I2S News

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Australian National University

WELCOME

Welcome to the last I2S News for 2015.

We are pleased to announce the launch of the Integration and Implementation Insights blog at http://i2insights.org/. We invite you to join a global community blogging about research integration and implementation practices. Comments on the first blogs are welcome; these cover criteria for choosing peer-reviewers (at: http://i2insights.org/2015/11/25/hairsplitting-interdisciplinarity/) and participatory modelling (at: http://i2insights.org/2015/12/02/modelling-is-the-language-of-scientific-discovery/).

Gabriele is now also producing a new semi-regular column for the journal *GAIA* on Toolkits for Transdisciplinarity, starting with the td-Net toolkit on co-producing knowledge: dx.doi.org/10.14512/gaia.24.3.2.

We wish you all a healthy, happy and fulfilling 2016 and hope to interact with you, especially via the (http://i2insights.org/) blog, in the new year.

Gabriele Bammer and Peter Deane

CONTENTS

FEATURED TOOLS

Implementation-Oriented Research: Eight Principles

Describes eight principles for implementation-oriented research:
1. Joint agenda setting to allow for effective engagement of societal actors from business,

industry, government and civil society to identify the problems
2. Co-design, co-production, co-delivery and co-interpretation to allow the full integration of knowledge and experiences of stakeholders as well as joint interpretation and communication of the results.
3. Process-oriented and adaptive program management to provide flexibility, creativity and learning. In addition, robust processes that are normative, goal-searching, participatory and can cope with complexity.
4. Adapted evaluation for proposal and project evaluation with criteria emphasising societal relevance and outreach.
5. Systemic approaches to emphasise systems perspectives and methods to better address "complexity, trade-offs, multiple scales, non-linearity and inherent uncertainty".
6. Communication, empowerment, engagement and exploitation to provide findings that are "accessible, accountable and meaningful for diverse audiences. This process of co-creation, co-delivery and co-interpretation requires special facilitation, interfacing and empowering skills that must be supported through project funding."
7. Career opportunities and recognition for inter- and trans-disciplinary researchers that provide "credit for challenging, complex projects and for designing and running dialogues and participative integrative science-for-society processes."
8. Capacity building for "funders and practitioners via training, a forum for exchange of experiences and easily available documentation of good practice."

Although the focus is on sustainability, these principles are more broadly relevant.

Jäger, J. (2013). Eight Principles for Implementation-Oriented Research, digital poster #835, from the First Global Conference on Research Integration and Implementation in Canberra, Australia, online and at co-conferences in Germany, the Netherlands and Uruguay, 8-11 September, 2013. (Online: http://i2sconference.digitalposter.com.au/posters-list/835).

Impact: Adoption and Use

Argues for the importance of differentiating between the initial adoption of research findings and long-term use, and suggests that focusing only on adoption is the single biggest impediment to achieving impact. Adoption is defined as "the willingness and ability to take research results and convert them into something that's usable more broadly", which can involve incorporating the results into "an artefact or service or advice". For example, farmers may be willing to grow genetically altered crops because of easier, low-cost production (adoption), but not taking into account consumer (user) preferences and concerns about risks may lead to difficult and slow uptake. The difference between adoption and use often also plays out as the difference between policy development and subsequent program delivery. Furthermore, the difficulty of achieving impact rises with the complexity of the receiving 'ecosystem'.

Elsum, I. (2013). Path to impact: Adoption and use, digital poster #809, from the First Global Conference on Research Integration and Implementation in Canberra, Australia, online and at co-conferences in Germany, the Netherlands and Uruguay, 8-11 September, 2013. (Online: http://i2sconference.digitalposter.com.au/posters-list/809).

Scoping: eight question framework

This framework presents a structured way to review all the possibilities for understanding and acing on a complex problem. The questions are:
1. "What do we know about the problem?

2. What can different interest groups and academic disciplines contribute to addressing this problem?
3. What areas are contentious?
4. What are the big-picture issues? In other words, what are the political, social, and cultural aspects of the problem?

and

5. Why is this problem on the agenda now?
6. What support and resources are likely to be available for tackling the problem?
7. What parts of the problem are already well covered and where are the areas of greatest need?
8. Where can the most strategic interventions be made?

