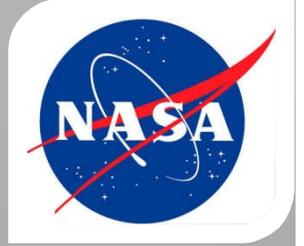


APPLIED SCIENCE PROGRAM: Agriculture and Water

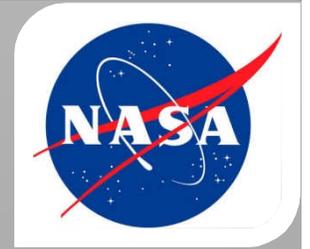
Bradley Doorn, Program Manager
Dave Toll, Deputy Program Manager–Water



Agriculture Project Summary

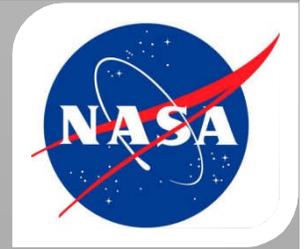
- Soil Moisture (4 projects)
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Water Resources Project Summary



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▶ NASA WATER RESOURCES

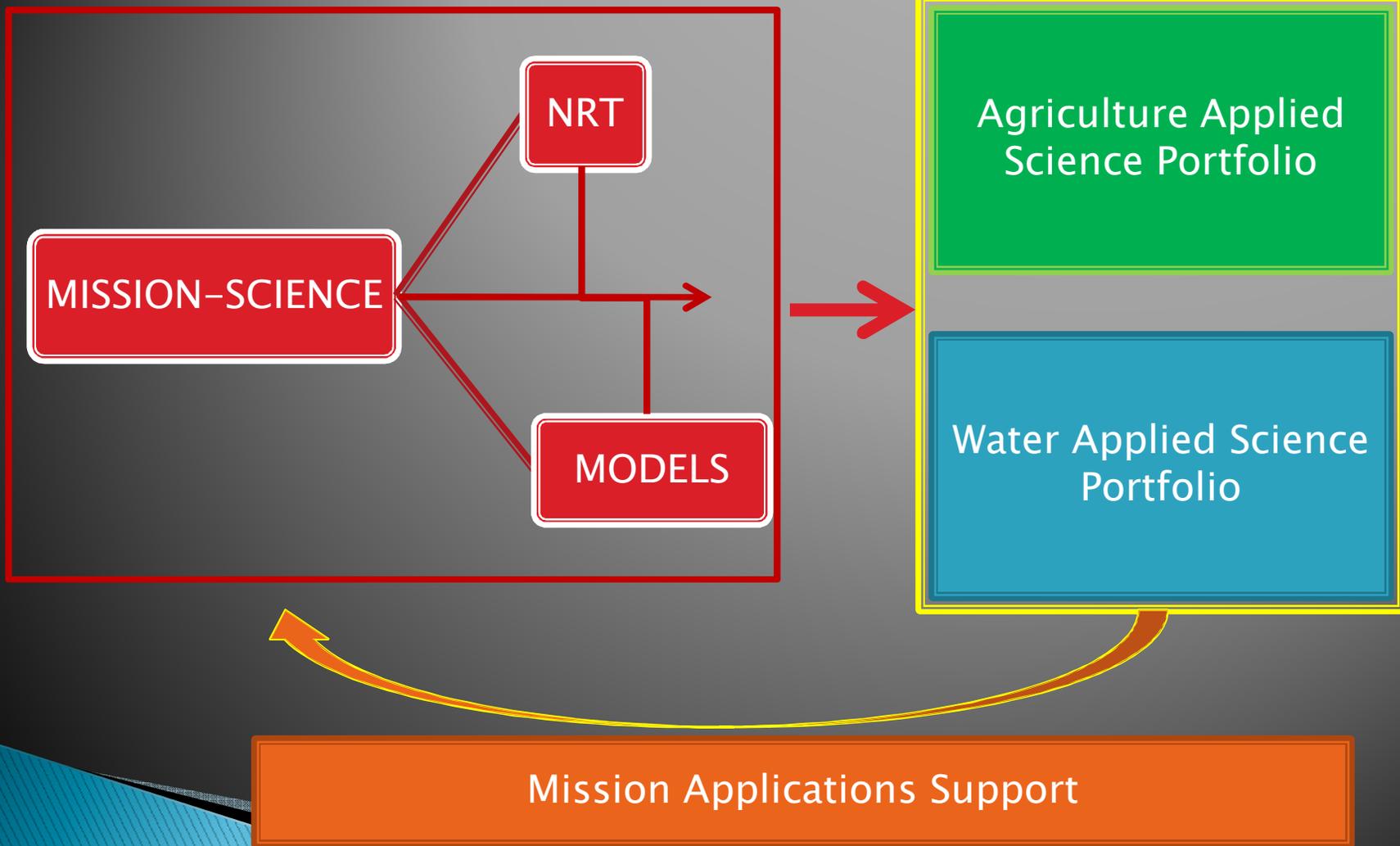
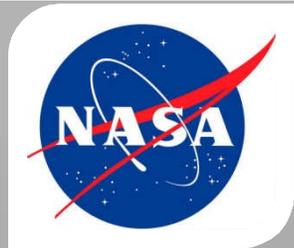


