

News from the Society for Decision Making Under Deep Uncertainty

February 2018

<http://www.deepuncertainty.org/>
#deepuncertainty

OUR MISSION

The Society for Decision Making Under Deep Uncertainty is a multi-disciplinary association of professionals working to improve processes, methods, and tools for decision making under deep uncertainty, facilitate their use in practice, and foster effective and responsible decision making in our rapidly changing world. While we share interests with other societies, ours is unique in its focus on developing, disseminating, and using these new approaches.

Welcome to the newsletter of the Society for Decision Making Under Deep Uncertainty

Please complete the DMDU Questionnaire [here](#).

**Quick link to
(‘In this issue’):**

[News](#) ; [Call for papers](#); [Funding opportunities](#); [Events](#);
[Recently Published Articles](#)

The Society for Decision-Making under Deep Uncertainty needs you!! Apply now to become the DMDU's Funding and Career Development Chair

The Society is soliciting suggestions and seeking volunteers for the Funding and Career Development chair. As you know, our DMDU Society is governed by an eight-member, volunteer leadership team elected by its membership. The leadership team's Funding and Career Development position is currently vacant. According to our Rules and Processes, the leadership team is seeking to appoint someone to this position for the remainder of the two-year term (ending in Dec 2018).

The chair would help the Society develop and implement a plan for generating revenue. The Society requires funding for several purposes including administrative expenses, special activities, and travel support for Society meetings. For instance, administrative expenses might include website improvements or managing online networks of Society members. Special activities might include preparing materials that others can use to include DMDU ideas in their own events. Travel support might be used to bring students and developing country participants to the Society's annual meeting. Potential sources of funding might include attendance fees at the annual meeting, membership dues, fees for training activities, and donations. An appropriate mix of funding sources will involve tradeoffs among different Society objectives. Obtaining revenue may also require the Society to obtain formal legal standing. The Fundraising and Career Development chair will work with the rest of the leadership team to first develop a fundraising plan, and then begin to implement that plan. The Fundraising and Career Development chair can also recruit volunteers to help with various task

Please send any suggestions to Lempert@rand.org

News

5th Annual Workshop on Decision-Making under Deep Uncertainty, Oxford, November 13-15.

The theme of this year's workshop was decision-making at multiple scales. A series of plenary, poster and parallel break-out sessions explored the impact of uncertainty on decisions made at the global, regional and local scales. A [blog](#) summarizing the conference's outcomes is available on the society's website. The conference's programme can be downloaded [here](#).

DMDU Leadership team meets in Oxford to for strategic planning process and to announce that next year's workshop will be held in Southern California

Our DMDU Society has begun a strategic planning process to sharpen our vision and goals, and to help chart our priorities and activities over the next five years. Last November, after the Society's annual meeting in Oxford, the leadership team met to sketch the plan and to allocate tasks. The leadership team will engage the membership with the emerging plan several times in the coming months and aims to have the full plan ready for the Society's next annual meeting in November 2018.



Major book on decision-making under deep uncertainty to be launched in 2018

This book presents an overview of the broad spectrum of approaches for dealing with deep uncertainty with an accent on, but not limited to, public policymaking. It has been produced under the aegis of the Society for Decision Making Under Deep Uncertainty .The book consists of the 3 parts. Part I presents approaches for designing plans under deep uncertainty, which include Robust Decision Making, Dynamic Adaptive Planning, Dynamic Adaptive Policy Pathways, Info-Gap Decision Theory, and Real Options Analysis. Each approach is worked out in terms of its theoretical foundation, methodological steps to follow when using the approach, latest methodological insights, and challenges for improvement. In Part II, applications of each of these approaches are presented. Based on recent case studies, the practical implications of applying each approach are discussed in depth. Part III presents governance issues for implementing these approaches. Finally, a synthesis of the lessons that can be drawn for designing and applying plans for decision-making under deep uncertainty, as well as recommendations for future work, are presented. The editors of the book are: V.A.W.J. Marchau, W.E.Walker, P Bloemen, S.W.Popper.

DMDU methods at the core on New Zealand's revised guidance on Coastal Hazards and Climate Change

On 15 December the New Zealand Government issued revised national Guidance on Coastal Hazards and Climate Change for decision makers which has DMDU methods at its core. Dynamic Adaptive Pathways Planning is used to address uncertainties around hazards and sea-level rise beyond mid-century when the uncertainty bands widen. The framework of the Guidance is an iterative 10-step decision cycle for developing a robust coastal adaptation strategy which integrates hazard and sea-level rise assessments with uncertainty type and with the scale and scope of activity. It is underpinned with values-based community engagement, and uses signals and decision triggers for monitoring and adjusting pathways to meet objectives over time. The roll out of the Guidance is being supported by “champions” in local government and workshops on the new elements in the guidance. A summary of the guidance is available [here](#). The full guidance is available [here](#).

