	Wednesday, October 21st (All times in US Mountain Time)			
	Track 1		**Track 2**	
8:00 8:15 8:30 8:45 9:00	**Good morning, Welcome, &** **Opening Keynote:** Geert Dewulf *Session Lead: Paul* *https://live.remo.co/e/epoc-2020-wednesday-opening-sess-1*			
9:15	*~ 15-minute break*			
	Water and Sanitation | *Session Lead: Kasey* *https://live.remo.co/e/epoc-2020-oct-21-water-and-sanit*		**Construction Teams and Participants |** *Session Lead: Sittimont* *https://live.remo.co/e/epoc-2020-oct-21-construction-te*	
9:30	Hamlet, Park, Xia, Kaminsky	Quantifying the impacts of water and sanitation infrastructure conditions on children's education within low- and middle-income countries	Handi, Duodu, Rowlinson	Project social capital, work engagement and safety performance of workers: a conceptual model
9:45	Osman, Hacker, Faust, Binz	Water services for all? Placing equity at the center of development agendas in water	Jia	Feminizing a masculinised industry: disruptive social re-engineering for construction projects?
10:00	Pugel, Javernick-Will, Peabody, Linden	Comparison of thirteen cases of collaborative approaches for water and sanitation service provision in Ethiopia, Kenya, and Uganda	Duva, Mollaoglu, Zhao, Frank	Expertise flows in AEC projects: an analysis of multi-level teams for sustainability
10:15	Araya, Tariq, Faust, Edwards	Do water contamination events impact willingness to pay for improved water quality in shrinking cities?	Asadian, Leicht, Cheng, Neuhauser	Project Outcome Forecasting through Longitudinal Monitoring of Project Team Attributes
10:30 10:45	**Discussion**		**Discussion**	
11:00 11:15	*~ 30-minute break*			
	Data/Digitalization/BIM | *Session Lead: Sittimont* *https://live.remo.co/e/epoc-2020-oct-21-datadigitalizat*		**Education |** *Session Lead: Kasey* *https://live.remo.co/e/epoc-2020-oct-21-education*	
11:30	Tuffour Atuahene, Kanjanabootra, Gajendran	How is the construction industry developing expertise for big data application?	Guerra	Understanding students' perceptions of cultural dimensions of engineering vs architecture in Ecuador
11:45	Rajendran, Mahalingam	Framework for an effective BIM implementation process in construction sites: a qualitative comparative analysis	Nguyen, Poleacovschi, Faust, Padgett Walsh, Feinstein, Rutherford, LaPatin	The culture of disengagement in engineering education revealed through the covid-19 pandemic
12:00	Eriksson, Vigren, Lindstrand	Social network analysis in research on digitalization in sustainable built environment: a review of research accomplishments and future research challenges	LaPatin, Faust, Poleacovschi, Padgett-Walsh, Feinstein, Rutherford, Nguyen	Macroethics in undergraduate engineering: an institutional view
12:15	Papadonikolaki, Morgan, Krystallis	Digital transformation in construction: Systematic Literature Review of evolving concepts	Kovacic, Pibal, Reisinger, Lorbek	Digital plattform for affordable housing – A framework proposal
12:30 12:45	**Discussion**		**Discussion**	
13:00 13:15 13:30 13:45				
14:00 14:15 14:30 14:45 15:00 15:15	**Trivia & Networking |** *Session Lead: Paul* *https://live.remo.co/e/epoc-2020-wednesday-trivia-and-n*			

