

Physics at UTB

Case Study II

Mario C. Díaz

Center for Gravitational Wave Astronomy and
Department of Physics and Astronomy

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012

Background

- UTB was created in 1992 as a partnership between the pre-existing Texas Southmost College and the UT system (Ann Richards governor).
- It was part of a string of “upgrades” in Higher Education Institutions along the Texas border with Mexico.
- This happened after MALDEF support for LULAC et al vs Richards et al.
- South Texas initiative passed by Texas legislature in 1993.

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012

UTB and the lower Rio Grande Valley

If the border were the 51st state:

It would rank first in

1. poverty rate,
2. schoolchildren in poverty,
3. unemployment rate,
4. percent of the adult population that is not a high school graduate,
5. birth rate, and,

it would rank 2nd in:

1. school enrollment as percent of the population, and,

it would rank 51st in:

1. per capita personal annual income.

2012: 60% of its population holds a HS diploma (state 80%), less than 15% has a BS (state 26%).
35% live below the poverty level (17% state).

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012

The Physics program

- 1998: 3 full-time faculty.
- 2003: 5 full-time faculty.
- 2012: 19 full-time faculty (15 t/tt)
- 2012: \$4.5 million external funding annually.
- 50-60 peer review journal articles published annually.
- Offers BS in Physics, MS in Physics and it is in the second year of collaborative PhD with UTSA.

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012

Graduation rates

WebFOCUS Report

5/3/12 6:23 PM

Degrees Awarded by Level, Curriculum Area (CIP)

Public University

Level: Baccalaureate

40080100-Physics, General

Institution	FICE Code	School Year							
		2010-11	2008-09	2006-07	2005-06	2003-04	2001-02	2000-01	1998-99
U. OF TEXAS AT BROWNSVILLE	030646	2	3	3	1	1	1	1	3
TOTAL for CIP Code 40080100		2	3	3	1	1	1	1	3

Texas Higher Education Coordinating Board - 05/03/2012

WebFOCUS Report

5/3/12 6:23 PM

Degrees Awarded by Level, Curriculum Area (CIP)

Public University

Level: Master's

40080100-Physics, General

Institution	FICE Code	School Year						
		2010-11	2009-10	2008-09	2007-08	2005-06	2004-05	2003-04
U. OF TEXAS AT BROWNSVILLE	030646	4	4	4	7	2	4	1
TOTAL for CIP Code 40080100		4	4	4	7	2	4	1

