Designing tomorrow’s campus: Resilience, Vulnerability and Adaptation

Massachusetts Institute of Technology (MIT), Cambridge, MA, USA
14-16 September 2016
Samberg Conference Center, Chang Building (E52)
The 2012 UN Conference on Sustainable Development (UNCSD), also known as “Rio+20”, was a historical event. Held in Rio de Janeiro, Brazil in June 2012, this landmark gathering agreed on various sets of actions to make the world a better and more sustainable place to live in. In particular, the document “The Future We Want”, outlined many of the measures countries across the world should pursue and implement, in order to translate the principles of sustainable development into practice.

As a parallel event to UNCSD, the “1st World Symposium on Sustainable Development at Universities” (WSSD-U-2012) was held in Rio de Janeiro on 5-6 June 2012. It was then followed up by the “2nd World Symposium on Sustainable Development at Universities” (WSSD-U-2014), which was held in Manchester, UK in September 2014. The event led to three ground-breaking publications on the theory and practice of sustainable development and showed the need for a continuation of the dialogue among sustainability academics and practitioners, so as to address the issues, matters and problems at hand.

It is against this background that the “3rd World Symposium on Sustainable Development at Universities” (WSSD-U-2016) is organized by the Office of Sustainability of the Massachusetts Institute of Technology (MIT), Manchester Metropolitan University (UK) and the Research and Transfer Centre “Applications of Life Sciences” of the Hamburg University of Applied Sciences (Germany), in cooperation with the United Nations University initiative “Regional Centres of Expertise on Education for Sustainable Development” (RCE).

The “3rd World Symposium on Sustainable Development at Universities” (WSSD-U-2016) focuses on: "Designing Tomorrow's Campus: Resiliency, Vulnerability, and Adaptation", and will contribute to the further development of this fast-growing field.

/// AIMS

Consistent with the goals of the WSSD-U series, the aims of the “3rd World Symposium on Sustainable Development at Universities” (WSSD-U-2016) are as follows:

i. to provide universities all around the world with an opportunity to display and present their works (i.e. curriculum innovation, research, activities, practical projects) as they relate to education for sustainable development at university level;
ii. to foster the exchange of information, ideas and experiences acquired in the execution of projects, from successful initiatives and good practice;
iii. to discuss methodological approaches and projects which aim to integrate the topic of sustainable development in the curriculum of universities;
iv. to network the participants and provide a platform so they can explore possibilities for cooperation.
Last but not least, a further aim of the event is to document and disseminate the wealth of experiences available today. To this purpose, a set of books has been published, with all accepted papers. These will be part of the award-winning “World Sustainability Series”, published by Springer, one of the world’s top five scientific publishers. The books are fully peer-reviewed and officially count as publication outputs for promotion and tenure purposes.

/// PROFILE OF PARTICIPANTS

Delegates attending the “3rd World Symposium on Sustainable Development at Universities” (WSSD-U-2016) will come from a cross-sectoral range of areas. They are:

i. members of university administrations;
ii. teaching staff
iii. research staff;
iv. student groups;
v. campus facilities and operations staff;
vi. project officers and consultants;
vii. other people interested in the field.

It is believed that this wide range of participants will help to outline the need for integrated approaches towards sustainable development and, hence contribute to the implementation of the UN Sustainable Development Goals.

/// STRUCTURE OF THE EVENT

The “3rd World Symposium on Sustainable Development at Universities” (WSSD-U-2016) will be organized in two main strands:

Strand 1: the displays
Participating universities and organizations will be able to put-up displays describing their works and projects and to distribute the relevant information to the participants. The displays will be the backbone of the event and will allow close, one-to-one contacts between the participants and the exhibitors.

Strand 2: the presentations
A set of presentations, divided into five sections will be organized, dealing with issues of strategic value in reviewing the state of the art of education for sustainability today. These are:

1) Innovations in Curriculum and Research
2) Collaborative Community Partnerships and Engagement
3) Sustainable Systems: Design, Build, Operate
4) Comprehensive approaches to Sustainable Development: Integration of curriculum, research and operations
5) Student participation and Engagement in Sustainability Issues
A tour of the state-of-the-art facilities at the Massachusetts Institute of Technology (MIT) will be offered, with excellent examples of how to implement campus sustainability initiatives.

