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State-wide Hazards Research Coordination Meeting
Parrington Hall, University of Washington
Sep 6, 2018

Summary by Ann Bostrom (Evans School of Public Policy and Governance, UW) and David Schmidt (Earth and Space Sciences, UW), with help from and thanks to small-group discussion leaders Maximilian Dixon, Amanda Murphy, Donna Riordan, Bill Steel, and Harold Tobin.

Concept: *There exists an interest in and demand for a broader coordination effort of hazards and disaster research across the state, particularly among researchers at the State's universities, emergency managers, practitioners, and regional planners. A focused meeting would provide timely input to next steps on several fronts, as noted below. One of the rationales for organizing this meeting at this time is to explore whether a more active coordination network might accelerate progress on hazard-related issues and promote new partnerships. The meeting also affords an opportunity to explore whether the UW Center for Hazards and Resilience, which was formally approved under the auspices of EarthLab, could help facilitate such coordination and networking in coordination with other organizations such as the Institute for Hazard Mitigation Planning and Research, DNR, CREW, the Ruckelshaus Center, Cascadia Hazards Institute at CWU, the Resilience Institute at WWU, and other federal, state and local hazards research organizations across the state and region.*

Outcomes: As highlighted below, participants expressed an interest in more active communication and partnering on hazards and resilience research in Washington and the region. Many participants saw roles for the organizations named above and made suggestions regarding tasks that might be helpful. Participants expressed interest in contributing to the development of Cascadia Rising 2.0.

The meeting opened in the Parrington Denny Forum on September 6, 2018, with all participants introducing themselves. Over 60 academic, local, state, and federal government, and nonprofit professionals attended; several of those unable to attend requested to stay involved (see participant list).

To kick off the meeting Bob Freitag described project Safe Haven, and the importance of dialog and interaction between hazard, community vulnerabilities and capabilities. The three-way relationship – between modelers, infrastructure and building design, and community – is vital.

In the opening plenary discussion it was noted that plans need to look at future risks, as risks and impacts change over time; climate change affects hazards, infrastructure and structures change, and society evolves. We as a collective are extremely important and our importance is increased and is only effective if we communicate, step by step as projects proceed.

Small group discussions addressed three questions, listed here with a summary of the group responses.

1. What mechanisms would facilitate bringing the best and most up-to-date hazard science into practice, to improve impact assessment and emergency management? What are the existing mechanisms that work efficiently to bring research results into practice? What new mechanisms could enable progress? What are the impediments?

Groups suggested that the emergency management community needs research results and data that are accessible (timely, disseminated widely) and digestible (no jargon, key results and recommendations easy to find). To this end, several specific mechanisms were highlighted, including scientists in meetings of hazard management professionals, both for them to hear what EMS practitioners need to support their decisions, and to present relevant new research findings. Other proposed mechanisms included:

- *Take a whole community effort on research prioritization (organizations and workgroups can help with this).*
- *Find organizations that will help keep an eye out for new research results/data that practitioners are looking for, digest it, disseminate it and create opportunities for researchers/SME's and practitioners to meet to discuss the results/data*
- *Develop a curated database of research and events for the EMS community to use to be able to determine what is known, what is important, and who to contact for additional information.*
- *Repackage high quality, curated content for non-academics or experts in other disciplines, e.g., simplified yet accurate research-to-practice briefs (cf WWU example.)*
- *Have a direct tie between researchers and end-users as a funding requirement (for funders)*
- *Develop and support student or citizen science projects for local data collection and implementation, or for background data and information to develop grant requests and enable scientists to engage more with practitioner-driven research agendas (that identify real, near-term needs for best available science), and practitioner-driven communications activities, where researchers support the front-line EMS professionals when they interact with the public. Combine research and application goals in projects, starting with the pre-application and kick-off meetings (include the appropriate partners)*

Several existing formal institutions for knowledge sharing were highlighted, including:

