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CONTACT

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ACADEMIC APPOINTMENTS

Assistant Professor, Science Education. 2019 – present
Department of Teacher Education & Curriculum Studies
University of Massachusetts Amherst - College of Education

Postdoctoral Research Associate, 2017 – 2019
Institute for Science & Math Education
University of Washington - College of Education

EDUCATION:

PhD in Science Education 2017
University of Colorado Boulder
Dissertation: *Designing Linguistically Equitable Science Learning Environments for Elementary-Aged Emerging Bilingual Students*
Committee: Valerie Otero (Chair), Kris Gutiérrez, William Penuel, Eve Manz, Noah Finkelstein

MS in Science Education 2012
Tufts University

BS in Astrophysics 2007
University of Oklahoma

AREAS OF EXPERTISE:

- Science education in PK-5 schools
- Translanguaging and multilingualism in science education
- Justice-oriented science education in formal and informal learning environments
- Pre-service and in-service science teacher education
- Research-practice partnerships
- Science curriculum design and adaptation

FUNDING, HONORS, AND AWARDS:

Honors & Awards:

National Academy of Education/Spencer Foundation, Postdoctoral Fellow 2022 - 2024

National Academy of Education/Spencer Foundation, Postdoctoral Fellowship Semifinalist — 2021

UMass Amherst, Community Engagement and Service Learning, Faculty Fellow — 2021 - 2022

UMass Amherst, ADVANCE Program for Institutional Transformation, Faculty Fellow — 2020 - 2021

UMass Amherst, Faculty Success Program, Faculty Fellow — 2020 - 2021

American Educational Research Journal, Outstanding Reviewer of the Year — 2019

NARST Equity & Ethics Committee, Jhumki Basu Scholar. — 2016 - 2017

NARST, Sandra K. Abell Institute for Doctoral Students. — 2015

University of Colorado Boulder, Chancellor's Award for Excellence in STEM Education. — 2014 - 2015

University of Colorado Boulder, School of Education PhD Scholarship. — 2012 - 2013

Tufts University, Tisch Active Citizenship Fellow. — 2011

Carnegie Mellon University, Achievement Rewards for College Scientists Scholar Award. — 2008 - 2009

Active Research Grants:

National Science Foundation – Division of Research on Learning (#2300743) — 2023-2026
A Professional Development Model for High School Teachers to Adapt Curricula towards Students' Knowledges and Resources
(Co-PI; PI: Dr. Christina Krist – UIUC; **$1,000,000**)

United States Department of Agriculture – National Institute of Food and Agriculture (#7004818) — 2023-2026
Designing Learning Opportunities for Equitable Science Education
(PI; **$50,000**)

National Academy of Education / Spencer Foundation – Postdoctoral Fellowship Program — 2022 - 2024
More Than Words: How Emergent Bilingual Students Laminate Multiple Semiotic Resources When Investigating Justice-Oriented Natural Phenomena
(Fellow; **$70,000**)

National Science Foundation – Division of Integrative Organismal Systems (#2128221) — 2022 - 2026
Integrating molecular, cellular, organismal and community scales to understand how plants structure pollinator-pathogen dynamics
(Senior Personnel: Science Education lead faculty; PI: Dr. Lynn Adler – UMass Amherst; funding begins in 2022; **$908,038**)

Previous Research Funding:

National Science Foundation – Division of Research on Learning (#1837086) — 2019 - 2020
A Researcher-Practitioner Partnership to Design, Implement, Assess, and Scale Integrated Computer Science for All in K-5 Classrooms
(Senior Personnel: RPP lead faculty; PI: Dr. Rick Adrion – UMass Amherst; funding began in 2018; **$1,998,924**)

UMass Amherst – MSP Research Support Fund 2021, 2020, 2019
$1000

SparkFun: Educator Mini Grant 2016
PI: Enrique Suárez
$250
ElectroBuzz Out-Of-School Science Program for Elementary-Aged Emerging Bilingual Students
Purchased Electroninks® materials for investigating circuits: pens with conductive ink and other electronic components. This grant made it possible for ElectroBuzz be free of cost for participating families.

CU Boulder School of Education Conference Travel Award 2016, 2013, 2012
US$500

CU Boulder Chancellor's Award for Excellence in STEM Education 2014 - 2015
0.5 Graduate Research Appointment

United Government of Graduate Students at CU Boulder Travel Award 2014
US$300

NSF: National Radio Astronomy Observatory (NRAO) Science Program
PI: Enrique Suárez; Co-PI: Dr. Jeffrey Peterson 2010
$35,000 and 300 observation hours at Greenbank Telescope
Study of Velocity Distortions Using 21cm Intensity Mapping. (GBT/10B-036).

REFEREED JOURNAL ARTICLES:

*indicates co-author was graduate student; † indicates co-author was a science educator

Suárez, E., & Otero, V. (2023). Ting, Tang, Tong: Emergent bilingual students reasoning mechanistically about sound production. Journal of Research in Science Teaching.

Krist, C. & Suárez, E. (under review). Theories of caring in science education: Current enactments and future directions. Review of Educational Research.

Stroupe, D., Suárez, E., & Scipio, D. (R&R; under review). Epistemic injustice and the "Nature of Science". Review of Educational Research.

González-Howard, M., *Andersen, S., *Méndez Pérez, K., & Suárez, E. (R&R; under review). *Language views for scientific sensemaking matter: A synthesis of research on multilingual students' experiences with science practices through a translanguaging lens.* Educational Researcher.

Pérez, G., González-Howard, M. & Suárez, E. (2022), Call for papers: Journal of Research in Science Teaching—Special issue on "Examining translanguaging in science and engineering education research". Journal of Research in Science Teaching, 59(9), 1733-1735.

Suárez, E., Beatty, C. (2022). Advising students in science education: Critiquing where we have been, moving toward a holistic advising approach. Science Education. 106(5), 1299-1317.

Edelson, D., Reiser B., McNeill, K., … Suárez, E. (2021). Developing research-based instructional materials to support large-scale transformation of science teaching and learning: The approach of the OpenSciEd middle school program. Journal of Science Teacher Education, 32(7), 780-804.

González-Howard, M., & Suárez, E. (2021). Retiring the term English Language Learners: Moving toward linguistic justice through asset-oriented framing. Journal of Research in Science Teaching, 58(5), 749-752.

