



## FSM4 SPEAKER BIOS

### DAY 2: TUESDAY, 21 FEBRUARY 2017

#### DAY 2, TRACK 1: RESEARCH

#### RESEARCH 2.1: INTEGRATED PROCESSES – II

1. ELLEDGE, M. et al., “Continued Development and Field Testing of a Decentralized, Self-contained Toilet that Converts Human Waste into Burnable Fuel and Disinfected Liquid”, USA



#### **Myles Elledge, Senior Director – Innovation Advisors**

Research Triangle Institute (RTI), Research Triangle Park, North Carolina USA

EMAIL: [melledge@rti.org](mailto:melledge@rti.org)

WEBSITE: <http://abettertoilet.org/>

Myles is a global development leader passionate about environmental health. He is leading technology innovation and adoption initiatives in water, sanitation and clean energy. At FSM4, he is presenting data on RTI’s Reinvent the Toilet prototype field tests in Ahmedabad, and insights from gender and social adoption survey research.

2. GREGO, S. et al., "Field Testing Of Onsite Wastewater Treatment Technologies With 100% Pathogen Removal", USA

*NO BIO AVAILABLE*

3. PIASCIK, J. et al., "Catalytic Pyrolysis of Human Feces for Biofuel Production", USA

*NO BIO AVAILABLE*

4. KULAK, M. et al., "A Life Cycle Perspective on Scaling Up Sanitation in India", UK



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### **Dr. Michal Kulak, Environmental Sustainability Scientist**

Safety and Environmental Assurance Centre, Unilever.

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WEBSITE: <https://www.unilever.com/about/innovation/safety-and-environment/>

Michal Kulak works in R&D where he helps to deliver innovations that reduce environmental impacts of people's lives. His core scientific expertise is in Sustainable Design and Life Cycle Assessment, especially of bio-based materials. He has recently completed a study investigating different technological options for scaling up sanitation in India.

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## RESEARCH 2.2: PATHOGEN & PARASITES INACTIVATION

1. FOUTCH, G. et al., "The Inactivation of Ascaris suum Eggs by Short Exposure to High Temperatures for the Purpose of Sanitizing VIP Latrine Sludge by Viscous Heating", USA



### **Gary L. Foutch, PhD, PE, Fellow AIChE**

Adjunct Professor, Civil and Mechanical Engineering, University of Missouri Kansas City, MO  
Anadarko Petroleum Chair Emeritus, Chemical Engineering, Oklahoma State University, Stillwater, OK  
Honorary Professor, Chemical Engineering, University of KwaZulu-Natal, Durban, South Africa

EMAIL: [foutch@okstate.edu](mailto:foutch@okstate.edu); [foutchg@umkc.edu](mailto:foutchg@umkc.edu)

Dr. Foutch has worked in several chemical engineering areas; including, ultrapure water processing, biotechnology, fermentation, rate-limited separations, among others. He became involved with FSM through a Bill & Melinda Gates Foundation Grand Challenges Exploration grant – developing technology from bench to full-scale equipment design.

2. AMOAH, I. D. et al., "Method for the Detection and Quantification of Soil Transmitted Helminth Eggs in Faecal Sludge", South Africa

*NO BIO AVAILABLE*

3 CHAPGAIN, S. K. et al., "Disinfection from Freshly Separated Fecal Matters by Applying Heat and Chemicals", Thailand



### **Dr. Saroj Kumar Chapagain, Research Specialist**

Environmental Engineering and Management, Asian Institute of Technology (AIT), Pathumthani, Thailand

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EMAIL: [saroj@ait.asia](mailto:saroj@ait.asia); [sarojchapagain77@gmail.com](mailto:sarojchapagain77@gmail.com)

A professional in environmental engineering, with extensive background in water and sanitation. I have a keen interest in designing innovative on-site sanitation technologies, and impact evaluations of those technologies.

#### 4. HARROFF, L. et al., "Fermentation of Human Faecal Waste to Produce Carboxylic Acids and Inactivate Ascaris Eggs", USA



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#### **Lauren Harroff, PhD Student**

Cornell University, Department of Biological and Environmental Engineering, Ithaca, NY, USA

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I am a graduate student researching pathogen inactivation in faecal solids through anaerobic fermentation. More specifically, I work on production of medium-chain carboxylic acids and try to understand how the combination of acid chain length, temperature, and exposure time affect toxicity to Ascaris eggs.