/// LOCATION AND SCHEDULE

The “3rd World Symposium on Sustainable Development at Universities” (WSSD-U-2016) will be held at the Samberg Conference Center, located on the sixth and seventh floors of the Chang Building (E52) 50 Memorial Drive, Cambridge, MA, 02139. The schedule is as follows:

/// Wednesday 14 September 2016

1:00 pm Registration opens and posters

2:30 pm Tour of MIT Campus

4:00 pm Opening remarks and welcome

Conference Chairs:

Walter Leal, Manchester Metropolitan University UK and HAW Hamburg, Germany

Julie Newman, Director of Sustainability, MIT

4:15 – 5:30 pm Keynote Panel

Panel: Are Sustainability Policies Good Indicators of Commitment of Higher Education Institutions?

Chair: Walter Leal, Manchester Metropolitan University UK and HAW Hamburg, Germany

Panel Members:

Robert Marans, Emeritus Professor of Urban and Regional Planning, University of Michigan
Nicholas Ashford, Professor of Technology and Policy, MIT
Prof Wu Jiang, Tongji University, Global Universities Partnership of Education for Sustainability co-chair

5:30 pm Welcome Reception
THURSDAY 15 SEPTEMBER 2016

8:30 am Light refreshments: Coffee/tea

9:00-9:15 am Opening remarks: Israel Ruiz, Executive Vice President MIT

9:15-10:30 Keynote Panel

Partners in Resilience: Higher Education’s Role in Metro-Boston Climate Adaptation Planning

Moderator: Amy Longsworth, Director, Boston Green Ribbon Commission

Panel Members:

Kerry Emanuel, Cecil and Ida Green Professor of Atmospheric Science, Department of Earth, Atmospheric and Planetary Sciences, MIT
Dennis Carlberg, AIA, Sustainability Director, Boston University
Paul H. Kirsten, Professor, School for the Environment & Faculty Director, Sustainable Solutions Laboratory, University of Massachusetts – Boston
Robert Manning, Director E&U, Harvard University

10:30-11:00 am Break

Tracks:

6) Innovations in Curriculum and Research
7) Collaborative Community Partnerships and Engagement
8) Sustainable Systems: Design, Build, Operate
9) Comprehensive approaches to Sustainable Development: Integration of curriculum, research and operations
10) Student participation and Engagement in Sustainability Issues

11:00-1:00 Parallel Tracks

Track 2: Collaborative Community Partnerships and Engagement (Dining Room 6)

1. Measuring Progress Over Time: The Sustainability Cultural Indicators Program at the University of Michigan
   John Callewaert and Robert Marans, University of Michigan, USA

2. Building the Platform: Supporting a Sustainability Agenda and University-Community Relationships
   B.D. Wortham-Galvin, Portland State University, USA

3. Evaluation of a transdisciplinary research project for a sustainable development
   Andrea Heilmann, Hochschule Harz, Germany

4. Prerequisites for the sustainability of municipalities in Rio Grande do Sul? Brazil: a project to foster Sustainable Development
   Luciana Londero Brandli, Amanda Lange Salvia, Marcos Antonio Leite Frandoloso, Walter Leal Filho, Passo Fundo University, Brazil
5. Community Microgrids and the Power of Power
   Curt D. Gervich, Aaron Baltich-Schecter and Christian Madu, SUNY Plattsburgh USA and University of Nigeria

6. Space for Interdisciplinary Collaboration: One Mode of Achieving Social Sustainability at Universities
   Kristina Careva and Bojan Baletic, University of Zagreb, Croatia

**Track 3: Sustainable Systems: Design, Build, Operate (Dining Room 5)**

1. A Peer-to-Peer Approach to Evaluation and Continual Improvement of Sustainability Management Systems at Higher Education Institutions
   Markus Will, Anke Zenker-Hoffmann, Jana Brauweiler, Bernd Delakowitz, Stefanie Herbig, Andreas Bulçu, and Eric Schön, University of Applied Sciences Zittau/Görlitz, Germany

