
Cynthia D'Angelo, Ph.D.

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Education:

Ph.D.	Science Education, Arizona State University	2010
M.S.	Physics, Arizona State University	2007
B.S.	Physics/Astrophysics, University of California - San Diego	2003

Professional Appointments:

Assistant Professor	University of Illinois at Urbana-Champaign	2018 – present
Senior Researcher	SRI International	2016 – 2108
Education Researcher	SRI International	2012 – 2016
Post-doctoral Fellow	University of Wisconsin – Madison	2010 – 2012

Research Areas:

- science education, physics education, conceptual change, educational games, simulations, data visualizations, scientific argumentation, discourse analysis, computer-supported collaborative learning, technology-based learning, multi-modal learning analytics

Honors and Awards:

- NSF Community for Advancing Discovery Research in Education (CADRE) Fellow, 2009-2010.
- Outstanding Paper Award, International Conference of the Learning Sciences, 2008.

Funded Grants:

- Advancing Computational Grounded Theory for Audiovisual Data from STEM Classrooms. Co-Principal Investigator. National Science Foundation. #DRL-1920796, program: EHR Core Research (ECR). \$1,313,855 (9/1/19 – 8/31/22).
- Speech-Based Learning Analytics for Collaboration. Principal Investigator. National Science Foundation #DRL-1432606, program: EHR Core Research (ECR). \$1,499,944 (9/1/14 – 8/31/17).
- CAP: Building Partnerships for Education and Speech Research. Co-Principal Investigator. National Science Foundation #IIS-1550800, program: Cyberlearning and Future Technologies for Learning. \$49,996 (9/1/15 – 8/31/17).

Elected positions:

- Chair, Advanced Technologies for Learning Special Interest Group of AERA, 2019-2021.

Research Experience:

- Researcher (SRI International). Selected projects:
 - SBLAC (Speech-Based Learning Analytics for Collaboration) – researching feasibility of using student speech to determine quality of collaboration using interactive online tasks
 - GlassLab-Research (Games, Learning, and Assessment – Research component) – simulation meta-analysis, validation of game-based assessment, and analysis of game-based learning
 - Learning analytics work for the Carnegie Foundation for the Advancement of Teaching and the George Lucas Educational Foundation (developing teaching and learning metrics for online curricula/materials)
 - Classroom VR project – designing and studying curricular supports for virtual reality (VR) components of science lessons
 - Next Generation Science Assessment project – designing three-dimensional (science core ideas, practices, and crosscutting concepts) online tasks for classroom assessment of learning
 - PBIS (Project Based Inquiry Science) Curriculum Implementation and Efficacy Study

- Facet-Based Science Assessment evaluation
- Research Director, Epistemic Games Group (University of Wisconsin – Madison), worked with David Williamson Shaffer. Projects:
 - AutoMentor, developing an epistemic game to teach about environmental science, urban planning, and the corresponding skills, knowledge, and ways of making decisions of those professions;
 - Epistemic Network Analysis (ENA), analysis technique that looks at networks of connections between different elements (or concepts/ideas);
 - Nephrotex, an engineering epistemic game, intended to increase persistence of first-year engineering students.
- Graduate Research Assistant (Arizona State University), worked primarily with Douglas Clark. Projects:
 - Scaffolding Understanding by Redesigning Games for Education (SURGE), building and evaluating a conceptual physics game;
 - Web-based Inquiry Science Environment (WISE), working with Marcia Linn's group at UC Berkeley to develop physics and chemistry technology-enhanced online curriculum;
 - Cross-cultural study of students' conceptions of force, investigation of knowledge coherence across age groups and countries of students;
 - SAVE Science, working with Diane Jass Ketelhut and Brian Nelson, teaching and assessing students' scientific inquiry skills in a virtual environment;
 - Project Pathways, working with Michael Oehrtman and Marilyn Carlson, professional development curriculum for math and science high school teachers to see connections between the disciplines and improve covariational reasoning.
- Research Assistant (San Diego State University), worked with Fred Goldberg. Project:
 - InterActions in Physical Science, middle school physical science curriculum focused on conceptual understanding of core science ideas.

