Overview of TACC

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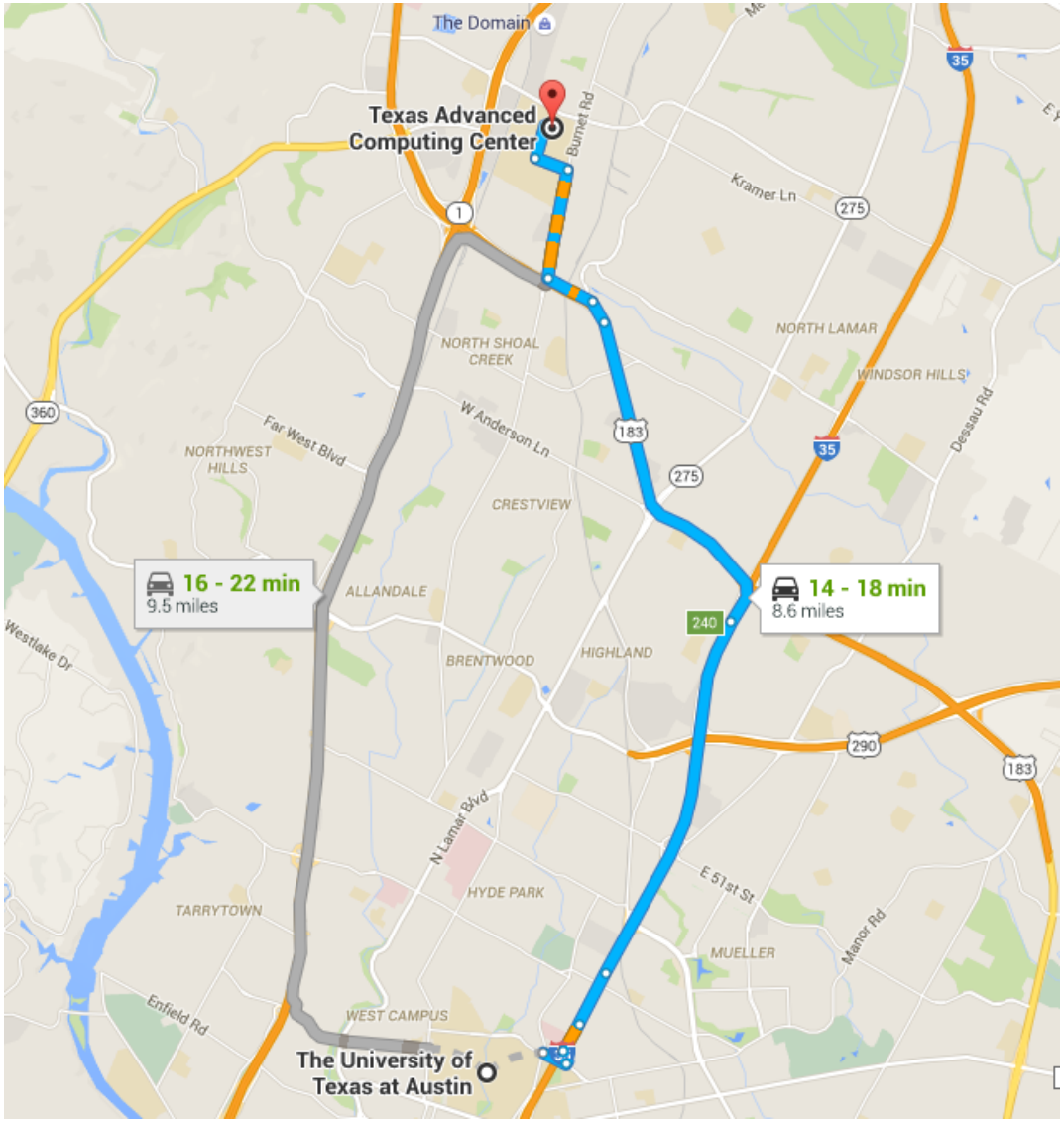
Your instructors

Victor Eijkhout (12:30 section)
Carrie Arnold (3:30 section)
Charlie Dey (co-instructor)

work at the
Texas Advanced Computing Center

So where is TACC?



