# Table of Contents

Forward ................................................................................................................................. 4  
Executive Director’s Message ......................................................................................... 5  
Research

  Study of Construction Employment in Marcellus Shale Related Oil and Gas Industry ......................................................... 6
  Apprenticeship in England: Impoverished but Laddered ............................................. 7
  Empirical Research on the Effect of Prevailing Wage ................................................. 10
Board of Directors ........................................................................................................... 12
Advisory Board ................................................................................................................ 13
Affiliate Researchers ......................................................................................................... 14
Special Thanks .................................................................................................................. 15
ICERES is coming up on its second anniversary. We were organized to support high quality research on the issues facing the construction industry.

“The construction industry and its stakeholders face pressing long term issues regarding workforce sustainability, safety, productivity and integration of technology. The purpose of the corporation is to support research with the goal of finding and disseminating an understanding of and pragmatic solutions to these and other construction issues. To this end, the corporation will undertake and support non-partisan research on issues facing the industry collaborating with existing construction researchers and attracting new investigators into the field of construction research. The corporation will also work to develop a network of researchers with ongoing programs on construction issues. In addition to its work in supporting research, the corporation will disseminate this research through appropriate means including a working paper series, a web presence, and conferences.”

Given ICERES short period of activity, we have been very successful. Over the last twenty-one months ICERES has sponsored five substantial research projects, four of which have been published. We are particularly pleased with Apprenticeship in England: Impoverished but Laddered as a contribution to current policy debates on the future of apprenticeship. Our other studies, the study of the construction employment effects of the development of Marcellus Shale and the labor assessments of Plant Vogtle and of the Baltimore-Washington area have contributed to stakeholder understanding of labor demand, supply and the policies needed to assure adequate supplies of labor for projects. The final study, Empirical Research on the Effect of Prevailing Wages, will be a thoughtful study of the current empirical knowledge of the outcomes of prevailing wage laws. It is intended to be submitted to a high quality academic journal and will raise the bar in assessing research on prevailing wages.

ICERES has had additional successes. We arranged panels on construction issues at the Industry Studies Association and the Labor and Employment Relations Association. In addition, ICERES sponsored Sean McGarvey’s luncheon address, “Changing Perceptions: A Value Based Strategic Approach for North America’s Building Trades”. This address, a dynamic development of the building trades concerns and plans, can be viewed on the LERA website (http://www.leraweb.org/lera-68-annual-meeting). In addition, ICERES announced a paper competition for the best paper on construction employment issues. The winner will receive a prize of $3,000 at the next LERA meeting.

Finally, ICERES has gone a considerable distance to improving its financial position. We have had success both in attracting funding for ICERES research and obtaining contributions from industry stakeholders in support of ICERES purposes. We are grateful for this support and hope to meet the expectations of our supporters.

Dale Belman, PhD
President, ICERES
Professor, Michigan State University
EXECUTIVE DIRECTOR’S MESSAGE

I have had the pleasure of serving as the Executive Director of the Institute for Construction Economic Research (ICERES) since its inception. I am pleased to report that, through the efforts of the Board of Directors, the Advisory Board, donors, and research sponsors, the Institute is well on its way toward meeting its mission: to conduct the highest quality research immediately useful to the construction industry and its stakeholders in all areas of employment relations.

As the Executive Director of a start-up Institute, much of my time has been spent building organizational infrastructure to support high quality research: website development, accounting practices, research review processes, database development, marketing documents, research affiliations, etc.

The Board of Directors have, in parallel, focused on the research needs of sponsoring organizations. The positive response we have received from the construction industry and the impacts we have witnessed signal that the Institute for Construction Economic Research is and will continue to be a needed service to the construction industry. To date, we have completed five research studies (summarized in this report), with one in progress and three in the RFP stage. The five completed studies are summarized in this report.

Currently, we believe that the quality and usefulness of our research can best be measured by ‘repeat requests and referral to others’. Other measures of success will come in time, but for now, we are well on our way toward building an impressive research portfolio.

Julie L. Brockman, PhD
Executive Director, ICERES
Associate Professor, Michigan State University
RESEARCH
Study of Construction Employment in Marcellus Shale Related Oil and Gas Industry

**Lead Researchers:** Robert Bruno, University of Illinois at Urbana-Champaign & Michael Cornfield, University of Illinois at Chicago

**Summary:** The purpose of this study was to retrospectively determine the number of full-time equivalent construction jobs created from 2008 through 2013 on natural gas pipeline projects as part of the Marcellus Shale formation in West Virginia, Virginia, Maryland, Pennsylvania, and Ohio.

**Results:** A preliminary examination of employment data in states related to the Marcellus Shale Play (i.e., Maryland, Virginia, Pennsylvania, Ohio and West Virginia) reveals that natural gas exploration has been a strong engine of job growth. From 2008 to the first half of 2014, over 72 million hours of direct and indirect construction labor has been worked on natural gas and oil projects related to the Marcellus Shale. These hours translate to 36,321 FTE construction workers (based on a standard 2,000 hours of work) engaged in oil and gas work that would not have occurred “but for” natural gas exploration in the Marcellus Shale geological footprint. Using a construction work year of 1,600 annual hours 45,500 construction workers were employed on Marcellus related work.

