



STRATEGIC CONSTRUCTION MODELING AND DELIVERY

INDUSTRIAL RESEARCH CHAIR

MEASURING THE IMPACTS OF ADVANCED WORK PACKAGING AND WORKFACE PLANNING ON WORK PACKAGE AND PROJECT PERFORMANCE

ABOUT THE CHAIR

Established in January 2012 under the leadership of Dr. Aminah Robinson Fayek, the Industrial Research Chair in Strategic Construction Modeling and Delivery operates within the Department of Civil and Environmental Engineering at the University of Alberta.

The Chair brings together construction industry owners, contractors, and labour groups working in Alberta and across Canada to develop comprehensive research-based solutions to key industry problems. Giving particular attention to Canada's oil and gas, utilities, industrial, and commercial construction sectors, the Chair focuses on strategic concerns related to construction management—such as construction industry productivity, project delivery, and performance. Research undertaken includes improvements to labour productivity, structuring projects and teams, assessing owner and contractor competencies, and reducing project execution risk.

The Chair's research program takes advantage of fuzzy logic's ability to capture and quantify the many subjective uncertainties that challenge construction projects. Researchers combine fuzzy logic with other forms of uncertainty modeling, artificial intelligence, and simulation techniques to develop advanced decision-support tools and approaches.



PROJECT PARTNERS



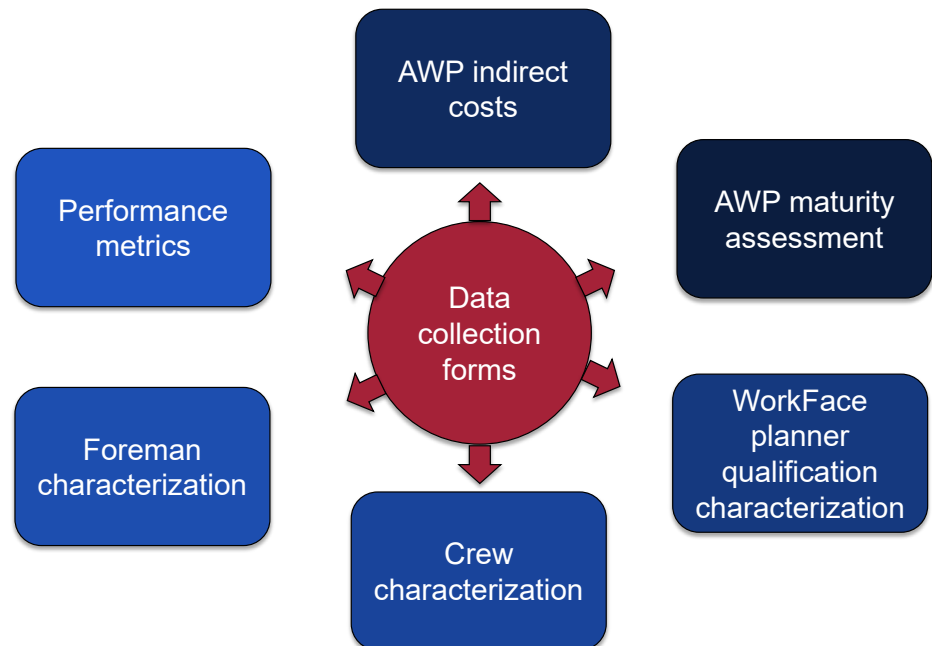
BACKGROUND

- Advanced work packaging (AWP) defined as the overall process flow of all the detailed work packages (EWP, CWP, IWP).
 - Term coined by Construction Industry Institute.
 - Developed in the context of large industrial projects and megaprojects.
- AWP provides a disciplined approach to project planning and execution.

OBJECTIVES

- Assess maturity of AWP.
- Collect quantitative data to verify benefits of AWP.
- Quantify cost of AWP implementation and compare to benefits to determine ROI.
- Evaluate impact of crew, foreman, and workface planners on AWP.
- Develop metrics to measure impact of AWP on work package performance.
- Help update COAA's AWP audit tool.

DATA COLLECTION FORMS



INDUSTRY APPLICATIONS AND BENEFITS

- Develop a framework for collecting and analyzing data to assess the cost and benefits of AWP.
- Provide industrial construction companies with a tool that can be used to assess the maturity of their AWP process.
- Contribute to the body of knowledge related to AWP as a tool for the improvement of productivity, cost and schedule performance.

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Dr. Aminah Robinson Fayek, Supervisor