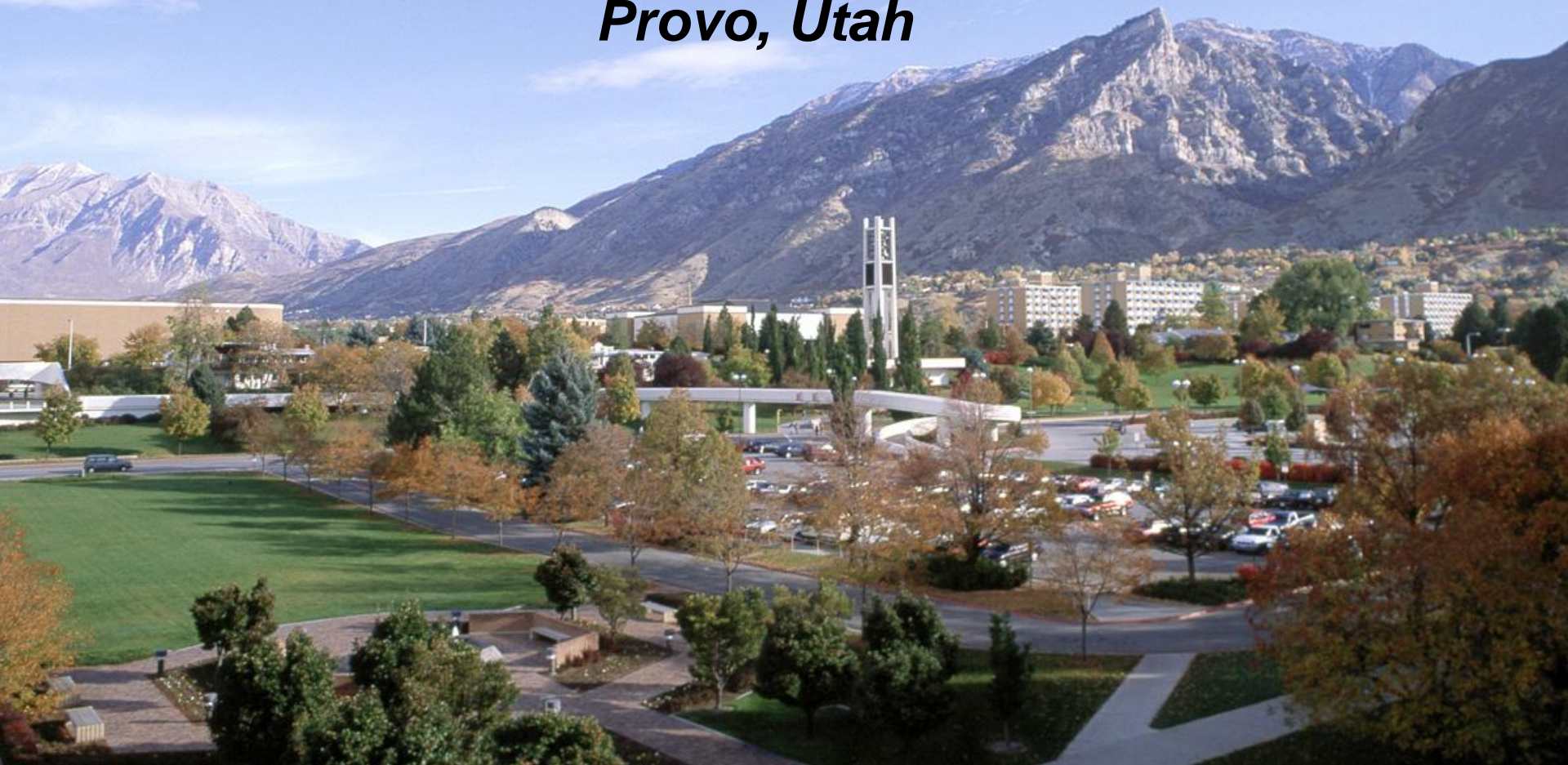


The 24th Annual ACERC Conference



***February 25-26, 2010
Provo, Utah***





Welcome to BYU

- Largest private university in U.S. (33,000 students)
- Owned and operated by the Church of Jesus Christ of Latter-Day Saints
- College of Engineering & Technology
 - 3000 students (ChemE, Civ E, Elect E, Mech E, School of Tech)
 - Cheme E dept is 14th largest in nation (# of seniors graduating/yr)
 - Mech E dept has grown to ~1000 students