**Impact:** This research was widely published and the information was used in multiple ways, from presentations to community stakeholders in various regions of the U.S. to political deliberations at state and national levels.
Apprenticeship in England: Impoverished but Laddered

Lead Researchers: Dr. Patrick McGurk, University of Greenwich, U.K & Dr. Martin Allen, University of Greenwich, U.K.

Summary: Current discussion among federal policy makers regarding the expansion of the U.S. apprenticeship system draws on the example of apprenticeship expansion in England. Often, this does not reflect a clear understanding of the current English Apprenticeship system. This paper aims to inform federal and state administrative policy makers and legislators, program administrators, and the staff of training and apprenticeship organizations who are interested in understanding the features and performance of the current English system. This paper describes the English apprenticeship system and summarizes current research on the outcomes of that system.

Results: After their heyday in the late-1960s, apprenticeships in the UK had almost completely disappeared by the 1980s. Their relaunch and modernization in the mid-1990s was needed in order to reflect a changed workforce and workplace; however continual subsequent reforms and abuses of the targets and funding systems have served to devalue the term ‘apprenticeship’, once widely understood as a hallmark of technical quality and craft-level skills. The one positive aspect of the contemporary system is the unified qualification framework within which apprenticeships sit. In theory at least, the qualifications framework enables low-achievers at school, or those who initially choose the vocational over the academic route, to progress to qualified occupations or switch between pathways, including progression to university. (In practice, however, progression and ongoing skill development have been very limited). In summary, the contemporary apprenticeship system may be described as ‘impoverished but laddered’.

Impact: This paper is currently being used to inform the U.S. apprenticeship expansion discussion. It has also been presented as part of a panel on apprenticeship at the May 2016 Labor and Employment Relations Association meetings in Minneapolis. As this paper was only recently finalized, other important outcomes are yet to be realized.

Lead Researchers: Dale Belman, PhD, Michigan State University & Russell Ormiston, PhD, Alleghany University

Summary: The Plant Vogtle Nuclear Generating Station Project is among the largest industrial projects currently under construction in the United States. However, with the recovery of industrial investment since the Great Recession—and the opportunities presented by the development of shale gas and oil—construction at Plant Vogtle is competing for resources, in particular craft labor, with numerous other projects in the Southeast and Gulf. This report provides a detailed analysis of the current conditions facing Plant Vogtle with respect to competing demands for craft labor, and the availability of that labor to Plant Vogtle.

This report is organized around three issues affecting the availability of craft labor for Plant Vogtle:

1. The condition of the construction economy in the Southeastern United States, labor demand conditions from 2014 to 2017 in the Southeast. The report reviews data on major industrial projects (TIV of $50 million or more) within a 500-mile radius of Plant Vogtle as well as estimates of the demand for labor for 12 crafts associated with these projects,
2. The current availability of craft labor to Plant Vogtle. This section reviews union compensation, membership and craft worker availability by craft and local union across the Southeast region. Plant Vogtle wages and compensation are compared with those of nearby union and merit shops.
3. The availability of housing and training for Plant Vogtle craft workers.

Results: At the broadest level, Plant Vogtle will face serious challenges in attracting sufficient craft labor to support the scheduled increase in the number of craft workers expected on the site in 2015. The primary causes of such concern stem from:

- Low levels of craft labor availability for many of the critical trades in the Southeast region.
- Plant Vogtle wage and compensation packages are not consistently competitive with those of other union projects and some merit shop projects and trades.
- The concurrent construction of several large projects in close proximity to Plant Vogtle that will demand similar mixes of skills while offering equal or better compensation. The lack of sufficient housing in the Plant Vogtle area will increase commuting times—and costs—for potential workers.

Impact: This research report was critical for making decisions regarding employment policies/procedures.
An Analysis of Craft Labor Availability: Baltimore-Washington Region: 2016 - 2018

Lead Researchers: Russell Ormiston, PhD, Allegheny College & Dale Belman, PhD, Michigan State University

Summary: The Southern Mid-Atlantic Region is on the cusp of a significant increase in construction spending on major industrial projects ($50+ million) starting in the summer of 2016. Industrial Information Resources expects this surge to continue through 2018. The total installed value (TIV) of active projects is expected to increase from $21.17 billion in 2015 to $31.04 billion in 2016, or a one-year growth rate of 46.7%. This increase is largely attributable to an uptick in $1+ billion projects to be constructed over the next three years, including four new projects that will get underway in the summer of 2016.

As a result of this increase in construction, IIR projects that all trades will experience a large increase in labor demand in 2016. However, these effects will vary in magnitude and duration over the next three years. The purpose of this report was to report on the three year demand for and availability of skilled construction labor in the Baltimore-Washington region and associated labor markets. The region under study includes Maryland, Delaware, Virginia, Eastern West Virginia, and Southeastern Pennsylvania excluding the Philadelphia metroplex.

