David E. Lopatto
Samuel R. and Marie-Louise Rosenthal Professor of Natural Science and Mathematics

Department of Psychology
Noyce Science Center
Grinnell College
Grinnell, Iowa 50112
(641) 269-3165
Lopatto@grinnell.edu

1225 Elm Street
Grinnell, Iowa 50112
(641) 236-5556

Education

Ph.D., Experimental Psychology, Ohio University, 1980
M.S., Experimental Psychology, Ohio University, 1977
B.A., Psychology, Kenyon College, 1975

Appointments

Director, Grinnell College Center for Teaching, Learning, and Assessment (2014-2022)
Interim Vice-President for Academic Affairs and Dean of the College, Grinnell College (2013-2014)
Samuel R. and Marie-Louise Rosenthal Professor of Natural Science and Mathematics, Grinnell College (2008-)
Professor of Psychology, Grinnell College (1996-)
Associate Professor of Psychology, Grinnell College (1987-1996)
Assistant Professor of Psychology, Grinnell College (1981-1987)
Instructor of Psychology, Ohio University (1980-1981)
Teaching Assistant, Ohio University (1976-1980)

Publications

1. Bender, C., Wright, D, & Lopatto, D. (2009). Students' self-reported changes in intercultural knowledge and competence associated with three undergraduate science experiences. Frontiers: The Interdisciplinary Journal of Study Abroad, 18, 307-321.

2. Bender, C., Yaffe, K., & Lopatto, D. (2017) Undergraduate research abroad: Different program designs serve different needs. CUR Quarterly, 37, 31-39.

3. Cirino, L.A., Emberts, Z., Joseph, P.N., Allen, P.E., Lopatto, D. & Miller, C.W. (2017). Broadening the voice of science: Promoting scientific communication in the undergraduate classroom. Ecology and Evolution, DOI: 10.1002/ece3.3501.

4. Clark, I.E., Romero-Calderon, R., Olson, J.M., Jaworski, L., Lopatto, D., & Banerjee, U. (2009). "Deconstructing" scientific research: A practical and scalable pedagogical tool to

provide evidence-based science instruction. PLoS Biology (PLoS Biol 7(12): e1000264. doi:10.1371/journal.pbio.1000264) See also
5. http://www.plosbiology.org/article/info:doi/10.1371/journal.pbio.1000264

6. Cohen, T.L., & Lopatto, D.E. (1995). Preschool children's comprehension of the word "handicapped". Perceptual and Motor Skills, 81, 747-750.

7. Croonquist, P., et al. (2023). The Genomics Education Partnership: First findings on genomics research in community colleges. SPUR, 6(3), 17-28. DOI: 10.18833/spur/6/3/1.

8. Denofrio, L.A., Russell, B., Lopatto, D., & Lu, Y. (2007). Linking student interests to science curricula. Science, 318, 1872-1873.

9. Donnelly, A., Jain, E., Lopatto, D., Spooner, H., Ramjatan, S. and Chun, G. (2016). "The Role of Undergraduate Research in an Undergraduate Engineering Curriculum", Athens: ATINER'S Conference Paper Series, No: ENGEDU2016-1957.

10. Elgin, S.C.R., Mardis, E.R., Buhler, J., Trosset, C.S., & Lopatto, D. (2007). The importance of research in the undergraduate curriculum: explorations in genomics (Abstract). FASEB Journal, 21, A42.

11. Evans, C.J. et al. (2021). A functional genomics screen identifying blood cell development genes in Drosophila by undergraduates participating in a course-based research experience. G3-Genes Genomes Genetics, 11(1). DOI: 10.1093/g3journal/jkaa028

12. Goodman, A., Arrigo, C., Barral, A., Jones, K. Peterson, C., Roecklein-Canfield, J., Leung, W., Shaffer, C., Lopatto, D., & Elgin, S. (2014). Genomics Education Partnership: a research-based approach to undergraduate teaching utilizing a centralized support system (618.39). The FASEB Journal, 28.

13. Goodman, A., Stry, M.V., Lopatto, D., Leung, W., Reed, L., & Community, G.F. (2020). Growing and Sustaining a Nationwide CURE: Genomics Education Partnership Enhances Research Opportunities for Students and Faculty at Diverse Institutions. The FASEB Journal, 34, 1-1.

14. Gregg-Jolly, L. A., Kington, R., Lopatto, D., & Swartz, J.E. (2011). Benefits of intertwining teaching and research. Science, 331, 532.

15. Gregg-Jolly, L., Swartz, J., Iverson, E., Stern, J., Brown, N. & Lopatto, D. (2016). Situating second-year success: Understanding second-year STEM experiences at a liberal arts college. CBE Life Sci Educ, 2016 Fall;15(3). pii: ar43. DOI: 10.1187/cbe.16-01-0044.

16. Hamel, J.A., ter Hofstede, H.M., Gauthier, A., Lopatto, D., Merton, P., & Vandermast, D. (2021). Undergraduate research abroad: Shared themes in student learning from two models of course-embedded undergraduate research in field biology study abroad courses.

Scholarship and Practice of Undergraduate Research, 5(1), 39-52. DOI: 10.18833/spur/5/1/11.

17. Harrison, M., Dunbar, D. & Lopatto, D. (2013). Using pamphlets to teach biochemistry: A service-learning project. Journal of Chemical Education, 90(2), 210-214.

18. Harrison, M., Dunbar, D., Mageeney, C., and Lopatto, D. (2010). Peer mentoring in an introductory biology laboratory. Council on Undergraduate Research Quarterly on the Web. http://www.cur.org/quarterly/dec10/HarrisonWeb.pdf

19. Harrison, M., Dunbar, D., Ratmansky, L., Boyd, K., & Lopatto, D. (2011). Classroom-based science research at the introductory level: Changes in career choices and attitude. CBE-Life Sciences Education, 10, 279-286.