How do you get to TACC?

Pickle Campus

Formerly Balcones Research Center,
location of some of the best wildflowers in Austin.

TACC

- Started in 2001 with 10-ish people, now 130
- UT has had computing centers before; in 2001 TACC became independent unit: falls under VP for research.
- First major supercomputer in 2008: Ranger.
- Currently: Stampede2, #12 in the world and largest academic computer in the U.S.

TACC now

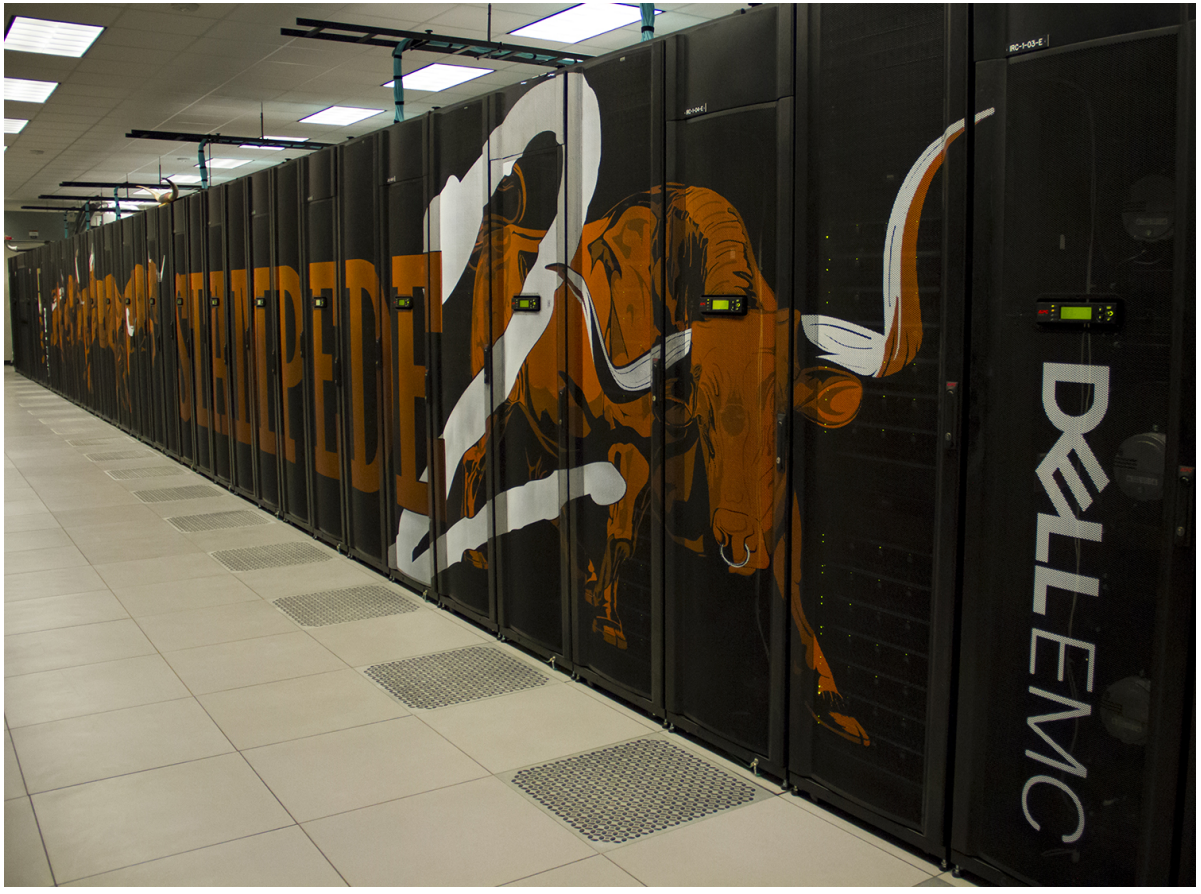
- 130-ish people, divided in Systems, High Performance Computing, Big Data, Visualization, Outreach (and more) groups.
- 15 platforms
- 200 public data collections
- 30 web portals with 35k users
- new 10MWatt data center
- second new building in 10 years

