i2S News

May/June 2018, #39

Australian National University

WELCOME

Welcome to the (slightly late) May/June i2S News which provides updates on resources added to the Integration and Implementation Sciences website (http://i2s.anu.edu.au), as well as a list of blog posts published on the Integration and Implementation Insights (i2Insights) blog (http://i2insights.org).

Resources include new tools for stakeholder engagement and understanding wicked problems, professional associations and journals on judgment and decision making, and a network to "articulate and promote the need for a dedicated career path around interdisciplinary research expertise."

The News also features conferences on inter- and trans-disciplinarity and systems modelling. For a full list of relevant conferences, see http://i2s.anu.edu.au/resources/conferences.

Gabriele Bammer and Peter Deane

CONTENTS

Featured Tool and Tool Update
- Stakeholder engagement: Why? who? when? how?
- Updated - Collaboration and Team Science: A Field Guide

Featured Video
- Wicked problems: A brief overview

Latest i2Insights Blog Posts
- There have been 12 new contributions since the last i2S News

Featured Journal and Journal News
- Judgment and Decision Making
- GAIA column 'Frameworks for Transdisciplinary Research' #3

Featured Network and Professional Association
- Intereach: Interdisciplinary Integration Research Careers Hub
- Society for Judgment and Decision Making

Featured Conferences
- 2nd Annual IEEE Systems Modelling Conference 2018
- Swiss Inter- and Transdisciplinarity Day 2018

About i2S News
- Aims and how to contribute, subscribe and un-subscribe

FEATURED TOOL AND TOOL UPDATE

Stakeholder engagement: Why? who? when? how?

Purpose:
- Provides detailed advice about the process of engaging stakeholders, including planning the process, methods, evaluation and managing conflict

Description:
The Handbook comprises seven main sections:

1. Defining the outcomes desired from the engagement (why)
2. Identifying the stakeholders to be involved (who), including assessing, analysing, prioritising and understanding their motivations
3. Identifying the best times to engage with stakeholders (when)
4. Choosing the best methods for engagement (how), including information on the most frequently used approaches
5. Planning the detail of the engagement
6. Dealing with conflict in stakeholder engagement
7. Reviewing and assessing the process to demonstrate achievements and to identify lessons learned for informing future engagement exercises.

The portal page for the handbook (http://www.biodiversa.org/702) also contains links to other resources relating to stakeholder engagement, namely:
1. Notes on how to use specific methods:
    a. Interviewing stakeholders
    b. Organising stakeholder workshops
    c. Participatory mapping
    d. How to write a policy brief
    e. Scenario analysis
    f. Co-development of research outputs with stakeholders
    g. Commissioning and working with video
    h. Delphi method
    i. Enabling stakeholders to monitor research outcomes and generate data
    j. Social media
    k. Multi-criteria decision analysis
    l. Facilitating stakeholder workshops
2. Three conflict management tools:
    a. Analysing the underlying cause of conflict
    b. Analysing the issues that give rise to conflict
    c. Analysing stakeholder rights, responsibilities, returns and relationships (the 4 R's)
3. Templates drawn from the BiodivERsA Stakeholder Engagement Handbook:
    a. Stakeholder identification and categorisation
    b. Extended interest-influence matrix
    c. Understanding your stakeholders
    d. Matrix for planning stakeholder engagement activities
    e. Matrix for categorising stakeholder dedication
    f. Stakeholder engagement evaluation
    g. Evaluating outcomes of stakeholder engagement activities
    h. Evaluating roles, rights, responsibilities and returns

The handbook is targeted at the environmental science community, but is more broadly useful.

- **Reference**:
  - o Durham E., Baker H., Smith M., Moore E. and Morgan V. (2014). *BiodivERsA Stakeholder Engagement Handbook*. ERA-NET BiodivERsA: Paris, France.
  - o Webpage with detail on the resource: http://www.biodiversa.org/702
  - o Low resolution PDF of the BiodivERsA Stakeholder Engagement Handbook. Online: http://www.biodiversa.org/706/download (2.7MB PDF)

Updated - Collaboration and Team Science: A Field Guide

First published in 2010, *Collaboration and Team Science: A Field Guide* has been updated to a second edition. It still covers 13 key areas ranging from 'leading research teams' to 'conflict is normal'. New features include 'top 10 takeaways for successful team collaboration' and appendices with templates for collaborative agreements and offer letters.