20. Hoskins, S.G., Lopatto, D., & Stevens, L.M. (2011). The C.R.E.A.T.E. approach to primary literature shifts undergraduates' self-assessed ability to read and analyze journal articles, attitudes about science, and epistemological beliefs. CBE-Life Sciences Education, 10, 368-378.

21. Jordan, T.C., et al. (2014). A broadly implementable research course in phage discovery and genomics for first-year undergraduate students. mBio5(1):doi:10.1128/mBio.01051-13.

22. Keiler, K.C., Jackson, K.L., Jaworski, L., Lopatto, D., & Ades, S.E. (2017). Teaching broader impacts of sciences with undergraduate research. PLoS Biology 03/2017; 15(3):e2001318.

23. Lewis, P., Gardner, E.T., & Lopatto, D. (1980). Shock duration-reduction as negative reinforcement for bar pressing. The Psychological Record, 30, 219-228.

24. Lewis, P., & Lopatto, D. (1989). Keypecking as a self-control response. Psychological Reports, 65, 651-657.

25. Lewis, P., Shellenberger, R.O., & Lopatto, D. (1988). Sensitivity of pigeons to an omission contingency. Bird Behaviour,8, 43-47.

26. Lindgren, C.A., & Lopatto, D. (2013). Introductory biology course involves every student in authentic research. http://www.cur.org/assets/1/23/Summer2013_V34.4_Vignettes-Web1.PDF.

27. Liu, J., Cook, R., Danhof, L., Lopatto, D., Stoltzfus, J.R., & Benning, C. (2021). Connecting research and teaching introductory cell and molecular biology using Arabidopsis mutant screen. Biochemistry and Molecular Biology Education. DOI: 10.1002/bmb.21579.

28. Lloyd, S.A., Shanks, R.A., & Lopatto, D. (2019). Perceived student benefits of an undergraduate physiological laboratory course. Teaching of Psychology, 1-8, DOI: 10.1177/00986283|9853935.

29. Lopatto, D. (1986). Animal research: Collateral issues concerning scientific practice in the context of education. The Psychological Record, 36, 145-154.

30. Lopatto, D. (1992). Teaching the logic of falsification: A classroom exercise. Iowa Science Teachers Journal, 29 (3), 8-10.

31. Lopatto, D. (1996). Review of The Unnatural Nature of Science by Lewis Wolpert. Journal of the Iowa Academy of Science, 103, 84.

32. Lopatto, D. (1997). Review of The End of Science: Facing the Limits of Knowledge in the Twilight of the Scientific Age by John Horgan. Journal of the Iowa Academy of Science, 104, 101-102.

33. Lopatto, D. (2002). Report from the hallways of CUR 2002. Council on Undergraduate Research Quarterly, 23 (1), 4-5.

34. Lopatto, D. (2003). The essential features of undergraduate research. Council on Undergraduate Research Quarterly, 24 (3), 139-142.

35. Lopatto, D. (2004). Survey of Undergraduate Research Experiences (SURE): First Findings. Cell Biology Education, 3, 270-277.

36. Lopatto, D. (2004). What undergraduate research can tell us about research on learning. PKAL Volume 4: What works, what matters, what lasts. http://www.pkal.org/documents/Lopatto_What-Undergraduate-Research-Can-Tell-Us-About-Research-On-Learning.pdf [Note: changes in the PKAL website may result in broken links. Please contact the author for a copy of this paper.]

37. Lopatto, D. (2005). Undergraduate research experiences and the choice of a STEM career. Published online by Project Kaleidoscope In *What Works: A Pkal Essay,* http://www.pkal.org/documents/Lopatto-Undergrad_Research.pdf?CFID=45916&CFTOKEN=89670982 [Note: changes in the PKAL website may result in broken links. Please contact the author for a copy of this paper.]

38. Lopatto, D. (2005). Harvard, take note: Women flourish in sciences at Grinnell. Grinnell Magazine, 37 (4). 23-25.

39. Lopatto, D. (2005). Hot pedagogy and cold buildings. Published online by Project Kaleidoscope in *What Works, A Pkal Essay*.

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41. Lopatto, D. (2006). Undergraduate research as a catalyst for liberal learning. Peer Review, 8, 22-25.

42. Lopatto, D. (2007). Undergraduate research experiences support science career decisions and active learning. CBE – Life Sciences Education, 6, 297-306.

43. Lopatto, D. (2008). Exploring the benefits of undergraduate research: The SURE survey. In R. Taraban & R.L. Blanton (Eds.), Creating Effective Undergraduate Research Programs in Science. NY: Teacher's College Press (pp.112-132).

44. Lopatto, D. (2010). Science in solution: The impact of undergraduate research on student learning. Council on Undergraduate Research and Research Corporation for Science Advancement. See http://web.grinnell.edu/sureiii/Science_in_Solution_Lopatto.pdf

45. Lopatto, D. (2010). Undergraduate Research as a high-impact student experience. Peer Review, 12, 27-30.

46. Lopatto, D. (2015). The consortium as experiment. In National Academies of Sciences, Engineering, and Medicine, Integrating Discovery-Based Research into the Undergraduate Curriculum. Report of a Convocation. Washington, DC: National Academies Press (pp. 101-114).

47. Lopatto, D. (2017). Adapting to change: Studying undergraduate research in the current education environment. Scholarship and Practice of Undergraduate Research (SPUR), 1(1), 5-10.