The first four questions help identify the dimensions of the problem, while the last four help set priorities."

- Reference: Bammer, G. (2013). Scoping public health problems. In Guest, C., Ricciardi, W., Kawachi, I., and Lang, I. (eds.). *Oxford Handbook of Public Health Practice*, 3rd edition. Oxford University Press: Oxford, United Kingdom, pp. 2-10.

For these and more tools, such as
- Feedback Loops, Unexpected Events and Complex Systems
- Unknowns: An Overview

See: http://i2s.anu.edu.au/resources/tools

FEATURED VIDEO

Project Management as an Inter-disciplinary and Integrative Practice

Project management, as a field of practice and aspiring discipline has enjoyed strong professional formation, driven by active associations of practitioners. In promoting project management as a discipline in its own right, these practitioners and their associations have worked to delimit it from other disciplines and define it through practice standards. As a result project management is practice rich and theory poor. Although the practice standards, based on the espoused theories of practitioners with backgrounds primarily in engineering, are useful and widely used, project management has few, if any, theories of its own. It draws upon theories from other disciplines including engineering, social, organisational, management and natural sciences, operations research, the arts and the humanities.

Recent research trends in the management of projects have drawn attention to the need to recognise the inter-disciplinary and perhaps trans-disciplinary nature of projects, focusing more on projects and temporary organising as a context than on project management as a unitary and singular set of practices. The challenges of complex projects have led to increased interest in systems thinking and complexity theory. New perspectives are offered by recognition that projects in areas such as the film industry and emergency response are managed effectively but largely without reference to mainstream project management standards. Increasing desire by researchers to test theories from a wide range of disciplines in project contexts are driving the re-integration of project management with its parent disciplines.

This presentation provides access to the useful practices of project management within a broader context of the inter-disciplinary and integrative practices required to manage projects.

This video " Managing Projects as an Inter-disciplinary and Integrative Practice" presented by Lynn Crawford was a plenary talk at the First Global Conference on Research Integration and Implementation held in Canberra, Australia, online and at co-conferences in Germany, the Netherlands and Uruguay, 8-11 September, 2013. Watch on YouTube at: https://youtu.be/NpLuclJ9puY.

FEATURED JOURNAL AND JOURNAL NEWS

Issues in Interdisciplinary Studies

Issues in Interdisciplinary Studies supports scholarship crossing the arts and sciences on issues pertaining to interdisciplinary/integrative research and teaching. The journal is particularly focused on:

1. "Interdisciplinary theory and methodology
2. The nature, means and problems of integrative research, especially on human experience
3. Models of interdisciplinary/integrative curricular designs both undergraduate and graduate, supplemented by evaluative empirical studies
4. Analyses of the relationships among social contexts, institutional arrangements and interdisciplinary programs of research and teaching
5. Cross-campus surveys on the status of interdisciplinarity
6. Conceptual and empirical attempts at distinguishing between disciplinary and interdisciplinary teaching, curricular models, and research
7. Special pedagogical approaches for enhancing interdisciplinary/integrative comprehension, perspectives, knowledge, and utilization
8. Substantial and critical reviews of literature published elsewhere on any of the above".

Issues in Interdisciplinary Studies, formerly known as *Issues in Integrative Studies*, is produced by the Association for Interdisciplinary Studies. One issue is produced per year. Articles from volume 1 (1982) to volume 31 (2013) are open access.

- Website: http://wwwp.oakland.edu/ais/publications/

GAIA column on 'Toolkits for Transdisciplinarity'

GAIA, an inter- and transdisciplinary journal focused on environmental and sustainability problems and their solutions, has a new, semi-regular, open-access column on "Toolkits for Transdisciplinarity". The first column is available to read at: Bammer, G. (2015). Toolkits for Transdisciplinarity - Toolkit #1: Co-producing Knowledge. *GAIA*, **24**, 3: 149 [online] URL: http://dx.doi.org/10.14512/gaia.24.3.2.

