Special Panel Session:

PSAM14, Los Angeles, CA, September 2018

Session abstract

- Over the past decade there has been significant progress in the development of HRA data sources thanks to a concerted effort by the international research community. While there is still ample work to be done in HRA data collection, the data sources have matured to a point where researchers can begin to explore how to use that data. It is clear that the future of HRA will involve both data and models at various levels of detail. Yet there are many open questions about how we get to this future state. What is the role of different types of data? What role will engineering models play? What methods do we apply to analyze the data, to combine data from multiple sources, or to generalize beyond the context of the data collection? How do we combine new data and knowledge with existing methods? What can (and can't) we do with these data? The goal of this session is to provide various perspectives and have an open discussion about the model- and data-informed future of HRA.

Panelists

- Andreas Bye, OECD Halden Reactor Project
- Jeffrey Julius, Jensen Hughes
- Ali Mosleh, UCLA
- Jinkyun Park, KAERI
- Nathan Siu, US NRC

- Moderator: Katrina Groth, UMD

Questions to panelists:

- **Many HRA data sources are emerging: what are the biggest opportunities for using it? The biggest challenges?**
- **What is HRA going to look like in 10 years? Beyond 10 years?**
  - For example: What new modeling methods has this data enabled? Will the objectives of HRA change? What isn't realistic in terms of HRA data?

Directions to panelists

- Please prepare a 5-10 minute presentation providing your perspective on HRA data future. Please answer the following questions (the questions are intentionally broad; feel free to focus on a specific facet of HRA or HRA data if needed).
  - Many HRA data sources are emerging: what are the biggest opportunities for using HRA data? The biggest challenges?
  - What is HRA going to look like in 10 years? Beyond 10 years?
    - For example: What new modeling methods has this data enabled? Will the objectives of HRA change? What isn't realistic in terms of HRA data?

Moderator questions for panelists:

1. What is the number one way we can advance the field of HRA with this data?
2. Data collection is a resource-intensive activity. Is it worth the investment? What factors make this a valueable investment?
3. In your publication [book/article/etc] you stated that [view point]. How did you come to that? Follow up question, [to another panelist] do you have a different perspective?
4. What are common misconceptions people have about HRA data? How can we combat these misconceptions and communicate more effectively?
5. What is the best resource (or starting point) for people who want to dive in deeper?
6. Which HRA data sources are you most excited about and why?
7. “Is there anything we’re leaving out here that needs to be addressed?”

HRA data workshop questions.

- Data Collection
- 1. What issues did you have to overcome?
- 2. What framework and terminology did you use as a starting point (for example is there an underlying set of Performance Shaping Factors), and what changes were needed to support your data collection?
- 3. What tasks are included? Excluded? What is the smallest unit (task) for which data is collected?
- 4. How does the data capture or address Human Performance improvement tools such as place-keeping aids or 3-way communications?
- 5. Does the approach to data collection from a simulator or lab also apply to data collection from real-world operating experience?
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- Data Analysis
- 1. Is there an underlying taxonomy that is used to categorize, parse and understand the data?
- 2. How is the data analyzed to identify new causes of error?
- 3. Is the data developed directly into Human Error Probabilities (HEP), or into factors that may impact the HEP?
- 4. What information can be mined from scenarios or sequences that had no real failures?
- 5. If the data is collected in a simulator or lab, how is experience from real-world operations used to adjust or validate the simulator(lab) data?
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- Application of Data in Decision-Making
- 1. What portions of your data can you share? What are the barriers to sharing data?
- 2. How does the data collection and analysis fit with end-user needs? Are there end-user data needs that are not being supported?
- 3. Can we use your data in our existing models, or does your data come with a new model?
- 4. How does your data provide insights and support to decision-making?
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- So if that is the set-up for Sunday, then I like your title: **What's next for HRA data analysis?**
- With questions such as:
  - Many HRA data sources are emerging: what are the biggest opportunities for using HRA data? The biggest challenges?
  - What is HRA going to look like in 10 years?

Reminders

- Ask panelists & Mary about preparing journal paper
- Notes for paper intro:
  - Compare to similar style article by Zio on "The future of risk assessment" 2018 https://doi.org/10.1016/j.ress.2018.04.020
  - "The paper is not a research work and not exactly a review or a state of the art work, but rather it offers a lookout on risk assessment, open to consideration and discussion, as it cannot pretend to give an absolute point of view nor to be complete in the issues addressed (and the related literature referenced to). "