Ashlyn E. Pierson

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Professional Appointments

Assistant Professor, Department of Teaching and Learning, August 2020 – present
The Ohio State University, College of Education and Human Ecology

Education

Ph.D., Learning, Teaching, and Diversity, August 2015 – May 2020
Vanderbilt University, Peabody College of Education and Human Development

Master of Education, Instructional Practice, August 2012 – May 2014
Lipscomb University, Tennessee teaching licensure in 4-12 Math and Science

B.A. Public Policy and Environmental Sciences, August 2008 – May 2012
Duke University, Magna Cum Laude

Honors and Awards

- Research Worth Reading Award, *National Science Teaching Association / National Association for Research in Science Teaching,* 2024
- Outstanding Paper Award, *International Conference of the Learning Sciences*, 2023
- Collaborative Research: Equitable Science Sensemaking (ESSe): Helping Teacher Candidates Support Multiple Pathways for Learning (Lead PI, $155,994.00), *National Science Foundation,* IUSE # 2213127, 2022-2024
- Representations for Teachers as Learners (RepTaLs), *James S. McDonnell Foundation*, (subaward, $14,155), 2023
- Science and Integrated Language + Computational Thinking and Modeling (SAIL+CTM), *National Science Foundation*, STEM+C (subaward, $58,379), 2022
- Teaching and Learning Department Envision Seed grant ($2,000), *The Ohio State University, College of Education and Human Ecology,* 2021
- Dean's Emerging Scholars Seed Grants ($30,000), *The Ohio State University, College of Education and Human Ecology,* 2021
- Outstanding Dissertation Award, *Vanderbilt Department of Teaching and Learning*, 2020
- National Academy of Education/Spencer Dissertation Fellowship ($27,500), 2019-2020
- Best Student Paper Award, *AERA Advanced Technologies for Learning/Learning Sciences SIG*, 2019
- Doctoral Consortium, *Computer Supported Collaborative Learning Conference*, 2019
- Bonsal Applied Education Research Dissertation Grant ($10,000), *Vanderbilt University*, 2018
- Institute for Digital Learning Fellowship ($5,000), *Vanderbilt University*, 2017-2018

Peer-Reviewed Journal Articles (underline indicates student author)

1. Evans, M., Trolli, E., Pierson, A., & Tilak, S. (2023). Designing courses with sustainable virtual learning communities: a STEM teacher candidate course that extends beyond higher education. *Journal of Computing in Higher Education*. Advance online publication.

2. Daniel, B.D., **Pierson, A.E.,** & Keifert, D.T. (2023). Elementary teachers' ideological sensemaking through interaction. *Journal of the Learning Sciences.* Advance online publication.
3. **Pierson, A.E.**, Brady, C.E., & Lee, S.J. (2023). Emotional configurations in STEM classrooms: Braiding feeling, sensemaking, and practice in extended investigations. *Science Education. 107*(5), 1126-1162. DOI: https://doi.org/10.1002/sce.21799.
4. Grapin, S., **Pierson, A.E.,** González-Howard, M., Ryu, M., Fine, C., & Vogel, S. (2023). Science Education with Multilingual Learners: From Equity as Access to Equity as Transformation. *Science Education, 107(4), 999-1032.*
5. Grapin, S., Haas, A., Llosa, L., Wendel, D., **Pierson, A.E.**, & Lee, O. (2023). Multilingual Learners' Epistemologies in Practice in the Context of Computational Modeling in an Elementary Science Classroom. *Journal of Research in Science Teaching, 60*(9), 1998-2041.
6. **Pierson, A. E.**, Keifert, D., Lee, S., Johnson, H., Henrie, A., & Enyedy, N. (2023). Multiple representations in elementary science: Building shared understanding while leveraging students' diverse ideas and practices. *Journal of Science Teacher Education. 34*(7), 707-731. DOI: 10.1080/1046560X.2022.2143612
7. **Pierson, A. E.**, Brady, C. E., Clark, D. B., & Sengupta, P. (2023). Students' Epistemic Commitments in a Heterogeneity-Seeking Modeling Curriculum. *Cognition and Instruction. 41*(2), 125-157. DOI: 10.1080/07370008.2022.2111431
8. Pierson, A. E. & Grapin, S. (2021). A disciplinary perspective on translanguaging. *Bilingual Research Journal, 44(3)*, 318-334.
9. **Pierson, A. E.,** Clark, D. B., & Brady, C. E. (2021). Scientific modeling and translanguaging: A multilingual and multimodal approach to support science learning and engagement. *Science Education*, *105(4),* 776-813.
10. **Pierson, A. E.** & Brady, C.E. (2020). Expanding opportunities for systems thinking, conceptual learning, and participation through embodied and computational modeling. *Systems, 8(4),* 48.
11. **Pierson, A. E.**, Brady, C., & Clark, D. B. (2020). Balancing the environment: Computational models as participants in STEM classrooms. *Journal of Science Education and Technology, 29(1),* 101-119.
12. **Pierson, A. E.** & Clark, D. B. (2019). Sedimentation of modeling practices: Dimensions of co-operative action at a classroom scale. *Science & Education, 28(8)*, 897-925.
13. **Pierson, A. E.**, & Clark, D. B. (2018). Engaging students in computational modeling: The role of an external audience in shaping conceptual learning, model quality, and classroom discourse. *Science Education*, *102*(6), 1336–1362.
14. **Pierson, A. E.**, Clark, D. B., & Sherard, M. K. (2017). Learning progressions in context: Tensions and insights from a semester-long middle school modeling curriculum. *Science Education*, *101*(6), 1061-1088.