For these and more journals, such as
- Administrative Science Quarterly
- Conservation Biology

See: http://i2s.anu.edu.au/resources/journals

FEATURED PROFESSIONAL ASSOCIATION

Operational Research Society

The *Operational Research Society* (often shortened to the *OR Society*) advances operational research, especially by providing services to operational research professionals. "Most of the problems OR tackles are messy and complex, often entailing considerable uncertainty. OR can use advanced quantitative methods, modelling, problem structuring, simulation and other analytical techniques to examine assumptions, facilitate an in-depth understanding and decide on practical action." The *OR Society* aims to demonstrate "to the wider community the benefits, in terms of greater efficiency, improved service or otherwise, that O.R. can bring to society".

The *OR Society* has members in 53 countries and a number of regional societies and special interest groups. It provides a wide range of online resources and networking opportunities, including a YouTube channel as well as hosting a variety of conferences, in particular an annual conference in Europe (usually in September each year). The *OR Society* supports a number of journals, including: European Journal of Information Systems; Health Systems; Journal of Simulation; Journal of the Operational Research Society; Knowledge Management Research and Practice; and, OR Insight.

The society was founded in 1948 as the *Operational Research Club*, and known from 1953 under its current name of the *Operational Research Society*.

- Website: http://www.theorsociety.com/

For this and more professional associations & networks, such as
- Cognitive Edge
- Australasian Implementation Network

See: http://i2s.anu.edu.au/resources/associations_networks

UPCOMING CONFERENCES

Conferences which have not been listed in previous newsletters are marked [NEW].

Interdisciplinarity, Transdisciplinarity and Action Research Methods
- Nil

Systems, Modelling and Simulation
- 5-8 January 2016, 49th Hawaii International Conference on System Sciences (HICSS 48), Kauai, Hawai'i, United States of America (http://www.hicss.org/)
- 18-19 January 2016, 7th International Conference on Computer Modelling and Simulation, Brisbane, Australia (http://www.iccms.org/)
- 3-6 April 2016, Symposium on Theory of Modeling and Simulation (within the 2016 Spring Simulation Multi-conference), Pasadena, California, United States of America (http://tms-devs.org/)
- [NEW] 11-13 April 2016, 8th Simulation Workshop (SW16), Stratford, United Kingdom (http://www.theorsociety.com/Pages/Conferences/SW16/SW16.aspx)
- 19-20 May 2016, 21st Coalition Theory Network Workshop, Venice, Italy (http://www.coalitiontheory.net/section-annual-workshop)

- 22-26 May 2016, 9th Chaotic Modeling and Simulation International Conference (CHAOS), London, United Kingdom (http://www.cmsim.org/chaos2016.html)
- 31 May - 3 June 2016, 30th European Conference on Modelling and Simulation (ECMS 2016), Regensburg, Germany (http://www.scs-europe.net/conf/ecms2016/)
- 3-6 June 2016, 28th European Conference on Operational Research, Poznań, Poland (http://www.euro2016.poznan.pl/)
- 12-16 June 2016, 11th International Conference on Systems of Systems Engineering (SoSE): SoSE and Cyber Physical Systems, from Academia to Application and Back, Kongsberg, Norway (http://2016.sosengineering.org/)
- 14-15 June 2016, Innovations in Collaborative Modeling: Addressing Complex Social and Environmental Problems through Systems Modeling Techniques, East Lansing, Michigan, United States of America (http://modeling.outreach.msu.edu/)
- 28 June – 1 July 2016, 9th International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction (SBP16), Washington DC, United States of America (http://sbp-conference.org/sbp2016/about/)
- 10-14 July 2016, Session on *Sociocybernetics, Simulation and Anticipation: Paradigms and Challenges*, in the 3rd ISA Forum of Sociology (RC51 Sociocybernetics), Vienna, Austria (https://isaconf.confex.com/isaconf/forum2016/webprogrampreliminary/Session6970.html)
- 13-17 July 2016, 24th Conference on User Modeling, Adaptation and Personalization, Halifax, Canada (http://www.um.org/umap2016/)
- 17-21 July 2016, 34th International Conference of the System Dynamics Society: Black Swans and Black Lies: System Dynamics in the Context of Randomness and Political Power-play, Delft, The Netherlands (http://conference.systemdynamics.org/)
- 24-29 July 2016, 60th Meeting of the International Society for the Systems Sciences: Unity in Diversity - Humanity in Technology, Boulder, Colorado, United States of America (http://isss.org/world/node/625)
- [NEW] 6-8 September 2016, Operational Research (OR) 58 Annual Conference, Portsmouth, United Kingdom (http://www.theorsociety.com/Pages/Conferences/OR58/OR58.aspx)
- [NEW] 19-23 September 2016, European Conference on Complex Systems (CCS'16), Amsterdam, The Netherlands (http://www.ccs2016.org/)