2. Campuses as sustainable urban engines - A morphological approach to campus social sustainability
   Luisa Cannas da Silva, Instituto Superior Técnico - University of Lisbon

3. Networking the sustainable campus awards: Engaging with the higher education institutions in developing countries
   Habib M. Alshuwaikhat, King Fahad University of Petroleum & Minerals, Saudi Arabia

4. So tell me what you want, what you really really want - Including the user perspective before implementing measures of sustainability
   Thomas Baeumer and Stefan Zimmermann, Hochschule fuer Technik Stuttgart - University of Applied Sciences, Germany

5. Sustainable Academic Libraries: A Campus Partnership at Michigan State University
   Eric D. Tans, Michigan State University Libraries, USA

6. Promotion of sustainable development at Universities: The adoption of Green Campus Strategies at the University of Southern Santa Catarina, Brazil
   João Marcelo Pereira Ribeiro, Samuel Borges Barbosa, Jacir Leonir Casagrande, Simone Sehnem, Issa Ibrahim Berchin, Camilla Gomes da Silva, Ana Clara Medeiros da Silveira, Gabriel Zimmer, Rafael Ávila Faraco, José Baltazar Salgueirinho Osório de Andrade Guerra, University of Southern Santa Catarina (Unisul), Brazil

**Track 4A: Comprehensive approaches to Sustainable Development: Integration of curriculum, research and operations (Dining Room 3)**

1. What Do We Imagine the Campuses of Tomorrow Will Be Like? Universities’ Transition Toward Sustainability in the Light of the Transition Initiative.
   Mª Angeles Murga-Menoyo, Unesco Chair of Environmental Education and Sustainable Development. University of Distance Educación (UNED), Spain

2. Education for Sustainable Development in China: A Case Study of Tongji University
   Wu Jiang and Li Fengting, Tongji University, China

3. Higher Education and Sustainable Development: An Exploratory Study of Indian Management Institutions
   Neetu Yadav and Vanita Yadav, Birla Institute of Technology and Science Pilani, Rajasthan, India
4. ShowHow: A flexible, structured approach to commit university stakeholders to sustainable development
   Leendert Verhoef, Luuk Graamans, Dean Gioutsos and Chris Hellinga, TU Delft - The Green Office, The Netherlands

5. Weaving the filigree: Paradoxes, opposites and diversity for participatory, emergent arts and design curricula on sustainable development
   David Haley, Manchester Metropolitan University, United Kingdom

**Track 4B: Comprehensive approaches to Sustainable Development: Integration of curriculum, research and operations (Dining Room 4)**

1. Addressing food waste through university and community partnerships
   Helen Puntha, Nottingham Trent University, UK

2. The Campus as a Living Laboratory, Macalester College Case Study
   Suzanne Savanick Hansen, Macalester College, USA

3. Environmental Education in Higher Education Institutions: an analysis of the strategies of the University of Southern Santa Catarina to promote Environmental Education
   Jéssica Garcia, Issa Ibrahim Berchin, Gabriel Alfredo Alves Zimmer, Maria Eduarda Medeiros da Silveira, Wellyntag da Silva Amorim, Samara da Silva Neiva and José Baltazar Salgueirinho Osório de Andrade Guerra, University of Southern Santa Catarina (Unisul), Brazil

4. Is there a Place for Resilience within Sustainable University Transition Management?
   Giulia Sonetti, Lorenzo Chelleri and Patrizia Lombardi, Politecnico di Torino, Italy

   Harold Glasser and Stephen Sterling, Western Michigan University and Plymouth University, United Kingdom

6. Resilience Thinking in Higher Education: Institutional Resilience as a Sustainability Goal
   P. Brian Fisher, College of Charleston, USA

**Track 5: Student participation and Engagement in Sustainability Issues (Dining Room 2)**

1. Evolution of an interactive online magazine for students, academics and expert practitioners, to engage students from multiple disciplines in Education for Sustainable Development (ESD)
   Kay Emblen-Perry, Sian Evans, Katy Boom, Wendy Corbett and Lorraine Weaver, University of Worcester, UK

