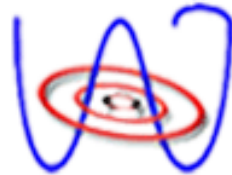


Computational Science at UTB Brownsville



Manuela Campanelli

*Center for Gravitational Wave Astronomy
Department of Physics and Astronomy
University of Texas at Brownsville*

MSI(CI)2 SDSC Meeting January 30, 31st 2006

Who are we ?

UTB, situated on the Mexican border, is an MSI with >90% students of Hispanic origin and an enrolment > 11K students.

Department of Physics & Astronomy:
Masters program in Physics, Ph.D. program in collaboration with UT-Dallas.

The CGWA is NASA/NSF funded Center for developing Excellence in Research and Education in areas related to *Gravitational Wave Astronomy*:

LIGO/ LISA data analysis (3+1 faculty members, 2 post-docs, 2 graduate students)

Astrophysics (1+1 faculty member, 1 post-doc and 1 undergraduate student)

Numerical Relativity (3 faculty members, 4 post-docs, 4 graduate students)

Grid Computing (2 faculty, several students)



Computing at UTB: a brief history

- 2000 Joe Romano brings GriPhyN at UTB. Lobizon 96-node cluster built for research in LIGO data analysis.
- 2001 New faculty hired with GriPhyN funds: Manuela Campanelli lead GriPhyN and iVDGL E&O. Several undergraduate students hired to install VDT software on the cluster for use in GW data analysis. Several grid test-beds performed.
- 2002 M.C. organize the first Workshop to train some 5 students from Salish Kootenai College on how to install VDT. Undergraduate students from UTB were sent to Grid meetings, Fermilab for training etc
- 2003 The CGWA is created thanks to NASA and NSF support. A new 64 nodes Funes cluster built at UTB used in Numerical simulations of astrophysical sources of Gravitational waves.
- 2004 Soma Mukherjee joins UTB Grid E&O and help organizing the first Grid Summer Workshop (GSW) at South Padre Island (SPI).
- 2005 S.M organize the second GSW at SPI. GriPhyN ends
- 2006 S.M. and M.C. plan to organize third GSW at SPI. iVDGL ends.
- Future E&O effort continued within OSG ...

Grid Summer Workshops: summary



- Collaborators : CGWA, GriPhyN, iVDGL, GRIDS, LSU, NCSA
- Exposure and broad overview of distributed computing to a large number undergraduate and graduate in various fields.
- Training ground students from MSI s. Providing exposure to local students >90 % of whom are of Hispanic origin.
- Compilation of workshop course material by Mike Wilde; Mary Trauner (GATech) intends to use the course material for the *Grid Cookbook* project.

Where do we go from here ?

In just few years, UTB has developed a computational intensive (high-performance and distributed computing) research effort
<http://cgwa.phys.utb.edu>.

Support from NASA, NSF (research grants) and from UTB administration (low teaching load, faculty hiring etc) to faculty has been crucial.

Grid computing, in particular the SGW, drew a larger number of interested undergraduate and graduate students and has proven to be useful as a major outreach undertaking in computational science.

The OSG group intends to continue this effort exporting the GSW idea as national and international effort (Mike Wilde).

UTB is looking forward to get involved in Cyberinfrastructure activities.