

A Capacity Building Initiative to Support the Uptake of Earth Observations for a More Resilient Energy Sector

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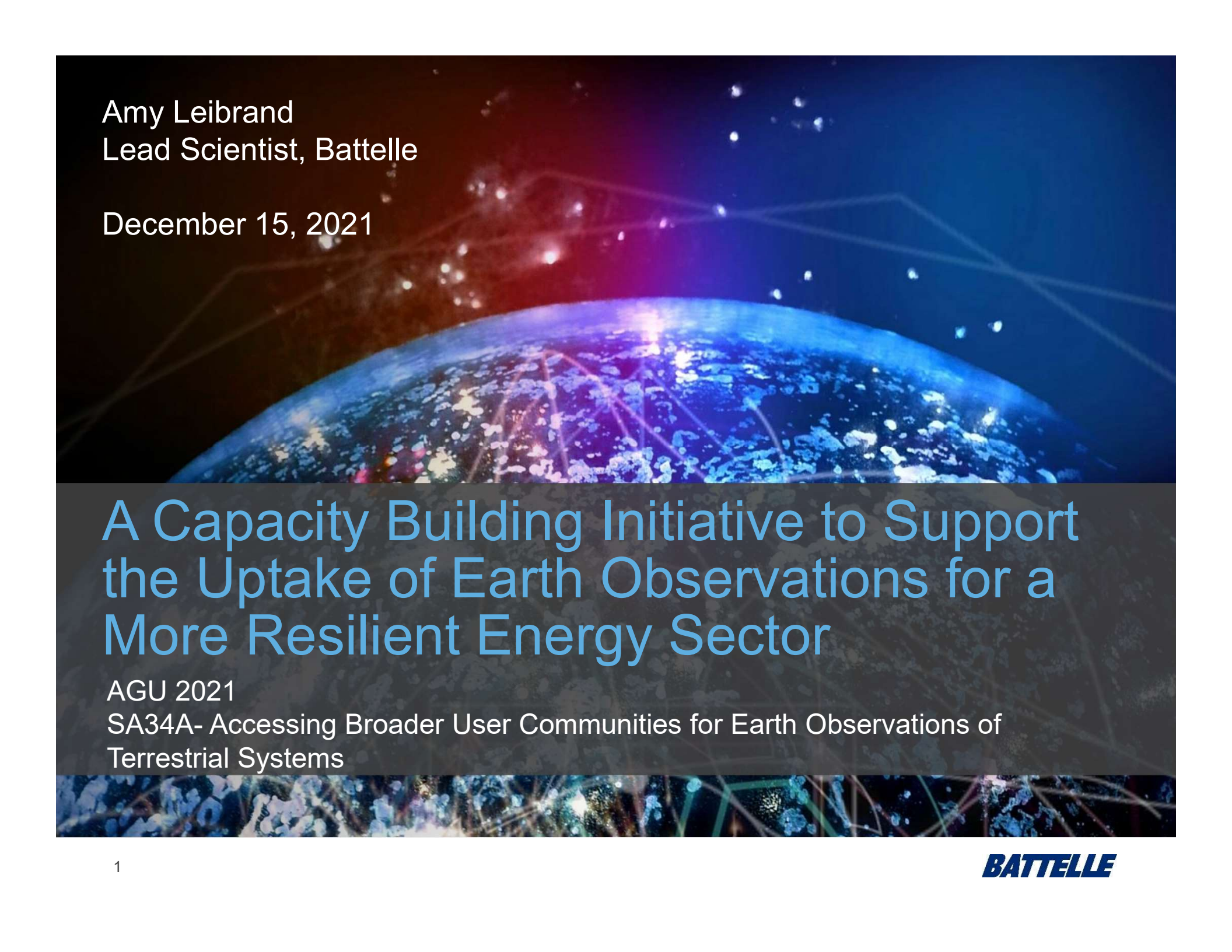
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Abstract

Access to reliable and sustainable electricity is essential for meeting the needs of society, such as communications, clean water, healthcare, and heating and cooling, both today and into the future. Shifts in extreme weather and a changing climate are challenging traditional and renewable power grids, as evidenced by widespread outages from events like hurricanes and heat waves, which are increasing in intensity and frequency and have the propensity to harm infrastructure and diminish generation capacity. Understanding the changing climate allows utilities to be more resilient in proactively producing or distributing energy. Earth observations (EOs) provide actionable data for monitoring such change, but better collaboration between scientists and end users is needed to ensure data is accessible and relevant to decision-making. Utilizing a capacity building approach, this NASA-funded initiative aims to promote broader utilization of NASA EOs within the energy sector by transferring knowledge and bridging the gap between scientists and end users. To the untrained user, satellite data can be onerous to find and challenging to apply. To address these concerns, we engaged the U.S. Department of Energy and stakeholders across the sector to solicit input on the greatest challenges and opportunities utilities face relevant to resiliency and the usage of EOs. In response, and through an iterative process with end users, we compiled relevant NASA EOs into a user-friendly Esri StoryMap® and developed the first energy-focused NASA ARSET training, both publicly available, followed by broad outreach. The StoryMap® aims to reduce the burden of accessing and using EOs by including only the most applicable data with a focus on terrestrial variables, such as soil moisture and land surface temperature, along with tutorials and use cases. The ARSET training provides an in-depth look at using NASA products to support a more climate resilient energy sector and presents real-world, illustrative examples of the ways in which EOs can be used to better understand the impact of extreme events. This talk will report on the successes and challenges of this capacity building initiative, highlight components of the StoryMap® and ARSET training, and share lessons learned in facilitating increased uptake and use of EOs by the energy sector.



