

## CURRICULUM VITAE

### David F. Feldon, Ph.D.

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#### EDUCATION

- **Ph.D., Educational Psychology (2004)**  
University of Southern California, Rossier School of Education  
*Inaccuracies in Expert Self-Report: Errors in the Description of Strategies for Designing Psychology Experiments*  
Richard E. Clark (Chair), Lee Shulman, John L. Horn, and David D. Marsh
- **M.S. Ed., Instructional Technology (1999)**  
University of Southern California, Rossier School of Education  
*Evaluation of a Bottom-Up Technology Integration Approach Emphasizing Software for Classroom Settings*  
Allen Munro (Chair)
- **B.A., Cognitive Science; Minor in Philosophy (1997)**  
Johns Hopkins University

#### INSTITUTIONAL AFFILIATIONS

2017-present: Professor, Instructional Technology & Learning Sciences, College of Education and Human Services, Utah State University

2016-2017: Director of Graduate Program Assessment and Development, College of Education and Human Services, Utah State University

2013-2016: Director, STE<sup>2</sup>M (Science, Technology, Engineering, Education, Mathematics) Center, Utah State University

- *Leading team of 4 full time staff in addition to affiliated faculty and graduate students to fulfill the Center's mission of "shaping policy and facilitating collaboration across the public and private sectors through the collection and analysis of data-driven evidence to improve STEM education and workforce development in the state of Utah."*
- *Supported the development of nearly \$40 million in proposals to federal, state, and private funders, including the National Science Foundation, National Institutes of Health, and USDA through development of research and/or evaluation plans with a ~20% success rate.*

2013-2017: Associate Professor without term, Instructional Technology and Learning Sciences, College of Education and Human Services, Utah State University

- 2012-2013: Associate Professor without term, STEM Education (Dept of Curriculum, Instruction, & Special Ed) and Educational Psychology (Dept of Leadership, Foundations, & Policy), Curry School of Education, University of Virginia
- 2009-2012: Assistant Professor, STEM Education (Dept of Curriculum, Instruction, & Special Ed) and Educational Psychology (Dept of Leadership, Foundations, & Policy), Curry School of Education, University of Virginia
- 2008-2009: Assistant Professor, Educational Psychology Program, College of Education, Washington State University
- 2008-2011: Visiting Assistant Professor, Department of Educational Studies, College of Education, University of South Carolina
- 2005-2008: Assistant Professor, Department of Educational Studies, College of Education, University of South Carolina
- 2004-2005: Postdoctoral Fellow, Graduate School of Education and Information Sciences, University of California at Los Angeles
- 2004-2005: Postdoctoral Research Associate, Rossier School of Education, University of Southern California

#### ADDITIONAL TRAINING

- Advanced Training Institute in Functional Magnetic Resonance Imaging, American Psychological Association (June, 2005)

#### SELECTED HONORS AND AWARDS

- Award for Significant Contribution to Educational Measurement and Research Methodology, Division D, American Educational Research Association, 2019
- Chair, STEM Education Panel, *U.S. Institute of Education Sciences*, 2020-present
- Chair, Graduate and Postdoctoral Education across the Disciplines, AERA SIG #168
- Editorial Board Member: *Educational Researcher, Instructional Science*
- Invited Panelist, National Academies of Science, Engineering, and Medicine, Committee on Revitalizing Graduate STEM Education for the 21<sup>st</sup> Century, 2017
- Researcher of the Year, Utah State University Department of Instructional Technology & Learning Sciences, 2017 and 2018
- Invited participant for Chief of Naval Operations Strategic Studies Group 34 (Talent Management for the 21<sup>st</sup> Century Navy), Naval War College, Newport, RI, 2015
- Outstanding Publication Award, 2013, Finalist, 2015, AERA Graduate Education across the Disciplines
- Leveraging Excellence Award, National Consortium for Continuous Improvement in Higher Education, 2013
- Presidential Commission on Advancing Graduate Education in the Chemical Sciences (Working Group on Student Support Mechanisms), *American Chemical Society*, 2012
- Excellence in Diversity Fellowship, Teaching Resource Center, University of Virginia, 2009-2010

\* denotes student at time of collaboration.

<b>FUNDED RESEARCH</b>
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Howard Hughes Medical Institute (HHMI)

- Savitzky, A. (P.I.). (2018-2023). HHMI Inclusive Excellence Program, \$1,000,000. Director of Assessment and Evaluation: **Feldon**, D. F.

National Science Foundation

- **Feldon**, D. F. (P.I.). (2020-2025). Collaborative Research: Impacts of Hard/Soft Skills on STEM Workforce Trajectories (Division of Graduate Education; DGE 1956114), \$1,489,540.
- **Feldon**, D. F. (P.I.), Roksa, J., & Griffin, K. (2018-2022). Trajectories into Early Career Research (Division of Graduate Education; DGE 1760894), \$2,459,199. Supplement awarded, (REU #1760894), \$14,981. Total: \$2,474,180.
- Clarke-Madura, J. (P.I.), **Feldon**, D. F., & Allan, V. (2016-2019). Understanding Gender in Two Dimensions: Combinatorial Effects of Recruitment Interventions in Computer Science (Division of Research on Learning #1614849), \$798,565.
- **Feldon**, D. F. (P.I.). (2014-2018). Collaborative Research: Progressions of Skill Development in Biology Doctorates (Division of Graduate Education; DGE #1431234). \$1,151,431. Supplements awarded, (DGE #1504633 & #1638924), \$188,928 and \$261,164, respectively. Total: \$1,601,523.
- **Feldon**, D. F. (P.I.), & Castleberry, J. (2013-2017). Integrating Expert Knowledge and Simulation-Based Assessment for Wastewater Management Training (Division of Undergraduate Education; DUE #1340239). \$899,447. Supplement awarded, (DUE #1640979), \$39,999. Total: \$939,446.
- **Feldon**, D. F. (P.I.). (2012-2013). EAGER: Proposal to Examine Potential Threshold Concepts Specific to the Biological Sciences (Division of Research on Learning; DRL #1242369). \$174,581.
- Holmes, A. (P.I.), & **Feldon**, D. F. (2011-2013). Research Initiation Grant: Improving Problem Solving in Electric Circuits using Cognitive Task Analysis (EEC Research Initiation Grants in Engineering Education; EEC #1137021). \$131,093.
- Davis, D. (P.I.), **Feldon**, D. F., & Trevisan, M. (2009-2011). Integrated Design Engineering Assessment and Learning System (IDEALS) (DUE Course, Curriculum, and Laboratory Improvement; DUE #0919248). \$149,973.
- **Feldon**, D. F. (P.I.), Timmerman, B., Thompson, S., Lyons, J., & Maher, M. (2007-2012)—The Role of Graduate Student Teaching Experiences in the Development of Scientific Research Skills (Research and Evaluation on Education in Science and Engineering; DRL #0723686). \$705,327.
- **Feldon**, D. F. (P.I.), Timmerman, B., & Showman, R. (2007-2012)—Improving STEM Retention through Instruction: Leveraging Faculty Expertise (Science Technology Engineering and Mathematics Talent Expansion Program; DUE #0653160). \$830,549.

University of Virginia

- University of Virginia Equipment Trust Fund. (2010)—Discourse Recording System for Interdisciplinary Research on Teaching and Learning. \$41,810.

University of South Carolina

- P.I., University of South Carolina Research Opportunity Program. (2007)—Efficiency Metrics in the Evaluation of Simulation Task Performance. \$17,000.

- P.I., College of Education Research Incentive Grant. (2006)—Efficiency Metrics in the Evaluation of Simulation Task Performance. \$5,000.

## PUBLICATIONS

### Peer-Reviewed Journal Articles

- Jeong\*, S., Litson\*, K., Blaney, J., & **Feldon**, D. F. (in press). Shifting gears: Characteristics and consequences of latent class transitions in doctoral socialization. *Research in Higher Education*.
- Maher, M., \*Wofford, A., Roksa, J., & **Feldon**, D. F. (in press). Exploring early exits: Doctoral attrition in the biomedical sciences. *Journal of College Student Retention: Research, Theory, & Practice*.
- Mills, R., Beaulie, T., **Feldon**, D. F., & Olsen, D. (in press). Implications of pre-lecture material on cognitive load and instructional effectiveness in cross-disciplinary IS education: The nexus of Benford's law and SQL. *Decision Sciences Journal of Innovative Education*.
- Jeong\*, S., Blaney, J., & **Feldon**, D. F. (2019). Identifying faculty and peer interaction patterns of first-year biology doctoral students: A latent class analysis. *CBE—Life Sciences Education*, 18(4), ar59.
- **Feldon**, D. F., \*Litson, K., \*Jeong, S., Blaney, J., Kang, J., \*Miller, C., Griffin, K., & Roksa, J. (2019). Postdocs' lab engagement predicts trajectories of Ph.D. students' skill development. *Proceedings of the National Academy of Sciences*, 116(42), 20910-20916.
- Maher, M., \*Wofford, A., Roksa, J., & **Feldon**, D. F. (2019). Doctoral student experiences in biological sciences laboratory rotations. *Studies in Graduate and Postdoctoral Education*, 10, 69-82.
- **Feldon**, D. F., Callan, G., \*Juth, S., & \*Jeong, S. (2019). Cognitive load as motivational cost. *Educational Psychology Review*, 31, 319-337.
- \*Chen, S., Sleipness, O., Christensen, K., **Feldon**, D. F., & Xu, Y. (2019). Environmental justice and park quality in an intermountain west gateway community: Assessing the spatial autocorrelation. *Landscape Ecology*, 34(10), 2323-2335.
- Roksa, J., **Feldon**, D. F., & Maher, M. (2018). First-generation students in pursuit of the Ph.D.: Comparing socialization experiences and outcomes to continuing-generation peers. *Journal of Higher Education*, 89, 728-752.
- Roksa, J., \*Jeong, S., **Feldon**, D., & Maher, M. (2018). Revisiting the "Model Minority" stereotype: API students' socialization experiences and research productivity. *Research in Sociology of Education*, 20, 155-179.