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### RESEARCH 2.3: BIOTREATMENT – I

#### 1. LARAMEE, J. et al., "Integrating Lifecycle Carbon, Energy and Water Impacts into Decentralized Sanitation Infrastructure Planning", USA

*Presented by Rohini Pradeep*



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#### **Rohini Pradeep, Subject Coordinator-R&D**

CDD Society, Bangalore

EMAIL: [rohini.p@cddindia.org](mailto:rohini.p@cddindia.org)

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Research activities related to treatment and performance efficiency pilot Faecal sludge treatment plants implemented by CDD Society ( at CDD Campus and Devanahalli).

Management of Laboratory at CASS, Bangalore.

Supporting capacity building program for the preparation of training materials and as resource person for faecal sludge management.

**2. GUEYE, A. et al., “Is it Possible to Continually Produce Fodder on Planted Drying Beds Treating Faecal Sludge?”, Senegal**

*NO BIO AVAILABLE*

**3. LALANDER, C. et al., “Treatment of Faecal Matter – A product value comparison of four treatment options”, Sweden**

*NO BIO AVAILABLE*

**4. PURKAYASHTA, D. et al., “Effect of Environmental Parameters on the Treatment of Human Faecal Waste by Black Soldier Fly Larvae”, India**

*NO BIO AVAILABLE*

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## RESEARCH 2.4: INTEGRATED PROCESSES – III

**1. CID, C., HOFFMANN, M., “Design and implementation of integrated electrochemical wastewater treatment and recycling systems for onsite sanitation in the developing world”, USA**



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### **Prof. Michael R. Hoffmann, NAE**

California Institute of Technology, Pasadena, California 91125

EMAIL: [mrh@caltech.edu](mailto:mrh@caltech.edu)

WEBSITE: <https://scholar.google.com/citations?user=KPeon7UAAAAJ&hl=en>

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Prof. Hoffmann has been a faculty member at Caltech since 1980. He was previously a member of the engineering faculty at the University of Minnesota. His research group has been part of the BMGF's RTTC initiative since 2011. The Yixing Eco-manufacturing Company is producing combined toilet and wastewater treatment systems commercially in China.

## 2. DESHUSSES, M. et al., "A Neighbourhood Faecal Sludge Treatment System Using Supercritical Water Oxidation", USA



### **Marc Deshusses, Professor of Civil and Environmental Engineering and of Global Health**

Duke University, North Carolina, USA.

EMAIL: [marc.deshusses@duke.edu](mailto:marc.deshusses@duke.edu)

WEBSITE: <http://sanitation.pratt.duke.edu/>

Dr. Deshusses' research focuses on the development and optimization of innovative waste treatment and sanitation processes. His work is being deployed into the field.

## 3. PARKER, A. et al., "The Nano Membrane Toilet", UK



### **Dr. Alison Parker, Lecturer in International Water and Sanitation**

Cranfield University, UK

EMAIL: [a.parker@cranfield.ac.uk](mailto:a.parker@cranfield.ac.uk).

WEBSITE: [www.nanomembranetoilet.org](http://www.nanomembranetoilet.org)

Alison Parker works on the Nano Membrane Toilet, responsible for user perspectives' and commercialisation. She also has a wide interest and experience in urban sanitation, including understanding how faecal sludge can be treated, its impact on the environment and the response of users and institutions to different sanitation technologies.

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#### 4. YEH, D. et al., “From TRL5 to TRL7: Development of the NEWgenerator™”, USA



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#### **Dr. Daniel H. Yeh, Associate Professor**

Dept. Civil & Environmental Engineering, University of South Florida, Tampa, FL USA

EMAIL: [dhyeh@usf.edu](mailto:dhyeh@usf.edu)

WEBSITE: <http://newgenerator.tumblr.com>

Dr. Yeh’s lab applies membrane biotechnology to accelerate the biorecycling of essential elements in the built environment. Their research on the NEWgenerator was one of six winning projects selected for the Reinvent the Toilet challenge: India, sponsored by the government of India (BIRAC) and the Bill & Melinda Gates Foundation.

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### RESEARCH 2.5: SOCIAL ASPECTS

#### 1. REDDY, M. et al., “Why do Women in India not Use Public Toilets? Patterns and Determinants of Public Toilet Usage by Women in Warangal City”, India



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#### **Dr. Y. Malini Reddy, Associate Professor**

Centre for Urban Governance, Administrative Staff College of India, Hyderabad, India

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WEBSITE: [www.asci.org.in](http://www.asci.org.in)

Dr. Malini has 20 years of academic, consulting and entrepreneurial experience in apparel, retail, hospitality, education and social sectors. She brings management and marketing expertise to her work in urban sanitation, smart cities and public service design and delivery. She is committed to bring change at grassroots level with a particular focus on social marketing, ICT for development, gender mainstreaming and inclusive markets

