

Applied Cyberinfrastructure Concepts

(ISTA 420/520, Fall 2013, Tue-Thu 9:30-10:45)



Image courtesy: <http://www.sciencemag.org/site/special/data/>

Learn about:

- Managing** large data sets
- Scaling** compute tasks
- Visualizing** dense data

Objective

- Introduce fundamental concepts, tools and resources for effectively managing common tasks associated with analyzing large data sets.
- Provide familiarity with **cyberinfrastructure** (CI) resources available at the University of Arizona campus, the iPlant Collaborative, NSF XSEDE centers and commercial providers such as Amazon.
- Learning to apply relevant CI skills (for final project) and developing wiki based documentation of these best practices.
- Learning how to effectively collaborate in interdisciplinary team settings.

- ❖ Class enrollment is limited to 20 students
- ❖ Programming expertise is NOT essential
- ❖ Students from ANY domain sciences (Bio, Geo, Astro, Engineering etc.) are highly encouraged to apply
- ❖ Please visit <http://goo.gl/p4j3m> for class website (or scan the QR code) for more details
- ❖ Contact instructor Nirav Merchant (nirav@email.arizona.edu) or Eric Lyons (elyons@email.arizona.edu) with questions
- ❖ This course is developed using cyberinfrastructure resources provided by the iPlant collaborative (NSF #DBI-0735191)

Sample Topics

- High Performance Computing
- High Throughput Computing
- Cloud Computing
- Large scale data management
- Workflow Engines
- 3D CAVE visualization

Course Format

- Guest lectures by domain experts
- Hands on exercises (HPC, Cloud, CAVE, iRODS etc.)
- Final group project in collaboration with domain scientists