- Reference:
  - o Bennett, L. M., Gadlin, H., Marchand, C. (2018). Collaboration and Team Science Field Guide. 2nd edn., National Institutes of Health Publication No. 18-7660, National Cancer institute, Bethesda, Unites States of America. Full text online at: https://www.cancer.gov/about-nci/organization/crs/research-initiatives/team-science-field-guide/collaboration-team-science-guide.pdf (850KB PDF). Landing page for the tool can be found at: https://www.cancer.gov/about-nci/organization/crs/research-initiatives/team-science-field-guide.

Additional tools can be found at: http://i2s.anu.edu.au/resources/tools

FEATURED VIDEO

Wicked Problems: A brief overview

Purpose:
- To provide an easy-to-understand, brief overview of 'wicked problems' which are complex problems that defy easy solutions.

Description:
Wicked problems are highly complex problems. Examples include: environmental degradation, climate change, multicultural integration, cybersecurity, sprawling mega cities, political gridlock, poverty, inequality and food security.

A wicked problem is a dysfunctionality within a complex system. They are unstructured, open-ended, interconnected, interdependent, multi-dimensional, systemic, often unbounded in time and space. They cross disciplines, cross borders and cross departments, making them very difficult to contain or structure.

These problems have many deep and unknown interconnections and interdependencies. When you try to pull on one part, you end up getting the whole thing.

Complex problems are dynamic, they evolve over time. Problems and solutions are entwined as they co-evolve, with the definition of the problems also evolving. In response to their intimidating

nature, many people feel overwhelmed and respond with denial, resignation and determinism, resulting in inertia or trying to 'tame' the problem by oversimplifying it. Complex problems signal a need for a paradigm shift in approach to recontextualise the issue, breaking out of established assumptions.

Truly tackling complex problems requires systems thinking. To integrate the many different perspectives and dimensions of the problem by seeing the system as a whole, we can get a real idea of the true nexus that makes up the core constraints at the heart of the wicked problem.

This description is taken, mostly verbatim, from the video.

- 'Wicked problems' by Complexity Labs:
    - Online: https://youtu.be/jETc1mO3DZo

LATEST i2INSIGHTS BLOG POSTS

The i2Insights blog has recently published the following posts:

Negotiations and 'normative' or 'ethical' power
by Lena Partzsch
https://i2insights.org/2018/06/26/normative-power/

What can interdisciplinary collaborations learn from the science of team science? by Suzi Spitzer
https://i2insights.org/2018/06/19/interdisciplinarity-and-science-of-team-science/

Structure matters: Real-world laboratories as a new type of large-scale research infrastructure
by Franziska Stelzer, Uwe Schneidewind, Karoline Augenstein and Matthias Wanner
https://i2insights.org/2018/06/12/structure-and-transdisciplinarity/

When are scientists neutral experts or strategic policy makers?
by Karin Ingold
https://i2insights.org/2018/06/05/researchers-and-policy-making/

Using Ostrom's social-ecological systems framework to set context for transdisciplinary research: A case study
by Maria Helena Guimarães
https://i2insights.org/2018/05/29/transdisciplinary-research-context/

A guide for interdisciplinary researchers: Adding axiology alongside ontology and epistemology
by Peter Deane
https://i2insights.org/2018/05/22/axiology-and-interdisciplinarity/

Using the arts and design to build student creative collaboration capacity
by Edgar Cardenas
https://i2insights.org/2018/05/15/student-creative-collaboration-capacity/

Leading large transdisciplinary projects
by Sanford Eigenbrode, Lois Wright Morton and Timothy Martin
https://i2insights.org/2018/05/08/leading-large-transdisciplinary-projects/

