LUCAS J T LANDHERR
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EDUCATION:

National Institute of Standards and Technology	NRC Post-doctoral Researcher	Ph.D., 2010-2012
Cornell University	Chemical Engineering	Ph.D., 2010
Lafayette College	Chemical Engineering	B.S., 2005

APPOINTMENTS:

Associate Chair of Undergraduate Studies	Chemical Engineering, Northeastern University (2021 – present)
Teaching Professor	Chemical Engineering, Northeastern University (2020 – present)
Associate Teaching Professor	Chemical Engineering, Northeastern University (2016 – 2020)
Assistant Teaching Professor	Chemical Engineering, Northeastern University (2012 – 2016)
Adjunct Faculty	College of Professional Studies, Northeastern University (2013 – 2016)

AWARDS AND HONORS:

Societal:

2019	Ray W. Fahien Award, American Society of Engineering Education
2018	AIChE Award for Innovation in Chemical Engineering Education
2017	AIChE 35 Under 35 Award
2017	ASEE Northeast Section 2016 Outstanding Teacher Award

Institutional:

2015, 2020	Dr. R. H. Sioui Award for Excellence in Teaching, Chem. Eng. Dept., Northeastern
2019	Honorable Mention, Dr. R. H. Sioui Award for Excellence in Teaching
2015, ‘16, ’18, ’19, ’20, ‘21	Omega Chi Epsilon Faculty Member of the Year Award, Chem. Eng. Dept., Northeastern
2019	Faculty Leadership Award, Northeastern student chapters of SWE, SHPE, BESS, and SASE
2019	Gratitude Award, LGBTQA Resource Center, Northeastern
2017	Fostering Engineering Innovation in Education Award, College of Engineering, Northeastern
2009	National Science Foundation GK-12 Fellowship, Biochem. Eng. Dept., Cornell
2008	Best Teaching Assistant Award, Chem. Eng. Dept., Cornell

PUBLICATIONS

STEM Comics:

1. Landherr, L.J.T. (w), et. al. Drawn to Engineering: Avoiding Shell Shock When Trying Something New, Chemical Engineering Education, 56(2), 2022, 113-114.
2. Landherr, L.J.T. (w), Kozlowska, M. (p) Drawn to Engineering: Learning and Growing Now, Chemical Engineering Education, 56(1), 2022, 79-80.
3. Landherr, L.J.T. (w), Hitt, P. (p) Drawn to Engineering: Safety Moments, Chemical Engineering Education, 55(4), 2021, 235-236.
4. Bassi, R. (w) (p). Ed. by Landherr, L.J.T. * Systems Thinking in Chemistry Education, Boston, MA: Northeastern. 2021 [8 1/2" X 11" comic. 1-8]
5. Hysi, I. (w), Baskin, B. (p). Ed. by Landherr, L.J.T. * Voltaic Fuel Cells, Boston, MA: Northeastern. 2021 [8 1/2" X 11" comic. 1-8]
6. Landherr, L.J.T. (w), Keszler, M. (p) Drawn to Engineering: The Future Is Meow, Chemical Engineering Education, 55(3), 2021, 173-174.
7. Landherr, L.J.T. (w), Keszler, M. (p) Drawn to Engineering: “Creating” Alternatives To Exams, Chemical

Engineering Education, 55(2), 2021, 95-96.