Chapters in Edited Books

1. **Pierson, A.E.** (2023). Translanguaging And Scientific Modeling in an English-Dominant STEM Classroom. In L. Shepard-Carey & Z. Tian (Eds.) *Chapter 12:* (*Re)imagining the Future of Translanguaging Pedagogies in Classrooms through Teacher-Researcher Collaboration* (pp. 278-298). Multilingual Matters. https://www.multilingual-matters.com/page/detail/?K=9781800413160
2. **Pierson, A.E.** (2023). Cultivating Cultural Knowledge. In S. Jeong, L.A. Bryan, D.J. Tippins, & C.M. Sexton (Eds.) *Navigating Elementary Science Teaching and Learning: Using case-based pedagogy to understand dilemmas of practice* (pp. 61-63). Cham, Switzerland: Springer Nature.
3. Clark, D. B. & **Pierson, A. E.** (2019). Engaging emerging bilingual students in language and scientific practices through collaborative disciplinarily-integrated games from a co-operative action lens. In P. Sengupta, M. Shanahan, and B. Kim (Eds.) *Critical, Transdisciplinary and Embodied Approaches in STEM Education* (pp. 101-117). New York: Springer. https://doi.org/10.1007/978-3-030-29489-2

Invited Publications

1. **Pierson, A. E.,** Clark, D. B., & Kelly, G. J. (2019). Learning progressions and science practices: Tensions in prioritizing content, epistemic practices, and social dimensions of learning. *Science & Education, 28(8),* 833-841.
2. Sengupta, P., Dickes, A., Farris, A. V., **Karan (Pierson), A.**, Martin, D., & Wright, M. (2015). Programming in K-12 science classrooms. *Communications of the ACM*, *58*(11), 33-35.

Manuscripts Under Review (underline indicates student author)

1. **Pierson, A.E.**, Keifert, D.T., Lee, S.J., Jen, T., Daniel, B.D., Bell, A., Johnson, H.J., Askew, R., & Henrie, A. (in review, accept with minor revisions). Designing to support equity-as-transformation perspectives for multilingual science learners. Submitted to *Instructional Science*.
2. **Pierson, A.E.,** Brady, C.E., Lee, S.J., Shuler, D., Clark, D.B., Sengupta, P. (in review, accept with major revisions). Representational and Relational Care in Pen Pal Letters: Sensitizing to Care in STEM Classrooms. Submitted to *Science Education*.
3. **Pierson, A.E.**, Henrie, A.W., Syifa, M., Jeong, S.J., Keifert, D.T., Johnson, H.J. (in review). Elementary Science Teacher Candidates' Equitable Noticing and Curriculum Design. Submitted to *Journal of Science Teacher Education*.
4. **Pierson, A.E.** & Grapin, S. (in review). Computational Thinking with Multilingual Learners: Normative and Transformative Approaches to Equity. Submitted to *Review of Research in Educaiton.*

Published Conference Proceedings (underline indicates student author)

1. **Pierson, A.**, Henrie, A., & Syifa, M. (2024, June). Supporting Equitable Noticing in Elementary Science Methods. *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024.* Buffalo, NY: International Society of the Learning Sciences.
2. **Pierson, A.** (2024, June). Translanguaging in High School Science: Epistemic and Relational Sensemaking. *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024.* Buffalo, NY: International Society of the Learning Sciences.
3. **Pierson, A.**, Brady, C., Lee, S., Shuler, S., Clark, D., & Sengupta, P. (2024, June). Students' Representational and Relational Caring in STEM. *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024.* Buffalo, NY: International Society of the Learning Sciences.
4. Daniel, B., **Pierson, A.**, & Keifert, D.T. (2024, June). Methods for Analyzing Ideological Sensemaking in Interaction. *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024.* Buffalo, NY: International Society of the Learning Sciences.
5. **Pierson, A.** (2024, June). STEM Curricular Adaptations as Ideological Stances. *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024.* Buffalo, NY: International Society of the Learning Sciences.
6. Keifert, D.T., **Pierson, A.**, Gentry, A., Vogelstein, L., Hennessy Elliot, C., Ryan, Z., DeLiema, D., Marin, A., Sengupta, P., Horn, I., Shapiro, B.R., Jeong, S., Zhou, M. Spigner, H., Felder, S., Henrie, A., Johnson, H., Daniel, B., Lee, S., Goeke, M., Bye, J.K., Carpenter, Z., Marupudi, V., Wilson Vasquez, A., Gilliam, S., Garner, B., Nolting, K., Lopez, B., Lindberg, L., Davé, S., Burley, X., Springer, A., Champion, D., Wagh, A., Banerjee, P., Sanyal, M., Dutta, S., & Khandelwal, C. (2024, June). Co-Research in Video Analysis: Shifts Towards Ethical Validity. *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024.* Buffalo, NY: International Society of the Learning Sciences.
7. Kim, M. & **Pierson, A.** (2024, June). Exploring Equity-Oriented Shifts in Teacher Candidates' Noticing. *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024.* Buffalo, NY: International Society of the Learning Sciences.

