SHORT TERM SCIENTIFIC MISSION (STSM) – SCIENTIFIC REPORT

The STSM applicant submits this report for approval to the STSM coordinator

Action number: FP1405

STSM title: Targeted communication of active and intelligent packaging for food.

STSM start and end date: 20/08/2018 to 07/09/2018

Grantee name: Dr Katherine Flynn

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| **PURPOSE OF THE STSM** |
| The purpose of this STSM was to collaborate with a group expert in science communication strategies, to choose best methods for communicating ActInPak results and to draft at least 1 communication.The ActInPak COST Action has generated a lot of scientific knowledge, followed by several publications in peer-reviewed journals. However, dissemination to non-scientists has been limited. Scientists are routinely viewed as poor communicators. The layperson might throw up their hands in frustration claiming that scientists always change their mind, or they might politely nod off because they stopped understanding in the first sentence. Yet, in our increasingly technological world, the successful communication of science and technology to the public is of critical importance. Despite this need, scientists tend not to be trained in communication. Our communication with non-experts is widely recognized as very poor quality and even our communication with other scientists often leaves much to be desired. **This STSM was motivated by a desire to improve communication of food science in general and specifically to improve communication of the ActInPak results to the food-buying public.**The objective of ActInPak is to “develop a network to overcome the obstacles which limit the deployment of active and intelligent packaging”. It is acknowledged that among those obstacles, are i) the gap between science and industry and ii) the consumers’ lack of familiarity with active and intelligent packaging. These obstacles were addressed by this STSM, which focussed on identifying effective methods of communicating science to non-experts. Finally, the STSM aimed to bring a group expert in science communication into the ActInPak network and, perhaps, into future collaborations with packaging scientists.  |

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| **DESCRIPTION OF WORK CARRIED OUT DURING THE STSM** |
| Contact with the STSM host, Dr Padraig Murphy, Chair of the Science Communications programme at Dublin City University (DCU), was by internet and telephone before the start of the STSM. Thus, the host and the grantee met for the first time at Dublin City University when the STSM began.The first week of the STSM was dedicated to a review of science communication literature and methods used by Dr Murphy’s research team. Particular attention was given to methods which involve a defined target group in formation of a scientific communication that will be geared towards them. A thorough literature review was trimmed to 8 crucial articles in the past 5 years from the following journals – Canadian Journal of Nursing Research, Qualitative Research, Journal of Environmental Psychology, Wageningen Journal of Life Sciences, Health Expectations, British Food Journal, Public Health and Nature Biotechnology. I name the journals to show how they address the interface between communication and food science. A summary of the articles and their methods, including benefits and drawbacks in the communication of active and intelligent packaging, was prepared by the grantee and reviewed and discussed together with Dr Murphy.**Public Involvement in Targeted Scientific Communication, Amended Literature Review**

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| **METHODOLOGY** | **PARTICIPANTS** | **ANALYSIS** | **REFERENCE** |
| 2 focus groups each, with 4 different groups of participants | 43 Canadian youth: 18 girls and 25 boys between 12 and 17 years old | Data-driven inductive approach to thematic analysis | Bottorff, J.L. *et al.* Designing tailored messages about smoking and breast cancer: A focus group study with youth. *Canadian Journal of Nursing Research 46(1)*:66-86. (2014) |
| InterviewsOpen-ended questionnaires | 5 academics2 members of the public | DiscussionIterative team feedback | Brown, L.J. *et al.* Openness, inclusion and transparency in the practice of public involvement in research: A reflective exercise to develop best practice recommendations. *Health Expectations 21(2*):441-447. (2018) |
| 3 independent focus groups  | Group 1: 6 females over 40 years old.Groups 2 and 3: mix of males and females between 20 and 30 years old. | Thematic analysis | Fernqvist F. *et al.* What’s in it for me? Food packaging and consumer responses, a focus group study. *British Food Journal 117(3)*:1122-1135. (2015) |
| Interviews | 312 consumers in Norway, males and females 18 to 64 years old. | Differential emotions scaleCognitive benefits scale  | Koenig-Lewis, N. *et al.* Consumers' evaluations of ecological packaging—rational and emotional approaches. *Journal of Environmental Psychology 37:*94-105. (2014) |

