Symposium Programme (Overview)

REES 2019 CAPE TOWN

Wednesday 10 July

8h30 – 9h00	Registration
9h00 – 9h10	Welcome: Bruce Kloot, Symposium Chair
9h10 – 9h30	Opening address: Jonathan Jansen, Stellenbosch University
9h30 – 10h30	Keynote: Jenni Case, Virginia Tech – *Interrogating our assumptions about the relationships between engineering education research, educational reform and social change.*
10h30 – 11h00	**Break and refreshments**
11h00 – 12h00	**Session 1**
12h00 – 13h00	**Session 2**
13h00 – 14h30	**Lunch** & **Postgraduate Networking Session**
14h30 – 15h30	**Session 3**
15h30 – 16h30	**Session 4**
16h30 – 17h00	**Break and refreshments**
17h00 – 18h00	Keynote: Aditya Johri, George Mason University – *Materiality Matters: Technology and Engineering Education.*
18h00 – 19h30	Welcome Reception – UCT Graduate School of Business

Thursday 11 July

8h30 – 8h45	Presentation by Adam Carberry, REEN Chair
8h45 – 9h45	Keynote: Maartje vd Bogaard, Delft University of Technology – *Student success, complexity, and the potential of learning analytics.*
9h45 – 10h15	**Break and refreshments**
10h15 – 11h15	**Session 5**
11h30 – 13h00	**Workshop Session 1**
13h00 – 14h00	**Lunch**
14h00 – 15h00	**Session 6**
15h15 – 16h45	**Workshop Session 2**
16h45 – 17h00	**Break and refreshments**
17h00 – 18h00	SASEE Biennial General Meeting (members only)
19h00 – 23h00	**Gala Dinner – Gold Restaurant**

Friday 12 July

8h45 – 9h00	Presentation by Deborah Blaine, SASEE President
9h00 – 10h00	Keynote: Khairiyah Mohd-Yusof, Universiti Teknologi Malaysia – *From Scholarly Practitioner to Researcher in Engineering Education: Establishing a Virtuous Cycle of Research.*
10h00 – 10h30	**Break and refreshments**
10h30 – 11h30	**Session 7**
11h30 – 12h30	**Session 8**
12h40 – 13h00	Closing remarks: Bruce Kloot & Sally Male
13h00 – 14h00	**Lunch**

------- Walking tours -------

Symposium Programme

REES 2019 CAPE TOWN

Wednesday 10 July

Registration, Welcome, Opening Address

Keynote: Jennifer Case, Virginia Tech – *Interrogating our assumptions about the relationships between engineering education research, educational reform and social change*

	Track A - Exhibition Hall	Track B - Boardroom 1	Track C - Faculty Room	Track D - Executive Room
Session 1	*Research (Chair: Adam Carberry)* Research-with-Practice: Insights From Delivering a Workshop Linking Undergraduate Research... (Lisa Benson et al.) A Translational Effort Focused on Student Reflection in Engineering Education (Jennifer Turns and Wendy Roldan) How do engineering lecturers perceive SOTL? (Deborah Blaine, Anton Basson and Cecilia Jacobs)	*Diversity (Chair: Shannon Chance)* Through HER Lens: Examining How Black Women Create and Leverage Counter-Spaces...(Jessica Rush Leeker et al.) Creating Gender Inclusive Engineering and Science Classes: Establishing Baseline Experiences… (Sally Male et al.) Engineering Education Re-interpreted Using the Indigenous Sacred Hoop Framework (Jillian Seniuk Cicek et al.)	*Engineering design (Chair: Brent Jesiek)* Intent & Revision in Engineering Design (Douglas Lecorchick, Elizabeth McEneaney, Tamecia Jones, et al.) Access for All: Promoting Universal Design Thinking in a Rehabilitation Engineering Course (Brian Self and Jim Widmann) EngStarter: An Open-Hardware and IoT Integrated Education Kit… (Claudio Freitas, Zachary Beyer, Jennifer DeBoer)	*Assessment (Chair: Andrea Mazzurco)* Why lecturers in an engineering school assess the way they do (Teresa Hattingh and Laura Dison) Assessment "as learning" in an extended engineering degree programme… (Erika Müller and Adriana Botha) Building a Repository of Instructional and Assessment Techniques... (Srividya Bansal and Jeanette Mueller-Alexander) First year engineering students' perceptions of the purposes of classroom assessment (Ashish Agrawal et al.)
Session 2	*Research (Chair: James Swart)* Work-in-Progress: Attempted Authors' Perspectives on the Peer Review Process of the JEE (Stephanie Cutler et al.) Influence of Personal Epistemology on Research Method: Implications for Research Education (David Walwyn) Moving from crime and punishment to success and reward: transitioning… to educational research (Sarah Dart et al.)	*Identity (Chair: Jennifer Case)* The development of engineering identity in an electrical engineering degree programme (Gabrielle Nudelman) Identity in practice: Examining personal identities of engineering graduates in the transition to the workplace (James Huff) Identity in Practice: Reflections from Malaysian Women who are Practicing Engineers (Jennifer DeBoer et al.)	*ICTs (Chair: Douglas Lecorchick)* Integrating Computation into a Civil Engineering Curriculum Instructions at a Colombian… (Camilo Vieira & Juan David Gomez) Motivational insights into students' help-seeking behaviours in a resource-rich engineering... (Amy Dunford et al.) Adoption of Computational Modelling in Introductory Engineering Course Modules: A Case Study (Abel Nyamapfene)	*Connections to the workplace (Chair: Karin Wolff)* An Analysis of Possible Predictors of Early Engagement with Professional Development.. (David Lowe & Anthony Kadi) Toward a Typology of the Sociotechnical in Engineering Practice (Brent Jesiek, Natascha Buswell, Andrea Mazzurco et al.) Teaching geotechnical engineering for practice-readiness: An action research project (Maria Ferentinou and Zach Simpson)

