

# Juarez Lincoln Marti International Education Project: an Update.

Jorge Luis and Zoila B. Romeu  
Juarez Lincoln Marti Int'l Ed. Project  
<http://web.cortland.edu/matresearch>  
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Jorge Luis Romeu, Ph.D.

Research Professor, Stats/O.R.

Syracuse University

Email:romeu@cortland.edu

Project Founder/Director

and

Zoila Barreiro Romeu , M.S.

Spanish Teacher

LaFayette High School, NY

Solidarity Officer and Instructor

# Outline

- Quick Review of Project Objectives, Origins, Motivations and Five Main Activities
  - and its Educational Materials and Research
- International Ed. Work Done Since 2005
  - Development of International Professionals
- Social and Solidarity Work
- Accomplishments and Results
- Summary and Conclusions

# Project Statement

- Juarez-Lincoln-Martí (a.k.a. Sierra-Dewey-De La Luz) is completely dedicated to the improvement of higher education in L.A. as well as to the enhancement of the mutual knowledge and understanding between the American and Latin American professionals.
- Toward this goal the Project develops five specific programs for faculty and students:

# Our Five Main Programs

- Teaching faculty development workshops in science, statistics and education.
- Finding scholarships for faculty attendance to conferences and seminars in the US
- Donating educational materials to small, provincial universities that need them.
- Maintaining an email list service on news and information about Stats and Education
- Solidarity programs for nearby population

# Target Populations

- University Faculty/Students in US and LA
  - via educational experiences and development
  - increment mutual knowledge and appreciation
  - via learning each other's language and culture
  - establishment of future professional contacts
- Higher Ed. Institutions in both Areas
  - via establishing of links for credit transfers
  - broaden mutual participation/collaboration.
- Population at large, especially children



# Project Goals

## • Short Term (Tactical)

- Spread information on Statistical Education
- Teach Faculty Development Workshops
- Donation of Math and Science Textbooks
- Move Faculty/Students Between Countries
- Donate materials to children of the areas

## • Long Term (Strategic)

- Contribute to the Improvement of Education
- Improve and Broaden International Relations
- Provide assistance to children in these areas.

# Main Drawbacks Addressed

- Language barrier
  - Project instructors are totally bilingual
  - Spanish-English, and often third language
- Lack of resources
  - We are Non-Profit or low cost services
  - Encourage cost sharing among participants
- Accessibility to provincial institutions
  - Project travels where services are needed.



# Project Origins/Motivations

- During our 1994 Mexican Fulbright stage
  - appreciation of both, Mexican and US needs
  - realization that our biculturalism provided
  - a bridge between both cultures and peoples
- Realization of current programs' weakness
  - regarding science and engineering students
  - and their role in a globally oriented economy
- Verification of the need to train teachers
  - Both in the Higher and Intermediate levels

# Project Reasons

- Behind our Juarez Project efforts
- Described in several newspaper articles
- In English:
  - <http://web.cortland.edu/romeu/mexus.html>
- In Spanish
  - <http://web.cortland.edu/romeu/mexcuba.html>
- And in several published/research papers:
  - <http://www.stat.auckland.ac.nz/~iase/publications/3/3041.pdf>

# Providing Faculty Scholarships

- First and most successful Project Program
- Seventeen Mexican professors
  - Participated in SUNY CIT Conferences
- One Venezuelan Professor
  - Spent one month internship in the US
- One SUNY Administrator
  - Sent to UNAM International Conference
- No longer available, for lack of funds.

# Mexican Scholars to CIT

- Have come from the Universities of:
- Universidad de las Americas, UDLA (3)
- Inst. Tech. Aut. de Mexico, ITESM (2)
- Universidad Hispanoamericana, La Salle,
- Universidades Autonomas de: Hidalgo, Ciudad Juarez, Metropolitana, Q. Roo (2), Guadalajara (2), Sinaloa, Veracruzana (2)

# Faculty Development Workshops

- Our second and most successful program
- To poorly endowed, provincial institutions
- With difficulties in finding instructors
- Teach how to teach using new technology
  - and pedagogical methods that accompany them
- We also teach how to survive the infusion
  - and how to administer the new course
- Over two dozen workshops, in 14 years.

# Workshops Characteristics

- In Provincial and Small Institutions
- In their Vernacular Language (Spanish)
- On using Technology in Science Education:
  - HW, Ed. SW, Internet, Smart Classrooms
- Using Projects and Cooperative Learning
- Contextual/Student Centered Methods
- Distance Learning Techniques/Approaches
- Course Assessments; Teaching techniques



# Faculty Development Problems

- Some Traditional Practical Problems:
  - Lack of funding from many host institutions to pay for Instructor transportation/honorariums
  - Perception of a lower quality from “freebies” (i.e. “you get what you pay for” philosophy)
- Our Project Implementation and Solution:
  - Host supports our stay and local transportation
  - Juarez provides part of the international travel
  - Any “payment” is used toward future visits.