Results: On major industrial projects, IIR estimates that labor demand for electricians, carpenters, operators and millwrights will grow by more than 20% over the next three years; double-digit percent growth is also projected for plumbers and pipefitters, instrumentation techs and welders. Increased labor demand may be uneven within the region, with growth most concentrated in West Virginia and southeastern Virginia. Analysis of union local membership and availability suggests concerns about the building trades’ capacity to absorb this uptick in construction over the next three years.

The increase in the demand for labor will create an opportunity for the building trades unions to increase their membership and regain market share over the next three years. Although some locals of some trades in the region have a limited numbers of craft workers available, there is little to no slack in the supply of union labor. Improving the position of the building trades in the Baltimore-Washington area will require a combination of organizing existing nonunion employers and substantially increasing the number of apprentices enrolled in area apprenticeship programs. Additional steps are required in some trades to assure the building trades have contractors who can bid and complete the available work. The current wave of work has created an opportunity for growth which is unlikely to repeat itself in the foreseeable future.

Impact: The findings of this report will be used to guide the planning of the Baltimore-Washington Trades Labor Council with respect to organizing and training.
Empirical Research on the Effect of Prevailing Wage

**Lead Researchers:** Russ Ormiston, PhD, Allegheny College & Kevin Duncan, PhD, BCG Economics, LLC

**Summary:** There is strong current interest in the effect of prevailing wage laws on the cost of construction, training, safety and the racial composition of the construction labor force. Research on the effect of prevailing wage differs in terms of methodologies employed to develop the results. Those interested in understanding the effect of prevailing wage on cost, training, safety, and racial composition will benefit from understanding studies that they can rely on for meaningful answers. The purpose of this study is to review the empirical research on the effect of prevailing wage laws on costs, training, and safety in the construction industry, as well as the effect of the wage policy on the racial composition of the construction labor force. The review provides a detailed and objective evaluation of the strengths and weaknesses of the methodologies employed in each of these areas.

**Findings:** This research study will be completed in September, 2016.

**Impact:** This study will provide academics and policy makers with an understanding of which research methodologies, and research outcomes, are reliable.
BOARD OF DIRECTORS

Dale Belman, PhD
President
Professor, Michigan State University

Matthew Bodah, PhD
Secretary-Treasurer
Professor, University of Rhode Island

Peter Phillips, PhD
Director
Professor, University of Utah

Pete Stafford
Director (Ex Officio)
Executive Director, CPWR

Jeff Waddoups, PhD
Director
Professor, University of Nevada, Las Vegas
ADVISORY BOARD

Sean R. Cherry
Director, Labor Relations
Babcock & Wilcox Construction Co.

Jonathon C. Fritts
Attorney
Morgan Lewis

Geary M. Higgins
Vice President, Labor Relations
National Electrical Contractors Association

John McNerny
Executive Director of Government and Labor Relations
Mechanical Contractors Association of America

Gary Roberts
Manager, Construction Labor
DTE Energy Co.

Herman Seedorf
Senior Vice President of Refining
PBF Energy Inc.

Andrew Siff
Attorney and Principal
Siff and Associates, PLLC
AFFILIATED RESEARCHERS

Hamid Azari-Rad, PhD
Chair
State University of New York

Dale Belman, PhD
Professor
Michigan State University

Peter Berg, PhD
Professor
Michigan State University

Cihan Bilginsoy, PhD
Professor
University of Utah

Matt Bodah, PhD
Professor
University of Rhode Island

Julie L. Brockman, PhD
Associate Professor
Michigan State University

Robert Bruno, PhD
Professor
University of Illinois

Francoise Carre
Research Director
University of Massachusetts Boston

Ralph Gentile, PhD
Principal Economist
Oyster Pond Associates, LLC

Paul Goodrum, PE., PhD
Assistant Professor
University of Kentucky

Heather L. Grob, PhD
Associate Professor
Saint Martin’s University School of Business

Steve Herzenberg
Keystone Research Center

Scott Littlehale
Smart Cities Prevail & Northern California Carpenters

Patrick McGurk, PhD
Professor
University of Greenwich, U.K.

Russ Ormiston, PhD
Assistant Professor
Allegheny College

Ryan Petty, PhD
Assistant Professor
Roosevelt University

Peter Philips, PhD
Professor
University of Utah

Mark Prus, PhD
Professor
SUNY, Cortland

Knut Ringen, DrPH, MHA, MPH
The Center for Construction Research and Training (CPWR)

Pete Stafford
Executive Director, Emeritus
CPWR

Jeff Waddoups, PhD
Professor
University of Nevada Las Vegas

Marc Weinstein, PhD
Professor
Department of Management & International Business
SPECIAL THANKS

Our efforts to bring useful, applied research to the construction industry would not be possible without the initial and ongoing support of the following stakeholder organizations. We gratefully acknowledge their generosity and confidence in our success:

General Presidents’ Project Maintenance Agreement Trust Fund
Nuclear Power Labor-Management Cooperation Committee Trust
American Income Life Insurance Company
The Center for Construction Research and Training