The university campus as a transdisciplinary living laboratory
by Dena Fam, Abby Mellick Lopes, Alexandra Crosby and Katie Ross
https://i2insights.org/2018/05/01/campus-as-transdisciplinary-living-laboratory/

Tool-swapping in interdisciplinary research - a case study
by Lindell Bromham
http://i2insights.org/2018/04/24/tool-swapping-in-interdisciplinarity/

Disciplinary diversity widget: how does your team measure up?
by Brooke Struck
https://i2insights.org/2018/04/17/disciplinary-diversity-widget/

Foundations of a translational health sciences doctoral program
by Gaetano Lotrecchiano and Paige McDonald
http://i2insights.org/2018/04/10/translational-health-sciences-doctorate/

FEATURED JOURNAL AND JOURNAL NEWS

Judgment and Decision Making

Judgment and Decision Making publishes articles that "deal with normative, descriptive, and/or prescriptive analyses of human judgments and decisions. These include, but are not limited to: experimental studies of judgments of hypothetical scenarios; experimental economic approaches to individual and group behavior; use of physiological methods to understand human judgments and decisions; discussion of normative models such as utility theory; and applications of relevant theory to medicine, law, consumer behavior, business, public choice, and public economics".

Although this journal mainly publishes experimental studies, it occasionally publishes theoretical and more general articles that are relevant to i2S, including on decision making under uncertainty.

"This is the journal of the *Society for Judgment and Decision Making* (SJDM) and the *European Association for Decision Making* (EADM)".

- Website:
  - http://journal.sjdm.org/

GAIA column on 'Frameworks for Transdisciplinarity' Research #3

Mitchell, C., Fam, D. and Cordell, D. (2018). Frameworks for Transdisciplinary Research: Framework #3 - Outcomes spaces: Designing for impact in transdisciplinary research. *GAIA*, **27**, 1: 112 [online] URL: https://doi.org/10.14512/gaia.27.1.3

Additional journals can be found at: http://i2s.anu.edu.au/resources/journals

Australian National University

FEATURED NETWORK AND PROFESSIONAL ASSOCIATION

Intereach: Interdisciplinary Integration Research Careers Hub

Intereach seeks "to articulate and promote the need for a dedicated career path around interdisciplinary research expertise, and to improve practitioners' tools, best practices, success metrics, and career trajectories".

As a community of practitioners and researchers, *Intereach* focuses on:
"Developing the Profession:
1. Making the case for the value of Intereach professionals
2. Professional Development: Training and educating Intereach professionals, the disciplinary and interdisciplinary researchers they serve, and students in the pipeline for either of those paths".

Intereach members meet annually at the Science of Team Science conference. *Intereach* supports an electronic mailing list and a webinar series that showcases people in relevant roles, alongside discussing challenges and best practices.

There is a degree of overlap between *Intereach* and i2S, and the two work in partnership where possible. For example, *Intereach* webinars are hosted on the i2S Youtube channel in a playlist called "Team Science (Intereach webinar series)". *Intereach*, i2S and the community of research development professionals have co-organised and co-hosted workshops at the annual Science of Team Science conference.

The network was launched in 2015.

- **Website**:
    - https://www.intereach.org/

Society for Judgment and Decision Making (SJDM)

The *Society for Judgment and Decision Making* (SJDM) "is an interdisciplinary academic organization dedicated to the study of normative, descriptive, and prescriptive theories of judgments and decisions.

Its members include psychologists, economists, organizational researchers, decision analysts, and other decision researchers".

The society holds an annual meeting, and has published a book series, alongside producing an open-access journal and a quarterly newsletter. Members have access to an electronic mailing list and the SJDM website holds a variety of topic relevant resources.

SJDM was launched in 1980.

- **Website**:
    - http://www.sjdm.org/

Additional professional associations and networks can be found at:
http://i2s.anu.edu.au/resources/associations_networks

FEATURED CONFERENCES

2ⁿᵈ Annual IEEE Systems Modelling Conference 2018: Leveraging the Power of Multi-methods in Model-based Decision Analysis and Problem Solving

This is a "one day conference on the use of whole-systems approach to design and manage complex problem in socio-technical and socio-ecological systems.