Stampede2

- Our current biggest machine: cost $50M
- 4000 nodes with Intel 'Knights Landing' Xeon phi;
  1700 nodes with two Skylake server processors about to be installed.
- 75 miles of cabling, up to 4.5Mwatt power
- TACC's machines are popular and reliable:
  Stampede1 was used by 5000 users, up 98% of the time,
  8 million jobs over its lifetime.

Stampede1

Stampede2



Stampede cabling

Maverick

GPU machine

Lonestar4

Finally been turned off. . .

Lonestar5

Our new Cray

Hikari

Hikari cooling

Big data

- Wrangler: big data machine with lots of SSDs
- Rustler: hadoop cluster
- Stockyard: 20Pbyte spinning disc (shared between all clusters)
- Ranch: 50Pbyte of tape

Wrangler

Clouds

- Rodeo: early cloud machine
- Chameleon: cloud research
- Jetstream: for educational use

Jetstream

Catapult

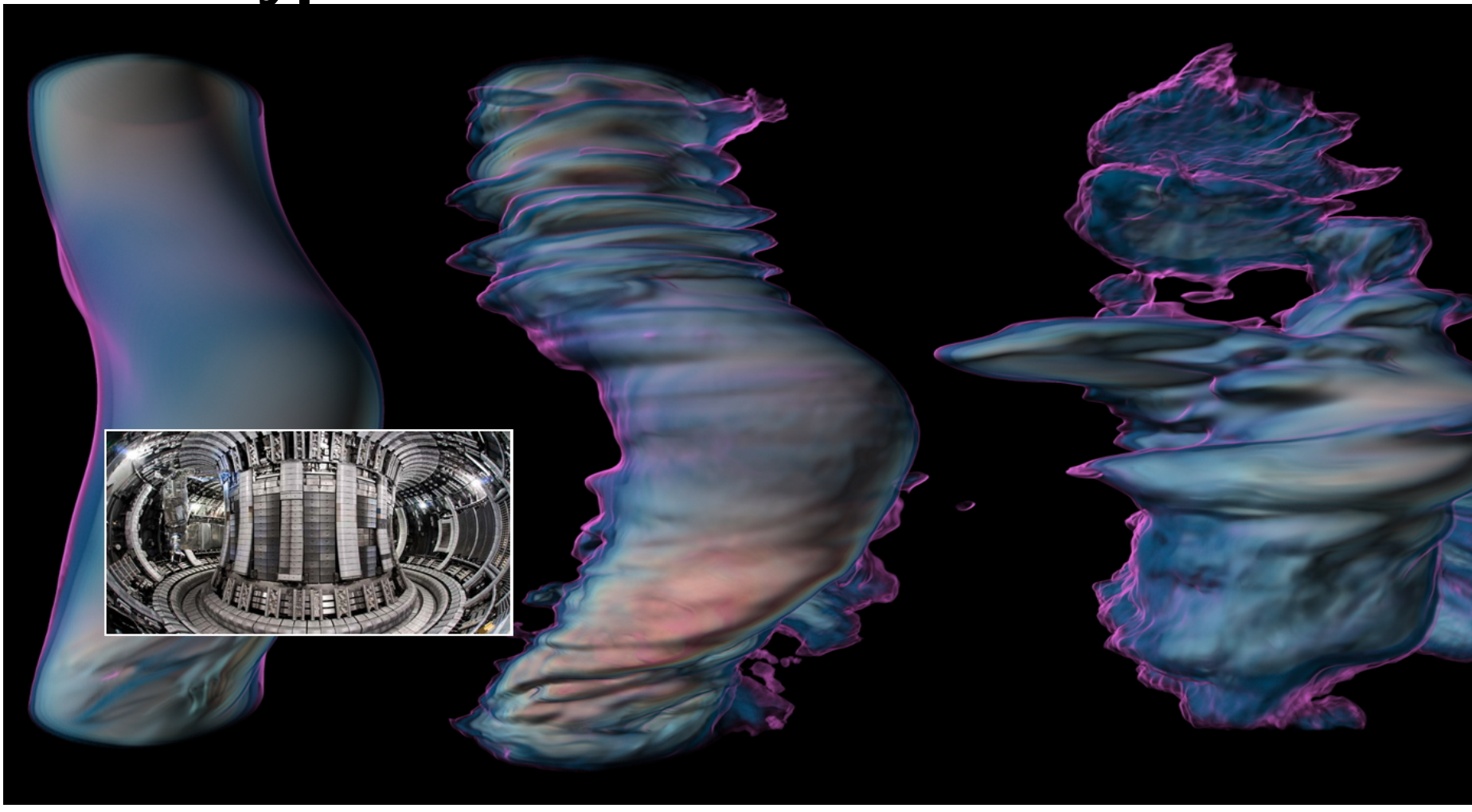
Microsoft FPGA machine learning platform