Suárez, E. (2020). "Estoy explorando science": Translanguaging in an out-of-school science program for emergent bilingual students. Science Education. 104(5), 791-826.

Tzou, C., *Meixi, Suárez, E., Bell, P., *LaBonte, D., Starks, E., Bang, M. (2019). Storywork in STEM-Art: making, materiality and robotics within everyday acts of indigenous presence and resurgence. Cognition & Instruction. 37(3), 306-326.

Suárez, E. (2019). How do we know if the glass is half full? Reflections on equity, hope, and cycles of violence. Cultural Studies of Science Education.14(2), 411-424.

Manz, E., & Suárez, E. (2018). Supporting teachers to negotiate uncertainty for science, students, and teaching. Science Education, 102(4), 771-795.

EDITED BOOKS:

National Academies of Sciences, Engineering, and Medicine. (2021). Science and Engineering in preschool through elementary grades: The brilliance of children and the strengths of educators. Washington, DC: The National Academies Press.

Vogel, S., Suárez, E., Semel, B., Proctor, C. (accepted). Learning machines, humans learning: Critical perspectives on languaging in digitally-mediated environments. De Gruyter Mouton.

PUBLISHED PEER-REVIEWED CONFERENCE PROCEEDINGS:

*indicates co-author was graduate student; † indicates co-author was a science educator

Suárez, E., & Krist, C. (2023). Designing for justice-oriented critical caring in science methods courses. *Proceedings of the 17th International Conference of the Learning Sciences - ICLS 2023*. Montreal, Canada: International Society of the Learning Sciences. (acceptance rate TBA)

*Beckert, B., *Stoler, A., Georgen, C., Manz, E., Suárez, E. (2021). Designing for home-based science learning: Infrastructuring within new openings and constraints. (pp. 1127-1128). In de Vries, E., Hod, Y., & Ahn J. (Eds.). (2021). *Proceedings of the 15th International Conference of the Learning Sciences - ICLS 2021*. Bochum, Germany: International Society of the Learning Sciences. (acceptance rate ~30%)

Sullivan, F., Suárez, E., *Petkas, E., *Duan, L. (2020, June). Developing pedagogical practices that support disciplinary practices when integrating computer science into elementary school curriculum. (pp. 2289-2292). In Horn, I. & Gresalfi, M. (Eds.), *The Interdisciplinarity of the Learning Sciences: Proceedings of the 14th International Conference of the Learning Sciences*. Nashville, TN. (acceptance rate 55% for short papers)

Furtak, E., Kang, H., Pellegrino, J., Harris, C., Krajcik, J., Morrison, D., Bell, P., Lakhani, H., Suárez, E., Buell, J., Henson, K., Nation, J., Tschida, P., Fay, L., Penuel, W.R., Biddy, Q., Wingert, K. (2020). Emergent design heuristics for three-dimensional classroom assessments that promote equity. (pp. 1487-1494). In Horn, I. & Gresalfi, M. (Eds.), *The Interdisciplinarity of the Learning Sciences: Proceedings of the 14th International Conference of the Learning Sciences*. Nashville, TN. (acceptance rate 65% for symposia)

Suárez, E., Tzou, C., Bang, M., *Meixi, Bell, P., Roque, R., Pinkard, N., Barron, B., Kennedy Martin, C., Goldman, S., Luce, M., Vea, T., Conlin, L., Gutiérrez, K. (2018). Designing for axiological innovations within family-centered learning environments. (pp. 1187-1194). 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*. London. (acceptance rate 32% for symposia)

Krist, C., & Suárez, E. (2018). Doing science with fidelity to persons: Instantiations of caring participation in science practices. (pp. 424-431). 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. London. (acceptance rate 32% for long papers)

Suárez, E., & Otero, V. (2014). Leveraging the cultural practices of science for making classroom discourse accessible to emerging bilingual students. (pp. 800-807). In J. Polman, E. Kyza, D. K. O'Neill, I. Tabak, W. R. Penuel, A. S. Jurow, K. O'Connor, T. Lee, L. D'Amico (Eds.), *Learning and Becoming in Practice. Proceedings of the 11th International Conference of the Learning Sciences*. Boulder, CO. (acceptance rate 32% for long papers)

Suárez, E., & Otero, V. (2014). Physics as a mechanism for including ELLs in classroom discourse. 2013 Physics Education Research Conference Proceedings. Mellville, NY: AIP Press. Portland, OR. (acceptance rate 72% for long papers)

Suárez, E., & Otero, V. (2013). 3rd grade English Language Learners making sense of sound. 2012 Physics Education Research Conference Proceedings. Mellville, NY: AIP Press. Philadelphia, PA. (acceptance rate 71% for long papers)

Peterson, J. B., & Suárez, E. (2012). Intensity mapping with 21-cm and Lyman alpha lines. Proceedings of 47th Recontres des Moriond: Cosmology Session. arXiv: 1206.0143

BOOK CHAPTERS:

Suárez, E., Tzou, C., Bell, P., Bang, M., Meixi (in preparation). (Re-)storying ourselves: Engaging in storywork through translanguaging in a STEM-Art program. In Vogel, S., Suárez, E., Semel, B., Proctor, C. (accepted). Learning Machines, Humans Learning: Critical Perspectives on Languaging in Digitally-Mediated Environments. De Gruyter Mouton.

Suárez, E., Quan, G., Hammer, D., Atkins-Elliot, L. (2023). Learning in interaction: Interacting lines of research. In Taşar, M. F., Heron, P. R. L. The International Handbook on Physics Education Research: Learning Physics . AIP Publishing. (pp. 13-1–13-32)

Jaber, L., Atkins-Elliot, L., Elby, A., Suárez, E. (2023). Affect in physics learning: From support to entanglement to transformational lever. In Taşar, M. F., Heron, P. R. L. The International Handbook on Physics Education Research: Learning Physics. AIP Publishing. (pp. 14-1–14-26)

Suárez, E. (2022). Communicating with Objects: Supporting Translanguaging Practices of Emergent Bilingual Students During Scientific Modeling. In Rodríguez, A. J., Suriel, R. Enacting CrossCultural Science/STEM Education Research Against the Odds: A Letter in Eight Chapters to Funding Agencies, Research Journal Editors, Reviewers and Policy Makers. Springer.

