

2020 Virtual Global Leadership Forum for Construction Engineering and Management

June 9-10, 2020

GLF-CEM Website: <https://cem.ecn.purdue.edu/glf/>

**Message from Conference Chair
Professor Edward Jaselskis**

I hope that you are doing well during these unusual and challenging times. The GLF-CEM is an organization which began about 10 years ago to bring leaders from academia and industry from around the world together to share ideas on building stronger academic programs and help shape our future construction industry leaders. We come together once a year to discuss and share common concerns in research, teaching, academic administration, and opportunities for collaboration. Typically, we meet in person, but this time we are gathering virtually and hope that next year we will be back to “normal”, meeting face-to-face. This year’s forum considers the opportunities and threats from the current pandemic and will include topics such as remote virtual construction education, disruptive technologies such as artificial intelligence, and innovative rapid project delivery techniques. I sincerely thank the planning committee for helping to organize this year’s conference and look forward to a successful program.



E.I. Clancy Distinguished
Professor Edward Jaselskis
North Carolina State University

PROGRAM [All times are Eastern Standard Time (EST)]:

- **Tuesday, June 9, 2020**

Join Zoom Meeting (When logging in please use your full name, title, and affiliation):
<https://ncsu.zoom.us/j/94546768088?pwd=QnRCK3NQV09IM2RLQW4zeSsvU2FQdz09>

| Time | Topic | Speakers |
|-------------|---|--|
| 9:00 am | Welcome | Drs. Edward Jaselskis and Hans-Joachim Bargstaedt |
| 9:15 am | GLF Overview | Dr. Makarand Hastak |
| 9:30 am | First Session - Promoting Innovation through University-Industry Partnerships—Part 1 <i>Construction Innovation Center at the University of Alberta</i> | Moderator: Dr. Simaan Abourizk Panelists: Dr. Aminah Robinson Fayek and Mr. Jim Kanerva |
| 10:30 am | BREAK-Group Screenshot Photo | Recommended to wear a shirt and/or use a background with your university or company logo |

| | | |
|----------|---|---|
| 10:45 am | Second Session -Promoting Innovation through University-Industry Partnerships—Part 2 <i>Overview of the Trenchless Technology Center (TTC) at Louisiana Tech University</i> | Moderators: Drs. Simaan Abourizk and Mickey Richards (backup) Panelists: Drs. Tom Iseley and John Matthews |
| 11:45 am | Summary and Wrap-up | Dr. Edward Jaselskis |

- **Wednesday, June 10, 2020**

Join the Zoom Meeting (When logging in please use your full name, title, and affiliation):

<https://ncsu.zoom.us/j/99695649089?pwd=U21JWnFIWWo3ZkM3bIBWMOJQWE44dz09>

| Time | Topic | Speakers |
|-------------|--|---|
| 9:00 am | Welcome | Drs. Edward Jaselskis |
| 9:10 am | Third Session - Future Trends in Construction Education—Lessons Learned from the Current Crisis | Moderator: Dr. Jan Wium Panelists: Drs. Chimay Anumba, Mike Kagioglou, Jeffrey Russell, and Lucio Soibelman |
| 10:10 am | BREAK | |
| 10:30 am | Fourth Session - Future Trends in Construction Education—Lessons Learned from the Current Crisis in Rapid Facility Delivery | Moderators: Drs. Makarand Hastak and Dongping Fang Panelists: Drs. Mohamad Al-Hussein, Anil Sawhney, Daniel Oliveira, and Penghua Zhou |
| 11:30 am | Fifth Session: ASCE Construction Engineering Education Committee | Moderator: Dr. Edward Jaselskis Presenter: Dr. Yong Bai |
| 11:45 am | Summary and Closing | Drs. Edward Jaselskis, Hans-Joachim Bargstaedt, and Ossama Salem |