Stockyard

Mass storage

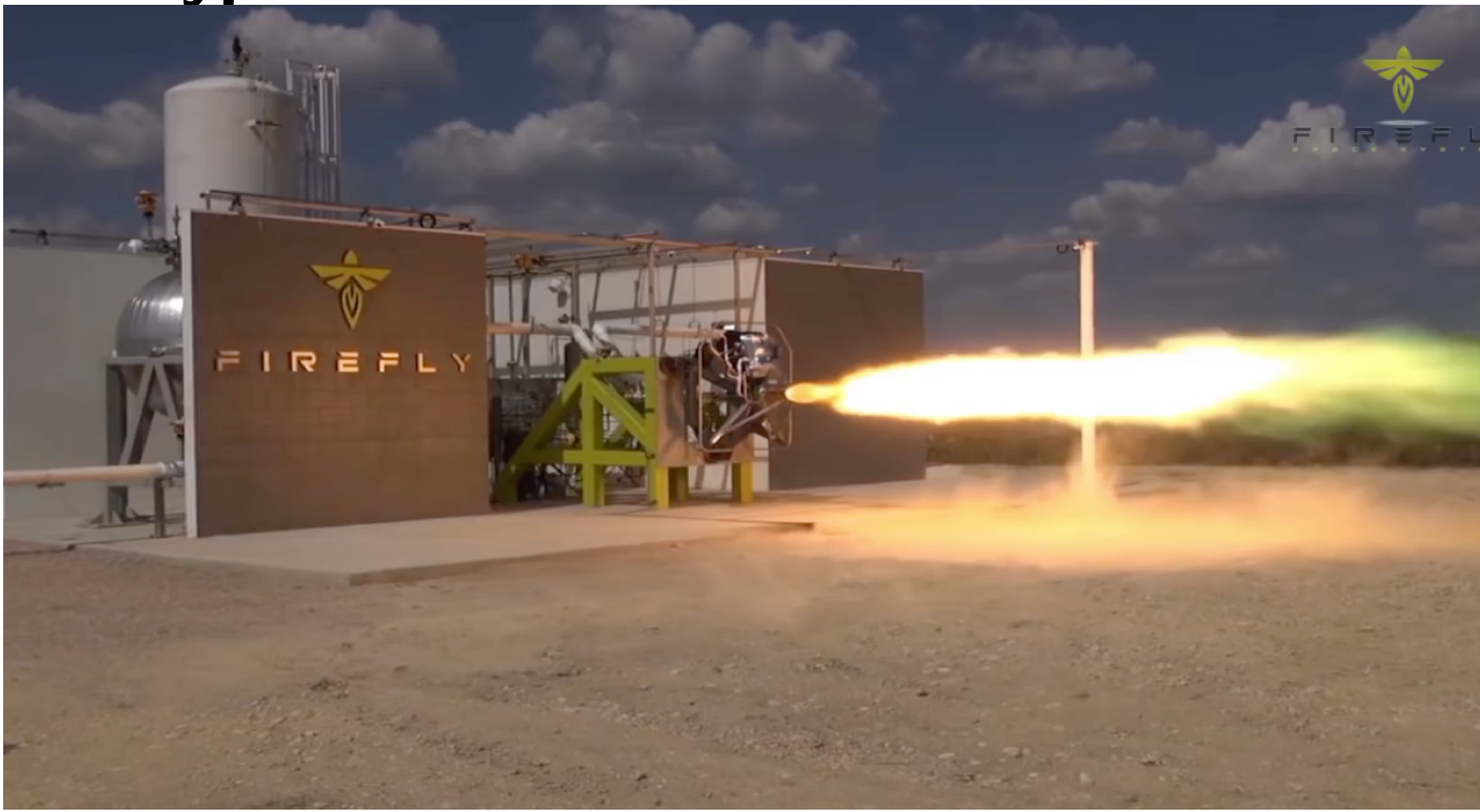
Visualization lab (POB)