Teaching Experience:

- Advanced Educational Technologies for Engagement and Interactive Learning (University of Illinois at Urbana-Champaign; EPSY/CI/INFO 555)
- Displaying and Interpreting Data (University of Illinois at Urbana-Champaign; EPSY 508)
- Elementary Science II (University of Illinois at Urbana-Champaign; CI 451)
- Elementary Science Methods (Arizona State University)
- Teaching and Learning Physics seminar (Arizona State University)
- Physics – Algebra-based introductory courses, recitation sections (Arizona State University)
- Physics – Algebra & Calculus-based introductory courses, lab sections (University of California – San Diego)

Scholarly Work:

Journal Articles:

1. D'Angelo, C. M., Harris, C. J., Lundh, P., House, A., Leones, T., & Llorente, C. (2017). Found science: Examining the types, features, and use of instructional materials in afterschool science. *School Science and Mathematics, 117*(6), 269-281.
2. Krumm, A. E., Beattie, R., Takahashi, S., D'Angelo, C., Feng, M., & Cheng, B. (2016). Practical measurement and productive persistence: Strategies for using digital learning system data to drive improvement. *Journal of Learning Analytics, 3*(2), 116-138.

3. Clark, D. B., Virk, S., Sengupta, P., Brady, C., Martinez-Garza, M., Krinks, K., Killingsworth, S., Kinnebrew, J., Biswas, G., Barnes, J., Minstrell, J., Nelson, B., Slack, K., & D'Angelo, C. M. (2016). SURGE's evolution deeper into formal representations: The siren's call of popular game-play mechanics. *International Journal of Designs for Learning*, 7(1), 107-146.
4. D'Angelo, C. M., Rutstein, D. R., & Harris, C. J. (2016). Learning with STEM simulations in the classroom: Findings and trends from a meta-analysis. *Educational Technology*.
5. Harris, C. J., Penuel, W. R., D'Angelo, C. M., DeBarger, A. H., Gallagher, L. P., Kennedy, C. A., & Cheng, B. (2015). Impact of project-based curriculum materials on student learning in science: Results of a randomized controlled trial. *Journal of Research in Science Teaching*, 52(10), 1362-1385.
6. Clark, D. B., Menekse, M., Ozdemir, G., D'Angelo, C. M., & Schleigh, S. (2014). Exploring sources of variation in studies of knowledge structure coherence: Comparing force meanings and force meaning consistency across two Turkish cities. *Science Education*, 98(1), 143-191.
7. Chesler, N. C., Arastoopour, G., D'Angelo, C. M., Bagley, E. B., & Shaffer, D. W. (2013). Design of a professional practice simulator for educating and motivating first year engineering students. *Advances in Engineering Education*, 3(3), 1-29.
8. Clark, D. B., Nelson, B., Chang, H. Y., Slack, K., Martinez-Garza, M., & D'Angelo, C. M. (2011). Exploring Newtonian mechanics in a conceptually-integrated digital game: Comparison of learning and affective outcomes for students in Taiwan and the United States. *Computers and Education*, 57(3), 2178-2195.
9. Clark, D. B., D'Angelo, C. M., & Schleigh, S. P. (2011). Comparison of students' knowledge and understanding of force in the Philippines, Turkey, China, Mexico, and the United States. *Journal of the Learning Sciences*, 20(2), 207 - 261.
10. Clark, D. B., D'Angelo, C. M., & Menekse, M. (2009). Initial structuring of online discussions to improve learning and argumentation: Incorporating students' own explanations as seed comments versus an augmented-preset approach to seeding discussions. *Journal of Science Education and Technology*, 18(4), 321-333.

Guest Editor, Special Issues:

1. D'Angelo, C., Litts, B. & Wilkerson, M. (Eds.) (Special Issue in progress). Stories from the field: Integrating computational thinking across curricular domains. Special Issue, *Interactive Learning Environments*.

Book Chapters:

1. Haertel, G. D., Vendlinski, T. P., Rutstein, D., DeBarger, A., Cheng, B. H., Snow, E. B., D'Angelo, C., Harris, C., Yarnall, L., & Ructtinger, L. (2016). Introduction to evidence-centered design. In H. I. Braun (Ed.), *Meeting the challenges to measurement in an era of accountability*. National Council on Measurement in Education Applications of Educational Measurement and Assessment Book Series. New York, NY: Routledge.
2. Haertel, G. D., Vendlinski, T. P., Rutstein, D., DeBarger, A., Cheng, B. H., Ziker, C., Harris, C., D'Angelo, C., Snow, E. B., Bienkowski, M., & Ructtinger, L. (2016). Assessing the life sciences: Using evidence centered design for accountability purposes. National Council on Measurement in Education Applications of Educational Measurement and Assessment Book Series. In H. I. Braun (Ed.), *Meeting the challenges to measurement in an era of accountability*. New York, NY: Routledge.
3. D'Angelo, C., Touchman, S., & Clark, D. B. (2008). Overview of constructivism. In E. M. Anderman & L. H. Anderman (Eds.), *Psychology of Classroom Learning: An Encyclopedia* (Volume 1. pp. 262-267). New York: MacMillan Reference.