- **Planning Committee**

- Dr. Simaan Abourizk, University of Alberta, Edmonton, Canada
- Dr. Irtishad Ahmad, American University of Sharjah, UAE
- Dr. Yong Bai, Marquette University, Milwaukee, Wisconsin, USA
- Dr. Hans-Joachim Bargstaedt, Bauhaus-Universität Weimar, Germany
- Dr. Dongping Fang, Tsinghua University, Beijing, China
- Dr. Carlos Formoso, Federal University of Rio Grande do Sul (UFRGS) Brazil
- Dr. Makarand Hastak, Purdue University, West Lafayette, Indiana, USA
- Dr. Edward Jaselskis North Carolina State University, Raleigh, North Carolina, USA
- Dr. Michail Kagioglou, Western Sydney University, Australia
- Dr. Lucio Soibelman, University of Southern California, Los Angeles, USA
- Dr. Jeffrey Russell, University of Wisconsin-Madison, USA
- Dr. Ossama Salem, George Mason University, Fairfax, Virginia, USA
- Dr. Geoffrey Shen, Hong Kong Polytechnic University, Hong Kong
- Dr. Koshy Varghese, IIT-Madras, Chennai, India
- Dr. Jan Wium, Stellenbosch University, South Africa

Speaker Biographies

Conference Chair

Professor Edward Jaselskis

Professor Jaselskis is the E.I. Clancy Distinguished Professor in the Department of Civil, Construction, and Environmental Engineering at North Carolina State University. He began his academic career at Iowa State University (ISU) where he achieved the rank of full professor. During his 22 years at ISU, Dr. Jaselskis held several administrative positions including professor-in-charge of the construction engineering program, director of the Engineering Policy and Leadership Institute in the College of Engineering, and interim chair for the Department of Civil, Construction and Environmental Engineering. He has also served as a program director for the Information Technology and Infrastructure Program at the National Science Foundation and as editor-in-chief of the ASCE Journal of Construction Engineering and Management. His primary research interests relate to modeling construction project success and integrating innovative construction technologies (e.g., laser scanning, RFID, and virtual project teams) into the construction process and has performed research for CII, DOE, NSF, NCHRP, AGC, Departments of Transportation, Ames Laboratory, and several private companies. This research has led to over 100 publications; two book chapters; three patents; numerous invited lectures; and consulting opportunities with the Department of Energy, Ministry of Transportation and Communications in Taiwan, and other private companies. He has also worked for Exxon as a cost and schedule engineer and field engineer, Perkins and Will as an electrical designer, and Bechtel as a field engineer. Professor Jaselskis is a member in several organizations including American Society of Civil Engineering, Construction Institute, Transportation Research Board, American Society for Engineering Education, Sigma Xi, National Society of Professional Engineers, and National Academy of Construction.



Professor Jaselskis holds a bachelor's degree in general engineering from the University of Illinois at Urbana-Champaign, master's degree in civil engineering from MIT, and PhD degree in civil engineering from the University of Texas at Austin. He is also a registered professional engineer in the State of Iowa.

Global Leadership Forum for Construction Engineering and Management Chair Welcome

Professor Hans-Joachim Bargstadt

Professor Bargstadt is Professor for Construction Engineering and Management at the Bauhaus-Universität Weimar. His research fields are in construction technologies, construction operations and construction logistics. Special focus is given to the development of software applications like building information modeling for project management and construction site operations as well as simulation of construction operations. Other areas of activity are in construction management, for example in claim management and arbitration.



After studying civil engineering at Technical University Braunschweig, at Georgia Institute of Technology, Atlanta, and at Institut Supérieur du Beton Arme, Marseille, Prof. Bargstadt was a structural engineer in a large construction company. From 1986 to 1989 he worked for his PhD in structural engineering at the Technical University Braunschweig. Then a career in the construction industry followed from working as site engineer to being director of a regional division of a large construction company.

He has been a university professor since 1999. In 2012 and 2013, he was a guest professor at the National Taiwan University, Taipei. Since 2011, he has been regularly teaching as a guest lecturer at Stellenbosch University.