- \*Chao, J., **Feldon**, D. F., & Cohoon, J. (2018). Invisible scaffolding in dynamic mental model construction: A Knowledge-in-Pieces based explanation for computing students' erratic performance on recursion. *Journal of the Learning Sciences*, 27, 431-473.
- **Feldon**, D. F., \*Franco, J., \*Chao, J., Peugh, J., & Maahs-Fladung, C. (2018). Self-efficacy change associated with a cognitive load-based intervention in an undergraduate biology course. *Learning & Instruction*, 56, 64-72.
- **Feldon**, D. F., & Tofel-Grehl, C. (2018). Phenomenography as a foundation for mixed models research. *American Behavioral Scientist*, 62, 887-899.
- Tofel-Grehl, C., **Feldon**, D. F., & Callahan, C. M. (2018). Impacts of learning standards and testing on gifted learners in STEM schools: A multilevel analytic induction. *Roeper Review*, 40, 130-138.
- **Feldon**, D. F., \*Sun, V., & \*Rates, C. (2017). Doctoral threshold concepts in the biological sciences. *International Journal of Science Education*, 18, 2574-2593.
- **Feldon**, D. F., \*Jeong, S., Peugh, J., Roksa, J., Maahs-Fladung, C., \*Shenoy, A., & \*Oliva, M. (2017). Null effects of boot camps and short-format training for Ph.D. students in life sciences. *Proceedings of the National Academy of Sciences*, 114(37), 9854-9858.
- **Feldon**, D. F., Peugh, J., Maher, M. A., Roksa, J., & Tofel-Grehl, C. (2017). Effort-to-credit gender inequities of first-year PhD students in the biological sciences. *CBE-Life Sciences Education*, 16(1), ar4.
- Tofel-Grehl, C., Fields, D., Searle, K., Maahs-Fladung, C., **Feldon**, D. F., \*Gu, G., & \*Sun, C. (2017). Electrifying engagement in middle school science classes: Improving student interest through e-textiles. *Journal of Science Education and Technology*, 26, 406-417.
- **Feldon**, D. F., Maher, M., Roksa, J., & Peugh, J. (2016). Cumulative advantage in the skill development of STEM graduate students: A mixed methods study. *American Educational Research Journal*, 53, 132-161.
- \*Urquhart, S., Maher, M. A., **Feldon**, D. F., & Gilmore, J. (2016). Factors associated with novice graduate student researchers' engagement with primary literature. *International Journal of Researcher Development*, 7, 141-158.
- **Feldon**, D. F., \*Shukla, K., & Maher, M. A. (2016). Faculty-student coauthorship as a means to enhance STEM graduate students' research skills. *International Journal for Researcher Development*, 7, 178-191.
- \*Rates, C. A., \*Mulvey, B. K., & **Feldon**, D. F. (2016). Promoting conceptual change for complex systems understanding: Outcomes of an agent-based participatory simulation. *Journal of Science Education and Technology*, 25, 610-627.
- Gilmore, J. A., Vieyra, M., Timmerman, B. E., **Feldon**, D. F., & Maher, M. A. (2015). The relationship between undergraduate research participation and subsequent research

\* denotes student at time of collaboration.

performance of early career STEM graduate students. *The Journal of Higher Education*, 86, 834-863.

- **Feldon**, D. F., Maher, M. A., Hurst, M., & Timmerman, B. (2015). Faculty mentors', graduate students', and performance-based assessments of students' research skill development. *American Educational Research Journal*, 52, 334-370.
- Gilmore, J., Maher, M., Lewis, D., **Feldon**, D., & Timmerman, B. (2015). Feeding two birds with one scone? The relationship between teaching and research for graduate students across the disciplines. *International Journal of Teaching and Learning in Higher Education*, 27(1), 25-41.
- Maher, M. A., Gilmore, J. A., **Feldon**, D. F., & Davis, T. E. (2014). Connected or conflicted? Doctoral students' evolving perceptions of the teaching-research relationship. *Journal of School Public Relations*, 35, 402-425.
- Gilmore, J., Maher, M., **Feldon**, D., & Timmerman, B. (2014). Exploration of factors related to the development of science, technology, engineering, and mathematics graduate teaching assistants' teaching orientations. *Studies in Higher Education*, 39, 1910-1928.
- Maher, M. A., **Feldon**, D. F., Timmerman, B., & \*Chao, J. (2014). Faculty perceptions of common challenges encountered by novice doctoral writers. *Higher Education Research & Development*, 33, 699-711.
- \*Craft, C., **Feldon**, D. F., & Brown, E. (2014). Instructional design affects the efficacy of simulation-based training in central venous catheterization. *American Journal of Surgery*, 207, 782-789.
- Maher, M. A., Timmerman, B. E., **Feldon**, D. F., & Strickland, D. (2013). Factors affecting the occurrence of faculty-doctoral student coauthorship. *The Journal of Higher Education*, 84, 121-143.
- Timmerman, B., **Feldon**, D. F., Maher, M., Strickland, D., & Gilmore, J. A. (2013). Performance-based assessment of graduate student research skills: Timing, trajectory, and potential thresholds. *Studies in Higher Education*, 38, 693-710.
- Maher, M. A., Gilmore, J. A., **Feldon**, D. F., & \*Davis, T. E. (2013). Cognitive apprenticeship and the supervision of science and engineering research assistants. *Journal of Research Practice*, 9, Article M5.
- \*Tofel-Grehl, C., & **Feldon**, D. F. (2013). Cognitive task analysis-based training: A meta-analysis of studies. *Journal of Cognitive Engineering and Decision Making*, 7, 293-304.
- **Feldon**, D. F., Peugh, J., Timmerman, B. E., Maher, M. A., \*Hurst, M., Strickland, D., Gilmore, J. A., & \*Stiegelmeyer, C. (2011). Graduate students' teaching experiences improve their methodological research skills. *Science*, 333(6045), 1037-1039.

- \*Yates, K. A., & **Feldon**, D. F. (2011). Advancing the practice of cognitive task analysis: A call for taxonomic research. *Theoretical Issues in Ergonomics Science*, 12, 472-495.
- **Feldon**, D. F., Timmerman, B. E., Stowe, K., & Showman, R. (2010). Translating expertise into effective instruction: The impacts of cognitive task analysis (CTA) on lab report quality and student retention in the biological sciences. *Journal of Research in Science Teaching*, 47, 1165-1185.
- **Feldon**, D. F., Maher, M., & Timmerman, B. (2010). Performance-based data in the study of STEM graduate education. *Science*, 329, 282-283.
- \*Gilmore, J., Strickland, D., Timmerman, B., Maher, M., & **Feldon**, D. F. (2010). Weeds in the flower garden: An exploration of plagiarism in graduate students' research proposals and its connection to enculturation, ESL, and contextual factors. *International Journal of Educational Integrity*, 6, 13-28.
- **Feldon**, D. F. (2010). Do psychology researchers tell it like it is? A microgenetic analysis of research strategies and self-report accuracy. *Instructional Science*, 38, 395-415.
- Kafai, Y. B., \*Quintero, M., & **Feldon**, D. (2010). Investigating the “Why” in Whyfox: Explorations of a virtual epidemic. *Games & Culture*, 5, 116-135.
- **Feldon**, D. F., & Stowe, K. (2009). A case study of instruction from experts: Why does cognitive task analysis make a difference?. *Technology, Instruction, Cognition, and Learning*, 7, 103-120.
- **Feldon**, D. F., & Kafai, Y. B. (2008). Mixed methods for mixed reality: Overcoming methodological challenges to understand user activities in virtual worlds. *Educational Technology Research and Development*, 56, 575-593.
- **Feldon**, D. F. (2007). Cognitive load and classroom teaching: The double-edged sword of automaticity. *Educational Psychologist*, 42, 123-137.
- **Feldon**, D. F. (2007). Implications of research on expertise for curriculum and pedagogy. *Educational Psychology Review*, 19, 91-110.
- **Feldon**, D. F., & \*Yates, K. (2007). Increasing validity in the evaluation of new distance learning technologies. *Computers in Human Behavior*, 23, 2355-2366.

#### Chapters in Edited Books

- **Feldon**, D. F. (2020). Implications of measurement issues for advancing the socialization framework. In L. DeAngelo & J. C. Weidman (Eds.), *Socialization in higher education and the early career: Theory, research and application* (pp. 287-310). New York: Springer International Publishing AG.
- **Feldon**, D. F., \*Jeong, S., & \*Franco, J. (2019). Education and STEM. In P. Ward, J. M. Schraagen, Gore, J., & E. Roth (Eds.), *The Oxford Handbook of Expertise: Research & Application* (pp. 529-550). Oxford, UK: Oxford University Press.

\* denotes student at time of collaboration.