- Building Codes, characterized as the most efficient method of ensuring new hazards information gets used to reduce vulnerability; but these do not apply to existing structures unless major renovation or change of use triggers retrofitting requirements, and it take time (up to six years?) for new discoveries to change code requirements.
- Design Review Processes, for larger buildings. Well-informed engineering firms can integrate emerging understanding of hazards without code requirement, as illustrated by the accommodation for increased forces in the Seattle and other sedimentary basins based on M9 research project results.
- Legal liabilities may encourage use of best science. Ignorance of vulnerabilities or ignoring known weaknesses can and have led to lawsuits.
- The press: Working with the press and providing them with opportunities to update their knowledge and develop interesting stories can have a huge impact on public awareness.
- Interdisciplinary scenario development can improve exercises and mitigation planning.
- Formal structures such as the PNSN can be used as trusted sources of information.

Other suggestions included:

- Developing a consortium of Public/Private/Academic sector leaders to identify and develop funding opportunities to advance these programs. Better coordination is needed between city, county, state planning, emergency management, and science. State and federal coordination is also needed. For example, in New Zealand, multi-government coordination exists which includes the sharing of funding and resources to address hazards and planning. Leadership and buy-in across multiple sectors to address and fund hazard research is needed.
- An entity or organization is needed to serve as a connector for science, policy, and planning that promotes resilience. Science, policy, and planning also need to connect to and include social science.

2. What organizations could help coordinate hazards and resilience science expertise across WA in partnerships that include federal, state, and local governments as well as public and private universities and other entities, including the Washington Department of Commerce, businesses, and others (e.g., Pacific Northwest Seismic Network stakeholders)? How?

Silo busting is needed: (a) interdisciplinary collaborations and public-private partnerships, (b) scenario-driven research and planning, and (c) including the role of human behavior (social sciences) in creating disasters from natural hazards are all ways of tackling this (i.e., encouraging social and physical scientists to work together and with planners).

Several organizations at the UW—including, but not limited to, the Pacific Northwest Seismic Network (PNSN), Civil Engineering (CE), the Institute for Hazard Mitigation Planning and Research, and EarthLab—have strong capabilities but little funding for outreach. State Government (DNR, Ecology, WSDOT) all have capabilities but tend not to collaborate with each other. For example, Dept. of Ecology messaging to property owners on a coastal bluff to pond water on their property can contradict DNR landslide hazard mitigation advice to drain water for increased slope stability.

Tying into responses to the first question, groups noted that universities could establish best practices on resilience for emergency managers and planners to use. This information could be developed with emergency managers to ensure it is applicable and implementable. Universities could help to do a review of all the different hazards state-wide – perhaps county by county and then specific hazards models could be applied that are unique to place.

- A way to tie-in and connect private industry, not just universities and government entities is needed. *Large private sector businesses (Walmart, Amazon), which already do extensive planning for disasters, should be involved in these discussions. This could be done through legislation, or through incentives, voluntary approaches, and partnerships. Stakeholders need to be engaged in the process of developing long term solutions (Ruckelshaus Center has the mission to do this and does it well.)*
- *More discussions must occur to think beyond the first step of data gathering; rather, how can data be used to generate solutions. There was concern that hazards data (or research) alone, out of context, can tend to exacerbate fear of hazards, rather than be used constructively to find solutions to real hazards.*

- *Create "disaster diaries" written by credible local individuals as a way to tell real-life stories that localize both the impacts of hazards and solutions (including preparations, mitigation, and disaster recovery and resilience).*

3. What state and other potential funding sources give scientists time to work on these issues (last mile, application of recent hazards science, and evaluation of applications)? List current and possible funding sources, with key criteria/requirements/constraints on funding from those sources.

   Groups nominated numerous sources of potential funding, including:

   - Federal grants: FEMA (sustaining and reporting can be onerous and expensive); National Science Foundation (no government agencies can apply but Universities can help support government involvement); NASA, USGS, NOAA. It was noted that PIs are often very busy, proposals have low rates of success, and interdisciplinary efforts are challenging to organize. May help to have grant writers and researchers who can assist in proposal development.
   - Private grants or gifts from foundations or private sector: Amazon, Bullitt foundation, Ford, Moore, Murdock, Gates, Vulcan, IOCRC, Rockefeller, and Tech industries – many in Seattle may be willing to support hazards work to protect their businesses and employees. The suggestion was also made to reach out to the WA Association of Building Officials about the standards they use, as well of the possibility of collaborating on raising funds for the translation of research into use by city and local practitioners (EMS, builders).
   - Local governments and state agencies: Not much State money available without multiple years working with the legislature, and then it usually goes to DNR or other State Agency for specific purposes.