Call for Papers

Call for Papers: Policy Pathways for Sustainability

The journal *Sustainability* (ISSN 2071-1050) has a special issue on 'Policy pathways for Sustainability'. The call for papers can be found here:

http://www.mdpi.com/journal/sustainability/special_issues/Policy_Pathways_Sustainability

Deadline for manuscript submissions: **31 August 2018**

The pathway metaphor is gaining prominence in various scientific domains. For example, there are papers on transition pathways, transformative pathways, adaptive pathways, adaptation pathways, emission reduction pathways, climate resilient development pathways, etc. Common, across all these usages of the pathway metaphor, is that policies are conceptualized as sequences of actions taken over time that co-evolve with changing conditions. This Special Issue aims at bringing together, for the first time, researchers working on policy pathways for sustainability in any application domain with the intention to foster interaction and cross-fertilization. DMDU members involved: Jan Kwakkel, Marjolijn Haasnoot, Evelina Trutnevyte and Mark Stafford Smith.

Call for Papers: Knowledge Systems for Urban Resilience

The journal *Urban Resilience to Extremes SRN*, has a special issue of *Environmental Science and Policy* on "Knowledge Systems for Urban Resilience." You can find the [call for papers here](#).

We are looking for both theoretical and case-based contributions and interdisciplinary perspectives, particularly those that explore how knowledge is contested and also focuses on issues related to uncertainty and decision-making for urban resilience. If you or a colleague are interested, please do not hesitate to contact Robert Hobbins <rhobbins@asu.edu>

Abstracts (400 words) should be submitted by March 15th to mattfeagan@gmail.com Full manuscripts will be expected starting July 15th.

Funding opportunities

- The Challenging Radical Uncertainty in Science, Society and the Environment (CRUISSE) network has a number of invitations to tender open, for small projects related to dealing with uncertainty: <http://cruisse.ac.uk/challenges/funding-opportunities/>
- The Models 2 Decisions (M2D) network has a number of funding opportunities open related to methods for dealing with uncertainty: <https://blogs.exeter.ac.uk/models2decisions/funding-opportunities/>
- Cascading Hazards Workshop, Hanoi. Developing a catchment megacity observatory. Apply by 23rd February 2018 for full consideration and covered expenses. For researchers based at UK and Vietnamese institutions. For more information visit: <https://www.hanoiworkshop.org/>

Events

DMDU @ iEMSs2018 (February 2018)

First Workshop for an iEMSs Special Interest Group on Uncertainty Management and Model Assessment at the iEMSs2018 - 9th International Congress on Environmental Modelling and Software.

Fort Collins, USA. Abstracts are due by February 1st. <http://iemss2018.engr.colostate.edu/call-for-abstracts/>

F100: First Workshop for an iEMSs Special Interest Group on Uncertainty Management and Model Assessment

Organizers: Joseph Guillaume, iEMSs Uncertainty Management and Model Assessment Special Interest Group

Uncertainty and model assessment is a core topic in environmental modelling. A number of iEMSs members have a strong methodological interest in this area, and have ensured it is well represented at every meeting, as well as collaborating in joint publications. An explicitly recognised Special Interest Group (SIG) within iEMSs will bring together interested iEMSs members and facilitate interaction with related organisations. This would support our existing activities, and promotion in other forums of environmental modelling and software interests.

This is the first workshop of the SIG, open to all, without ongoing obligation. The agenda will include:

- Presentation of proposed SIG: aims and relationship with other uncertainty-related organisations
- Comments from other organisations, and news of other initiatives
- Open discussion of the SIG, agreement on next steps; appointment of a chair
- News on upcoming projects that you would like to promote
- Discussion of possible SIG initiatives

If you have comments or news you would like to communicate to the SIG, please email joseph.guillaume@aalto.fi

A number of other sessions and workshops have an uncertainty focus:

<http://iemss2018.engr.colostate.edu/sessions/>

- * F1: Understanding User Uncertainty in Complex modelling
- * F2: Model-based Support for Designing Adaptive Policy Pathways
- * F3: Modelling and Decision Making Under Uncertainty

<http://iemss2018.engr.colostate.edu/workshops/>

- * A101: Modelling Uncertainty in Geographic Information Analysis

Society Meet-up at IEMSS:

We would like to organize dinner and drinks as an informal society meet-up for those attending the iEMSS conference. The dinner will hopefully follow the Special Interest Group workshop. If you will be there and are interested in joining, please email Joseph (joseph.guillaume@aalto.fi), so we can get an idea of numbers. We will follow up with details closer to the time.

DMDU Session and Meet-up @ Adaptation futures conference (June 2018)

We would like to organize dinner and drinks as an informal society meet-up for those attending the Adaptation Futures 2018 conference in Cape Town, in June. The dinner will follow a session we are organizing (see short description below). If you will be there and are interested in joining, please reserve Monday evening, June 18, in your agendas and email Christophe (christophe.briere@deltares.nl), so we can get an idea of numbers. We will follow up with details closer to the time.

Through the 2 hours proposed session, Deltares (NL), with University of Southampton (UK), Victoria University of Wellington (New Zealand) and UNDP aim at sharing a range of experiences in using pathways approaches to adaptation planning for coastal areas, and at addressing the practical challenges that coastal planning authorities and coastal managers are facing while considering or following an adaptive policy planning approach.

