Implementing systematic review methods in chemical risk assessment: addressing the challenges of problem formulation and quality assurance

International Expert Workshop, 1-2 December 2016. Burlington House, London
8am to 3pm, Thursday 1 December (social activity 4.30pm at *The Glassblower*)
9am to 5pm, Friday 2 December

Date, Time and Venue

Thursday 1 – Friday 2 December 2016. Burlington House, London. (Confirmed)

- Thursday 8:00 am to 3:00 pm: Problem Formulation in Systematic Reviews for Chemical Risk Assessment
- Thursday 4:30 pm to finish: Networking activity and dinner at the Glassblower, Piccadilly
- Friday 9:00 am to 5:00 pm: Improving the Quality of Systematic Reviews in Chemical Risk Research

Due to logistical issues, we will be making an early start on Thursday 1 December; we ask participants to arrive on Wednesday evening, if possible.

From 4:30 pm on Thursday, we will reconvene for a networking activity and dinner at the Glassblower in Piccadilly (for details, see below), where participants will enjoy traditional English ales and rustic cuisine, and have an opportunity to contribute ideas for strategic activities beyond the confines of the workshop agenda.

We would very much like to thank the Royal Society of Chemistry Toxicology Group for providing the venue for this workshop.

Workshop Objective

This is a meeting of expert researchers, regulators and risk assessors involved in the development of systematic review (SR) methods for toxicological research and chemical risk assessment (CRA). The objective of the meeting is to make a significant step forward in addressing the following two priority issues in facilitating the development, acceptance and implementation of high-quality SR methods in CRA:

1. How to define the objective of a SR so it can meet the requirements of the CRA community, while fulfilling the rigorous methodological demands of the SR process (referred to hereafter as “problem formulation”).
2. A best-practice standard for conduct and reporting of SRs, to continue raising the methodological standard of CRAs, helping ensure only high-quality SRs are published in environmental health journals.

The workshop will deliver two high-impact scientific publications as major contributions to solving these two priority issues in adapting SR methods to the specific demands of the CRA context.

Preparation and Conduct of the Workshop

Day 1 of the workshop will address the issue of problem formulation; day 2 will address how to improve the quality of SRs. The days will be structured around three objectives: (a) finalising the research papers; (b) determining a set of practical activities which will facilitate acceptance and uptake of the recommendations made in the scientific publications; and (c) hearing presentations from world-leading researchers and regulators, in which the latest developments in application of SR methods to CRA will be discussed.

In order to provide an efficient structure for collaboration, we have appointed Topic Leads who will be developing draft discussion papers for each of the research outputs described above. These draft papers will be presented to participants prior to the workshop, discussed in detail at the workshop, redrafted and circulated by email, and feedback will be solicited by email and on teleconference calls as appropriate. Finalised drafts will be submitted for publication as outputs of the meeting.

Day 1: Problem Formulation

Workshop participants will develop recommendations for a process whereby a risk assessment question can be posed which is sufficiently narrow in scope to permit systematic review, that responds to community concerns, and is also acceptable to risk managers and policy-makers – implying not only a scientifically robust scoping process, but also various activities to render narrow-scope risk assessments acceptable.

- **Topic leads**: Dr Andrew Rooney (NTP/OHAT) and Dr Daniele Wikoff (ToxStrategies)

Day 2: Improving the Quality of Systematic Reviews

Workshop participants will examine how Cochrane *Methodological Expectations of Cochrane Intervention Reviews* (Chandler et al. 2013) Standards can be adapted into a conduct and reporting standard for SRs in toxicology and chemical risk assessment.

- **Topic leads**: Paul Whaley (Lancaster Environment Centre, Associate Editor for Systematic Reviews at *Environment International*) and Toby Lasserson (Cochrane Editorial Unit)

Contact Details

Paul Whaley, Lancaster Environment Centre

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Agenda

Day 1 (08:00-15:00)

08:00-08:30. Welcome coffee

08:30-08:45. Objectives, structure and strategic context of workshop

08:45-10:15. Presentations: Perspectives on Problem Formulation

10:15-10:45. Coffee

10:45-12:30. Presentation and breakout discussion of the *Problem Formulation* paper

12:30-13:15. Lunch

13:15-15:00. Continued discussion of the *Problem Formulation* paper

16:30 onwards. Networking event followed by dinner at the Glassblower

Day 2 (09:00-17:00)

09:00-09:30. Coffee

09:30-10:45. Presentations: Latest developments in SR Methods for CRA (part 1)

10:45-11:05. Quality Assurance for Cochrane Systematic Reviews (Toby Lasserson, Cochrane Editorial Unit)

11:05-12:30. Presentation and breakout discussion of draft manuscript *"MECIR Standards" for CRA*

12:30-13:15. Lunch

13:15-14:30. Presentations: Latest developments in SR Methods for CRA (part 2)

14:30-16:00. Continued breakout discussion of the *"MECIR Standards" for CRA* paper

16:00-16:30. Coffee

16:30-17:00. Final plenary. Agreement on actions. Wrap-up and depart.