In the wrap-up to the group discussions, participants highlighted several **specific opportunities** related to the questions the groups addressed:

- FEMA special project funding – FEMA (Tiffany Anderson) may be able to dedicate a staff person to help with the hazard research coordination.
- Related state-wide meetings and extension offices in every county (out of WSU) might present opportunities to advance integrated, interdisciplinary hazards research and coordination, for example the annual WA public health meeting (October; mentioned by Amanda Murphy of the Ruckelshaus Center), Washington Association of Counties (annual meeting in November), and the Association of Washington Cities and Counties.
- State-of-the-science briefings for hazard sciences: There is a need for 2 to 6-page authoritative briefings summarizing the state of the science for each of the hazards in this region (several requested hazard briefs for Washington State). This type of briefing is exemplified by those created by Save the Children and others for the United Nations.

The meeting closed with a discussion of Cascadia Rising 2.0, led by Maximilian Dixon (WA EMD). This included questions about how to find and use the latest research to improve on the next scenario, to drive improvements in risk assessment, and a presentation by Richard Woods (GNS NZ) on RiskScape, a risk assessment software tool used in the Kaikura earthquake and to be tested by WA EMD. Maximilian requested (and received) contact information for those attending the meeting, noted that EMD is working with FEMA (Courtney from EMD, and Serena Segura from FEMA) on developing the scenario and will be trying to incorporate a response element into the next scenario. Participants requested

information on how to get involved and stay updated. Tiffany noted that the regional FEMA administrator has recommended that Cascadia Rising 2.0 become a national exercise. The meeting adjourned at 2pm.

Appended: Agenda, participant list with contact information, concept note for the meeting, and small group discussion handout.

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AGENDA

Washington State-Wide Hazards Research Meeting
September 6, 2018

9:30am - 10:00am Meet and greet, coffee and tea, review and assess proposals for Cascadia Rising follow-up [from prior workshop, posted on whiteboards].

10:00am to 10:30am Introductions of participants and participating organizations.

10:30am to 11am Overview of agenda and plenary discussion of concept note and meeting goals.

How can we collectively contribute to advancing hazard and risk assessments in the state?

- How do we identify common objectives across our various groups in the natural hazards community in the Pacific Northwest, including researchers, emergency managers, city, county, and organizations?
- How can we strengthen existing partnerships and enable new partnerships?

11:00am to 11:45am Small Group Discussions (led by Amanda Murphy, Donna Riordan, Bill Steele, Harold Tobin and Maximilian Dixon)

1. What mechanisms would facilitate bringing the best and most up-to-date hazard science into practice, to improve impact assessment and emergency management? What are the existing mechanisms that work efficiently to bring research results into practice? What new mechanisms could enable progress? What are the impediments?

   Brief examples/analogs to kick off discussion (see handout):
   - National Academies of Science (NASEM) committees or boards / Washington State Academy of Science (WSAS) committees
   - Umbrella organizations for professional associations such as WASafe, or COSSA
   - GEER and ISSEER for coordination of disaster reconnaissance science
   - Occasional convenings funded by nonprofit or private organizations like Wingspread/Johnson Foundation

2. What organizations could help coordinate hazards and resilience science expertise across WA in partnerships that include federal, state, and local governments as well as public and private universities and other entities, including the Washington Department of Commerce, businesses, and others (e.g., Pacific Northwest Seismic Network stakeholders)? How?

   - What roles could these undertake?
     i. Ruckelshaus Center,
     ii. Washington State Academy of Sciences,
     iii. EarthLab

- What other existing organizations could or should play coordinating roles?
- Is a new Research Coordination Network needed?

