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## **Workflow Science: Moving from tool generation to Discovery**

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Workflow systems have emerged as the coordination engine behind large distributed data intensive science experiments. They manage the movement of data, the allocation of resources, and display of results for a growing number of science communities. However, existing workflow systems are typically simple, purpose built tools that automate some of the routine tasks a scientist performs. Future workflow systems will need to do more autonomous work, deal with more heterogeneous resources, and provide SMARTer interfaces to both scientists and facilities staff. To achieve this objective Workflow Science needs to move from a tool generation activity to a research and discovery process in its own right. Workflow scientists need to develop the methods, experiments, models, and simulations that can describe and validate the behavior of any workflow system ensuring that it is operating correctly and efficiently.

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