	Thursday, October 22nd (All times in US Mountain Time)			
	Track 1		**Track 2**	
8:00 8:15 8:30 8:45 9:00	**Good morning & Keynote** **The Social Sustainability of Infrastructure: Constructing for Justice** Jessica Kaminsky *Session Lead: Sittimont* *https://live.remo.co/e/epoc-2020-thursday-opening-sessi*			
9:15	*~ 15-minute break*			
	Climate Change & Sustainability | *Session Lead: Paul* *https://live.remo.co/e/epoc-2020-oct-22-climate-change-*		**Project Delivery, Outcomes and Models** | *Session Lead: Ashwin* *https://live.remo.co/e/epoc-2020-oct-22-project-deliver*	
9:30	Kanjanabootra, Konstantinou, Hellström	Climate change and professional responsibility in construction, engineering and project management	Hunhevicz, Brasey, Bonanomi, Hall	Blockchain and smart contracts for integrated project delivery: inspiration from the commons
9:45	Taylor, Poleacovschi, Perez	Climate change adaptation of infrastructure: institutional support in rural Alaska	Borhani, Jupp, Dossick	IB index: towards a standard for building intelligence evaluation
10:00	Nelson, Franz, Leicht	Evaluating building sustainability impacts from evolving LEED rating systems	Shi, Leicht	Subcontracting strategy: practices and performance implications for building projects
10:15	Thuesen, Tommelein, Lepech	construction transformation — connecting sustainability (ends) and new technology (means)	Jia, Rowlinson	Alternative project business models via top-down vs. bottom-up institutional development
10:30 10:45	**Discussion**		**Discussion**	
11:00 11:15	*~ 30-minute break*			
	Education | *Session Lead: Paul* *https://live.remo.co/e/epoc-2020-oct-22-education*		**Project Governance** | *Session Lead: Ashwin* *https://live.remo.co/e/epoc-2020-oct-22-project-governa*	
11:30	True-Funk, Poleacovschi, Smith, Feinstein, Jones-Johnson, Luster-Teasley	Differential experiences of microaggressions among minority engineering students by gender	Bonanomi, Hall, Staub-French	Governing Integrated Project delivery as a commo pool resource scenario: what management practices and impact on project participants?
11:45	Motshubi, Poleacovschi, Appelgate, Jackson, Swalwell, Cetin	Development of a critical consciousness instrument for civil engineers	Balasubramani, Mahalingam	Leveraging mimicry to organize vanguard megaprojects: evidence from an Indian metro rail project
12:00	Fantalis, Chinowsky, Edkins, Dewulf	Influential academic leadership: a framework for collaborative organization leadership	Khurana, Garvin, Uday Sapre	Investigation of relational approaches in public private partnership contracts
12:15	Walker, Franz	Communication characteristics within an architecture and engineering design studio teams	Tang, Chen, Shi, Hua	Organizational arrangement in construction projects: from perspectives of project goal and capability
12:30 12:45	**Discussion**		**Discussion**	
13:00 13:15 13:30				
13:45 14:00 14:15 14:30	**Editorial Board Meeting** | *Session Lead: Ashwin* *https://live.remo.co/e/epoc-2020-thursday-epoj-editoria*			
14:45				
15:00 15:15 15:30 15:45 16:00 16:15 16:30 16:45	**PhD- 3 Minute Thesis competition followed by Posters Competition** | *Session Lead: Kasey* *https://live.remo.co/e/epoc-2020-thursday-3mt-and-poste*			