3. What state and other potential funding sources give scientists time to work on these issues (last mile, application of recent hazards science, and evaluation of applications)? List current and possible funding sources, with key criteria/requirements/constraints on funding from those sources.

11:45 to 12:15 Report out from small groups and discussion

12:15 to 1pm Working lunch

Lunchtime activity:

The goal of this activity is to develop a "live" list of scientists and hazard experts for emergency managers to contact and vice versa. This should facilitate creating directories of experts at universities and in other research organizations who conduct relevant hazards research, and of managers, planners, and policy makers who may be able to use such research and inform its design.

- Individually, take a few minutes to list up to ten hazards scientists (any kind) with whom you work on hazards research, planning, or policy for WA state or the PNW, on the sheet provided. List also their primary collaborators, if you can.
- At your table, brainstorm with your tablemates strategies for creating and maintaining a "live" hazard researcher directory for the PNW (Notetaker: please post your group's suggestions on the google doc.)

1pm-2pm Input to Cascadia Rising Scenario update for 2022 exercise
(facilitated by Maximilian Dixon, EMD)

- Brief overview of activities and processes in the works to update the Cascadia Rising scenario.
- Discussion of how researchers and others can plug into the process.
- How to incorporate the best hazards science in the scenario design?

2pm Adjourn

Attendee list:

First name	Last name	Affiliation	Email:
Dan	Abramson	UW Urban Design & Planning; Institute for Hazard Mitigation Planning and Research	abramson@uw.edu
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Emily	Roland	UW Oceanography	eroland@uw.edu
David	Schmidt	UW (Dept. of Earth and Space Sciences and Pacific Northwest Seismic Network)	dasc@uw.edu

Serena	Segura	WA Military Department, Emergency Management Division	serena.segura@mil.wa.gov
Kate	Simonen	Dept. Architecture College of Built Environments	Ksimonen@uw.edu
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Walter	Szeliga	Central Washington University PANGA	walter@geology.cwu.edu
Harold	Tobin	UW Earth and Space Sciences and Pacific Northwest Seismic Network)	htobin@uw.edu
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Charles	Wallace	Grays Harbor County Emergency Management	cwallace@co.grays-harbor.wa.us
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Zhaoqing	Yang	Pacific Northwest National Laboratory	zhaoqing.yang@pnnl.gov

Interested in staying on the list but couldn't attend

Amanda	Boyd	WSU	amanda.boyd@wsu.edu
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Concept note for a state-wide hazards research meeting September 6, 2018
Draft 8 August 2018 (with input from Ann Bostrom, David Schmidt, Bob Freitag, Ben Packard, Randy Leveque and Joan Gomberg)

There exists an interest in and demand for a broader coordination effort of hazards and disaster research across the state, particularly among researchers at the State's universities, emergency managers, practitioners, and regional planners. A focused meeting would provide timely input to next steps on several fronts, as noted below. One of the rationales for organizing this meeting at this time is to explore whether a more active coordination network might accelerate progress on hazard-related issues and promote new partnerships. The meeting also affords an opportunity to explore whether the UW Center for Hazards and Resilience, which was formally approved under the auspices of EarthLab, could help facilitate such coordination and networking in coordination with other organizations such as the Institute for Hazard Mitigation Planning and Research, DNR, CREW, the Ruckelshaus Center, Cascadia Hazards Institute at CWU, the Resilience Institute at WWU, and other federal, state and local hazards research organizations across the state and region.

Desirable outcomes:

- WA hazards management incorporates latest hazards science, affords opportunities for partnerships with hazards researchers.
- EarthLab partnership with others across the state and region; bring academic researchers from both public and private universities together with other hazards researchers and managers into discussions of hazards management, and coordinate with hazards research in all parts of the state and region.