48. Lopatto, D. (2023). Quantitative methods in the assessment of undergraduate research, scholarship, and creative inquiry. Scholarship and Practice of Undergraduate Research Journal, 7 (2): https://doi.org/10.18833/spur/7/2/3.

49. Lopatto, D., et al. (2008). Genomics Education Partnership. Science, 322, 684-685.

50. Lopatto, D., et al. (2014). A Central Support System Can Facilitate Implementation and Sustainability of a Classroom-Based Undergraduate Research Experience (CURE) in Genomics. CBE Life Sci Educ. 3(4):711-23. DOI: 10.1187/cbe.13-10-0200. PMID: 25452493.

51. Lopatto, D., et al. (2020). Facilitating Growth through Frustration: Using Genomics Research in a Course-Based Undergraduate Research Experience**.** J Microbiol Biol Educ. 2020; 21(1): 21.1.6. Published online 2020 Feb 28. DOI: 10.1128/jmbe.v21i1.2005.

52. Lopatto, D., et al. (2022). Student attitudes contribute to the effectiveness of a genomic CURE. JMBE, 23 (2) **DOI:** https://doi.org/10.1128/jmbe.00208-21**.**

53. Lopatto, D., et al. (2023). Supporting the democratization of science during a pandemic: Genomics Course-based Undergraduate Experiences (CUREs) as an effective remote learning strategy. Journal of Microbiology and Biology Education, 24(3). **DOI:** https://doi.org/10.1128/jmbe.00039-23**.**

54. Lopatto, D., & Brown, B. (1994). The effect of schedules of reinforcement on operant sequential stereotypy in humans. The Psychological Record, 44,185-206.

55. Lopatto, D., Brown, B., & Gray, J. (1995). Response sequence differences between preschoolers and college students on a stereotypy procedure. Perceptual and Motor Skills, 80, 1299-1306.

56. Lopatto, D. & Ellis, A. (2010). The top 10 ways to persuade an Institutional Review Board to reject your research proposal. Council on Undergraduate Research Quarterly, 30 (3), 15-19.

57. Lopatto, D. & Lewis, P. (1985). Contributions of elicitation to measures of self-control. Journal of the Experimental Analysis of Behavior, 44, 69-77.

58. Lopatto, D. & Lewis, P. (1985). Food duration and signal-controlled responding by pigeons. Bulletin of the Psychonomic Society, 23, 347-349.

59. Lopatto, D. & Lewis, P. (1986). Effects of signal modality on signal-controlled responses in pigeons. Bird Behaviour, 6, 53-57.

60. Lopatto, D., Ogier, S., Wickelgren, E.A., Gibbens, C., Smith, A., Sullivan, L., & Muns, M. (1998). Cautiousness, stereotypy, and variability in older and younger adults. The Psychological Record, 48, 571-589.

61. Lopatto, D., & Trosset, C. (2001). The utility of learning style data for learning outcomes assessment. A Collection of Papers on Self-Study and Institutional Improvement. Chicago: The Higher Learning Commission.

62. Lopatto, D., & Williams, J.L. (1976). Self-control: A critical review and an alternative interpretation. The Psychological Record, 26, 3-12.

63. Miller, C. W., Hamel, J., Holmes, K.D., Helmey-Hartman, W. L., & Lopatto, D. (2013). Extending your research team: Learning benefits when a laboratory partners with a classroom. BioScience, 63, 754-762.

64. Murray, M., Spinks, H. Besen-Cassino, Y., Emery, E., Johnson, B. Nunez Perez, E., Wang, Y., Lopatto, D., Goodey, N.M., & Tuininga, A.R. (2024). Breaking barriers: female and Hispanic undergraduate students experience gains in self-confidence and tolerance of obstacles during a sustainability-centered internship program in the USA. Journal of Environmental Studies and Sciences. https://doi.org/10.1007/s13412-024-00966-6.

65. Nerio, R., Webber, A., MacLachlan, E., Lopatto, D. & Caplan, A.J. (2019). One-year research experience for associate's degree student impacts graduation, STEM retention, and transfer patterns. CBE- Life Sciences Education. 18:ar25, 1-9, Summer.

66. O'Connor, C., Withers, M., Donovan, S., Hoskins, S.G., Lopatto, D., Varma-Nelson, P., & White, H. (2011). Cultivating scientific thinking. In C. Brewer & D. Smith (Eds.) Vision and Change in Undergraduate Biology Education: A Call to Action. American Association for the Advancement of Science.

67. Pagano, J.K., Jaworski, L. Lopatto, D., & Waterman, R. (2018). An inorganic chemistry laboratory course as research. J. Chem. Educ., 95, 1520-1525.

68. Perera, V., Mead, C., Buxner, S., Lopatto, D., Horodyskyj, L., Semken, S., & Anbar, A.D. (2017). Students in fully-online programs report more positive attitudes toward science than students in traditional, in-person programs. CBE – Life Sciences Education. 16:ar60.

69. Peteroy-Kelly, M.A., Marcello, M.R., Crispo, E., Buraei, Z, Strahs, D., Isaacson, M., Jaworski, L., Lopatto, D., & Zuzga, D. (2017). Participation in a year-long CURE embedded into major core genetics and cellular and molecular biology laboratory courses results in gains in foundational biological concepts and experimental design skills by novice undergraduate researchers. Journal of Microbiology & Biology Education, 18, 1-14.

70. Pribbenow, C.M., Harrington, D., Rele, C.P., Sandlin, K.M., Leung, W., Lopatto, D., & Reed, L.K. (in press). Accessible support at a national scale: The use and value of virtual learning assistants across multiple undergraduate institutions. Journal of Microbiology & Biology Education, in press.

