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## **Preliminary findings from observations of the sociotechnical nature of early career engineers in practice**

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Summit Themes: Descriptions of Practice, Factors Influencing Practice

There is broad agreement in engineering education and practice literature that a greater focus on practice within engineering curriculum can better support graduate readiness for engineering work. Embedding learning associated with the sociotechnical nature of engineering practice within the curriculum can help achieve a theory-practice balance. The shift towards practice and curriculum development work to achieve a theory-practice balance is proving a challenge for engineering educators many of whom are unaware of what these sociotechnical contextual and cultural factors from practice are. Most engineering educators also have limited to no current meaningful experience in practice to draw upon to inform the shift in focus.

To address this challenge, my PhD research project is employing ethnographic methods to explore the research question, “What are the sociotechnical contexts and cultures that influence the professional practice of early career engineers and in what way are these contexts influencing their practice?”

This presentation introduces preliminary findings and examples from interviews and observations of early career engineers in practice in two different contexts. First is within a medium sized Mechanical Engineering Product Development and Manufacturing organisation that recently started expanding manufacturing internationally. The other is within a large-scale government funded Rail Construction infrastructure project on a finite timeline and budget. Emerging insights about engineering practice that are generalisable, along with examples of contextual and cultural factors identified so far will be presented.

Bio

Rob McHenry is Lecturer Engineering Professional Practice at Deakin University School of Engineering, who transitioned to academia from industry at the end of 2019 after working 11 years as an automotive engineer in various roles. Rob draws upon his extensive experience and networks to lead engineering curriculum renewal and

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embedding of professional practice skills across the schools' programs. Rob is passionate about bringing students and industry together to improve learning and employment outcomes for graduates and the broader engineering community. Rob is also completing a PhD in Engineering Education, with a focus on developing a deeper understanding Engineering Practice in various contexts and cultures. His aim being to help provide evidence that can inform approaches to further embed the sociotechnical nature of engineering practice into engineering curriculum in authentic yet manageable ways.