Meeting Agenda – draft of possible goals:

1. What mechanisms would facilitate bringing the best and most up-to-date hazard science into practice, to improve impact assessment and emergency management ?
2. Coordinate hazards and resilience science expertise across WA in partnerships that include federal, state, and local governments as well as public and private universities and other entities, including the Washington Dept of Commerce, businesses, and others (e.g., PNSN stakeholders)
3. Input to Cascadia Rising follow-up, and to WA state resilience plan (how to move forward with hazard and risk assessments in the state)
4. Develop a "live" list of scientists and hazard experts for emergency managers to contact (directories of experts at universities and in other research organizations)
5. Find state and other potential funding sources to give scientists time to work on these issues (last mile, application of recent hazards science, and evaluation of applications).

Invitation lists: M9 and Cascadia Rising-Tangaroa workshop lists; lists from USGS, EMD, UW Office of Global Affairs list of hazard researchers; and Institute for Hazards Mitigation Planning and Research. Please add to the list, available here.

- **Timing for meeting [September 6th, 9:30am to 2:30pm**]
- **Anyone else we should put on the list?** NOAA/PMEL, FEMA , USGS, PNSN, local, county – storm (extreme weather), tsunami, volcano hazards
- **EarthLab** – will host refreshments, lunch, and room
- **Institute for Hazard Mitigation Planning and Research, RAISE,** and other organizations invited to co-sponsor and partner on the meeting,

Draft list of possible outputs from meeting:

- Input to Cascadia Rising 2.0
- Improved directory of hazards researchers state-wide (including notation of willingness / capacity to work in impact assessments, risk analyses)
- Plan for next steps to coordinate hazards science for policy in WA – link to state legislative science caucus?
- Questions for hazards researchers from public and private sectors in WA
- Ideas for seeking funding to support coordination

Additional questions:

- Propose WA State or West Coast Research Coordination Network on hazards?
- Where do EarthLab and Institute of Hazards Mitigation Planning and Research goals overlap/align? [bringing the latest science into hazards management]

Sponsoring Organizations (others welcome to assist in sponsorship):

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***REFERENCE SHEET FOR SMALL GROUP Discussion**: Here are a few models of ways to coordinate science for policy, to inspire your thinking about coordinating better hazards sciences for policy in the PNW.*
September 6, 2018 DRAFT (borrowed from the websites of the subject organizations)

National Academies of Sciences, Engineering, and Medicine (NASEM)

To meet the government's urgent need for an independent adviser on scientific matters, President Lincoln signed a congressional charter forming the National Academy of Sciences in 1863 to "investigate, examine, experiment, and report upon any subject of science." As science began to play an ever-increasing role in national priorities and public life, the National Academy of Sciences eventually expanded to include the National Research Council in 1916, the National Academy of Engineering in 1964, and the National Academy of Medicine, which was established in 1970 as the Institute of Medicine. Members are elected by their peers for outstanding contributions to research, or to medicine and health (IOM/NAM). The three Academies work together as the National Academies of Sciences, Engineering, and Medicine to provide independent, objective analysis and advice to the nation and conduct other activities to solve complex problems and inform public policy decisions. The National Academies also encourage education and research, recognize outstanding contributions to knowledge, and increase public understanding in matters of science, engineering, and medicine. The National Academies of Sciences, Engineering, and Medicine are the nation's pre-eminent source of high-quality, objective advice on science, engineering, and health matters. Most of their work is conducted through seven major program areas: Behavioral and Social Sciences and Education, Earth and Life Studies, Engineering and Physical Sciences, Health and Medicine, Policy and Global Affairs, Transportation Research Board, and the Gulf Research Program. For example, in the Division on Behavioral and Social Sciences and Education, the Board on Environmental Change and Society (BECS) evolved from the Committee on Human Dimensions of Global Change (CHDGC, established 1989), to guide research on the interactions between human activities and the environment, and to provide a forum for linking the social and natural sciences in research, planning, and decision making. BECS continues in this tradition, while expanding on the types of issues that it may consider, to address emerging scientific and governmental concerns.

Reports: Each year more than 6,000 of selected scientists, engineers, and health professionals volunteer their time to address some of society's toughest challenges by serving on the hundreds of study committees that are convened to answer specific sets of questions. NASEM peer-reviewed reports present the evidence-based consensus of these committees of experts. NASEM reports are available to read free online, at www.nap.edu For example, the Disasters Roundtable at NASEM published this report on Disaster Resilience in 2012 https://www.nap.edu/catalog/13457/disaster-resilience-a-national-imperative.