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2. WILLETTS, J. et al., “Smart Compliance in Faecal Sludge Management: Strategies to Achieve Health and Environmental Outcomes”, Australia



**Professor Juliet Willetts, Research Director**

Institute for Sustainable Futures – University of Technology Sydney (UTS), Sydney. Australia

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<http://www.uts.edu.au/research-and-teaching/our-research/institute-sustainable-futures/our-research/international/water>

Juliet Willetts leads applied research in Asia-Pacific on urban sanitation, and other aspects of water, sanitation and hygiene. At FSM4 she is involved in contributions on smart regulatory approaches; local government engagement in desludging; enabling private sector roles; and lastly, a poster on the need to recognise pathogen hazards in the liquid flows from onsite systems.

3. MILLS, F. et al., “FSM is Not Just an Urban Issue: Findings from a Rapid Assessment in Rural Vietnam”, Australia



**Freya Mills, Senior Research Consultant**

Institute for Sustainable Future – University of Technology Sydney, Australia

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Freya is an urban sanitation specialist, with a career that spans multilateral development banks, non-government organisations (NGOs), research institutes and private consulting firms. Freya has a Masters in Water Resource Engineering and has worked for extended periods in Indonesia, Nepal, Samoa, Vietnam and Australia



4. CHILKUNDA, C.A.S. et al., "Studies on the impact of anthropogenic wastes on growth and yield of maize and cowpea, major nutrients and pathogen load in soil", India

*Presented by Dr. Srinivasamurthy*



### **Dr. C.A. Srinivasamurthy, FISSS, Director of Research**

Central Agricultural University, Imphal, Manipur, India (795004)

EMAIL: [casmurthy@yahoo.com](mailto:casmurthy@yahoo.com), [chilkunda.casm@gmail.com](mailto:chilkunda.casm@gmail.com)

Carried out research on utilization of faecal waste as a nutrient source to crops, its effect on soil fertility, heavy metals content and pathogen load in soil, yield and quality of crops.

Worked extensively on utilization of human urine as a liquid fertilizer.

Taught soil science to graduate and post graduate students at University of Agricultural Sciences, Bangalore during the past 33 years.

Guided 18 Ph. D. And 29 M. Sc. students in soil science.

Conferred with, Best research worker award by University of Agricultural Sciences, Bangalore in 2010.

Fellow of the Indian Society of Soil Science in 2015.

## RESEARCH 2.6: CHARACTERISATION & QUANTIFICATION OF FS – II

1. PRADEEP, R. et al., "Characteristics of Faecal Sludge generated from onsite systems located in Devanahalli", India

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SEE RESEARCH 2.3.1

**2. KUMAR, S. et al., “Septage Characterization in Indian Urban Centres and Standalone Treatment Options for Septage Handling & Disposal”, India**



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**N. Sampath Kumar, Managing Director**

Tide Technocrats Private Limited (Tide Technocrats), Bengaluru, India

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Sampath has over 27 years’ experience across waste-management, sanitation, and renewable energy. A serial social entrepreneur, his experience includes projects in Africa and Asia for leading organizations across the world. Apart from other areas, his current work is on variability of septage characteristics in Urban India and its implications on design of treatment options.

**3. DIAZ-AGUADO, B. M. et al., “Maximising the Value of Fertilisers Derived from Source-Separated Human Waste in Antananarivo, Madagascar”, UK**



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**Berta Moya Diaz-Aguado, PhD Candidate**

Cranfield University, Cranfield Water Science Institute, Bedford, UK)

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Berta is a biochemical and environmental engineer with a passion for resource recovery from wastes. Her interest in sanitation was sparked after writing a chapter on the end uses of faecal sludge in the ‘Faecal Sludge Management’ handbook. In 2014 she started a PhD at Cranfield University on the topic of maximising the value of fertilisers derived from human excreta, both in terms of nutrient content and market potential.

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### **Dr. Santiago Septien Stringel, Research Engineer**

Pollution Research Group, University of KwaZulu-Natal, Durban, South Africa

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With a chemical engineering degree, Dr. Santiago Septien Stringel obtained a PhD on biomass gasification in 2011 and performed a post-doctorate in the same domain for two more years, in French research centres. During this period, he acquired an expertise in thermochemical processes (pyrolysis, gasification, combustion) and biofuels. In 2014, he joined the Pollution Research Group at the University of KwaZulu-Natal to supervise master research projects funded by the Bill & Melinda Gates Foundation and the Water Research Commission. Actually, he continues as a research staff in the Pollution Research Group, and his main task is to support sanitation practitioners. His main expertise has become thermal processes for sanitation applications.

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