- **Feldon, D. F.** (2016). The development of expertise in scientific research. In R. Scott & S. Kosslyn (Eds.), *Emerging Trends in the Social and Behavioral Sciences* (pp.1-14). New York: John Wiley & Sons, Inc.
- Gilmore, J., Maher, M, & **Feldon, D. F.** (2016). Prevalence, prevention, and pedagogical techniques: Academic integrity and ethical professional practice among STEM students. In T. Bretag (Ed.), *Handbook of Academic Integrity* (pp. 729-748). New York: Springer.
- **Feldon, D. F.**, \*Warren, S., & \*Rates, C. (2015). Cognitive task analysis. In J. M. Spector (Ed.), *SAGE Encyclopedia of Educational Technology* (pp. 642-645). Thousand Oaks, CA: SAGE Publications.
- Clark, R. E., & **Feldon, D. F.** (2014). Ten common but questionable principles of multimedia learning. In R. E. Mayer (Ed.), *The Cambridge Handbook of Multimedia Learning* (2<sup>nd</sup> ed.) (pp. 151-173). New York: Cambridge University Press.
- **Feldon, D. F.**, \*Hurst, M., \*Rates, C., & \*Elliott, J. (2013). Innovation in science, technology, engineering, and mathematics (STEM) disciplines: Implications for educational practices. In L. Shavinina (Ed.), *The International Handbook of Innovation Education* (pp. 359-371). New York: Taylor & Francis/Routledge.
- **Feldon, D. F.** (2012). Validity of learning. In N. Seel (Ed.), *Encyclopedia of the Sciences of Learning* (pp. 3381-3383). New York: Springer.
- **Feldon, D. F.**, & \*Flynn, C. (2010). Web-based teaching. In J. Carper, T. C. Hunt, T. J. Lasley, & D. Raisch (Eds.), *Encyclopedia of Educational Reform and Dissent* (pp. 935-936). Thousand Oaks, CA: SAGE Publications.
- **Feldon, D. F.**, & \*Hurst, M. (2010). National Science Foundation. In J. Carper, T. C. Hunt, T. J. Lasley, & D. Raisch (Eds.), *Encyclopedia of Educational Reform and Dissent* (pp. 642-645). Thousand Oaks, CA: SAGE Publications.
- **Feldon, D. F.**, & \*Morris, W. (2010). Educational technology. In J. Carper, T. C. Hunt, T. J. Lasley, & D. Raisch (Eds.), *Encyclopedia of Educational Reform and Dissent* (pp. 313-317). Thousand Oaks, CA: SAGE Publications.
- **Feldon, D. F.** (2009). Expertise. In E. Anderman & L. Anderman (Eds.), *Psychology of Classroom Learning: An Encyclopedia* (pp. 401-406). Detroit, MI: Macmillan Reference USA.
- Clark, R. E., **Feldon, D.**, van Merriënboer, J. J. G., \*Yates, K., and \*Early, S. (2008). Cognitive task analysis. In J. M. Spector, M. D. Merrill, J. J. G. van Merriënboer, & M. P. Driscoll (Eds.). *Handbook of research on educational communications and technology* (3<sup>rd</sup> ed.) (pp. 577-593). New York: Macmillan/Gale.
- Kafai, Y., **Feldon, D.**, \*Fields, D. A., \*Giang, M., & \*Quintero, M. (2007). Life in the time of Whyfox: A virtual epidemic as a community event. In C. Steinfield, B. Pentland,



M. Ackerman, & N Contractor (Eds.), *Communities and Technologies 2007* (pp. 171-190). New York: Springer.

- **Feldon, D. F., & Clark, R. E.** (2006). Instructional implications of cognitive task analysis as a method for improving the accuracy of experts' self-report. In G. Clarebout & J. Elen (Eds.), *Avoiding simplicity, confronting complexity: Advances in studying and designing (computer-based) powerful learning environments* (pp. 109-116). Rotterdam, Netherlands: Sense Publishers.
- **Feldon, D. F., & \*Gilmore, J.** (2006). Patterns in children's online behavior and scientific problem-solving: A large-N microgenetic study. In G. Clarebout & J. Elen (Eds.), *Avoiding simplicity, confronting complexity: Advances in studying and designing (computer-based) powerful learning environments* (pp. 117-125). Rotterdam, Netherlands: Sense Publishers.
- Clark, R. E., **Feldon, D. F.**, \*Howard, K., & \*Choi, S. (2006). Five critical issues for web-based instructional design research and practice. In H. F. O'Neil, Jr., & R. S. Perez (Eds.), *Web-based learning: Theory, Research and Practice* (pp. 343-370). Mahwah, NJ: Lawrence Erlbaum Associates.
- Clark, R. E., & **Feldon, D. F.** (2005). Five common but questionable principles of multimedia learning. In R. Mayer (Ed.), *The Cambridge Handbook of Multimedia Learning* (pp. 97-115). New York: Cambridge University Press.
- Hong, E., O'Neil, H. F. Jr., & **Feldon, D. F.** (2005). Gender effects on mathematics achievement: Mediating role of state and trait self regulation and test anxiety. In A. M. Gallagher & J. C. Kaufman, (Eds.). *Gender differences in mathematics: An integrative psychological approach* (pp. 264-293). New York: Cambridge University Press.

#### Evaluation Reports and Policy Briefs

- **Feldon, D. F.** (2018). *Evaluation report for the Southern Regional Education Board Institute on Teaching and Mentoring, 2011-2016*. Atlanta, GA: Southern Regional Education Board.
- Maahs-Fladung, C., & **Feldon, D. F.** (2015). *Food and nutrition I curriculum professional development evaluation*. Evaluation report generated under contract #634973 to Granite School District. Logan, UT: Utah State University STE<sup>2</sup>M Center.
- **Feldon, D. F.** (2015). *Proposal to enhance the post-high school STEM workforce*. Logan, UT: Utah State University STE<sup>2</sup>M Center.
- **Feldon, D. F.** (2015). *Incentivizing engineers to teach*. Logan, UT: Utah State University STE<sup>2</sup>M Center.
- **Feldon, D. F.** (2015). *Engineering majors as future science teachers*. Logan, UT: Utah State University STE<sup>2</sup>M Center.
- **Feldon, D. F.**, Maahs-Fladung, C., \*Zhao, X., & \*Sun, V. (2014). *Status of qualified science educators in Utah*. Logan, UT: Utah State University STE<sup>2</sup>M Center.

\* denotes student at time of collaboration.

### Solicited Publications

- **Feldon, D. F., & \*Craft, C.** (2011). A problem in search of a solution. *Educational Technology Magazine, May/June*, 55-57.
- **Feldon, D. F.** (2011). *Initial proposal for an industry-wide test of cognitive task analysis based training*. White paper for the White House Office of Science and Technology Policy. Charlottesville, VA: University of Virginia.
- Plank, J., **Feldon, D. F.**, Sherman, W., & \*Elliott, J. (2011). The UVA Bay Game: Complex systems, interdisciplinary collaboration, and institutional renewal. *Change, 43*(3), 35-43.
- **Feldon, D. F.**, Timmerman, B., & Maher, M. (2010). The best test of Ph.D. student success: Response. *Science, 330*, 586.
- **Feldon, D. F.** (2010). Consideration for STEM integration strategies in K-12 education. White paper for the White House Domestic Policy Council. Charlottesville, VA: University of Virginia.
- **Feldon, D. F.** (2010). Why magic bullets don't work. *Change, 42*(2), 15-21.
- **Feldon, D. F.** (2005). Dispelling a few myths about learning. *UrbanEd, 1*(4), 37-39.
- **Feldon, D. F.** (2005). *Perspectives on learner-centeredness: A critical review of definitions and practice*. White Paper for the Western Association of Schools and Colleges. Los Angeles, CA: University of Southern California Center for Learning. Available online at <http://www.wascsenior.org/wasc/Session%20Materials/FeldonPerspectivesLearnerCentered.pdf>.
- **Feldon, D. F.** (2005). *The impact of class size in institutions of higher education*. White Paper for the University of Southern California. Los Angeles, CA: University of Southern California Center for Learning.

<b>CONFERENCE PRESENTATIONS</b>
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### Academic Conferences (peer-reviewed)

- **Feldon, D. F.**, Tofel-Grehl, C., & Searle, K. (2020). *Measuring contextual shifts in multidimensional identity in makerspaces*. Poster presented at the International Conference of the Learning Sciences. Nashville, TN: June, 2020.
- **Feldon, D. F.**, Blaney, J., & Litson, K. (2020). *Contribution vs. recognition: The tenuous role of postdocs in Ph.D. training*. Paper presented at the Annual Meeting of the American Educational Research Association. San Francisco, CA: April, 2020.
- Blaney, J., Jeong\*, S., Kang, J., & **Feldon, D. F.** (2020). *How STEM doctoral students make meaning of their academic and professional trajectories: A narrative analysis*. Paper presented at the Annual Meeting of the American Educational Research Association. San Francisco, CA: April, 2020.

\* denotes student at time of collaboration.

- Blaney, J., Kang, J., Wofford\*, A., & **Feldon**, D. F. (2020). *“My mental support and my scientific support”*: Mentoring relationships between STEM doctoral students and postdocs. Paper presented at the Annual Meeting of the American Educational Research Association. San Francisco, CA: April, 2020.
- Clarke-Midura, J., Sun, C., Pantic, K., **Feldon**, D. F., Poole, F. J., & Allan, V. (2020). *The influence of gender composition in computer science camps on girls’ self-efficacy and interest*. Paper presented at the Annual Meeting of the American Educational Research Association. San Francisco, CA: April, 2020.
- Litson, K., & **Feldon**, D. F. (2019). *Divergent patterns of doctoral skill development across time*. Paper presented at the 44<sup>th</sup> Annual Conference of the Association for the Study of Higher Education. Portland, OR: November 14-16.
- Blaney, J., Litson, K., & **Feldon**, D. F. (2019). *Deconstructing the role of advisor gender in developing STEM students: A longitudinal study of doctoral students in biology*. Paper presented at the 44<sup>th</sup> Annual Conference of the Association for the Study of Higher Education. Portland, OR: November 14-16.
- Juth\*, S., & Feldon, D. F. (2019). *Measuring cognitive load with eye tracking and fNIRS*. Paper presented at the 12<sup>th</sup> International Cognitive Load Theory Conference. Maastricht, the Netherlands: June 1-19, 2019.
- Jeong\*, S., Blaney, J., & **Feldon**, D. F. (2019). *Identifying faculty and peer interaction patterns in doctoral students: A latent class analysis*. Poster presentation in the Division 15 program at the 2019 Annual Convention of the American Psychological Association. Chicago, IL: August, 2019.
- Litson\*, K., & **Feldon**, D. F. (2019). *Controlling for state variability in performance-based measures of Ph.D. research skill development*. Poster presentation in the Division 15 program at the 2019 Annual Convention of the American Psychological Association. Chicago, IL: August, 2019.
- Jeong\*, S., Litson\*, K., & **Feldon**, D. F. (2019). *Role of doctoral training environments in scholarly productivity: Moderation from sense of belonging and research self-efficacy*. Paper presented at the Annual Meeting of the American Educational Research Association. Toronto, Canada: April, 2019.
- Wofford\*, A., Peugh, J., & **Feldon**, D. F. (2019). *Beyond “best” practices: Using evidence-based comparisons to support outcomes for doctoral students of color*. Paper presented at the Annual Meeting of the American Educational Research Association. Toronto, Canada: April, 2019.
- **Feldon**, D. F. (2018). *Effects of cognitive load on self-efficacy during instruction, independent of learning*. Paper presented at the 2018 International Cognitive Load Theory Conference. Beijing, China: September 4-6, 2018.