White Papers and Technical Reports:

1. Cheng, B. & D'Angelo, C. (2018). CIRCL Primer: Virtual Reality in Educational Settings. In *CIRCL Primer Series*. Retrieved from <http://circlcenter.org/virtual-reality-in-education>
2. D'Angelo, C., & Dorsey, C. (2017). CIRCL primer: Speech technology and learning. In *CIRCL Primer Series*. Retrieved from <http://circlcenter.org/speech-technology-and-learning>
3. Cheng, B. H., D'Angelo, C., Miller, G., Bhanot, R., Van Brunt, J., & Nourse, H. (2016). Approaches to science education for 21st century learning in the United States. In Y. Belfali and M. Ikeda (Eds.), *Country note: Key findings from PISA 2015 for the United States* (pp. 61-73). Paris: OECD Publishing. Retrieved from: <http://www.oecd.org/pisa/PISA-2015-United-States.pdf>
4. Harris, C. J., Penuel W. R., DeBarger, A. H., D'Angelo, C., & Gallagher, L. P. (2014). *Curriculum materials make a difference for next generation science learning: Results from year 1 of a randomized controlled trial*. Menlo Park, CA: SRI International.
5. D'Angelo, C. M., Rutstein, D. R., Harris, C. J., Bernard, R., Borokhovski, E., & Haertel, G. (2014). *Simulations for STEM learning: Systematic review and meta-analysis*. Menlo Park, CA: SRI International.
6. Clark, D. B., Nelson, B., Sengupta, P., D'Angelo, C. M. (2009). Rethinking Science Learning Through Digital Games and Simulations: Genres, Examples, and Evidence. Invited Topic Paper in the *Proceedings of The National Academies Board on Science Education Workshop on Learning Science: Computer Games, Simulations, and Education*. Washington, D.C.

Published Conference Proceedings (Refereed):

1. D'Angelo, C. M., Smith, J., Alozie, N., Tsiartas, A., Richey, C., & Bratt, H. (2019). Mapping individual to group level collaboration indicators using speech data. In Lund, K., Niccolai, G., Lavoué, E., Hmelo-Silver, C., Gweon, G., & Baker, M. (Eds). *A Wide Lens: Combining Embodied, Enactive, Extended, and Embedded Learning in Collaborative Settings: 13th International Conference on Computer Supported Collaborative Learning*. Lyon, France: International Society of the Learning Sciences.
2. Cheng, B. H., D'Angelo, C. M., Zaner, S., Kam, M., & Hamada, R. A. (2018). Teaching and Learning Using Virtual Reality: Identifying and Examining Two Design Principles of Effective Instruction. In Kay, J. and Luckin, R. (Eds). *Rethinking Learning in the Digital Age: Making the Learning Sciences Count, Volume 3*. London, UK: International Society of the Learning Sciences.
3. Schnaubert, L., Lam, R., D'Angelo, C. M., Deiglmayr, A., Mazziotti, C., & Vogel, F. (2018). Collaborative learning, interdependence, and dyadic data analyses: Building knowledge and community practices. In Kay, J. and Luckin, R. (Eds). *Rethinking Learning in the Digital Age: Making the Learning Sciences Count, Volume 3*. London, UK: International Society of the Learning Sciences.
4. D'Angelo, C., Hmelo-Silver, C., Borge, M., Wise, A., & Chen, B. (2017). Establishing a foundation for collaborative process evaluation and adaptive support in CSCL. In Smith, B. K., Borge, M., Mercier, E., and Lim, K. Y. (Eds.). *Making a Difference: Prioritizing Equity and Access in CSCL, 12th International Conference on Computer Supported Collaborative Learning (CSCL) 2017, Volume 2*. Philadelphia, PA: International Society of the Learning Sciences.
5. Smith, J., Bratt, H., Richey, C., Bassiou, N., Shriberg, E., Tsiartas, A., D'Angelo, C., & Alozie, N. (2016). Spoken interaction modeling for automatic assessment of collaborative learning. *Proceedings of the Speech Prosody Conference 2016*, pp 277-281. Boston, MA.
6. Richey, C., D'Angelo, C., Alozie, N., Bratt, H., & Shriberg E. (2016). "The SRI Speech-Based Collaborative Learning Corpus". *Proceedings of the Speech Prosody Conference 2016*. Boston, MA.