Interventions from proposed speakers (Prof. Robert Nicholls, Dr. Marjolijn Haasnoot, Dr. Judy Lawrence, Dr. Alessio Giardino, Dr. Pradeep Kurukulasuriya –to be confirmed) will be followed by a dialogue addressing questions regarding the engaged research in coastal adaptation, that would make possible or not a paradigm shift towards a dynamic adaptive policy making process, how to bring the evidences from research and innovations into policy and practice, how to ensure the sustainability and replicability of coastal projects following an adaptive policy planning approach.

Models 2 Decisions Network

The Models 2 Decisions network is currently taking abstracts for its next annual conference in Cambridge, UK, 11th-14th June, 2018.

‘Dealing with the unknown’ at the European Consortium for Political Research General Conference (August 22-25, 2018).

This year at the ECPR General Conference, Art Dewulf and Pot Wieke aim to organize a panel about:

Dealing with the unknown: Embedding long-term decisions in today's governance

This conference is organized between 22nd and 25th of August 2018 in Hamburg (Germany).

For more information:

<https://ecpr.eu/Events/EventDetails.aspx?EventID=115>

For more information about the content of the panel, please have a look at the attached file.

Recently published articles

Some recent publications from members of the DMDU community:

Beh EHY, F Zheng, GC Dandy, HR Maier, Z Kapelan (2017) Robust optimization of water infrastructure planning under deep uncertainty using metamodels. *Environmental Modelling & Software*

Bloemen, P, T Reeder, C Zevenbergen, J Rijke, A Kingsborough (2017) Lessons learned from applying adaptation pathways in flood risk management and challenges for the further development of this approach. *Mitigation and Adaptation Strategies for Global Change*

Guo, D, S Westra, HR Maier (2017) Use of a scenario-neutral approach to identify the key hydro-meteorological attributes that impact runoff from a natural catchment. *Journal of Hydrology*

Herman, JD, M Giuliani (2018) Policy tree optimization for threshold-based water resources management over multiple timescales. *Environmental Modelling & Software.*

Hermans, LM, M Haasnoot, J ter Maat, JH Kwakkel (2017) Designing monitoring arrangements for collaborative learning about adaptation pathways. *Environmental Science & Policy*

Kingsborough, A, K Jenkins, JW Hall (2017) Development and appraisal of long-term adaptation pathways for managing heat-risk in London. *Climate Risk Management*

Lamontagne, J. R., Reed, P. M., Link, R., Calvin, K. V., Clarke, L. E. and Edmonds, J. A. (), Large Ensemble Analytic Framework for Consequence Driven Discovery of Climate Change Scenarios. *Earth's Future.*

McPhail, C., Maier, H. R., Kwakkel, J. H., Giuliani, M., Castelletti, A. and Westra, S. (2018), Robustness metrics: How are they calculated, when should they be used and why do they give different results?. *Earth's Future.*

Moallemi, EA, F de Haan, J Kwakkel, L Aye (2017) Narrative-informed exploratory analysis of energy transition pathways: A case study of India's electricity sector. *Energy Policy.*

Newman, JP, HR Maier, GA Riddell, AC Zecchin, JE Daniell, AM Schaefer (2017) Review of literature on decision support systems for natural hazard risk reduction: Current status and future research directions. *Environmental Modelling & Software*

Quinn, J. D., P. M. Reed, M. Giuliani, and A. Castelletti (2017), Rival framings: A framework for discovering how problem formulation uncertainties shape risk management trade-offs in water resources systems. *Water Resour. Res.*

Ray PA, L Bonzanigo, S Wi, YCE Yang, P Karki, LE García, DJ Rodriguez (2017) Multidimensional stress test for hydropower investments facing climate, geophysical and financial uncertainty. *Global Environmental Change*

Salazar, JZ, PM Reed, JD Quinn, M Giuliani, A Castelletti (2017) Balancing exploration, uncertainty and computational demands in many objective reservoir optimization. *Advances in Water Resources*

Taner, MÜ, P Ray, C Brown (2017) Robustness-based evaluation of hydropower infrastructure design under climate change. *Climate Risk Management*

Thacker, S, R Pant, JW Hall (2017) System-of-systems formulation and disruption analysis for multi-scale critical national infrastructures. *Reliability Engineering & System Safety*

Thissen, W, J Kwakkel, M Mens, J van der Sluijs, S Stemberger (2017) Dealing with uncertainties in fresh water supply: experiences in the Netherlands. *Water resources management*

Watson, AA, JR Kasprzyk (2017) Incorporating deeply uncertain factors into the many objective search process. *Environmental Modelling & Software*.

Don't see your publication? Submit it [here](#).

***** **Conferences and workshops** *****

Submit a blog

Do you want to share information? A report on a meeting, or reflection on some news? Submit a blog via: <http://www.deepuncertainty.org/submit-a-blog/>

***** **Recently published articles** *****

The website has a [list of recent publications](#)
Recent publications can be submitted [here](#)

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Thank you for reading the newsletter of the Society for Decision Making Under Deep Uncertainty

The newsletter is brought to you by the Communication & Outreach Team (James Derbyshire, Kim Smet, Edoardo Borgomeo, Marjolijn Haasnoot).