\* denotes student at time of collaboration.

- **Feldon, D. F., & Tofel-Grehl, C. (2018).** *Preserving ideographic quality in mixed methodological analysis.* Paper presented at the MMIRA International Conference. Vienna, Austria: August 22-25, 2018.
- Jeong\*, S., & **Feldon, D. F. (2018).** *Profiling students' faculty and peer interactions during the first three years of doctoral study: Associations with student demographics, sense of belonging, and research productivity.* Paper presented at the 43rd annual meeting of the Association for the Study of Higher Education. Tampa, FL: November 15-17, 2018.
- **Feldon, D. F., & Tofel-Grehl, C. (2018).** *Phenomenography as a foundation for mixed models research.* Presented in the symposium Methodological Innovations in Mixed Methods Research at the Annual Meeting of the American Education Research Association. New York, NY: April, 2018.
- Maher, M., **Feldon, D. F.,** Roksa, J., & \*Wofford, A. (2018). *Making a match: Doctoral students' experiences with laboratory rotations and permanent advisor selection processes.* Paper to be presented at the Annual Meeting of the American Educational Research Association. New York, NY: April, 2018.
- \*Jeong, S., **Feldon, D. F.,** Maher, M., & Peugh, J. (2018). *Doctoral students' faculty and peer interaction patterns: Relationships to researcher self-efficacy and skill acquisition.* Paper to be presented at the Annual Meeting of the American Educational Research Association. New York, NY: April, 2018.
- \*Jeong, S., Maher, M., **Feldon, D. F.,** & Peugh, J. (2018). *Doctoral satisfaction with faculty advisors: Advisement characteristics and relationship to socialization outcomes.* Paper to be presented at the Annual Meeting of the American Educational Research Association. New York, NY: April, 2018.
- Roksa, J., \*Whitley, S., \*Wofford, A., **Feldon, D. F.,** & Maher, M. (2018). *Friendly relations but limited opportunities: Experiences of first-generation and continuing-generation doctoral students.* Paper to be presented at the Annual Meeting of the American Educational Research Association. New York, NY: April, 2018.
- Tofel-Grehl, C., \*Jex, E., **Feldon, D. F.,** \*Shenoy, A., & Searle, K. A. (2018). *Changing the fabric of classroom discourse: A quasi-experimental examination of shifting instructional practices through "Making".* Paper to be presented at the Annual Meeting of the American Educational Research Association. New York, NY: April, 2018.
- Roksa, J., \*Jeong, S., **Feldon, D.,** & Maher, M. (2017). *Revisiting the "Model Minority" stereotype: API students' socialization experiences and research productivity.* Paper presented at the annual meeting of the Association for the Study of Higher Education. Houston, TX: November, 2017.
- **Feldon, D. F.,** \*Jeong, S., Roksa, J., & Peugh, J. (2017). *What I did on my summer vacation: Limited impacts of boot camps and summer bridge activities.* Paper presented at the Annual Meeting of the American Educational Research Association. San Antonio, TX: April, 2017.

- \*Franco, J., **Feldon**, D. F., Peugh, J., & Maahs-Fladung, C. (2017). *Cognitive load-based instruction and self-efficacy changes in an undergraduate biology course: A shift in frameworks' interaction*. Paper presented at the Annual Meeting of the American Educational Research Association. San Antonio, TX: April, 2017.
- **Feldon**, D. F. (2017). *Cognitive task analysis as an empirical framework for identifying cross-domain training opportunities*. Paper to be presented at the Annual Meeting of the American Educational Research Association. San Antonio, TX: April, 2017.
- \*Wofford, A. M., Maher, M. A., Roksa, J., & **Feldon**, D. F. (2017). *The early emergence of doctoral student attrition: Perspectives on early departure in the biomedical sciences*. Paper to be presented at the Annual Meeting of the American Educational Research Association. San Antonio, TX: April, 2017.
- **Feldon**, D. F., \*Jeong, S., & Peugh, J. (2017). *Progressions of research skill development in the biological sciences*. Paper presented at the 15th Annual Hawaii International Conference on Education. Honolulu, HI: January 6, 2017.
- **Feldon**, D. F., Peugh, J., \*Sun, C., Maher, M. A., & Roksa, J. (2016). *Gender inequality in supervised research time: A national study of Ph.D. Students in biological sciences*. Paper presented at the Annual Meeting of the American Educational Research Association. Washington, DC: April 8-12, 2016.
- \*Koh, D. S. M., Koedinger, K. R., Rose, C. P., & **Feldon**, D. F. (2015). *Expertise in cognitive task analysis interviews*. In Noelle, D. C., Dale, R., Warlaumont, A. S., Yoshimi, J., Matlock, T., Jennings, C. D., & Maglio, P. P. (Eds.), *Proceedings of the 37th Annual Meeting of the Cognitive Science Society* (pp. 1147-1152). Austin, TX: Cognitive Science Society.
- \*Rates, C., & **Feldon**, D. F. (2015). *Research skills as threshold concepts in biology graduate education*. Paper presented at the 2015 Conference on Higher Education Pedagogy. Blacksburg, VA: February 5, 2015.
- \*Urquhart, S., Maher, M., **Feldon**, D. F., Gilmore, J., & Timmerman, B. (2015). *Lifting the lid on the black box: Primary literature engagement in graduate research skill development*. Paper presented at the Annual Meeting of the American Educational Research Association. Chicago, IL: April 16, 2015.
- Maher, M., \*Say, B., & **Feldon**, D. F. (2015). *Faculty advisers as learners and teachers of disciplinary writing*. Paper presented at the Annual Meeting of the American Educational Research Association. Chicago, IL: April 16, 2015.
- \*Rates, C., & **Feldon**, D. F. (2015). *Doctoral biology training and proposed threshold concepts*. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching. Chicago, IL: April 14, 2015.
- \*Rates, C., & **Feldon**, D. F. (2014). *Threshold concepts within doctoral biology programs*. Paper presented at the 2014 meeting of the American Educational Research Association. Philadelphia, PA: April 3, 2014.

- \*Elliott, J. B., & **Feldon**, D. F. (2014). *Complex systems understanding with the use of an agent-based watershed system simulation*. Paper presented at the 2014 meeting of the American Educational Research Association. Philadelphia, PA: April 5, 2014.
- Maher, M., Gilmore, J. A., **Feldon**, D. F., & \*Davis, T. (2014). *Doctoral student mentoring and the role of cognitive apprenticeship*. Paper presented at the 2014 meeting of the American Educational Research Association. Philadelphia, PA: April 6, 2014.
- **Feldon**, D. F., Maher, M. A., Roksa, J., & Peugh, J. (2014). *The Matthew effect in STEM Ph.D. programs: A mixed-method study*. Paper presented at the 2014 meeting of the American Educational Research Association. Philadelphia, PA: April 7, 2014.
- **Feldon**, D. F. & \*Chao, J. (2013). *Analysis of experts' omissions during instruction: Impacts on student learning and motivation*. Paper presented at the 15<sup>th</sup> biennial EARLI conference for Research on Learning and Instruction, Munich, Germany. August, 2013.
- **Feldon**, D. F., \*Chao, J., & \*Muniraj, D. (2013). *The effects of cognitive task analysis-based instruction on students' motivation in an undergraduate biology course*. Paper presented at the annual meeting of the American Educational Research Association. San Francisco, CA: April, 2013.
- \*Tofel-Grehl, C., & **Feldon**, D. F. (2013). *Cognitive task analysis-based training: A meta-analysis of studies*. Paper presented at the annual meeting of the American Educational Research Association. San Francisco, CA: April, 2013.
- \*Rates, C., \*Mulvey, B., \*Carson, E., & **Feldon**, D. F. (2013). *Enhancing complex systems thinking in high school environmental science: A study of a participatory simulation*. Paper presented at the annual meeting of the American Educational Research Association. San Francisco, CA: April, 2013.
- \*Shukla, K., **Feldon**, D. F., Maher, M. A., & Timmerman, B. C. (2013). *Faculty-student coauthorship as a means to enhance STEM graduate students' research skills*. Paper presented at the annual meeting of the American Educational Research Association. San Francisco, CA: April, 2013.
- Maher, M. A., **Feldon**, D. F., Timmerman, B. C., & \*Chao, J. (2013). *Learning to write for publication: Exposing common challenges encountered by novice doctoral writers*. Paper presented at the annual meeting of the American Educational Research Association. San Francisco, CA: April, 2013.
- \*Chao, J., **Feldon**, D. F., & Cohoon, J. (2013). *Phenomenological primitives in introductory computer science students' understanding of recursion*. Paper presented at the annual meeting of the American Educational Research Association. San Francisco, CA: April, 2013.
- \*Hurst, M., **Feldon**, D. F., & Maher, M. (2011). *Motivation, goal commitment, and performance among graduate students in the science, technology, and mathematics fields*.

Paper presented at the annual meeting of the American Psychological Association. Washington, DC: August 4, 2011.