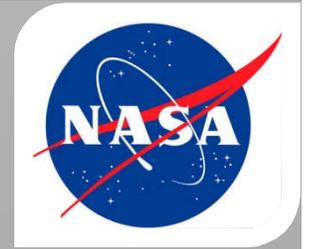
Goal: *Facilitate application of NASA Earth science products as a routine use in integrated water resources management for the sustainable use of water.*

THEMES: WATER RESOURCES FUNCTIONAL

- 1) Streamflow & Floods {2-Projects}
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- 4) Water Quality {3-Projects}
- 5) Climate Change and Water Resources {1}

NASA Agriculture/Water Applied Science Vision





APPLIED SCIENCE PROGRAM: Disasters

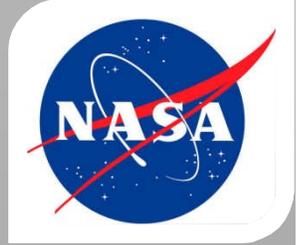
Andrea Donnellan, Program Manager

Tier 1 Decadal Survey Missions and Applications



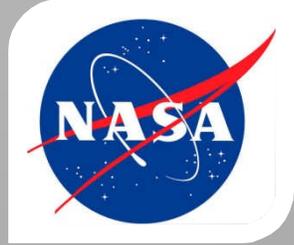
SMAP	DESDynI	CLARREO	ICESat-II
Weather	Disasters	Weather	Ocean Resources
Disasters	Climate Variability and Change	Ocean Resources	Climate Variability and Change
Climate Variability and Change	Agriculture and Forestry	Climate Variability and Change	Agriculture and Forestry
Agriculture and Forestry	Ecology	Human Health and Well-being	Ecology
Ecology	Weather	Disasters	Human Health and Well-being
Water Resources	Ocean Resources	Water Resources	Weather
Ocean Resources	Human Health and Well-being	Energy Resources	Disasters
Human Health and Well-being	Water Resources	Agriculture and Forestry	Water Resources
Energy Resources	Energy Resources	Ecology	Energy Resources
Part of mission	Potential application	Not applicable	

