CURRICULUM VITAE

David DeLiema

IDENTIFYING INFORMATION

Academic Rank

Assistant Professor - Department of Educational Psychology

Education

Degree	Institution	Date Degree Granted
B.A.	University of California, Los Angeles Communication Studies	2008
Ph.D.	University of California, Los Angeles Graduate School of Education and Information Studies Dissertation Chair: Noel Enyedy Dissertation Committee: William Sandoval, Charles Goodwin, Louis Gomez, Francis Steen	2015

Positions/Employment

University of Minnesota, Twin Cities
Assistant Professor   2019 – present

University of California, Berkeley
Postdoctoral Researcher   2016-2019

University of California, Los Angeles
Postdoctoral Researcher (UCLA)   2015-2016

Current Membership in Professional Organizations
- American Educational Research Association (AERA)
- AERA, Special Interest Group – Learning Sciences
- International Society of the Learning Sciences (ISLS)

HONORS AND AWARDS FOR RESEARCH/CREATIVE WORK, TEACHING, PUBLIC ENGAGEMENT, AND SERVICE

University of Minnesota

- UMN's Thank a Teacher certificate through the Center for Educational Innovation (2021)
- University of Minnesota's Center for Educational Innovation's Certificate for Outstanding Teaching and Dedication to Helping Students' Learn (2020)

External Sources

- o Recognition in 2022 for Outstanding Service to the Journal of Educational Psychology
- o Journal of the Learning Sciences Reviewer of the Year (received March, 2021)
- o Facilitators' Choice Award, 2018 NSF STEM For All Video Showcase, Debugging Failure
- o Participant, Early Career Workshop at ICLS 2016
- o Participant, ICLS 2014 Doctoral Consortium
- o Nominated, 2013 CSCL Best Design Paper (with Noel Enyedy and Joshua Danish)

RESEARCH, SCHOLARSHIP, AND CREATIVE WORK

Grants and Contracts

External Sources

Received at the University of Minnesota

Principal Investigator: Cassie Scharber
UMN Co-PIs: **David DeLiema** & Bodong Chen
Status: Awarded
Sponsoring Organization: National Science Foundation, DRK-12
Award type: <u>Supplemental funding</u>
Project Title: DataX: Exploring Justice-Oriented Data Science with Secondary School Students
Award Dates: 04/18/2023 - 12/31/2023
Funded Amount: $89,664
Direct Amount: $69,138
Indirect Amount: $20,526

Principal Investigator: Bodong Chen
UMN Co-PIs: Cassie Scharber & **David DeLiema**
Status: Active
Sponsoring Organization: National Science Foundation, DRK-12
Project Title: DataX: Exploring Justice-Oriented Data Science with Secondary School Students
Award Dates: 07/01/2021 - 06/30/2023
Funded Amount: $449,199
Direct Amount: $310,712
Indirect Amount: $138,487

Principal Investigator: **David DeLiema**
UMN Co-PIs: Bodong Chen and Keisha Varma
External Co-Is: Shima Salehi, Matthew Bernacki, and Craig Anderson
Status: Active
Sponsoring Organization: Carina Initiatives
Project Title: *Playful Problem Solving*
Award Dates: 9/1/2020 – 08/30/2023
Funded Amount: $990,700
Direct Amount: $927,994
Indirect Amount: $62,730

Principal Investigator: **David DeLiema**
Status: Complete
Sponsoring Organization: NAEd/Spencer Foundation
Project Title: *Longitudinal Research on Collaborative Approaches to Failure in Youth Computer Science Workshops*
Award Dates: 9/1/2020 – 8/31/2022
Funded Amount: $70,000
Direct Amount: $70,000
Indirect Amount: $0

Under Review at the University of Minnesota

Principal Investigator: Laura Allen
Co-Principal Investigator: **David DeLiema** & Jeff Bye
Sponsoring Organization: National Science Foundation, Sci of Lrng & Augmented Intel
Project Title: *Collaborative Research: Improving and Scaling Team-Based Software Engineering Education Using an Assistive Agent*
Award Dates: 9/1/2023 – 8/30/2026
Award Total: $479,941
Direct Amount: $328,195
Indirect Amount $151,746

Received at another institution:

Principal investigator: **David DeLiema**
National Science Foundation
Graduate Research Fellowship Program (GRFP) Fellowship
$90,000

Principal investigator: **David DeLiema**
University of California, Los Angeles
2011 Graduate Summer Research Mentorship (GSRM) Fellowship
$4,000

Principal investigator: **David DeLiema**
University of California, Los Angeles
2010 Graduate Summer Research Mentorship (GSRM) Fellowship
$4,000

Rejected at the University of Minnesota

Principal Investigator: **David DeLiema**
Co-Principal Investigator: Marjorie Bequette (Science Museum of Minnesota)
Status: Rejected
Sponsoring Organization: National Science Foundation, AISL
Project Title: *Scoping Review of the Museum Family Learning Conversations Research*
Award Dates: 9/1/23 – 8/31/25
Direct Amount: $261,767
Indirect Amount: $120,588

Principal Investigator: Savana Bak
UMN Co-PIs: **David DeLiema**
Status: Rejected
Sponsoring Organization: National Institute of Health, R03
Project Title: *Multimodal Communicative Interaction of NV Autistic Children*
Direct Amount: $100,000

Principal Investigator: Savana Bak
UMN Co-PIs: **David DeLiema,** LeAnne Johnson, & Seungwon Chung
Status: Rejected
Sponsoring Organization: Department of Defense
Project Title: *Developing a Multi-modal Communication Assessment for Children with Autism*

Principal Investigator: Alp Sehirlioglu
Co-PIs: **David DeLiema**, Mark Griswold, Michael-Jon A. Hore, Fey Parrill
Status: Rejected
Sponsoring Organization: National Science Foundation, Cyberlearn & Future Learn Tech
Project Title: *Design, Development, and Evaluation of 3D Teaching of 3D Concepts via Augmented Reality*
Award Dates: 09/01/21 – 08-31/24
Proposed Award Amount: $228,074 (Subaward to UMN); Total project: 849,862
Direct Amount: $161,717
Indirect Amount: $66,357

