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## ANALYSIS SCENARIOS

1. Evaluation of model biases in hydrology (precipitation, soil water, runoff, river discharge) over the Rio Grande Basin. *User: climate modeler.*
2. Investigation of projected changes in hydrology of Rio Grande Basin using the Variable Infiltration Capacity Macroscale Hydrologic Model. *User: watershed hydrologist/modeler.*

## BARRIERS TO INTEROPERABILITY

- ❖ Data reside in numerous agencies
- ❖ Each source has its own metadata and search interface
- ❖ Scientists are familiar with observational or modeling data, not both
- ❖ Multiple temporal and spatial scales
- ❖ Numerous formats
- ❖ Lack of formal descriptions (ontologies)

### Search on observation and computational variables by:

- ❖ Names
- ❖ Tags
- ❖ Description

### Tagging function:

- ❖ Tags connect unfamiliar variables
- ❖ Community keywords
- ❖ Controlled vocabulary (NASA Global Change Master Directory)



### DATA REQUIREMENTS

- stream flow
- water quality
- precipitation
- temperature
- sediment data
- soil moisture
- vegetation index



## RESULTS

1. Refine the analysis by integrating Observational and Model data.
2. Demonstrate the benefit of applying information science methods to scientific knowledge capture in the context of integrated climate and environment research.
3. Perform an end-to-end analysis of the impact of climate change on a basic unit of analysis: the watershed.



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