<p style="text-align:center">**2021 Data & Decisions Destination Area**</p>

Request for Concepts

Purpose of RFC

This program supports Virginia Tech faculty who wish to engage in interdisciplinary research within the Data & Decisions Destination Area (DA). These projects will kick start the DA research agenda and be used as a springboard for potential future funded research.

Funding

The Data & Decisions Destination Area will issue awards this fiscal year pertaining to one or more of the following topics: Curriculum Development, External Funding and Relationship/Partnership Development, Inter-DA cross-cutting collaboration, Research Collaborations and Engaged Scholarship, as it relates to one of our five focus areas of All Data Analytics, Health Analytics, Environmental Analytics, Social Analytics and Decisions Sciences. This RFC is open to Virginia Tech faculty in any College and/or Institute. Awards are planned as follows:

Up to $20,000 for 1 award

Up to $10,000 each for 2 awards

Guidelines

- Proposals must demonstrate an interdisciplinary, collaborative relationship between the PI (tenure-track, non-tenured faculty, junior faculty, collegiate faculty, and Research or AP faculty) with at least one or more other faculty members. A junior faculty member and senior faculty member jointly proposing is preferred.

- Examples of appropriate requests include equipment, materials and supplies, GRA and/or administrative support, and travel critical to research activities.

- Faculty are eligible for only one award during the current fiscal year.

- Only one proposal per PI will be considered. However, a faculty member may participate as co-PI on multiple proposals.

- Proposals must be clearly aligned with the Data & Decisions Destination Area.

- The proposal must state what the team is proposing and how it leads to the intended next steps.

Anticipated Timeline

- **February 19, 2021:   Proposal due (2.5 pages)**

- o   March 19, 2021: Awards announced

- o   April 30, 2021: Funding transferred to host department

- o   Fall 2021: Participation in Data & Decisions Research Events

- o   June 30, 2022: Funding must be fully spent (please follow your department fiscal spending guidelines to ensure you can expend all funds before the end of the fiscal year)

- o   September 1, 2022: Due date for final report, outcomes of project

- o   Fall 2022: Participation in Data & Decisions Research Day

Proposal Requirements (2.5 pages)

- o   <u>Title Page</u> (1 page): Title of project, Data & Decisions focus topics your concept falls into, names and affiliations of PI and Co-PI(s) as well as all other faculty participants.

- o   Proposal Narrative (1.5 pages):

    - ▪   <u>Vision Statement</u>: Describe your overall vision for your project and incorporate a summary of your goals. How does your proposed project align with the Data & Decisions Destination Area? How does it set Virginia Tech apart from other academic institutions and how will it garner VT national recognition?

    - ▪   <u>Description of the Proposed Project</u>: Discuss needs in the area you've chosen, deliverables and timeline of the project. Describe future funding opportunities and next steps resulting from the project that would allow Virginia Tech to gain national recognition. Include any infrastructure needs and how these resources will synergize with existing faculty, facilities and programs at Virginia Tech.

- o   CVs of PIs, Co-PIs (NSF Bio-sketch style, 2-page limit & doesn't count towards proposal page limit)

Additional Information

- ●   The Request for Concepts will be disseminated through Institute Directors, College Deans, Department Heads, and other DA/SGA Program Managers.

- ●   Proposals will be reviewed by a panel of Data & Decisions Stakeholder committee members.

- ●   Proposals are due no later than **February 19th** via on-line submission to

     https://docs.google.com/forms/d/e/1FAIpQLSeZ5NizT4w0r7pUmFcji1LbpJ1mIQ-Hrsg_Bu4Ay1zVvNs1pQ/viewform?usp=sf_link

- ●   For questions, please contact **Min Wang** (minwang@vt.edu)

Data & Decisions at Virginia Tech

Vision: Advance the human condition and society with better decisions through data

Mission:

- Providing data and decision infrastructure to support a systems approach to transdisciplinary problems.
- Empowering students, faculty, and alumni to translate data into actionable knowledge to improve the human condition.

- Providing an intellectually enriched environment to achieve excellence in data-driven decision sciences.

- Attracting the global community to join Virginia Tech in tackling the world's data analytics and decision science problems.

- Transforming pedagogy with an inclusive, human-centered, data-powered approach to learning and engagement for all students.

The Data & Decisions Stakeholders Committee, through research, a Request for Ideas, and an Open Faculty Forum, narrowed down the five areas to focus on in the short-term. These areas are All Data Analytics, Health Analytics, Environmental Analytics, Social Analytics, and Decision Sciences. A brief description of each area can be found below.

All Data Analytics: Fundamental research in data analytics methodology provides the underlying crosscutting technical advancements that support many data analytics and decision sciences application areas. An "all data" analysis allows for across scale, from personal health records and surveys derived from controlled trials to massive numbers of observations more commonly classified as "big data." This "all data" approach builds upon Virginia Tech's long-standing strengths in the algorithmic, statistical, and computational foundations of data analytics.

Health Analytics: Health Analytics pursues the ambitious goal of improving the human condition by addressing and changing individual, collective, and organized thought and actions. Health analytics transcends scale in its applications and insights, from the analysis of individual health records to population health data for communities, nations, and the world.

Environmental Analytics: The expansion of environmental data due to technological advances in observation and collection, the pervasive spread of sensors, and measurement of complex systems creates new opportunities for research in Environmental Analytics. Scholars in this field develop a framework for information sharing among research collaborations as well as policy-makers and the public to enable sharing information and creating knowledge. Environmental data science technologies are advancing sustainability efforts related to climate change, forestry, watershed, ecology, water quality, geology, and many other fields.

Social Analytics: Vast amounts of data, generated through almost every aspect of living, offer an unprecedented opportunity to improve health, well-being, and quality of life for all. Social Analytics pursues data-driven and evidence-based research methods to inform policy decision-making by actors and organizations embedded in complex adaptive systems. Social Analytics raises new ethical issues that encompass not only privacy but also the careful representation of disadvantaged groups in the context of policy decisions. Through the capture and integration of significant amounts of data, large-scale social and systems interactions can be explained, visualized and, predicted, thus marking a significant link between complex adaptive systems and the statistical sciences.

Decision Sciences: Understanding Decision Sciences as operational human actions is critical to data analytics by addressing questions of what types of data will need to be collected, how human beings process data, and most importantly, where data can add value to practices, organizations, and communities. More specifically, research in this field asks what information human actors, individually and collectively, choose to use and what they ignore, disregard, and misunderstand by exploring models of cognitive hierarchies, ethical aspects of decision-making, using game theoretic tools, neural connectivity, and the communication of decisions.