Bargstadt served many years as students' dean and as dean of the faculty. He is spokesman of the German Association of Professors in Construction Engineering and Construction Management. He serves as Chairman of the German association of civil engineering facilities. Since the beginning of 2017 he is also president of 4ING e.V., the German Council of University Faculties in Engineering and Informatics.

Global Leadership Forum for Construction Engineering and Management Overview

Professor Makarand Hastak

Professor Hastak is the Professor and Head of the Division of Construction Engineering and Management as well as Professor of Civil Engineering at Purdue University. He has been involved with the construction industry for the past 30 years where he has conducted research, taught, and assisted industry in the area of construction engineering and management including process improvement, disaster risk reduction, infrastructure management, cost control, project management decision-making, risk management, and strategic planning. Dr. Hastak is a Professional Engineer (PE) and a Certified Cost Professional (CCP). As an academic, he has worked on numerous Construction Industry Institute (CII) projects over the past 25 years.

As a prominent educator and consultant, he has given over 40 keynotes and invited lectures around the world.

Professor Hastak has authored over 200 publications that relate to process improvement, project controls, capital rehabilitation planning, strategic planning and decision-making based on his work. He has co-authored a widely used book on *Infrastructure Planning, Engineering, and Economics* published by McGraw-Hill (2006 and 2015). He serves on the Education Board of the Association for Advancement of Cost Engineering (AACE) where he is also the editor for the *6th edition of the Skills and Knowledge of Cost Engineering* (2015) and the *2nd Edition of the CCP Certification Study Guide* (2016).

In addition to his strong analytical skills, Professor Hastak utilizes his verbal and written communication skills in developing training material and workshops as well as regularly teaching professional courses for the A/E/C industry. Specializations and key skills pertain to capital rehabilitation planning, risk management for capital projects, development of tools for advanced decision-making in project controls, and continuous process improvement of capital projects.

Dr. Hastak received his BE (Civil) from Nagpur University, India, MSCE from the University of Cincinnati, and PhD (Civil) from Purdue University. In addition, he is a trained university planner through SCUP and has received training at Cornell University in Executive Leadership, Financial Management, and Advanced Strategic Human Resource Management. He has worked on the faculty at Georgia Tech, NYU, University of Cincinnati, and is currently a faculty member at Purdue University.



First Session - Promoting Innovation through University-Industry Partnerships— Part 1

Moderator: Professor Simaan Abourizk, Canada Chair in Construction Engineering and Management at the University of Alberta

For almost 30 years, Professor Abourizk and his research team have focused on advancing simulation modelling for improved project management and control of large-scale construction projects, resulting in the foundation of several simulation tools and strategies that have been implemented throughout the industrial construction sector. Partnering with 40 organizations and receiving over \$4.5 million in research funding from industry alone, the success and distinctiveness of Dr. Abourizk's research program are a consequence of building strong industrial research partnerships focused on advancing research, teaching, and overall practice. This collaborative approach has garnered widespread support from numerous funding agencies, policy makers, and industrial practitioners and has been instrumental in the expansion of the University of Alberta's Haskayne School of Construction Engineering into one of the most reputable and well-respected Construction Engineering and Management Programs in North America.



Backup Moderator: Dr. Mickey Richards

Dr. Richards received her BA (Honors) in Chemistry at the University of Nebraska-Lincoln in 1996, then moved on to the University of Wisconsin-Madison, where she completed her MSc in 1998, working with Prof. Samuel H. Gellman. After receiving her MSc, Dr. Richards worked in software development at Epic Systems Corporation, and as an application scientist at Personal Chemistry/Biotage, and as a medicinal chemist in the Molecular Pharmacology Laboratory at McLean Hospital. In 2012, she received her PhD in Chemical Biology at the University of Alberta, under the supervision of Prof. Todd L. Lowary. After a postdoctoral fellowship at the Alberta Glycomics Centre, she began working in the Department of Civil and Environmental Engineering at the University of Alberta as a technical writer in 2018.



