



**The Knowledge Leader for Project Success**

*Owners • Contractors • Academics*

# **Construction Industry Institute**

## **CII's Role in identifying research needs**

### **CII's Role as a “funding agency”**

Stephen R. Thomas, PhD, PE

GLF-CEM

May 20, 2012

Purdue University

West Lafayette, IN





- A consortium of leading owners, contractors, and academics working collaboratively to improve the constructed project and the capital investment process.
- An organized research unit of the Cockrell School of Engineering at The University of Texas at Austin.



# Owner CII Members

Abbott	Eli Lilly	Praxair
Air Products and Chemicals	Eskom Holdings Limited	Procter & Gamble
Ameren	ExxonMobil	SABIC
American Transmission	General Electric	Sasol Technology
Anheuser-Busch InBev	General Motors	Shell Global Solutions US
Aramco Services	GlaxoSmithKline	Smithsonian Institution
ArcelorMittal	International Paper	Southern
Architect of the Capitol	Huntsman	Statoil
Barrick Gold	Irving Oil	Teck Resources
BP America	Kaiser Permanente	Tennessee Valley Authority
Bristol-Myers Squibb	Kinross Gold	TransCanada
Cameco	Koch Industries	U.S. Army Corps of Engineers
Cargill	LyondellBasell	U.S. Dept. of Commerce/NIST/EL
Chevron	Marathon Oil	U.S. Dept. of Defense/Tricare
CITGO Petroleum	Marathon Petroleum	U.S. Dept. of Energy
ConocoPhillips	NASA	U.S. Dept. of Health & Human Services
Dow Chemical	NOVA Chemicals	U.S. Dept. of State
DTE Energy	Occidental Petroleum	U.S. Dept. of Veterans Affairs
DuPont	Ontario Power Generation	U.S. General Service Administration
Eastman Chemical Co.	PEMEX	Vale S.A.
Ecopetrol S.A.	Petrobras	



# Contractor CII Members

Alstom Power

AMEC

Audubon Engineering

Aveng Group

AZCO

Baker Concrete Construction

Bateman Engineering

Bechtel Group

Bentley Systems

BIS Frucon Industrial  
Services

Black & Veatch

Burns & McDonnell

CB&I

CCC Group

CDI Engineering Solutions

CH2M HILL

Coreworx

CSA Group

Day & Zimmermann

Dresser-Rand Company

Emerson Process Mgmt

eProject Management

ENGlobal U.S., Inc.

Faithful+Gould

Flad & Associates

Flint Energy Services

Fluor Corporation

Foster Wheeler USA

Gross Mechanical Contractors

GS Engineering & Construction

Hargrove Engineers+Constructors

Hatch

Hilti

Industrial Contractors

IDEA

Jacobs

JMJ Associates

JV Driver Projects

KBR

Kvaerner North American

Lauren Engineers & Constructors

M. A. Mortenson

Matrix Service

McCarthy Building Companies

McDermott International

Midwest Steel

Parsons

Pathfinder

Quality Execution

Robins & Morton Group

S&B Engineers & Constructors

SAIC Constructors

Shaw Group

Siemens Energy

SKE&C USA

SNC-Lavalin

SOG – Óleo e Gás S/A - SETAL

Technip

URS

Victaulic

Walbridge

Wanzek Construction

Wood Group Mustang

WorleyParsons

Yates Construction

Zachry Holdings

Zurich



# CI's Academic Partners (1983-Present)

**University of Alabama**

**Arizona State University**

**University of Arkansas**

Auburn University

Baylor University

Bucknell University

**University of California-Berkeley**

Carnegie Mellon University

University of Cincinnati

Clemson University

**University of Colorado-Boulder**

Colorado State University

Columbia University

Drexel University

East Carolina University

**University of Florida**

**Florida International University**

Midwest Steel, Inc.