8. Landherr, L.J.T. (w), Hitt, P. (p), Cabriada, A. (p) Drawn to Engineering: Little Things, Chemical Engineering Education, 55(1), 2021, 61-62.
9. Landherr, L.J.T. (w), Keszler, M. (p) Drawn to Engineering: Doing Our Best … Just Like Our Students, Chemical Engineering Education, 54(4), 2020, 175-176.
10. Landherr, L.J.T. (w), Becker, Y. (p) Drawn to Engineering: Bad Ideas. Chemical Engineering Education, 54(3), 2020, 151-152.
11. Landherr, L.J.T. (w), Nguyen, D. (p) Drawn to Engineering: The Show Must Go On. Chemical Engineering Education, 54(2), 2020, 107-108.
12. Landherr, L.J.T. (w), Nguyen, D. (p) Drawn to Engineering: Mentoring: In Honor of Phil Wankat, Chemical Engineering Education, 54(1), 2020, 43-44.
13. Landherr, L.J.T. (w), Keszler, M. (p) Drawn to Engineering: TA Doesn't Stand For Tomato Attack, Chemical Engineering Education, 53(4), 2019, 234-235.
14. Landherr, L.J.T. (w), Keszler, M. (p) Drawn to Engineering: Illumination, Chemical Engineering Education, 53(3), 2019, 145-146.
15. Landherr, L.J.T. (w), Keszler, M. (p) Drawn to Engineering: Evolving Your Teaching, Chemical Engineering Education, 53(2), 2019, 67-68.
16. Landherr, L.J.T. (w), Keszler, M. (p). Drawn to Engineering: Idea Theft, *Chemical Engineering Education*, 53(1), 2019, 63-64.
17. Landherr, L.J.T. (w), Keszler, M. (p). Drawn to Engineering: Exams Are Alive With The Sound Of … Music?, *Chemical Engineering Education*, 52(4), 2018, 294-295.
18. Landherr, L.J.T. (w), Keszler, M. (p). Drawn to Engineering: Skeleton Notes, *Chemical Engineering Education*, 52(3), 2018, 221-222.
19. Landherr, L.J.T. (w), Keszler, M. (p). Drawn to Engineering: Diversity Statement, *Chemical Engineering Education*, 52(2), 2018, 115-116.
20. Landherr, L.J.T. (w), Lubchansky, M. (p). Drawn to Engineering: Answering Questions, *Chemical Engineering Education*, 52(1), 2018, 31-32.
21. Landherr, L. (w), Keszler, M. (p). Drawn to Engineering: Presenting Audiences, *Chemical Engineering Education*, 51(4), 2017, 163-164.
22. Landherr, L. (w), Keszler, M. (p). Drawn to Engineering: Humor in Exams, *Chemical Engineering Education*, 51(3), 2017, 126-127.
23. Landherr, L. (w), Lubchansky, M. (p). Drawn to Engineering: Problem-Solvers, *Chemical Engineering Education*, 51(2), 2017, 62-63.
24. Simonson, Z. (w), Keszler, M.. (p). Ed. By Shepherd, D. Gene Therapy. Boston, MA: Northeastern. 2016 [8 1/2" X 11" comic. 1-4]
25. Cogswell, C. (w), Shepherd, D. * (w), Pietsch, C. (p) Assumptions. Boston, MA: Northeastern. 2016 [8 1/2" X 11" comic. 1-8]
26. Shepherd, D. * (w), Keszler, M. (p) Refrigeration Cycles. Boston, MA: Northeastern. 2016 [8 1/2" X 11" comic. 1-10]
27. Shepherd, D. * (w), Lubchansky, M. (p). Recycle and Purge Streams. Boston, MA: Northeastern. 2016 [8 1/2" X 11" comic. 1-6]
28. Shepherd, D. * (w), Cooke, J. (p). Fugacity. Boston, MA: Northeastern. 2016 [8 1/2" X 11" comic. 1-10]
29. Shepherd, D. * (w), Lubchansky, M. (p). Heat Exchangers. Boston, MA: Northeastern. 2016 [8 1/2" X 11" comic. 1-6]
30. Shepherd, D. * (w), Lai, M. (p). Feedback Controls. Boston, MA: Northeastern. 2015 [8 1/2" X 11" comic. 1-8]
31. Shepherd, D. * (w), Kahl, A. (p). Uncertainty. Boston, MA: Northeastern. 2015 [8 1/2" X 11" comic. 1-6]
32. Shepherd, D. * (w), Sparks, B. (p). Data Analysis. Boston, MA: Northeastern. 2015 [8 1/2" X 11" comic. 1-5]