	Friday, October 23rd (All times in US Mountain Time)			
	Track 1		**Track 2**	
8:00 8:15 8:30 8:45	**Good morning & Keynote** **Increased Diversity Is Not Increased Inclusivity: The Impact of Microaggressions on Underrepresented Minorities in Engineering Education** Cristina Poleacovschi and Kalynda Smith *Session Lead: Kasey* *https://live.remo.co/e/epoc-2020-friday-opening-session*			
9:00 9:15				
	Housing | *Session Lead: Ashwin* *https://live.remo.co/e/epoc-2020-oct-23-housing*		**Sustainability |** *Session Lead: Sittimont* *https://live.remo.co/e/epoc-2020-oct-23-sustainability*	
9:30	Goldwyn, Javernick-Will, Liel	Changing perceptions of safe housing after a less familiar disaster	Schwartz, Spohr, Gustafsson	The actions needed to commercialize platform economy and energy efficiency seeking investments in shipping – what is the marginal benefit of the transformation?
9:45	Ballesteros, Poleacovschi, Talbot	Self-perceptions of psychological resilience after hurricanes Irma and Maria in Puerto Rico: evaluating the compounding effects of housing vulnerability and socioeconomic vulnerability	Duodu, Handi, Rowlinson	High-performance work systems ,intrafirm social capital and individual outcomes: a conceptual framework
10:00	Edkins, Mayhew	The productivity conundrum: evidence from the housing industry	Mansell, VanRooyen, Philbin, Sabini	Infrastructure projects' assessment through SDGtargets: towards a comprehensive framework
10:15	Puddicombe	Looking at all things real estate afresh: a solutions and systems based conceptual model	Yao, Chen, Zhang, Du	To Enforce or Not to Enforce: Untangling the tangled relationship between contracts and trust
10:30 10:45	**Discussion**		**Discussion**	
11:00	*~ 15-minute break*			
11:15 11:30	**Awards & Closings |** *Session Lead: Paul* *https://live.remo.co/e/epoc-2020-friday-closing-and-awa*			

KEYNOTES

Thursday, October 22nd | The Social Sustainability of Infrastructure: Constructing for Justice – Dr. Jessica Kaminsky

Engineering projects and organizations construct the built environments that shape and enable our lives. As such, they play an utterly foundational role in the pursuit of human aspirations to social, economic, and environmental justice. This perspective is founded in engineering (Levitt, Javernick-Will, Faust), sociological (Scott), philosophical (Sen), and feminist (Haraway) thought, which together I call the social sustainability of infrastructure. In this talk I link this intellectual heritage to my past and future work. In addition to my ongoing passion for global sanitation and infrastructure development, in that future work I aspire to contribute to the fight against climate change, and to grapple with the recent and much needed challenges to social climate in the United States and around the world.

Friday, October 23rd | **Increased Diversity Is Not Increased Inclusivity: The Impact of Microaggressions on Underrepresented Minorities in Engineering Education** - Drs. Cristina Poleacovschi and Kalynda Smith

The need for studying microaggressions. Engineering education and practice continues to be predominantly White male and racial and gender minorities continue to be heavily underrepresented (Bureau of Labor Statistics, 2019). Two-thirds of underrepresented minority students in engineering report being frequent targets of microaggressions (Williams et al., 2016; Yang & Carroll, 2018). Microaggressions are subtle or ambiguous behaviors or statements that denigrate people because of their race, ethnicity, gender, or other underrepresented identities (Sue et al., 2007). Examples include statements like, "Wow, your English is so good!" or behaviors like avoiding sitting near underrepresented minority students (women and people of color) in class.

The need for studying microaggressions intersectionally. Microaggressions are experienced intersectionally. Intersectionality refers to when an individual experiences overlapping discriminatory treatment because of multiple race, gender, and other social identities (Crenshaw, 1989; True-Funk et al. 2020). Rather than a unidimensional interpretation of identity (e.g., gender or race), intersectionality incorporates co-occurring multidimensional identification. An intersectional perspective goes beyond the traditional approaches to assure an inclusive environment for women. Instead, the discussions focus but are not limited to intersectional identities such as women who identify as Black, Indigenous, and people of color (BIPOC), women with disabilities, or women who are members of LGBTQIA+ community. The study employed intersectionality theory to examine microaggressions at a primarily White institution (PWI) and a historically Black college or university (HBCU). Participants included undergraduate engineering students who identified as one of the following: White women, African American women, African American men, Asian men, Asian women, Latino men, and Latina women. The presentation will give an overview of (1) the gender and race microaggressions used to target underrepresented minorities and (2) the effects of microaggressions on underrepresented engineering undergraduates.