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Session 3	*Society & curriculum (Chair: Johanna Lönngren)* Building a national engineering educator community of practice (Karin Wolff, Anton Basson, Deborah Blaine and Mandy Tucker) National, disciplinary and institutional influences on curriculum... (Nicole Pitterson, Jennifer Case Ashish Agrawal and Kevin Krost) Re-Thinking the Industrial Engineering Curriculum in Light of Technological Changes (Tinashe Tendayi et al.)	*Teaching & learning (Chair: Cindy Finelli)* Work-in-Progress: Engineering Students' Changing Conceptions of the Value of Creativity (Sarah Zappe & Joseph Tise) Student Reflections on Proficiency with Learning Objectives: Early Semester Actions and Plans (Heidi Diefes-Dux & Adam Carberry) Patterns of Monthly Student Access to Feedback by Section… (Heidi Diefes-Dux and Laura Cruz Castro)	*The workplace & mentoring (Chair: Anne Gardner)* How to make pre-college STEM program and industry partner relationships successful...(Jessica Rush Leeker et al.) The role of the industry mentors in navigating the paradoxes inherent in work integrated learning (Tiyamike Ngonda et al.) An Air Quality Inquiry: A Curricular Approach to Preparing Student Mentors of Air Quality Research Projects… (Daniel Knight et al.)	*Diversity & curriculum (Chair: Gabi Nudelman)* Web tools for curriculum co-design: An indicator of engineering student graduate attributes (Cheryl Belford and Bronwyn Swartz) The Role of Racial Identity in the Achievement Motivation of African American Engineering Students (Kendra DeLaine et al.) The impact of prior transport-based experiences on academic interest and performance (Megan Bruwer and Marion Sinclair)
Session 4	*LCT (Chair: Jennifer Tums)* Legitimating Engineering Education Research: A View from Sociology of Knowledge (Mike Klassen and Jennifer Case) Professional engineering work: what knowledge matters? (Nicky Wolmarans and Corrinne Shaw) An interrogation of the relationship between theoretical concepts and their application in practice in the curriculum... (Jonathan Pike) Trialling a problem-solving engineering learning environment (Karin Wolff, Lauren van Breda and Reynaldo Rodriguez)	*Teaching & learning (Chair: Sarah Zappe)* A strategy, harnessing the power of cooperative learning… thermodynamics (Willem van Niekerk and Elsa Mentz) Changing instructor behavior and motivation related to active learning… (Cynthia Finelli, Laura Carroll, Michael Prince et al.) Gamification of a flipped classroom course: effects in students motivation and learning (Matías Recabarren & Benjamín Corvalán) Development of Autonomy through Flipped Classroom Methodology… (Karen Angulo, Astrid Bernal and Mario Castillo)	*International studies (Chair: Teresa Hattingh)* Technology-Mediated Resources as a Substitute to Human Resources… (Rohit Kandakatla, Edward Berger et al.) Short Term International Service Learning: Reflections of Engineering Students... (Martina Jordaan et al.) Becoming a Researcher: A Narrative Analysis of U.S. Students' Experiences in Australia (Kirsten Davis and David Knight) Constructing the Bourdieusian field of engineering education... (Esther Matemba and Natalie Lloyd)	*Progression & persistence (Chair: Sally Male)* Assessing the grit and mindset of incoming engineering students with an emphasis on gender (Inês Direito et al.) Do Teaching and Learning Environments influence Students' Conative Domain Development? (Nur Shahira Samsuri et al.) University Dropout: A Prediction Ensemble Model for an Engineering Program in Bogotá, Colombia (Andrés Acero et al.) Grit as a key success indicator in engineering postgraduate studies, or: marks aren't everything... (Robbie Pott)