PRACTITIONER-ORIENTED PUBLICATIONS:

*indicates co-author was graduate student; † indicates co-author was a science educator

Suárez, E., †Sousa, K. (2023). "What did you learn?" Emergent bilingual students write their understandings about sinking and floating. *Language Arts, 100(4), 323-328*.

Braaten, M., †Foster, D., †Foster, J. *Han, R. J., Scipio, D., Suárez, E. (2021; alpha order, equal contributions). How can we confront and dismantle systemic racism through science learning? STEM Teaching Tools. *(This tool was accessed 3,064 times between Oct '21 and Dec '22)*

Suárez, E. (2021). Supporting ELs learn science: Summary of interviews with teacher advisors from Bringing the Universe to America's Classrooms (BUAC). Report prepared for GBH's Science Education Professional Development for Teachers and NASA.

Suárez, E., Bell, P., †McCulloch, A., †Starr, M. (2020). Why you should stop pre-teaching science vocabulary and focus on students developing conceptual meaning first. STEM Teaching Tools. *(This tool was accessed 12,341 times between Mar '20 and Dec '22)*

Tzou, C., †Rother, D., †Braun, A., Starks, E., *Meixi, Suárez, E., Rambayon, A., Bell, P., *LaBonte, D., †Twito, A., Peterson, S., †Ortiz, S.M., and Bang, M. (2020). Trust the process: Developing stem mindsets through family storytelling. Connected Science Learning 2(1).

*Tesoriero, G., Suárez, E., †Heinz, M. (2019). Creating science learning experiences that support learners receiving special education services. STEM Teaching Tools *(This tool was accessed 8,158 times between Mar '19 and Dec '22)*

Suárez, E. (2018). Todos los caminos conducen a Roma: Sobre las diferentes estrategias que lxs estudiantes usan para comunicar sus ideas y razonamiento. American Association of Physics Teachers Mexico Section: Boletín, 4(2), 8-12.

MANUSCRIPTS IN PREPARATION:

*indicates co-author was graduate student; † indicates co-author was a science educator

Suárez, E & Krist, C. (in preparation). *Critical justice-oriented caring in science teacher education: Away from politeness and towards solidarity*. To be submitted to: Science Education.

Suárez, E. (in preparation). *Working towards consensus: Elementary-aged students presenting and evaluating mechanistic models of electric flow*. To be submitted to: Cognition & Instruction.

Suárez, E. (in preparation). *Choosing the right tools: Supporting elementary-aged students to problematize electrical resistance*. To be submitted to: Journal of the Learning Sciences.

Bell, P., Suárez, E., *LaBonte, D. (in preparation). *The sociomateriality of family creativity in STEAM environments*. To be submitted to: Journal of the Learning Sciences.

REFEREED CONFERENCE PRESENTATIONS:

*indicates co-presenter was graduate student; † indicates co-author was a science educator

Krist, C., & Suárez, E. (under review). "A Systematic Review of Theories of Caring in Science Education." In Stoler, A. "Developing Critical Caring in Science Education." Symposium submitted to Strand 2 at NARST 2024 Annual Meeting, Virtual.

Suárez, E., *Light, E., Adler, L. S. (under review). "Professional Development Design that Supports Graduate Students to Develop Equity-Oriented Pedagogies for Science Outreach." Paper submitted to Division C for AERA 2024 Annual Meeting, Philadelphia.

Suárez, E., & Krist, C. (under Review). "Designing for Justice-Oriented Critical Caring in Science Teacher Education." In Tierney, G. "Revisioning Care in the Pursuit of Education Equity." Symposium to Division K for AERA 2024 Annual Meeting, Philadelphia.

Krist, C., & Suárez, E. (2023, April). "Designing for Epistemic Justice with an Ethic of Critical Care in Pre-Service Science Methods Courses." In Lee, S. "Epistemic Justice Across Learning Environments" for Learning Sciences SIG. Paper presented at AERA 2023 Annual Meeting, Chicago.

Suárez, E., Scipio, D., Stroupe, D. (2022, April). "Whose Science? Interrogating the Foundations of 'Nature of Science' and Uncovering Epistemic Injustices in Science Education." Session organized for Division C, Section 1d: Science at AERA 2022 Annual Meeting, San Diego, CA & Virtual.

Suárez, E. (2022, April). "Who Appears? Examining the Genealogy of NOS and the Authors It Included/Excluded." In Suárez, E., Scipio, D., Stroupe, D. (2022, April). "Whose Science? Interrogating

the Foundations of 'Nature of Science' and Uncovering Epistemic Injustices in Science Education." Paper presented at AERA 2022 Annual Meeting, San Diego, CA & Virtual.

Suárez, E. (2022, April). What Elementary Teachers Respond To: Tensions Around Translanguaging as a Sense-Making Practice for Learning Science. In Venegas-Webber, P., Seltzer, K., & Varghese, M. "Centering Multilingual Ideologies and Practices in Disciplinary Teaching and Learning." Paper presented at AERA 2022 Annual Meeting, San Diego, CA & Virtual.

Suárez, E. (2022, April). Rejecting Semiotic Homogeneity: Reimagining Justice in Elementary Science Classrooms. In Takeuchi, M., Kayumova, S., de Araujo, Z., & Madkins, T. C. "Critical Orientations to Language in STEM Education: Praxis Beyond Replacement of Labels." Paper presented at AERA 2022 Annual Meeting, San Diego, CA & Virtual.

Suárez, E. (2022, March). How do we know? The Implications of Translanguaging for Equitably Assessing Multilingual Students' Science Learning. In Sezen-Barrie, A., Butler, M., & Aghaseleh, R., "Research Committee Admin Session: Future Directions for Research on Equitable and Socially Just Assessments in Science and Engineering Education." Paper presented at NARST 2022 Annual Meeting, Vancouver, BC, Canada & Virtual.

Suárez, E. (2021, April). Supporting Elementary Teachers Recognize Emergent Multilingual Students' Sense-Making Repertoires. In Kang, H. "Articulating Theoretical and Methodological Approaches for Mathematics and Science Teachers' Pursuit of Racial Justice." Paper presented at AERA 2021 Annual Meeting, Virtual.

Suárez, E. (2021, April). Rejecting Narrow Definitions: Reimagining Equitable Science Classroom Discourse. In Machado, E., Wynhoff Olsen, A., Brownell, C. J., Kwon, J. "Language and Social Processes LSP Symposium." Paper presented at AERA 2021 Annual Meeting, Virtual.