SMAP and Applications

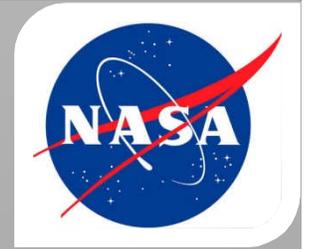


Weather	Disasters	Ocean Resource	Climate Variability and Change	Agriculture and Forestry	Human Health and Well-being	Ecology	Water Resources
More accurate, longer term weather forecasts; prediction of severe rainfall; operational severe weather forecasts	Drought early warning decision support; key variable in water related floods and landslides; improved and operational flood forecasts, especially in medium to large watersheds; protect downstream resources	Sea ice mapping for navigation; temporal changes in ocean salinity; surface water and ocean topography	Linkage between terrestrial water, energy, and carbon cycle; extend climate prediction capability; land atmosphere fluxes	Prediction of agricultural productivity	Decision support for malaria and other waterborne diseases; algal blooms, vector-borne, and zoonotic disease	Effect of soil moisture on vegetation; monitoring of vegetation and water relationship over land	Global water balance; estimates of river discharge; more effective management; variability of water stored in lakes, reservoirs, wetlands, and river channels

SMAP and Disasters

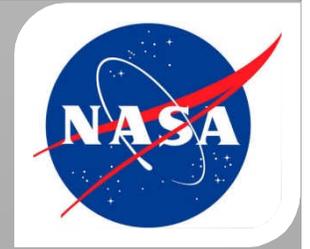


Coastal Inundation	Drought	Flood	Heat-wave	Human and Ecosystem Health	Hurricane	Landslide and Debris Flow	Wildland Fire	Winter Storm
Maps of coastal inundation	Early warning decision support	Key variable; improved forecasts, especially in medium to large watersheds; protect downstream resources; soil infiltration conditions	Early warning decision support	Decision support for malaria and other water-borne diseases	Affected landfall area	Soil moisture is a key variable; better prediction through consistent observations in mountainous regions	Fuel loading	Operational severe weather forecasts



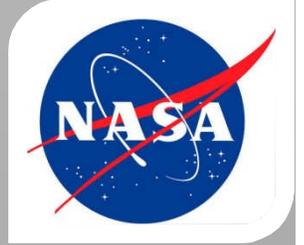
Related Applications Workshops

- ▶ **DESDynI Workshop**
 - Attendees included representatives several agencies and centers
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 - Combine with all decadal survey missions
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 - Agency co-sponsorship
 - Identify any additional commitments that may be needed to meet the applications goals
 - Identify themes and needs that cut across the missions



APPLIED SCIENCE PROGRAM: Agriculture and Water

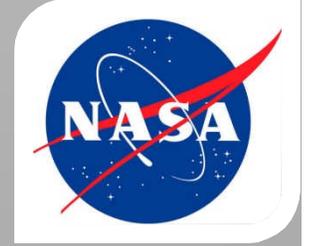
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Agriculture Project Summary

