

## George Mason University (GMU) Center for Resilient and Sustainable Communities (C-RASC)

### Summary

**Overview:** In the Fall of 2019 George Mason University (GMU) established a Center for Resilient and Sustainable Communities (C-RASC). Its vision is that communities world-wide can create life-changing social and economic opportunities through locally led, bottom-up resilience and sustainability initiatives supported by cross-cutting approaches and effective, replicable models. It builds on work begun by Mason's [Community Resilience Lab](#) and oversees two complementary initiatives: *Collaborative Community Resilience* and the global [STAR-TIDES](#) knowledge-sharing network. These integrate public-private, whole-of-government, and trans-national approaches with diverse technologies and input from practitioners with field experience.

**Motivation:** Communities face diverse, urgent challenges today: How to reduce pressures for migration and marginalization, mitigate conflicts, enhance “all hazards” emergency preparedness, and improve understanding of infrastructure dependencies? Affected areas range from regions in developing countries with youth bulges, to under-served communities in the developed world, to more affluent communities where critical infrastructure disruptions can impact wide areas or key functions. Accelerating rates of technological, social and climate change, along with population growth and concentration, are stressing businesses, governments, and security structures. These require integrated approaches that build resilience--the capacity to absorb disruptions, adapt, and emerge stronger--through problem solving, collaborative planning, and system capabilities. In sum, “Be prepared to bounce forward better.” Stand-alone risk mitigation and incident management approaches will not be enough.



**Approach:** C-RASC uses a five-part approach to coordinate activities that normally would be stove piped: (1) a focus on communities—each project begins by listening to a community’s narratives about its needs, (2) global knowledge sharing, (3) innovative economics if traditional markets aren’t working, (4) integration across several inter-dependent infrastructures (or “platforms”), and (5) trans-disciplinary research and teaching. Governance is key. These are supported by enablers of success, such as: narrative and story-telling, both to understand community needs in their cultural context and to translate technical analyses into terms that support their engagement; systems thinking to integrate platforms; sharing of global knowledge facilitated by the [STAR-TIDES](#) network; resource-raising strategies; finance; education; transportation & logistics; and digital enabling technologies such as geospatial information systems (GIS), identity management, distributed ledger technology (like blockchain) for accountability and transparency, climate science, big data analytics, etc. C-RASC also supports real world events as appropriate, such as disaster relief. Although C-RASC has a broad overall focus, each C-RASC project has a specific name, such as “Appalachia Advancing,” and emphasizes the interests of the community in question.

**Collaborative Opportunities:** C-RASC is located in Mason’s Volgenau School of Engineering (VSE), and has core ties with 5 other GMU academic units: The Colleges of Science (CoS) and Health and Human Services (CHHS); and the Schools of Business, Conflict Analysis and Resolution (S-CAR), and Policy and Government (Schar School). This lets resilience questions be addressed in both technical and policy detail, e.g. the resilience of networks and systems as part of cybersecurity, plus collaboration with: business & economics, public policy and governance, conflict analysis & resolution, sociology (what does resilience mean in different communities?), narrative & storytelling, systems engineering, critical infrastructure protection, and specific technologies. Partners may include: diverse businesses; local, state, federal and international governments; multiple GMU entities; other academic institutions, domestic and international; philanthropic institutions; think tanks; international organizations; organizations focused on the specific technologies and infrastructures (“platforms”) as noted above; and health care providers. C-RASC also will sponsor events, such as the annual [STAR-TIDES](#) tech demo, the 13<sup>th</sup> of which was held at Mason from Sept 30-Oct 2, 2019.

October 19, 2019

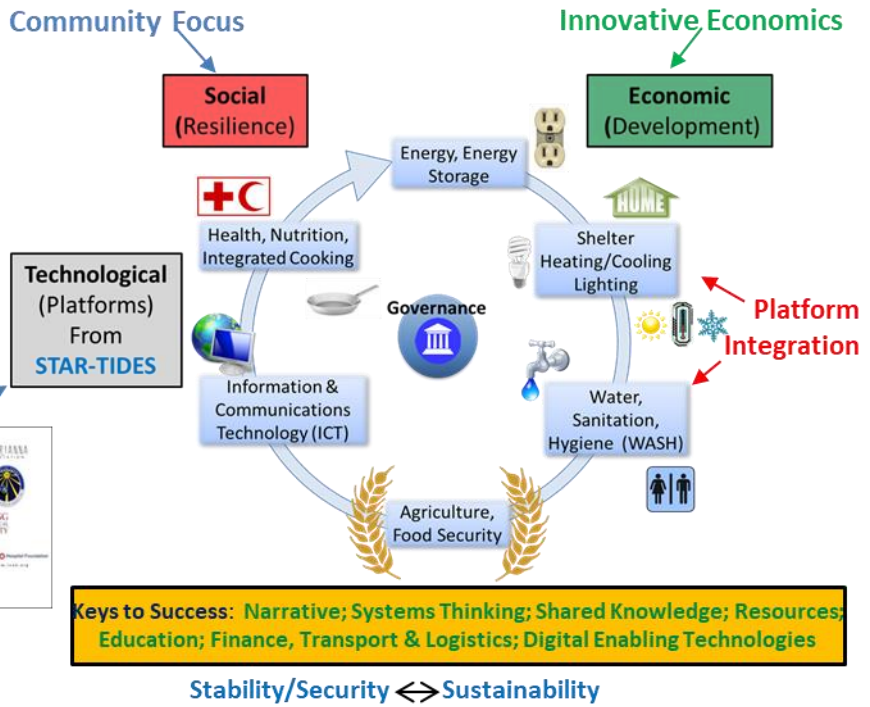
# Center for Resilient and Sustainable Communities (C-RASC) Overview

## Elements:

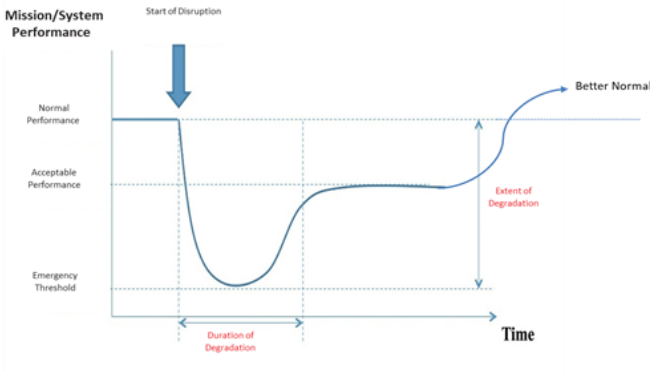
- Community Focus
  - Knowledge Sharing
  - Innovative Economics
  - Platform Integration
  - Research and Teaching
- Supported by Cross-Cutting  
Keys to Success
- Listening, Learning, Lasting



## Trans-Disciplinary Research and Teaching are Key



## Profile of Resilience (Be Prepared to Bounce Forward Better)



<https://crl.c4i.gmu.edu/>  
[www.star-tides.net](http://www.star-tides.net)  
[star.tides.net@gmail.com](mailto:star.tides.net@gmail.com)

13<sup>th</sup> Annual STAR-TIDES Tech Demo, Sep 30-Oct 2, 2019  
 GMU Fairfax Campus

## Collaborative Opportunities

- Systems Thinking
- Critical Infrastructure Protection
- Conflict Analysis & Resolution
- Business & Economics
- Geospatial Info Systems
- Narrative & Storytelling
- Specific Technologies and Engineering Disciplines
- Entrepreneurship
- Cybersecurity
- Public Policy
- Sociology
- Public Health
- Education
- Logistics
- Climate Science