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Collaborative Workflow-Driven Science in a Rapidly Evolving Cyberinfrastructure Ecosystem

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Scientific workflows are powerful tools for computational data scientists to perform scalable experiments, often composed of complex tasks and algorithms distributed on a potentially heterogeneous set of resources. Existing cyberinfrastructure provides powerful components that can be utilized as building blocks within workflows to translate the newest advances into impactful repeatable solutions that can execute at scale. However, any workflow development activity today depends on the effective collaboration and communication of a multi-disciplinary data science team, not only with humans but also with analytical systems and infrastructure. Dynamic, predictable and programmable interfaces to systems and scalable infrastructure is key to building effective systems that can bridge the exploratory and scalable activities in the scientific process. This talk will focus on our recent work on the development of methodologies and tools for effective workflow driven collaborations, namely the PPoDS methodology and the SmartFlows family of tools for the practice and smart utilization of workflows.

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Session Classification: Related Projects