Systems thinking and modelling is the science of integration, where every system is conceptualised as a set of inter-related components. Systems thinking and systems modelling provides a problem solving approach that helps us develop the capacity to understand and manage complexity in a systemic way and how to deal with it in multi-stakeholder situations".

Further, "systems modelling is a crucial approach for decision-making associated with real-world systems. The-state-of-the-art in systems modelling does not rely on one dominant modelling technique, one group of analytical methods, one ultimate model, or one set of input data or parameters for an effective decision analysis and problem solving. Consequently, decision makers have available a wide range of modelling and analytical approaches that have differing strengths and limitations and can address some aspects of decision problems better than others. The daylong conference... will feature showcases on the use of systems thinking and systems modelling in a wide range of areas".

The conference is run by the University of New South Wales Capability Systems Centre in partnership with Institute of Electrical and Electronics Engineers (IEEE).

The conference will be held in Canberra, Australia, on October 4, 2018.

- For further details see:
    - https://www.unsw.adfa.edu.au/conferences/systems-modelling-conference-2018/home

Swiss Inter- and Transdisciplinarity Day 2018: Inter- and Transdisciplinarity in a Digital World

"Digitalisation is a major societal issue with countless opportunities and challenges. Recently, the 'Swiss Action Plan Digitalisation in Education and Research' was elaborated by the State Secretariat for Research and Innovation (SERI) Education. But what does digitalisation mean for co-productive modes of research and teaching? Where and how can it enhance or deepen collaboration, connect to disparate actors, and make interaction more tangible? Where does digitalisation lead to extractive modes of knowledge production, where does it hinder concrete (inter)action?
With this day, we want to explore and reflect experiences and visions on how digitalisation can be devised for inter- and transdisciplinary research and education in a meaningful way".

The conference will be held in Lausanne, Switzerland, on November 15, 2018.

- For further details see:
    - http://www.transdisciplinarity.ch/en/td-net/Veranstaltungen/ITD-CH-2018.html
    - Abstract submission deadline - 12 August 2018:
    - http://www.transdisciplinarity.ch/td-net/Veranstaltungen/ITD-CH-2018/Call-for-contributions.html

Additional conference information can be found at:
http://i2s.anu.edu.au/resources/conferences

ABOUT i2S NEWS

The aim of this newsletter is to provide regular (bi-monthly) updates about new resources added to the Integration and Implementation Sciences website (http://i2s.anu.edu.au/resources). These resources are useful for researchers interested in Integration and Implementation Sciences (i2S), which underpins the investigation and tackling of complex real world problems, by:

- Synthesizing knowledge from different disciplines and stakeholders,
- Understanding and managing diverse unknowns, and
- Providing integrated research support for policy and practice change.

In general, each issue features tools (concepts and methods), case studies and/or approaches relevant to i2S - either a useful compilation or one or more examples of note. We also provide information about journals, professional associations & networks and conferences where researchers can learn from others, report their findings and interact with like-minded peers. The newsletter also reports on discussions in the LinkedIn group "Global Network for Research Integration and Implementation": https://www.linkedin.com/groups/4888295/ (when these occur) and new entries on the Integration and Implementation Insights blog: http://I2Insights.org.

I2S News is archived at: http://i2s.anu.edu.au/what-i2s/i2s-publications/i2s-news.

Useful links:
- i2S website: http://i2s.anu.edu.au
- i2S on YouTube: https://www.youtube.com/user/i2sTalks
- LinkedIn group "Global Network for Research Integration and Implementation": https://www.linkedin.com/groups/4888295/
- i2Insights blog: http://I2Insights.org

To subscribe or unsubscribe to the newsletter go to "i2S News" at http://i2s.anu.edu.au or contact Peter Deane at peter.deane@anu.edu.au. To contribute material please contact Peter Deane at peter.deane@anu.edu.au.