Current ACERC Mission

***To develop advanced combustion technology
through fundamental engineering research
and educational programs
aimed at the solution of critical national problems***





Research Interests

Industries

- Electric power
- Chemical processes
- Forest products
- Forest Service
- Solid Waste
- Transportation
- Cement/Concrete
- Glass
- Military (safety)

Fuels

- Coal
- Biomass
- Black liquor
- Petroleum coke
- Hydrogen
- Municipal solid waste
- Natural gas
- Jet & diesel fuel
- Metallurgical coke
- Soot/model hydrocarbons
- Live fuels (wildland fires)
- Foams

Subjects

- Sustainable Energy
- Combustion/
Gasification
- Ash
Formation, Deposition,
Corrosion, Use
- Soot/Aerosol
formation
- NO_x, SCR
- Mercury emissions
- Heat transfer
(convective, radiative)
- CFD, Fluid/Fixed
Beds
- Parallel computing

**See Poster Session
Titles (in program)
for a Complete List
of Active Projects**



Professors Involved

• Larry Baxter*	ChE	• Calvin Bartholomew	ChE
• Tom Fletcher*	ChE	• Hugh Hales	ChE
• David Lignell*	ChE	• Bill Hecker	ChE
• Dale Tree*	ME	• Matt Jones	ME
		• Matt Linford	Chem
		• Dan Maynes	ME
		• Dennis Tulley	Stat
		• Brent Webb	ME



***ACERC Executive Committee**



Who Really Does The Work

(at BYU)

- 11 Graduate Students
- 27 Undergraduate Students
- Emily Cannon (secretary)



Graduate students receiving degrees in 2008-2009:

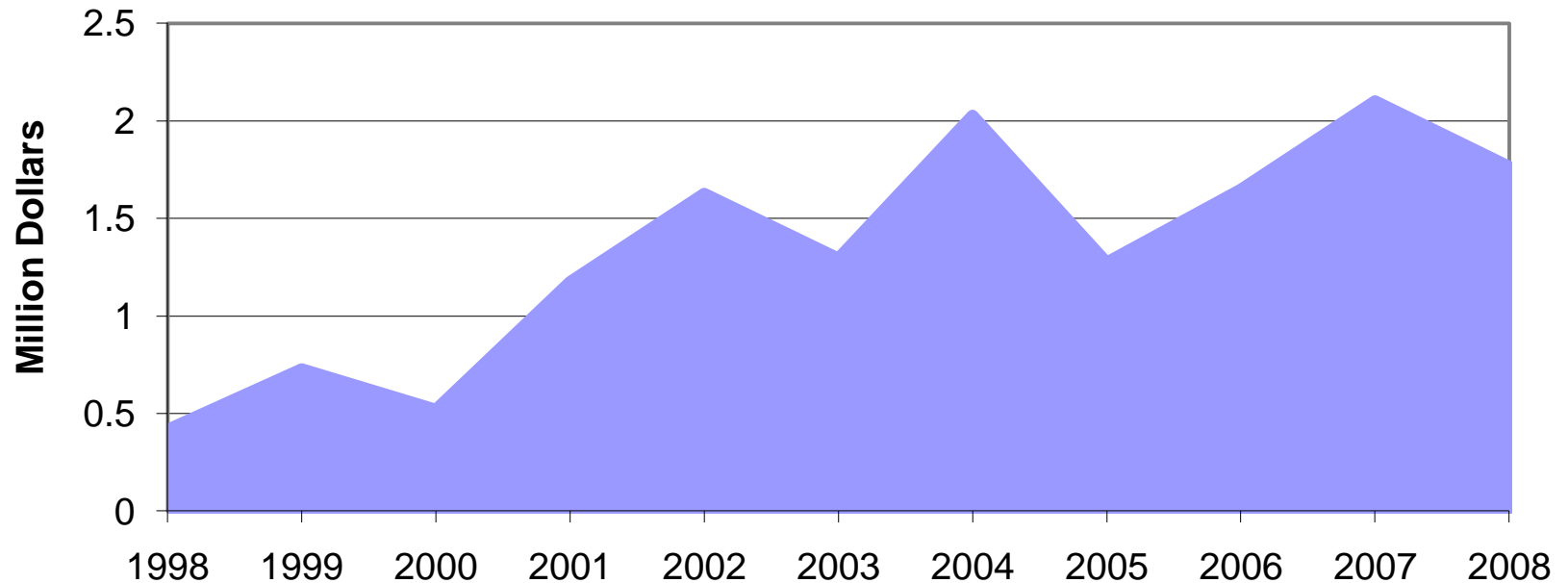
- Ryan Blanchard, MS ME (GE) – Cofiring of Biomass & Coal
- Michael Clark, PhD ChE (Alstom Power) – Wildland Fire Modeling
- Nathan King, PhD ChE (Conoco-Phillips) – VLE/Foam Decomposition
- Skigh Lewis, PhD ChE (GE) – Laser-suspended Particle Diagnostic
- Shrinivas Lokare, PhD ChE (REI) – Deposition of Coal Flyash
- Andrew Mackrory, PhD ME (B&W Research) – Oxyfuel Coal Combustion
- Brent Pickett, PhD ChE (AFRL Tyndall AF Base) – Live Leaf Combustion
- Weiguo Ai, PhD ChE (WVU) – Deposition from Syngas in Gas Turbines
- Tom Salt, MS ME (Associated Electric) – Oxycombustion in an engine
- John Sowa, MS ChE (BYU) – Nitrogen release in coal combustion