8. Lee, S., Daniel, B., Kiefert, D.T., **Pierson, A.**, Jeong, S., Johnson, H., Henrie, A., O'Beollain, S., & Syifa, M. (2024, June). "How are Acorns Equitable?": Teacher Candidate Perceptions of Immersive Language Play Experiences. *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024.* Buffalo, NY: International Society of the Learning Sciences.
9. **Pierson, A.E.,** Brady, C.E., Lee, S.J., & Shuler, D. (2023, June). Cultivating Generative Emotion in Science Classrooms. In Blikstein, P., Van Aalst, J., Kizito, R., & Brennan, K. (Eds.) *Proceedings of the 17th International Conference of the Learning Sciences - ICLS 2023* (pp. 59-66). Montreal, Canada: International Society of the Learning Sciences.
10. **Pierson, A.E.,** Brady, C.E., & Lee, S.J. (2023, June). Braiding Feeling, Sensemaking, and Practice in Science Investigations. In Blikstein, P., Van Aalst, J., Kizito, R., & Brennan, K. (Eds.) *Proceedings of the 17th International Conference of the Learning Sciences - ICLS 2023* (pp. 67-74). Montreal, Canada: International Society of the Learning Sciences.
11. Keifert, D.T., **Pierson, A.,** Jeong, S., De Lucca, N., Watkins, J., Bell, A., Daniel, B., Henrie, A., Johnson, H., Scipio, D., & Bell, P. (2023, June). Theorizing and Designing Relational Possibilities in Teaching and Learning. In Blikstein, P., Van Aalst, J., Kizito, R., & Brennan, K. (Eds.) *Proceedings of the 17th International Conference of the Learning Sciences - ICLS 2023* (pp. 1593-1602). Montreal, Canada: International Society of the Learning Sciences.
12. Daniel, B., Lee, S., Askew, A., Bell, A., Henrie, A., Johnson, H., **Pierson, A.,** Ziegler, H., & Keifert, D.T. (2023, June). Sustaining Participation in an Elementary Science PD Community. In Blikstein, P., Van Aalst, J., Kizito, R., & Brennan, K. (Eds.) *Proceedings of the 17th International Conference of the Learning Sciences - ICLS 2023* (pp. 1770-1771). Montreal, Canada: International Society of the Learning Sciences.
13. **Pierson, A.,** Brady, C., Clark, D.B., & Sengupta, P. (2022, June). Epistemic Commitments: A Lens for Heterogeneity in Science. In C. Chinn, E. Tan, C. Chan, & Y. Kali (Eds.) *Proceedings of the 16th International Conference of the Learning Sciences – ICLS 2022*. (pp. 885-888). Hiroshima, Japan: International Society of the Learning Sciences.
14. Blue, L. & **Pierson, A.** (2022, June). Silly or Substantive?: How Video Club Can Help Science Teacher Candidates See Strengths in Students' Contributions. In C. Chinn, E. Tan, C. Chan, & Y. Kali (Eds.) *Proceedings of the 16th International Conference of the Learning Sciences – ICLS 2022*. (pp. 961-964). Hiroshima, Japan: International Society of the Learning Sciences.
15. Blue, L. & **Pierson, A.** (2022, June). The Power of Gestures: Video Club to Support Teacher Awareness of Gestures as a Form of Multimodal Science Instruction. In C. Chinn, E. Tan, C. Chan, & Y. Kali (Eds.) *Proceedings of the 16th International Conference of the Learning Sciences – ICLS 2022*. (pp. 1872-1902). Hiroshima, Japan: International Society of the Learning Sciences.
16. Daniel, B., **Pierson, A.**, Keifert, D., Lee, S., & Askew, R. (2022, June). Science Teachers' Ideological Shifts about Multilingual Learners. In C. Chinn, E. Tan, C. Chan, & Y. Kali (Eds.) *Proceedings of the 16th International Conference of the Learning Sciences – ICLS 2022*. (pp. 1902-1903). Hiroshima, Japan: International Society of the Learning Sciences.
17. Evans, M., **Pierson, A.,** Xu, M. (2022, June). Designing Courses as Sustainable Learning Communities: A STEM Teacher Candidate Course Extending into K-12 Teaching. In *Proceedings of Computer Supported Collaborative Learning – CSCL 2022*. Hiroshima, Japan: International Society of the Learning Sciences.
18. Bell, A., Lee, S., Haverly, C., **Pierson, A.,** Keifert, D., Johnson, H., Salgado, M., Shim, S., Krist, C., Nation, J., & Kang, H. (2022, June). Navigating Making Space: Attending to Multiple Learning Pathways in Science Learning. In C. Chinn, E. Tan, C. Chan, & Y. Kali (Eds.) *Proceedings of the 16th International Conference of the Learning Sciences – ICLS 2022*. (pp. 1691-1698). Hiroshima, Japan: International Society of the Learning Sciences.