Panel Members:

Professor Aminah Robinson Fayek, PhD, PEng

Professor Robinson Fayek is a professor in the Department of Civil and Environmental Engineering at the University of Alberta and Tier 1 Canada Research Chair in Fuzzy Hybrid Decision Support Systems for Construction. She is also distinguished as the NSERC Industrial Research Chair (IRC) in Strategic Construction Modeling and Delivery. She is the Director of the Construction Innovation Centre, which brings together 30 faculty members and 50 industry partners from various construction research groups under one umbrella to develop interdisciplinary solutions to high-priority challenges in construction. Her research program focuses on the use of artificial intelligence to develop advanced decision support systems for construction, and her research has been implemented by leading members of the construction industry.



Mr. Jim Kanerva, MEng, PEng

Jim Kanerva is the General Manager for Carry Steel. He holds a bachelor's degree in Mechanical Engineering, a Master of Engineering degree in Engineering Management, both from the University of Alberta, and has been a Professional Engineer with APEGA since 1997. He is active in the Edmonton and Alberta community, serving as:

- Member of the Executive Management Committee, and Co-Chair of the Scientific Advisory Committee for the University of Alberta's Construction Innovation Centre since 2019;
- Director with Women Building Futures since 2018;
- Member of the Management and Technical Board for the NSERC Industrial Research Chair in Construction Engineering (2012–2016)
- An active member on various Alberta Region and National Board Subcommittees for the Canadian Institute of Steel Construction since 1998;
- Director with Manufacturers Health and Safety Association (2017–2011)



Second Session - Promoting Innovation through University-Industry Partnerships—Part 2

Moderators: Prof Simaan Abourizk , Canada Chair in Construction Engineering and Management at the University of Alberta

Backup Moderator: Dr. Mickey Richards

Panel Members:

Professor Tom Iseley

Professor Iseley has over 40 years of experience in the planning, design, and construction of underground infrastructure systems. From 1982, he served on the faculty of Mississippi State University, Purdue University, Indiana University–Purdue University Indianapolis, and Louisiana Tech University. During this time, he has maintained an international leadership position in trenchless technology. In 1989, Dr. Iseley established the Trenchless Technology Center (TTC) at Louisiana Tech University. He is a founding director of the North American Society for Trenchless Technology (NASTT). Dr. Iseley also served for three years as the chairman of the National Utility Contractors Association’s (NUCA) Trenchless Technology Committee. In 1993, Dr. Iseley was selected as the Trenchless Technology Magazine’s Person of the Year. He received the ASCE 1995 John O. Bickel Award and the



1999 Stephen D. Bechtel Pipeline Engineering Award. He also served on the board of directors of the American Underground-construction Association (AUA) from 1991 to 2005. Dr. Iseley was inducted in the Class of 2016 to the National Academy of Construction (NAC). In April 2015, Dr. Iseley was selected as a Distinguished Member of the American Society of Civil Engineers (ASCE) for his eminence in pipeline engineering, becoming just one of only 637 Distinguished Members ever selected by the ASCE. He was also selected as the 2016 UCTA MVP (Most Valuable Professional) by the Underground Construction Technology Association (UCTA) and Underground Construction magazine. Dr. Iseley was inducted into the 2017 NASTT Hall of Fame. He received the Centre for Advancement of Trenchless Technologies (CATT) Award of Excellence. Dr. Iseley serves as the Chair for the Utility Risk Research and Education Council of the ASCE Utility Engineering and Surveying Institute (UESI), and a member of the EXCOM for the Risk Management Division.

Dr. Iseley holds a B.S. in Civil Engineering and an M.B.A. from the University of Alabama in Birmingham and a Ph.D. in Civil Engineering from Purdue University.