# Some Workshop Topics

- Design of Experiments; introductory Stats
- Modern Pedagogical Methods for Science
- Using MINITAB SW in the Statistics Lab
- GPSS Simulation SW in Statistics Projects
- Using and Administering Student Projects
- Technology Infusion and Administration
- Intro to Distance Learning Techniques
- The Assessment Tools in Education

# Faculty Practical Approach

- We practice what we preach:
  - Working in learning groups
  - Exchange of experiences
  - Adaptation, not imitation
  - In-depth, root-cause analysis
  - Methodology as support tool
  - Final project required
  - Participant presentations

# Donating materials and textbooks

- Our third most successful program
- Dozen boxes of statistics/science textbooks
  - sent by mail with hundreds of books
- Sent to Dozens of universities in Mexico,
  - Venezuela, DR, Argentina, Brazil, Spain, etc
- We have had to solve two key problems
  - obtaining the books and sending them abroad
- Thanks to the solidarity of many colleagues

# Electronic Bulletin

- For educators and researchers
  - in Latin America, Spain and Portugal
- Our fourth most successful program
- Bimonthly news about opportunities
  - in research, study abroad and conferences
  - web pages, educational materials, positions
- Project also maintains a Web Page
  - with educational materials and information

# JLM Project Annual Award

- To an international Educator associated with the JLM Int. Ed. Project
- Does not carry any monetary award
- Given annually since the year 2006
- Not for curriculum, but for commitment
- Several journal editors received it
- Colleagues that enhance statistics in:
  - Applied topics or broader audiences



# Solidarity Program

- Donation of books and school materials
  - To Indigenous schools in Ecuador and Mexico.
- Donation of toys and clothes
  - To Mexico, Ecuador, Colombia, Dom. Republic
- Donation of medicines
  - HIV/AIDS children hospice in the Dom. Republic
- In cooperation with the LaFayette HS students
  - Students donate or collect much of the materials
  - Students also provide time in support activities
  - LaFayette School provides teacher with time to Project

# Educational Research

- For uses in our faculty workshops
- Some are published in scholarly journals
- Labs developed using GPSS and Minitab
  - for introductory, intermediate, advanced
  - using cooperative learning groups
- Experiments to measure their effectiveness
  - have been carried out and reported
  - enhancing the stats education research

## **Some Examples of Educacional Research:**

Teaching Engineering Statistics with Simulation. Journal of the Institute of Statisticians. Vol. 35. No. 4. 1986 (RSS, Series D).

Simulación, Pedagogía y Estadística. Proceedings of the 1994 Mathematics Symposium. ITAM, Mexico.

More On Simulation and Statistical Education. American Journal of Mathematics and Management Sciences; Vols. 3 & 4. 1997.

Assessment of Simulations, Group Learning and Laboratories in the Teaching of Statistics. Proceedings of the 51st International Statistical Institute. Istambul, Turkey. August 1997.

Minitab and Pizza: a workshop experiment. Journal of Educational Technology Systems. Vol. 27(2), 163-168, 1998.

Statistical Assesment of an Experiment to compare traditional vs. laboratory approaches in teaching Introductory Computer Programming. Journal of Educational Technology Systems Vol. 27(4) 319-324, 1999.

## More Examples of Educational Research:

Technology and International Education; Journal of Educational Technology Systems, JETS Vol. 28(4) 305-310, 2000.

Course Administration: the often forgotten component of technology infusion. Journal of Educational Technology Systems. 31(4) 305-310

Teaching Engineering Statistics to Practicing Engineers (ICOTS-7)

A Survey on How Engineers Learn Statistics after Leaving College (ASA Proceedings, Education Section. August 2006).

Enhancing the Statistical Education of Practicing Engineers (Proceedings of the Fall Technical Conference, October 2007).

Group Learning, Conceptual Projects, Simulation Models and Student Presentations in Enticing Engineering Statistics Students (JETS 2008)

Over Two Dozen Tutorials, completely free and accessible in the Web , on statistics applications to engineering and reliability problems (2002-2008). (<http://web.cortland.edu/romeu/urlstats.html>)

# Distance/Internet Work

- Universidad del Comahue, Argentina (98)
  - Developed a Masters Program in O.R.
  - Five International Faculty Working via Internet
  - Development of all Aspects of the Curriculum
  - Program Completed, Approved and Working
- Universidad Veracruzana, MX (00/03/05)
  - Distance Learning used in the Teaching of
  - Faculty Workshops to all Five UV campuses.

