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Remy Dou

Curriculum Vitae

Spec. Physics Education

Spec. Research Methodologies

Research

and Statistics

March, 2017

EDUCATION Ph.D. Florida International University Curriculum & Instruction,

Florida International University Biological Sciences Dec., 2004 B.S.

EXPERIENCE

2019 – <i>Current</i>	 Assistant Professor (Intensive Research) Florida International University, STEM Transformation Institute, Department of Teaching and Learning Fellow, FIU Extreme Events Institute Summary: Contributions to research on informal STEM learning, STEM identity formation, and STEM career choice PI: CAREER: Talking Science: Early STEM Identity Formation Through Everyday Science Talk Noyce Scholar Mentor Pre-service and in-service STEM teacher preparation instructor
2017 – 2019	 Visiting Clinical Assistant Professor (Significantly Enhanced Research) Florida International University, STEM Transformation Institute, Department of Teaching and Learning Summary: Contributions to research on informal STEM learning, STEM identity formation, and STEM career choice Natural Hazards Engineering Research Infrastructure (NHERI) Wall of Wind
	 (WOW), Education Research Director Verizon Innovative Learning for minority males program at FIU, Education Research Director Noyce Scholar Mentor Pre-service and in-service STEM teacher preparation instructor Institutional service: Math Strike Force; Connect4Success
2016 – 2017	 Postdoctoral Research Associate University of Maryland, College Park, Department of Physics Summary: Contributions to research lines related to faculty practices around web-based, curricular resources for Introductory Physics for the Life Sciences UX design of web-based user-interface that promotes adoption of active-learning pedagogies and professional community development for IPLS faculty

2013 – 2016	Graduate Assistant Florida International University, Department of Teaching and Learning Summary:
	 Major contributions to projects related to career persistence research in physics, focusing on the mediating role of in- and out-of-class social networks on self-efficacy and interest formation
	 Examining relationships between informal science learning experiences and STEM career choices from large-scale data
	 Institution-level financial analysis of reformed intro physics courses
2011 – 2013	 Albert Einstein Distinguished Educator Fellow National Science Foundation, Education & Human Resources Directorate Summary: Special appointment to the White House Office of Science & Technology Policy Fellow in the Advancing Informal STEM Learning program Fellow in the Presidential Awards for Excellence in Mathematics and Science Teaching program
2005 – 2011	 Science Department Director Miami Christian School Summary: Led efforts related to development of K-12 science curriculum Led teacher professional development in science and technology Taught life sciences, chemistry, and physics

PUBLICATIONS IN DISCIPLINE

- **Dou, R.** & Cian, H. (*Under review*). Constructing "STEM identity": Test of an expanded identity model. *Journal of Research in Science Teaching.*
- Cian, H., **Dou, R.**, Palma-D'Souza, E., Castro, S., & Martinez, A. (*Under review*). The central role of parents in STEM identity development through everyday science talk. *American Educational Research Journal.*
- **Dou, R.**, Bhutta, K., Ross, M., Kramer, L., & Thamotharan, V. (2020). The effects of computer science stereotypes and interest on middle school boys' career intentions. *ACM Transactions on Computing Education.* https://dl.acm.org/doi/abs/10.1145/3394964
- Dou, R. & Cian, H. (2020). The relevance of childhood science talk as a proxy for college students' STEM identity at a Hispanic Serving Institution. *Research in Science Education*, 50, 1–13. https://doi.org/https://doi.org/10.1007/s11165-020-09928-8
- **Dou, R.,** Hazari, Z., Dabney, K., Gerhard, S., & Sadler, P. (2019). Early informal STEM experiences and STEM identity: The importance of talking science. *Science Education*, 103:623-637.
- **Dou, R.,** Teodorescu, R., Madsen, A., Redish, E., & Reeves, M. (2019). Examining course syllabi: Introductory physics for life sciences. *Physical Review Physics Education Research*, *15*(2), 020143.
- **Dou, R.** & Zwolak, J.P. (2019). Practitioner's guide to social network analysis: Examining physics anxiety in an active-learning setting. *Physical Review Physics Education Research*, *15*(2), 020105.
- Williams, E.A., Zwolak, J., **Dou, R.**, & Brewe, E. (2019). Engagement, integration, involvement: Supporting academic performance and developing a classroom social network. *Physical Review Physics Education Research*, *15*(2), 020150.
- **Dou, R.**, Brewe, E., Potvin, G., Zwolak, J.P., & Hazari, Z. (2018). Understanding the development of interest and self-efficacy in active-learning undergraduate physics courses. *International Journal of Science Education*, *40*(13), 1587-1605.
- Zwolak, J.P., **Dou, R.**, & Brewe, E. (2018). Student perceptions of the value of out-of-class interactions: Attitudes vs. practice. In *Proceedings of the 2017 Physics Education Research Conference* (pp 480-483). Cincinnati, OH.