Suárez, E. (2021, April). Broadening what science educators respond to: Translanguaging as sensemaking practices students leverage when problematizing phenomena. In Schenkel, K. "Science Teaching and Learning Towards Collaborative Social Transformation and Justice." Poster presented at AERA 2021 Annual Meeting, Virtual

Suárez, E., Machado, E., *LaBonte, D., *Plitkins, L., *Gonzales, G. (2021, April). Centering Family Storytelling: Engaging In Disciplinary Practices Through Translanguaging. In Pierson, A. "Translanguaging and Disciplinary Literacies: Exploring and Leveraging Translanguaging Across Disciplinary Contexts." Paper presented at AERA 2021 Annual Meeting, Virtual.

Suárez, E. (2021, April). Rejecting Narrow Definitions: Reimagining Equitable Science Classroom Discourse. In Morales-Doyle, D. "Studying Contestations of Hegemonic Science Education as Public Goods Across Time-Scales and Contexts." Paper presented at NARST 2021 Annual Meeting, Virtual

Suárez, E. (2021, March). (Re-)storying ourselves: Engaging in Storywork Through Translanguaging in a STEM-Art Program. In Ànand, A., Vogel, S. "The Linguistic Hierarchies Embedded in Digital Tools: Exploring the Intersections of Language, Technology & Power." Paper presented at AAAL 2021 Annual Meeting, Virtual.

Suárez, E., Machado, E., *LaBonte, D., *Plitkins, L. (2020, April). *Investigating Families' Translanguaging Practices as They Engage in Storytelling Through Disciplinary Literacies*. Paper submitted to AERA 2020 Annual Meeting, San Francisco. {Conference Cancelled}

Tzou, C., Bang, M., Bell, P., *Meixi, Suárez, E., *LaBonte, D., Starks, E. (2020, April). *Documenting Family Storywork and Making Through Sociomaterial Perspectives*. In Svihla, V. (session organizer), Materiality and Sociomaterial Practices in Learning, Designing, and Making. Paper submitted to AERA 2020 Annual Meeting, San Francisco. {Conference Cancelled}

Suárez, E. (2020, April). *Broadening What Science Educators Respond To: Translanguaging as Sense-Making Practices Students Leverage When Problematizing Phenomena*. In Schenkel, K. (session organizer), Collaborative Science Teaching and Learning Toward Social Transformation and Justice. Paper submitted to AERA 2020 Annual Meeting, San Francisco. {Conference Cancelled}

Suárez, E., Tzou, C., *LaBonte, D., †Braun, A. (2019, April). *Designing equitable STEAM learning environments that invite and leverage learners' stories and experiences*. Paper presented at NSTA 2019 Annual National Meeting, St. Louis, MO.

Suárez, E., *Sánchez, A. (2019, April). *Inviting all students into the NGSS: Fostering equitable learning communities through culturally relevant science teaching*. Paper presented at NSTA 2019 Annual National Meeting, St. Louis, MO.

Bell, P., Morrison, D., Suárez, E. (2019, April). *Supporting all students make sense of phenomena by building all of their intellectual resources*. Paper presented at NSTA 2019 Annual National Meeting, St. Louis, MO.

Suárez, E. (2019, April). *Translanguaging in the service of co-constructing explanations: Elementary-aged emerging bilingual students problematizing electrical phenomena*. In Pierson, A. E., Brady, C., Clark, D. (session organizers), Multimodal STEM Learning with Emerging Bilingual Students. Poster presented at AERA 2019 Annual Meeting, Toronto.

*Lakhani, H., Suárez, E., Morrison, D., †Welch, M. †Taylor, A., †Lippitt, W. (2019, April). *The SEPC RPP: partnering with districts for co-designing meaningful framework-aligned professional learning*. In Kawasaki, J., Sandoval, W. (symposium organizers), Examining Successes and Challenges from Five Different Science Teacher Professional Development Projects Around the NGSS. Paper submitted to AERA 2019 Annual Meeting, Toronto.

Suárez, E. (2019, April). *Investigation questions as epistemic tools that shape epistemic agency in physics discussions*. In Morrison, D., Moon, J., Michaels, S. (session organizers), The Growing Public Space of Learning and Teaching and the Role of Epistemic Tools. Poster presented at AERA 2019 Annual Meeting, Toronto.

*Lakhani, H., Suárez, E., Morrison, D. (2019, March). *Using practical measures to support secondary science teachers implement NGSS*. In Dyer, E. (session organizer), Exploring the Use of Practical Measures to Support Improvement in Science Education. Paper presented at the NARST 2019 Annual International Conference, Baltimore, MD.

*Salcido White, M., *Lakhani, H., Dyer, E., Suárez, E. (2019, March). *Exploring students' perceptions of the relevance of science learning with practical measures*. In Dyer, E. (session organizer), Exploring the Use of Practical Measures to Support Improvement in Science Education. Paper presented at the NARST 2019 Annual International Conference, Baltimore, MD.

Bell, P., Suárez, E., *LaBonte, D., Tzou, C., Bang, M. (2019, March). *The sociomateriality of family creativity in story-centered STEAM learning environments*. In Suárez, E. (session organizer), Reimagining STEM Learning Through Centering Families' Sense-Making Practices. Paper presented at the NARST 2019 Annual International Conference, Baltimore, MD.

Suárez, E., Bell, P. (2019, March). *Supporting expansive science learning through different classes of investigative phenomena*. In Buell, J. (session organizer), Something like a Phenomenon: Identifying Phenomena to Support the Development of NGSS-aligned Curricula and Assessment. Paper presented at the NARST 2019 Annual International Conference, Baltimore, MD.

Suárez, E. (2019, March). *The translanguaging practices of bilingual families when engaging in storywork through robotics in an out-of-school STEM program*. In Tian, Z. (session organizer), Translanguaging

Within and Beyond Disciplines: Transforming STEM Literacies with and for Bilingual Learners. Paper presented at American Associated for Applied Linguistics 2019 Annual Conference, Atlanta, GA.

†Welch, M., Suárez E., *Lakhani, H., & †Taylor, A. (2018, April). *Leading NGSS implementation in districts*. Presented at the NSTA 2018 Annual National Meeting, Atlanta, GA.