2. Utilising work-integrated learning to enhance student participation and engagement in sustainability issues in open and distance learning
   Graeme A. Wilson and Rudi W. Pretorius, University of South Africa (Unisa) – South Africa

3. Energy consumption in student hostels of Universiti Sains Malaysia: Energy audit and energy efficiency awareness
   Theam Foo NG, Universiti Sains Malaysia, Malaysia
4. Student leadership in sustainable development in a private university in the UAE - a case study
   Kathy O’Sullivan, South University of Science and Technology of China

1:00-2:00 Lunch

2:00–3:30 Parallel Tracks

**Track 1: Innovations in Curriculum and Research (Dining Room 4)**

1. Crafting pedagogical pathways that disrupt and transform anthropocentric mindsets of higher education students
   Tanja Tillmanns and Charlotte Holland, Dublin City University, Ireland

2. Learning Outside the Box: overcoming the constraints of a modular system to allow holistic sustainability learning
   Alison Greig, Anglia Ruskin University, UK

3. “A degree in sustainability? What’s the point?” The past, present and future of named sustainability degrees
   Zoe Robinson, Keele University, UK

4. Rethinking Thinking about Sustainable Development Curriculum
   Christopher A. Haines, Natural Sustainability, USA

**Track 2: Collaborative Community Partnerships and Engagement (Dining Room 3)**

1. How university sustainable development research can impact the local community: the links between ESD and dietary choices?
   Loraine Spiteri and Mark Mifsud, University of Malta, Malta

2. Student Capital: Green Capital - relational thinking and engaged education for sustainability in HE
   Christine Willmore, University of Bristol, UK

3. Sustainable Commuting for Students, Faculty, and Staff - A Multi-Campus Initiative
   Melissa Voss Lapsa, Oak Ridge National Laboratory, USA

4. The Research - Climate Nexus: The Difficult Questions Facing Progressive Institutions Today
   Steven Baumgartner, Sarah Brylinsky, Stephanie Corbett, Shana Weber, BuroHappold Engineering, MIT, Case Western Reserve University, Princeton University, USA

**Track 3: Sustainable Systems: Design, Build, Operate (Dining Room 6)**

1. Food (In)Security: Food (In)Security within a University Community: Stories from Students, Staff and Faculty at a Sustainable Institution
   Annie Booth, University of Northern British Columbia, Canada

2. Controlling Risks Through Flexibility and Urban Integration: The Regeneration of Otaniemi Campus in Finland
   Antti Ahlava, Aalto University, Finland
3. Designing Sustainable Consumption and Production Systems in Higher Education Institutions: The Case of Solid Waste Management  
Danesto Bacdayan Anacio, University of the Philippines Los Banos, Philippines

Track 4: Comprehensive approaches to Sustainable Development: Integration of curriculum, research and operations (Dining Room 5)

1. A holistic approach for integration of sustainable development in education, research, collaboration and operations  
Göran Finnveden, KTH Royal Institute of Technology, Sweden

2. The Role of University Centers in Environmental and Sustainability Education in Envisioning Futures  
Peter Blaze Corcoran, Joseph P. Weakland and Brandon Hollingshead, Florida Gulf Coast University and Georgia Institute of Technology, USA

3. Achieving resiliency through sustainable literacy  
Vijaya Deshmukh, National Institute of Design, India

4. The Effects of Higher Education in Economics, Law and Political Science on Perceptions of Responsibility and Sustainability  
Niklas Harring, Cecilia Lundholm and Tomas Torbjörnsson, University of Gothenburg and Stockholm University, Sweden

Track 5: Student participation and Engagement in Sustainability Issues (Dining Room 2)

1. Sustainable Campus in a historical town: the "Ca' Foscari University of Venice" case study  
Fabio Pranovi, Ca' Foscari University of Venice, Italy

2. EcoGIS – A Solution for Interactive Facility Management  
Rainer Kettemann and Volker Coors, Hochschule für Technik Stuttgart, Germany

3. Saving Lives: Using Student Problem- and Project-Based Learning to Reduce Bird-Window Collisions on Campus  
Katherine Switala Elmhurst, Temple University, USA