- Brewe, E., **Dou, R.**, & Shand, R. (2018). Costs of success: Financial implications of implementation of active learning in introductory physics courses for students and administrators. *Physical Review Physics Education Research*, *14*(1), 010109.
- Zwolak, J. P., Dou, R., Williams, E. A., & Brewe, E. (2017). Students' network integration as a predictor of persistence in introductory physics courses. *Physical Review Physics Education Research*, *13*(1), 1–14. <u>http://doi.org/10.1103/PhysRevPhysEducRes.13.010113</u>
 - Featured in Editor's Choice in Science: "The Physics of Social Butterflies" 356, 6335 (2017)
- Dou, R., Brewe, E., Zwolak, J. P., Potvin, G., Williams, E. A., & Kramer, L. H. (2016). Beyond performance metrics: Examining a decrease in students' physics self-efficacy through a social networks lens. *Physical Review Physics Education Research*, 12(2), 020124. <u>http://doi.org/10.1103/PhysRevPhysEducRes.12.020124</u>
- **Dou, R.** (2016). Traversing STEM: Creating pathways for social justice in the United States. In 2016 SFERC: Fifteenth Annual South Florida Education Research Conference (pp. 30–38). Miami, Florida: Florida International University.
- Williams, E., Brewe, E., Zwolak, J., & Dou, R. (2015). Understanding centrality: Investigating student outcomes within a classroom social network. In *Proceedings of the 2015 Physics Education Research Conference* (pp. 1–4). College Park, MD.
- Dou, R., & Brewe, E. (2014). Network centrality and student self-efficacy in an interactive introductory physics environment. In P. V. Engelhardt, A. D. Churukian, & D. J. Jones. (Eds.), 2014 PERC Proceedings (pp. 67–70). Minneapolis, MN. doi:10.1119/perc.2014.pr.013
- Jose, S. & Dou, R. (October, 2014). Fostering partnerships between local educators and national STEM programs. *The Florida Science Teacher*, 16 – 19.
- Dou, R. & Gibbs, K. (2013). Engaging all students in the pursuit of STEM careers. *School Science Review*, 95(351), 106-112.
- **Dou, R**. (August, 2013). Change is coming: the impact of the next generation science standards. *SEEN Magazine*. (15.2). Retrieved from http://www.seenmagazine.us/articles/articledetail/articleid/3258/change-is-coming-the-impact-of-the-next-generation-science-standards.aspx
- Dou, R., Hogan, D., Kossover, M., Spuck, T., & Young, S. (August 2013). Defusing Diffusion. *The American Biology Teacher*, 75(6), 391-395.
- **Dou, R**. (2013). Editorial: Encouraging Authentic Learning Experiences. *The Journal of Experimental Secondary Science*, 2(4), http://www.jes2s.com/April2013/dou_editorial.pdf.
- Dou, R. (2012). Places to Go, People to See: Informal Science Education in Florida. *The Florida Science Teacher.*
- Dou, R. (2012). Remy Dou Reporting. *The Florida Science Teacher*, 29(1).

BOOK RELATED CONTRIBUTIONS

- Hite, R., Vieyra, R., Milbourne, J., **Dou, R.**, Spuck, T., & Smith, J.F. (2020). STEM Teacher Leadership in Policy. In C. Johnson, M. Mohr-Schroeder, T. Moore, & L. English (Eds.), *Handbook of Research on STEM Education* (Ch. 37). London, UK: Routledge/Taylor & Francis.
- Spuck, T., Rust, T., Jenkins, L., & Dou, R. (Eds.). (2018). Best Practices in STEM Education: Innovative Approaches from Einstein Fellow Alumni (2nd ed.). New York, NY: Peter Lang Publishing.
- Dou, R. (2014). Alternative Reality: Gamifying Your Classroom. In *Einstein Fellows Best Practices* in STEM Education. New York: Peter Lang Publishing.ⁱ
- Dou, R., & Rust, T. (2014). Integrating Informal STEM Learning into Your Curriculum. In *Einstein Fellows Best Practices in STEM Education*. New York: Peter Lang Publishing.ⁱⁱ

PRESENTED PAPERS, POSTERS, AND LECTURES

INVITED/PEER-REVIEWED

• Cian, H. & **Dou, R.** *Experiencing childhood science talk: Identity development of STEM majors at a Hispanic Serving Institution*, American Educational Research Association Annual Meeting, San Francisco, CA (*April, 2020*).