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012

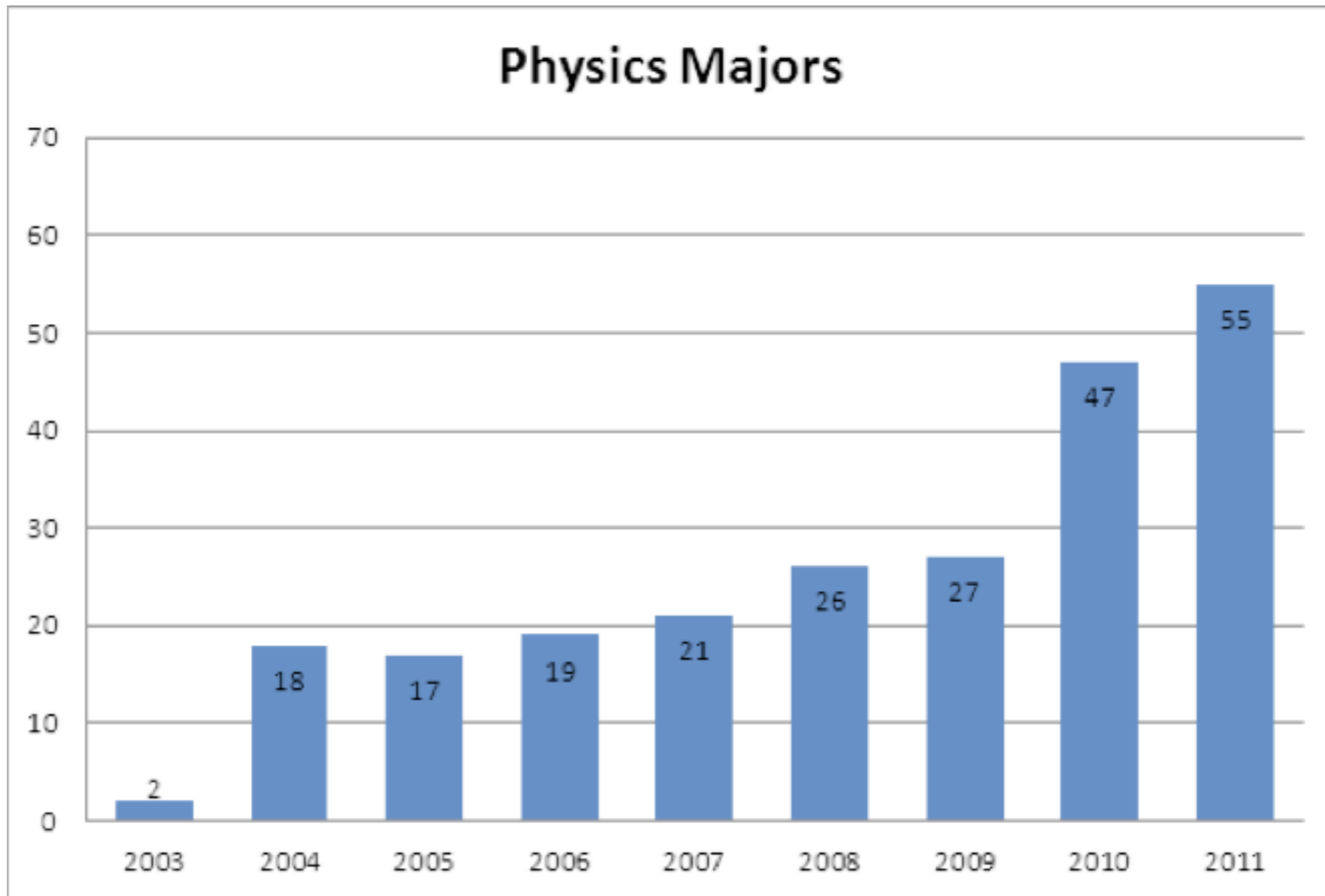
We clearly had a problem

- Nature of the program was one.
- UTB physics was by 2004 highly theoretical; difficult to attract and engage students: numerical relativity, Grav. wave data analysis.
- Almost zero experimental/applied physics.