Principal Investigator: **David DeLiema**
Co-PIs: Bodong Chen, Keisha Varma, Panayiota Kendeou, & Sashank Varma
Status: Rejected
Sponsoring Organization: National Science Foundation, Sci of Lrng & Augmented Intel
Project Title: *Informed Search in the Post-Truth Era: Teaching Students to Navigate the Information Landscape of Socioscientific Issues*
Award Dates: 6/1/2021 - 5/31/24
Proposed Amount: $1,006,188
Direct Amount: $714,394
Indirect Amount: $292,697

Principal Investigator: Cassie Scharber
Co-PIs: **David DeLiema**, Lana Peterson, Andrea Wilson Vazquez
Status: Rejected
Sponsoring Organization: National Science Foundation, DRL – CS for All
Project Title: *Code for Equity: A Minnesota RPP Supporting High School Educators, District Allies, and English Learners in Introductory Computer Science Education*
Award Dates: 1/1/21 – 12/31/24
Proposal Amount: $999,915
Direct Amount: $727,581
Indirect Amount: $272,334

University Sources

Received at the University of Minnesota

Principal Investigator: **David DeLiema**
Co-Investigator: Jeff Bye
Status: Active
Sponsoring Organization: UMN Grant-in-Aid
Project Title: *Developing and Testing an Expansive Debugging Pedagogy to Support Students' Learning through Failure*
Award Dates: 01/01/2022 – 8/31/2023
Funded Amount: $40,450

Principal Investigator: **David DeLiema** & Panayiota Kendeou
Status: Active
Sponsoring Organization: UMN Department of Educational Psychology
Project Title: *Eye-tracking dynamic regions of interest: Studying problem solving in interactive learning environments*
Award Dates: 10/4/2021 – 8/31/2022
Funded Amount: $2,400
Direct Amount: $2,400
Indirect Amount: $0

Principal Investigator: **David DeLiema**
Status: Complete
Sponsoring Organization: UMN Sustainable Development Goals Initiative
Project Title: *Parent-child Discourse in Outdoor Inquiry: Understanding Autonomy, Risk, and Failure during Learning*
Award Dates: 9/1/2020 – 1/31/2021
Funded Amount: $5,000
Direct Amount: $5,000
Indirect Amount: $0

Principal Investigator: **David DeLiema**
Status: Complete
Sponsoring Organization: UMN Department of Educational Psychology
Project Title: *Parent-child Discourse in Outdoor Inquiry: Understanding Children's Agency during Moments of Play, Failure, and Risk-taking*
Award Dates: 6/1/2020 – 8/31/2020
Funded Amount: $3,000
Direct Amount: $3,000
Indirect Amount: $0

Publications (underlined names denote mentee/student author; for clarity and consistency, my annotations beneath each research product follow the CRediT conventions from CASRAI: https://casrai.org/credit/)

Refereed Journal Articles

Fong, M. M., **DeLiema, D.**, Flood, V. J., & Walker-van Aalst, O. (2023). Contesting sociocomputational norms: Computer programming instructors and students' co-

operative stance-taking around refactoring. *International Journal of Computer-supported Collaborative Learning.* DOI: 10.1007/s11412-023-09392-2

Contributed to conceptualization, data curation, formal analysis, investigation, methodology, project administration, resources, supervision, visualization, writing (original draft), and writing (review & editing)

Ryan, Z., & **DeLiema, D.** (2023). Reflections on sustained debugging support: Conjecture mapping as a point of departure for instructor feedback on design. *Instructional Science*. 10.1007/s11251-023-09629-5

Contributed to conceptualization, formal analysis, investigation, methodology, project administration, resources, supervision, writing (original draft), and writing (review & editing)

DeLiema, D., Hufnagle, A. S., Rao, V. N. V., Baker, J., Valerie, J., & Kim, J. (2023). Methodological innovations at the intersection of video-based educational research traditions: Reflections on relevance, data selection, and phenomena of interest. *International Journal of Research & Method in Education*, 46(1), 19-36.

Contributed to conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, resources, supervision, visualization, writing (original draft), and writing (review & editing)

DeLiema, D., Kwon, Y., Chisholm, A., Williams, I., Dahn, M., Flood, V., Abrahamson, D., & Steen, F. (2023). A multi-dimensional framework for documenting students' heterogeneous experiences with programming bugs. *Cognition & Instruction, 41*(2), 158-200.

Contributed to conceptualization, data curation, formal analysis, investigation, methodology, project administration, resources, supervision, visualization, writing (original draft), and writing (review & editing)

Baker, J., **DeLiema, D.**, Hufnagle, A. S., Carlson, S. M., Sharrat, A., & Williams Ridge, S. (2022). Impasses in the wild: Autonomy support in naturalistic, parent-child outdoor play. *Frontiers in Education, 7*, 1-28.

Contributed to conceptualization, formal analysis, funding acquisition, investigation, methodology, supervision, writing (original draft), and writing (review & editing)

Lindgren, R., & **DeLiema, D.** (2022). Viewpoint, embodiment, and roles in STEM learning technologies. *Educational Technology Research and Development, 70*, 1009–1034.

Contributed to conceptualization, formal analysis, investigation, methodology, visualization, writing (original draft), and writing (review & editing)

Lee, U.-S., **DeLiema, D.**, & Gomez, K. (2022). Equity conjectures: A methodological tool for centering social change in learning and design. *Cognition & Instruction, 40*(1), 77-99.

Contributed to conceptualization, methodology, writing (original draft), and writing (review & editing)

DeLiema, D., Enyedy, N., Steen, F., Danish, J. A. (2021). Integrating viewpoint and space: How lamination across gesture, body movement, language, and material resources shapes learning. *Cognition & Instruction, 39*(3), 328-365.

Contributed to conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, resources, supervision, visualization, writing (original draft), and writing (review & editing)

Dahn, M., & **DeLiema, D.** (2020). Dynamics of emotion, problem solving, and identity: Portraits of three girl coders. *Computer Science Education, 30*(3), 362-389.

Contributed to conceptualization, data curation, formal analysis, investigation, methodology, supervision, writing (original draft), and writing (review & editing)

Dahn, M., **DeLiema, D.,** & Enyedy, N. (2020). Art as a point of departure for storytelling about the experience of learning to code. *Teachers College Record, 122*(8).