Team Science and Project Management
- 9-11 May 2016, Project Management Institute (PMI) Global Congress 2016, Barcelona, Spain (http://www.pmi.org/events//emea-2016.aspx)
- [NEW] 16-19 May 2016, Science of Team Science 2016 Conference, Phoenix, Arizona, United States of America (http://www.scienceofteamscience.org/)
- 14-16 July 2016, 11th Annual INGRoup Conference, Helsinki, Finland (http://www.ingroup.net/conference.html)

Uncertainty, Risk and Decision Making
- [NEW] 20-24 June 2016, 16th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems, Eindhoven, The Netherlands (http://is.ieis.tue.nl/ipmu/)
- 10-14 July 2016, Session on *Epistemic Uncertainty and Complexity Theories*, in the 3rd ISA Forum of Sociology (RC51 Sociocybernetics), Vienna, Austria (https://isaconf.confex.com/isaconf/forum2016/webprogrampreliminary/Session6650.html)
- 10-14 July 2016, Thematic Group on Sociology of Risk and Uncertainty (TG04) at the 3rd International Sociological Association (ISA) Forum of Sociology, Vienna, Austria (http://www.isa-sociology.org/forum-2016/tg/tg.php?n=TG04)

Bridging the Gap from Research to Policy and Practice

- 14-15 December 2015, 8th Annual Conference on the Science of Dissemination and Implementation, Washington D.C., United States of America (http://www.academyhealth.org/Events/events.cfm?ItemNumber=13518)
- 5-6 October 2016, 3rd Biennial Australian Implementation Conference, Melbourne, Australia (http://www.ausimplementationconference.net.au/)

Other (including Sustainability Science)

- 14-16 December 2015, Science and Governance theme at the 6th Annual Conference on Earth System Governance: Democracy and Resilience in the Anthropocene, Canberra, Australia (http://www.earthsystemgovernance.org/canberra2015/)
- 11-15 May 2016, 8th International Conference for the Humanities, Arts, Science, and Technology Alliance and Collaboratory (HASTAC): Impact, Variation, Innovation, Action, Tempe, Arizona, United States of America (http://www.hastac2016.org/)
- [NEW] 16-18 May 2016, 23rd Annual International Symposium on Sustainable Systems and Technologies, Phoenix, Arizona (http://issst2016.net/)
- 26-29 June 2016, Society for Ecological Economics (ISEE) 2016 Conference: Transforming the Economy - Sustaining Food, Water, Energy and Justice (http://www.isecoeco.org/isee-2016-conference/)
- [NEW] 26-29 July 2016, International Association for Conflict Management 2016 Conference, New York City, New York, United States of America (http://www.iacm-conflict.org/)
- 2-4 August 2016, 11th International Conference on Interdisciplinary Social Sciences: An Age and its Ends: Social Science in the Era of the Anthropocene, London, United Kingdom (http://thesocialsciences.com/2016-conference/)
- [NEW] 17-19 August 2016, 7th Annual VIVO 2016 Conference, Denver, Colorado, United States of America (http://vivoconference.org/)
- 12-15 October 2016, XXI International Conference of the Society for Human Ecology: Shaping a Liveable Future: Research – Education – Policy, Santa Ana, California, United States of America (http://societyforhumanecology.org/call-for-participation/)

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, professional development courses 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": http://www.linkedin.com/groups/Global-Network-Research-Integration-Implementation-4888295.

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": http://www.linkedin.com/groups/Global-Network-Research-Integration-Implementation-4888295

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