19. Lee, S., Bell, A., Keifert, D., Johnson, H., **Pierson, A.**, Henrie, A., & Askew, R. (2022, June). The Tensions of Making Space: How Teachers Work Toward Heterogeneous Science Sense-Making. In C. Chinn, E. Tan, C. Chan, & Y. Kali (Eds.) *Proceedings of the 16th International Conference of the Learning Sciences – ICLS 2022*. (pp. 1189-1192). Hiroshima, Japan: International Society of the Learning Sciences.
20. **Pierson, A.**, Keifert, D., Lee, S., Henrie, A., Johnson, H., & Enyedy, N. (2021, June). Elementary Science Teacher' Use of Representations to Build Shared Understanding from Students' Diverse Ideas and Practices. In E. de Vries, Y. Hod, & J. Ahn. (Eds.) *Proceedings of the 15th International Conference of the Learning Sciences,* (pp. 505-508). Bochum, Germany: International Society of the Learning Sciences.
21. **Pierson, A.**, Brady, C. (2021, June). Expansive Embodied Modeling: Inviting and Leveraging Students' Ideas and Linguistic Resources. In E. de Vries, Y. Hod, & J. Ahn. (Eds.) *Proceedings of the 15th International Conference of the Learning Sciences,* (p. 830). Bochum, Germany: International Society of the Learning Sciences.
22. **Pierson, A.,** Clark, D.B., & Brady, C. (2020, June). Modeling in Languages, Languages of Modeling: Integrating Science Practices and Translanguaging Practices. In M. Gresalfi and I. Horn. (Eds.) *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 2* (pp. 943-950). Nashville, Tennessee: International Society of the Learning Sciences.
23. **Pierson, A.,** Brady, C., Clark, D.B., & Sengupta, P. (2020, June). Hybrid Modeling in 6th Grade STEM: Seeds of Convergence Research. In M. Gresalfi and I. Horn. (Eds.) *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 1* (pp. 19-26). Nashville, Tennessee: International Society of the Learning Sciences.
24. **Pierson, A.**, Clark, D. (2020, June). Substrate in a Science Classroom: Sedimentation of Middle-School Modeling Practices. Poster accepted to the International Conference of the Learning Sciences, Nashville, TN. In M. Gresalfi and I. Horn. (Eds.) *The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 3* (p. 1473). Nashville, Tennessee: International Society of the Learning Sciences.
25. **Pierson, A.** (2019, June). Modeling and modes: Broadening participation in science practices for emerging bilingual students. In Lund, K., Niccolai, G., Lavoué, E., Hmelo-Silver, C., Gweon, G., and Baker, M. (Eds.) *A Wide Lens: Combining Embodied, Enactive, Extended and Embedded Learning in Collaborative Settings, 13th International Conference on Computer Supported Collaborative Learning (CSCL) 2019, Volume 2* (pp. 1086-1087). Lyon, France: International Society of the Learning Sciences.
26. **Pierson, A.**, Clark, D., & Sherard, M. (2018, June). Supporting Sophisticated Modeling Practices in Secondary Science. In M. Cukurova, J. Hunter, W. Holmes, & V. Dimitrova (Eds.) *Practitioner and Industrial Track Proceedings of the 13th International Conference of the Learning Sciences (ICLS18).* University College London, London, UK (23-27 June).
27. **Pierson, A.**, & Clark, D. (2018, June). Emerging Bilingual Students and Science Practices: Can Translanguaging Resources be Leveraged to Support Modeling? In M. Cukurova, J. Hunter, W. Holmes, & V. Dimitrova (Eds.) *Practitioner and Industrial Track Proceedings of the 13th International Conference of the Learning Sciences (ICLS18).* University College London, London, UK (23-27 June).
28. **Pierson, A.**, & Clark, D. (2018, June). Programming for an Audience of Younger Students: Engaging Students in Creating Computational Models to Support Science Learning. In M. Cukurova, J. Hunter, W. Holmes, & V. Dimitrova (Eds.) *Practitioner and Industrial Track Proceedings of the 13th International Conference of the Learning Sciences (ICLS18).* University College London, London, UK (23-27 June).