Contributed to conceptualization, data curation, formal analysis, investigation, methodology, supervision, writing (original draft), and writing (review & editing)

DeLiema, D., Enyedy, N., & Danish, J. A. (2019). Roles, rules, and keys: How different play configurations shape collaborative science inquiry. *Journal of the Learning Sciences, 28*(4-5), 513-555.

Contributed to conceptualization, data curation, formal analysis, investigation, methodology, visualization, writing (original draft), and writing (review & editing)

Hoey, E. M., **DeLiema, D.**, Chen, R., Flood, V. J. (2018). Imitation in children's locomotor play. *Research on Children in Social Interaction, 2*(1), 1-24.

Contributed to conceptualization, data curation, formal analysis, investigation, methodology, visualization, writing (original draft), and writing (review & editing)

DeLiema, D. (2017). Co-constructed failure narratives in mathematics tutoring. *Instructional Science, 45*(6), 709-735.

Contributed to conceptualization, data curation, formal analysis, investigation, methodology, project administration, resources, supervision, visualization, writing (original draft), and writing (review & editing)

Xiao, S., & **DeLiema, D.** (2017). Video-based analysis of learning processes: Rationale and method. *Journal of East China Normal University (Educational Sciences), 35*(5), 55–71.

Contributed to conceptualization, data curation, formal analysis, investigation, methodology, visualization, writing (original draft).

Enyedy, N., Danish, J. A., **DeLiema, D.** (2015). Constructing liminal blends in a collaborative augmented-reality learning environment. *Int'l. Journal of Computer Supported Collaborative Learning, 10*(1), 7-34.

Contributed to conceptualization, data curation, formal analysis, methodology, visualization, writing (original draft), and writing (review & editing)

Kawasaki, J., **DeLiema, D.**, Sandoval, W. (2014). The influence of non-epistemic features of settings on epistemic cognition. *Canadian Journal of Science, Math, and Technology Education, 14*(2), 207-221.

Contributed to conceptualization, data curation, formal analysis, investigation, methodology, project administration, resources, supervision, visualization, writing (original draft), and writing (review & editing)

Manuscripts Under Review

Goeke, M. & **DeLiema, D.** (revised and resubmitted on 05/25/2023). Uncovering maker educators' heterogenous professional visions of agency within goal setting interactions.

Contributed to conceptualization, formal analysis, investigation, methodology, supervision, and writing (review & editing)

DeLiema, D., Hufnagle, A. S., Ovies-Bocanegra, M. (under review on 07/11/2023). Contrasting stances at the crossroads of debugging learning opportunities.

Contributed to conceptualization, data curation, formal analysis, investigation, methodology, project administration, resources, supervision, visualization, writing (original draft), and writing (review & editing)

Carpenter, Z., & **DeLiema, D.** (under review on 08/01/2023). Linking epistemic stance and problem-solving with self-confidence during play in a puzzle-based video game.

Contributed to conceptualization, formal analysis, investigation, methodology, project administration, resources, supervision, and writing (review & editing).

Anderson, C. G., Hussein, B., Carpenter, Z. L., Salehi, S., & **DeLiema, D.** (under review on 08/10/2023). Exploring how tutors give scaffolding in a puzzle game.

Contributed to conceptualization, data curation, formal analysis, investigation, methodology, project administration, resources, supervision, and writing (review & editing).

Refereed Book Chapters

DeLiema, D., Dahn, M. Flood, V. J., Asuncion, A., Abrahamson, D., Enyedy, N., Steen, F. F. (2020). Debugging as a context for collaborative reflection on critical thinking and emotion. In E. Manolo (Ed.), *Deeper Learning, Communicative Competence, and Critical Thinking: Innovative, Research-Based Strategies for Development in 21st Century Classrooms* (pp. 209-228). New York: Routledge.

Contributed to conceptualization, data curation, formal analysis, investigation, methodology, project administration, resources, supervision, visualization, writing (original draft), and writing (review & editing)

DeLiema, D., Lee, V., Danish, J., Enyedy, N., & Brown, N. (2015). A microlatitudinal/microlongitudinal analysis of speech, gesture, and representation use in a student's repeated scientific explanations of phase change. In A. A. diSessa, M. Levin, & N. J. S. Brown (Eds.). *Knowledge and interaction: A synthetic agenda for the learning sciences* (pp. 133-159). New York, NY: Routledge.

Contributed to conceptualization, data curation, formal analysis, visualization, writing (original draft), and writing (review & editing)

DeLiema, D. & Steen, F. F. (2014). Thinking with the body: conceptual integration through gesture in multiviewpoint model construction. In M. Borkent, B. Dancygier, Hinnell, J. (Ed.) *Language and the Creative Mind* (pp. 275-294). Stanford, CA: CSLI Publications.

Contributed to conceptualization, data curation, formal analysis, investigation, methodology, project administration, resources, visualization, writing (original draft), and writing (review & editing)

Refereed Proceedings of Conferences as Part of Paper Sessions

Wilson Vasquez, A., **DeLiema, D.**, Goeke, M., & Bye, J. (2023). Debugging debugging pathways: A research-practice partnership in K-8 computer science education. In *17th International Conference of the Learning Sciences (ICLS) 2023*. Montreal, Canada: International Society of the Learning Sciences.

Carpenter, Z., & **DeLiema, D.** (2023). Learning through play at the intersection of problem-solving, epistemic (un)certainty, and emotion. In *17th International Conference of the Learning Sciences (ICLS) 2023*. Montreal, Canada: International Society of the Learning Sciences.

Steen, F.., **DeLiema, D.,** & Miao, G. C. (2023). "Remember...you can always just": Approaching the zone of proximal development. *73rd Annual International Communication Association Conference*. Toronto, Canada.

DeLiema, D., Goeke, M., Hussein, B., Valerie, J., Anderson, C., Varma, K., Chen, B., Salehi, S., & Bernacki, M. (2022). Playful learning following deviations: A mixture of tinkering, causal explanations, and revision rationales. In C. Chinn, D. Tan, C. Chan, & Y. Kali (Eds.), *16th International Conference of the Learning Sciences (ICLS) 2022* (pp. 1421-1424). Hiroshima, Japan: International Society of the Learning Sciences.

Goeke, M. & **DeLiema, D.** (2022). Attenuation and amplification of agency through goal announcements in a makerspace. In C. Chinn, D. Tan, C. Chan, & Y. Kali (Eds.), *16th International Conference of the Learning Sciences (ICLS) 2022* (pp. 211-218). Hiroshima, Japan: International Society of the Learning Sciences.