7. Basiou, N., Tsiartas, A., Smith, J., Bratt, H., Richey, C., Shriberg, E., D'Angelo, C., & Alozie, N. (2016). Privacy-preserving speech analytics for automatic assessment of student collaboration. *Proceedings of the Speech Prosody Conference 2016*. Boston, MA.
8. McElhaney, K. W., Vaishampayan, G., D'Angelo, C. M., Harris, C. J., Pellegrino, J. W., & Krajcik, J. S. (2016). Using learning performances to design science assessments that measure knowledge-in-use. *Proceedings of the International Conference of the Learning Sciences (ICLS)*. Singapore.
9. D'Angelo, C. M., Roschelle, J., & Bratt, H. (2015). Using Students' Speech to Characterize Group Collaboration Quality. In Lindwall, O., Häkkinen, P., Koschman, T., Tchounikine, P., & Ludvigsen, S. (Eds.) *Exploring the Material Conditions of Learning: The Computer Supported Collaborative Learning (CSCL) Conference 2015, Volume 1*. Gothenburg, Sweden: The International Society of the Learning Sciences.
10. DeBarger, A. H., Harris, C. J., D'Angelo, C., Krajcik, J., Dahsah, C., Lee, J., & Beauvineau, Y. (2014). Constructing assessment items that blend core ideas and science practices. In Polman, J. L., Kyza, E. A., O'Neill, D. K., Tabak, I., Penuel, W. R., Jurow, A. S., O'Connor, K., Lee, T., and D'Amico, L. (Eds.). *Learning and becoming in practice: The International Conference of the Learning Sciences (ICLS) 2014, Volume 3*. Boulder, CO: International Society of the Learning Sciences.
11. D'Angelo, C. M., Harris, C. J., & Rutstein, D. (2013). Systematic Review and Meta-Analysis of STEM Simulations. *Proceedings of the Tenth International Conference on Computer-Supported Collaborative Learning*. Madison, WI.
12. D'Angelo, C. M., Arastoopour, G., Chesler, N.C., & Shaffer, D. W. (2011). Collaborating in a virtual engineering internship. *Proceedings of the Ninth International Conference on Computer-Supported Collaborative Learning*. Hong Kong, Hong Kong S.A.R.
13. D'Angelo, C. M., Shaffer, D. W., & Chesler, N. C. (2011). Undergraduate engineers engaging and reflecting in a professional practice simulation. *Proceedings of the American Society for Engineering Education Conference 2011*. Vancouver, Canada.
14. Chesler, N.C., D'Angelo, C.M., Arastoopour, A., & Shaffer, D.W. (2011). Use of a professional practice simulation in a first-year introduction to engineering course. *Proceedings of the American Society for Engineering Education Conference 2011*. Vancouver, Canada.
15. Clark, D. B., D'Angelo, C., & Schleigh, S. (2008). International comparison of knowledge structure coherence: Cultural, semantic, and educational differences. *Proceedings of the Eighth International Conference of the Learning Sciences*. Utrecht, Netherlands.
16. Linn, M. C., Quintana, C., Chang, H.-Y., Shen, J., Chiu, J. L., Clark, D., Menekse, M., D'Angelo, C., Schleigh, S., Touchman, S., McElhaney, K. W., Varma, K., Price, A., & Lee, H.-S. (2008). Improving the design and impact of interactive, dynamic visualizations for science learning. *Proceedings of the Eighth International Conference of the Learning Sciences*. Utrecht, Netherlands.
17. Schleigh, S., Clark, D. B., D'Angelo, C. (2008). The impact of gender on conceptual theoretical framework and cognition across cultures. *Proceedings of the National Association of Research in Science Teaching Conference 2008*. Baltimore, MD.
18. Clark, D. B., Schleigh, S., D'Angelo, C., Ozdemir, G., Menekse, M., Zhang, Z., & Corpuz, E. (2008). Cross-cultural analysis of knowledge structure coherence and understanding of force. *Proceedings of the National Association of Research in Science Teaching Conference 2008*. Baltimore, MD.

Dissertation and Master's Thesis:

1. D'Angelo, C. M. (2010). Scaffolding vector representations for student learning inside a physics game.

2. D'Angelo, C. M. (2007). Problem solving behaviors of math and science teachers: Striving for an answer or for understanding.