Professor John Matthews

Professor Matthews is a faculty member in the Department of Civil Engineering and Construction Engineering and Director of the Trenchless Technology Center at Louisiana Tech University. He has over 16 years of experience in the rehabilitation and inspection of pipelines. Prior to joining Louisiana Tech he previously served as Pipe Renewal Service Line Manager at Pure Technologies, as Water Infrastructure Lead at Battelle, and as a Research Associate at the TTC. He has authored more than 200 technical publications in his field and currently serves on the National Board of Directors of NASTT.



Third Session - Future Trends in Construction Education—Lessons Learned from the Current Crisis

Moderator: Professor Jan Wium

Professor Wium is the Chair in Construction Engineering and Management at Stellenbosch University. Prof Wium qualified with a BScEng and MScEng in civil engineering from the University of Pretoria in South Africa and holds a PhD from the Swiss Federal Institute of Technology in Lausanne. He worked in industry as a structural engineering consultant and project manager for 20 years. In 2003, he joined Stellenbosch University as a specialist in structural concrete and structural dynamics. He was appointed in 2010 to the Chair in Construction Engineering and Management. His research interests are modular construction, collaboration for better constructability, design management, and risk management.



Backup Moderator: Professor Hans-Joachim Bargstaedt

Professor Bargstadt is Professor for Construction Engineering and Management at the Bauhaus-Universität Weimar. His research fields are in construction technologies, construction operations and construction logistics. Special focus is given to the development of software applications like building information modeling for project management and construction site operations as well as simulation of construction operations. Other areas of activity are in construction management, for example in claim management and arbitration.

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Panel Members:

Professor Chimay Anumba

Professor Anumba graduated at 18 with a First Class Honours degree in Building and worked as a Project Engineer and Design Engineer before studying for his PhD in Civil Engineering (specializing in Computer-Aided Design) at the University of Leeds, UK. On completion of his PhD in 1989, he worked in industry on a wide range of building and civil infrastructure projects, becoming a Chartered/Professional Engineer in 1993. This was followed by academic appointments at a number of UK academic institutions. More recently, he was Professor and Head of the Department of Architectural Engineering at the Pennsylvania State University from 2008 to 2016.



Dr. Anumba's research interests are in the fields of collaborative design, construction engineering and informatics, intelligent systems, knowledge management, cyber-physical systems, and project management. He has over 450 publications in these fields. Dr. Anumba's research has received support worth over \$150 million from industry, The National Science Foundation (NSF), the U.S. Department of Energy (DOE), National Institutes for Health (NIH), the Engineering and Physical Sciences Research Council (EPSRC, UK), and a variety of national and international agencies. In addition, he has supervised 47 doctoral graduates, advised numerous master's students, and mentored over 23 postdoctoral scholars. Dr. Anumba is Editor-in-Chief of the Engineering, Construction and Architectural Management journal, Co-Editor of the Journal of Information Technology in Construction, and Specialty Editor of the ASCE Journal of Computing in Civil Engineering.

He has won several awards for his work and has held Visiting Professor/Scholar appointments at more than 10 universities in North America, Europe, Asia and Africa – including MIT, Stanford and Tsinghua. In recognition of his substantial and sustained original contributions to the field of Construction Engineering and Informatics, Dr. Anumba was awarded the higher doctorate degree of Doctor of Science, D.Sc., by Loughborough University in July 2006. In January 2007, he was also awarded an Honorary Doctorate (Dr.h.c.) by Delft University of Technology in The Netherlands for outstanding scientific contributions to Building and Construction Engineering. He was elected a Fellow of the Royal Academy of Engineering in July 2012. He also holds

Fellowships of the following professional institutions: The Institution of Civil Engineers, The Institution of Structural Engineers, and the American Society of Civil Engineers.

Dr. Anumba joined the University of Florida on August 1, 2016 as a full Professor and Dean of the College of Design, Construction and Planning.