†Welch, M., *Lakhani, H., Suárez E., & †Taylor, A. (2018, April). *Equity-centered NGSS storylining: a practical guide to the planning of phenomena-centered science learning*. Presented at the NSTA 2018 Annual National Meeting, Atlanta, GA.

†Welch, M., *Lakhani, H., Suárez E., & †Taylor, A. (2018, April). *Equity-based NGSS implementation through research practice partnerships*. Presented at the NSTA 2018 Annual National Meeting, Atlanta, GA.

Suárez E. (2018, March). *Responding to emerging bilingual students' translanguaging when reasoning and communicating about natural phenomena*. In Haverly, C. (session organizer), Approaches for Studying Equitable and Responsive Science Teaching. Paper presented at the NARST 2018 Annual International Conference, Atlanta, GA.

Manz, E., & Suárez, E. (2017, May). *How teachers negotiate uncertainty for science, students, and teaching*. Poster presented at AERA 2017 Annual Meeting, San Antonio, TX.

Suárez E. (2017, April). *Designing equitable science learning environments for elementary-aged emerging bilingual students*. Poster presented at the NARST 2017 Annual International Conference, San Antonio, TX.

Suárez E. (2016, April). *Negotiating students' epistemic agency in physics consensus discussions*. In Suárez, E., & Krist, C. (session organizers), Investigating Epistemic Agency: Creating Space for Students and Teachers to Actively Construct Scientific Knowledge. Paper presented at the NARST 2016 Annual International Conference, Baltimore, MD.

Manz E., & Suárez E. (2016, April). *Leveraging uncertainty to support students' engagement in practice*. Paper presented at the NARST 2016 Annual International Conference, Baltimore, MD.

Suárez E. (2016, April). *Design principles for supporting emerging bilingual students construct mechanistic models*. Presented at the NARST 2016 Annual International Conference, Baltimore, MD.

Sommer S., Suárez E., Langdon L., & Grover, R. (2016, April). *Models for promoting inquiry and collaborative learning for veteran, novice, and preservice teachers*. Paper presented at the AERA 2016 Annual Meeting, Washington D.C.

Manz, E., & Suárez, E. (2016, April). *Supporting elementary teachers to adapt curriculum materials for increased uncertainty*. Poster presented at the AERA 2016 Annual Meeting, Washington, D.C.

Suárez E., & Otero, V. (2015, July). *Negotiating epistemic agency and epistemic authority in consensus discussions*. Poster presented at the Physics Education Research Conference, College Park, MD.

Suárez E., & Otero, V. (2015, July). *Am I stealing your glory? Negotiating students' epistemic agency during consensus discussions*. Paper presented at the AAPT 2015 Summer Meeting, College Park, MD.

Renga, I., Suárez, E., Langdon, L., Grover, R., Sommer, S., Marsh, C., (2015, April). *Investigating the epistemic activity and agency of pre-service teachers within a model of collaborative inquiry*. Paper presented at AERA 2015 Annual Meeting, Chicago, IL.

Suárez E., & Otero, V. (2015, April). *Science: A mechanism for inviting emerging bilingual students into classroom discourse*. Paper presented at the NARST 2015 Annual International Conference, Chicago, IL.

Suárez E., & Otero, V. (2015, April). *Emerging bilingual students engaging in science practice through blending everyday and academic language*. Poster presented at the NARST 2015 Annual International Conference, Chicago, IL.

Suárez E., Ross, M.J., Guegan, P., Belleau, M., Hubert, K., & Otero, V. (2014, July). *A methodology for characterizing student engagement in consensus discussions*. Poster presented at the Physics Education Research Conference, Minneapolis, MN.

Suárez E., Guegan, P., & Otero, V. (2014, July). *Analyzing high school physics consensus discussions: Coding schemes are not observations*. Paper presented at the AAPT 2014 Summer Meeting, Minneapolis, MN.

Suárez E., & Otero, V. (2014, April). *Doing and talking science: Strategies for engaging ELLs in classroom discourse*. Presented at the NSTA 2014 Annual National Meeting, Boston, MA.

Suárez E., & Otero, V. (2013, July). *Physics as a mechanism for including ELLs into classroom discourse*. Poster presented at the Physics Education Research Conference, Portland, OR.

Suárez E., & Otero, V. (2013, July). *Hands-on physics as a mechanism for including ELLs into classroom discourse*. Paper presented at the AAPT 2013 Summer Meeting, Portland, OR.

Suárez E., & Otero, V. (2012, July). *"Because it hibernates faster": 3rd grade English language learners making sense of sound*. Poster presented at the Physics Education Research Conference, Philadelphia, PA.

INVITED RESEARCH PRESENTATIONS:

Suárez, E. (2022, November). *Listen Closely: Making science education more just for through centering emergent bilingual students' translanguaging practices*. Invited Talk for Rutgers University's College of Education. Hosts: Drs. Ravit Duncan and Clark Chinn.

Suárez, E. (2022, March). *Listen Closely: Making science education more just for through centering emergent bilingual students' translanguaging practices*. Invited Talk for Stanford University's College of Education. Hosts: Drs. Bryan Brown, Victor Lee, and Emily Virginia Reigh.

Suárez, E. (2021, December). *Listen Closely: Making science education more just for through centering emergent bilingual students' translanguaging practices*. Invited Talk for Stanford University's College of Education. Hosts: Drs. Erin Furtak and Victoria Hand.

Suárez, E. (2021, October). *Estoy explorando science: Emergent bilingual students problematizing physical phenomena through leveraging multiple communicative resources*. Invited Talk for the University of California Irvine's College of Education. Host: Dr. Andres Bustamante.

Suárez, E. (2021, September). *Making science education more just through centering K-5 emergent bilingual students' translanguaging practices when problematizing phenomena*. Invited Talk for the Institute of Diversity Sciences, University of Massachusetts, Amherst. Host: Dr. Buju Dasgupta.

Suárez, E. (2021, April). *Communicating with objects: Supporting translanguaging practices of emergent bilingual students during scientific investigations*. Invited Talk for the New England Learning Sciences (NELS) virtual seminar: Multimodal Means of Learning in STEM. Hosts: Drs. Janet Kolodner and Nicholas Wilson.

