# Thermo Virtual Community of Practice (VCP)

## Session 6: Instructional activities – Part 3: Having students work in teams

May 8, 2013

John Chen
California Polytechnic State University
jchen24@calpoly.edu

Milo Koretsky
Oregon State University
milo.koretsky@oregonstate.edu

# Tentative Agenda

- Introductions, Objectives ~ 5 min
- Inquiry based activity demonstration (Margot) ~ 15 min
- Using teams in the active-learning course ~ 20 min
- Mid-course evaluation ~ 15 min
- Discussion of fall activities: goals, support & meetings ~ 10 min
- Wrap-up and next week ~ 5 min

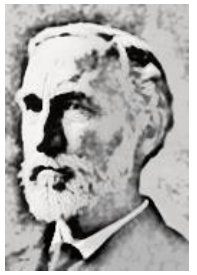
## Team Flow

Ganesh Balasubramanian
Iowa State

Jeff LaMack
Milwaukee School of Engineering

Melissa Pasquinelli
North Carolina State

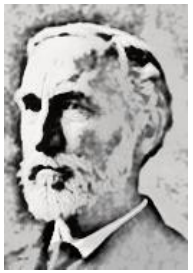
Georg Pingen
Union



Nastaran Hashemi
Iowa State

## Team Energy

Nihad Dukhan
Detroit Mercy



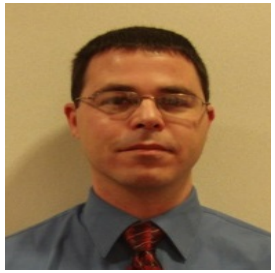
Calvin Li
Villanova

Krishna Pakala
Boise State

Hessam Taherian
Alabama at Birmingham

Robert F Richards
Washington State

## Killer Watts



Jamie Canino
Trine

Heather Dillon
Portland

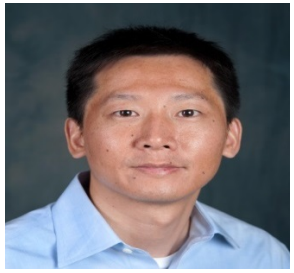
Edwin Wiggins
Webb Institute

Joseph Tipton
Evansville

## Team Green Engineering

Margot Vigeant
Bucknell

John O'Connell
Virginia



Zhihua Xu
Minnesota Duluth

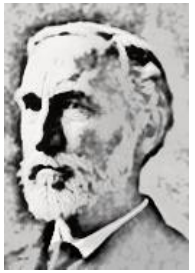
Sapna Sarupina
Clemson

## TdS

Sooby Bhattacharjee
San Diego State

Ashland Brown
Pacific

Betta Fisher
Cornell



H. S. Udaykumar
Iowa

## Team Cycle

John Chen
California Polytechnic

Milo Koretsky
Oregon State

Sadi Carnot
École Polytechnique

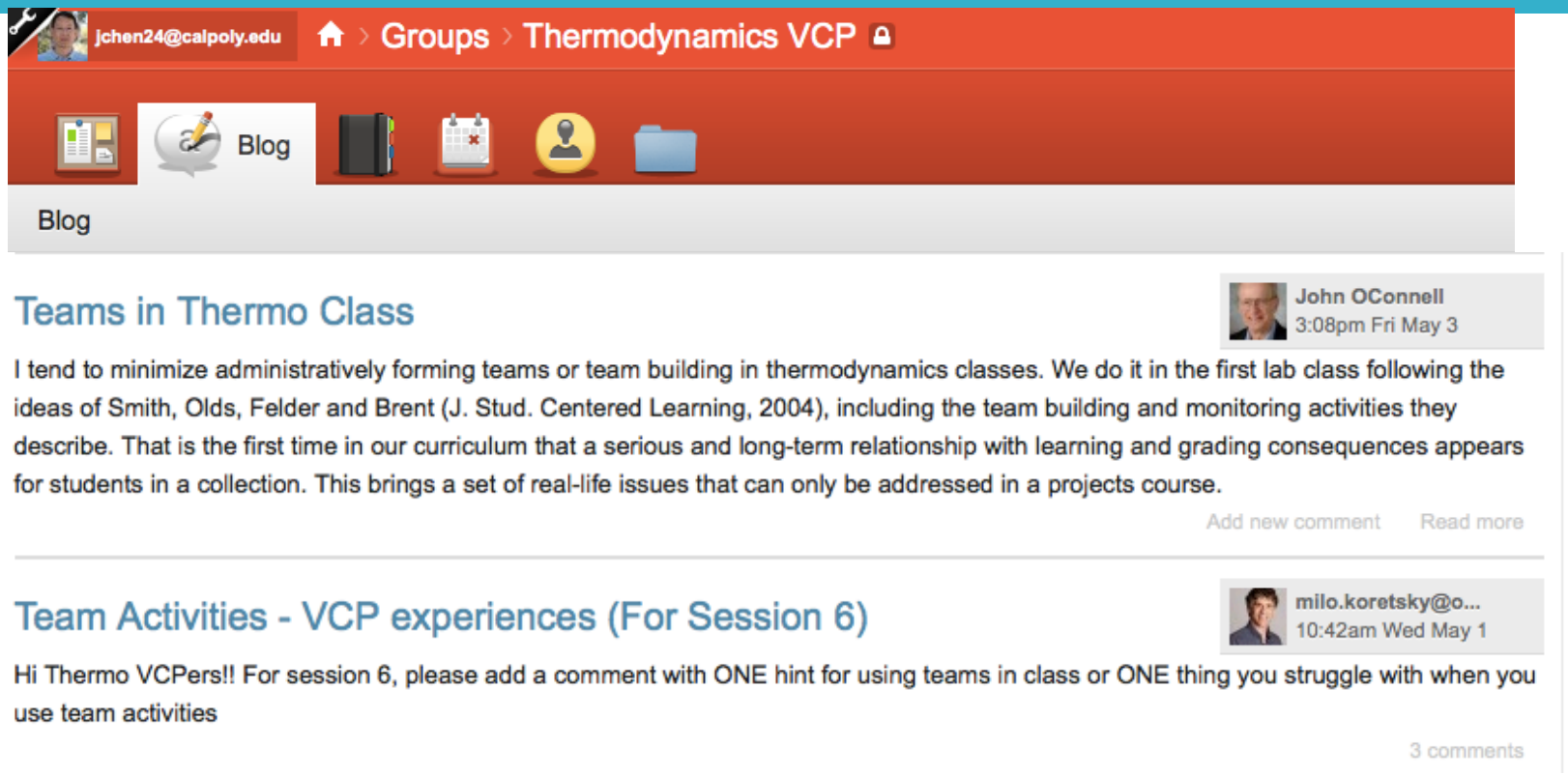
# Objectives

- Experience “inquiry based activities” as another active learning technique
- Introduce Cooperative Learning for team work
- Provide feedback to Milo and John about VCP
- Consider fall VCP activities

# Inquiry Based Activities

- Carnot Engine Cycle:
  http://www.facstaff.bucknell.edu/mvigeant/Thermo_JS/Carnot/Carnot-Engine.html