What are the types of microaggressions? Microaggressions have been traditionally subdivided into three primary categories: microinvalidations, microinsults and microassaults. Microinvalidations occur when an individual's negative experiences as an underrepresented minority are ignored or dismissed; for instance, when women are told they now receive equal treatment in the workforce. Microinsults are when a person knowingly or unknowingly behaves rudely to or devalues the culture or identity of an underrepresented minority; for instance, when an African American is told that they are surprisingly eloquent. A microassault is a directly discriminatory behavior toward an underrepresented minority that is employed in a way that shields the aggressor. For instance, when the target is not around or when the target is present, but cannot defend themselves. An example of a microassault would be screaming out a racial slur while in a moving car (Sue, et al., 2007).

What are the consequences of microaggressions? We show that microaggressions affect students' self-esteem, and likely cause racial or gender group isolation, and stereotype threat. However, microaggressions affect individual groups differently. Latinx women and Latinx men reported reduced self-esteem more commonly than other individuals with intersectional identities. Asian women felt isolated both by race and gender whereas Latinx men felt only isolated by their race. Finally, unlike other groups, we found that, when being targeting by microaggressions, African American women and African American men were able to attribute the negative experience to the aggressors rather than internalizing the slights. They used negative experiences to empower themselves in a way that differed from other participants in the study.

What's next? This study increases the visibility of invisible discriminatory acts to university administrators, department heads, and industry leaders. To build a diverse workforce, issues surrounding microaggressions and similar behaviors must be aggressively reduced and eliminated. New policy and interventions need to be nuanced and outline the intersectional experiences of minority students in order to be effective.

3 Minute Thesis Competition

Student (Degree)	University (Advisor)	Title	Description
Nishchay Pidiha (MS)	Michigan State Univ. (Sinem Mollaoglu)	What are the multidimensional dynamic network structures that emerge and evolve to support knowledge sharing in AEC Project teams	
Chathuri Naiduwa-Handi (PhD)	The Univ. of Hong Kong (Steve Rowlinson)	Social capital, work engagement and safety performance in construction projects	Construction projects are network type organizations where central authority is often lacking. In such work environments, while the (safety) performance of the employees is dependent on their work engagement, 'social capital' is the primordial paradigm that captures the contribution of social elements such as reciprocity and trust towards effective interactions of project participants, facilitating work engagement. This talk presents a conceptual model to explain relationships among these three constructs, social capital, work engagement, and safety performance in construction projects. It looks into how resources embedded in the social relationships in the work environment can influence employees' work engagement and performance. Also, the mediating nature of work engagement in explaining relationship between social capital and the safety performance of the employees will be discussed.
Khalid Osman (PhD)	Univ. of Texas at Austin (Kasey M. Faust)	Operationalization of Equity in Water Sector Infrastructure Services	Historic decisions with regards to water sector services were designed to limit access to certain groups of people. The impact of these decisions still loom today, and if not addressed will continue to breed more inequities that are not helping water providers achieve their bottom lines. In 2020, the planning, management, and operations of utilities still do not consider inequities between spatially distributed community members (e.g., quantity and quality of levels of service, infrastructure investments). Further, utilities describe seeking equal distribution as opposed to equitable distribution as the status quo. However, through my dissertation I argue that equity is needed before equality is possible because of historic disinvestments of the physical systems in low-income and communities of color.
Alireza Borhani (PhD)	Univ. of Washington (Carrie Sturts Dossick)	IB Index: Towards a Standard for Building Intelligence Evaluation	Buildings are a key component of the built environment that constantly influence people's quality of life. The evolving industry of "intelligent buildings" aim to improve buildings' environmental, social, and economic performance by deploying emerging technologies. However, there is a lack of holistic understanding of intelligent buildings and more importantly, there is a gap in standard methods for evaluating a building's intelligence. This ongoing research responded to the current gap by developing a tool (called the IB Index) for assessing building intelligence. The IB Index provides project stakeholders with a standardized framework to understand the array of technological capabilities to consider and assess the impacts of those choices on building performance. The outcome of this research facilitates a data-driven decision making for building life cycle management that ultimately enhances building occupants' quality of life.
Luan Nguyen (PhD)	Iowa State Univ. (Cristina Poleacovschi)	COVID-19 Pandemic Reveals a Culture of Disengagement In Engineering Education	Our study explores whether the culture of disengagement persists when engineering students experience a pressing real-world ethical issue, such as the global COVID-19 pandemic, that directly impacts their day-to-day lives.
Bernard Tuffour Atuahene (PhD)	The Univ. of Newcastle, Australia (Sittimont Kanjanabootra)	Improving construction process through the application of big data analysis	The digitization of the construction process has contributed to the generation of large amount of varied data in the construction process: Big data. Whilst big data is nascent in the construction industry but poor data management has been a systemic problem in the industry. This study explored the benefits of big data, structural problems and big data capabilities from construction professionals through semi-structured interviews. This study contributed to the development an integrated framework of big data capabilities for construction firms to facilitate the efficient management and use of data to improve the construction process. The findings has been presented to the New South Wales Chapter of the Australian Institute of Architects as part of the 2020 Continuous Professional Development.