- \*Hurst, M., & **Feldon**, D. F. (2011). *Effects of procedurally-oriented training on flexible performance in the field of social work*. Poster presented at the annual meeting of the American Psychological Association. Washington, DC: August 5, 2011.
- \*Elliott, J. B., & **Feldon**, D. F. (2011). *Understanding environmental sustainability as a complex system: Use of an agent-based participatory watershed simulation*. Poster presented at the annual meeting of the American Educational Research Association, New Orleans, LA: April, 2011.
- **Feldon**, D. F., & \*Stiegelmeyer, C. (2011). *Inquiry-oriented teaching skills and research skills: Competing or compatible skills?* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA: April, 2011.
- Maher, M., \*Hurst, M., Timmerman, B., **Feldon**, D., & \*Gilmore, J. (2011). *"I start with turning to the literature": Opening the door to research skill development*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA: April, 2011.
- Maher, M., Timmerman, B., & **Feldon**, D. (2011). *Do you want to write with me? Factors influencing faculty mentor – graduate student writing activities*. Paper presented at the Eastern Educational Research Association, Sarasota, FL: February 2011.
- Maher, M., Hurst, M., & **Feldon**, D. (2011). *So what do I need to know to succeed? Mentors' advice to graduate students*. Paper presented at the Eastern Educational Research Association, Sarasota, FL: February 2011.
- \*Elliott, J., & **Feldon**, D. F. (2011). *Understanding environmental sustainability as a complex system: Use of an agent-based participatory watershed simulation*. Paper presented at the Society for Information Technology & Teacher Education International Conference. Nashville, TN: March, 2011.
- Maher, M., Timmerman, B. **Feldon**, D. F., & Strickland, D. (2011). *Faculty mentor-graduate student coauthoring: The precursors, processes, and outcomes of 'scholarly bricklaying' as a stand-alone paper*. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching. Orlando, FL: April, 2011.
- \*Hurst, M., & **Feldon**, D. F. (2010). *The [mis]perceptions of graduate student research skills*. Paper presented at the Annual Meeting of the American Educational Research Association. Denver, CO: March, 2010.
- \*Gilmore, J., & **Feldon**, D. F. (2010). *Measuring graduate students' teaching and research skills through self-report: Descriptive findings and validity*. Paper presented at the Annual Meeting of the American Educational Research Association. Denver, CO: March, 2010.

- \*Craft, C., & **Feldon**, D. F. (2010). *Twirling around educators' use of Twitter for personal professional development*. Paper presented at the Annual Meeting of the American Educational Research Association. Denver, CO: March, 2010.
- **Feldon**, D. F., & \*Stiegelmeier, C. (2010). *Synergistic effects of teaching and research activities for graduate students*. Paper presented at the Annual Meeting of the American Educational Research Association. Denver, CO: March, 2010.
- \*Elliott, J., \*Craft, C., & **Feldon**, D. F. (2010). *Is informational material between K-12 faculty on Twitter supported by research?* Paper presented at the 21<sup>st</sup> International Conference of the Society for Information Technology & Teacher Education. San Diego, CA: March 29-April 2, 2010.
- \*Stiegelmeier, C., Maher, M., **Feldon**, D. F., & Timmerman, B. (2010). *Factors that facilitate inquiry-based teaching*. Paper presented at the Annual Meeting of the National Association of Research in Science Teaching. Philadelphia, PA: March 20-24, 2010.
- Timmerman, B., Maher, M., Strickland, D., & **Feldon**, D. F. (2010). *Crossing the threshold concept: A transformative view of research skill development*. Paper presented at the Annual Meeting of the National Association of Research in Science Teaching. Philadelphia, PA: March 20-24, 2010.
- **Feldon**, D. F. (2009). *Leveraging STEM expertise for improving instruction and retention*. Poster presented at the Governor's Conference for STEM Education. Roanoke, VA: November 15-16, 2009.
- **Feldon**, D. F., Hurst, M., & Flynn, C. (2009). *Interactions between cognitive load and motivation in undergraduate biology*. Poster presented at the Annual Convention of the American Psychological Association (Division 15). Toronto, Canada: August, 2009.
- McCormack, J., Beyerlein, S., **Feldon**, D. F., Davis, D., Davis, H., Wemlinger, Z., & Howe, S. (2009). *Methodology for selection, sequencing, and deployment of activities in a capstone design course using the TIDEE web-based assessment system*. Proceedings of the ASME 2009 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference. San Diego, CA: August/September, 2009.
- Strickland, D. C., Timmerman, B. E., Maher, M., & **Feldon**, D. F. (2009). *The value of teaching and research in graduate student research skill development*. Paper presented at the Annual Meeting of the National Association of Research in Science Teaching. Garden Grove, CA: April, 2009.
- Maher, M., & **Feldon**, D. F. (2009). *Finding connections between STEM graduate students' teaching and research identities and skill sets*. Paper presented at the Annual Meeting of the National Association of Research in Science Teaching. Garden Grove, CA: April, 2009.
- \*Stiegelmeier, C., & **Feldon**, D. F. (2009). *Do research experiences enhance the inquiry-oriented teaching skills of STEM graduate students?* Paper presented at the



Annual Meeting of the National Association of Research in Science Teaching. Garden Grove, CA: April, 2009.

- **Feldon, D. F., Stowe, K., & Showman, R. (2009).** *Cognitive task analysis as a basis for instruction in experimental design and analysis: Impacts on skill development and student retention in the biological sciences.* Paper presented at the Annual Meeting of the National Association of Research in Science Teaching. Garden Grove, CA: April, 2009.
- **Feldon, D. F., Stowe, K., \*Flynn, C., \*Morris, W., & Showman, R. (2009).** *Effects of cognitive task analysis-based direct instruction on skill development and student retention in the biological sciences.* Paper presented at the Annual Meeting of the American Educational Research Association. San Diego, CA: March, 2009.
- **Feldon, D. F. (2008).** Automaticity in teaching and its implications for CTA-based training. Presented in the symposium *Current Perspectives for Improving Learning and Performance through Cognitive Task Analysis and Instructional Design* at the Annual Meeting of the American Education Research Association. New York, NY: March, 2008.
- **\*Yates, K. A., & Feldon, D. F. (2008).** *Towards a taxonomy of cognitive task analysis methods for instructional design: Interactions with cognition.* Presented at the Annual Meeting of the American Education Research Association. New York, NY: March, 2008.
- **Yap, C., Johnson, R., & Feldon, D. F. (2008).** *Rater characteristics and performance scores.* Presented at the Annual Meeting of the American Education Research Association. New York, NY: March, 2008.
- **Feldon, D. F., & \*Stiegelmeier, C. K. (2007).** Microgenetic analyses of research strategies and self-report accuracy. A poster presented at the Annual Meeting of the Association for Psychological Science. Washington DC: May, 2007.
- **Feldon, D. F. (2007).** *Is there value in massive multiuser online environments?* Presented at South Carolina EdTech Conference. Myrtle Beach, SC: October 25, 2007.
- **Feldon, D. F. (2007).** *Designing technology labs as learning spaces.* Presented at South Carolina EdTech Conference. Myrtle Beach, SC: October 25, 2007.
- **Clark, R. E., Feldon, D. F., van Merriënboer, J., \*Yates, K., & \*Early, S. (2007).** *Cognitive task analysis for complex learning.* Presented at the Biannual Meeting of the European Association for Research on Learning and Instruction. Budapest, Hungary: August, 2007.
- **Feldon, D. F. (2007).** *Experimental design and analysis strategies: What experts do but fail to report.* Presented at the Annual Meeting of the American Education Research Association. Chicago, Illinois: April, 2007.
- **Feldon, D. F., Gustainis, J., & Timmerman, B. (2007).** *Do Advanced Placement courses in biology really prepare students for higher level biology courses in college?* Presented at the South Carolina Educators for the Practical Use of Research 19<sup>th</sup> Annual Conference. Columbia, South Carolina: February, 2007.

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- **Feldon, D. F.** (2007). *Mixed methods for mixed reality: Overcoming methodological challenges to understand user activity in a massive multi-user virtual environment*. Presented at the Annual Meeting of the American Education Research Association. Chicago, Illinois: April, 2007.
- Kafai, Y. B., **Feldon, D. F.**, \*Fields, D., \*Giang, M., & \*Quintero, M. (2007). *Where in the world is science in Whyville? Informal science in a multi-user virtual community*. Interactive symposium presented at the Annual Meeting of the American Education Research Association. Chicago, Illinois: April, 2007.
- Yap, C., \*Lewis, A., & **Feldon, D. F.** (2007). *Efficacy of a web-based training and monitoring procedure in scoring performance tasks*. Presented at the Annual Meeting of the American Education Research Association. Chicago, Illinois: April, 2007.
- Kafai, Y. B., **Feldon, D. F.**, \*Fields, D., \*Giang, M., & \*Quintero, M. (2007). *Life in the times of Whyvox—A virtual epidemic as a community event*. Presented at the 3<sup>rd</sup> International Conference on Communities and Technology. East Lansing, MI: June, 2007.
- Yap, C., \*Lewis, A., \*Halladay, K., & **Feldon, D. F.** (2007). *Efficacy of training raters and monitoring remote scoring*. Presented at the South Carolina Educators for the Practical Use of Research 19<sup>th</sup> Annual Conference. Columbia, South Carolina: February, 2007.
- **Feldon, D. F.** (2006). *Dispelling a few myths about learning with technology*. South Carolina EdTech Conference. Myrtle Beach, SC: October 5, 2006.
- **Feldon, D. F.** (2006). *Using simulations in the social science classroom*. South Carolina EdTech Conference. Myrtle Beach, SC: October 5, 2006.
- **Feldon, D. F.**, & \*Gilmore, J. (2006). *Patterns in children's online behavior and scientific problem-solving: A large-N microgenetic study*. Presented at Avoiding simplicity, confronting complexity: Advances in studying and designing powerful (computer-based) learning environments [European Association for Research on Learning and Instruction SIG Instructional Design and SIG Learning and Instruction with Computers conference]. Leuven, Belgium: June, 2006.
- **Feldon, D. F.**, & Clark, R. E. (2006). *Instructional implications of cognitive task analysis as a method for improving the accuracy of experts' self-report*. Presented at Avoiding simplicity, confronting complexity: Advances in studying and designing powerful (computer-based) learning environments [European Association for Research on Learning and Instruction SIG Instructional Design and SIG Learning and Instruction with Computers conference]. Leuven, Belgium: June, 2006.
- **Feldon, D. F.** (2006). *If intelligence matters then we are doing something wrong: Empowering teachers by examining data in light of research on teaching and learning*. Presented at the South Carolina Educators for the Practical Use of Research 18<sup>th</sup> Annual Conference. Columbia, South Carolina: February, 2006.