71. Reig, A.J., Goddard, K.A.., Kohn, R.E., Jaworski, L., & Lopatto, D. (2018) The FUTURE Program: Engaging underserved populations through early research experiences. https:/pubs.acs.org.doi:10.1021/bk-2018-1275.ch001. Chapter 1 in B.L. Gourle and R. M. Jones (Eds.) Best Practices for Supporting and Expanding Undergraduate Research in Chemistry. ACS Symposium Series 1275. ISBN13: 9780841232846.

72. Sandlin, K., Goodman, A., Reinke, C., Van Stry, M. Croonquist, P., Leung, W., Lopatto, D., & Reed, L. (2023). The Genomics Education Partnership empowers faculty from a variety of institutions to successfully integrate genomics research experiences into undergraduate

courses by providing flexible implementation strategies, ready-made curricula, a support network. Journal of Biological Chemistry, 299 (3), S269. https://doi.org/10.1016/j.jbc.2023.103535

73. Sandlin, K. M., Leung, W., Lopatto, D., Key, S. C. S., Van Stry, M., Siders, J., & Reed, L. (2023). Democratizing Student Access to Help: the nationwide, virtual peer mentoring network of the Genomics Education Partnership. NABT 2023 Professional Development Conference.

74. Sargent L, Liu Y, Leung W, Mortimer NT, Lopatto D, Goecks J, & Elgin, S.C.R. (2020). G-OnRamp: Generating genome browsers to facilitate undergraduate-driven collaborative genome annotation. PLoS Comput Biol 16(6): e1007863. https://doi.org/10.1371/journal.pcbi.10078.

75. Shaffer, C.D., et al. (2010). The Genomics Education Partnership: Successful integration of research into laboratory classes at a diverse group of undergraduate institutions. CBE - Life Sciences Education, 9, 55-69.

76. Shaffer, C.D., et al. (2014). A course-based research experience: How benefits change with increased investment in instructional time. CBE – Life Sciences Education, 13, 111-130.

77. Staub, N.L., Poxleitner, M., Braley, A., Smith-Flores, H., Pribbenow, C.M., Jaworski, L., Lopatto, D., & Anders, K.R. (2016). Scaling up: Adapting a phage-hunting course to increase participation of first-year students in research. CBE – Life Sciences Education, 15, 1-11.

78. Trosset, C., Lopatto, D., & Elgin, S. (2008). Implementation and assessment of course-embedded undergraduate research experiences: some explorations. In R. Taraban & R.L. Blanton (Eds.), Creating Effective Undergraduate Research Programs in Science. NY: Teacher's College Press (pp.33-49).

Presentations

Braverman, J.M., Dunbar, D., Jones, C.J., Leung, W., Du, C., Shaffer, C., Lopatto, D., & Elgin, S.C.R. (2012). The Genomics Education Partnership (GEP): A cost-effective approach to enabling undergraduate genomics research. Poster presented at the meeting of the Council on Undergraduate Research, College of New Jersey, Ewing, NJ.

Cochran, J.C., & Lopatto, D.E. (1998). The effect of reinforcement schedules on operant stereotypy: interaction with problem difficulty. Paper presented to the Iowa Academy of Science, Mason City, IA.

Elgin, S.C.R., Shaffer, C., Leung, W., Buhler, J., Mardis, E., & Lopatto, D. (2006). Bringing research into the undergraduate curriculum. Presented to the annual meeting of the American Society for Cell Biology, San Diego, CA.

Elgin, S.C.R., Trosset, C., & Lopatto, D. (2006). Generating research experiences within the undergraduate curriculum. Presented at To Think and Act Like A Scientist: The Roles of Inquiry, Research, and Technology, *Center for the Integration of Science Education and Research*, Lubbock, Texas.

Elgin, S.C.R., Trosset, C., & Lopatto, D. (2006). What do undergraduates gain from a research experience? Presented at the meeting of the American Association for the Advancement of Science, St. Louis.

Gardner, E.T., Lopatto, D., & Lewis, P. (1976). Negative reinforcement as shock duration-reduction. Paper presented to the Midwestern Association of Behavior Analysis, Chicago, IL.

Gardner, E.T., Lopatto, D., Lewis, P., & Hayes, M. (1980). The effects of brief stimuli preceding the availability of safety. Paper presented to the Psychonomic Society, Washington, D.C.

Gardner, E.T., Wisti-Brainard, J., Lopatto, D., & Lewis, P. (1980). Signal-controlled responding in negative reinforcement. Paper presented to the Southeastern Psychological Association, Washington, D.C.

Gradwohl, J., & Lopatto, D. (1985). The effects of a closed economy depend on weight fluctuations. Paper presented to the Iowa Academy of Science, Pella, IA.

Grimm, L.R., & Lopatto, D. (2000). The matching law as a predictor of group choice using a survey method. Paper presented to the Iowa Academy of Science, Des Moines, IA.

Hare, J. Voyles, B., Lopatto, D., & Gregg-Jolly, L. (2002). Teaching introductory biology at Grinnell College with microbiology and inquiry-based methods. Poster presented at the 9th Annual Undergraduate Microbiology Education Conference, Salt Lake City, UT.

Johnson, E., & Lopatto, D. (1994). Sensitivity to reinforcement schedules during a stereotypy procedure. Paper presented to the Iowa Academy of Science, Davenport, IA.

Lauer-Glebov, J.M.R., Sanford, C., Lopatto, D., & Beld, J. (2006). Crossing boundaries: Collaborating to assess information literacy. Presentation at the meeting of American Association of Colleges and Universities, *General Education and Outcomes that Matter in a Changing World*, March 9-11, Phoenix, AZ.