Conference Presentations and Invited Presentations (underline indicates student author)

1. **Pierson, A.**, Hennessy Elliot, C., Ryan, Z.D., Zhou, M., Keifer, D.T., Johnson, H.J., Gentry, A., O'Beollain, S., Daniel, B., Henrie, A.W., Jeong, S., Lee, S., Poppins, D., DeLiema, D., Goeke, M., Bye, J.K., Carpenter, Z., Wilson Vasquez, A., Horn, I.S., Shapiro, B.R., Garner, B., & Nolting, K. (2024, April). Expanding Participatory Video Analysis for Ecological and Ethical Validity. Symposium presented at the annual meeting of the American Educational Research Association, Philadelphia, PA. [peer reviewed]
2. **Pierson, A.**, Papendieck, A., Azevedo, F., Parekh, P., Polman, J., Shapiro, R.B., Brady, C., Lee, S., & Lee, H.H. (2024, April). Connections with More than Human Participants in Science Learning. Symposium presented at the annual meeting of the American Educational Research Association, Philadelphia, PA. [peer reviewed]
3. **Pierson, A.,** Grapin, S., Ryu, M., Fine, C., Braaten, M., González-Howard, M., Andersen, S., Méndez Pérez, K, Robinson, C., Vogelstein, V., Vogel, S., Ma, J.Y., Hoadley, C., Ascenzi-Moreno, L., & Barrales, W. (2024, April). Science Education with Multilingual Learners: Toward Equity as Transformation. Symposium presented at the annual meeting of the American Educational Research Association, Philadelphia, PA. [peer reviewed]
4. **Pierson, A.** (2024, April). Translanguaging and Scientific Modeling in an English Dominant STEM classroom. In L. Shepard-Carey & Z. Tian (Chairs) *Acknowledging and Taking Up Teacher Expertise in Translanguaging Co-Design: Voices from the Field.* Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA. [peer reviewed]
5. Jeong, S., **Pierson, A.**, Keifert, D.T., Henrie, A.W., Johnson, H.J., Daniel, B., & Lee, S.J. (2024, April). Diffracting the Notion of Race in an Elementary Science Methods Course. In A.L. Luehmann (Chair) *Justice-Centered Pedagogy: Context-Specific Adjustments and Cross-Cutting Constants.* Poster presented at the annual meeting of the American Educational Research Association, Philadelphia, PA. [peer reviewed]
6. **Pierson, A.**, Henrie, A., Syifa, M., Keifert, D.T., Jeong, S., Johnson, H., Daniel, B., & Lee, S. (2024, March). Supporting Equitable Noticing in Elementary Science Methods Courses. Paper presented at the annual international conference of National Association for Research in Science Teaching, Denver, CO. [peer reviewed]
7. Dabholkar, S., Krishnamoorthy, R., **Pierson, A.**, Sanchez, A., Arada, K., Dutta, D., Tzou, C., Sherry-Wagner, J., McGowan, V., Aceves, A.F., Duncan, R.G., Tan, E., Bell, P., Bang, M. (2024, March). Disrupting Epistemic and Ontological Boundaries of Doing Science and Producing Science Knowledge in K-12 Classrooms. Symposium presented at the annual international conference of National Association for Research in Science Teaching, Denver, CO. [peer reviewed]
8. Syifa, M., **Pierson, A.**, Jeong, S., & Henrie, A. (2024, March). Making Space for Repertoires, Community Resources, and Sensemaking with Elementary Science Teacher Candidates. Poster presented at the annual international conference of National Association for Research in Science Teaching, Denver, CO. [peer reviewed]
9. Henrie, A., Jeong, S., **Pierson, A.**, Johnson, H., Keifert, T., Daniel, B., Lee, S. (2024, January). Designing Elementary Science Methods for Equitable Science Sensemaking. Paper presented at the annual meeting of the Association of Science Teacher Education, New Orleans, LA. [peer reviewed]
10. **Pierson, A.,** Brady, C., & Lee, S. (2023, April). Emotional Configurations in STEM Classrooms: Braiding Feeling, Sense-making, and Practice. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL. [peer reviewed]
11. Lee, S., Bell, A., Keifert, D.T., Johnson, H., **Pierson, A.,** Henrie, A., & Askew, R. (2023, April). Making Space for Justice-Centered Ambitious Science with In-Service Elementary Teachers. Poster presented at the annual meeting of the American Educational Research Association, Chicago, IL. [peer reviewed]
12. Syifa, M., Jeong, S., & **Pierson, A.** (2023, April). Noticing for Equity: Supporting Preservice Science Teachers for Inclusive and Equitable Teaching. Paper presented at the annual international conference of National Association for Research in Science Teaching, Chicago, IL. [peer reviewed]