Anderson, C. G., Goeke, M., Hussein, B., Carpenter, Z. L., Salehi, S., **DeLiema, D.** (2022). Baba is hint - Designing a scaffolding guidebook for game-based learning. In Proceedings of the *Games+Learning+Society Conference 2022*. Irvine CA.

Elliott, C. H., Radke, S., **DeLiema, D.**, Silvis, D., Vogelstein, L. (2020). Whose video?: Surveying implications for participants' engagement in video recording practices in

ethnographic research. In M. Gresalfi, M. & I. S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 2* (pp. 414-421). Nashville, TN: International Society of the Learning Sciences.

Kafai, Y., **DeLiema, D.**, Fields, D. A., Lewandowski, G., & Lewis, C. (2019). Rethinking debugging as productive failure for CS education. In *Proceedings of the ACM Special Interest Group on Computer Science Education* (pp. 169-170). Minneapolis, MN: ACM.

Flood, V. J., **DeLiema, D.**, & Abrahamson, D. (2018). Bringing static code to life: The instructional work of animating computer programs with the body. In J. Kay & R. Luckin (Eds.), *"Rethinking learning in the digital age: Making the Learning Sciences count," Proceedings of the 13th International Conference of the Learning Sciences* (Vol. 2, pp. 1085-1088). London: International Society of the Learning Sciences.

Keifert, D., Lee, C., Dahn, M., Illum, R., **DeLiema, D.**, Enyedy, N., & Danish, J. (2017). *Agency, embodiment, & affect during play in a mixed-reality learning environment*. Proceedings of the 16th Interaction Child & Design Conference (pp. 268-277), Palo Alto CA.

Nathan, M. J., Williams-Pierce, C., Abrahamson, D., Ottmar, E. R., Landy, D., Smith, C., Walkington, C., **DeLiema, D.**, Soto-Johnson, H., Alibali, M., & Boncoddo, R. (2017). Embodied Mathematical Imagination and Cognition (EMIC) Working Group. In E. Galindo & J. Newton (Eds.), *"Synergy at the crossroads" -- Proceedings of the 39th annual conference of the North-American chapter of the International Group for the Psychology of Mathematics Education* (Ch. 14 [Working groups], pp. 1497-1506). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.

Enyedy, N., Danish, J., **DeLiema, D.**, Saleh, A., Lee, C., Morris, N., and Illum, R. (2017). Social affordances of mixed reality learning environments: A case from the science through technology enhanced play project. In the *50th Proceedings of the Hawaii International Conference on System Science* (pp. 2096-2105). University of Hawaii, Honolulu, Hawaii: University of Hawaii Press.

DeLiema, D., Saleh, A., Lee, C., Enyedy, N., Danish, J. A., Illum, R., Dahn, M., Humburg, M., & Mahoney, C. (2016). Blending play and inquiry in augmented reality: A comparison of playing a video game to playing within a participatory model. In C-K. Looi, J. Polman, U. Cress, & P. Reimann (Eds.) *Transforming Learning, Empowering Learners: The International Conference of the Learning Sciences (ICLS) 2016, Volume 2* (pp. 1421-1425). Singapore: International Society of the Learning Sciences.

Enyedy, N., Danish, J. A., **DeLiema, D.** (2013). Constructing and deconstructing materially-anchored conceptual blends in an augmented reality collaborative learning environment. In. N. Rummel, M. Kapur, M. Nathan, & S. Puntambekar (Eds.) *To See the World and a Grain of Sand: Learning across Levels of Space, Time, and Scale: CSCL 2013 Conference Proceedings Volume 1 — Full Papers & Symposia* (pp. 192-199). Madison, WI: International Society of the Learning Sciences.

DeLiema, D., Kawasaki, J., & Sandoval, W. A. (2012). High school students' epistemic engagement in producing documentaries about public science concerns. In. J. van Aalst, K. Thompson, M. J. Jacobson, & P. Reimann, (Eds.) *The Future of Learning: Proceedings of the 10th International Conference of the Learning Sciences (ICLS 2012) –*

Volume 2 (pp. 311-315). Sydney, NSW, Australia: International Society of the Learning Sciences.

Abrahamson, D., Petrick, C., **DeLiema, D.**, Johnson–Glenberg, M., Birchfield, D., Koziupa, T. Savio-Ramos, C., Cruse, J., Lindgren, R., Fadjo, C., Black, J., & Eisenberg, M. (2012). You're it! Body, action, and object in STEM learning. In. J. van Aalst, K. Thompson, M. J. Jacobson, & P. Reimann, (Eds.) *The Future of Learning: Proceedings of the 10th International Conference of the Learning Sciences (ICLS 2012) – Volume 2* (pp. 99-109). Sydney, NSW, Australia: International Society of the Learning Sciences.

Refereed Proceedings of Conferences as Part of Poster Sessions

Baker, J. & **DeLiema, D.** (2022). Mathematizing embodied play and failure. In A. Simpson, C. Williams-Pierce, E. Shokeen, & N. Katirci (Co-organizers), The nature(s) of embodied mathematical failure. In *15th International Conference of the Learning Sciences (ICLS)* (pp. 1787-1794), Hiroshima, Japan: International Society of the Learning Sciences.

DeLiema, D., Enyedy, N., Steen, F., & Danish, J. A. (2021). Meadow bees, hive bees, and a moving sun: Tensions and affordances in learning between embodied point of view and spatial frames of reference. In A. Wagh & A. Dickes (Chairs), Expansive modeling: Broadening the scope of modeling in K-12 education. In de Vries, E., Hod, Y., & Ahn J. (Eds.), P*roceedings of the 15th International Conference of the Learning Sciences - ICLS 2021.* Bochum, Germany: International Society of the Learning Sciences.

DeLiema, D., & Dahn, M. (2020). Envisioning debugging cultures at the intersection of emotion, problem solving, and identity. In D. Weintrop, G. W. Choi, A. Maltese, & M. Tissenbaum (Organizers), What does computer science and maker education look like in 2030? In M. Gresalfi, M. & I. S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 2* (pp. 1519-1524). Nashville, TN: International Society of the Learning Sciences.

