

# 2020 Rapid Response Joint Session Distillation

The Academic Data Science Alliance Annual Meeting and Data Science Leadership Summit held a joint session in fall of 2020 to discuss the future of rapid response data science for disaster management. This document represents a distillation of the discussions during that session based on three main topic areas: data science expertise and coordination, coordination with the larger rapid response community, and resources. In-depth notes from the [panel discussion](#) and the [breakout session](#) are also available for reference.

## Topic 1: Data science expertise and coordination

What expertise can this community offer? What would a data science rapid response network look like and how does effective coordination look like? What could be the unique contribution of the expertise in this network to the national crisis response? How can this network be beneficial to science even when we are not in a crisis?

Key Takeaways:

**Create a Go-To Network:** Defining the network, its members, and how to participate will make it easier for other networks and organizations to quickly identify the data science network as a viable resource for collaboration.

**Communicate the Entry Points for Collaboration:** Communication breakdowns across networks (e.g. between clinicians and data scientists) can hamper rapid response efforts. The data science community can address this challenge by creating clear and well defined “entry points” for other communities into the network. Likewise, the network must engage with existing networks to understand how to communicate across the collaborative. What does an API for Data Science look like?

**Identify Roles and Responsibilities:** Who is responsible at the moment of response? Post response? Between Responses? Identifying clear roles and responsibilities (individual and organizational) will facilitate effective response and help build trust in the network.

**Create Trust:** Long before the network is called upon to respond to a disaster, we must make it clear to the broader disaster response community that we are prepared, resourced, and have endurance for engagement. Regular communication and collaboration with other disaster response organizations and networks will help build trust and make the data science network an obvious resource for collaboration.

## Topic 2: Coordination with the larger rapid response community

Who should be the partners of the data science rapid response network (e.g. funding agencies, community organizations)? How can we be one effective link of a much more extensive rapid

response network? How do we best coordinate with other rapid response organizations and policy makers at various levels? How do we communicate with the public? How do we translate the research insight into immediate impact? Do you have success stories, lessons and comments to share?

Key Takeaways:

**Leverage Existing Networks and Organizations:** The ADSA community clearly has connections to a number of existing rapid response networks (e.g. [UC Boulder Natural Hazards Center](#), [DHS Disaster Response and Recovery](#)) and should leverage these and other existing networks to shape this initiative.

**Use After Action Reports to Build Bridges:** We need to better understand and communicate the history and context of rapid response actions and use this information to build stronger networks and facilitate an effective interface to data science moving forward.

**Championing Trusted Communication from the Network:** ADSA, Big Data Innovation Hubs, and existing rapid response networks should carefully scope the connection points among them. The focus should be leveraging frameworks and resources/infrastructure that exist, understanding how to scale over time and space, articulate the value proposition, and avoid burden on partners.

**Gather Existing Insights to Help with Scoping:** What have existing rapid response networks and data science projects/initiatives learned and how can we address these challenges? How have existing networks interfaced with one another (e.g. across domains) and what can we learn about integrating data science as an additional network?

### Topic 3: Resources

How do we make resources available when needed (yet not wasted when not needed)? How can personnel be incentivized and enabled to pause their routine work in order to build and maintain the network and to carry out research and coordination during a crisis? What about data and computing resources that should be developed and maintained as part of a network, while knowing that it is impossible to anticipate all such needs for all potential crises? How do we pursue funding for the network?

Key Takeaways:

**Identify and Promote Models for Staffing from Academia:** Academic faculty and staff often have limited flexibility with respect to allocation of resources due to time-limited grants, teaching responsibilities, and service requirements. Can we create and promote models that will allow academic faculty and staff to rapidly reallocate resources without negatively impacting their

careers long term? What can we do to promote structures for credit in academia for participation in service-based rapid response networks?

**Conduct Regular Training and Exercises:** Given the uncertainty around when a rapid response network might be deployed, we must create training opportunities for network participants related to skill sets specific to anticipated needs. In order to keep those skills sharp, we must also consider regular exercises (ie. Tabletop Exercises) for network participants.

**Identify Core Datasets and Data Entities:** Regardless of the disaster, there are likely to be core datasets (e.g. geographic baseline data) and data providers (e.g. States, Agencies) that will be called upon during a disaster. Can we create relationships to facilitate the transfer and use of data during a crisis? What legal and social bridges do we need to build to allow flexibility in data access and use?

**Identify Rapidly Deployable Infrastructure:** Tools and infrastructure are largely “easy” problems to solve, however, distribution of infrastructure is uneven across academia, potentially limiting participation in a rapid response network. Can US funding agencies facilitate a network-wide cloud contract and/or stand up a shared infrastructure? What other models for shared infrastructure could be used to ensure rapid access?

**Identify and Engage with Sources of Funding:** A rapid response network requires funding on a number of fronts - planning and buildout, incentives for participation, and long-term sustainability. How can we secure such funding and what forms does it need to take? What of this can be done ahead of time versus post-hoc?

## Next Steps:

- Create a Special Interest Group and/or project charter that includes:
  - The scope of the problem
  - The desired outcomes
  - An outline of a plan for the project
- Identify Potential Future Sessions in a Rapid Response Series, possibly including:
  - Presentations from a number of existing RR networks
  - Infrastructure
  - Rapid Response Retrospectives
  - Policy and Administrative Planning
  - Privacy
  - Frameworks for rapid decision making and evaluation (e.g. of tools, models, datasets)
  - Invite Johns Hopkins dashboard team to talk about how they prepared and responded to COVID
  - Responsible rapid communication of research results