Professor Mike Kagioglou

Professor Kagioglou became the Dean of Engineering at Western Sydney University on the 9th of March 2020. The School consists of Civil, Electrical and Electronic, Mechatronics and Mechanical Engineering. Previous to that he was the Dean of Art, Design and Architecture at the University of Huddersfield in the UK from the 4th of November 2013. The School consisted of three innovative departments: Art and Communications; Fashion and Textiles; and Architecture and 3D design. He was previously at the University of Salford in the UK where he was the Head of the School of Built Environment since 2009, the No.1 Research Power School in the 2008 RAE for Architecture and the Built Environment.



His career spans Engineering, Manufacturing, Creativity, Design, Architecture and the Built Environment, engaged in inter and multi-disciplinary research at a global level. Professor Kagioglou's commitment to inter and multidisciplinary endeavours was evident from the beginning of his academic career. Receiving his PhD in 2009 he joined the University of Salford as the Manager of the £8M EPSRC (Engineering and Physical Sciences Research Council) Salford Centre for Research and Innovation (SCRI) in the built and human environment. He became the Director of SCRI in 2008.

Professor Kagioglou's more recent work over the last 7-8 years focused on process issues in healthcare infrastructure and he was an Academic Director for the £11M EPSRC funded interdisciplinary IMRC in Health and Care Infrastructures Research and Innovation Centre (HaCIRIC). His current research is around healthcare infrastructure and better decision making in complex settings, following an outcomes/benefits based philosophy. He is also working on platform design in a number of sectors and Lean thinking. He has published more than 200 academic refereed papers, many industrial reports and three books. He has taken part in international evaluations and consultancy activity.

Professor Jeffrey Russell, PE, FNSPE, Dist. M.ASCE, National Academy of Construction

Professor Russell is the Vice Provost for Lifelong Learning and Dean of the Division of Continuing Studies at the University of Wisconsin-Madison since 2011. In his role as Vice Provost, he is striving to make UW-Madison a global leader in the service of lifelong learners.

He first joined UW-Madison's faculty in 1989 as an assistant professor in the Department of Civil and Environmental Engineering, where he co-founded the Construction Engineering and Management Program and developed the construction curriculum. In addition, he has authored and co-authored a myriad of papers on the subject of educating civil engineers. His body of work demonstrates his commitment to using emerging technology in the classroom to prepare the next generation of engineers and other students for the challenges of the future.

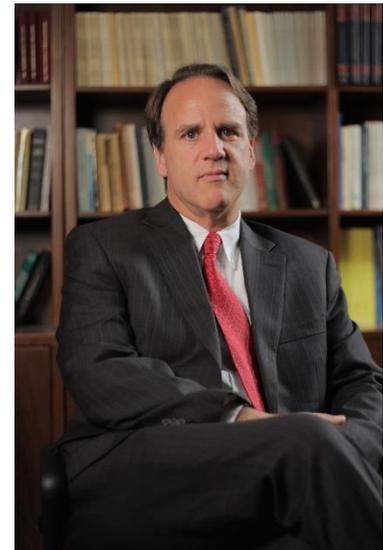


He was honored for his career in education as one of five *Outstanding Projects and Leaders (OPAL) Lifetime Achievement Award* winners for 2014 by the American Society of Civil Engineers.

Professor Russell holds a bachelor's degree in civil engineering from the University of Cincinnati and master's and doctoral degrees from Purdue University. He is also a registered professional engineer in Wisconsin.

Professor Lucio Soibelman

Professor Soibelman obtained his bachelor and master's degrees from UFRGS, Brazil. He worked as a construction manager for 10 years before moving in 1993 to the U.S. where he obtained his PhD at MIT in 1998. He then started as an Assistant Professor at the University of Illinois at Champaign-Urbana. In 2004 he moved to Carnegie Mellon University as an Associate Professor and then was promoted to Professor in 2008. In 2012 he joined the University of Southern California as the Chair of the Sonny Astani Department of Civil and Environmental Engineering. During the last 25 years he focused his research on advanced data acquisition, management, visualization, and mining for construction and operations of advanced infrastructure systems. He published over 150 books, book chapters, journal papers, conference articles, and reports and performed research with funding from NSF (NSF career award and several other NSF grants), NASA, DOE, US Army, NIST, IBM, Bosch, IDOT, and RedZone Robotics as well as many other funding agencies.