Suárez, E. (2021, March). *Estoy explorando science: Emergent bilingual students problematizing physical phenomena through leveraging multiple communicative resources*. Invited Talk for the UMass STEM Education Institute Seminar. Host: Dr. Shubha Tewari.

Suárez, E. (2020, February). *Estoy explorando science: Emergent bilingual students problematizing physical phenomena through leveraging multiple communicative resources*. Invited Seminar at the CREATE for STEM Institute, Michigan State University. Hosts: Drs. Christina Schwarz, David Stroupe, and Joseph Krajcik.

Suárez, E. (2020, February). *Estoy explorando science: Emergent bilingual students problematizing physical phenomena through leveraging their expansive semiotic repertoires*. Invited Lecture for the Five College Latin American, Caribbean and Latino Studies group, University of Massachusetts, Amherst. Host. Dr. Laura Valdiviezo

Suárez, E. (2019, November). *Translanguaging spaces that support learners engage in epistemic practices of stem*. Invited Seminar for the Learning, Language, and Culture program at University of Massachusetts, Amherst. Host: Drs. Theresa Austin and Marialuisa DiStefano

Suárez, E. (2019, October). *Making sense of the natural world through translanguaging*. Invited Seminar at University of Illinois, Urbana-Champaign; Host: Dr. Christina (Stina) Krist.

Suárez, E. (2018, June). *Valuing and leveraging students' semiotic repertoires*. Invited Plenary at Frontier and Foundations of Physics Education Research, Puget Sound.

Suárez, E. (2018, April). *Valuing and leveraging students' semiotic repertoires*. Invited Presentation at California State University, Chico, CA; Host: Dr. Carolina Alvarado.

Suárez, E. (2018, February). *Using video for tracking communication, interaction, and sense-making*. Invited Seminar at University of Illinois, Urbana-Champaign; Host: Dr. Christina (Stina) Krist.

Suárez, E. (2016, April). *Design principles for supporting emerging bilingual students construct mechanistic models*. Invited Presentation at University of Maryland, College Park; Host: Drs. Andrew Elby and Ayush Gupta.

Suárez, E. (2015, May). *Science: A mechanism for inviting emerging bilingual students into classroom discourse*. Invited Seminar at Columbia University: Teachers College, New York; Host: Dr. Christopher Emdin.

Suárez, E. (2014, August). *How can I play if don't know the rules of the game?* Invited "Equity in Higher Education" Workshop for faculty at Northwestern Oklahoma State University, Ada; Host: Dr. Steve Maier.

Suárez, E. (2014, August). *Whose science? Inclusive learning environments*. Invited "Equity in Higher Education" Workshop for science faculty at Northwestern Oklahoma State University, Ada; Host: Dr. Steve Maier.

POLICY DOCUMENTS AND SYMPOSIA:

Suárez, E., Pérez, G. (Aug 2023). "Equity, Justice, and Transformation in STEM Learning Among Latiné/X Youth and Families." Panel organized for Conectando Saberes Forum on STEM Learning Among Latiné Youth and Families. National Science Foundation: Division of Research on Learning in Formal and Informal Settings (DRL).

Bell, P., Suárez, E., Bang, M., Tzou, C., Morrison, D., Rodríguez, A., Buxton, C., Lee. O., Tesoriero, G., Heinz, M. (2021). *OpenSciEd High School design specifications for equitable science instruction for all students.* New York: Carnegie Corporation.

Bell, P., Suárez, E., Bang, M., Tzou, C., Morrison, D., Rodríguez, A., Buxton, C., Lee. O., Tesoriero, G., Heinz, M. (2018). *OpenSciEd Elementary School design specifications for equitable science instruction for all students.* New York: Carnegie Corporation.

Bell, P., Suárez, E., Bang, M., Tzou, C., Morrison, D., Rodríguez, A., Buxton, C., Lee. O., Tesoriero, G., Heinz, M. (2018). *OpenSciEd Middle School design specifications for equitable science instruction for all students.* New York: Carnegie Corporation.

Buxton, C., Lee, O. & Suárez, E. (2018). *Supporting the equitable participation and learning of emergent multilingual students.* Design specifications for OpenSciEd Middle School Initiative. New York: Carnegie Corporation.

PROFESSIONAL DEVELOPMENT FOR K-12 TEACHERS:

Holyoke Public Schools (HPS), Hybrid — Oct 2023, Jan 2024, Mar 2024, May2024

PD Series: Promoting Equitable Discourse to Support High School Multilingual Students Learn Science
Collaborators: Eric Levine (HPS Director of Science) and Jennifer Albury (HPS Multilingual Education Director)

Math for America: Equity Webinar Series, Virtual — February 2022

How Emergent Bilingual Students Problematize Phenomena Through Translanguaging
Collaborator: Dr. John Russell (MfA Senior Education Researcher)

Smithsonian Institute Science Education Center: K-12 STEM Education Action Planning, Virtual — November 2021

Estoy Explorando Science: Emergent Bilingual Students Problematizing Physical Phenomena Through Leveraging Multiple Communicative Resources
Collaborator: Eva Muszynski (Professional Services Lead Program Assistant)

Holyoke Public Schools (HPS), Virtual — November 2021

Adapting PK-5 Science Curricula to Reflect Locally-Relevant, Justice-Oriented Science Phenomena
Collaborator: Eric Frary (HPS PK-8 Science Instructional Leadership Specialist)

American Association of Physics Teachers - New England Section (AAPTNES), Virtual — April 2021

Estoy Explorando Science: Emergent Bilingual Students Problematizing Physical Phenomena Through Leveraging Multiple Communicative Resources

Islandwood Institute's Applied Learning Series for future PK-8 science educators, Virtual — February 2021

Leveraging multiple languages in STEM teaching and learning environments with Multilingual Learners

Advancing Coherent and Equitable Systems of Science Education (ACESSE 50+) for science state supervisors from 50 US states and federal territories, Virtual — November 2020

Justice-Oriented Science Education Through Centering Place-based & Social- focus Learning
Collaborators: Dr. Fixile Nxumalo and *Anastasia Sánchez (PhD Candidate, middle school science teacher).