Invited Talks:

1. D'Angelo, C. M. (2017). *An education research perspective on xR technologies*. Presented at the xR in EDU event. Menlo Park, CA.
2. D'Angelo, C. M. (2011). *Epistemic Games: Research on Simulations/Games and Learning*. Presented at the American Association of Publishers School Division Annual Meeting. Washington, DC.

Conference Presentations:

1. D'Angelo, C. M., & Alozie, N. (2017). *Measuring collaboration quality of small group interactions for automated analysis*. Paper presented at the American Educational Research Association annual meeting. San Antonio, TX.
2. D'Angelo, C. M., Roschelle, J., Bratt, H., Shriberg, L., Richey, C., Tsiartas, A., & Alozie, N. (2015). *Using students' speech to characterize group collaboration quality*. Poster presented at The Computer Supported Collaborative Learning (CSCL) Conference 2015. Gothenburg, Sweden.
3. Cheng, B. H., Moorthy, S., D'Angelo, C. M., Fujii, R., Leones, T., Gong, B., Fritts, J., Allen, C. D., Sherwood, C., & Harris, C. J. (2015). *Examining developing teaching practices at the intersection of content and practice in middle school science*. Paper presented at the NARST annual international conference. Chicago, IL.
4. Fujii, R., DeBarger, A., Werner, A., D'Angelo, C., Feng, M., McElhaney, K., & Gong, B. (2015). *Exploring the role of facet-based items in next generation science assessment*. Paper presented at the NARST annual international conference. Chicago, IL.
5. Harris, C. J., Penuel, W. R., DeBarger, A. H., Moorthy, S., D'Angelo, C. M., & Krajcik, J. S. (2015). *Supporting next generation science teaching and learning with curriculum materials: Results from an efficacy study*. Paper presented at the NARST annual international conference. Chicago, IL.
6. McElhaney, K., D'Angelo, C., Harris, C. J., Seeratan, K., Stanford, T., & DeBarger, A. (2015, April). *Integrating crosscutting concepts into 3-dimensional scoring rubrics*. Paper and poster presented at the annual meeting of the National Association for Research in Science Teaching, Chicago, IL.
7. McElhaney, K. W., DeBarger, A. H., D'Angelo, C. M., Harris, C. J., Seeratan, K. L., & Stanford, T. M. (2015). *Designing scoring rubrics that address crosscutting concepts in science*. Poster presented at the NARST annual international conference. Chicago, IL.
8. Krumm, A. E., D'Angelo, C. M., Beattie, R., Yamada, H., Podkul, T., & Thorn, C. (2015). *Practical measures of learning behaviors*. Paper presented at the Learning @ Scale conference. Vancouver, B.C., Canada.
9. D'Angelo, C. M., Rutstein, D., Harris, C. J. (2014). *Simulations for STEM learning: A meta-analysis*. Paper presented at the EARLI Sig 6/7 joint meeting. Rotterdam, The Netherlands.
10. D'Angelo, C. M., Moorthy, S., Allen Bemis, C., & Sherwood, C. A. (2014). *Using log data to analyze teacher implementation of Framework-aligned curriculum*. Paper presented at the NARST annual international conference. Pittsburgh, PA.
11. Lundh, P., D'Angelo, C. M., Harris, C., House, A., Llorente, C., & Leones, T. (2014). *One activity at a time: The role of instructional materials in after school science*. Paper presented at the NARST annual international conference. Pittsburgh, PA.