Bringing Together Interested Parties: Every year NASEM convenes hundreds of conferences, workshops, symposia, and other gatherings of people from academia and the public and private sectors. Published proceedings chronicle the presentations and discussions that take place at these activities.

Journals and periodicals: NASEM journals — the *Proceedings of the National Academy of Sciences*, *ILAR [Institute for Laboratory Animal Research] Journal*, and *Transportation Research Record* — publish the latest scientific findings on a wide range of topics. We also produce a host of other magazines and publications that cover critical issues of science, technology, and health.

Education and outreach: NASEM offers a variety of opportunities from grade school to grad school and beyond that are designed to ensure lifelong learning, promote research across disciplines, and engage the public in a deeper understanding of science.

Washington State Academy of Sciences: Science in the service of Washington State

The Washington State Academy of Sciences (WSAS) is a not-for-profit organization of 250+ elected members who are nationally recognized for their scientific and technical expertise. All members of the National Academies of Sciences, Engineering and Medicine who reside in WA state are invited to join; others are elected in recognition of their scientific and technical contributions to our nation and their desire to contribute their expertise to inform issues in WA State. The WSAS mission is to provide expert scientific and engineering assessments to inform public policy making and works to increase the impact of research in WA State.

Working groups: WSAS harnesses its members' expertise through topical working groups that allow us to be responsive to requests from stakeholders while also proactively identifying emerging issues of importance to the state. These groups address key issues that affect the future of Washington's natural spaces, built environment, prosperity and well-being of our residents. Topical working groups focus on

- Environmental quality, sustainability and climate change
- Jobs, infrastructure and economic environment
- Quality of life, health, education and workforce development

WSAS accomplishes its mission by drawing on our state-wide pool of distinguished members, state government officials, and other key stakeholders and experts to address critical issues facing WA State. We organize and conduct multi-disciplinary roundtable discussions, workshops, and symposia to assess risks, identify technological

opportunities, and define critical research gaps. WSAS use of peer review ensures the studies WSAS conducts, programs and projects they evaluate, and reports they provide are scientifically and technically sound and unbiased resources for informing the development of WA state policy.

WASafe (Washington safety assessment and facilities evaluators)

The March 2018 Memorandum of Understanding (MOU) between the American Institute of Architects Washington Council (AIA-Washington), the Structural Engineers Association of Washington (SEAW), and the Washington Association of Building Officials (WABO)—referred to jointly as WAsafe—and the Washington State Military Department Emergency Management Division (EMD). This MOU identifies the expectations and procedures of WAsafe and EMD for mobilizing WAsafe (safety assessment volunteers as Emergency Workers through the Emergency Support Function 3 (ESF-3) at the State Emergency Operations Center (SEOC) under direction of the SEOC Operations Section Chief. The MOU describes the mobilization of WAsafe volunteers as emergency workers to support a *structure condition evaluation surge effort* in response to a catastrophic incident. The MOU also diagrams specific processes for WAsafe pre-event training, deployment through local emergency management, and alternatively under direct state control, WAsafe processes, and the duties and minimum qualifications for volunteers.

Consortium of Social Science Associations (COSSA)

COSSA is a nonprofit advocacy organization working to promote sustainable federal funding for and widespread use of social and behavioral science research and federal policies that positively impact the conduct of research. COSSA serves as a united voice for a broad, diverse network of organizations, institutions, communities, and stakeholders who care about a successful and vibrant social science research enterprise. The COSSA membership includes professional and disciplinary associations, scientific societies, research centers and institutes, and U.S. colleges and universities. COSSA is organized for the purpose of promoting the social and behavioral sciences. This includes, but is not limited to, legislative and policy activities directly related to the advancement of the social and behavioral sciences, educating members of the public on the utility of social and behavioral science research, and facilitating discourse on issues and concerns of the Governing Members. In conducting its activities the Corporation shall operate at all times so as to maintain its qualification for exemption from federal income tax under section 501(c)(6) of the Internal Revenue Code of 1986 (or corresponding provisions of subsequent Internal Revenue Codes).