Tennessee STEM Education Center at Middle Tennessee State, Virtual June 2020

Valuing and Leveraging Multilingual Students' Ways of Communicating About the Natural World

Office of the State Superintendent of Education. Washington D.C. Jan 2020

Valuing and Leveraging Multilingual Students' Ways of Communicating About the Natural World

Rhode Island Department of Education. Providence, RI Jan 2020

Valuing and Leveraging Multilingual Students' Ways of Communicating About the Natural World
Supporting Equitable Student Talk in Science Learning Environments

Seattle Public Schools, Renton School District. Mukilteo School District, WA 2017 - 2018

Co-designed and co-facilitated 15 PD sessions with secondary science teachers around equitable, NGSS-aligned science instruction.
Collaborators: Monica Chandler, William Lippitt, Alisha Taylor, Anastasia Sánchez (middle school science teacher), MaryMargaret Welch.

Boulder Valley School District. Boulder, CO
Supporting Emerging Bilingual Students in Science Discourse. Summer 2015
Collaborators: Samantha Messier, Judy Stone (K-5 teacher).

Supporting 2nd Grade Teachers to Adapt Curriculum Materials for Increased Uncertainty. 2014 - 2015
Collaborators: Dr. Eve Manz (lead instructor) and Samantha Messier.

Somerville Public Schools. Somerville, MA 2012

Supporting Emerging Bilingual Students in Science Discourse.
Collaborator: Hannah deSouza (K-5 teacher).

Sanborn Public Schools & Timberlane Public Schools. NH 2010 - 2012

Poincaré Institute for Math Education: Supporting Middle Grades Teachers Develop Mathematics Subject Matter Knowledge for Teaching

TEACHING EXPERIENCE: Higher Education

University of Massachusetts Amherst, College of Education. Amherst, MA

Instructor Spring 2021
EDUC693B: MSLT Graduate Research Seminar Spring 2022

The purpose of this course is to support graduate students as they move forward in their research and scholarly work in science and mathematics education and learning technology, with an explicit focus on methodology – the "how" of research, what researchers do as they conceive of, design, and implement their studies and justify their conclusions. Students become skilled at identifying and implementing how researchers build on theoretical frameworks to inform their study design and analytical approaches, as well as how those theoretical and methodological decisions shape the findings and overall claims.

Instructor Fall 2020
EDUC704: Issues of Gender and Sexuality in STEM And STEM Education

This course examines the relationships among the body of knowledge and practices of STEM fields and the structures that undergird gender- and sexuality related inequities and injustices. The course brings together the disciplinary

approaches of science and technology studies and critical gender and sexuality studies to explore historical and contemporary questions at the intersection of gender, sexuality, race, colonialism, ability, and STEM knowledge and ways of knowing.

Instructor Fall 2022
EDUC462: Teaching Science in Elementary Schools Fall 2020

This course pushes back against restrictive science pedagogies, exploring and valuing the way children make sense of the natural world, as well as recognizing that science teaching and learning as life-long, life-wide, and life-deep processes. The course supports undergraduate students begin developing a science teaching practice that supports children in seeing how science (and engineering) is everywhere and creates a path towards self-determination and transformation. Additionally, reflect on how science learning in schools can be detrimental for some children, especially those from historically marginalized communities, paying close attention to how classrooms and society portray "who can do science."

Instructor Fall 2021
EDUC561: Science Education Methods in Elementary School Spring 2020

In this course, pre-service elementary teachers extended their understanding of science as a multidimensional process of sense-making, emphasizing the importance of creating justice-oriented opportunities for learning that builds on students' sense-making repertoires for problematizing natural phenomena.

Instructor Fall 2019
EDUC693F: Teaching Social Justice: Equity & Justice in STEM Education

This course examines the relationships among the body of knowledge and the practices of science, technology, engineering, and mathematics (STEM disciplines) and the structures that undergird social, political, and economic inequities and injustices. Through this course, students work towards a shared vision of transformative STEM education that builds on students' life-ways and life-worlds, rather than solely striving for "access."

University of Colorado Boulder, School of Education. Boulder, CO.

Instructor Spring 2017
EDUC/PHYS 1580: Energy and Interactions Fall 2016
Spring 2016

Energy and Interactions is an inquiry-based science course where students learn physics content, engage in co-constructing science knowledge, and learn best practices for science pedagogy. The course met an education requirement or a physical science requirement for pre-service teachers.

Instructor Summer 2016
Program for Excellence in Academics and Community (PEAC): Energy and Interactions

PEAC is a rigorous academic program for incoming freshmen from traditionally underrepresented groups and/or who are first-generation college students. Energy and Interactions is an inquiry-based science course where students learn physics content, engage in co-constructing science knowledge, and learn best practices for science pedagogy.

Instructor Fall 2015
EDUC 5215: Elementary Science Methods and Theory

In this course, pre-service elementary teachers extended their understanding of science as a process of sense-making, emphasizing the importance of creating opportunities for students to engage in epistemic practices for finding out about the natural world.

Teaching Assistant Fall 2014
EDUC 5215: Elementary Science Methods and Theory
Instructor: Dr. Eve Manz.

Instructor Spring 2013
EDUC 2020: Inquiry Approaches to Teaching

This course was for undergraduate STEM majors who were interested in teaching science in K-12. The course provided students with an opportunity to explore teaching science or mathematics as a career, an introduction to the theory and practice that is necessary to design and facilitate instruction, and practicum experiences in teaching science and engineering.

Tufts University, Department of Education. Medford, MA.

Teaching Assistant 2011 - 2012
Math 102 - From Numbers to Functions for Grades 5-9 Math Teachers
Instructors: Dr. Todd Quinto, Dr. Moon Duchin

This online course aimed to improve the teaching and learning of secondary mathematics by helping teachers deepen their understanding of functions and their representations, and of how students learn. Teachers worked online and in face-to-face collaborative groups.

Carnegie Mellon University, Physics Department. Pittsburgh, PA.

Teaching Assistant Spring 2009
PHYS 33-112: Physics II for Science Students
Instructor: Dr. George Klein

This calculus-based course developed the concepts of electricity and magnetism, including the following topics: Coulomb's law, polarization, electric field, electric potential, DC circuits, magnetic field and force, magnetic induction, and the origins of electromagnetic waves.

Teaching Assistant Spring 2009
PHYS 33-111: Physics I for Science Students
Instructors: Dr. Kunal Ghosh, Dr. Mathias Lösche

This calculus-based course combined the basic principles of mechanics with some quantum physics and relativity to explain nature on both a microscopic and macroscopic scale. The course built models to describe the universe based on a small number of fundamental physics principles.