DeLiema, D., Sharma, G., Valerie, J., Cabrera, A., & Smith, S. (2020). Temporal and geographical features of programming substrates: Navigating code structure, behavior, and function during debugging. In D. Keifert (Chair), Analytical designs: Goodwin's substrates as a tool for studying learning. In M. Gresalfi, M. & I. S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 2* (pp. 1471-1478). Nashville, TN: International Society of the Learning Sciences.

Fong, M., Aalst, O. W-V., Flood, V., & **DeLiema, D.** (2020). When features become bugs: Stance-taking around refactoring in a coding classroom. In Y. Kafai (Chair), Turning bugs into learning opportunities: Understanding debugging processes, perspectives, and pedagogies. In M. Gresalfi, M. & I. S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 2* (pp. 374-381). Nashville, TN: International Society of the Learning Sciences.

Flood, V. J., **DeLiema, D.**, Harrer, B. W., & Abrahamson, D. (2018). Enskilment in the digital age: The interactional work of learning to debug. In J. Kay & R. Luckin (Eds.), *"Rethinking learning in the digital age: Making the Learning Sciences count," Proceedings of the 13th International Conference of the Learning Sciences* (Vol. 3, pp. 1405-1406). London: International Society of the Learning Sciences.

Refereed Proceedings of Conferences as Part of Career Workshops

DeLiema, D. (2016). The social organization of play, embodied cognition, and failure in STEM education. In C-K. Looi, J. Polman, U. Cress, & P. Reimann (Eds.) *Transforming Learning, Empowering Learners: The International Conference of the Learning Sciences (ICLS) 2016, Volume 2* (pp. 1364-1365). Singapore: International Society of the Learning Sciences.

DeLiema, D. (2014). Attributions and epistemology in conversation: How math tutors and students co-construct accounts of failure and knowledge. In J. L. Polman, E. A. Kyza, D. K. O'Neill, I. Tabak, W. R. Penuel, & A. S. Jurow (Eds.) *Learning and becoming in practice: The International Conference of the Learning Sciences (ICLS) 2014, Volume 3* (pp. 1750). Boulder, CO: International Society of the Learning Sciences.

Presentations, Posters, and Exhibits

Invited Presentations at Professional Meetings, Conferences, etc.

DeLiema, D. (2022). Debugging failure: A multi-dimensional framework for documenting newcomers' experiences with obstacles. Invited session to Stat Chat group, October 9, 2022.

DeLiema, D., Bye, J., & Marupudi, V.+ (2021, 2022). Teaching debugging: Noticing problems, proposing causes, and testing solutions. Invited session at MNCodes Cohort, March 11, 2021 & March 10, 2022.

Dahn, M. & **DeLiema, D.** (2021). Dynamics of emotion, problem solving, and identity: Portraits of three girl coders. Invited talk at University of North Florida's School of Computing, Diversity and Inclusion Committee, January 19, 2021.

DeLiema, D., Bye, J., & Marupudi, V.+ (2020). Programming instructors and students' active (and partial) debugging: Deviation noticing, causal modeling, and intervening. Breakout session at MN Virtual Codes Summit, November 14, 2020.

DeLiema, D. (2020). *Debugging Failure: A Multi-dimensional Framework for Documenting Newcomers' Experiences with Obstacles.* Plenary Speaker, MNCodes Digital CS PD & Meet Up, May 16, 2020.

DeLiema, D. (2020). *Big picture ideas for teaching debugging.* Invited presentation, Code Savvy MNCodes Cohort Meeting, March 12, 2020.

DeLiema, D. (2019). *Integrating points of view and frames of reference: How laminated gestures drive learning.* Invited presentation, University of Minnesota, Center for Cognitive Science Symposium on Learning, November 1, 2019.

DeLiema, D. (2019). *Navigating code form, flow, and output during debugging.* Invited presentation, University of Minnesota, Psych Foundations Brown Bag, September 25, 2019.

DeLiema, D. (2017). *Debugging failure: Teacher-student interactions around obstacles*. Invited presentation, Stanford University, Paulo Blikstein's Research Lab, October 18, 2017.

DeLiema, D. (2017). *Teacher-student interactions during debugging*. Invited presentation, University of San Francisco, Cognitive Brown Bag Research Colloquium, San Francisco. September 29, 2017.

Ryoo, J., Hadad, R., & **DeLiema, D.** (2017). *Monthly discussion of failure in making*. Invited presentation, Online meeting hosted by Adam Maltese (Indiana University), Alice Anderson (Science Museum of Minnesota), and Amber Simpson (Indiana University).

DeLiema, D. (2016). *Debugging failure*. Invited presentation, UC Berkeley Graduate School of Education Colloquium. October 17, 2016.

DeLiema, D. (2015). *Failure and epistemic cognition*. Invited presentation, Research Lab of Judit Moschkovich, University of California, Santa Cruz. January 14, 2016.

DeLiema, D. (2015). *Modeling-play and game-play in participatory simulations*. Invited presentation, Embodied Design Research Laboratory (D. Abrahamson, Director), University of California, Berkeley. December 1, 2015.

DeLiema, D. (2015). *Failure storytelling*. Shanghai Municipal Education Commission's Project of Children's Basic Competencies of Learning and Innovation. Shanghai, China, September 23rd.

DeLiema, D. (2015). *Fostering a modeling practice in school*. Shanghai Municipal Education Commission's Project of Children's Basic Competencies of Learning and Innovation. Shanghai, China, September 22nd.

Steen, F. F., Treynor, W., **DeLiema, D.**, & Jeong, D. (2009). *Participatory knowledge and transformative understanding: Bridging some gaps between the sciences and the humanities*. University of California, Santa Barbara, CA, October 19.

Refereed Papers Presented at Professional Meetings, Conferences, etc. (use any standard format that the candidate's field uses)

Pan, Q., **DeLiema, D.**, & Bak, S. (under review). Effects of video modeling on play of a preschooler with autism: A mixed-method analysis. Paper submitted to the 2024 American Educational Research Association Annual Meeting.

Goeke, M., Zack Carpenter, Ashley Hufnagle, David Melchionne-Martinez, & **David DeLiema** (under review). Caring for collaborators: Holding space for heterogeneity in ethical commitments and analytical approaches. In C. Love & J. T. Tessally (Chairs), Caring relations across interaction analysis labs. Symposium submitted to the 2024 American Educational Research Association Annual Meeting.