Typical academic customer



Non-typical academic customer

Typical non-academic customer



We're very hands-on

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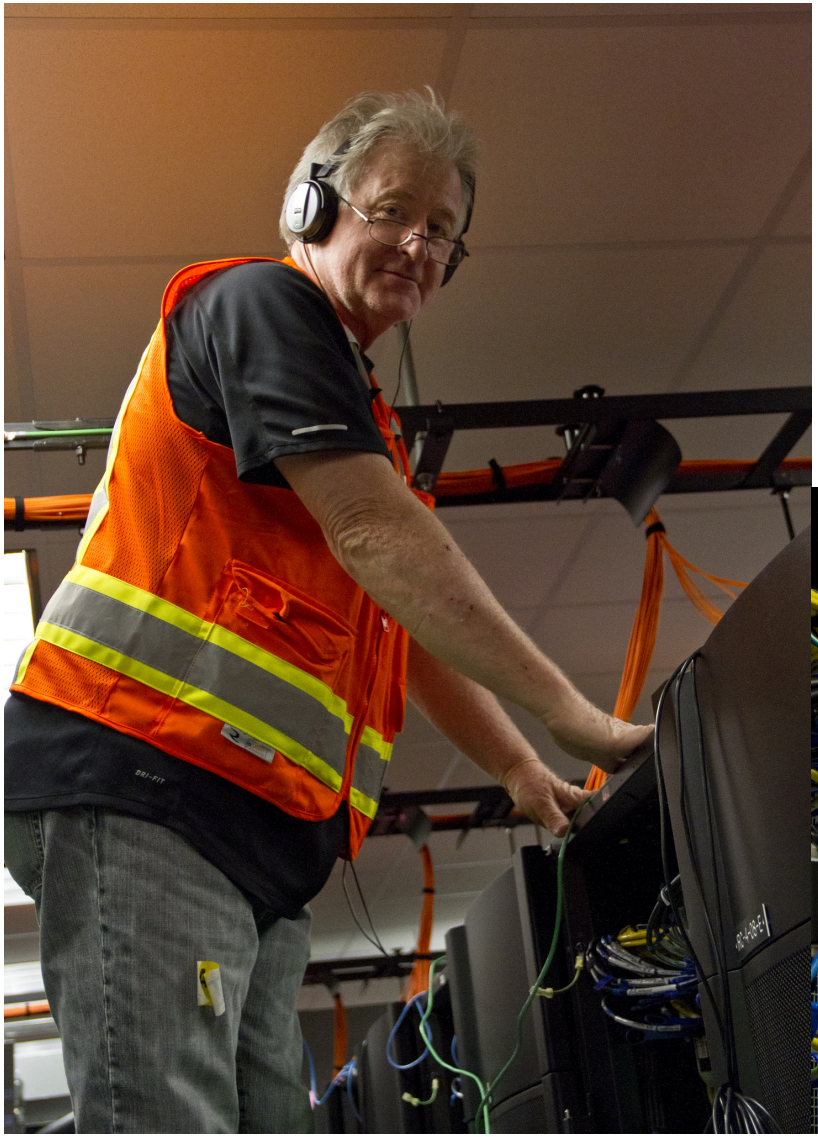