Nishchhal Pandey (MS)	Michigan State Univ. (Sinem Mollaoglu)	Predicting project bottlenecks in construction projects	
Alexander S.J. Zhou (PhD) (PhD)	Imperial College London (Jennifer Whyte)		Why do construction firms choose different modular strategies? Existing work on construction firms' modular strategies focuses on their internal capabilities, but this provides limited explanation of why firms choose different strategies. We examine the role of inter-firm coordination in modularization strategies, using an empirical study of three leading construction firms. The study shows that firm modularization strategies are affected by the scope of integration; and include move across the value chain. Thus, this analysis shows that to modularize, firms both use their own capabilities and draw on external capabilities from sources along the value chain. They thus mobilize in-house modularizing capabilities (intra-firm), and integration capabilities to benefit from capabilities of other firms in the value chain (inter-firm). This work has implications for construction management policy and practice, suggesting the availability of external as well as internal capabilities influences firm strategies for modularization.
Briar Goldwyn (PhD)	Univ. of Colorado Boulder (Amy Javernick-Will and Dr. Abbie Liel)	(Mis)alignments between housing safety perceptions and structural assessments of safety within Puerto Rico's informal construction sector	While many studies have investigated household perceptions of risk in hazard-prone areas, few have sought to evaluate perceptions of housing safety, or beliefs of how a house will perform in a hazard event, and specifically whether it will be damaged, leading to economic loss, injury, or death. Moreover, there has not yet been enough research to evaluate these perceptions in multi-hazard environments, where different hazards may affect their structures in entirely different ways. These multi-hazard environments force resource-limited households and builders to weigh risks of these different hazards and prioritize modifications to make their housing safe. Further, despite its prominence in resource-limited regions of the world, little is known about the housing safety perceptions of those working within the informal construction sector. In these regions, which may have weak governance over construction processes, including a lack of building code enforcement, the construction decisions fall to these informal builders themselves. Thus, it is important to investigate the housing safety perceptions of these individuals providing both labor and advice in this sector. Although anecdotal evidence may inform researchers of instances where these beliefs on safe housing construction do not align with formal, technical assessments of safe housing, there is not yet evidence from research of which housing safety perceptions do and do not align with structural engineering performance assessments.
Mo Hu (PhD)	Virginia Tech (Tripp Shealy)	Overcoming Cognitive Bias for Resilient Stormwater Infrastructure: Empirical Evidence in Neurocognition and Decision-Making	Green infrastructure (GI) holds great promise for urban stormwater management but it is less preferred and limited in its implementation. The general public constructs preference when facing such infrastructure choice. They might prioritize the negative features before considering the sustainable advantages of GI. Engineers perceive GI as riskier because it deviates from the status quo of the industry standards. They fixate on the traditional function and predictable performance of conventional stormwater infrastructure while undervaluing the social and ecological benefits of GI. To neutralize harmful cognitive bias, I will develop a discrete choice model to analyze public preference for GI and also empirically test the effects of behavioral interventions (i.e., default effects and priming effects) on changing brain activities measured by a neuroimaging technique and overcoming cognitive barriers to GI.
Meltem Duva (PhD)	Michigan State Univ.(Sinem Mollaoglu and Dong Zhao)	DIFFUSION OF SUSTAINABILITY EXPERTISE IN ARCHITECTURAL ENGINEERING AND CONSTRUCTION PROJECT NETWORKS	Sustainable buildings require additional considerations beyond conventional construction projects in their delivery due to the need for highly optimized systems and interdisciplinary collaboration (Korkmaz et al. 2010). Social networks emerged as a new tool to evaluate collaboration among project participants and enhance project performance and outcomes including sustainability (Chinowsky et al. 2008). However, there is a knowledge gap regarding what network characteristics are favorable for improved sustainability outcomes in AEC projects, how they evolve during delivery, and how relevant expertise flows through project networks. To respond to the need in the literature, this study aims to develop a holistic understanding of AEC project team networks and associated characteristics that allow experts to exchange knowledge to optimize sustainability outcomes for built environment projects.