13. Blue, L., Jeong, S., & **Pierson, A**. (2023, April). Noticing Beyond Disciplinary Ideas Prompts Reimagination of Classroom Interactions that Foreground Students' Classroom Experience. Paper presented at the annual international conference of National Association for Research in Science Teaching, Chicago, IL. [peer reviewed]
14. **Pierson, A.** & Grapin, S. (2022, April). A Disciplinary Perspective on Translanguaging in Science Classrooms. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
15. **Pierson, A.**, Keifert, D., Daniel, B. (2022, April). Circulating Reference: Local Conjecture Maps and Abstract Conceptual Frameworks. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
16. Johnson, H., **Pierson, A.**, Keifert, D., Henrie, A., Enyedy, N., Danish, J., & Askew, R. (2022, April). Scientific Modeling to Support Multilingual Students: Examining a Professional Learning Design for Elementary Teachers. Poster presented at the annual meeting of the American Educational Research Association, San Diego, CA.
17. Daniel, B., Keifert, D., & **Pierson, A.** (2022, April). Negotiating Ideologies about Science and Language in Elementary Teacher Professional Development. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
18. **Pierson, A.**, Daniel, B., Lee, S., Henrie, A., Johnson, H., Keifert, D., & Enyedy, N. (2022, March). Rearticulating Deficit Language Ideologies with Researchers and Teachers in Elementary Science Professional Development. Paper presented at the annual international conference of National Association for Research in Science Teaching, Vancouver, Canada.
19. **Pierson, A.**, Keifert, D., Lee, S., Johnson, H., & Henrie, A. (2021, April). Elementary Science Teachers' Purposes and Practices for Connecting Multiple Representations. Paper presented at the annual international conference of National Association for Research in Science Teaching, Orlando, FL.
20. **Pierson, A.** & Grapin, S. (2021, April). Translanguaging from the Perspective of Disciplinary Science. Paper presented at the annual international conference of National Association for Research in Science Teaching, Orlando, FL.
21. Johnson, H., **Pierson, A.**, Henrie, A., Daniel, B., & Keifert, D. (2021, April). Comparing Contexts for Professional Development: Student Work Analysis and Video Club. Paper presented at the annual international conference of National Association for Research in Science Teaching, Orlando, FL.
22. **Pierson, A.**, Brady, C., Clark, D., & Sengupta, P. (2021, April). Commitments, Convergence, and Modeling in Middle School Science. Paper presented at the annual meeting of the American Educational Research Association, Orlando, FL.
23. **Pierson, A.**, Clark, D., & Brady, C. (2021, April). Scientific Modeling and Translanguaging: Supporting Productive Science Discourse. Paper presented at the annual meeting of the American Educational Research Association, Orlando, FL.
24. Henrie, A., Johnson, H., Keifert, D., Askew, R., & **Pierson, A.** (2021, April). Engaging Teachers as Learners with an Anchoring Phenomenon in Practice-Based Professional Development. Poster presented at the annual meeting of the American Educational Research Association, Orlando, FL.
25. Keifert, D., **Pierson, A.**, Daniel, B., Lee, S., & Jen, T. (2020, November). Disrupting Assimilationist Ideologies in K-4 Science+Language Learning. Invited Presentation at the Caruth Institute for Engineering Education, Southern Methodist University, Dallas, TX.
26. **Pierson, A.**, Brady, C., & Clark, D. (2020, April). Seeds of Hybrid Modeling in Design-Oriented STEM. Paper accepted to the annual meeting of the American Educational Research Association, San Francisco, CA. [conference canceled]
27. **Pierson, A.**, Clark, D., & Brady, C. (2020, April). Parallel Practices: Translanguaging and Scientific Modeling. Paper accepted to the annual meeting of the American Educational Research Association, San Francisco, CA. [conference canceled]