DeLiema, D., Hufnagle, A., & Ovies-Bocanegra, M. (under review). *Contrasting stances at the crossroads of debugging learning opportunities*. In P. Sengupta (Chair), Centering care and affect in computing education. Symposium submitted to the 2024 American Educational Research Association Annual Meeting.

DeLiema, D., Goeke, M., Bye, J. K., Carpenter, Z., & Wilson Vasquez, A. (under review). *Viewing and envisioning debugging pedagogy: Collaborative teacher-researcher interaction analysis as ethical, practical, and epistemological.* In A. Pierson (Chair), Expanding participatory video analysis for ecological and ethical validity. Symposium submitted to the 2024 American Educational Research Association Annual Meeting.

Goeke, M., & **DeLiema D.** (2023, April). "Well that's up to you": Professional visions of agency in makerspace interactions. In V. Svihla (Chair), Whose agency? What learning? Whence power? Poster presented as part of a structured poster session at The American Educational Research Association, Chicago, Illinois.

Chen, B., Bartucz, J., Scharber, C., Rao, V. V., & **DeLiema, D.** (2023, April). *Toward a framework for justice-oriented data science education in K–12 schools.* Paper presented as part of a structured poster session at The American Educational Research Association, Chicago, Illinois.

Dahn, M., & **DeLiema, D.** (2022, April). *Design considerations for centering emotion and failure in problem solving.* In M. Gresalfi (Chair), Inclusion in computer science education: Documenting, designing, and supporting transformative learning in computer science classrooms. Paper presented at the meeting of The American Educational Research Association, San Diego, California.

Baker, J., **DeLiema, D.,** Sharratt, A., Hufnagle, A.+, & Carlson, S. (2021, July). *Understanding autonomy support: A group reflection on video data of parents and children playing together outdoors.* Paper and workshop held at the Natural Start 2021 Conference, Virtual Meeting.

The Link Tank+ (2021, July). *The promise of video-based research methods in psychology* [Oral presentation]. The 36th Annual Psychology Postgraduate Affairs Group Conference, online. 6 scholars (alphabetical order): Baker, J., **DeLiema, D.**, Hufnagle, A., Kim, J., Rao, V.N.V., & Valerie, J.

DeLiema, D., Bye, J., & Marupudi, V. (2021). *Programming instructors and students' active (and partial) debugging: Deviation noticing, causal modeling, and intervening.* Paper presented at the annual conference of the American Educational Research Association, Virtual Meeting, Virtual Annual Meeting.

DeLiema, D. (2019, October). *Navigating code form, flow, and output during debugging.* Paper presented at the Big 10+ Maker & CS Education Research Conference, Bloomington, Indiana.

Dahn, M., & **DeLiema, D.** (2019, October). *What it's like: Stories about learning to code through art making.* Paper presented at the Connected Learning Summit, Irvine, California.

Aalst, O. W-V., **DeLiema, D.**, Flood, V., & Abrahamson, D. (2018, May). *Peer conversations about refactoring computer code: Negotiating reflective abstraction through narrative, affect, and play.* Paper presented at the Jean Piaget Society Annual Meeting, Amsterdam, The Netherlands.

Danish, J. A., Enyedy, N., Saleh, A., Humburg, M., **DeLiema, D.**, Dahn, M., & Lee, C. (2017, April). *STEP-Bees: Coordinating embodied interaction with peers, teachers, and*

computer simulation to support learning. Paper presented at the annual conference of the American Educational Research Association, San Antonio, TX.

DeLiema, D. & Sweetser, E. (2016, July). *Rethinking gestural viewpoint as multidimensional rather than a dichotomy*. Paper presented at the International Society of Gesture Studies conference, Paris, France.

Lee, C., **DeLiema, D.**, & Enyedy, N. (2016, July). *Learning through physical action and gestural reflection in a first-person augmented reality science simulation*. Paper presented at the International Society of Gesture Studies conference, Paris, France.

Enyedy, N., Danish, J. A., Lee, C., **DeLiema, D.**, Saleh, A., Dahn, M., Illum, R. (2016, April). *Learning about states of matter through multiple correspondences among the body, abstractions, and reality*. Paper presented at the Annual Meeting of The American Educational Research Association, Washington, D.C.

Enyedy, N., Danish, J., **DeLiema, D.**, Lee, C., Illum, R., et al. (2015, August). *Science through technology enhanced play*. Paper presented at the CREST Conference 2015, Redondo Beach, California.

Steen, F., Turner, M. & **DeLiema, D.** (2014, Novermber). *Extending blended viewpoint in multimodal communication*. Paper presented at the Twelfth Conceptual Structures and Discourse in Language conference, Santa Barbara, California.

DeLiema, D. (2014, July). Teachers and students' collaborative work to render pointing gestures intelligible. In C. Goodwin, *The intelligibility of gesture as a situated accomplishment.* Symposium conducted at the International Society of Gesture Studies conference, San Diego, California.

DeLiema, D., & Steen, F. F. (2012, April). *The evolution of gestural blends around learning a new technical system.* Paper presented at the Eleventh Conceptual Structures and Discourse in Language conference, Vancouver, Canada.

DeLiema, D., Steen, F. F., & Turner, M. (2012, April). *Language, gesture, and audiovisual communication: a massive online database for researching multimodal constructions*. Workshop conducted at the Eleventh Conceptual Structures and Discourse in Language conference, Vancouver, Canada.

Kawasaki, J., **DeLiema, D.**, & Sandoval, W. (2012, April). *Using media production as a lever for critical source evaluation*. In C. Chinn, Learning from Others: Advancing Theory and Research on Learning from Sources*. Symposium conducted at the Annual Meeting of The American Educational Research Association, Vancouver, Canada.

Brown, N. J. S., Danish, J., **DeLiema, D.**, Engle, R. A., Enyedy, N., Lee, V. R., & Parnafes, O. (2012, April). *Representations, interlocutors, and their influences on apparent knowledgeability*. In M. Levin, Integrating Issues of Knowledge and Interaction in Analyses of Cognition and Learning. Symposium conducted at the meeting of The American Educational Research Association, Vancouver, Canada.