iPoster Competition

Student (Degree)	University (Advisor)	Title	Description
Lauryn Spearing (PhD) First Table	Univ. of Texas at Austin (Kasey M. Faust)	Understanding How Social Distancing Policies Have Impacted US Water Utilities During the COVID-19 Pandemic	Social distancing policies (SDPs) implemented throughout the US in response to COVID-19 led to spatial and temporal shifts in water demand and created sociotechnical challenges for water utilities. Further, during this period, many water utilities operated with reduced workforce and financial capacities. In turn, we aim to document how utilities were impacted by the COVID-19 pandemic through a qualitative analysis of 30 interviews with 53 practitioners spanning 28 US water utilities. Specifically, we aim to understand the challenges experienced by water utilities and document utilities' responses. Results show that utilities faced a variety of challenges to maintain service continuity and implement SDPs (e.g., demand changes, financial losses). An example of utilities' responses include postponing capital projects, which may have negative repercussions in the future.
Linnel Marie Ballesteros (PhD) Second Table	Iowa State Univ. (Cristina Poleacovschi)	Self-Perceptions of Psychological Resilience After Hurricanes Irma and Maria in Puerto Rico: Evaluating the Compounding Effects of Housing Vulnerability and Socioeconomic Vulnerability	Individuals whose homes were destroyed or badly damaged by hurricanes Irma and Maria in Puerto Rico can experience significant distress due to material and social losses, including feelings of instability, hopelessness, and exposure to danger. A homeowner's psychological resilience becomes critical for their mental health, quality of life, and sustainability of their communities. Self-perception of psychological resilience is an effective measure of resilience in the absence of time and resources for long-term, longitudinal studies, thus this study utilizes self-perceptions of psychological resilience by utilizing the Brief Resilience Scale. Results show that compounding effects of socioeconomic vulnerability and housing vulnerability have amplified effects on individuals' self-perception of psychological resilience.
Alireza Borhani (PhD) Third Table	Univ. of Washington (Carrie Sturts Dossick)	IB Index: Towards a Standard for Building Intelligence Evaluation	Buildings are a key component of the built environment that constantly influence people's quality of life. The evolving industry of "intelligent buildings" aim to improve buildings' environmental, social, and economic performance by deploying emerging technologies. However, there is a lack of holistic understanding of intelligent buildings and more importantly, there is a gap in standard methods for evaluating a building's intelligence. This ongoing research responded to the current gap by developing a tool (called the IB Index) for assessing building intelligence. The IB Index provides project stakeholders with a standardized framework to understand the array of technological capabilities to consider and assess the impacts of those choices on building performance. The outcome of this research facilitates a data-driven decision making for building life cycle management that ultimately enhances building occupants' quality of life.
Luan Nguyen (PhD) Fourth Table	Iowa State Univ. (Cristina Poleacovschi)	COVID-19 pandemic reveals a culture of disengagement in engineering education	Our study explores whether the culture of disengagement persists when engineering students experience a pressing real-world ethical issue, such as the global COVID-19 pandemic, that directly impacts their day-to-day lives.
Bernard Tuffour Atuahene (PhD) Fifth Table	The Univ. of Newcastle, Australia (Sittimont Kanjanabootra)	Improving construction process through the application of big data analysis	The digitization of the construction process has contributed to the generation of large amount of varied data in the construction process: Big data. Whilst big data is nascent in the construction industry but poor data management has been a systemic problem in the industry. This study explored the benefits of big data, structural problems and big data capabilities from construction professionals through semi-structured interviews. This study contributed to the development an integrated framework of big data capabilities for construction firms to facilitate the efficient management and use of data to improve the construction process. The findings has been presented to the New South Wales Chapter of the Australian Institute of Architects as part of the 2020 Continuous Professional Development.
Jessica Taylor (PhD) Sixth Table	Iowa State Univ. (Cristina Poleacovschi)	Climate Change Adaptation of Infrastructure: Drivers and Barriers	As climate change impacts intensify, communities in rural Alaska are undergoing and adapting to changes to infrastructure from increased permafrost thawing, flooding, and coastal erosion. Climate change adaptation is needed to address significant structural failures and safety concerns. Despite the need for adaptation of infrastructure, the level of adaptation activity remains limited and inconsistent across regions and communities in rural Alaska. We address this need by identifying drivers and barriers of adaptation based on stakeholder perspectives. Results show that strong community leadership was a driver to adaptation of infrastructure. Further, results show that the high cost of technology and infrastructure was a barrier to adaptation of infrastructure. These drivers and barriers emphasize the need for national adaptation funding and policy that encourages local decision-making power.