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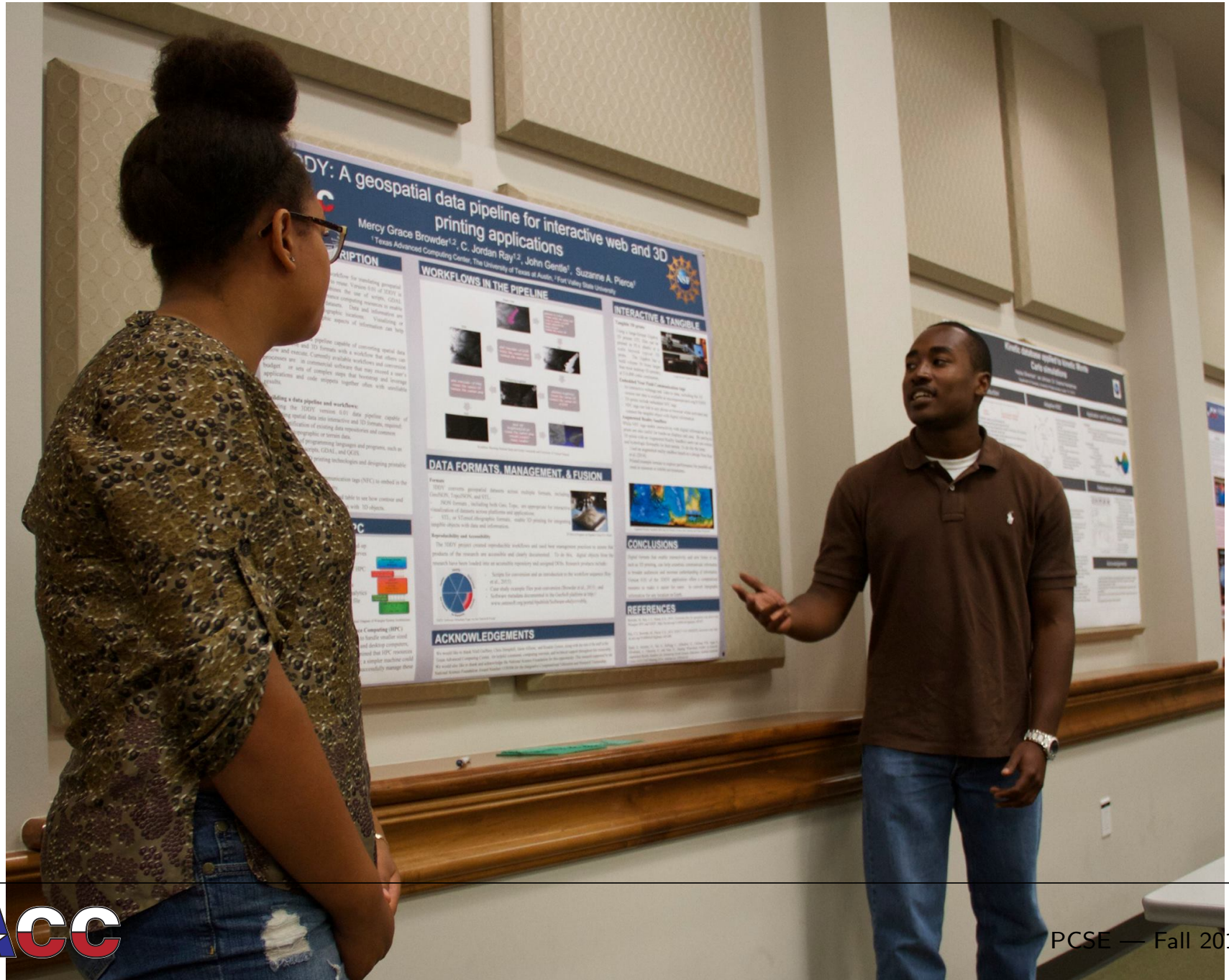
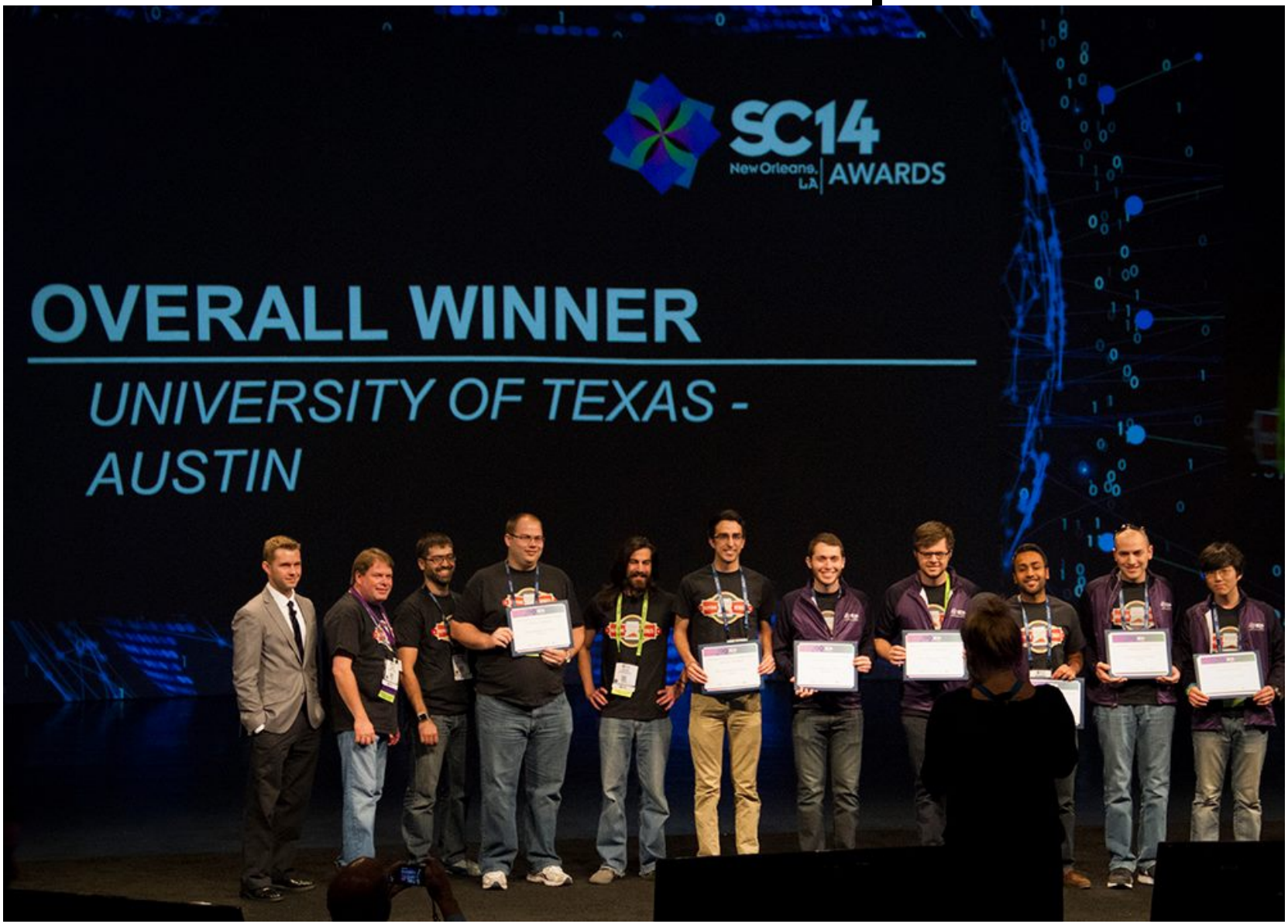
Student activities: REU



Student cluster competition



Outreach: Code at TACC

A good year ago...

Our new building

TACC is a nice place to be