Leatherman, J., Kokan, N., Merkhofer, E., Lopatto, D., Leung, W., & Reed, L. K. (2020). The Genomics Education Partnership: A Nationwide Collaborative CURE that Offers Online-Based Research Opportunities for Students and Faculty at Diverse Institutions. Presented virtually to the ACUBE virtual conference, October 25.

Leung, W., Sargent, L., Liu, Y., Mortimer, N.T., Lopatto, D., Goecks, J., & Elgin, S. (2020). Using genome browsers constructed by G-OnRamp to provide students with Course-based Undergraduate Research Experience in genome annotation. DOI:10.25334/A57B-W632.

Lindgren, C.A., Sullivan, C.H, & Lopatto, D. (2005). Total immersion biology: A course that engages first-year undergraduate students in cell biology research. Poster presented at the annual meeting of the American Society for Cell Biology, San Francisco, CA.

Lopatto, D. (1985). Tactics of humane research. Paper presented to the Iowa Academy of Science, Pella, IA.

Lopatto, D. (1987). The application of microcomputers to laboratory exercises in operant conditioning. Paper presented to the Iowa Academy of Science, Grinnell, IA.

Lopatto, D. (1989). The ethics of human and animal subject research: Some questions facing the academy. Paper presented to the Iowa Academy of Science, Storm Lake, IA.

Lopatto, D. (1991). Operant stereotypy. Invited address, Drake University, Des Moines, IA.

Lopatto, D. (1999). Undergraduate research: From role model to conceptual model. Presented to the science faculty of Grinnell College, Grinnell, IA.

Lopatto, D. (2000). Assessing research-based science teaching. Presented to the science faculty and the NSF-AIRE site visit team, Grinnell, IA.

Lopatto, D. (2001). Role models and conceptual models. Presented at Project Kaleidoscope, Snowbird, Utah.

Lopatto, D. (2002). The Undergraduate Research Experience: What to Bring. Keynote address at the fall conference of the Midwest Pew Consortium, Chicago, IL.

Lopatto, D. (2002). Dropping the other shoe: Convergence of qualitative and quantitative data on undergraduate research experiences. Hope College, MI (Oct 19); Wellesley College, MA (Oct 21).

Lopatto, D. (2003). Personal and professional benefits of the undergraduate research experience at liberal arts colleges. Invited address presented at the meeting of the SCAFRO group, Reed College, OR.

Lopatto, D. (2003). “This research experience helps me to understand that I do not wish to continue in this field." Presented at the meeting of Project Kaleidoscope, Oberlin College, OH.

Lopatto, D. (2003). What undergraduate research can tell us about research on learning. Invited address presented at the meeting of Project Kaleidoscope, University of Richmond, VA. Text posted by Project Kaleidoscope Jan, 2004, http://www.pkal.org/template2.cfm?c_id=1002.

Lopatto, D. (2004). Student perception of mentor traits and their relation to reported benefits from the undergraduate research experience. Invited address made to the faculty of Harvey Mudd College, CA.

Lopatto, D. (2004). What undergraduate research can tell us about research on learning: Crossing boundaries. Paper presented to the 10th National Conference of the Council on Undergraduate Research, La Crosse, WI.

Lopatto, D. (2004). Assessment and Mini-grant report. Presented to the meeting of the Howard Hughes Medical Institute Program Directors, Chevy Chase, MD.

Lopatto, D. (2005). Collaborative learning, faculty-student, and student-student collaboration. Presented to the meeting of the Associated Colleges of the Midwest, Lake Forest College, IL.

Lopatto, D. (2005). Undergraduate research experiences and the epigenesis of a science career. Presented to the 64th meeting of the Society for Developmental Biology, San Francisco, CA

Lopatto, D. (2005). 21st century learning communities that serve the 21st century student: Response. Presented at the National Colloquium of Project Kaleidoscope, Kansas City, MO.

Lopatto, D. (2006). Exploring the benefits of Undergraduate Research Experiences: The SURE survey. Presented at To Think and Act Like A Scientist: The Roles of Inquiry, Research, and Technology, *Center for the Integration of Science Education and Research*, Lubbock, Texas.

Lopatto, D. (2006). The assessment of student learning with online surveys. Presented at Research Explorations in Genomics Workshop, Washington University in St. Louis, St. Louis, MO.

Lopatto, D. (2006). Student responses to undergraduate research experiences and research-like courses. Presented at Society of Physics Students/Council on Undergraduate Research Workshop on Metrics and Resources for Undergraduate Researchers, DePauw University, Greencastle, IN.

Lopatto, D. (2006). Student responses to undergraduate research experiences and research-like courses: SURE and CURE. Presented to the meeting of the HHMI Professors, Chevy Chase, MD.

Lopatto, D. (2006). Mini-grant report. Presented to the meeting of HHMI Program Directors, Chevy Chase, MD.

Lopatto, D. (2007). The Genomics Education Partnership: Outcomes of the spring term, 2007. Presented at the meeting of the Genomics Education Partnership, St. Louis, MO.

Lopatto, D. (2007). Developing a culture of consultation: Researchers and the institutional review board. Presented to the faculty of Whitman College, Walla Walla, WA.

Lopatto, D. (2007). The Grinnell College assessment rubric for evaluating student critical thinking. Presentation to the faculty of Denison University, Granville, OH. Presented also April 19th, 2008 at a meeting of the Teagle CALL critical thinking assessment group, St. Olaf College, Northfield, MN, and presented to the Teagle planning group, June 30, 2008, Augustana College, Moline, IL.

