Benefits of Scientific Workflows (from the point of view of an application scientist)

- Conducts a series of computational tasks.
  - Resources distributed across Internet.

- Chaining (outputs become inputs) replaces manual hand-offs.
  - Accelerated creation of products.

- Ease of use - gives non-developers access to sophisticated codes.
  - Avoids need to download-install-learn how to use someone else's code.

- Provides framework to host or assemble community set of applications.
  - Honors original codes. Allows for heterogeneous coding styles.

- Framework to define common formats or standards when useful.
  - Promotes exchange of data, products, codes. Community metadata.

- Multi-disciplinary workflows can promote even broader collaborations.
  - E.g., ground motions fed into simulation of building shaking.

- Certain rules or guidelines make it easier to add a code into a workflow.

Slide courtesy of David Okaya, SCEC, USC