- Dou, R. & Cian, H. A mixed-methods study of everyday science talk and STEM identity development, National Association for Research in Science Teaching Annual Conference, Portland, OR (March, 2020).
- **Dou, R.** *The physics of wind engineering: A workshop for STEM teachers.* American Association of Physics Teachers Winter Conference, Orlando, FL, (January, 2020).
- **Dou, R.** *Promoting everyday science talk to nurture science identities in individuals from Latino/Hispanic communities,* Association of Zoos and Aquariums Annual Conference, New Orleans, LA (September 9, 2019).
- Hazari, Z., **Dou, R.,** Sonnert, G., & Sadler, P. *Breaking with the tradition: How informal learning experiences contribute to physics identity development*, Physics Education Research Conference, Provo, UT (July 25, 2019).
- Dou, R., Bhutta, K., Ross, M., Thamotharan, V., & Kramer, L. Computer science stereotypes and identity: Two career-choice models for informal programs to consider, National Association for Research in Science Teaching Annual Conference, Baltimore, MD (April 3, 2019).
- Dou, R., Hazari, Z., Dabney, K.P., Sonnert, G. & Sadler, P.M. Examining the effect of early informal STEM experiences on STEM identity: The importance of talking science, Invited Poster, Association of Zoos and Aquariums Annual Conference, Seattle, WA (September, 2018).
- Dou, R., Hazari, Z., Dabney, K.P., Sonnert, G. & Sadler, P.M. Examining the effect of early informal STEM experiences on STEM identity: The importance of talking science, National Association for Research in Science Teaching Annual Conference, Atlanta, GA (March, 2018).
- **Dou, R,** & Chowdhury, A. *Transforming wind engineering: CES* 3580, Spring 2018 DBER Seminar Session, Florida International University (February, 2018).
- Dou, R., Brewe, E., Potvin, G., Zwolak, J.P., & Hazari, Z. *The risks we take*, National Association for Research in Science Teaching Annual Conference, San Antonio, TX (April, 2017).
- Dabney, K. P., Johnson, T. N., Hazari, Z., Dou, R., Sonnert, G., & Sadler, P. M. Elementary, middle, and high school out-of-school time science experiences and STEM career interest, American Educational Research Association Annual Conference, San Antonio, TX (April, 2017).
- **Dou, R.**, *Beyond performance metrics*, National Association for Research in Science Teaching Annual Conference, Baltimore, MD (April 16, 2016).
- **Dou, R.**, *Beyond performance metrics*, American Association for the Advancement of Science Annual Conference, Washington, DC (February 13, 2016).
- Speaker at U.S. Department of State International Visitor Leadership Program (2013)
- Phipps, A. & **Dou, R.**, *High impact public/private partnerships for K-12 sustainability education*, Green Schools National Conference, West Palm Beach, FL (February 23, 2013)
- Dou, R., Engaging your students in STEM, Center for Excellence in Education, McLean, VA (2013)
- Dou, R., The current climate of STEM education in America, Panelist, Triangle Coalition 12th Annual STEM Education Conference, Arlington, VA (September, 2012)
- **Dou, R.**, Innovative methods to retain diversity in the STEM pipeline, American Association for the Advancement of Science Diversity Forum, Washington, DC (2012)
- Gibbs, K. & **Dou**, **R**., *Evidence-based framework for design and evaluation of STEM interventions*, National Science Foundation "Investing in Diversity" series, Arlington, VA (2012)
- **Dou, R.**, *Panelist*, White House Summit on Environmental Education, Washington, DC (April 16, 2012)

CONTRIBUTED

- **Dou, R.,** & Brewe, E., Social cognitive responses to network stimuli in an interactive introductory classroom, Contributed Poster, Physics Education Research Conference, College Park, MD (July 30, 2015).
- **Dou, R.,** & Brewe, E., Centrality and student self-efficacy in an interactive introductory physics environment, *Contributed Poster*, Physics Education Research Conference, Minneapolis, MN (July 30, 2014).
- **Dou, R.**, MindMeld: Science and engineering competition, American Association of Physics Teachers Summer Conference, Minneapolis, MN (July 30, 2014).

- **Dou, R.,** Defusing diffusion, Florida Association of Science Teachers Conference, Miami, FL (October 25, 2013).
- Dou, R., Becoming an affective teacher: A look at the non-cognitive factors that influence STEM engagement, National Science Teachers Association National Conference, San Antonio TX (April 13, 2013).

CURRENTLY FUNDED PROPOSALS

• National Science Foundation – PI (2019 – 2024; Award #1846167). CAREER: Talking Science: Early STEM Identity Formation Through Everyday Science Talk. \$802,250.