12. Moorthy, S., Harris, C., D'Angelo, C., Sherwood, C., Allen Bemis, C., Stanford, T. (2014, March). *The role of productive talk in supporting student participation in scientific modeling*. Paper presented at the NARST Annual Conference, in Pittsburg, PA.
13. D'Angelo, C. M., Harris, C. J., & Rutstein, D. (2013). *Systematic Review and Meta-Analysis of STEM Simulations*. Poster presented at the Tenth International Conference on Computer-Supported Collaborative Learning. Madison, WI.
14. Sherwood, C., Moorthy, S., D'Angelo, C. M., Allen Bemis, C., & Harris, C. J. (2013). *A "model" case study: Characterizing one teacher's instructional talk moves during model-based learning activities*. Presented at the National Association for Research in Science Teaching Annual International Conference. Rio Grande, Puerto Rico.
15. Arastoopour, G., Chesler, N., D'Angelo, C. M., Opgenorth, J., Reardan, C., Naggerty, N., Lepak, C., & Shaffer, D. W. (2013). *Epistemic persistence: A simulation-based approach for increasing women in engineering*. Presented at the American Educational Research Association Annual Meeting. San Francisco, CA.
16. D'Angelo, C. M. (2012). *Land Science: Assessing student discourse in games with Epistemic Network Analysis*. Presented at the National Council for Measurement in Education Annual Conference. Vancouver, Canada.
17. D'Angelo, C. M., Clark, D. B., & Shaffer, D. W. (2012). *Epistemic Network Analysis: An alternative analysis technique for complex STEM thinking*. Paper presented at the National Association for Research in Science Teaching Annual International Conference. Indianapolis, IN.
18. Martinez-Garza, M. M., Clark, D. B., Nelson, B. C., Slack, K., & D'Angelo, C. M. (2012). *Investigating cognitive factors that mediate learning in the context of a physics-based game*. Paper presented at the American Educational Research Association Annual Conference. Vancouver, Canada.
19. D'Angelo, C. M., Arastoopour, G., Chesler, N.C., & Shaffer, D. W. (2011). *Collaborating in a virtual engineering internship*. Paper presented at the Ninth International Conference on Computer-Supported Collaborative Learning. Hong Kong, Hong Kong S.A.R.
20. D'Angelo, C. M., Shaffer, D. W., & Chesler, N. C. (2011). *Undergraduate engineers engaging and reflecting in a professional practice simulation*. Poster presented at the American Society for Engineering Education Conference 2011. Vancouver, Canada.
21. Chesler, N.C., D'Angelo, C.M., Arastoopour, A., & Shaffer, D.W. (2011). *Use of a professional practice simulation in a first-year introduction to engineering course*. Poster presented at the American Society for Engineering Education Conference 2011. Vancouver, Canada.
22. Clark, D. B., Nelson, B. C., Chang, H.-Y., D'Angelo, C. M., Slack, K., & Martinez-Garza, M. M. (2011). *Exploring Newtonian mechanics in a conceptually-integrated digital game: Comparison of learning and affective outcomes for students in Taiwan and the United States*. Paper presented at the Games, Learning, & Society conference. Madison, WI.
23. Martinez-Garza, M., Clark, D. B., Nelson, B., Slack, K., & D'Angelo, C. M. (2011). *Novel approaches to gameplay data analysis as an assessment of learning*. Paper presented at the Games, Learning, & Society Conference. Madison, WI.
24. Clark, D. B., Nelson, B., Martinez-Garza, M., Slack, K., & D'Angelo, C. M. (2011). *SURGE: Embodied Learning About Newtonian Mechanics*. Paper presented as part of symposium at the National Association of Research 2011 meeting. Orlando, FL.
25. Clark, D. B., Nelson, B., Martinez-Garza, M., Slack, K., & D'Angelo, C. M. (2011). *Prediction and Explanation as Design Mechanics in Conceptually-Integrated Digital Games to Help Players Articulate the Tacit*