- **Feldon, D. F.** (2006). *Where should we draw the lines? Critiquing NCLB's disaggregation of data by race and gender.* Presented at the South Carolina Educators for the Practical Use of Research 18<sup>th</sup> Annual Conference. Columbia, South Carolina: February, 2006.
- **Feldon, D. F.** (2005). *Validity and expertise: A logical and empirical examination.* Presented at the American Psychological Society 17<sup>th</sup> Annual Convention. Los Angeles, California: May, 2005.
- **Feldon, D. F.** (2005). *Challenges for defining and using expertise in education.* Symposium presented at the Annual Meeting of the American Educational Research Association. Montreal, Canada: April, 2005.
- Yates, K., & **Feldon, D.** (2004). *The value of modularity in instructional design: Implications for improved validity in the evaluation of new techniques in distance learning.* Presented at Association for Educational Communications and Technology Annual Conference. Chicago, Illinois: October, 2004.
- **Feldon, D. F.** (2004). *Is expertise a viable cognitive construct?* Presented at the American Psychological Society 16<sup>th</sup> Annual Convention. Chicago, Illinois: May, 2004.
- **Feldon, D. F.** (2004). *The benefits of an efficiency metric in the evaluation of simulation task performance.* Presented at the Annual Meeting of the American Education Research Association. San Diego, California: April, 2004.
- **Feldon, D. F.,** & Bordiujevici, I. (2004). *Cognitive load in the classroom: The double-edged sword of automaticity.* Presented at the Annual Meeting of the American Education Research Association. San Diego, California: April, 2004.
- Hong, E., O'Neil, H. F., & **Feldon, D. F.** (2004). *Gender effects on mathematics achievement: Mediating role of state and trait self-regulation and test anxiety.* Presented at the Annual Meeting of the American Education Research Association. San Diego, California: April, 2004.
- Marsh, D. D., **Feldon, D. F.,** Gallagher, K. S., Hagedorn, L. S., & Harper, S. (2004). *Rethinking the role of a dissertation in Ed.D. programs.* Presented at the Annual Meeting of the American Education Research Association. San Diego, California: April, 2004.
- **Feldon, D. F.** (2003). The benefits of an efficiency metric in the evaluation of task performance. In M. R. Simonson & M. Crawford (Eds.), *26<sup>th</sup> Annual Proceedings: Selected Papers Presented at the 2003 National Convention of the Association for Educational Communications and Technology.* Washington, DC: Association for Educational Communications and Technology.
- **Feldon, D. F.** (2001). *Working from the bottom up: A gentler approach to technology integration in schools.* Presented at Computer Using Educators conference. Anaheim, California: May, 2001.

- **Feldon, D. F.** (2000). *Don't lose out on the educational power of your network!*. Presented at Computer Using Educators conference. Palm Springs, California: May, 2000.

#### Invited Talks and Workshops

- **Feldon, D. F.** (2020). *How to convey the methodology of mixed methods research in conference proposals: Advice from mixed methods scholars*. Invited mentor for the symposium presented at the Annual Meeting of the American Educational Research Association. San Francisco, CA: April, 2020.
- **Feldon, D. F.** (2019). *The butler didn't do it: Looking beyond the usual suspects in understanding doctoral success*. Keynote presentation presented to the Doctoral Education, Assessment, & Learning Conference. Newcastle, Australia: November 26, 2019.
- **Feldon, D. F.** (2019). *Circumscribing cognitive load theory: Empirical studies at points of intersection*. Invited presentation to faculty of the University of New South Wales. Sydney, Australia: November 22, 2019.
- **Feldon, D. F.** (2019). *Trajectories of student development in the biological sciences: Implications for theory and method*. Invited presentation for CRESST Distinguished Lecture Series at UCLA. Los Angeles, CA: September 26, 2019.
- **Feldon, D. F.** (2019). *Panelist: Broadening participation in computing: Putting our work in context*. Invited panelist for SIGCSE 2019. Minneapolis, MN: February 28, 2019.
- **Feldon, D. F.** (2018). *Leveraging expertise: Adaptive assessment for open-ended problem solving*. Invited presentation for CRESSTCON'18. Los Angeles, CA: October 1, 2018.
- **Feldon, D. F.** (2018). *Desperately seeking socialization*. Invited presentation to the University of Pennsylvania Center for Learning Analytics. Philadelphia, PA: July 9, 2018.
- **Feldon, D. F.** (2018). *The butler didn't do it: Looking beyond the usual suspects in understanding doctoral success*. Invited presentation to the Council of Graduate Schools Research & Policy Forum. Washington, DC: June 27, 2018.
- **Feldon, D. F.** (2017). *Panelist: National Academies' Committee on Revitalizing Graduate STEM Education for the 21<sup>st</sup> Century*. Washington, DC: November 7, 2017.
- **Feldon, D. F.** (2017). *Discussant: Design of innovative and active learning environments*. Paper presented at the Annual Meeting of the American Educational Research Association. San Antonio, TX: April, 2017.
- **Feldon, D. F.** (2017). *Discussant: STEM in graduate education*. Paper presented at the Annual Meeting of the American Educational Research Association. San Antonio, TX: April, 2017.
- **Feldon, D. F.** (2016). *Applying research data to research training*. Invited presentation to the National Science Foundation EHR Division of Graduate Education Open House,

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Inventing the way forward: Graduate education for the STEM workforce. Washington, DC: September 19, 2016.

- **Feldon, D. F.** (2016). *From fountains to firehoses: A vision for the future of education doctorates*. Panelist for the joint Carnegie Professional Education Doctorate-Doctoral Education Across the Disciplines SIG symposium at the Annual Meeting of the American Educational Research Association. Washington, DC: April 9, 2016.
- **Feldon, D. F.** (2016). *Hard data on graduate STEM education*. Invited presentation to the Utah State University Graduate Council. Logan, UT: January 13, 2016.
- **Feldon, D. F.** (2016). *Applying research data to research training*. Invited keynote to the graduate faculty of the University of Southern California School of Pharmacy. Los Angeles, CA: January 8, 2016.
- **Feldon, D. F.** (2015). *Standing on the shoulders of giants: Using the lessons of science to prepare career-long teachers*. Invited presentation for the Hugo Rossi Lecture Series hosted by the Center for Science and Mathematics Education at the University of Utah. Salt Lake City, UT: December 2, 2015.
- **Feldon, D. F.** (2015). *Secondary, post-secondary and industry collaborations: Creating a synergistic pipeline*. Panelist for the NDIA/AIA STEM Utah Call-to-Action Forum. Ogden, UT: August 19, 2015.
- **Feldon, D. F.** (2015). *Cognitive task analysis and workforce training*. Invited presentation to the U.S. Navy CNO Strategic Studies Group. Logan, UT: April 6, 2015.
- **Feldon, D. F.** (2014). *STEM education, workforce development, and the innovation economy in Utah*. Invited presentation to the Cache Valley Chamber of Commerce. Logan, UT: May 20, 2014.
- **Feldon, D. F.** (2014). *Overcoming cognitive interactions with STEM expertise: Empirical results and implications for practice*. Invited presentation to the Center for Science and Math Education at Weber State University. Ogden, UT: March 25, 2014.
- **Feldon, D. F.** (2014). *STEM funding and initiatives*. Invited presentation to the USU Extension Annual Conference. Logan, UT: March 6, 2014.
- **Feldon, D. F.** (2014). *The USU STE<sup>2</sup>M Center*. Invited presentation to the Kiwanis Club. Logan, UT: March 5, 2014.
- **Inkelas, K., Feldon, D. F., & \*Rates, C.** (2013). *Best practices in science, technology, engineering, and mathematics (STEM) in Cambodian higher education institutions*. Invited workshop supported by the Cambodian Ministry of Education, Youth, and Sport. Siem Reap, Cambodia: October 14-17, 2013.
- **Feldon, D. F.** (2012). *Exploring interactions between cognitive load and motivation*. Invited colloquium talk to the cognitive psychology program at the University of Virginia. Charlottesville, VA: September 26, 2012.

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- **Feldon, D. F.** (2012). *Assessing efficacy and outcomes of graduate education in the sciences*. Invited keynote address to the Johns Hopkins University Meeting of Graduate Directors. Baltimore, MD: May 18, 2012.
- **Feldon, D. F.** (2012). *Understanding research skill development in graduate students: Emerging patterns and influences*. Invited presentation to the Johns Hopkins University Department of Cell Biology. Baltimore, MD: May 17, 2012.
- **Feldon, D. F.** (2012). *Strategies for effective evaluation*. Panel presentation to the National Science Foundation meeting for STEP Principal Investigators. Washington, DC: March 15, 2012.
- **Feldon, D. F.** (2012). *Empirical examinations of research skill development and their implications for graduate education*. Invited professional development workshop presented to the faculty of the Indiana University School of Medicine. Indianapolis, IN: March 6, 2012.
- **Feldon, D. F.** (2011). *Discussant: Understanding and reducing cognitive load during learning*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA: April, 2011.
- **Feldon, D. F.** (2011). *Effects of inquiry-based teaching experiences on graduate students' research skill development*. Invited presentation to the National Science Foundation meeting for REESE Principal Investigators. Washington, DC: October 21, 2011.
- **Feldon, D. F.** (2011). *Assessing critical skills of future faculty: Considering sources of data*. Invited presentation to the Center for the Integration of Research, Teaching, and Learning (CIRTL) Forum. Madison, WI: October 10, 2011.
- **Feldon, D. F.** (2011). *Evidence-based practice: What works, what doesn't, and why*. Invited presentation to the Tapestry Summer Workshop for high school computer science teachers. Charlottesville, VA: June 29, 2011.
- **Feldon, D. F.** (2011). *Expertise development and research experiences in STEM disciplines*. Invited presentation to the Center for the Chemistry of the Universe (NSF Center for Chemical Innovation). Charlottesville, VA: June 27, 2011.
- \*Yates, K. A., **Feldon, D. F.**, & Clark, R. C. (2011). *Using cognitive task analysis to capture expert knowledge and skills for research and instructional design*. Professional development workshop presented at the Annual Meeting of the American Educational Research Association. New Orleans, LA: April, 2011.
- **Feldon, D. F.** (2010). *Discussant paper: Strategies in science learning*. Paper presented at the Annual Meeting of the American Educational Research Association. Denver, CO: May, 2010.