PENDING PROPOSALS

- National Science Foundation, AISL PI. Collaborative Research: Creating Opportunities for Practicing Scientific Identities in Zoos. \$2,657,912.
- Lyle Spencer Research Awards Program Co-PI. Engaging in the Token Economy of STEM Education: Its Impact on Elementary Teaching. \$700,000.
- Florida International University, Provost-WPHL Humanities Research Grants for 2020-2021 PI. *Translanguaging Across STEM Learning Environments.* \$3,988.96.

REVIEW AND ADVISORY PANELS

- Chair External Policy and Relations Committee, NARST (2020 *Present*)
- Editorial Board Member for the Journal of Research in Science Teaching (2019 Present)
- Online STEM Resources Roundtable, White House Office of Science and Technology Policy (2020)
- Sub-Committee Chair External Policy and Relations Committee, NARST (2017 2020)
- Reviewer for the National Science Foundation, Education and Human Resources (EHR) Directorate, and Mathematical and Physical Sciences Directorate (2014, 2016 – 2019)
- Editorial Board Member for the Journal of Microbiology & Biology Education (2016 2018)
- Reviewer for the Federal Department of Education (2012, 2015-2016)
- Secondary-Biology Concept Inventory Biology Expert Panel Member, Ohio State University (2016)
- Reviewer for the Air Force Association Educator Grant (2013, 2014, 2016)
- Graduate Advisory Board Member, Florida International University (2015-16)
- Finals Judge, Siemens We Can Change the World Challenge (2012, 2013)
- Reviewer for the DC Children and Youth Trust Corporation (2012)

AWARDS AND FELLOWSHIPS

- 2019 Faculty Research Award Recipient, Florida International University, Department of Teaching and Learning
- 2019 Fellow, Florida International University Extreme Events Institute (Current)
- 2017 Worlds Ahead Graduate, Florida International University
- 2017 Jhumki Basu Scholar Award, National Association for Research in Science Teaching
- 2016 School of Education Scholarship, Florida International University
- 2016 First place winner, Education, American Association for the Advancement of Science Student Poster Competition
- 2015, 2016 Student Government Association Graduate Scholarship, Florida International University
- 2015 Physics Education Research Topical Group Travel Grant
- 2015 Air Force Association Educator Grant
- 2014 Robert R. Bellamy Scholarship, College of Education, Florida International University
- 2014 Lead grant writer and recipient of an ARISS contact via NASA's Teaching from Space Office
- 2011, 2012 Albert Einstein Distinguished Educator Fellowship
- 2012 Highlights Foundation, Science Writing Bootcamp Scholarship
- 2010 ING Unsung Heroes Award
- 2010 Classroom Earth's National High School Challenge Grant, National Environmental Education Foundation and the Weather Channel

- 2009 Selected Claes Nobel Educator of Distinction; National Society of High School Scholars
- 2009 Toyota Tapestry Grant, National Science Teachers Association and Toyota Motors Sales, U.S.A. \$10,000.

OTHER PROFESSIONAL HIGHLIGHTS

- Department Editor for the American Biology Teacher (2013 2019)
- Working group member at the National Science Foundation developing the 2014 Science of the Winter Olympics NBC Learn video series (2013)
- Administrator of NSF's Learning360 Facebook page (2012 2013)
- NASA's Microgravity Experience for Educators Participant (2011 2012)
- Aeroponics in Space I and II Project Director: 8th-12th grade students designing experiments and gathering data on the viability of aeroponics (2009 2011)
- Developer and cofounder of MindMeld Science and Engineering Competition (2006 2011)

CERTIFICATIONS

• Project Wild, Project Aquatic Wild – Council for Environmental Education (CEE)

HIGHER EDUCATION TEACHING EXPERIENCE

- SMT 3100 Knowing and Learning; Fall 2016-19, Summer 2017-18, Spring 2019-20
- SMT 6105 Knowing and Learning in STEM Education (New course development)
- SMT 4311 Advanced Content and Methods of Teaching Elementary Science; Spring 2019
- SMT 4301 Classroom Interactions; Spring 2018
- EDF 3251 Classroom Management; Fall 2017-18
- MAE 4394 Perspectives of Math and Science; Spring 2014-16
- SCE 4894 Nature of Math and Science; Fall 2013-15
- SCE 6315 Instruction in Elementary Science Teaching; Fall 2013

MENTORING

POSTDOCTORAL RESEARCH ASSOCIATES

 Heidi Cian, Postdoctoral Research Associate (2019 – Present) – Informal STEM education research, Talking Science Project, Florida International University