- Understandings they Build Through Gameplay*. Poster presented as part of a structured poster session at the National Association of Research 2011 meeting. Orlando, FL.
26. D'Angelo, C. M. (2011). *Analyzing STEM thinking with epistemic network analysis*. Paper presented at the Cyberlearning Tools for STEM Education Conference. Berkeley, CA.
 27. D'Angelo, C. M., Clark, D. B., Nelson, B. C., Slack, K., & Menekse, M. (2010). *Student understanding of vector concepts mediated by immersive game playing*. Poster presented at the Games, Learning, & Society conference. Madison, WI.
 28. Clark, D. B., Nelson, B. C., D'Angelo, C. M., Slack, K., & Martinez-Garza, M. M. (2010). *SURGE, Vygotsky, games: Connecting students' intuitive "spontaneous concepts" about Newtonian mechanics into formalized "instructed concepts"*. Poster presented at the Games, Learning, & Society conference. Madison, WI.
 29. D'Angelo, C. M., Clark, D. B., Nelson, B. C., Slack, K., & Menekse, M. (2010). *Connecting tacit understanding from video games to formalized vector concepts*. Paper presented at the National Association for Research in Science Teaching Annual International Conference. Philadelphia, PA.
 30. Clark, D. B., Nelson, B. C., D'Angelo, C. M., Slack, K., Martinez-Garza, M. M., & Menekse, M. (2010). *SURGE: Integrating tacit and formal understanding of mechanics in a digital game*. Poster presented at the National Association for Research in Science Teaching Annual International Conference. Philadelphia, PA.
 31. Ketelhut, D., Clark, D. B., Nelson, B. C., Schifter, C., D'Angelo, C. M., Kane, T., Menekse, M., Shelton, A., Kent Slack, K., & Snyder, M. (2010). *Electrons, Photons, and Neurons: Harnessing virtual worlds to redesign science assessment*. National Association of Research in Science Teaching (NARST) 2010 meeting. Philadelphia, PA.
 32. Clark, D. B., Nelson, B., D'Angelo, C. M., Slack, K. & Martinez-Garza, M., (2010). *SURGE: Integrating Vygotsky's Spontaneous and Instructed Concepts in a Digital Game*. Poster presented at the International Conference of the Learning Sciences (ICLS) 2010 meeting. Chicago, IL.
 33. Clark, D. B., Nelson, B., D'Angelo, C. M., Slack, K. & Martinez-Garza, M., (2010). *Argument Construction And Critique To Help Students Articulate Tacit Understandings, Embed Assessment, and Provide Feedback*. Presented as part of a structured poster session at the International Conference of the Learning Sciences (ICLS) 2010 meeting. Chicago, IL.
 34. Clark, D. B., Nelson, B., D'Angelo, C. M., Slack, K. & Martinez-Garza, M., (2010). *SURGE: Intended and unintended science learning in games*. Presented as part of a structured poster session at the International Conference of the Learning Sciences (ICLS) 2010 meeting. Chicago, IL.
 35. Martinez-Garza, M., Clark, D. B., Nelson, B., Slack, K., & D'Angelo, C. (2010, June). *Understanding students' gameplay using data-driven visualizations as an analytical approach*. Poster session presented at the International Conference of the Learning Sciences, Chicago, IL.
 36. Clark, D. B., Nelson, B., D'Angelo, C. M., Slack, K., Martinez-Garza, M., & Menekse, M. (2010). *SURGE: Assessing Students' Intuitive and Formalized Understandings About Kinematics and Newtonian Mechanics Through Immersive Game Play*. Paper presented as part of a structured poster session at the American Educational Research Association (AERA) 2010 meeting. Denver, CO.
 37. Slack, K., Nelson, B., Clark, D. B., D'Angelo, C. M., & Menekse, M. (2010). *Visual Cueing and Visual Feedback to Provide Formative Assessment in a Physics-Based Video Game*. Paper presented as part of a structured poster session at the American Educational Research Association (AERA) 2010 meeting. Denver, CO.
 38. Clark, D. B., Nelson, B., Martinez-Garza, M., Slack, K., & D'Angelo, C. M. (2010). *SURGE: Bridging Intuitive Ideas with Disciplinary Concepts*. Talk presented as part of a symposium at the NSF Discovery Research: K-12 2010 meeting. Washington, DC.