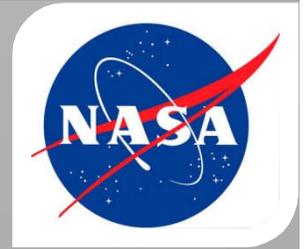
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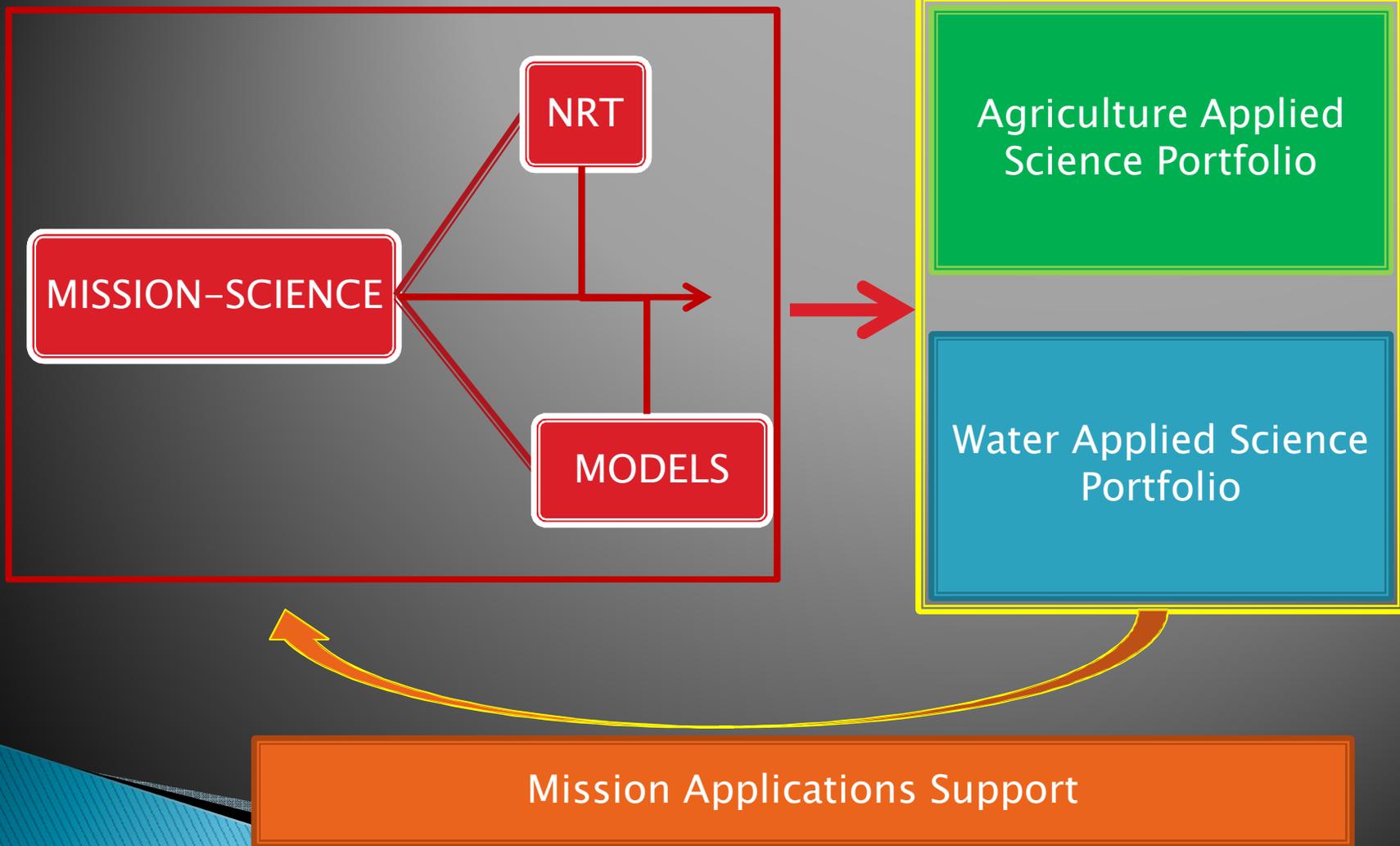


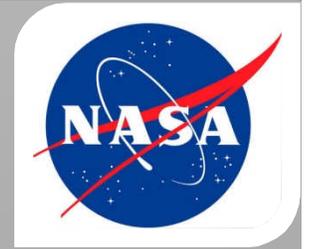
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NASA Agriculture/Water Applied Science Vision





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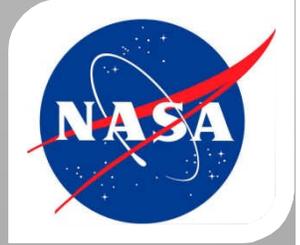
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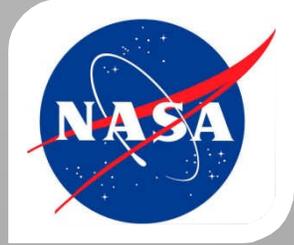
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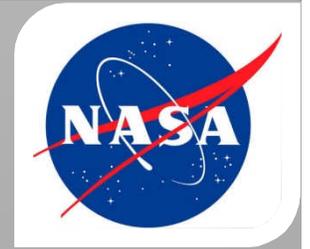


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SMAP and Disasters



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