GRADUATE STUDENTS

- Ivan Ceballos PhD in Higher Education, Department of Educational Policy Studies (Committee Member)
- Alberto Diaz, PhD Candidate PhD in Higher Education, Department of Educational Policy Studies, (Committee Member)
- Jennifer Murray PhD in Higher Education, Department of Educational Policy Studies, (Committee Member)
- David Riera PhD in Curriculum & Instruction, Department of Teaching & Learning (Committee Member)

UNDERGRADUATE RESEARCH ASSISANTS

- Sheila Castro, Undergraduate (2019 Present) Currently mentoring this student through a research experience in the field of informal STEM learning and STEM identity development.
 Products:
 - Cian, H., Dou, R., Palma-D'Souza, E., Castro, S., & Martinez, A. (Under review). The central role of parents in STEM identity development through everyday science talk. *American Educational Research Journal.*
- Valentina Espinosa, Undergraduate (2019 Present) Currently mentoring this student through a research experience in the field of informal STEM learning and STEM identity development.

- Cristal Kelly, Undergraduate (2019 Present) Informal education research in computer science, Florida International University. **Products:**
 - Kelly, C., Bhutta, K., Dou, R. & Ross, M. How perceptions about computer science affect the career plans of middle school boys from underrepresented communities, *Invited Poster*, Conference for Undergraduate Research, Florida International University, Miami, Fl. (April, 2019).
- Alexandra Martinez, Undergraduate (2019 Present) Currently mentoring this student through a research experience in the field of informal STEM learning and STEM identity development.
 Products:
 - Cian, H., Dou, R., Palma-D'Souza, E., Castro, S., & Martinez, A. (Under review). The central role of parents in STEM identity development through everyday science talk. *American Educational Research Journal.*
- Elizabeth Palma-D'Souza, Undergraduate (2019 Present) Currently mentoring this student through a research experience in the field of informal STEM learning and STEM identity development. Products:
 - Cian, H., Dou, R., Palma-D'Souza, E., Castro, S., & Martinez, A. (Under review). The central role of parents in STEM identity development through everyday science talk. *American Educational Research Journal.*
- Karina Bhutta, Undergraduate (2017 Present) Informal education research in computer science, Florida International University. **Products:**
 - Dou, R., Bhutta, K., Ross, M., Kramer, L., & Thamotharan, V. (*In Print*). How socially divergent stereotypes of computer scientists contribute to middle school boys' career intentions. *ACM Transactions on Computing Education*.
 - Bhutta, K., Dou, R. & Ross, M. How socially deviant and socially agreeing stereotypes of computer scientists contribute to middle school boys' identity and career intentions, *Invited Poster*, Posters on the Hill, Council on Undergraduate Research, Washington, DC. (April, 2019).
 - Bhutta, K., Dou, R. & Ross, M. Computer science identity: Decoding career interest and stereotype barriers, *Invited Poster*, Conference for Undergraduate Research, Florida International University, Miami, Fl. (March, 2018). ***Award Winner
- Ariadna Pereiras, Undergraduate (2018 2020) STEM Teacher Policy Leadership, Florida International University. Products:
 - Pereiras, A., Dou, R., Vieyra, R., Hite, R., Milbourne, J., & Smith, J.F. Reconceiving the role of immersive professional development experiences on K-12 STEM teacher retention in the classroom, *Invited Poster*, Conference for Undergraduate Research, Florida International University, Miami, Fl. (April, 2019).
- Jessica Marie Fernandez, Undergraduate (2015 2017) Physics Education Research, Florida International University. Products:
 - Fernandez, J.M. Examining Relationships between Academic Performance, Self-Efficacy, and Student Interactions in Introductory Physics, *Contributed Paper*, Honors College Research Conference, Florida International University, Miami, Fl. (2017).

PROFESSIONAL MEMBERSHIPS

- Sigma Xi (2019 Present)
- Association of Zoos and Museums (Member, 2018 Present)
- National Association for Research in Science Teaching (Member, 2015 Present)
- American Physical Society (Member, 2014 Present)
- American Association of Physics Teachers (Member, 2012 Present)
- American Association for the Advancement of Science (Member, 2015 Present)
- American Educational Research Association (Member, 2016 Present)
- American Institute of Aeronautics and Astronautics (Member, 2011 Present)
- National Association of Biology Teachers (Member, 2011 2018)

OTHER

Remy Dou

Fluent in both written and spoken Spanish.

Website: https://www.remydou.com

LinkedIn Profile: https://www.linkedin.com/in/remy-dou

ⁱ Reprinted in Spanish [2017] ⁱⁱ Reprinted in Spanish [2017]