BYU Combustion Funds

1998-2008

BYU Combustion Research Funding



- Maintaining an active research program
- Most funding goes to students



Industrial Participants

(ACERC annual conference participants, 2006-2008)

Aalborg University	Detroit Stoker Co.	Praxair
Alion Science & Technology	DONG Energy	Reaction Engineering Int'l
ALSTOM Power	Fuel Tech, Inc.	Risø DTU
American Air Liquide	GE Global Research	Southern Company
American Electric Power	Headwaters	Technical University of Denmark
*The Babcock & Wilcox Company	Idaho National Laboratory	US Department of Energy
Biomass & Geothermal	The John Zink Institute	UT Div of Public Utilities
Carnegie Mellon University	NETL	University of Utah
Combustion Resources	ORYXE Energy	Weyerhaeuser Company
ConocoPhillips	Pusan National University	Xcel Energy Services, Inc.

***Current ACERC Industrial Member**



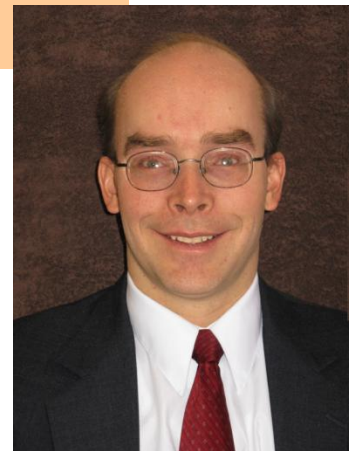
News



- **David Lignell started Jan 2009**
 - PhD 2008, U of U
 - DNS/LES methods

- **Two new professors joined ChE Fall 2009**
 - Brad Bundy: PhD at Stanford with focus on protein production and engineering
 - Morris Argyle: PhD 2003 from UC Berkeley; interests in catalysis, coal gasification, and CO₂ capture

(Just before hiring freeze at BYU)



Sponsors



Novell

BYU
BRIGHAM YOUNG
UNIVERSITY



2010 Conference Agenda

Thursday Morning

Chair: David Lignell (*ChE, BYU*)

- **CO₂ Management**
 - Capture
 - Oxy-Fuel

Thursday Afternoon

Chair: Tom Fletcher (*ChE, BYU*)

- **Alternate Processes**
 - Gasification
 - Corrosion
 - Soot

Monday Evening

- **Student Posters (5:30-7 pm)**

Friday

- **Wildland Fire Workshop**
- **Lab Tours**
 - Signup with Emily