28. **Pierson, A.** (2020, April). Integrating scientific modeling and everyday translanguaging: Supporting productive science discourse in 6th grade STEM. Poster accepted to the the annual meeting of the American Educational Research Association, San Francisco, CA. [conference canceled]
29. **Pierson, A.**, Clark, D., & Brady, C. (2020, April). "Languages" of Science: Computational Modeling for Reasoning and Expression with Emerging Bilingual Students. Poster accepted to the annual meeting of the American Educational Research Association, San Francisco, CA. [conference canceled]
30. **Pierson, A.**, Clark, D., & Brady, C. (2020, March). Languages of Modeling, Modeling in Languages: Integrating Science and Translanguaging. Paper accepted to the annual international conference of National Association for Research in Science Teaching, Portland, OR. [conference canceled]
31. Johnson, H., **Pierson, A.**, Keifert, D., Henrie, A., Enyedy, N., Danish, J., & Askew, R. (2020, March 15-18). Modeling for equitable learning with ELs: Examining a professional learning design for elementary teachers. Poster presented at the National Association of Research in Science Teaching (NARST), Portland, OR. [conference canceled]
32. **Pierson, A.**, Brady, C., & Clark, D. (2019, April). Computational Models as Multimodal Participants with Emerging Bilingual Students. Poster presented at the annual meeting of the American Educational Research Association, Toronto, Canada.
33. **Pierson, A.**, & Clark, D. (2019, April). Sedimenting Science Practices: Longitudinal Analysis of Modeling Practices and Artifacts. Poster presented at the annual meeting of the American Educational Research Association, Toronto, Canada.
34. Clark, D., & **Pierson, A.** (2019, April). Engaging Emerging Bilinguals in Language and Scientific Practices through Disciplinarily-Integrated Games from Co-Operative Action Lens. Poster presented at the annual meeting of the American Educational Research Association, Toronto, Canada.
35. **Pierson, A**. (2019, April). Modeling and Modes: Broadening Participation in Science Practices for Emerging Bilinguals. Poster presented at the annual international conference of National Association for Research in Science Teaching, Baltimore, MD.
36. **Pierson, A.**, & Clark, D. (2019, April). Reuse and Transformation: Development of Classroom Modeling Practices from a Co-Operative Action Perspective. Paper presented at the annual international conference of National Association for Research in Science Teaching, Baltimore, MD.
37. **Pierson, A.**, & Clark, D. (2018, March). Learning Progressions in Context: Tensions and Insights from a Middle School Modeling Curriculum. Paper presented at the annual international conference of National Association for Research in Science Teaching, Atlanta, GA.
38. Martin, K., **Pierson, A.**, & Sengupta, P. (2018, March). Integrating Programming and Biology in 8th Grade. Poster presented at the annual international conference of National Association for Research in Science Teaching, Atlanta, GA.
39. **Karan (Pierson), A.** (2017, April). The Role of Authentic Audience in Constructionist Modeling Activities: Supporting NGSS Practices in the Classroom. Paper presented at the annual meeting of the American Educational Research Association, San Antonio, TX.
40. **Karan (Pierson), A**. (2017, April). Designing to Support the Development of Modeling Practices and Epistemologies in Middle School Science. Poster presented at the annual meeting of the American Educational Research Association, San Antonio, TX.

Research

Principal Investigator, ESSe, 2022 – present
Collaborative Research: Equitable Science Sensemaking (ESSe): Helping Teacher Candidates Support Multiple Pathways for Learning, NSF 2213127, 2022-2023.

Principal Investigator, MIST, 2021 – 2023

Modeling for Inclusive Science Teaching: Developing Effective Science Instruction for Students Classified as English Learners and Students with Disabilities, Dean's Emerging Scholars Seed Grant, The Ohio State University.

Co-Investigator, SARP, 2021 – 2023
Scientific Argumentation Research Project: Teaching and Learning Scientific Argumentation in Secondary Science Classrooms, Dean's Big Idea Grant, The Ohio State University. Principal Investigator: George Newell, The Ohio State University.

Consultant/Research Assistant, RepTaLs, 2019 – 2023
Representations for Teachers as Learners: Teacher Cognition and Learning about Incorporating Science Representations in Elementary Classrooms, JSMF 220020521. Principal Investigator: Joshua Danish, Indiana University.

Consultant/Research Assistant, SAIL+CTM with ELs, 2017 – 2022
Science and Integrated Language (SAIL) plus Computational Thinking and Modeling with English Learners, NSF 1742138. Principal Investigators: Lee, O. & Llosa, L., New York University, Klopfer, E., Massachusetts Institute of Technology, Brady, C. & Clark, D., Vanderbilt University, 2017-2020.

Research Assistant, CTSiM**,** 2016 – 2017
Extending CTSiM: An Adaptive Computational Thinking Environment for Learning Science through Modeling and Simulation in Middle School Classrooms, NSF 1441542. Principal Investigators: Biswas, G., Clark, D., Sengupta, P., & Kinnebrew, J., Vanderbilt University, 2014-2018.

Teaching

Teaching, Ohio State University:
- EDUTL 8731: Teaching and Teacher Education, Spring 2024
- EDUTL 5129: Early Childhood Science Methods, Spring 2023, Spring 2024
- EDUTL 5275: Middle Childhood Science Methods, Fall 2021
- EDUTL 5744: Technologies Used in STEM Education, Fall 2021
- EDUTL 5745: Intro to Assessment in STEM Education, Fall 2020

Teaching, Relay Graduate School of Education, 2016 – 2019
- As an adjunct professor, taught and supported in-service secondary science teachers working toward their master's degrees through Year 1 and Year 2 science methods courses.

K-12 Teaching Experience, 3 years, 2012-2015
- **Science Teacher**, Liberty Collegiate Academy, RePublic Schools Network, 2013 – 2015
  - Created and taught daily lesson plans for 7th and 8th grade science (about 100 students per year).
  - Earned a TVAAS score of 5 out of 5: students averaged more than a year of growth on the state assessment for science.
- **Math Teacher**, Hunters Lane High School, 2012 – 2013
  - Created and taught daily lesson materials for Algebra II, Geometry, Scientific Research, and Bridge Math (over 200 10th – 12th grade students).
  - Earned TVAAS score of 5 out of 5: students averaged more than a year of growth on the state assessment for Algebra II.

Lead Science Teacher and Curriculum Developer, RePublic Schools Network, 2014 – 2015
- Selected as the lead science teacher for three 5th – 8th grade schools with 12 science teachers.