Teaching Assistant Fall 2009
PHYS 33-124 & 33-126: Introduction to Astronomy & Astronomy Lab Fall 2008
Instructor: Dr. Diane Turnshek

This course presented a broad view of astronomy, straightforwardly descriptive and without any complex mathematics. The goal of the course was to encourage non-STEM students to become scientifically literate and to appreciate new developments in the world of science, especially in the rapidly developing field of astronomy.

Universidad Simón Bolívar, Physics Department. Caracas, Venezuela.

Teaching Assistant Spring 2005
FIS1111 - Introductory Calculus-based Physics Winter 2005
Fall 2004

This calculus-based course was designed for students to fundamental of Newtonian mechanics, as well as develop skills for solving and analyzing practical problems using appropriate physical models.

TEACHING EXPERIENCE: K-12 and Out-of-school contexts

"Sunrise" Public Library System. Denver metro area, CO.

Instructor and Lead Curriculum Designer Fall 2016
"ElectroBuzz Science Program" Summer 2016
Spring 2016

The program was offered three times throughout 2016 (Spring, Summer, Fall), at different library branches that serve predominantly immigrant families, and recruited elementary-aged bilingual learners (predominantly from grades 3-5). The program focused on problematizing electrical phenomena, creating opportunities for learners to predict, investigate, and explain how energy is transmitted and transformed within electrical circuits.

Boulder Valley School District. Boulder, CO.

Science Support 2014 - 2015
University Hill Bilingual Elementary School, Grade 4
Worked with teachers grade 4 co-developing and co-teaching science lessons where bilingual students engaged in epistemic practices to co-construct knowledge about the natural world. Additionally, developed and taught activities about electrical phenomena for a small group of bilingual students.

Somerville Public Schools. Somerville, MA.

Science Support 2011 - 2012
"Platino" Community K-8 School, Grades 1-3
Worked with teachers in grades 1-3 in a sheltered English immersion program, co-developing and co-teaching science and engineering lessons where emerging bilingual students engaged in epistemic practices to co-construct knowledge about the natural world and solve meaningful problems.

Instructor and Lead Curriculum Designer Summer 2011
Summer Program from English Language Learners (SPELL), Grades K-6
Designed lessons for intermediate and proficient English speakers, grades 1-5, around the topic of Light: selected readings appropriate for age and proficiency level, investigation activities, and formative assessments; coordinated visits with local science related organizations and institutions.

Carnegie Mellon University, Physics Department. Pittsburgh, PA.

Teaching Assistant Summer 2010
Physics SAMS Academy for under-served high school students Summer 2009
Instructor: Dr. George Klein
Survey algebra-based physics course that covered topics frequently covered in the high school physics curriculum, such as Newtonian mechanics and electrostatics.

Mentor Fall 2008
Department of Physics Outreach Program for Middle School Students
Supported a 7th grade student to investigate Rayleigh scattering, designing an experiment that would let him reproduce and measure this effect in order to understand the reasons behind blue and red skies; the student won second place in a local science fair for Middle School students.

PROFESSIONAL ACTIVITIES AND SERVICE:

Service to the field and consulting

Co-chair of NARST Fellows Award Subcommittee 2022 – present
Committee on Enhancing Science and Engineering in K-5. 2020 - 2021
National Academies of Science, Engineering, and Medicine.

Co-chair of AERA Division C, Section 1d: Science 2020 - 2021

Advisor on equitable science teaching and learning for GBH and NASA's "Bringing the Universe to America's Classroom" (BUAC) 2020 - 2021

Reviewer for Spencer Foundation	2020 - present
Panel Reviewer for DRK12, National Science Foundation	2020 - present
Member of NARST Equity and Ethics Committee	2019 - present
Reviewer for AERA Division K Dissertation Award	2019 - 2020
President of the Board of Directors of education non-profit *Integral Steps*.	2016 - 2018
Secretary for the Physics Education Research Consortium of Graduate Students.	2013 - 2015

Service to the University of Massachusetts, Amherst

Internal Advisory Board Member of the Institute of Diversity Sciences	2022 - present

Service to the UMass College of Education

Decanal Review Committee Member University of Massachusetts Amherst, College of Education.	2022
Faculty Member, Ad Hoc hiring committee for the Communications and Marketing. Specialist position. University of Massachusetts Amherst, College of Education.	2021
Committee member of the Departmental Academic Matters. University of Massachusetts Amherst, Teacher Education & Curriculum Studies.	2020 - 2023 (Chair: AY22-23)

Service to the CU Boulder School of Education

PhD Student Committee Representative for Dean of School of Education search. University of Colorado Boulder, School of Education.	2015 - 2016
Elementary Science Education Faculty search. University of Colorado Boulder, School of Education.	2015 - 2016
Co-chair of the Student Association of Graduate Educators. University of Colorado Boulder, School of Education.	2014 - 2015

Reviewing

Special Issue Co-Editor, Journal of Research in Science Teaching	2022 - 2023
Reviewer, Journal of Engineering Education	2023 - present
Reviewer, AERA Open	2022 - present
Reviewer, Journal of the Learning Sciences	2020 - present
Reviewer, Educational Researcher.	2019 - present
Reviewer, American Educational Research Journal.	2019 - present
Reviewer, Cognition & Instruction.	2019 - present
Reviewer, Bilingual Journal of Research.	2018 - present
Reviewer, Science Education.	2017 - present

Reviewer, International Conference of the Learning Sciences.	2017 - present
Reviewer, Journal of Research in Science Teaching.	2017 - present
Reviewer, Cultural Studies in Science Education.	2017 - present
Reviewer, Science Educators for Equity Diversity and Social Justice Conference.	2017 - present
Reviewer, National Association for Research in Science Teaching.	2016 - present
Reviewer, PLOS One.	2016 - present
Reviewer, Revista Infancia y Aprendizaje.	2016 - present
Reviewer, American Educational Research Association.	2015 - present
Reviewer, Physical Review Physics Education Research (PR-PER).	2015 - present
Reviewer, Physics Education Research Conference.	2012 - present

Memberships

American Association of Applied Linguistics (AAAL)
American Educational Research Association (AERA)
International Society of the Learning Sciences (ISLS)
National Association for Research in Science Teaching (NARST)
National Science Teacher Association (NSTA)