# Efforts in Developing International Professionals

- Key goal of our International Project
- Definition of an international professional:
  - get off an airplane and “hit the ground running”
- Some necessary conditions described in:
  - On Preparing International Professionals (in Spanish). Revista La Ciencia y El Hombre; Universidad Veracruzana, Ver. Mexico. Vol. XIV, No. 3. Sept-Dec 2001
- And in several Latin American forums



# Educational Pre-Conditions For an International Plan:

- Common curriculum core
  - in professional and university studies
- Recognition of professional credentials
  - and acceptance of professional mobility
- Establishment of links/network
  - to develop multi-national projects
- Better communications facilities
  - among participating countries

# Student Exchange Models

- **TWO DIFFERENT APPROACHES:**

- **TRADITIONAL (CURRENT) MODEL:**

- Oriented toward humanities (language, history)
- Directed by Office of International Programs

- **OUR PROJECT PROPOSED MODEL:**

- Oriented toward Science and Engineering
- Directed and Operated by Science faculty
- Centered on Science Subjects/Curriculum.

# Pros and Cons of New Model

- **SOME ADVANTAGES:**
  - Subject matter akin to Project director allows:
  - Easier technical transition for students and
  - Larger cooperation from foreign sources
- **SOME DISADVANTAGES:**
  - Possible duplication/coordination problems,
  - Potential turf challenge with the DIE and
  - Potential overload for Faculty Director.

# Student Characteristics

- Business, science and engineering majors
- Juniors/seniors with intermediate language
- Spend some time taking courses in major
- In host's language, with host's students
- Courses must count for their degree
- Immersion preparation before travel (LxC)
- Symmetric for IberoAm and US students.

# NSF 2004-09 Proposals

- Between Syracuse University, USA, and
  - Universidad Veracruzana, Mexico
  - Universidad de Las Americas, Mexico
- Summer Research for Engineering Students
- Complete immersion of all the students
  - in language, culture and science research
- Currently organizing a PASI (NSF Institute)
  - For statistical applications in environment
  - American and Latin American researchers

# Other Research Proposals

- To NSF, in 1995 and 1996
  - Undertake International Research (in ecology)
- To FIPSE, in 1997 and 1998
  - Move 75 student between Mex-US-Canada
- To U.S. Depts. of Education and State
  - Operate an International Project (1999)
  - Teach Faculty Development Courses (2000)
  - Fulbright Speaker Specialist (2001-06)



# Accomplishments

- Remaining alive and growing
- Faculty and student exchanges
- Faculty workshops taught
- Book donations to institutions
- Electronic Bulletin for Ten Years
- Free consultation on US Education
- Social work directed to children

# Statistics Workshops Taught

- Several Weeks of Workshops (98-08):

- Venezuela: U. Romulo Gallegos (UNERG)
- Mexico: Universidad Veracruzana
- Dominican Republic: Catholic University
- Ecuador: National Polytechnic Institute

- One Week Workshops (94-00):

- Mexico: Univ. del Anahuac; UAT Tampico; Univ. UDLA-Puebla, Univ. Veracruzana
- Spain: Univ. de Galicia (Coruna & Santiago); Univ. del Pais Vasco (Bilbao & San Sebastian)

# Other Workshops Taught

- **Two-Day Stats Workshops (95-08):**
  - Mexico: Chapultepec, Hispanoamericana
  - Spain: U. De Galicia; U. Del Pais Vasco
  - Ecuador: ESPOL Polytechnic, Guayaquil
  - Mexico: Universidad Veracruzana
- **Secondary Education Workshops**
  - Mexico: Universidad Veracruzana
  - Dominican Republic: Universidad Catolica
  - Ecuador: Universidad de Guayaquil
  - Several Indigenous Schools in the Andes

# Future work

- Develop more programs and workshops
  - in statistics, math and science education
  - as well as in secondary education areas
- Develop other areas of social interest
  - Providing Solidarity functions to children
  - School materials, clothes, toys, medicine
- Becoming a Non Profit Foundation
  - to obtain more support for our work

# Conclusions

- The Juarez-Lincoln-Marti Project Pursues:
  - Educational Benefits (science knowledge)
  - Institutional Benefits (academic development)
  - Economic Benefits (professional contacts)
  - Political Benefits (international interaction)
  - Social Benefits (to children and general public)
- For Faculty, Students and Peoples involved
- FROM ALL participating countries/societies
- If interested in helping out, contact us!

# Contact Addresses

- Web Page URL
  - <http://web.cortland.edu/matresearch>
- Email Addresses:
  - [romeu@cortland.edu](mailto:romeu@cortland.edu)
- Postal Address:
  - P. O. Box 6134
  - Syracuse NY 13217 USA