Fourth Session - Future Trends in Construction Education—Lessons Learned from the Current Crisis in Rapid Facility Delivery

Moderators: Professor Makarand Hastak and Dongping Fang

Professor Makarand Hastak

Professor Hastak is the Professor and Head of the Division of Construction Engineering and Management as well as Professor of Civil Engineering at Purdue University. He has been involved with the construction industry for the past 30 years where he has conducted research, taught, and assisted industry in the area of construction engineering and management including process improvement, disaster risk reduction, infrastructure management, cost control, project management decision-making, risk management, and strategic planning. Dr. Hastak is a Professional Engineer (PE) and a Certified Cost Professional (CCP). As an academic, he has worked on numerous Construction Industry Institute (CII) projects over the past 25 years.



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Professor Dongping Fang

Professor Fang is the Head of the Department of Construction Management, School of Civil Engineering at Tsinghua University. He is the founding director of (Tsinghua–Gammon) Construction Safety Research Center. His research, teaching and consulting are in the areas of safety and risk management in construction, sustainability and green construction. His research has been published in more than 200 reports, papers and books in English, Japanese and Chinese. Dongping is a board member of CIB and the Chair of CIB program committee (2010-2013). He is a member of the executive committee of GLF-CEM. He has been honored as Visiting Professors in Australia, Sweden and the UK. He also serves as an editorial board member of several international journals.



Panel Members:

Professor Mohamad Al-Hussein, PEng

Professor Al-Hussein is a professor and Industrial Research Chair (IRC) in the Industrialization of Building Construction at the University of Alberta, and a highly sought after researcher and consultant in the areas of lean manufacturing, construction process optimization, CO₂ emission quantification, and building information modelling (BIM), with the development of modular and offsite construction technologies and practices forming the hub of his research.

Dr. Al-Hussein's research has contributed to construction automation as applied to equipment selection and on-site utilization. His participation in overseeing the crane lifts of concrete panels at a mansion project in Long Island, NY, helped to establish his reputation as a world-class researcher in this field. Since then, his research has continued to develop in the area of crane selection and utilization algorithms. Dr. Al-Hussein's work in the area of crane utilization has led to a number of innovations to minimize the cost and footprint associated with crane operations on industrial sites.



Dr. Al-Hussein has also successfully applied lean principles to improve work methods and productivity standards, including the City of Edmonton Drainage Operations. One unique application has been Dr. Al-Hussein's work on optimization of invoice processing for construction organizations.

Dr. Al-Hussein's research has developed best practices for panelized building systems, lean production, and modular construction. He applied modular construction to build five 3-story

student dorms at a Pennsylvania college in just 10 onsite working days. More recently, applications of Dr. Al-Hussein's research in the area of modular and offsite construction have included several mid-rise, multi-family residential facilities, such as a 68-unit apartment building for which on-site assembly of modules was completed in just two days.

Dr. Anil Sawhney

Dr. Sawhney is the Director of the Infrastructure Sector for the Royal Institution of Chartered Surveyors. He leads the emerging initiative and strategy on placing and positioning the Institution within the field of commercial management of infrastructure projects globally. Anil is involved in the production of the infrastructure sector's body of knowledge, standards, guidance, practice statements, education, and training. He is also a Visiting Professor at Liverpool John Moores University in the UK and the Bovard College at the University of Southern California. Anil has a rich mix of academic, research, industry, and consulting experience gathered working in the USA, India, Canada, the UK, and Australia. Anil is the co-editor of the Construction Innovation: Information, Process, Management Journal. He serves on the International Editorial Board of the Journal of Infrastructure Asset Management of the Institution of Civil Engineers (UK), the Journal of Civil Engineering and Environmental Systems published by Taylor and Francis, and the Journal of Information Technology in Construction.