39. Clark, D. B., Nelson, B., Martinez-Garza, M., Slack, K., & D'Angelo, C. M. (2010). *SURGE: Studies Completed, Underway, and In The Works*. Poster presented as part of a structured session at the NSF Discovery Research: K-12 2010 meeting. Washington, DC.
40. Clark, D. B., Nelson, B., D'Angelo, C., Slack, K. & Menekse, M., (2010). *Connecting students' intuitive understandings about kinematics and Newtonian mechanics into explicit formalized frameworks*. Paper presented at the American Association for the Advancement of Science (AAAS) Conference 2010. San Diego, CA.
41. Menekse, M., Clark, D. B., Özdemir, G., D'Angelo, C. M., & Schleigh, S. (2009). *Turkish students' force meanings*. Paper presented at the European Science Education Research Association (ESERA) Conference. Istanbul, Turkey.
42. D'Angelo, C. M., Clark, D. B., Nelson, B. C., & Slack, K. (2009). *The effect of vector representations on students' understanding of motion*. Poster presented at the Physics Education Research Conference. Ann Arbor, MI.
43. Clark, D. B., D'Angelo, C., & Schleigh, S. (2009). *Analyzing Differences and Similarities in Students' Knowledge Structure Coherence and Understanding of Force*. Paper presented at the National Association for Research in Science Teaching Annual International Conference. Garden Grove, CA.
44. Clark, D. B., D'Angelo, C., & Schleigh, S. (2009). *Comparison of Students' Knowledge Structure Coherence and Understanding of Force in the Philippines, Turkey, China, Mexico, and the United States*. Paper presented at the annual meeting of the American Educational Research Association. San Diego, CA.
45. Clark, D. B., Menekse, M., D'Angelo, C. M., & Schleigh, S. (2009). *Initial Structuring of Online Discussions to Improve Learning and Argumentation: Incorporating Students' Own Explanations as Seed Comments Versus an Augmented-Presets Approach to Seeding Discussions*. Paper presented at the annual meeting of the American Educational Research Association. San Diego, CA.
46. Clark, D. B., D'Angelo, C., & Schleigh, S. (2008). *International comparison of knowledge structure coherence: Cultural, semantic, and educational differences*. Individual paper accepted for the International Conference of the Learning Sciences (ICLS) 2008. Utrecht, Netherlands.
47. Clark, D. B., Menekse, M., D'Angelo, C., Touchman, S., & Schleigh, S. (2008). *Scaffolding students' argumentation about simulations*. Paper accepted as part of a symposium organized by Hsin-Yi Chang to the International Conference of the Learning Sciences (ICLS) 2008. Utrecht, Netherlands.
48. Schleigh, S., Clark, D. B., D'Angelo, C. (2008). *The impact of gender on conceptual theoretical framework and cognition across cultures*. Individual paper accepted for the National Association of Research in Science Teaching (NARST) meeting. Baltimore, MD.
49. Clark, D. B., Schleigh, S., D'Angelo, C., Ozdemir, G., Menekse, M., Zhang, Z., & Corpuz, E. (2008). *Cross-cultural analysis of knowledge structure coherence and understanding of force*. Individual paper accepted for the National Association of Research in Science Teaching (NARST) meeting. Baltimore, MD.
50. Clark, D. B., Menekse, M., D'Angelo, & Sampson, S. (2008). *Improving the quality of student argumentation through the initial structuring of online discussions*. Paper accepted as part of symposium organized by William Sandoval for the American Educational Research Association 2008 meeting. New York City.
51. Clark, D. B., D'Angelo, C., Schleigh, S., Ozdemir, G., Menekse, M., Zhang, Z., & Corpuz, E. (2008). *International analysis of students' knowledge structure coherence*. Individual paper accepted for the American Educational Research Association 2008 meeting. New York City.

52. Clark, D. B., D'Angelo, C., & Schleigh, S. (2008). *International analysis of students' knowledge structure coherence: Poster overview of research findings*. Participant in the NAEd-Spencer/IES/AERA postdoctoral fellowship poster session at the American Educational Research Association 2008 meeting. New York City.
53. Clark, D. B., D'Angelo, C., & Schleigh, S. (2007). *International analysis of students' knowledge structure coherence: Progress to date*. Paper presented at the National Academy of Education/Spencer Foundation 2007 Annual Meeting. Washington, DC.
54. D'Angelo, C. (2007). *High School Teachers' Orientation to Problem Solving and Learning: Striving for an Answer or for Understanding?* Paper presentation at the Research in Undergraduate Mathematics Education annual conference. San Diego, California.
55. D'Angelo, C. (2006). *Investigation of Science and Math Behaviors of High School Teachers*. Paper presented at the American Association of Physics Teachers national summer meeting. Greensboro, North Carolina.
56. D'Angelo, C. (2005). *Preparing In-Service High School Teachers to Teach Integrated Math and Science*. Poster presented at the American Association of Physics Teachers national summer meeting. Syracuse, New York.

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- Roberto Rojas-Alfaro, Ph.D. (in progress). Curriculum & Instruction, University of Illinois at Urbana-Champaign
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Conference Organizing:

- Co-Chair of Cyberlearning 2019 meeting

Professional Memberships:

- International Society of the Learning Sciences (ISLS)
- National Association of Research on Science Teaching (NARST)
- American Educational Research Association (AERA)

Research Technical Skills:

- Use of R and SPSS for quantitative analysis
- Use of Dedoose for qualitative coding and analysis
- Use of R and Shiny to create online interactive data visualization and analyses

Ad-Hoc Reviewer:

National Science Foundation, Journal of the Learning Sciences, International Society of the Learning Sciences annual meetings, Computers & Education journal, National Association of Research on Science Teaching annual meeting, American Educational Research Association annual meeting, Educational Data Mining conference, Physics Education Research Conference annual meeting, Digital Games Research Association annual meeting, Journal of Educational Data Mining, Next Generation Learning Challenge, National Council on Measurement in Education annual meeting