3:30-4:00  Break

4:00-5:15  Parallel Tracks

Track 2: Collaborative Community Partnerships and Engagement (Dining Room 3)

1. Environmental Dashboards: Fostering Pro-Environmental and Pro-community Thought and Action Through Feedback  
John E. Petersen, Daniel Rosenberg-Daneri, Cindy Frantz, Md Rumi Shammin, Oberlin College, USA

2. Evaluating Sustainability Initiatives on University Campuses: A Case Study from the University of Michigan’s Sustainability Cultural Indicators Program  
Robert Marans and John Callewaert, University of Michigan, USA
Track 3: Sustainable Systems: Design, Build, Operate (Dining Room 6)

1. Building Climate Change Resilience in East African University Campuses
   *Denise Galvin, Walter Leal, Cristina Beans and Roberto Escarré*, Universidad de Alicante, Spain

2. Definition and Frameworks on a Life-Cycle Negative Growth Rate for Energy and Carbon in an Academic Campus
   *Somayeh Tabatabaee and Benjamin Weil*, University of Massachusetts Amherst, USA

3. A Brazilian University Facing Challenge of Education for Sustainable Development
   *Deisi Viviani Becker, Simone Alves Pacheco de Campos, Tânia Nunes da Silva*, Federal University of Rio Grande do Sul, Brazil

Track 4A: Comprehensive approaches to Sustainable Development: Integration of curriculum, research and operations (Dining Room 4)

1. A decade of Earth in the mix: Emergent scholarly research converging sustainability education and ecopsychology in higher education
   *Amanda Leetch*, Prescott College, USA

2. Sustainability skills: The case of a Portuguese University
   *Thiago Antonio Beuron, Lucas Veiga Ávila, Luciana Londero Brandli, Filipe Jorge Ribeiro de Almeida, Lúcia Rejane da Rosa Gama Madruga, Eduardo Jorge Gonçalves Barata*, Federal University of Santa Maria, Brazil

3. Unipoli Green – Four Universities Working Together for Sustainability
   *Eveliina Asikainen and Saana Raatikainen*, University of Tampere, Finland

Track 4B: Comprehensive approaches to Sustainable Development: Integration of curriculum, research and operations (Dining Room 5)

1. Conceptualizations of sustainability in Portuguese higher education: roles, barriers and challenges toward sustainability
   *Aleixo, A.M., Leal, S., Azeiteiro U.M.*, Universidade Aberta, Portugal

2. Becoming Sustainable in Our Own Way: Sustainability at the Flagship Massachusetts Public University
   *Ludmilla Pavlova-Gillham and Dennis Swinford*, University of Massachusetts and Massachusetts Institute of Technology, USA

3. Implementing sustainable development in the Nordic higher education institutions
   *Meeri Karvinen, Ms. Ullika Lundgren, Ms. Helena Mälkki and Ms. Jaana Sorvari*, Aalto University, Finland
Track 5: Student participation and Engagement in Sustainability Issues (Dining Room 2)

1. Green campus as an integral part of sustainable university: students’ perceptions
   Egle Katiliute and Jurgis Staniskis, Kaunas University of Technology, Lithuania

2. Student Participation and Engagement in Sustainable Human Development: A Value
   Education Approach
   Shobha Sundaresan and Sushama Bavle, Maharani Lakshmi Ammanni College for
   Women, India

3. Linking Space and Nature Syntaxes: the Influence of a Natural View through observed
   behaviour at Arcosanti, Arizona, USA
   Karen Elizabeth Munro, University of Strathclyde, Glasgow, Scotland

6 pm Reception and Dinner
Friday 16 September, 2016

8:30-9:00 am  Light refreshments: Coffee/tea

9:00-9:15 am  Opening remarks: A case study of MIT Plan for Climate Action: Tom Kiley, Senior Advisor to the VP Research, MIT

9:15-10:30 am  Keynote Panel: The role of the Sustainable Development Goals in advancing sustainability in Higher Education

Moderator: Peter Blaze Corcoran and Brandon Hollingshead, Center for Environmental and Sustainability Education, Florida Gulf Coast University

Panel members:

Stephen Sterling, Professor of Sustainability Education, Plymouth University, England
John E. Fernandez, Professor of Architecture and Director of the Environmental Solutions Initiative, MIT
Akpezi Ogbuigwe, Director, International Collaboration Center; Rivers State University of Science and Technology, Port Harcourt, Nigeria
Monika MacDevette, Deputy Director of Environmental Policy Implementation, United Nations Environment Programme, Nairobi, Kenya

10:30-11:00 am  Break

11:00-1:00 Parallel Tracks

Track 1: Innovations in Curriculum and Research (Dining Room 6)

1. Identifying relevant vs received sustainability education at Industrial Engineering and Management programs in Sweden
   Niccolas Albiz, Royal Institute of Technology (KTH), Sweden

2. Implementing sustainability in the classroom at Université Laval
   Daniel Forget, Université Laval, Canada

3. Sustainability Education: A Wisdom Model
   Lorraine Lander, State University of New York Empire State College, USA

4. Sustainable Development at Universities as Viewed through the Lens of the PROMISE Framework for Sustainability
   Camelia Dimitriu, University of Quebec at Montreal, Canada

5. Sustainability Education: Towards Total Sustainable Management Teaching
   Stefan Boron and Keith Murray, Heriot Watt University, UHI-Lews Castle College, UK

Track 3: Sustainable Systems: Design, Build, Operate (Dining Room 5)

1. Smart Campus: Building-User Learning Interaction for Energy Efficiency, the Lisbon case study
   Ricardo Manuel Anacleto Gomes, Instituto Superior Técnico, Lisbon, Portugal
2. University of São Paulo: Sustainability Master plan for Policies, Plans, Goals and Actions
   Roberta Consentino Kronka Mülfarth, University of Sao Paulo, Brazil

3. Carrots and Sticks: Triggering Stakeholder Engagement with a Bonus System for Energy
   Conservation
   Andreas Wanke, Freie Universität Berlin, Germany

4. Sustainable energy campus: A challenge on smart facilities and operations
   Paulo Ferrão and Mário de Matos, Técnico - Lisboa, Portugal

5. University of North Carolina at Chapel Hill Sustainability Plan - Embedding Sustainability
   into the DNA of the Campus
   Cynthia Shea, Carol Hee, Amelia Aboff and Steven Baumgartner, UNC Chapel Hill, North Carolina, USA

Track 4A: Comprehensive approaches to Sustainable Development: Integration of
   curriculum, research and operations (Dining Room 3)

1. Munich University of Applied Sciences towards a “whole institution approach” –
   illustrations along x-disciplinary
   Sascha Zinn, Munich University of Applied Science, Germany

2. Sustainability at universities: Degrees of institutionalization for sustainability at German
   higher education institutions – a categorization pattern
   Kathrin Rath and Claudia T. Schmitt, Hamburg University of Applied Sciences and
   Universität Hamburg, Germany

3. The Will and the Skill in Education for Sustainability
   Dilys Williams, London College of Fashion, University of the Arts London, UK

4. Sustainability, Dignity and Higher Education
   James R. May, Widener University, USA

5. (Be)coming and (Re)membering Sustainability: An Innovative Living Learning Systems
   Model for Higher Education
   Joy Kcenia O’Neil, University of Wisconsin - Stevens Point, USA

6. Towards Sustainability through Higher Education: Sustainable Development
   incorporation into Portuguese Higher Education Institutions
   Aleixo, A.M., Azeiteiro, U.M., Leal, S., Universidade Aberta, Portugal

Track 4B: Comprehensive approaches to Sustainable Development: Integration of
   curriculum, research and operations (Dining Room 4)

1. Campus Living Lab Knowledgebase: A Tool for Designing the Future
   Bojan Baletic, Rene Lisac and Roberto Vdovic, University of Zagreb, Croatia

2. Promoting a University Culture of Sustainability: The Role of Conscious Consumption
   Madhavi Venkatesan, Bridgewater State University, USA

3. Divestment and Investment: Strategic Financial Decisions in Higher Education to
   Promote Societal Change Toward Sustainability
   Jennie C Stephens, Elizabeth Palchak and Bonnie Reese, Northeastern University,
   Boston  USA