Keynote: Aditya Johri, George Mason University – *Materiality Matters: Technology and Engineering Education*

Welcome Reception

Symposium Programme

REES 2019 CAPE TOWN

Thursday 11 July

Presentation by Adam Carberry, REEN Chair

Keynote: Maartje van den Bogaard, Delft University of Technology – *Student success, complexity, and the potential of learning analytics*

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Session 5	*Society & culture (Chair: Corrinne Shaw)* Improving first year engineering students experiences: the role of providing psychosocial support… (Disaapele Mogashana et al.) The language question in Africa's university engineering education... (Kant Kanyarusoke and Tiyamike Ngonda) Examining the socio-psychological phenomenon of shame in engineering with coupled interpretive methods (James Huff et al.) Factors in Engineering Education that Influence Social Justice (Paula Barco-Alzate, Daniela Moreno-Luna & Catalina Ramírez)	*Teaching & learning (Chair: Brandon Collier-Reed)* Authentic Assessment in Engineering Education: a systematic literature review (Ekaterina Rzyankina) Exploring the use of metacognition in learning science concepts (Kholisa Z Papu, Paul Webb and Nokhanyo Mdzanga) Developing T-shaped individuals through the MPhil in Sustainable... (Alexandra Himunchul et al.) Using a diagnostic test to inform and improve teaching for first year engineering students (Helen Inglis et al.)	*International studies & Design (Chair: Ashish Agrawal)* Challenges and solution in an international collaborative aircraft design education project (Lelanie Smith) Engineering self-efficacy in former "street youth" in a residential school in Kenya… (Casey Lynn Haney et al.) "Out of the Box" Low-Cost Portable Tinker Space for Elementary Eng. Education… (Douglas Lecorchick & Liz Gallo) Engineering Education in the Elementary Classroom with Stop-Motion Animation: A Grounded Theory (Douglas Lecorchick)	*Curriculum & Diversity (Chair: Zach Simpson)* Reflection on strategies and interventions used to reduce dropout... (Moses Basitere, Disaapele Mogashana & Eunice Ivala) Developing growth mindsets to prevent dropout in engineering students at UCT (Anita Campbell) Anti-Deficit Reframing in Engineering Education: A Model for the Development of Critical Consciousness (Mejia et al.) The potential of utilising alternate capital in learning communities… (Kalpana Ramesh Kanjee and Corrinne Shaw)

Workshop 1: *Unpacking the Writing and Publishing Process for Engineering Education Researchers*: Lisa Benson, Adam Carberry, Jennifer Case, Kristina Edström, Cindy Finelli, Kate Le Roux, James Swart and Maartje van den Bogaard	Workshop 2: *Design for Communities: Lessons on teaching engineers to design for people*: Engineers Without Borders South Africa

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Session 6	*Teamwork (Chair: Helen Inglis)* Literature Review: Exploring Teamwork in Engineering Education (Tahsin Chowdhury and Homero Murzi) Individual versus collaborative study behaviors while using an automatic answer-checking feature (Mohamed Aziz Dridi et al.) The Impact of Capstone Design Courses on New Engineering Graduates Preparation for Teamwork… (Daniel Knight et al.)	*Teaching ethics (Chair: Aditya Johri)* Exploring the Discursive Construction of Ethics in an Introductory Engineering Course (Johanna Lönngren) Exploration of the Ethics and Societal Impacts Teaching Practices of Anglo & Western European Educators (Madeline Polmear et al.) Towards a collaborative strategy to research the teaching of ethics within... South Africa (Alison Gwynne-Evans et al.)	*Knowledge & curriculum (Chair: Kate Le Roux)* Development of Socio-Technical and Co-Design Expertise... (Andrea Mazzurco, Scott Daniel and Jeremy Smith) Perceptions of Interdisciplinary Learning: a qualitative approach (Renate Klaassen, Nanneke de Fouw et al.) The smart engineering curriculum (Karin Wolff and Marthinus Booysen)	*Diversity (Chair: Jessica Rush Leeker)* Diversity in groups – students' reflection (Martina Jordaan and Dolf Jordaan) Understanding Female Students' Dissatisfaction in First-Year Engineering Teams (Laura Hirshfield and Robin Fowler) The impact of the combined status of race and gender on the persistence of Black female… (Barbara Boakye et al.)