Referred Posters, Roundtables, or Exhibitions

Keifert, D., Marin, A., & **DeLiema, D.** (2022, April). *Foregrounding expansive relations: Toward methods of assembly and weaving in longitudinal interaction analysis.* In. D. Silvis (Chair), What's next for interaction analysis of learning?: Aligning analytical approaches with theoretical turns. Roundtable conducted at the meeting of The American Educational Research Association, San Diego, California.

Marin, A., Shapiro, B. R., Hennessy Elliott, C., **DeLiema, D.**, Silvis, D., Radke, S. C., & Vogelstein, L. (2022, April). *Everyday interaction analysis: Public forms and public forums for making sense of video.* In. D. Silvis (Chair), What's next for interaction analysis of learning?: Aligning analytical approaches with theoretical turns. Roundtable conducted at the meeting of The American Educational Research Association, San Diego, California.

Goeke, M. & **DeLiema, D.** (2021, November 13-14). *"Well that's up to you": Family negotiation of social authority in making* [Poster presentation]. Building Community for Grad Students in the Learning Sciences: 2021 Learning Sciences Graduate Student Conference, online.

Valerie, J., Goeke, M., Hussein, B., Varma, K., Chen, B., & **DeLiema, D.** (2021, November 13-14). *Solving CHANGELESS by Changing the Problems: Problem Formation in a Video-Game Environment* [Poster presentation]. Building Community for Grad Students in the Learning Sciences: 2021 Learning Sciences Graduate Student Conference, online.

DeLiema, D. (2021). *"Toucan has failed me": Peer-to-peer playful discourse during debugging.* In A. Saleh (Chair), Orchestrating Collaborative Play for Diverse Participation Across Contexts and Disciplines. Poster presented as part of a structured poster session at the annual conference of the American Educational Research Association, Virtual Meeting.

DeLiema, D. & Hufnagle, A. (2021). *Longitudinal debugging growth: Interaction analyses of collaborative approaches to failure in a series of youth computer science workshops.* In G. L. Wimberly (Chari), Excellence in Education Research: Early Career Scholars and Their Work. Poster presented as part of a structured poster session at the annual conference of the American Educational Research Association, Virtual Meeting.

DeLiema, D. (2019, May). *Envisioning a blended math-cs exploration of geometric constructions and definitions through movement, failure, and play.* Poster presented at The Future of Embodied Design for Mathematical Imagination & Cognition, Madison, Wisconsin.

Lin, K., & **DeLiema, D.** (2019, April). Subgoals, problem solving phases, and sources of knowledge. Poster presented at the *ACM Special Interest Group on Computer Science Education* (p. 1292). Minneapolis, MN: ACM.

Ryan, Z., **DeLiema, D.**, & Abrahamson, D. (2019, April). *Understanding instructors' reflections on conjecture maps and their impact on design-based research.* In F. S. Azevedo (Session Organizer), *STEM Teacher Education and Cognition*. Roundtable session conducted at the annual meeting of the American Educational Research Association, Toronto, Canada.

Dahn, M., **DeLiema, D.**, & Enyedy, N. (2019, April). *Using art to tell stories about failure when learning to code*. Poster presented at the annual meeting of the American Educational Research Association, Toronto, Canada.

DeLiema, D., Abrahamson, D., Enyedy, N., Steen, F., Dahn, M., Flood, V. J., Taylor, J., & Lee, L. (2018, April). Measuring debugging: How late elementary and middle school students handle broken code. In D. A.-L. Lui & Y. Kafai (Chairs & Organizers), *Measuring making: Methods, tools, and strategies for capturing learning, participation, and engagement in maker activities*. Structured poster session conducted at the annual meeting of the American Educational Research Association, New York City.

DeLiema, D., Smith, M., Goodwin, C. (2015, April). *Sources of knowledge in interaction: How geology and math students laminate resources in the process of knowing*. Poster presented at the Annual Meeting of The American Educational Research Association, Chicago, Illinois.

DeLiema, D. (2012, April). *A study of the live evolution of mental models through gesture*. Poster presented at the Annual Meeting of The American Educational Research Association, Vancouver, Canada.

Websites

Personal research webpage: http://www.david-deliema.com/.

TEACHING AND CURRICULUM DEVELOPMENT

University of Minnesota

Courses, seminars, and instructional units taught:

Instructor – Department of Educational Psychology, University of Minnesota
(Fall 2021)
EPSY 8114: Introduction to the Learning Sciences

Instructor – Department of Educational Psychology, University of Minnesota
(Fall 2020, Fall 2022)
EPSY 8114: Play-based Learning

Instructor – Department of Educational Psychology, University of Minnesota
(Spring 2020; Fall 2021; Spring 2023)
EPSY 8114: Video-based Educational Research: Micro-longitudinal Methods for Documenting and Studying Learning

Instructor – Department of Educational Psychology, University of Minnesota
(Fall 2019; Fall 2021)
EPSY 5121: Debugging Failure in Learning

Curriculum Development

      EPSY 5121: Debugging Failure in Learning
      EPSY 8119: Video-Based Microlongitudinal Research in Learning
      EPSY 8121: Play-based Learning
      EPSY 8114: Introduction to the Learning Sciences

Collaborative Efforts and Activities

      Invited presentation on writing to UMN EdPsych's Creating Inclusive Cohort's group, May 6, 2022

      Guest panelist for UMN School of Architecture's "BeTheChange" final student presentations, October 18, 2022

      Invited guest lecture on design-based research to UMN Human Factors & Ergonomics graduate seminar (HUMF.8901), October 8, 2021

      Invited guest lecture on mixed methods, University of Minnesota, Savana Bak and Jason Wolff's EPSY 8694 Research in Special Education course, April 8, 2020.

      Invited guest discussion about the Learning Sciences, University of Minnesota, Panayiota Kendeou's research lab, September, 25th, 2019.

      Invited guest lecture, titled, "Debugging failure: A multi-dimensional framework for documenting newcomers' experiences with obstacles," University of Minnesota, Peter Demerath's course on Case Studies for Policy Research, September, 30th, 2019.

Faculty Development Activities regarding teaching

      Co-led with Dr. Debbie Golos an Ed workshop for faculty focused on writing Diversity, Equity, and Inclusion statements in course syllabi (Fall 2021)

      Participated in a teaching evaluation (planning sessions, course observations, data debriefs, and student evaluations) through the University of Minnesota's Center for Educational Innovation (Spring 2020).