- Conducted observations and provided feedback to teachers on lesson planning and execution.
- Created materials for and led summer professional development about science instruction.
- Created foundational curriculum documents for the RePublic Network, including scope and sequences, final and interim assessments and rubrics, and unit plans aligned to Tennessee, Mississippi, and Common Core standards for 5th – 8th grade Science, Biology, and Algebra II.

Instructor, VSA and SAVY at Vanderbilt, 2016 – 2018
- Curriculum creator and instructor for intensive 1 to 3 weeklong summer courses for 2nd through 12th grade students about computer science and programming.

Service

Editorial Service
- **Editorial Board Member,** *Science Education*, January 2023-December 2025
- **Editor,** Special Issue, *Science & Education***,** 2018 – 2019
    - Special Issue Title: *Scientific Practices, Epistemic Aims, and Learning Progressions*
    - Associate Editor: Gregory Kelly, Special Issue Co-editor: Douglas Clark

Grant Reviewer
- Review Panel: National Science Foundation, 2024
- Review Panel: National Science Foundation, 2023
- Review Panel: National Science Foundation, 2022
- Review Panel: National Science Foundation, 2021
- Review Panel: National Science Foundation, 2020

Journal Reviewer
- *Cognition and Instruction,* 2024
- *Journal of Research in Science Teaching,* 2023-2024
- *Journal of the Learning Sciences,* 2021-2024
- *Science Education*, 2019-2024
- *Science & Education*, 2018-2021
- *Eurasia Journal of Mathematics, Science and Technology Education,* 2021
- *Journal of Language, Identity, and Education*, 2021

Conference Reviewer and Committee Member
- AERA Conference, Reviewer, ATL/LS SIG and Division C, Section 1d – Science, 2019-2024
- NARST Conference, Reviewer Strands 1, 2, and 4, 2019-2024
- International Conference of the Learning Sciences (ICLS),
    - Reviewer, 2019-2022
    - Senior Reviewer (Program Committee), 2023-2024
    - Publications Committee, 2023
- Computer Supported Collaborative Learning Conference, Reviewer, 2018

Symposium Chair and Organizer
- *Co-Research in Video Analysis: Shifts Towards Ethical Validity*, ICLS, Buffalo, NY, June 2024
- *Expanding Participatory Video Analysis for Ecological and Ethical Validity*, AERA, Philadelphia, PA, April 2024
- *Connections with More than Human Participants in Science Learning,* AERA, Philadelphia, PA, April 2024

- *Science Education with Multilingual Learners: Toward Equity as Transformation*, AERA, Philadelphia, PA, April 2024
- *Theorizing and Designing Relational Possibilities in Teaching and Learning,* ICLS, Montreal, Canada, June 2023
- *Affect and Emotions as Productive Sensemaking Resources in STEM Education*, AERA, Chicago, IL, April, 2023
- *Re-Imagining Disciplinary Learning through Expansive Approaches toward Language in STEM*, AERA, San Diego, CA, April 2022
- *Translanguaging and Disciplinary Literacies*, AERA, Orlando, FL, April 2021
- *Thinking Across Representations: Designing to Leverage Material and Computational Investigations for Science Learning*, AERA, Orlando, FL, April 2021
- *Translanguaging and Disciplinary Literacies: Exploring and Leveraging Translanguaging in Disciplinary Contexts*, AERA, San Francisco, CA, April 2020 [conference canceled]
- *Thinking Across Representations: Designing to Support Investigations that Leverage Physical and Computational Modes of Inquiry*, AERA, San Francisco, CA, April 2020 [conference canceled]
- *Multimodal STEM Learning with Emerging Bilingual Students*, AERA, Toronto, Canada, April 2019
- *Supporting Modeling Epistemologies in the Science Classroom*, AERA, Toronto, Canada, April 2019
- *Epistemic Aims and Learning Progressions: Exploring a central tension in science education*, NARST, Atlanta, GA, March 2018
- *Supporting Science as Modeling Practice in the Classroom though the Lens of NGSS*, AERA, San Antonio, TX, April 2017
- *Constructionism, Modeling, and Games Synergies Through the Lens of the NGSS and the Common Core*, AERA, San Antonio, TX, April 2017

Conference Chair, Learning Sciences Graduate Student Conference, 2017 – 2018
- Secured $4,250 in funding for the conference.
- Organized research presentations (papers, posters, workshops) and social events.
- Managed subcommittees responsible for faculty speakers, recruitment, reviews, and website.

Other Professional Experience

Director, Trailblazer Praxis Prep Program, TN Educational Equity Coalition, 2018
- In order to provide equitable access to licensure and testing, surveyed TN Equity coalition members to determine diverse teacher candidates' Praxis support needs.
- Developed a business plan to offer sustainable Praxis prep resources to all teacher candidates in Middle Tennessee.

Professional Affiliations

- American Educational Research Association
- International Society of the Learning Sciences
- National Association of Research in Science Teaching
- National Science Teachers Association