- Cousteau, P., & Feldon, D. F. (2010). *The UVA Bay Game and the future of Chesapeake Bay education*. Plenary session presented at the Educational Technology Leadership Conference (Virginia Department of Education). Roanoke, VA: November 30, 2010.
- **Feldon, D. F.** (2010). *Methodological considerations in understanding game-based learning*. Presented at the Kaplan Games and Learning Panel. New York, NY: September 13, 2010.
- **Feldon, D. F.** (2010). *Grantsmanship for application to the National Science Foundation*. Presented at the University of Virginia Curry School of Education. Charlottesville, VA: November 15, 2010.
- **Feldon, D. F.** (2010). *Assessment in graduate programs: Instruments, approaches, and lessons*. Workshop presented to the University of Virginia on behalf of the Office for Institutional Research and Assessment. Charlottesville, VA: October 22, 2010.
- **Feldon, D. F.** (2010). *Preparing an IES grant application: Tips from Curry IES reviewers*. Panelist at the University of Virginia Curry School of Education. Charlottesville, VA: May 11, 2010.
- **Feldon, D. F.** (2010). *Student success in foundational courses in science*. Presented at the National Science Foundation STEP Grantees Meeting 2010. Washington, DC: March, 2010.
- **Feldon, D. F., & Timmerman, B. E.** (2010). *Teaching excellence workshop: Can teaching improve graduate students' research skills? Intriguing findings from an ongoing NSF study*. Workshop presented at the University of South Carolina Center for Teaching Excellence. Columbia, SC: February 4, 2010.
- **Feldon, D. F.** (2009). *Discussant paper: Cognitive processes and learning*. Paper presented at the Annual Meeting of the American Educational Research Association. San Diego, CA: March, 2009.
- **Feldon, D. F.** (2009). *Cognitive load theory and instructional design*. Brown bag talk presented to the Group on Research in Medical Education, School of Medicine, University of Virginia. Charlottesville, VA: November 19, 2009.
- **Feldon, D. F.** (2009). *CTA-based training: Leveraging expertise for instruction and assessment*. Colloquium presented to the College of Social Work, University of South Carolina. Columbia, SC: May 18, 2009.
- **Feldon, D. F.** (2009). *Evidence-based practice: What works, what doesn't, and why*. Workshop presented as a professional development workshop to the Sacred Heart Medical Center Nursing Education Program. Spokane, WA: March 26, 2009.
- **Feldon, D. F.** (2009). *Impactful research in educational technology: Assessment in games and simulations*. Presented as part of the Tea and Technology lecture series for the Curry School of Education at the University of Virginia. Charlottesville, VA: November 22, 2009.

\* denotes student at time of collaboration.

- **Feldon, D. F.** (2009). *Cognitive task analysis*. Presented as a Dean's Teaching Fellow Seminar for the University of Rochester Medical Center. Rochester, NY: January 6, 2009.
- **Feldon, D. F.** (2009). *Gathering and analyzing data (Session B)*. Presented at the National Science Foundation STEP Grantees Meeting 2009. Washington, DC: March, 2009.
- **Feldon, D. F.** (2008). *Understanding effectiveness in educational technologies: Leveraging contexts, expertise, and instructional design*. Colloquium presented at Teachers College, Columbia University. New York, NY: February 6, 2008.
- **Feldon, D. F.** (2008). *Leveraging contexts, expertise, and instructional design in educational technology research*. Colloquium presented at the Human-Computer Interaction Institute, Carnegie Mellon University. Pittsburgh, PA: April 1, 2008.
- **Feldon, D. F.** (2008). *When medical expertise interferes with medical education: Challenging interactions between cognition and instruction*. Presented as a Faculty Development Workshop for the University of Rochester Medical Center. Rochester, NY: April 14, 2008.
- **Feldon, D. F.** (2007). *Discussant paper: Supporting instruction with expertise*. Presented at the Annual Meeting of the American Education Research Association. Chicago, Illinois: April, 2007.
- **Feldon, D. F.** (2007). *Discussant paper: Technology research on multimedia learning: A session in honor of William Winn*. Presented at the Annual Meeting of the American Education Research Association. Chicago, Illinois: April, 2007.
- **Feldon, D. F.** (2007). *Impactful research in educational technology*. Colloquium presented at the Steinhardt School of Education, New York University. New York, NY: April 27, 2007.
- **Feldon, D. F.** (2006). *Where should we draw the lines? Critiquing NCLB's disaggregation of data by race and gender*. Invited address presented at the Annual Meeting of the American Educational Research Association. San Francisco, CA: April, 2006.
- **Feldon, D. F.** (2005). *Defining knowledge domains for research on expertise and intelligence*. Presented as part of the UCLA Psychological Studies in Education Colloquium on Applied Human Development. Los Angeles, CA: February, 2005.
- Foulk, S., Gubler-Junge, L., Hill, K., & **Feldon, D. F.** (2002). *Social implications in education for children in foster care*. Panel presentation at A New Beginning for Partnerships for Children & Families in Los Angeles County. Los Angeles, California: November, 2002.



<b>ACADEMIC HONORS AND AWARDS</b>
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- Chair, STEM Education Panel, *U.S. Institute of Education Sciences*, 2020-present
- USU Center for the Schools of the Future, Research Fellow, 2020
- Recipient, Award for Significant Contribution to Educational Measurement and Research Methodology, Division D, American Educational Research Association, 2019
- Invited Participant, Enhancing Dissemination of Evidence-Based Models for PhD Career Development, Howard Hughes Medical Institute, 2019
- Editorial Board Member, *Educational Researcher*, 2019-2021
- Editorial Board Member, *Instructional Science*, 2018-2021
- Editorial Board Member, *CBE—Life Sciences Education*, 2018-2021
- Invited Panelist, National Academies of Science, Engineering, and Medicine, Committee on Revitalizing Graduate STEM Education for the 21<sup>st</sup> Century, 2017
- Researcher of the Year, Department of Instructional Technology and Learning Sciences, 2018
- Researcher of the Year, Department of Instructional Technology and Learning Sciences, 2017
- Editorial Board Member, *Studies in Graduate and Postdoctoral Education*, 2017-2020
- Chair, U.S. Office of Education Institute for Education Sciences (IES) Virtual Learning Research & Development Center review panel, 2016
- Invited speaker for the Hugo Rossi Lecture Series sponsored by the Center for Science and Mathematics Education at the University of Utah, 2015
- Invited participant for Chief of Naval Operations Strategic Studies Group 34 (Talent Management for the 21<sup>st</sup> Century Navy), Naval War College, Newport, RI, 2015
- Utah State University Notable New Grant Award, 2015
- Certificate of Commendation (Finalist), Outstanding Paper Award, AERA Doctoral Education across the Disciplines SIG, 2015
- Faculty Fellow, USU Center for Persons with Disabilities, 2014-present
- Editor's Choice Article "Advancing the Practice of Cognitive Task Analysis: A Call for Taxonomic Research" in *Theoretical Issues in Ergonomics Science*, 2013
- Outstanding Paper Award, AERA Doctoral Education across the Disciplines SIG, 2013
- Leveraging Excellence Award (co-recipient), National Consortium for Continuous Improvement in Higher Education, 2013
- Member, Presidential Commission on Advancing Graduate Education in the Chemical Sciences (Working Group on Student Support Mechanisms), *American Chemical Society*, 2012
- Inducted into the Psychonomic Society, 2012
- Best Poster Award, UVA Presidential Inauguration Research Poster Session (Translational and Cross-Disciplinary Research category), 2011
- Finalist, UVA Presidential Inauguration Research Poster Session (Law, Business, Policy, & Education category), 2011
- Finalist, UVA Presidential Inauguration Research Poster Session (Social, Behavioral, and Economic Sciences category), 2011
- Excellence in Diversity Fellowship, Teaching Resource Center, University of Virginia, 2009-2010
- Curry Cup Business Proposal competition, 2nd place, 2009

\* denotes student at time of collaboration.

- Michael J. Mungo Graduate Teaching Award Nominee, University of South Carolina, 2007
- Distinguished Paper Award, AERA/State and Regional Educational Research Associations, 2006
- University of Southern California Order of Troy Award for Outstanding Scholarship and Service, 2004
- Campbell Fellowship, University of Southern California Rossier School of Education, 2002-2004
- Student Models Award, University of Southern California Rossier School of Education, 1997-1998

<b>UNIVERSITY TEACHING</b>
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*Utah State University*

- |      |   |
|------|---|
| 2020 | EDUC 6800—Mixed Methods Research  |
| 2019 | ITLS 6870—Advanced Seminar: Cognitive Load Theory<br>ITLS 7300—Research in Instructional Technology & Learning Sciences |
| 2018 | EDUC 6800—Mixed Methods Research<br>PSYC 6666—Cognitive Psychology of Education   |
| 2017 | EDUC 6800—Mixed Methods Research<br>EDUC 6570—Introduction to Educational and Psychological Research                    |
| 2016 | PSYC 6666—Cognitive Psychology of Education<br>ITLS 6530—Instructional Design and Development Studio                    |
| 2015 | ITLS 6530—Instructional Design and Development Studio<br>ITLS 7150—Advanced Seminar: Cognitive Load Theory              |
| 2014 | TEAL 7810—Mixed Methods Research<br>ITLS 6530—Instructional Design and Development Studio                               |

Student Dissertation Committees

Joana Franco (member)  
Soojeong Jeong (chair)  
Sarah Urquhart (chair)  
Angela Minichiello (member)  
Joel Drake (member)

*University of Virginia*

- |           |  |
|-----------|--|
| 2011-2012 | EDIS 8500—Issues in STEM Education<br>EDLF 5500—Cognitive Psychology of Education<br>EDLF 5500—Mixed Methods Research<br>EDLF 5010/5011—Child and Adolescent Development |
| 2010-2011 | EDIS 8500—Issues in STEM Education<br>EDLF 5500—Cognitive Psychology of Education<br>EDLF 5010/5011—Child and Adolescent Development                                     |

\* denotes student at time of collaboration.