Vijayeta Malla (PhD) Seventh Table	Indian Institute Technology, Bombay (Venkata Santhosh Kumar Delhi)	Enabling Interface Management in Construction Projects	Infrastructure projects serve as an excellent setting for interfaced-related research as they encompass complex interdisciplinary interactions. However, the tacit interface issues lowered Interface Management performance substantially. To surmount the traditional management of interfaces with interface agreements and control documents, this research utilizes a three pronged theoretical lens of People Process and Technology. Lean Construction principles (Process) in minimizing the redundant interfaces using BIM (Technology & 1S0 19650 standards) which serves as a single point source of truth for information rich federated models for the interfacing parties. As the relationship links of the interacting parties are diverse in infrastructure projects, using the graph theory a link prediction social network model (People) will be synthesized to exhibit different relations and their influence among various interfacing teams.
Justine Lee (MS) Eighth Table	Stanford Univ. (Soh Young In)	Accelerating Entrepreneurship in the Clean Technology Sector: Firm-centric Conjunctional Factors Determining Successful Exits of Clean- and Hardtech Startups	To curb climate change, we need disruptive innovation in physical products and processes (i.e., hardtech) that uses less nonrenewable sources or produces less waste than conventional options (i.e., cleantech). Lawmakers tried boosting investment in cleantech with loans, subsidies, and tax breaks; but venture capitalists have been steadily pulling funds since 2009. Early-stage hardtech firms, more capital-intensive than softtech counterparts, were hit the hardest by this investment "valley of death." And yet, some clean-, hardtech startups did exit successfully between 2005 and 2016. This study therefore dives into these outlying successes using fuzzy-set qualitative comparative analysis. We find four exit recipes and three categories of cases. Understanding the different paths to success help entrepreneurs, incubators/ accelerators, and policymakers to strategically support clean-, hardtech development.