University of California, Los Angeles

Courses, seminars, and instructional units taught

      Instructor – Communication Studies, UCLA (Summers 2011 - 2015)
      COMMST 183 – Media and Mind

      Instructor – Communication Studies, UCLA (Summer 2015)

COMMST 128 – Entertainment and Play

Teaching Assistant – Graduate School of Education and Information Studies, UCLA (2013, 2014)
EDUC 127 – Educational Psychology

Teaching Assistant – Communication Studies, UCLA (Spring 2013)
Course titles: The Gaming Mind; Social Communication & New Technology

Collaborative Efforts and Activities

DeLiema, D. (2015). The interpersonal organization of knowledge. Invited presentation, ESL Techniques in Content Subject Classrooms (Anna-Eunhee Lee Chee, Instructor), Cal State Los Angeles, May 18, 2015.

ADVISING AND MENTORING

Graduate Student Activities

Master's Student Advisees
  Vimal Rao (current)
  Hareem Khan (current)
  Nasim Eshgarf (current)
  Brooke Herman (current)
  David Melchionne-Martinez (current)

Master's Committees Served on
  Jesslyn Valerie (completed 2020)
  Tayler Loiselle (completed 2021)
  Megan Goeke (completed 2022)

Doctoral Students Advised (Academic advising for all or part of graduate student's program)
  Ashley Hufnagle (current)
  Justin Baker (current)
  Megan Goeke (current)
  Zachary Carpenter (current)
  Alexis Tarter (current)
  Basel Hussein (current)

Doctoral Committees Served on
  Valerie Barbaro (completed 2021)
  Nicolaas VanMeerten (completed 2022)
  Elizabeth Stretch (current)
  Scott Iseminger (current)
  Justin Baker (current)
  Rukmini M Avadhanam (current)

Ashley Hufnagle (current)

Post-doctoral fellows supervised
Craig Anderson, 2021 - present

SERVICE AND PUBLIC OUTREACH

Service To The Discipline/Profession/Interdisciplinary Area(s)

Editorships/Journal Reviewer Experience

Consulting Editors Board, *Journal of Educational Psychology,* 2022 – present
Principal Reviewer, *Journal of Educational Psychology,* 2020 – 2021
Reviewer, *Journal of the Learning Sciences*, 2016 – present
Reviewer, *Cognition & Instruction,* 2015 – present
Reviewer, *Journal of Virtual Worlds Research,* 2018
Reviewer, *Education Studies in Mathematics*, 2017
Reviewer in training, *Educational Psychologist,* 2014

Conference Reviewer Experience

Reviewer, *International Conference of the Learning Sciences*, 2014 – present
Reviewer, *Computer-supported Collaborative Learning Conference,* 2018 – present
Reviewer, *AERA Informal Learning Environments SIG,* 2018
Reviewer, *UCLA GSE&IS Research & Inquiry Conference*, 2014-2015

Book Reviewer Experience

Reviewer, Routledge Taylor & Francis (2020)
Reviewer, MIT Press (2018)

Organization of conferences, workshops, panels, symposia [indicate if served as chair or co-chair]

D'Angelo, C., **DeLiema, D.**, Marin, A., Shapiro, B., & Worsley, M. (2020). Multimodal Learning Analytics and Interaction Analysis. In M. Gresalfi, M. & I. S. Horn (Eds.), *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 2* (pp. 2661). Nashville, TN: International Society of the Learning Sciences.

DeLiema, D., Dahn, M. Enyedy, N., Abrahamson, D., Steen, F., Flood, V. J., & Taylor, J. (2019, April). Debugging failure: 5th-10th grade students' journal reflections, coding, and artwork about broken code. In D. A.-L. Lui, D. DeLiema, J. Ryoo, & Y. Kafai (Chairs & Organizers), *Failure in the learning process: How learners experience and overcome obstacles through resources and supports*. Structured poster session conducted at the annual meeting of the American Educational Research Association, Toronto, Canada.

Federal Grant Advisory Boards

Advisory Board Member, NSF AISL, "The Notion of Failure and Maker Programming for Youth: Supporting the Professional Development, Reflection, and Learning of Informal Educators," 2021-present, PI Simpson, A., Co-PIs Maltese, A., & Anderson, A.

Advisory Board Member, NSF ECR-EDU Core Research, "Dialogic Gesture in Collaborative Sense-making in Physics," 2022 – present, PI Flood, V. J., Co-PI Harrer, B. K.

Advisory Board Member, NSF AISL, "EXPANSE: EXPanding Activities for Nature Situated Engineering," 2022-present, PI Marjorie Bequette, Co-PIs Robby Schreiber and Bette Schmit.

Service To The University/College/Department

University of Minnesota

Collegiate Service and Intercollegiate Service
- o UMN Learning Informatics Lab, Core Faculty, 2019-present
- o UMN Learning Sciences Certificate Faculty Contact, 2022-present

Department/Unit Service

Committee service
- o EPSY Professional Development and Recognition Committee, Chair, 2022-2023
- o EPSY Graduate Advisory Council; Committee member, Fall 2019 – Spring 2022

Search committee service
- o EPSY Special Education Open Rank Professor Search Committee member, Fall 2022
- o C&I Learning Technologies Open Rank Professor Search Committee member, Fall 2022
- o EPSY Psych Foundations Assistant Professor Search Committee member, Fall 2021
- o EPSY QME Assistant Professor Search Committee member, Fall 2019

Public And Other Service

Community

- o UMN Diversity in Psychology Mentor to two students in Fall 2022
- o Panelist on UMN's NextGen Psych Scholars Program presentation on Grad School Admissions 101 panel, November 8, 2021 & October 20, 2022
- o Panelist on UC Berkeley Visiting Scholar and Postdoc Affairs (VSPA) Postdoc Alumni Career Panel, September 20, 2022.
- o Research talk on debugging education given to Code.org's curriculum developers, May 17, 2022
- o Organized a gathering of UMN graduate students and researchers at Minneapolis Institute of Art to discuss best practices for supporting students with failures during maker space activities (Fall, 2019).
- o Presented research on productive failure at the *Beyond Science Symposium* gathering of hundreds of middle school students at University of California, Los Angeles, CA (February 4, 2015).