Lopatto, D. (2008). The essential ingredients of a good undergraduate research program. Presented at the HHMI conference on undergraduate research, Janelia Farm, VA.

Lopatto, D. (2008). The assessment of professional development in science faculty. Presented to the Board of Directors, The Research Corporation, Tucson, AZ.

Lopatto, D. (2008). Undergraduate research at liberal arts colleges. Presented to the faculty of Augustana College, Moline, IL.

Lopatto, D. (2008). Undergraduate research as a catalyst for enhanced learning. Presented to the undergraduate honors program, Iowa State University, Ames, IA.

Lopatto, D. (2008). Student responses to undergraduate research experiences in physics. Presented to the meeting of NSF Physics REU directors, College Park, MD.

Lopatto, D. (2008). The Genomics Education Partnership outcomes for 2008. Presented to the Genomics Education Partnership, Washington U., St. Louis, MO.

Lopatto, D. (2008). Research in the classroom: Findings from the CURE survey. Presented at the 2008 national conference of the Council on Undergraduate Research, St. Benedicts College, MN.

Lopatto, D. (2008). Robust findings about student research experiences: The SURE survey. Presented to the meeting of HHMI program directors, Chevy Chase, MD.

Lopatto, D. (2009). Undergraduate research as effective pedagogy. Presented to the faculty of Benedictine University, Lisle, IL.

Lopatto, D. (2009). The benefits of undergraduate research and advanced scholarship. Presented to the faculty of Knox College, Galesburg, IL.

Lopatto, D. (2009). The assessment of undergraduate research experiences. Webinar hosted by the Independent Colleges Organization, March 3.

Lopatto, D. (2009). The Pkal-Keck assessment roundtable. Webinar hosted by Project Kaleidoscope, April 6.

Lopatto, D. (2009). Collaborative assessment of interdisciplinary learning. Presented at the Project Kaleidoscope round table, Baltimore, MD.

Lopatto, D. (2009). Collaborative assessment of interdisciplinary learning. Presented at the meeting of the Consortium for the Assessment of Liberal Learning, Northfield, MN.

Lopatto, D. (2009). The Genomics Education Partnership: Outcomes for 2009. Presented to the Genomics Education Partnership, Washington U., St. Louis, MO.

Lopatto, D. (2009). The SEA NGRI: Preliminary findings on student learning. Presented to the HHMI SEA Genomics Faculty (June 20, 2009).

Lopatto, D. (2009). The value of student research in the sciences: Answers and questions. Presented to the faculty of Haverford College (September, 2009).

Lopatto, D. (2010). The survey of undergraduate research experiences (SURE). Presented to the 2010 NSF BIO REU Workshop, Arlington, VA.

Lopatto, D. (2010). The Genomics Education Partnership: Outcomes for 2010. Presented to the Genomics Education Partnership, Washington U., St. Louis, MO.

Lopatto, D. (2011). The Genomics Education Partnership: Outcomes for 2011. Presented to the Genomics Education Partnership, Washington U., St. Louis, MO.

Lopatto, D. (2011). Seeing undergraduate research. Presented at the CUR Undergraduate Research Program Director's meeting, Washington U., St. Louis, MO.

Lopatto, D. (2012). The Genomics Education Partnership: Outcomes for 2012. Presented to the Genomics Education Partnership, Washington U., St. Louis, MO.

Lopatto, D. (2012). The Genomics Education Partnership: A model of inter-institutional collaboration. Presented to the faculty of Willamette University, Salem, Oregon.

Lopatto, D. (2012). Research on the Integrated Science Curriculum. Presented to the faculty of Willamette University, Salem, Oregon.

Lopatto, D. (2012). Assessing student undergraduate science experiences: SURE and CURE. Presented to the faculty of Iowa State University, Ames.

Lopatto, D. (2012). SURE and CURE assessment of HHMI and NSF/REU programs for undergraduate research. Presented to a meeting of grant Principal Investigators at Iowa State University, Ames.

Lopatto, D. (2013). Take a RISC: Some instruments for the assessment of student learning. Presented at a meeting of the Grinnell College faculty, February 26.

Lopatto, D. (2013). The soft side of science learning. Presented to a Grinnell faculty and workshop attendees, July 15.

Lopatto, D. (2014). Research-like experiences in science courses: Findings from the CURE survey. Presented to the Incorporating Research-like Experiences into Science Courses meeting, Grinnell College, Grinnell, IA.

Lopatto, D. (2015). Research findings about student research: Implications and findings from the Survey of Undergraduate Research Experiences (SURE III) work for student success. Presented to the Student Success at the liberal arts college: Best practices in operations and research meeting, Grinnell College, Grinnell, IA.

Lopatto, D. (2016). Authentic goals for an authentic research experience: What are we trying to achieve? Presented at the Research in the Classroom workshop (CUNY), New York, NY.

Lopatto, D. (2016). The Genomics Education Partnership: Student outcomes for 2016. Presented to the Genomics Education Partnership, Washington U., St. Louis, MO.

Lopatto, D. (2016). Investigations of Undergraduate Research Experiences and Science Learning: How Findings Drive New Questions. Presented to the American Society for Cell Biology, San Francisco, CA.

Lopatto, D. (2017). What uncommon research experiences have in common: The uses of the SURE survey. Presented to the faculty of the University of Nebraska, Omaha, Omaha NE.

Lopatto, D. (2017). The Genomics Education Partnership: Student outcomes for 2017. Presented to the Genomics Education Partnership, Washington U., St. Louis, MO.

Lopatto, D (2017). The Grinnell College Quality Initiative. Presented to the Faculty Friday discussion group, November 17.