Initiatives started in 2008

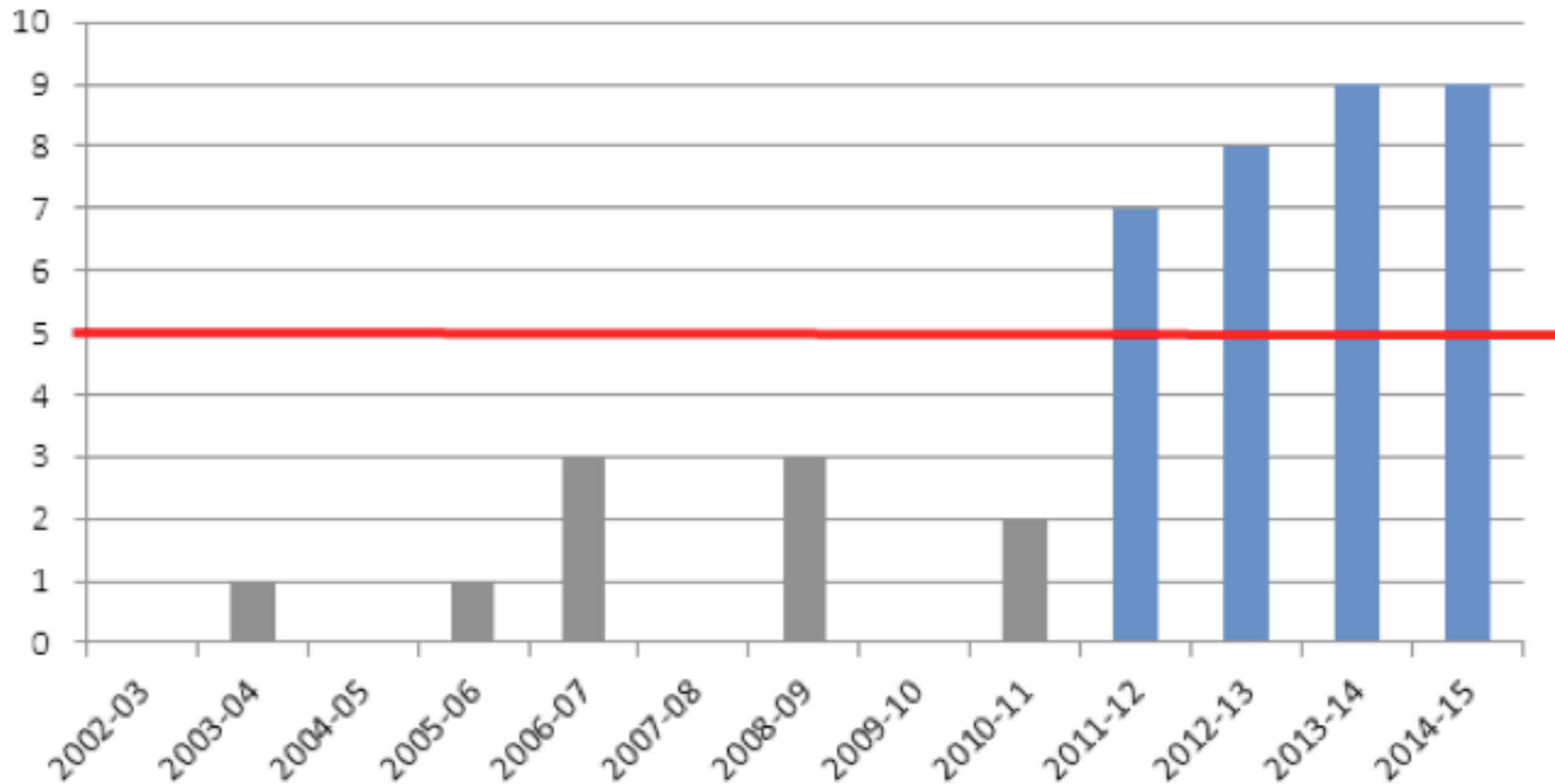
- Creation of a program in Radio-Astronomy, ARCC: main focus increasing participation since HS and majors since their first year by performing research at the Arecibo Remote Command Center.
- Creation of an Experimental Program: optics and lasers, biophysics, material science.
- Development of an outreach program centered in the ARCC, UTB Astronomical Observatory and laboratories.