13
4. The Sustainability Journey of USM: Solution Oriented Campus Ecosphere for Vitalising Higher Education Action on GAP
   Omar Osman, Kamarulazizi Ibrahim, Kanayathu Chacko Koshy, Noor Adelyna Mohammed Akib, Ahmad Firdaus Ahmad Shabudin, Universiti Sains Malaysia, Malaysia

5. Lessons learned for decision-makers during a five-year research period on sustainability problems at the Galileo University in Guatemala
   Nelson Amaro, Sustainable Development Institute, Galileo University, Guatemala

6. A Real-world Lab Approach to the Carbon Neutral Campus Transition: A Case Study
   Lisa Botero, Ursula Eicker, Jan Cremers, Nansi Palla, Christiane Schoch and Michael Bossert, Hochschule für Technik Stuttgart (HFT Stuttgart), Germany

Track 5: Student participation and Engagement in Sustainability Issues (Dining Room 2)

1. Sustainability Champions: Role Models in Sustainability Graduate Education
   Michael C. Cavallaro, University of Saskatchewan, Canada

2. Increasing student participation and engagement in Sustainability projects in Universiti Sains Malaysia (USM) through Kampus Sejahtera and WSU101: Sustainability Course for Undergraduates
   Noor Adelyna Mohammed Akib, Suzyrman Sibly, Mohd. Sayuti Hassan, Radieah Mohd. Noor, Kanayathu Chacko Koshy, Kamarulazizi Ibrahim, Universiti Sains Malaysia, Malaysia

1:00-2:00 Lunch

2:00-3:00 Parallel Tracks

Track 3: Sustainable Systems: Design, Build, Operate (Dining Room 5)

   Gowri Betrabet Gulwadi and Kathleen Scholl, University of Northern Iowa, USA

2. Sustainable campus development with a strategic approach: Case study of a multi-campus tertiary institution in Hong Kong
   Simon Leung and Artie Ng, The Hong Kong Polytechnic University, Hong Kong, China

Track 4A: Comprehensive approaches to Sustainable Development: Integration of curriculum, research and operations (Dining Room 3).

1. Integration of Research, Teaching, and Practice in the Implementation of the Michigan State University Energy Transition Plan
   Wolfgang Bauer, Dan Bollman, Robert Ellerhorst, William Latta, Michigan State University, USA

2. Transnational Dialogues for sustainability research in early childhood education: A model for building capacity for ESD in universities?
Sherridan Emery, Julie Davis, Jo-anne Ferreira, Barbara Maria Sageidet, University of Tasmania, Queensland University of Technology, Griffith University, Australia

3. Sustainable Cities, Sustainable Universities: Re-engineering the campus of today for the world of tomorrow
   Martin Lehmann, Ronnie D. Lipschutz, Dominique de Wit, Aalborg University, Denmark and University of California, USA

Track 4B: Comprehensive approaches to Sustainable Development: Integration of curriculum, research and operations (Dining Room 4)

1. A mixed-method exploration and analysis of innovations in campus sustainability
   Camille Washington-Ottombre, Smith College, USA

2. Sustainable Development Policies as Indicators and Pre-Conditions for Sustainability Efforts at Universities: fact or fiction?
   Walter Leal Filho, HAW Hamburg, Germany and Manchester Metropolitan University, UK and Chris Shiel, Bournemouth University, UK

3:00-3:30 Break

3:30-4:30 Keynote Plenary

The role of networks: Collectively coping with Resiliency, Vulnerability, and Adaptation

Moderator: Iain Patton, Chief Officer, Environmental Association for Universities and Colleges, England

Panel members:

Zena Harris, Executive Director, International Sustainability Campus Network
Meghan Fay Zahniser, President, American Association of Sustainability in Higher Education
Leanne Denby, Director of Sustainability, Macquarie University, Australia

4:30 – 5 pm Hand-over of the best papers awards & closing remarks

Walter Leal, Manchester Metropolitan University UK and HAW Hamburg, Germany

Julie Newman, Director of Sustainability, MIT
/// ORGANISERS

- Massachusetts Institute of Technology (MIT), Office of Sustainability
- Manchester Metropolitan University
- Hamburg University of Applied Sciences Research and Transfer Centre “Applications of Life Sciences”, RCE Hamburg and Region