Lopatto, D. (2018). GSP: The Future. Presented to a meeting of the Grinnell Science Project group, February 26.

Lopatto, D. (2018). The Genomics Education Partnership: Student outcomes for 2018. Presented to the Genomics Education Partnership, Washington U., St. Louis, MO.

Lopatto, D. (2018). Assessment of Undergraduate Research's Impact. Presented to the Eighteenth National Conference of the Council on Undergraduate Research, Washington, DC.

Lopatto, D. (2019). The Genomics Education Partnership: Outcomes for 2019. Presented to the Genomics Education Partnership, Washington U., St. Louis, MO.

Lopatto, D. (2020). The Genomics Education Partnership: Student outcomes for 2020. Presented virtually. Meeting hosted by the University of Alabama., June 14.

Lopatto, D. (2020). The thriving work of annotation: Genomics in the time of COVID 19. Presented virtually to the GEP, Grinnell, IA.

Lopatto, D. (2021). Assessment strategy in the Genomics Education Partnership. Presented virtually to the GEP. Meeting hosted by the University of Alabama, June 10.

Lopatto, D. (2021). GEP student selected results 2020-2021. Presented virtually to the GEP. Meeting hosted by the University of Alabama, June 13.

Lopatto, D. (2022). Evaluating research tools: Anticipating Reviewer 2. Presented virtually to the GEP. Meeting hosted by Washington University in St. Louis, June 8.

Lopatto, D. (2023). Evaluating research tools: discriminative validity and the problem of ubiquity. Presented to the GEP, St. Louis, June 8.

Lopatto, D. (2024). GEP student learning and attitude: A clinimetric review. Presented to the GEP, St. Louis, June 19.

Lopatto, D., & Allen, M. (2000). What do students learn by doing research? Paper presented to the Eighth National Conference of the Council on Undergraduate Research, Wooster, OH.

Lopatto, D., Borsche, G.L., Costa, G.H., & Rush, R.C. (1995). The relative influence of verbal instructions and reward contingencies during a stereotypy procedure. Paper presented to the Iowa Academy of Science, Waverly, IA.

Lopatto, D., & Brown, B. (1991). The effect of reinforcement schedules on stereotypical responding in humans. Paper presented to the Iowa Academy of Science, Dubuque, IA.

Lopatto, D., & Brown, B. (1992). The effect of reinforcement schedules on stereotypical responding in humans: Interval schedules. Paper presented to the Iowa Academy of Science, Cedar Falls, IA.

Lopatto, D., Brown, B, & Gray, J. (1993). Grids for kids: Differences between preschoolers and college students on a stereotypy procedure. Paper presented to the Iowa Academy of Science, Decorah, IA.

Lopatto, D., Crasco, L., & Kim, J. (2010). The SEA National Genomics Research Initiative: When phage is the rage. Presented at the NGRI Cohort III Orientation meeting, Chevy Chase, MD.

Lopatto, D., & Enger, R. (2008). Assessing Students' Science Learning. Workshop given at the meeting of the AAC & U, Engaging Science, Advancing Learning, Providence, RI.

Lopatto, D., Gardner, E.T., Lewis, P., & Weaver, R. (1977). The effect of food duration on "food-avoidance" behavior. Paper presented to the Psychonomic Society, Washington, D.C.

Lopatto, D., Gardner, E.T., Weaver, R., & Lewis, P. (1978). Auditory versus visual signals. Paper presented to the Midwestern Association of Behavior Analysis, Chicago, IL.

Lopatto, D., Hunter, A-B., & Swartz, J. (2004). Faculty perceptions of the benefits of undergraduate research. Presented at the 10th annual meeting of the Council on Undergraduate Research, La Crosse, WI.

Lopatto, D. & Lewis, P. (1980). Self-control and omission procedures. Paper presented to the Midwestern Psychological Association, St. Louis, MO.

Lopatto, D. & Lewis, P. (1981). Facilitating self-control in pigeons. Paper presented to the Midwestern Psychological Association, Detroit, MI.

Lopatto, D. & Lewis, P. (1981). Comparison of signal modality in self-control and omission procedures. Paper presented to the Midwestern Psychological Association, Detroit, MI.

Lopatto, D. & Lewis, P. (1984). Omission responding in a closed economy. Paper presented to the Midwestern Psychological Association, Chicago, IL.

Lopatto, D., Lewis, P., & Upole, V. (1982). Observing responses penalized by reduced reinforcement. Paper presented to the Midwestern Psychological Association, Minneapolis, MN.

Lopatto, D., Ogier, S., Wickelgren, E., Gibbens, C., Smith, A., Sullivan, L., & Muns, M. (1996). Cautiousness and operant stereotypy in older adults. Paper presented at the 108th meeting of the Iowa Academy of Science, Indianola, IA.

Lopatto, D., & Seymour, E. (2002). Establishing the impact of undergraduate research experiences on learning, attitude and career choice. Workshop conducted at the 9th National Conference of the Council on Undergraduate Research, New London, CT.

Lopatto, D., & Swartz, J. (2005). Student and Faculty Views of the Undergraduate Research Experience: Variations on a Theme. Paper presented to the meeting of the American Association of Colleges and Universities, San Francisco, CA.

Lopatto, D, & Swartz, J. (2006). Undergraduate Research Experiences and the Epigenesis of a Science Career (presented by J. Swartz). *Presented at Capstone Experiences: Transitioning Students Beyond College*. The Pew Midstates Consortium, Chicago.

Lopatto, D., Swartz, J., & Gentile, J. (2003). What do students learn when conducting undergraduate research? Roundtable discussion presented at the 89th annual meeting of the Association of American Colleges and Universities, Seattle, WA.

