

Presentacion Rivera-Reyes
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Curriculum Vitae

Education

- 2010-2015 Utah State University, USA.
 PhD in Engineering Education
 *Title of dissertation: "Task Interpretation and Conceptual Understanding in
 Electronics Laboratory Work"*
 Advisor: Dr. Oenardi Lawanto
- 1996 National University of Honduras, Honduras.
 Master in Business Administration
- 1993 National University of Honduras, Honduras.
 BS in Electrical Engineering

Summary of Teaching Qualifications

- Evidence-based teaching and tutoring
- Motivating students through one-to-one mentoring
- Laboratory instruction
- Curriculum design and innovation
- Classroom management
- Multicultural oriented instruction
- Problem-based learning
- Active learning in classroom

Research Interests/Techniques

- Troubleshooting problem-based learning using metacognition and self-regulated learning
- Metacognition
- Self, Collaborative, and Shared Regulated Learning
- Talk-Aloud, MSLQ (English and Spanish)
- Use of enhanced guided notes

Summary of Industrial/Professional Qualifications

- Project Manager Coordinator
- Teamwork
- Ability to work in interdisciplinary teams
- Expertise developing telecommunication projects
- Operate telecommunication measure and diagnostic instruments such as digital multimeter, oscilloscope, spectrum analyzer, Bit-Error Rate analyzer, and fiber optic splicer.
- Planning
- Evaluation
- Troubleshooting
- Multicultural oriented

Research and Teaching Experience

School of Engineering and Applied Science, SUNY-Buffalo

2018-Today

Lecturer.

Teaching freshman- and sophomore- engineering level courses, including EAS-200, Electrical Engineering Concepts for Non-Majors. Duties and responsibilities include:

- Developing curriculum content for the courses to teach.
- Carrying out research initiatives in course to improve teaching and learning outcomes (blended course and problem-based learning).
- Leading role in managing large courses (coordinating proctoring, grading, and assigned activities).

Department of Electrical Engineering, University of Nebraska-Lincoln

2016-2017

Post-Doctoral Research Associate

Teaching and conducting research in the Department of Electrical Engineering:

Instructor of ELEC-211, Elements of Electrical Engineering I. A total of 125 students, from Agriculture, Biological, Chemical, Civil, and Mechanical engineering majors, are enrolled for spring and fall semester.

Conducting education research in the Department of Electrical Engineering, participating in two research projects.

- **Crossing the Threshold of Problem Solving: Electrical Engineering vs. Chemistry:**
We conducted educational research in determining whether an abstraction threshold exists for students enrolled in different Electrical Engineering courses:
 - ✓ Conducting interviews in problem-solving to instructors, sophomore, and junior engineering students at the University of Nebraska-Lincoln (UNL) and the University of Massachusetts-Boston (UMASS).
 - ✓ Analyzing interviews.
 - ✓ Leading groups of discussion for inter/rater reliability.
 - ✓ Disseminating the findings of the research in presentations at Discipline Based Educational Research Group at UNL and peer-review conference papers.
- **Collaborative Research: Spatial Visualization Skills and Engineering Problem Solving:**
We are investigating how spatial reasoning skills as measured by the mental cutting test (MCT) relate to Electrical Engineering problem solving.

Department of Engineering Education, Utah State University

2013-2015

Teaching Assistant

Teaching Assistant for ENGR-2210, Fundamental Electronics for Engineers in the Department of Engineering Education, College of Engineering. This course is offered during spring, summer, and fall sessions with an approximate enrollment of 90, 20, and 160 students respectively. Duties and responsibilities include:

- Co-developing and modifying curriculum content in course.
- Managing of Canvas Learning Page for course.

- Managing ABET accreditation portfolio, assembly, and assessment.
- Leading innovative software and real-life experiments for practical applications of electronic concepts.
- Proctoring exams, grading, tutoring students, leading help sessions, leading lab sessions, and updating Canvas platform of the course.
- Carrying out research initiatives in course to improve teaching and learning outcomes (blended course).

I was part of the team supporting this course in which the leading instructor, Dr. Oenardi Lawanto, received the Teaching Excellence Award of 2014 awarded by the College of Engineering.

School of Engineering, Technological University of Honduras (UNITEC) 2007-2009
Lecturer/Laboratory Instructor

Instructor of TEL 301 Transmission System I, a course for senior students enrolled in Telecommunication Engineering major, Department of Mechatronics, College of Engineering.

Duties and responsibilities include:

- Designing and teaching TEL 301 course, an introduction to systems of high data transmission through microwave and fiber optics, point-to-point and point-to-multipoint systems, techniques of multiplex, and techniques to design paths for microwave links.
- Supervising students during their off-campus internship as part of the curriculum of this course.
- Teaching lab for TEL 301 to 10 senior students enrolled in Telecommunication Engineering major.

Department of Physics, National University of Honduras (UNAH) 1992-1994
Laboratory Instructor

Lab instructor of Physics in the Department of Physics, Center for General Studies. Duties and responsibilities:

- Teaching lab sessions for Physics I to 150 freshman students enrolled in different engineering majors.
- Teaching lab session for Physics II to 90 sophomore students enrolled in different engineering majors.
- Teaching lab sessions for Medical Physics I to 120 students enrolled in different science majors.