COSSA monitors the full range of federal issues impacting the social and behavioral science community as a whole, from funding to new research policies and directives. COSSA advocates during the appropriations process for sustained federal support for social and behavioral science research across the federal agencies. COSSA also advocates for authorizing and other legislation that reflects the importance of these sciences. Within the federal agencies and administration, COSSA weighs in on regulatory and policy issues by submitting comments to and otherwise engaging with agency officials to promote our science. COSSA also publishes regular updates on federal funding and other regulatory activities pertaining to the social and behavioral sciences.

William D. Ruckelshaus Center

The Center is a joint effort of Washington State University and the University of Washington, created to foster collaborative public policy in the state of Washington and Pacific Northwest. It is hosted and administered at WSU by WSU Extension and hosted at UW by the Daniel J. Evans School of Public Policy and Governance. The Ruckelshaus Center partners with university faculty, staff, and students to help people work together to develop shared solutions to challenging policy issues. They work in the areas of Community and Economic Development, Land Use, Natural Resources, Transportation, Agriculture, Healthcare, and Federal, State, Tribal and Local Governance. The Ruckelshaus Center builds problem-solving capacity in the region by helping individuals and organizations better understand, initiate, participate in, and lead collaborative public policy efforts. For examples of their work, see their projects or publications pages. The Center assists public, private, tribal, nonprofit, and other leaders to build consensus, resolve conflicts, and develop innovative, shared solutions for Washington and the Pacific Northwest.

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Interdisciplinary and Social Science Extreme Events Research (ISEEER and SSEER)

Extreme events are increasing in frequency, magnitude, and scope as the population grows and infrastructure development expands and concentrates in hazard-prone areas. This project is concerned with how hazards and disaster research communities will respond to disaster events when they occur. At present, the social science and interdisciplinary disaster research communities have:

- no formal structure for organizing before, during, or after a disaster,
- no established process for communicating pressing research needs, ongoing projects, or research outcomes to affected communities and decision-makers, and
- no established culture regarding scientific agenda setting for rapid reconnaissance research.

Project Purpose: This National Science Foundation (Award #1745611) EArly-concept Grant for Exploratory Research (EAGER) project establishes a scientific platform and coordinating network for Social Science Extreme Events Research (SSEER) and a second platform and network for Interdisciplinary Science and Engineering Extreme Events Research (ISEEER). SSEER and ISEEER will draw upon insights from the science of team science (e.g., as per this report) and leverage databases (e.g., of researchers who have participated in the annual Natural Hazards Workshop) and information resources available at the University of Colorado Boulder Natural Hazards Center to increase the capacity of the social science, engineering, and interdisciplinary hazards and disaster research communities. The ultimate vision for the work is to prepare individual researchers and teams to carry out extreme events rapid reconnaissance research that is coordinated, comprehensive, coherent, ethical, and scientifically rigorous. This project will develop two new platforms and corresponding networks, SSEER and ISEEER, that will help researchers respond to long-standing challenges of rapid reconnaissance research while advancing the disaster research field through the following research tasks:

- identifying and mapping researchers and research teams from a range of disciplines (using prior databases, enrolling researchers actively, and using big data tools, e.g. web scraping,machine learning)
- coordinating those researchers in the event of a major disaster
- defining guiding research questions and frameworks for rapid reconnaissance investigations
- offering ethical guidance for social science and interdisciplinary disaster research
- mentoring next generation researchers
- cataloguing and creating inventories of existing research protocols, instruments, validated scales, and secondary data sets to allow researchers to characterize affected populations and communities quickly
- encouraging research on large-scale, sudden-onset events, as well as more creeping, chronic, repetitive loss events
- facilitating integration of interdisciplinary social science and engineering rapid reconnaissance teams
- convening social scientists, engineers, and scholars working in the science of team science field to inform projects and advance the science and practice of rapid reconnaissance research.

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Wingspread / The Johnson Foundation

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