Dr. Daniel Oliveira

Dr. Daniel Oliveira is the Associate Director of Funded Studies at the Construction Industry Institute. Previously, he managed CII's Research Services and was a researcher in data analytics for capital projects. Daniel is passionate about using research and data analytics to improve capital projects, and he works with industry members and academics to manage CII's research portfolio. Before joining CII in 2014, Daniel was a project manager with The University of Texas at Austin's Office of Campus Planning, where he planned capital projects and worked on the university's master plan. He holds a Master's in Engineering from the Universidade Federal do Rio Grande do Sul (in Brazil) and a Ph.D. in Civil Engineering from Carnegie Mellon University.



Dr. Penghua Zhou

Dr. Zhou is the Chief Engineer of the projects for China Construction Third Engineering Bureau Group Co., LTD. Dr. Penghua and his team made their unique and indispensable contribution during the current pandemic to the successful completion of the Huoshen Shan and Leishen Shan hospitals, with time-proven experience and expertise. Dr. Zhou received his Doctorate degree in Disaster Prevention and Control and Protection Engineering from Wuhan University and is a registered construction engineer of Grade I and national cost engineer.

Over the years Dr. Penghua has won 25 awards from China Association of Construction Enterprise Management for his innovations, published four articles in SCI(EI) and 21 articles with nationally renowned academic journals and earned 28 national patents. Dr. Penghua is also the author of *Application of Management as Main Contractor in Construction of Medical Facilities with Modern Requirements*.



Fifth Session - ASCE Construction Engineering Education Committee

Moderator: Professor Edward Jaselskis

Professor Jaselskis is the E.I. Clancy Distinguished Professor in the Department of Civil, Construction, and Environmental Engineering at North Carolina State University. He began his academic career at Iowa State University (ISU) where he achieved the rank of full professor. During his 22 years at ISU, Dr. Jaselskis held several administrative positions including professor-in-charge of the construction engineering program, director of the Engineering Policy and Leadership Institute in the College of Engineering, and interim chair for the Department of Civil, Construction and Environmental Engineering. He has also served as a program director for the Information Technology and Infrastructure Program at the National Science Foundation and as editor-in-chief of the ASCE Journal of Construction Engineering and Management. His primary research interests relate to modeling construction project success and integrating innovative construction technologies (e.g., laser scanning, RFID, and virtual project teams) into the construction process and has performed research for CII, DOE, NSF, NCHRP, AGC, Departments of Transportation, Ames Laboratory, and several private companies. This research has led to over 100 publications; two book chapters; three patents; numerous invited lectures; and consulting opportunities with the Department of Energy, Ministry of Transportation and Communications in Taiwan, and other private companies. He has also worked for Exxon as a cost and schedule engineer and field engineer, Perkins and Will as an electrical designer, and Bechtel as a field engineer. Professor Jaselskis is a member in several organizations including American Society of Civil Engineering, Construction Institute, Transportation Research Board, American Society for Engineering Education, Sigma Xi, National Society of Professional Engineers, and National Academy of Construction.



Professor Jaselskis holds a bachelor's degree in general engineering from the University of Illinois at Urbana-Champaign, master's degree in civil engineering from MIT, and PhD degree in civil engineering from the University of Texas at Austin. He is also a registered professional engineer in the State of Iowa.

Presenter: Professor Yong Bai

Professor Bai is the McShane chair and professor in charge of the Construction Engineering program in the Department of Civil, Construction and Environmental Engineering at Marquette University. He has more than 20 years of experience in academia and over six years of experience in the construction industry. His research expertise is in the area of infrastructure construction and maintenance. He has received over \$2 million in research funding and has produced more than 100 publications. Dr. Bai is a professional engineer, an ASCE fellow, a specialty editor of the ASCE Journal of Construction Engineering and Management, and chair of the ASCE Construction Engineering Education Committee.