Presentations

- **Perspectives on Problem Formulation**
  - Introduction and plan for presentations, break-out discussions (Andrew Rooney, NTP/OHAT)
  - Approaches to securing multi-stakeholder agreement on objectives (Sandy Oliver, EPPI Centre)
  - Systematic mapping as a tool to facilitate problem formulation (Nicola Randall, Harper Adams)
  - Examples of problem formulation and protocol development at EFSA (Elisa Aiassa, EFSA)
  - Use of SR in Chemical Risk Assessment – Applications and Challenges (Daniele Wikoff)
- **Latest developments in Systematic Review Methods for Chemical Risk Assessment**:
  - Case studies from the Navigation Guide (Juleen Lam, University of California San Francisco)
  - The SYRINA tool for classification of EDCs (Anna Beronius, Karolinska)
  - Experience in education and training in SR methods at the SYRCLE group (Rob de Vries, SYRCLE)
  - Latest Evidence Based Toxicology Collaboration case studies (Sebastian Hoffmann, EBTC)
  - Machine-learning tools for systematic review (Sciome LLC)
  - Risk of bias in exposure studies (Julian Higgins, Bristol)
  - Integrating evidence to determine overall risk of bias (Holger Schuenemann, McMaster)
  - Systematic review of evidence for non-monotonic dose responses (Annika Hanberg, Karolinska)

Break-out and plenary sessions

We will be looking to achieve two objectives in the break-out and plenary sessions. Firstly, we will be fine-tuning the discussion drafts of the research outputs prior to redrafting and journal submission; secondly, we will be identifying activities to be conducted over the 24 months after the workshop which will facilitate acceptance and implementation of SR methods in CRA.

In the latter case, the intention is to encourage participants to join together in informal working groups and conduct at least one priority activity in that time, to build momentum via practical activity going forward. These will be centred around (though not necessarily limited to) maximising the impact of the two research outputs, i.e. to define and encourage uptake of best practices in problem formulation, and quality assurance and control, in relation to conducting and publishing systematic reviews relevant to chemical risk research.

Networking activity, 16:30 onwards at *The Glassblower*

There will be approximately 30-35 of us at the Glassblower for dinner and networking. Because of the early start and intense programme for the day, we will keep the activity short and simple.

The group will divide into 5 tables of 6-7 people. For 20 minutes, each group will discuss things they would like to see change in order for systematic review methods to become better implemented in chemical risk assessment. The groups will appoint a rapporteur who will report back to the room up to five things which their group has discussed.

Bugbears, annoyances, misplaced strategic priorities, research deficits, lack of funding, lack of understanding of the merits of various methods (be they GRADE, risk of bias, etc.), cavalier attitudes to publishing standards, confused regulatory mandates… this is an opportunity for participants to get these issues off their chests!

Next, each table chooses one the challenges (or two, if they have time) as a priority for discussion, and in the next 40 minutes brainstorms an action-plan of activities they could do over the next 12-24 months which would contribute to overcoming it. Participants are encouraged to consider what they want to do, why it is likely to be effective, and who they want to target with the activity.

Activities could include training, research (such as case-studies of SR methods, or empirical research into risks of bias), education for policy-makers, setting up or joining networks, educating funders, etc. Participants are encouraged to think creatively and, if possible, come up with several activities which can address the same challenge from different angles.