/// INTERNATIONAL PARTNERS

Association for the Advancement of Sustainability in Higher Education
Baltic University Programme
UN Educational, Scientific and Cultural Organisation (UNESCO)
UN Environment Programme (UNEP)
Australasian Campuses Towards Sustainability (ACTS)
Environmental Association for Universities and Colleges (EAUC)

/// SCIENTIFIC COMMITTEE

Chairpersons

- Prof. Walter Leal (BSc, PhD, DSc, DPhil, DL, DLitt), Manchester Metropolitan University, UK, HAW Hamburg and RCE Hamburg and Region, Germany
- Dr Julie Newman, Massachusetts Institute of Technology (MIT), Office of Sustainability

Members

Dr. Abul Quasem Al-Amin, University of Malaya, Malaysia
Maria de Fátima Pereira Alves, Open University, Portugal
Dr. Nelson Amaro, Galileo University, Guatemala
Prof. Ulisses Azeiteiro, University of Coimbra, Portugal
Prof. Sandra Caeiro, Universidade Aberta, Portugal
Prof. Adriano Ciani, University of Perugia, Italy
Prof. Bernd Delakowitz, University of Applied Sciences Zittau-Görlitz, Germany
Mr. Jos Eussen, RCE Rheine-Meuse, Netherlands
Dr. Alexander Feher, University of Nitra, Slovakia
Prof. Baltasar D’Andrade Guerra, UNISUL, Brazil
Professor Sadiq Hussain, Ibr College of Applied Sciences, Sultanate of Oman
Prof. Dzintra Ilisco, Daugavpils University, Latvia
Prof. Ralf Isenmann, Munich University of Applied Sciences, Germany
Prof. Charbel Jabbour, University of São Paulo, Brazil
Prof. Simon Kemp, University of Southampton, UK
Prof. Maris Kļavins, University of Latvia, Latvia
Prof. Linas Klucininkas, Kaunas University of Technology, Lithuania
Dr. Paula Lindroos, Baltic University Programme, Sweden
Prof. Violeta Orlovic Lovren, University of Belgrade, Serbia
Dr. Evangelos Manolas, Democritus University of Thrace, Greece
Dr. Karel Mulder, TU Delft, Netherlands
Prof. Maria Novo, National University on Distance Education, Spain
Prof. Paul Pace, University of Malta, Malta
Prof. Joost Platje, University of Opole, Poland
Prof. Anita Pipere, Daugavpils University, Latvia
Prof. Diana-Mihaela Pociovalisteân, Constantin Brancusi University, Romania
Prof. Osvaldo Quelhas, Fluminense Federal University, Brazil
Prof. Lars Ryden, Baltic University Programme, Sweden
Prof. Mikhail Shilin, Russian State Hydrometeorological university, St. Petersburg, Russia
Prof. Luis Vargas, University of Chile, Chile
Prof. Luis Velazquez, University of Sonora, Mexico
Prof. Sergei Zenchenko, Moscow State University of Economics, Statistics and Informatics, Minsk Branch, Belarus
Dr. Michaela Zint, University of Michigan, USA

/// CONTACT PERSONS

Walter Leal (BSc, PhD, DSc, DPhil, DEd, DLitt, FSB, FRGS, FLS)
Professor of Environment and Technology
School of Science and the Environment
E-mail: w.leal@mmu.ac.uk

Dr Julie Newman
Director, Office of Sustainability
Massachusetts Institute of Technology
E-mail: j_newman@mit.edu

/// CONFERENCE ADMINISTRATOR AND CONTACT POINT
FOR FURTHER DETAILS

All questions related to abstracts and registrations should be sent to:

Dr. Mihaela Sima
Institute of Geography
Romanian Academy
E-mail: simamik@yahoo.com

All logistical questions related to the Symposium should be sent to:

Rebecca Fowler
Office of Sustainability
Massachusetts Institute of Technology
E-mail: rfowler@mit.edu