

INTERDISCIPLINARY COUPS TO CALAMITIES

1. Title summarizing the tutorial goals or workshop theme.

Interdisciplinary Coups to Calamities: a Call for Experiences

2. Details of the organizing committee, including names and institutional affiliations.

The Organising Committee consists of:

- Clare Hooper (IT Innovation, University of Southampton)
- Dave Millard (Web and Internet Science, University of Southampton)
- Noridayah Azman (Universiti Sains Islam, Malaysia)

The Program Committee consists of the Organising Committee and:

- Faith Lawrence (Kings College London)
- Aaron Houssian (State Farm Insurance)
- Stéphane Bazan (Université Saint-Joseph de Beyrouth, Lebanon)
- Elizabeth Buie (Northumbria University)
- Abigail Durrant (Newcastle University)

3. Max two-page description about the relevance, motivation and goals of the tutorial or workshop.

Motivation

Successful interdisciplinary collaboration is essential to Web Science, yet surprisingly little guidance exists about how to reach across disciplines and achieve successful collaborations. The fast pace of both academic and practitioner workplaces limits the possibilities for mindful reflection about success factors in this complex area. This workshop aims to provide such a space and generate insights relevant to the whole community, particularly newcomers and those communities with whom Web Scientists wish to connect.

This workshop offers the opportunity to share and reflect on experiences of interdisciplinary collaboration: from the outstanding to disastrous, and from the surprising to the confusing. If you have ever reached across disciplines and felt there was some lesson to be learned afterwards – whether you had time to reflect on it or not – this is the workshop for you.

Attendees will each have time to share a brief summary of their collaboration, what happened, and why. We will generate keywords for each attendee's contribution and use a group working session to find parallels, discrepancies and unexpected insights across the collaborations. We will identify key issues (and possible solutions) in interdisciplinary work, yielding insights for the Web Science community regarding the common issues we face and practical approaches to combat these.

Background: Academic discussions of interdisciplinary work

Interdisciplinary work is often subject to a fundamental tension in which positivist engineering epistemologies are at odds with interpretivist stances. This tension can often arise in WebSci: consider, for example, the rich nuances of User Experience, and the issues of evaluating Social Computing systems. There has been much academic debate in this area:

Stolterman [6] has argued that science is not always the best source of methods for tackling design complexity, calling for a better understanding of the nature of design practice. Shneiderman [5] discusses the difficulty in striking a balance between qualitative and quantitative methods, noting that there is often pressure from academic reviewers for statistically significant results but that laboratory studies with many participants can be inappropriate.

Fallman and Stolterman [1] present a discussion of rigour and relevance in interaction design research, defining rigour as validity and reliability, and relevance as related weight and generalizability of contributions. Kaye [4] takes a step back to discuss the problems that arise from such a rich diversity of epistemologies, particularly with respect to the review process. He describes

CSCW's approach of letting associate chairs nominate themselves for papers (an opportunity to match expertise with epistemic culture).

The Web Science community is youthful, yet discussions of interdisciplinary methodology are already emerging. WebSci'12 included an examination of how Web Science and HCI relate [2], while Tinati et al [7] call for a meshing of methods from different perspectives, offering a demonstration of how this can be done (with Computer Science and Sociology).

The WebSci community has a history of interdisciplinary work within art, computer science, the humanities, design and sociology. Web Science tackles the complex challenges raised by people's interactions with the web, and the resulting behavioural phenomena. Web Science approaches are grounded in individual and community interactions, and draw in an interdisciplinary way on work between the disciplines of STEM (science, technology, engineering, and mathematics) and HASS (humanities, arts, and social sciences).

Practical issues arise from the tension and complexities between STEM approaches (which through necessity strive for simplification and abstraction) and HASS approaches (which embrace complexity and explore conflicting perspectives). Such issues are especially pertinent in the context of interdisciplinary work such as Web Science research.

Background: Workshop History

This workshop follows an animated and well-attended Special Interest Group held at CHI'13 [3], entitled *Science vs. Science: the Complexities of Interdisciplinary Research*. The workshop targeted researchers and practitioners whose work encompasses multiple disciplinary perspectives and methods, bringing them together to share their approaches to tackling the tensions and complexities of interdisciplinary work. Discussions covered:

- Differences in philosophy (and the reasons and motivations behind them)
- Differences in methodological approaches (tools and techniques, levels of certainty)
- Differences in scholarly culture (publishing, review expectations, communication)

The SIG drew people together for an animated discussion of barriers to interdisciplinary work, which was grounded in real-world examples: participants worked in groups to discuss specific interdisciplinary projects that they felt had been successful. The SIG identified some initial issues in this area: knowledge representation, coverage of literature and mentoring.