- Piston Cylinder Model:
  http://www.facstaff.bucknell.edu/mvigeant/Thermo_JS/Piston/cycle-modeler.html
- Reversibility of Mixing:
  http://www.facstaff.bucknell.edu/mvigeant/Thermo_JS/Mixing/Mixing.html
- Pump Reversibility:
  http://www.facstaff.bucknell.edu/mvigeant/Thermo_JS/Pump_Reversibility_edit/pump-reversibility.html
- Cough Drop Dissolution (Steady State vs. Equilibrium):
  http://www.facstaff.bucknell.edu/mvigeant/Thermo_JS/Steady_State/steadyState.html

# Using Teams – Blog Review



# Using Teams – Cooperative Learning

- Most researched pedagogy in education – over 50 years of research
- CL can be used with various in- and out-of-class activities: e.g., project-based learning, design projects, jigsaw, homework assignments, group tests
- When implemented well, CL promotes many positive learning outcomes; instructor shifts role away from most learning activities

# Using Teams – Cooperative Learning

- Five essential elements of CL:
  - Positive interdependence
  - Face-to-face interaction
  - Individual and group accountability
  - Group processing
  - Social and team skills

# Mid-Course Evaluation

- Your turn to give us some formative feedback for how this VCP is working for YOU

# Thoughts about Fall

- The intent is to continue in some form this fall
  - Is this time good?  Alternatives?
  - What are your goals for the fall?
  - What other ways can we support one another in making changes?
  - How frequently should we should meet?

# For Session 7: May 15, 2013

- Review the "Cooperative Learning – additional resources" handout developed by Karl Smith available in the week 7 folder: filename is "smith-formal-cl-additional_resources.pdf" https://aseevcp.asee.org/?q=thermovcp/node/384

- Post your thoughts for our fall VCP meetings (based on previous slide) to our blog: https://aseevcp.asee.org/?q=thermovcp/node/554

- Update your syllabus based on VCP this far with track changes – If you have any changes you wish to make https://aseevcp.asee.org/?q=thermovcp/node/384