2009-2010 EDLF 5500—Advanced Cognition and Instructional Design  
EDIS 8500—Development of Expertise in STEM Disciplines

Student Dissertation Committees

Jennifer Elliott (chair)  
Jie Chao (chair)  
Sheila Warren (member, informal chair)

*Washington State University*

2008-2009 EDPSY/EDRES 563—Principles of Research  
EDPSY 509—Educational Measurement: Test Development and Assessment  
EDPSY 502—Theoretical Foundations of Learning and Instruction  
College of Education, Washington State University

*University of South Carolina*

2007-2008: EDPY 835—Advanced Research Methods in Educational Psychology  
EDPY 785—Motivation and School Learning  
EDPY J705—Human Growth and Development  
College of Education, University of South Carolina

2006-2007: EDET 652—Design and Evaluation of Games and Simulations  
EDPY 709—Motivation and School Learning  
EDPY 835—Advanced Problems in Educational Psychology: Expertise in the Sciences  
EDPY J705—Human Growth and Development  
College of Education, University of South Carolina

SCCC 383R—Proseminar: Development of Scientific Expertise  
Honors College, University of South Carolina

2005-2006: EDPY 705/J705—Human Growth and Development  
EDPY 709—Motivation and School Learning  
EDPY 401—Learners and Diversity  
College of Education, University of South Carolina

Student Dissertation Committees

Christopher Craft (member; informal chair)  
Melissa Hurst (member)  
Joanna Gilmore (member)  
Pu Peng (member)

*University of Southern California*

2004-2005: EDUC 532—Inquiry Methods I  
EDUC 525—Challenges in Urban Education: Learning  
EDPT 511—Human Motivation

2003-2004: EDPT 502—Learning and Individual Differences

Student Dissertation Committees

\* denotes student at time of collaboration.

Kenneth Yates (member, informal chair)  
 Cecilia Huckestein (member, informal chair)  
 Yan Diao (external examiner, School of Education Studies, University of New South Wales)

*University of California Los Angeles*  
 2004-2005: PSE 212b—Motivation

*Antioch University*  
 2004-2005: TEP 519—Educational Technology

<b>SERVICE</b>
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University

*Utah State University*

- Faculty Senator, representing the College of Education & Human Services, 2020-2023
- Director of Graduate Program Assessment and Development, Emma Eccles Jones College of Education and Human Services, 2016-present
- Director, USU STE<sup>2</sup>M Center, 2013-2016
- Chair of Promotion Advisory Committee for Jina Kang
- Member of Promotion Advisory Committee for Deborah Fields
- Member of Promotion Advisory Committee for Jody Clarke-Midura
- Member of Promotion Advisory Committee for Breanna Litts
- Member of Promotion Advisory Committee for Kristin Searle
- Member of Promotion Advisory Committee for Sarfaraz Serang

*University of Virginia*

- Member of Internal Review Committee for Tenure and Promotion Candidate, 2012
- Coordinator of Graduate Studies, Department of Curriculum, Instruction, and Special Education, Curry School of Education, 2012-2013
- Member of the UVA Faculty Senate Task Force on Online Learning, 2012
- Member of the Curry School Standing Committee on Doctoral Studies, 2012
- Member of the Curry School Committee on Doctoral Education, 2012
- Member of the Curry School Committee on New Courses and Programs, 2011
- Member of the University Critical Thinking Competency Assessment Committee, 2011
- Member of the University Committee on Instructional Technology, 2010-2013
- Member of the University of Virginia (Curry-SEAS) Engineering Education Committee, 2010-2013
- Member of Research and Assessment of Teacher Education committee, 2009-present
- Member of Faculty Council Subcommittee on Ph.D. Mentor Qualifications and Guidelines, 2009-2010

*Washington State University*

- Member of WSU-Pullman General University Classroom Committee's Academic Vision for Classroom Technology/Furnishings subcommittee, 2009
- Member of the WSU College of Education Graduate Student Professional Development Committee, 2008-2009

\* denotes student at time of collaboration.

- Adjudicator for the WSU Dr. William R. Wiley Exposition of Graduate and Professional Studies, 2008

#### *University of South Carolina*

- Member of Faculty Senate Committee on Instructional Development—University of South Carolina, 2007-2008

#### *University of Southern California*

- Ed.D. Core Course Design Committee Member, EDUC 525—Challenges in Urban Education: Learning, Rossier School of Education, University of Southern California, 2004-2005
- Student Representative to the Carnegie Foundation Initiative on the Doctorate, Rossier School of Education, University of Southern California, 2003-2004
- Education Graduate Organization President, Rossier School of Education, University of Southern California, 2003-2004
- Faculty Search Committee Member, Rossier School of Education, University of Southern California, 2003-2004
- Ed.D. Program Redesign Committee Member, Rossier School of Education, University of Southern California, 2002-2003
- California Commission on Teacher Credentialing Reaccreditation Self-Study Report Co-Author (Professional Administrative Credential), Rossier School of Education, University of Southern California, 2002

#### Profession

- Chair, *Graduate and Postdoctoral Education across the Disciplines SIG*, American Educational Research Association, 2019-2021
- Editorial Board Member, *Studies in Graduate and Postdoctoral Education*, 2017-2020
- Editorial Board Member, *CBE—Life Science Education*, 2018-2021
- Consulting Editor, Research Section, *Educational Technology Research & Development*, 2013-present
- AERA Annual Meeting Review Panel member for Division C (Section 6 [Cognitive, Social, and Motivational Processes]; Section 3 [Science Education]) and the Doctoral Education Across the Disciplines SIG
- Ad Hoc Reviewer for: *Educational Psychologist; Educational Researcher; Computers in Human Behavior; Urban Review; Review of Educational Research; American Educational Research Journal; Higher Education Research and Development; Technology, Instruction, Cognition, and Learning; Educational Technology Research & Development; Science Education; Journal of Research in Science Teaching; International Journal of Science Education; Mind, Brain, & Education; International Journal of Human-Computer Studies; Learning and Instruction; Instructional Science; CBE—Life Sciences Education; Journal of Educational Psychology; Cognition & Instruction; Journal of Learning Sciences*
- *UrbanEd Magazine* Editorial Board Member, 2003-2004

#### Field

- Participant, *I3IDP Summit*—American Chemical Society, December 10-11, 2019.
- Review Panel Member, *Institute of Education Sciences, U.S. Department of Education*—Mathematics and Science panel, 2018-2021

- Review Panel Chair, *Institute of Education Sciences, U.S. Department of Education*—Virtual Learning Centers panel, 2016
- Review Panel Member, *Institute of Education Sciences, U.S. Department of Education*—Virtual Learning Centers panel, 2015
- Survey Instrument Technical Review Panel Member, *NASA Office of Education*, 2015
- Member of the Utah Core Standards Review Committee for Science, 2014
- Review Panel Member, Division of Undergraduate Education, Division of Graduate Education, Division of Research on Learning, National Science Foundation, 2007-2016
- Member of Utah State Science Education Coordinating Committee, 2013-present
- Member of UEN (Utah Education Network) Advisory Council, 2013-present
- Review Panel Member, *Institute of Education Sciences, U.S. Department of Education*—Basic Processes panel, 2012-2015
- Review Panel Member, *National Institute for General Medical Sciences*—Research to Understand and Inform Interventions that Promote the Research Careers of Students in Biomedical and Behavioral Sciences, 2012
- Member of Working Group on Financial Support Mechanisms for Graduate Education in the Chemical Sciences, Presidential Commission on Advancing Graduate Education in the Chemical Sciences, *American Chemical Society*, 2012
- Facilitator, *National Science Foundation*—Workshop for Developing and Sustaining Productive Graduate Research Groups in Engineering, July 11-12, 2011
- Member of the *National Science Foundation* Science, Technology, Engineering, and Mathematics Talent Expansion Program (STEP) PI Meeting Program Steering Committee, 2010-2012
- Review Panel Member, *Institute of Education Sciences, U.S. Department of Education*—Mathematics and Science Education panel, 2009-2012
- Ad Hoc Reviewer, *National Institute for Child and Human Development*—Center for Science Learning panel, 2009

### EXTRAMURAL & PREDOCTORAL PROFESSIONAL EXPERIENCE

- 2012-present Evaluator, Virginia-North Carolina Alliance for Minority Participation in STEM (NSF LSAMP)
- 2017-2018 Evaluator, Southern Regional Education Board Institute on Teaching and Mentoring (NSF AGEP)
- 2011-2013 Consultant, Kaplan University cognitive task analysis and instructional design efforts.
- 2009 Consultant, CTA-based Instruction for SNAP Eligibility Workers (Project funded by the South Carolina Department of Social Services and the Center for Child and Family Studies at the University of South Carolina).
- 2007-2010 Consulting Scientist, Expert Knowledge Solutions, LLC: Pilot Study of Guided Experiential Learning (GEL) Instructional Design System for the New Army Learning Model (nALM) (Project funded by U.S. Army Training and Doctrine Command [TRADOC]).

\* denotes student at time of collaboration.

- 2007-2008 Consultant, Interactive Neuro-Educational Technology (I-NET): Increasing the pace and efficiency of marksmanship training (Project funded by the Defense Advanced Research Projects Agency [DARPA]). A contract awarded to Advanced Brain Monitoring, Inc., the National Center for Research on Evaluation, Standards, and Student Testing at UCLA, and the UCLA IMMEX Project.
- 2006-2007 Consultant, Integrated Learning Environment Assessment System (Project funded by the Office of Naval Research). A contract awarded to the National Center for Research on Evaluation, Standards, and Student Testing at the University of California at Los Angeles.

### **PROFESSIONAL AFFILIATIONS**

- Association for the Study of Higher Education
- American Educational Research Association
- Psychonomic Society
- National Association for Research on Science Teaching
- Association for Psychological Science
- American Psychological Association
- International Society of the Learning Sciences
- Cognitive Science Society