Goals and structure of workshop

The CHI SIG only began to scratch the surface of this key area that is central to Web Science research and practice. SIG outputs were unstructured and informal, and this workshop seeks to build on those initial insights and enthusiasm. Our goal is to collate people's experiences of interdisciplinary work, both positive and negative, in order to begin to identify success and failure factors in such collaborations. Outputs will include:

- A collection of interdisciplinary collaboration experiences from workshop participants
- A list of factors that led to those successes and failures
- A first pass at a taxonomy of these experiences

Encompassing multiple disciplinary perspectives and methods is a serious challenge and it is difficult to maintain conferences that fairly review and host contributions from multiple disciplines: as such, we anticipate that the workshop outputs will be relevant not only to individuals seeking to collaborate across disciplinary boundaries and groups who are already engaging in such endeavours, but also the wider WebSci community, including future WebSci conference organisers.

The Web Science community is richly diverse, with multiple interdisciplinary endeavours. Many researchers struggle – understandably – with the issues that interdisciplinary work can bring. It is clear that discerning appropriate methodologies for interdisciplinary work (and appropriate peer review mechanisms for such work) is non-trivial. In this workshop we hope to strengthen the community of people actively engaging in such activity, and identify key issues and possible solutions that span interdisciplinary work.

References

- [1] Fallman, D., Stolterman, E. (2010). Establishing Criteria of Rigor and Relevance in Interaction Design Research. create10. Edinburgh, UK.
- [2] Hooper, C., Dix, A. (2012). Web Science and Human-Computer Interaction: When Disciplines Collide. In: Web Science 2012, Evanston, USA.
- [3] Hooper, C.J., Millard, D.E., Fantauzaccoffin, J., Kaye, J. (2013) Science vs. Science: the Complexities of Interdisciplinary Research (SIG). In: CHI'13, April 2013, Paris, France.
- [4] Kay, J. (2011) Minority retort. ACM Interactions Vol 18 Issue 6, pages 10-11
- [5] Shneiderman, B. (2007). Creativity Support Tools: Accelerating Discovery and Innovation. Communications of the ACM, 50, 20-32.
- [6] Stolterman, E., (2008) The Nature of Design Practice and Implications for Interaction Design Research. International Journal of Design, Vol. 2, No. 1
- [7] Tinati, R., Halford, S., Carr, L., Pope, C. (2012) Mixing Methods and Theory to Explore Web Activity, In Proc. Web Science 2012, ACM Press

4. Schedule of sessions, panels, and talks (half or full day).

This half day workshop is formatted as follows:

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| 15 minutes | Introduction to workshop, goals and schedule. Questions from the participants. |
| 45 - 60 minutes | Presentations (of maximum 5 minutes) from each attendee, describing an interdisciplinary collaboration. To include: mechanisms used, what worked, what didn't work. |
| 30 minutes | Brief plenary discussion of collaborations: keywords allocated to each collaboration to record a) its success, b) mechanisms used, c) what worked, d) what didn't work and e) other aspects of interest. |
| 60 minutes | Plenary discussion (or break out into groups if more than 8 attendees) of parallels, discrepancies and unexpected insights across the set of collaborations. |
| 30 minutes | A plenary to draw together outcomes and insights of main discussion period. First steps towards sketching a taxonomy. Collection of expressions of interest for engagement in further work. Agree next steps. |

5. Names of instructors and potential invited speakers.

N/A. The workshop organisers will attend and facilitate the event, and all participants will contribute as described above.

6. For workshops, selection criteria for papers to be presented.

The preferred papers will be those that:

- a) Describe a real past or current interdisciplinary collaboration, successful or otherwise,
- b) Describe that collaboration clearly and concisely,
- c) Provide an initial indication of what factors may have influenced the success (or otherwise) of the collaboration.

7. Tutorial or workshop website URL (advisable).

The workshop webpage is online at:

<http://www.icc.ecs.soton.ac.uk/>

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