University of Houston

University of Illinois

Illinois Institute of Technology

**Iowa State University**

University of Kansas

**University of Kentucky**

Lehigh University

University of Maryland

**University of Michigan**

University of Milwaukee-Wisconsin

**Michigan State University**

Mississippi State University

University of New Mexico

**North Carolina State University**

North Dakota State University

**Northeastern University**

Ohio University

Oklahoma State University

Oregon State University

The Pennsylvania State University

**Bold – Current Research**

University of Pittsburgh

**Purdue University**

**Polytechnic University of New York**

**San Diego State University**

San Jose State University

Stanford University

State University of New York-Albany

**Vanderbilt University**

**Virginia Tech**

**Texas A&M University**

**The University of Texas at Austin\***

Tsinghua University

University of Washington

Midwest Steel, Inc.

**University of Wisconsin-Madison**

Worcester Polytechnic Institute

\* Headquarters and founding university



# **CI's Role in Identifying Research Needs**



# CII Research Committee

The RESEARCH COMMITTEE develops policy to guide the research function and implements the research needs assessment process. Annually, the committee develops a list of potential research topics and solicits an assessment of overall topic interest and value from the Board of Advisors. The committee selects the appropriate request for funding proposal (RFP) approach for each topic and solicits proposals from academia on recommended topics.