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AGU 2021

SA34A- Accessing Broader User Communities for Earth Observations of Terrestrial Systems

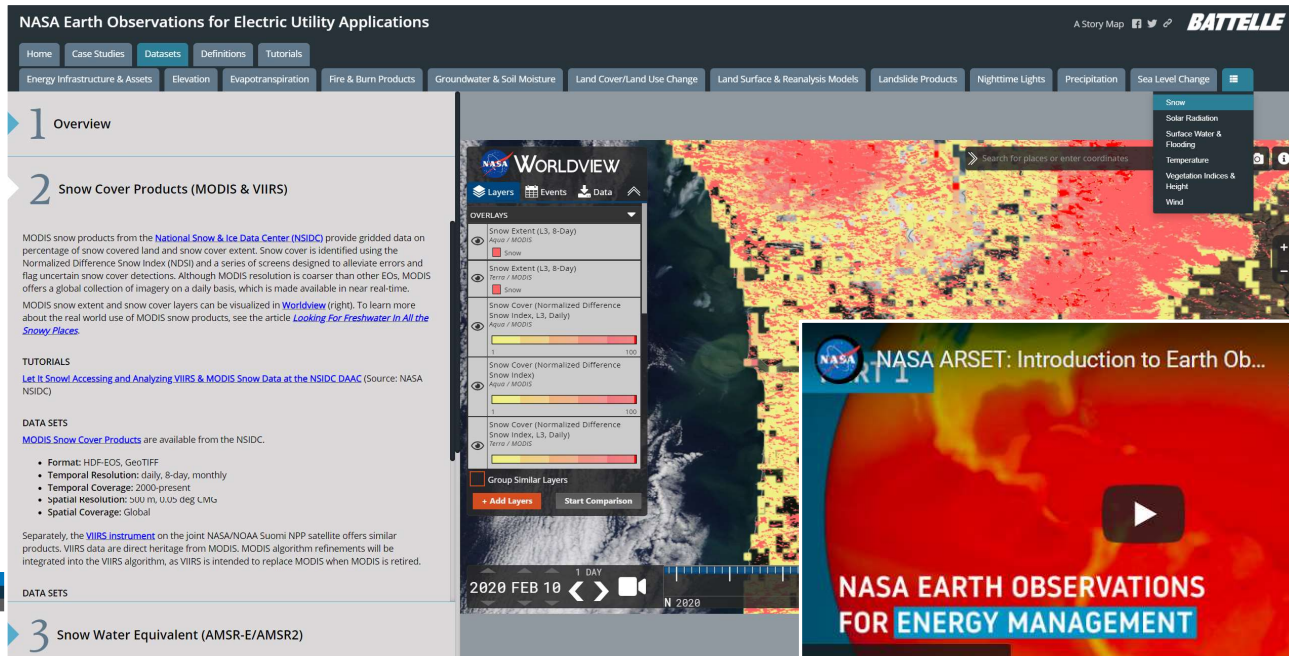
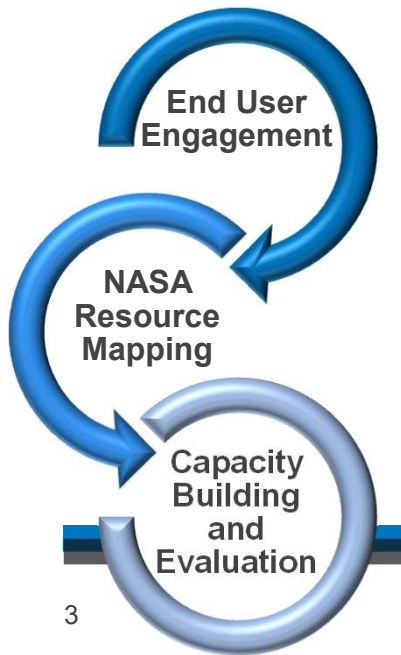
Energy Sector Challenges

- Shifts in extreme weather and climate impact electrical infrastructure and resource availability
- Utilities need data to plan, monitor, respond, and improve resiliency
- NASA has Earth Observations (EOs) relevant to electric utility applications
 - Are these actionable? What does “actionable” mean?
 - Do NASA EO data meet decision-making needs?
 - What are priorities for U.S. electric utilities?
 - What is their capacity for using EOs?



Capacity Building Approach

- Needs assessment & mapping NASA EOs to needs
- Developing tools, trainings, handouts, webinars, papers
 - StoryMap®: <https://tinyurl.com/NASAEnergyStoryMap>
 - ARSET Training: <https://tinyurl.com/ARSET-Energy-Management>
- Outreach & dissemination



Evaluation

• Successes

- User-friendly, relevant, and accessible tools that effectively bridge gap between scientists and end users
- Broad, global reach through ARSET training (but was it the right audience?)

• Challenges

- Engaging U.S. electric utilities (very busy!)
- Overcoming utility bias about the usefulness of EOs
- Measuring impact over a short period
- Sustaining communication and interest after project end

