- **Fluent**

- **Mehrdad Shahn timer**, Senior Consulting Engineer

- **NETL**

- **Carl Bauer**, Director (Acting), NETL
- **Bob Romanosky**, Technology Manager, Power Systems, Advanced Research
- **Larry Headley**, Director, Office of Science, Technology and Analysis (OSTA)
- **Anthony Cugini**, Focus Area Leader, Computational & Basic Sciences (CBS)
- **Bill Rogers**, Director, Simulation, Analysis & Computational Science Div. (SACSD)
- **Steve Zitney**, Research Group Leader, Device-Scale & Systems Modeling, SACSD
- **Lorraine Alvarez**, NETL Conference Services
- **Carolyn Moore**, NETL Conference Services
- **Pam Stanley**, NETL Conference Services



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## *Agenda*

- **Wednesday, May 25, 2005**

- 1: Introduction to NETL, CAPE-OPEN, and CO-LaN
- 2: CO Concepts, Components, and Demonstrations
- 3: CO-Compliant Process Simulators
- 4: CO-Compliant Software Components

- **Thursday, May 26, 2005**

- 5: Applications/Demonstrations of CO Interoperability
- 6: Experiences/How-To Advice on CO Implementation
- 7: Support Tools for CO Component Development
- 8: CO Future Directions and General Discussion



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## *Agenda – Day 1*

### **Session 1: Introduction to NETL, CAPE-OPEN, and CO-LaN**

#### **1.1 *Opening Remarks***

- Stephen E. Zitney, National Energy Technology Laboratory

#### **1.2 *Introduction to NETL Computational & Basic Sciences***

- Anthony Cugini, National Energy Technology Laboratory

#### **1.3 *Introduction to CAPE-OPEN and CO-LaN***

- Bertrand L. Braunschweig, IFP/CO-LaN

#### **1.4 *End User's Perspectives***

- Michel Pons, CAPE-OPEN Laboratories Network



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## *Agenda – Day 1*

### **Session 2: CO Concepts, Components, and Demonstrations**

#### **2.1 *CAPE-OPEN Concepts and Usage***

- Bertrand L. Braunschweig, IFP/CO-LaN

#### **2.2 *Demo of gPROMS Unit Operation Models in the Aspen Plus, HYSYS, and PRO/II Simulators***

- Michel Pons, CAPE-OPEN Laboratories Network

#### **2.3 *CAPE-OPEN Integration for Advanced Process Engineering Co-Simulation***

- Stephen E. Zitney, National Energy Technology Laboratory

#### **2.4 *Survey CAPE-OPEN Compliant Components***

- Michel Pons, CAPE-OPEN Laboratories Network



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## *Agenda – Day 1*

### **Session 3: CO-Compliant Process Simulators**

#### **3.1 *Overview of AspenTech's CAPE-OPEN Support***

- Andrew McGough, Aspen Technology, Incorporated

#### **3.2 *Process Systems Enterprise and CAPE-OPEN***

- Benjamin Keeping, Process Systems Enterprise Ltd.

#### **3.3 *CAPE-OPEN in PRO/II***

- David Jerome, Invensys Systems Inc. – SimSciEsscor

#### **3.4 *Honeywell: UniSim Design – Current and Future Plans on CO-Compliance***

- Sanjoy Saha, Honeywell Canada



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## *Agenda – Day 1*

### Session 4: CO-Compliant Software Components

#### 4.1 ***CO-NEQ2: CO-Compliant Non-Equilibrium Column Model***

- Ross Taylor, ChemSep

#### 4.2 ***Simulis Thermodynamics from ProSim SA***

- Michel Pons, CAPE-OPEN Laboratories Network

#### 4.3 ***A CO-Compliant Solver Object for Large-Scale Nonlinear Programming***

- Yi-dong Lang and Lorenz T. Biegler, Carnegie Mellon Univ.



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## *Agenda – Day 2*

### **Session 5: Applications/Demos of CO Interoperability**

#### **5.1 *Property Generation in HTRI Xchanger Suite using CAPE-OPEN***

- Fernando J. Aguirre, Heat Transfer Research, Inc.

#### **5.2 *Transient Integrated Network Analysis (TINA)***

- Bertrand L. Braunschweig, IFP/CO-LaN

#### **5.3 *Metal Finishing Pollution Prevention Application***

- William Barrett, U.S. Environmental Protection Agency

#### **5.4 *Power Plant Analysis Using CFD and Process Simulation***

- David Sloan, Alstom Power



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## *Agenda – Day 2*

### Session 6: Experiences/How-To Advice on CO Implementation

#### 6.1 *Fluent CAPE-OPEN COM/CORBA Bridge and CO-Compliant Unit Operation*

- Maxwell Osawe, Fluent, Incorporated

#### 6.2 *Thermo Specification Implementations: Lessons Learned*

- Michel Pons, CAPE-OPEN Laboratories Network

#### 6.3 *CAPE-OPEN Numerical Solver Interfaces*

- Benjamin Keeping, Process Systems Enterprise Ltd.



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## *Agenda – Day 2*

### **Session 7: Support Tools for CO Component Development**

#### **7.1 CO Component Development Wizards**

- Bertrand L. Braunschweig, IFP/CO-LaN

#### **7.2 CO Tester**

- Michel Pons, CAPE-OPEN Laboratories Network

#### **7.3 CO Logger**

- Bertrand L. Braunschweig, IFP/CO-LaN



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## *Agenda – Day 2*

### **Session 8: CO Future Directions and General Discussion**

#### **8.1 *Extensions for Dynamic Simulation***

- Michel Pons, CAPE-OPEN Laboratories Network

#### **8.2 *Extensions for Solids within Thermo Specification***

- Michel Pons, CAPE-OPEN Laboratories Network

#### **8.3 *CO-LaN Future Directions/General Discussion***

- CAPE-OPEN Laboratories Network



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Enjoy the Meeting!