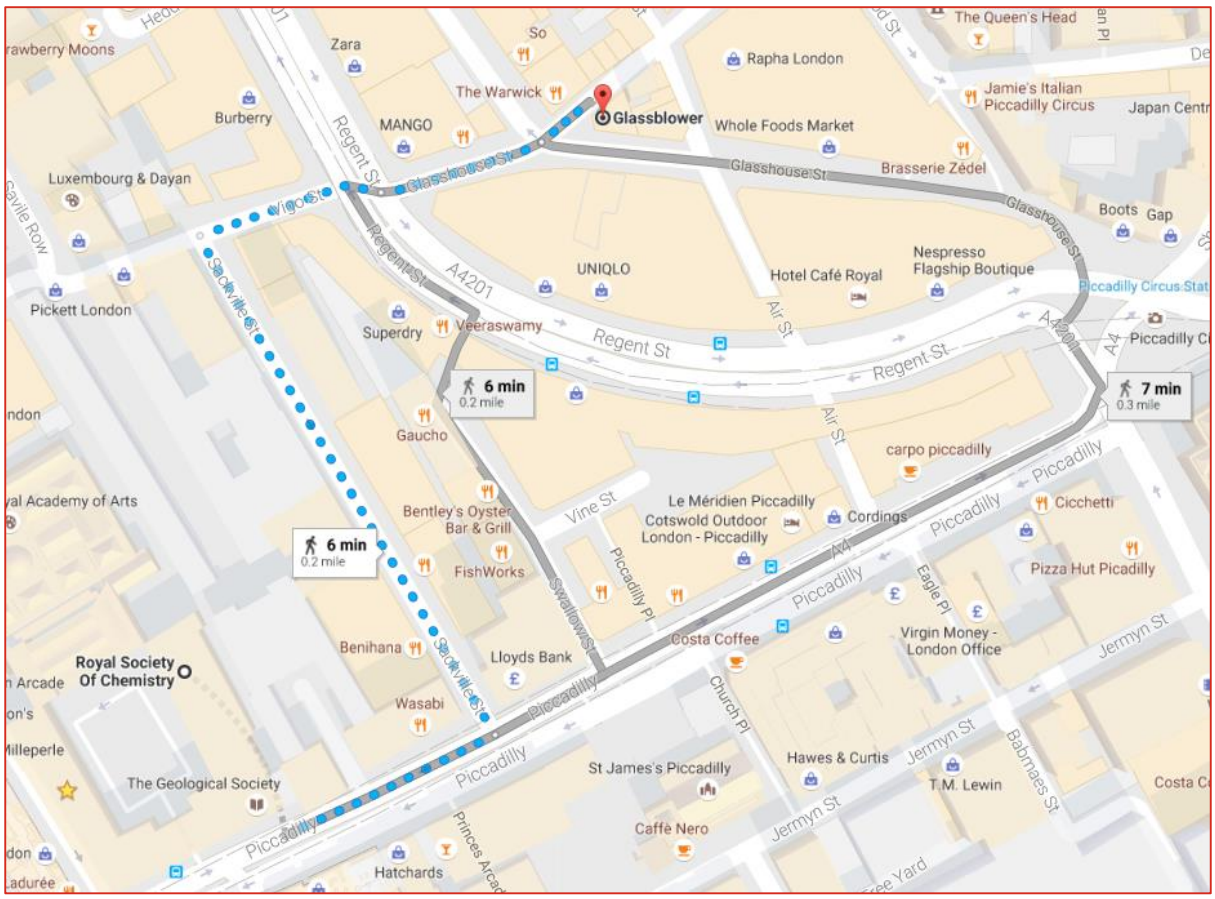
- **Ambition**: What change would you like to see happen?
- **Activities**: What do you think needs to do to in order to make the change happen?
- **Audience**: Who are the main audiences who need to be influenced in order for the change to happen?

Finally, the rapporteur will report back to the room with an overview of the group's proposed activities.