- CII Governance Plan



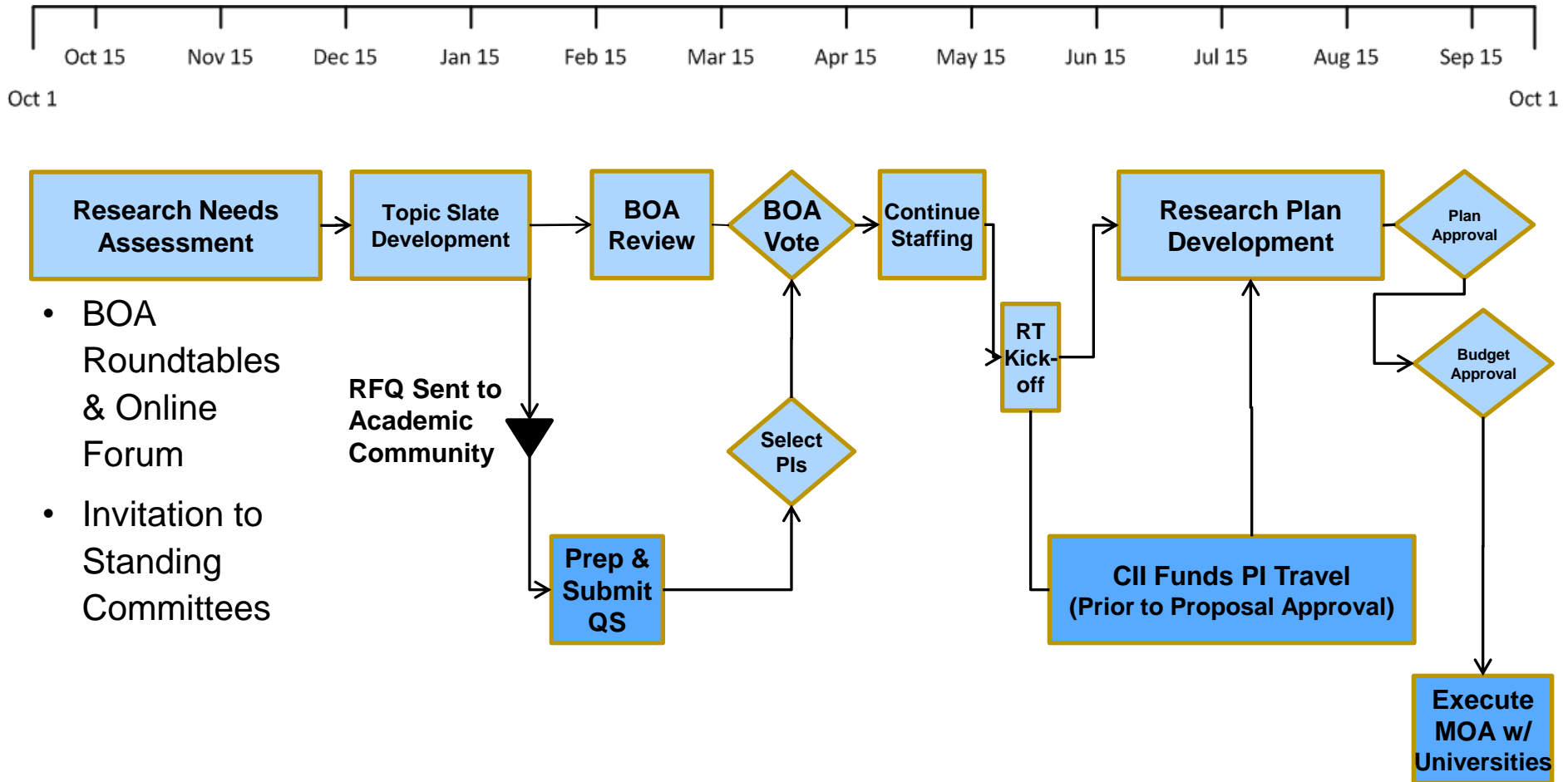
# Research Committee

Randy Abdallah, Walbridge, **Chair**  
Bruce Beck, Eli Lilly  
Dr. John Borchering, University of Texas at Austin  
Barry Christen, URS Corporation  
Earl Clark, DuPont  
Carol Conomos, Dresser Rand  
Frank Gay, WorleyParsons  
Jim Gibson, Alstom Power  
Dr. Daniel Halpin, Professor Emeritus, Purdue University  
Tom Kudele, ExxonMobil  
Don Leinweber, Mustang Engineering  
Tom Napier, USACE  
Brian Rhoades, Hargrove E&C  
Cindy Richartz, Abbott, **Vice-Chair**  
Ed Ruane, Fluor  
Stan Tripp, ConocoPhillips  
Danny Scott, Yates  
Dr. Ken Walsh, San Diego State University  
David Wolfson, Air Products and Chemicals  
Dr. Steve Thomas, CII  
Dr. Jacqueline Thomas, CII  
Junghye Son, CII  
Kristi Delaney, CII





# CII Research Needs Assessment through Proposal Approval



# Ongoing Research Teams

## Current Research Teams

252 - Construction Productivity Program: Waterloo/Kentucky/Texas

268 – Front End Planning Summary Documentation: ASU

272 – WorkFace Planning from Design through Site Execution: Texas

280 – Dealing with Uncertainty, Probabilistic Controls: Colorado

281 – PM Skills of the Future: ASU

282 – Managing Indirect Costs: NC State/Michigan State

283 – Modularization: Texas

284 – Driving to Zero with Safety Leading Indicators: Florida/Colorado

290 - Quantifying the Impact of Change: UC Berkeley/NC State

291- Improving Predictability of Project Outcomes: Alabama

292 - Knowledge Transfer: Texas

293 - Strategies for HSE Hazard Recognition: Va. Tech/Colorado

294 - Deploying BPs to Developing Countries: Va. Tech



# New Start Research Teams

## Current Research Teams

300 - True Impact of Late Deliverables at the Construction Site: Texas

301 - Using Near Miss Reporting to Enhance Safety Performance: Florida/Ga. Tech

302 - Interface Management: Waterloo/Michigan

303 - Managing a Portfolio of Projects – Metrics for Improvement:  
Northeastern/Ga.Tech/Florida

304 - Sustainability Practices & Metrics for the Construction Phase of Capital  
Projects: Texas

305 - Measuring Project Complexity and its Impact: TAMU/Iowa State

306 - Quantitative Measurement of PM Competencies: Wisconsin-Madison

307 - Mitigating Threats of Counterfeit Materials in the Capital Projects Industry:  
Purdue/Vanderbilt/Florida International

308 - Effective Supplier Quality Surveillance Processes & Practices: San Diego  
State/Arkansas





**Thank you**