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Food Design for Sustainability

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1. Workshop Organiser/s

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2. Context of Workshop

The workshop responds to several interlinked global challenges in global warming, obesity, health and waste, of which food has made a significant contribution. The consumption of food contributes to a significant proportion of a person's overall greenhouse gas emissions (Dey et al., 2007), accounting for 20% of an individual's CO_2e footprint globally (Hertwich and Peters 2009). Agricultural production is responsible for 19%–29% of global anthropogenic greenhouse gas emissions (Vermeulen et al., 2012). At the same time, an estimated 30% of food purchased for home consumption is not eaten and wasted (FAO 2013).

A range of potential alternative practices to reduce food related CO_2e emissions have been estimated for an individual diet and include: eliminating meat consumption (35%), avoiding domestic food waste (12%), purchasing local (5%) and avoiding packaging waste (3%) (Hoolohan et al. 2013, p.1065).

While food is significant with respect to an individual's environmental impact, it is also a significant contributor to health, in particular the obesity epidemic. For example, in 2004-2005 54% of adult Australians were overweight or obese, rising to 63% in 2011-2012 (ABS 2013). The global economic cost of obesity is estimated to be *$2 trillion* annually (Dobbs et

al. 2014). The WWF livewell report suggests that the two element are interrelated, with a healthy diet also being a more sustainable one (Macdiarmid et al. 2011). The gravity of the situation should not be underestimated, given that 'no country has yet managed a successful, sustained reduction in the prevalence of overweight and obesity, despite health and medical research' (NHMRC 2014, p.1).

3. Planned Activities and Expected Outcomes

This workshop aims to explore the design space of food, and asks the question whether and how this can be shaped to reduce impacts and promote health by design. The workshop is separated into 3 parts:

Part 1: Introduction to the problem space (at the conference site venue): An initial conversation and presentation from facilitators and participants introduce past work within the space, and provide participants with a dataset and brief for the day (small teams are formed).

Part 2: ideation session: A hackathon/rapid prototyping/ideation session. This session builds on the recent dataset compiled by the facilitators (containing the Global Warming Potential and nutritional values for over 170 food types). The design work aims to address two questions: A – what does a healthy and sustainable diet look like? and B – how can this be facilitated via design?

Part 3: reflection and synthesis: presentation, synthesis and discussion of findings, and identification of potential ways forward.

The workshop aims to present and build upon work undertaken by the facilitators, including theoretical insights from: Life Cycle Assessment; Design for Behavioural change; and Social Practice Theory, as well as practical insights from a wide range of food related research projects. This includes: sustainable food shopping; packaging design to reduce food waste; empirical monitoring of student cooking habits; community food growing and cooking projects; app design for environmental food purchases; and design studios that have engaged in the above thematics.

4. Intended Audience

The workshop is relevant for three streams of DRS: *1. Food and Eating Design, 2. Sustainable Design (Sustainability SIG), 3. Design for Behaviour Change (Behaviour Change SIG)*

Ideally the workshop would have between 15-30 participants working in 5-6 teams so that individuals can engage with and respond to the material presented.

5. Length of Workshop

The workshop will be a four-hour event.

6. Space and Equipment Required

The event requires a venue with a data projector, whiteboards and tables. Participants may go mobile during the day to nearby food related venues in local shops/cafes etc, prior to reconvening.

7. Potential Outputs

We hope the workshop will reveal insights into the challenges of 'sustainable food design' via designing potential solutions and that it will connect the research community for future research collaboration. The workshop will be designed so that the outcomes of the day are documented for the DRS blog and ImaginationLancaster websites.

About the Organisers:

Dr Stephen Clune is a sustainable designer, researcher and educator interested in design as a facilitator of sustainable change. His work draws on a range of tools from social practice theory, behavioural change and LCA.

Prof Adrian Friday Adrian Friday is an established researcher at the intersection of computing and sustainability. Adrian's recent research has explored supporting sustainable food shopping; fine-grained accounting for energy use in the home and achieving thermal comfort with less energy

Dr Roger Witham is a lecturer within ImaginationLancaster at Lancaster University. His research focuses on collaborative interactions, tools, structures and practices, exploring the role that technology and design can play in this space.

8. References

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