The second week of the STSM began with a brainstorming meeting on how best to interact with a target group in order to gather their input on best methods for communicating about food packaging. A review of the brainstorming, the previous week’s literature review and materials from the Master’s in Science Communication programme led to the decision to organise a Focus Group on the Dublin City University campus with a defined group of the food-buying public with the aim of finding out their ideas about food packaging. We identified an accessible group: English language students at DCU and began organization with the DCU Language School including meeting the administrators and language teachers. A “Focus Group Question Outline” was prepared containing, as suggested in the literature, Opening Questions, Introduction Questions, Transition Questions, Key Questions and Concluding Questions, designed to get the group talking about food, food packaging and food information. Finally, the DCU Ethics Committee was contacted such that all Focus Group activities conformed to university ethical standards.The third week of the STSM involved finalisation of all Focus Group materials, including, for the Focus Group participants, a Plain Language Statement about the research project and an Informed Consent specifying that the Focus Group would be audio recorded. The consent forms were distributed and signed by participants at the Focus Group and are part of the Ethics Committee package. Several books and articles provided background information on moderating a focus group and Dr Murphy and I had several review sessions before I moderated the actual event. The 1-hour focus group took place on Wednesday afternoon 5 September. **Characteristics of Focus Group Discussion on Food****5 September 2018**

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| **FOCUS GROUP** | **PARTICIPANTS** | **ANALYSIS** |
| 1 hour long with 1 moderator | 10 men and 6 women  | Data-driven |
| Audio recorded | between 19 and 25 years old | Thematic |
| 10 questions in 5 categories3 slides shown | from Asia, Europe and South America | Key words |

After, the audio recordings were verified and saved in duplicate followed by a session on transcription methods and available software. Finally, all relevant material regarding the STSM was copied between the host and the grantee and all other copies destroyed. The STSM ended with a short session on possible future collaborations to advance this pilot study on targeted communication about food and food packaging. |

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| **DESCRIPTION OF THE MAIN RESULTS OBTAINED** |
| The anticipated result of preparing an effective communication package for disseminating complex scientific ideas to the non-expert was started, although, and perhaps this is the most valuable part of the STSM, not as the grantee envisioned beforehand. In a completely novel approach to science communication (for me), the target audience was intimately involved before any communication was even envisioned. In fact, the STSM was devoted to learning the state-of-the-art in gathering target audience ideas, to choosing one of these based on the topic of communication and practical considerations, and then to using that method – a Focus Group – to collect information on how to communicate about food packaging. A concrete result of this collaboration is the audio recording of the completed Focus Group on food packaging. The Focus Group was held with a discrete subset of the food-buying public, that is young people who have recently arrived in Europe, and as such may be a pilot for further Focus Groups on communication about food packaging. Transcription and analysis of the Focus Group discussion will be completed in the weeks following completion of the STSM, and an abstract and then a presentation will be prepared for the ActInPak final conference in November 2018. Finally, an effective and perhaps ongoing collaboration was initiated between the grantee, and thus the ActInPak project, and Dr Murphy’s Science Communication research team at Dublin City University. Dr Murphy will be invited to attend the ActInPak final conference and meeting on potential future projects to be held in November 2018. |

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| **FUTURE COLLABORATIONS (if applicable)** |
| The pilot Focus Group study to determine best practices for communication of ActInPak results will be presented at the ActInPak Final conference, 20-22 November 2018 in Vienna AT. Analysis of the Focus Group transcript will likely result in a collaboratively produced print- or web-based communication geared towards young adults who have recently arrived in Europe. The results of this Focus Group may also be a component of a future research project in which information is gathered from targeted sections of the food-buying public in order to more fully understand the best methods of informing different groups of consumers about active and intelligent packaging.  |