Publications (Peer-Reviewed)

Rivera-Reyes, P., Pérez, L.C. and Delahunty, T. (2018, accepted). Exploring Students' Abstraction in Signals and Systems Course. *Journal of Engineering Education*.

Rivera-Reyes, P., Pérez, L.C. and Delahunty, T. (2018, accepted). WIP: Measuring the Cognitive Demand in Undergraduate Electrical Engineering Curricula. *IEEE Transaction in Education*.

Rivera-Reyes, P., Pérez, L.C. and Delahunty, T. (2018, accepted). WIP: Measuring the Abstraction Threshold in an Electrical Circuits Course. Paper accepted for the American

Society for Engineering Education conference to be held in Salt Lake City, UT, OH, June 2017.

- Delahunty, T., Pérez, L.C. and Rivera-Reyes, P. (2018). Exploring the Role of Spatial Skill in Electrical Circuits Problem Solving. Engineering Design Group Conference, Kingston, Jamaica.
- Rivera-Reyes, P., Lawanto, O. and Pate, M. L. (2017). Students' Task Interpretation and Conceptual Understanding in Electronics Laboratory. IEEE Transactions on Education, Vol. 60, Issue 4, p. 265-272.
- Rivera-Reyes, P., Lawanto, O. and Pate, M.L. (2016). Understanding Student Coregulation in Task Interpretation during Electronics Laboratory Activities. International Education Studies, Vol. 9, Issue 7, p. 1-9.
- Rivera-Reyes, P. and Pérez, L.C. (2016). Abstraction and Problem Solving in an Electrical Engineering Circuits Course. Erie, PA: Frontiers in Education (FIE) Annual Conference.
- Pérez, L.C. and Rivera-Reyes, P. (2016). Abstraction Thresholds in Undergraduate Electrical Engineering Curricula. New Orleans, LA: American Society for Engineering Education (ASEE) Annual Conference.
- Rivera-Reyes, P., Lawanto, O. and Boyles, R. (2013). Bridging Engineering and Technology Education Fields: Providing Synthesis and Knowledge through Historical Perspectives of Engineering and technology Education Construct. Atlanta, GA: American Society for Engineering Education (ASEE) Annual Conference.
- Rivera-Reyes, P. and Boyles, R. (2013). Training in Troubleshooting Problem-Solving: Preparing Undergraduates Engineering Students for Industry. Atlanta, GA: American Society for Engineering Education (ASEE) Annual Conference.
- Rivera-Reyes, P. and Boyles, R. (2013). Self-Regulated Learning for Engineering Context. Poster presentation. Atlanta, GA: American Society for Engineering Education (ASEE) Annual Conference.
- Rivera-Reyes, P., Boyles, R. and Lawanto, O. (2012). Offsetting Gender Bias in Engineering: Gender Equity Internet Controlled Fish Farm Curriculum Activity. San Antonio, TX: American Society for Engineering Education (ASEE) Annual Conference.

Leadership and Service

- Member of the American Society for Engineering Education (ASEE) since 2013.
- Reviewer of conference papers for the American Society for Engineering Education (ASEE). Total articles reviewed (March 2018): 65.
- Reviewer of conference papers for the Frontiers in Education (FIE). Total articles reviewed (March 2018): 14.
- Reviewer of articles for the Advances in Engineering Education Journal and IEEE Transactions in Education. Total articles reviewed (March 2018): 2.
- Reviewer of articles for the Institute of Electrical and Electronics Engineers (IEEE), Division of Transactions on Education. Total articles reviewed (March 2018): 2.
- Evaluator of undergraduate students' proposals in the field of education for the Undergraduate Creative Activities and Research Experience (UCARE) at the University of Nebraska-Lincoln. Total proposals evaluated (May 2016 and May 2017): 32.

Former member of the Postdoctoral Advisory Council (PAC) at the University of Nebraska-Lincoln. Secretary for the period January 2017 - December 2017.

Former member of the Disciplined Based Education Research group (DBER) at the University of Nebraska-Lincoln. January 2016 - December 2017.

Former member of the Teaching & Learning in STEM community at the University of Nebraska-Lincoln. January 2016 - December 2017.

President and founder member of the chapter Utah State University of the American Society for Engineering Education, period 2014 - 2015.

Supervisor and counselor of senior students of Telecommunication Engineering during off-campus internships (400 hours of duration).

Member of the Association of Mechanical, Electrical, and Chemistry Engineers of Honduras.

Work Experience

Claro – Wireless Provider, Honduras (*www.claro.com.hn*) **2008-2009**

Transmission Planning Manager

Responsible for the design of the transmission backbone of the entire network, including:

- Managing the roll-out stage in coordinating the installation of microwave links for 1,200 radio base stations in 9 months.
- Evaluating new proposal of expansion for the transmission network. The transmission backbone was built including 850 microwave links of different capacities, from 10 to 9,600 megabits per second.
- Coordinating the design of microwave links and fiber optic rings in accordance to the policies of service level of the company.