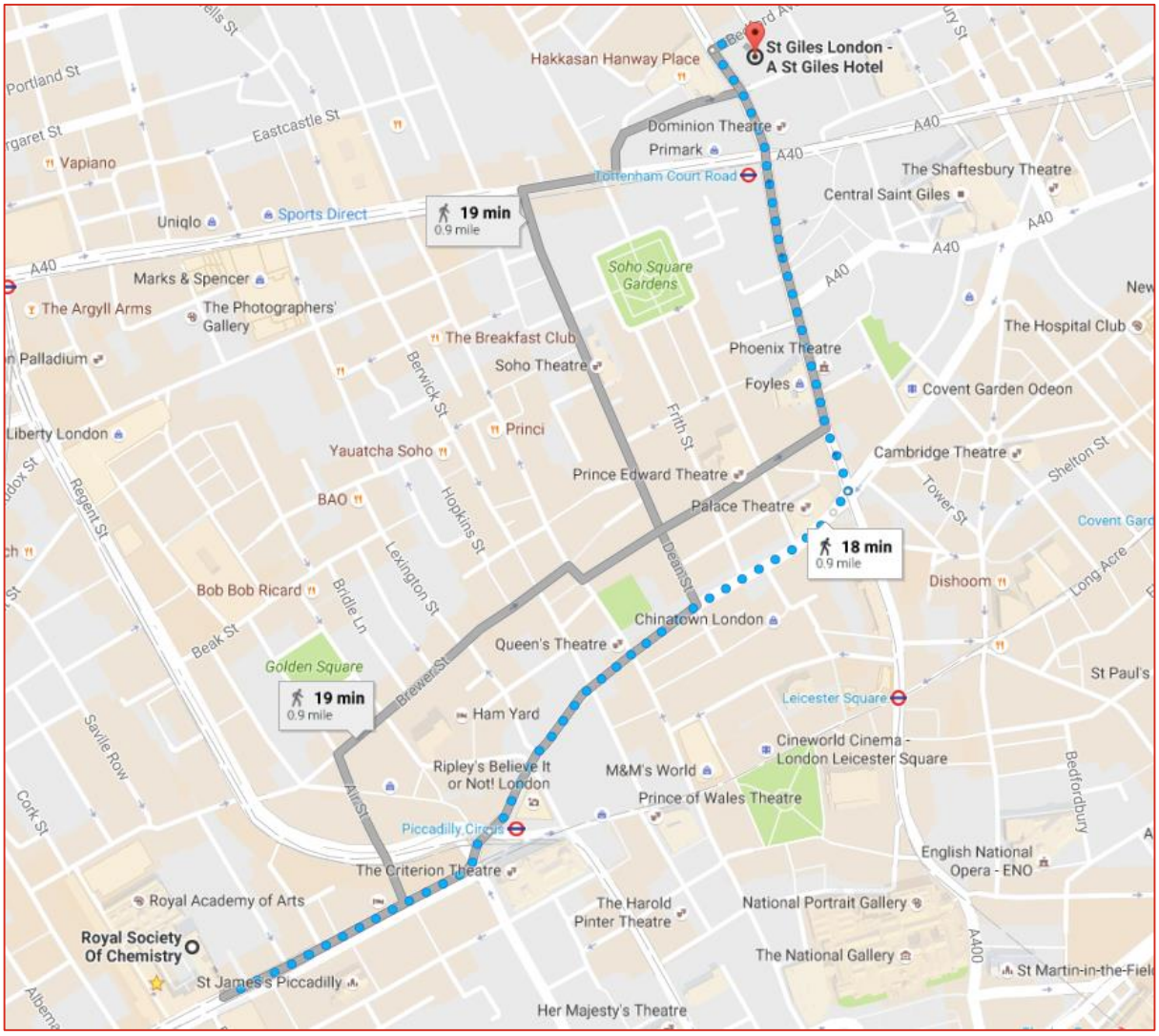
The purpose is to identify common strategic interests among participants in the room, and potential activities which people could potentially work on together. The ideas we generate could be seeds for informal working groups and help advance systematic review methods over the next 12-24 months. Hopefully participants will over the course of the evening be able to follow up with each other on some of the ideas discussed.

We will finish the activity by 18:30 at the latest, assuming we start by 17:00. We will then have dinner and everyone is free to socialise!

Maps



Route from Royal Society of Chemistry to The Glassblower



Route from St Giles Hotel (Bedford Avenue) to Royal Society of Chemistry

Participant List

Participant	Institution
Aiassa, Elisa	EFSA
Beausoleil, Claire	ANSES
Beronius, Anna	Karolinska
Bilotta, Gary	Brighton University
Boobis, Alan	Imperial College London
Brown, Richard	WHO
Bull, Sarah	RSC Toxicology Committee
Duarte Davidson, Raquel	Public Health England
Guyton, Kathryn	IARC
Halsall, Crispin	Lancaster University
Hanberg, Annika	Karolinska University
Higgins, Julian	Bristol University
Hoffmann, Sebastian	Evidence Based Toxicology Collaboration
Hunt, Neil	The REACH Centre
Kwiatkowski, Carol	The Endocrine Disruption Exchange
Lam, Juleen	UCSF / Navigation Guide
Lasserson, Toby (Fri)	Cochrane Collaboration
Lipworth, Steven (Thurs)	Royal Society of Chemistry
Martin, Olwenn	Brunel University
McLean, Angela (Thurs)	Oxford Martin School
McPartland, Jennifer	Environmental Defense Fund
Minhas, Harpal (Fri)	Royal Society of Chemistry
Munn, Sharon	EU Comm. Joint Research Centre
Oliver, Sandy	EPPI Centre
Randall, Nicola (Thurs)	Harper Adams University
Rhomberg, Lorenz	Gradient Corporation
Rooney, Andrew	NTP/OHAT
Schuhnemann, Holger	McMaster University
Sepai, Ovnair	RSC Toxicology Committee
Shah, Ruchir	Sciome LLC
Stewart, Gavin	Newcastle University
Straif, Kurt	IARC
Tritscher, Angelika	WHO
Vries, Rob de	SYRCLE
Weis, Chris	US NIEHS
Whaley, Paul	Lancaster University
Wikoff, Daniele	ToxStrategies Inc.