Lopatto, D., & Trosset, C. (2001a). The utility of learning style data for learning outcomes assessment. Paper presented at the 106th annual meeting of the North Central Association, Chicago, IL.

Lopatto, D., & Trosset, C. (2001b). The utility of learning style data for learning outcomes assessment. Paper presented to the Consortium for Assessment and Planning Support, Fort Mitchell Kentucky.

Stewart, J., Levandoski, M., Russo, J., Ferrett, T., Lopatto, D., Schlegel, W. & Swartz, J. (2010). Multi-institutional research on assessment of interdisciplinary learning: uncovering a shared framework for learning. Poster presented at the meeting of the Howard Hughes Medical Institute, Chevy Chase, MD.

Sullivan, C., Lindgren, C., Brown, J., & Lopatto, D. (2002). The student as scientist: A first course in biology at Grinnell College. Poster presented at the 9th National Conference of the Council on Undergraduate Research, New London, CT.

Weinman, J., Jenson, D., & Lopatto, D. (2015). Teaching computing as science in a research experience. ACM technical symposium on Computer Science Education (SIGCSE), Kansas City, MO.

Wisti-Brainard, J., Gardner, E.T., Lopatto, D., & Lewis, P. (1981). Parameters affecting signal-controlled responding under negative reinforcement. Paper presented to the Association of Behavior Analysis, Chicago, IL.

Online Reports

Lopatto, D. (1999). Undergraduate research: From role model conceptual model. In 1999 Summer Research Study Results. URL: http://www.grinnell.edu/GCAIRE/

Lopatto, D. (1999). Pilot Project: Benefits of student summer research. URL: http://www.grinnell.edu/GCAIRE/

Lopatto, D. (The following are found on http://web.grinnell.edu/science/ROLE/)

- Short-Term Impact of the Undergraduate Research Experience: Results of the First Summer Survey 2001 (PDF).
- Follow Up to the Summer 2001 ROLE Survey (PDF).
- Dropping the Other Shoe: Correspondence between qualitative and quantitative analysis of student reported benefits of undergraduate research experiences (PDF).
- Project Kaleidoscope Presentation, September 2003 (PDF). "This research experience helps me to understand that I do not wish to continue in this field."
- Project Kaleidoscope Presentation, October 2003 (PDF). "What Undergraduate Research Can Tell Us About Research on Learning."

- Presentation at the 2004 CUR annual meeting in La Crosse, Wisconsin (PDF). "What Research on Learning Can Tell Us about Undergraduate Research: Crossing Boundaries."

Professional Associations

American Association for the Advancement of Science (Fellow, Education Section, 2015)
The Iowa Academy of Science (Chairman of the Psychology Section, 1988, 1992, 1997; Fellow, 1993; Controversial Issues Committee (1992-1994))
Association for Behavior Analysis
Council on Undergraduate Research
American Association of Colleges and Universities

Research and Assessment related activities

Principle Investigator, Howard Hughes Medical Institute grant for the SURE and CURE assessment surveys (2008-2019).
Lead Analyst for assessment, Genomics Education Partnership, Prof. Sarah C. R. Elgin, HHMI Professor, Program Director (2006- present).
Assessment Consultant, Long-Term Undergraduate Research Experience (LURE), Prof. James Davis, University of Richmond, Program Director (NSF, 2007-2010).
Assessment Consultant, HHMI Science Education Alliance, Dr. Tuajuanda Jordan, Program Director (2008-2011), David Asai, Program Director (2012-).
Consultant, Research Corporation (2007-2008).
Lead analyst, "Research on the Integrated Science Curriculum" (RISC) survey." Howard Hughes Medical Institute grant (2008-2011).
Lead analyst, "Course related Undergraduate Research Experiences (CURE) survey." Howard Hughes Medical Institute grant (2004-2007).
Co-Principal Investigator, "Survey of Undergraduate Research Experiences (SURE): Replication and Extension", Howard Hughes Medical Institute grant (2005-2007).
Co-Principal Investigator, "Pilot Study to Establish the Nature and Impact of Effective Undergraduate Research Experiences on Learning, Attitude, and Career Choice' (NSF REC0087611, 2001-2003).
Assessment Director, Howard Hughes Medical Institute 2000 Undergraduate Biological Sciences Education Program grant to Grinnell College (2001-2003).
Assessment Director, Howard Hughes Medical Institute 2004 Undergraduate Biological Sciences Education Program grant to Grinnell College (2004-2008).
Assessment Director, Howard Hughes Medical Institute 2008 Undergraduate Biological Sciences Education Program grant to Grinnell College (2008-2012).
Lead analyst, "Assessment of the Undergraduate Research Experience" (HHMI grant to Prof. Sarah Elgin, Washington University at St. Louis, Principal Investigator, 2003-2004).
Workshop for assessment plan writing in student affairs, Grinnell College (2000).

Workshop for assessment of student learning outcomes, Hastings College (1999).
Assessment of the effect of undergraduate research opportunities on science education, Award for Integration of Research and Education grant (NSF, 1999-2001).
Assessment consultant, "Reform of Undergraduate Biology Education: Biological Inquiry and Integrative Biology" (NSF CCLI grant, 1999-2001).
Assessment Coordinator, Grinnell College (1997-1998).
Grinnell College Self-study Coordinator for reaccreditation by the North Central Association of Colleges and Schools, Commission on Institutions of Higher Education (1997-1998).
Lilly Foundation New Science grant for improving performance and retention of underrepresented groups in science (1993-1995).
Alfred Sloan Foundation grant for problem solving and technological literacy (1985).