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012



Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012

BS Physics Graduates



The 2011-2012 graduates in 4.5 years

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012



News



News

News From the Field

For the News Media

Special Reports

Research Overviews

NSF-Wide Investments

Speeches & Lectures

Multimedia Gallery

NSF Current Newsletter

News Archive

News by Research Area

Arctic & Antarctic

Astronomy & Space

Biology

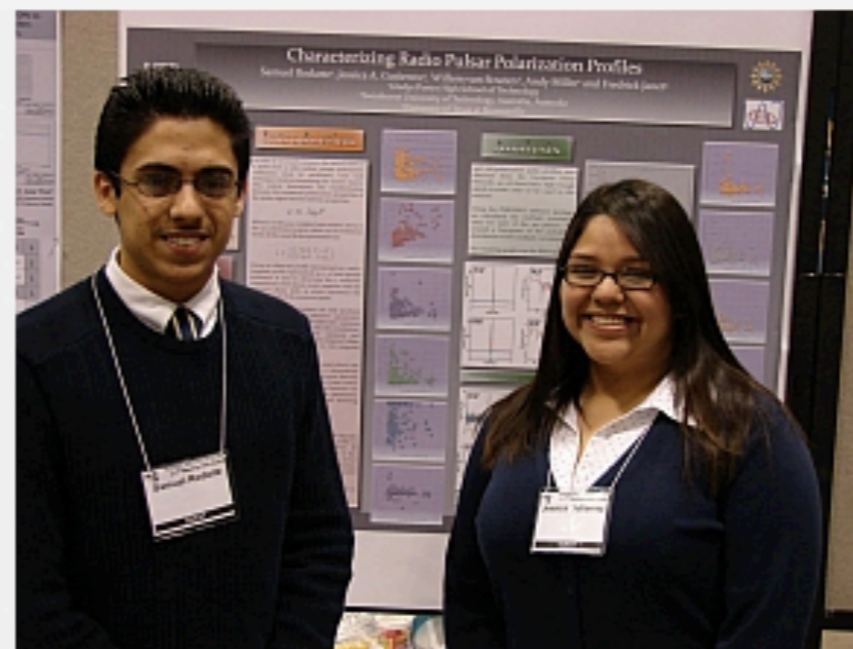
Chemistry & Materials

All Images

Press Release 08-015

Texas High School Students Present Research Results at National Astronomy Conference

[Back to article](#) | [Note about images](#)



Samuel Rodarte, jr., and Jessica Gutierrez stand in front of their poster at the recent AAS conference. The two students were part of a team of High School astronomers from the University of Texas at Brownsville and Texas Southmost College who presented their research results at the conference. Trained at the Arecibo Remote Command Center located on the Brownsville campus, the students results are contributing to a global scientific effort to develop a galactic scale gravitational wave

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012

Some characteristics

- Recruitment from HS.
- Students get involved in research since then.
- Close follow up of students
- Required to make regular presentations.
- Extra support through mentoring and extra recitation sections .
- They get full tuition and stipend.

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012

THECB I

- Based on the record up to 2010-2011 THECB decides to close BS in Physics and BS in Engineering Physics (similar record).
- BS in Engineering Physics only engineering degree existing at UTB.
- Originally proposed by Physics. Took over by Engineering Technology faculty.
- No coordination between EP and Physics, although EP majors are required to take 3 more physics classes in addition to Calculus Introductory physics.

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012

THECB II

- UTB appeals. THECB denied appeals.
- THECB meeting UTB proposes consolidation which it is accepted.
- Consolidation implied the creation of a new track in EP.
- ABET denied accreditation of new track.

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012

UTB, no more TSC

- 12-10-2010 the University of Texas system Board of Regents decided to terminate the partnership and establish an autonomous campus at Brownsville, separate from Texas Southmost College.
- UTB expects to have a reduction in revenue of about 40% due to reduced enrollment.
- Engineering is reduced by 40% (5 out of 8 faculty)

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012

UTB, no more TSC II

No rightsizing for Physics. Based on:

- 1. Increased enrollment in the MS and doctoral program.
- 2. Creation of a 2 course sequence in Astronomy.
- 3. Creation of an integrated 3+2 MS in Physics degree.(in 5 years students can obtain both a BS in
- Multidisciplinary Studies with concentration in Physics and a Master degree in Physics

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012

NSF & AFOSR fund REU site

- Starting in 2012: 8 students from USA institutions.
- 4 from UTB.
- 10 weeks performing research at UTB.
- Expect to have an impact in graduate recruitment but also in increasing reputation statewide.

Texas SPIN-Up workshop at The University of Texas at Austin, May 4-6, 2012