Outstanding achievement was made in the roll-out stage installing more than 1,000 radio base stations in a record time considering the telecom regulations and topographical conditions.

Columbus Networks -Telecom Carrier, Honduras (*www.columbus-networks.com*) **1999-2008**

Access System Manager

Responsible for the design, installation, operation, and maintenance of wireless systems operating in 3 and 10 Gigahertz, including:

- Coordinating the installation, commissioning, and put in service of Local Multipoint Distribution Service System (LMDS), a broadband wireless access system.
- Coordinating the installation, operation, and later maintenance of microwave links (medium and high capacity) and fiber optic rings (SDH, STM-64).
- Coordinating the maintenance of ancillary equipment for 45 sites for telecommunications: air conditioner, power, grounding equipment among others.
- Evaluating performance, managing, and effectively training technicians in microwave, fiber optic, and wireless system components.

After the fourth year of operation, the company became the second largest in the country for the amount of points of connections due to the installations performed by the technical department I was in charge at that time.

Millicom International Cellular - Wireless Service, Honduras, (www.tigo.com.hn) 1996-1999
Planning & Cell Field Engineer

Responsible for installation, commissioning, and put in service of analog cellular systems and medium capacity microwave links, including:

- Installing DC power, batteries, and grounding systems.
- Installing radio base stations for cellular network coverage.
- Installing 34 Megabits/second microwave links.
- Designing new sites for analog cellular coverage. It includes software management and site surveys to define new radio base station sites.
- Compiling and analyzing traffic information to design growth plans for trunk interconnections with the Public Switch Telephone Network (PSTN).
- Designing the microwave network to support the radio base infrastructure.
- Elaborating technical specifications for the Government's telecommunication regulator.
- Supporting the installation department in "put in service" radio base stations and microwave links.
- Supporting the operation & maintenance department in preventive and corrective radio base station and microwave links maintenance.
- Evaluating performance, managing, and effectively training technicians in microwave systems.

I was part of the pioneer technical team installing the first cellular network in the country.

Professional Certifications and Courses

LSY-9600 Long Range High Data Transmission Microwave, operation & maintenance (1 week),
Alcatel Industry of Telecommunications, Mexico D.F., Mexico, Oct 2006.

ADD-DROP SDH Multiplexer NR2500, operation and maintenance (1 week), *UTStarcom Inc,*
Tegucigalpa, Honduras, June 2005.

ADD-DROP SDH Multiplexer 1651/1661, operation and maintenance (1 week), *Alcatel Industry*
of Telecommunications, Mexico D.F., Mexico, July 2003.

USY-9600 Urban High Data Transmission Microwave, operation and maintenance (1 week),
Alcatel Industry of Telecommunications, Mexico D.F., Mexico, July 2003.

Certified Alvarion Network Administrator –CANA- (1 weeks), *Alvarion Professional*
Educational Center, Miami, FL, USA, July 2003.

Certified Alvarion System Specialist –CASS- (2 weeks), *Alvarion Professional Educational*
Center, Miami, FL, USA, May 2002.

RAD equipment certification: Multiplex Access, Compressed Voice, and Last Mile (1 week),
RAD Data Communications, Panama, Panama, Aug 2000.

Passport, ATM-Frame Relay switch, course of operation and maintenance (1 week), *Nortel*
Networks Educational Services, Milpitas, CA, USA, Jan 2000.

WalkAir Wireless Local Loop, course of instruction, commission, and maintenance (7 days),
Siemens International Center, Lisbon, Portugal, Dec 1999.

- Frequency Planning for cellular systems AMPS/NAMPS (2 days), *Motorola Cellular Infrastructure Group, Mundelein, IL, USA, July 1997.*
- Ericsson Microwave Minilink-E, course of installation, operation, and maintenance (1 week), *Ericsson Telecom of Mexico, Tegucigalpa, Honduras, Aug 1997.*
- Cell Site installation and grounding systems (1 week), *Motorola Cellular Infrastructure Group, Mundelein, IL, USA, July 1997.*
- HD-II Cell Site, course of instruction, operation and maintenance for radio base station (1 week) *Motorola Cellular Infrastructure Group, Mundelein, IL, USA, June 1997.*
- Switch mate, course of instruction for EMX-2500 cellular system (1 week), *Motorola Cellular Infrastructure Group, Arlington Heights, IL, USA, July 1996.*
- Operation and Maintenance Digital Cross-Connector DACS-II (1 week), *AT&T-Lucent Technologies, México D.F., México, Jan 1996.*
- Fiber Optic theory course for Telecommunication Engineers (5 weeks), *Central American Institute of Telecommunications, Tegucigalpa, Honduras, Aug 1994.*
- Basic Transmission Technologies for Telecommunication Engineers (5 weeks), *Central American Institute of Telecommunications, Tegucigalpa, Honduras, Sep 1993.*
- Residential and Industrial Electrical Installations (50 hours), *Educational Institute S. de R.L., Tegucigalpa, Honduras, Jan-May, 1991.*

Last updated March 2018.