Workshop 3: *Decolonizing Engineering Education: Where do we start?:* Susan Lord, J. Alex Mejia, Kathy Luckett, Nicky Wolmarans, Napo Mochekoane and Vukheta Mukhari	Workshop 4: *Developing and Planning Engineering Education Research*: Anne Gardner and Tania Machet

SASEE Biennial General Meeting

Gala Dinner – Gold Restaurant

Friday 12 July

Presentation by Deborah Blaine, SASEE President

Keynote: Khairiyah Mohd-Yusof, Universiti Teknologi Malaysia – *From Scholarly Practitioner to Researcher in Engineering Education: Establishing a Virtuous Cycle of Research.*

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Session 7	*Connections to the workplace (Chair: David Walwyn)* Global Responsibility in Civil Engineering Practice in the UK: A Report of Work in Progress (Shannon Chance et al.) Developing a Conceptual Model of Construction Employees' Professional Values (Hwangbo Bae, Denise Simmons et al.) Busy Times, Productive Students: Cutoff Points Marking Time in University Engineering Culture (Elizabeth Briody et al.)	*Teaching & learning (Chair: Deborah Blaine)* (Re-)validation of a standardised test instrument in a different national context (Julie Direnga and Christian Kautz) The CECI – Interview-based development of items for a control engineering concept inventory (Ferdinand Kieckhäfer et al.) Taking Teaching and Learning Online: A Sequential Mixed-Methods Study of an Online... (Robert Huberts) Motivations and Offline Experience in a Blended STEM MOOC (Casey Haney, Jawaria Qureshey, S. Zahra Atiq, David Cox and Jennifer DeBoer) Multimodal representations for teaching problem solving in engineering dynamics... (Kate le Roux and Bruce Kloot) Design literacy practices in a mech engineering degree program: A multimodal analysis (Muaaz Bhamjee and Zach Simpson)	*Institutional systems (Chair: Jillian Seniuk Cicek)* Using Self-determination Theory to Evaluate Faculty Professional Development Programs (Camilo Vieira et al.) Instructional Practice Learning Through Instructional Incubator Engagement (Cassandra Woodcock, Haley Antoine et al.) Peer Review of Teaching Excellence in Academic Career Systems… (Kristina Edström, Lars Geschwind et al.)	*Progression & persistence (Chair: Nicky Wolmarans)* A comparative study to predict students' performance based on their access pattern… (Sriudaya Damuluri Pouyan Ahmadi et al.) The diagnostic potential of admissions tests for South African Higher Education (Robert Prince, Darlington Mutakwa et al.) Academic SUCCESS: An Analysis of How Non-Cognitive Profiles Vary by Discipline (Jim Widmann, Brian Self, John Chen et al.)
Session 8	*CoP & PBL (Chair: James Huff)* Engineering teachers as action researchers through a community of practice… (Dhinesh Radhakrishnan, Sally Kimani et al.) Disciplinary learning in project-based undergraduate engineering education… (Ann Lahiff, Emanuela Tilley, Janet Broad et al.) Extent and Depth of PBL Implementation: Survey results... (Angela van Barneveld and Johannes Strobel)		*Institutional systems (Chair: Kristina Edström)* Using continuous feedback as an alternative student evaluation of teaching (Homero Murzi) Assisting tutors to develop their student's competence when working with complexity (Keith Willey and Tania Machet) An exploration of first year engineering students' perception of the university's responsibilities (Ashish Agrawalet al.)	*Progression & persistence (Chair: Maartje vd Bogaard)* Improving course retention rates in engineering education in refugee settings (Moses Olayemi, Claudio Freitas et al.) Engineering students' perceptions of the learning experience and its impact on… success (Nancy Nelson and Robert Brennan) Student perceptions on intrapersonal skills required for academic success (Arthur James Swart)

Closing remarks – Bruce Kloot and Sally Male

Announcement of the winner of the Duncan Fraser Award