Aidsa I. Santiago, Ph. D.

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Professional Experience

- Assistant Professor, Department of General Engineering, University of Puerto Rico, Mayagüez, PR, [2009 – present]
- Research Assistant, Purdue University, West Lafayette, IN, [2007 – 09]
- Instructor, Department of General Engineering, University of Puerto Rico, Mayagüez, PR, [2000 – 07]
- Instructor, Department of Natural Sciences, Interamerican University, Aguadilla, PR, [1996 – 2000]

Professional Preparation

- Ph.D., Engineering Education, Purdue University University, West Lafayette, IN, [2009]
- M.S., Industrial Engineering, University of Puerto Rico, Mayagüez, PR, [2000]
- B.S., Industrial Engineering, University of Puerto Rico, Mayagüez, PR, [1994]

Publications

- Streveler, R.A., Miller, R.L., Santiago Roman, A.I., Nelson, M.A., Geist, M.R., and Olds, B.M. (2011). Using the "assessment triangle" as a framework for developing concept inventories: a case study using the thermal and transport concept inventory. International Journal of Engineering Education, 27(5), 1-17.
- Miller, R.L., Streveler, R.A., Yang, D., Santiago Roman, A.I. (2011) Identifying and Repairing Student Misconceptions in Thermal and Transport Science: Concept Inventories and Schema Training Studies. Chemical Engineering Education. 45(3), 203-210.
- Süer, G. A., Pico, F., and Santiago, A. (1997). Identical machine scheduling to minimize the number of tardy jobs when lot-splitting is allowed. Computers & Industrial Engineering, 33(1-2), 277-280.

Conference/Poster Presentations

- Magana, A.J., Santiago-Román, A.I., Santiago, N.G., et.al, "Students' Understanding of Computational Problem-Solving Tasks", presented at the ASEE Annual Conference and Exposition. Vancouver, Canada, 2011.

- Santiago-Román, A.I., Papadopoulos, C., Ohland, M., Streveler, R.M. et.al, "Panel Discussion: Completing the Cycle of Innovation in Engineering Education by Fostering Implementation of Best Practices", ASEE Annual Conference and Exposition. Vancouver, Canada, 2011.
- Santiago-Román, A.I., Streveler, R.A., DiBello, L., "The Development of Estimated Cognitive Attribute Profiles for the Concept Assessment Tool for Static", paper presented at the 40th ASEE/IEEE Frontiers in Education Conference, Washington, DC, 2010.
- Castro-Sitiriche, M., O'Neill-Carrillo, E., Papadopoulos, C., Pomales-García, C., Santiago-Román, A.I., Seguel, J., "Work in Progress - Leveraging Accreditation Efforts to Foster Innovation in Engineering Education", paper presented at the 40th ASEE/IEEE Frontiers in Education Conference, Washington, DC, 2010.
- Papadopoulos, C., Santiago-Román, A,I., Portela, G., "Work in Progress – Developing and Implementing an Inverted Classroom for Engineering Statics", paper presented at the 40th ASEE/IEEE Frontiers in Education Conference, Washington, DC, 2010.
- Santiago Román, A.I., Streveler, R. A., Steif, Paul, DiBello, Louis, "The Development of a Q-matrix for the Concept Assessment Tool for Statics", paper presented at the ERM Division of the ASEE Annual Conference and Exposition. Louisville, KY, 2010.
- Douglas, T., Santiago Román, A.I., Streveler, R. A., "Does Conceptual Understanding Matter: Patterns of Error in Senior Engineering Students Problem Solving in Statics", paper presented at the ERM Division of the ASEE Annual Conference and Exposition. Louisville, KY, 2010.
- Yang, D., Streveler, R. A., Miller, R., Santiago Román, A.I., "Can Instruction Reinforce Misconceptions? Preliminary Evidence from a Study with Advanced Engineering Student", paper presented at the AERA Annual Meeting, Denver, CO, 2010.
- Yang, D., Santiago Román, A.I., Streveler, R. A., Miller, R., "Repairing Student Misconceptions Using Ontology Training: A Study with Advanced Engineering Students", paper presented at the ERM Division of the ASEE Annual Conference and Exposition. Louisville, KY, 2010.
- Papadopoulos, C., Santiago Román, A.I., "Implementing an Inverted Classroom Model in Engineering Statics", paper presented at the Mechanics Division of the ASEE Annual Conference and Exposition. Louisville, KY, 2010.
- Miller, Ronald L., Streveler, Ruth A., Yang, Dazhi, Santiago Román, A.I., "Identifying and Repairing Students' Misconceptions in Thermal and Transport Science", paper presented at the 2009 AIChE Annual Meeting. Nashville, TN, 2009.
- Yang, D., Streveler, R. A., Miller, R., Santiago Román, A.I., "Repairing Misconceptions: A Pilot Study with Advanced Engineering Students on Their Use of Schema Training Modules", poster presented at the ASEE Annual Conference and Exposition. Austin, TX, 2009.
- Santiago Román, A.I., Clarke Douglas, T., Enersen, D. L., Streveler, R. A., Geist, M. R. , Sulzbach, C. S. "Senior Engineering Students' Conceptualization of Force: The Relationship Between Two Different Conceptual Frameworks", presented at AERA Annual Meeting, San Diego, CA, 2009.

- Clarke Douglas, T., Streveler, R. A., Santiago Román, A.I., "Surely students know this!: Patterns of error in senior engineering students problem-solving in Statics", presented at ASEE IL/IN Section Conference. Valparaiso, IN, 2009.

Research Projects

- Leveraging Simulation Tools to Deliver Ill-Structured Problems: Enhancing Student Problem-Solving Ability in Statics and Mechanics of Materials (TUES Phase 1) [DUE-1044866 ($199,983)]
- BRIGE: Testing the efficacy of concept inventories with bilingual students: The application of the Concept Assessment Tool for Statics at the UPRM [EEC-1032563 ($174,990)] .

Current Collaborations

- ProTect: Provide high quality interdisciplinary biomedical and non-biomedical training, education and mentoring for a diverse group of students at participating institutions in the PROTECT program .
- Collaborative Research: Integrating Cognition and Measurement with Conceptual Knowledge: Establishing the Validity and Diagnostic Capacity of Concept Inventories.
- Developing Ontological Schema Training Methods to Help Students Develop Scientifically Accurate Mental Models of Engineering Concepts.

Synergistic Activities

- Director of the Strategic Engineering Education Development (SEED) Office, UPRM, [since 2010]
- Representative of the Dean of Engineering on Academic Affairs, UPRM, [Oct. 2010 - Feb. 2011]
- Member of the Mechanics Committee, General Engineering Department, UPRM, [since 2000]
- Member of the Computers Committee, General Engineering Department, UPRM, [since 2000]

Awards and Recognitions

- FIE 2010 New Faculty Fellow Grant, [October 2010]
- ASEE ERM 2010 Apprentice Faculty Grant, [June 2010]
- UPRM 2010 Female Innovator in Engineering Education, [February 2010] § Tau Beta Pi Honor Society, [since 2008]
- Golden Key Award Honor Society, [since 2008]

Professional Memberships

- American Society for Engineering Education (ASEE), [since 2007]

- American Educational Research Association (AERA), [since 2008]

Professional Activities

- NSF Peer Review Panelist, [since 2010]
- FIE and ASEE paper reviewer, [since 2008]