* - *All articles are independently published science comics for educational distribution. Note that Dante Shepherd has been used as a pseudonym for creative work for Lucas James Landherr.*

Peer-Reviewed and Other Significant Publications:

1. Bassi, R.; Landherr, L.J.T. "Comics as a Learning Tool to Promote Systems Thinking in Chemistry Education". Journal of Chemical Education, in submission.
2. Landherr, L.J.T. "Work in Progress: Creative Projects Supplementing Exams so Students Can Better Demonstrate Their Understanding". Proceedings of the ASEE Annual Conference, 2021.
3. Ford, L.P.; Brennan, J.; Silverstein, D.L.; Landherr, L.J.T.; Wheeler West, C.; Thiel, S.W.; Dahm, K.D.; Cole, J.; Jamieson, M.V. "How We Teach: Kinetics and Reactor Design". Proceedings of the ASEE Annual Conference, 2021.
4. Landherr, L.J.T. "By Students for Students: Using Course Projects to Create Learning Materials for Future Classes". Proceedings of the ASEE Annual Conference, 2020.
5. Landherr, L.J.T. "Work in Progress: The Development and Applied Use of Crash Course Engineering Videos for Formal and Informal Learning". Proceedings of the ASEE Annual Conference, 2020.
6. Ford, L.P.; Brennan, J.; Cole, J.; Dahm, K.D.; Jamieson, M.V.; Landherr, L.J.T.; Silverstein, D.L.; Vaughen, B.K.; Vigeant, M.A.; Thiel, S.W. "How We Teach: Chemical Engineering in the First Year". Proceedings of the ASEE Annual Conference, 2020.
7. Landherr, L.J.T. "Integrating Comics Into Engineering Education To Promote Student Interest, Confidence, and Understanding". Proceedings of the ASEE Annual Conference, 2019.
8. Vigeant, M.A.; Cole, J.; Dahm, K.D.; Ford, L.P.; Landherr, L.J.T.; Silverstein, D.L.; West, C.W. "How We Teach: Thermodynamics". Proceedings of the ASEE Annual Conference, 2019.
9. Landherr, L.J.T.; Pfluger, C.; Koppes, R.A. "The River Project: an Open-Ended Engineering Design Challenge from Bench-Scale to Pilot-Scale". Proceedings of the ASEE Annual Conference, 2018.
10. Vigeant, M.; Silverstein, D.L.; Dahm, K.D.; Ford, L.P.; Cole, J.; Landherr, L.J.T.. "How We Teach: Unit Operations Laboratory" Proceedings of the ASEE Annual Conference, 2018.
11. Landherr, L.J.T. "The Production of Science Comics To Improve Undergraduate Engineering." Proceedings of the ASEE Northeast Section Conference, 2016.
12. Landherr, L.J.T.; Cohen, C.; Agarwal, P.; Archer, L.A. "Interfacial Friction and Adhesion of Polymer Brushes." *Langmuir* 2011, *27*, 9387-9395.
13. Landherr, L.J.T.; Cohen, C.; Archer, L.A. "Effect of Pendent Chains on the Interfacial Properties of Thin Polydimethylsiloxane (PDMS) Networks." *Langmuir* 2011, *27*, 5944-5952.
14. Landherr, L.J.T.; Zhang, Q.; Cohen, C.; Archer, L.A. "Interfacial friction of thin PDMS network films." *Journal of Polymer Science B*, 2008, *46*, 1773-1787.

Books:

1. Landherr, L.J.T. *Drawn to Thermodynamics: A Comic Textbook.* In preparation.
2. Shepherd, D. *Surviving The Word: The Textbook.* Marquis Press, 2018. Print.

Book Chapters:

1. Shepherd, D. "Respect the Catalysts." *The Hustle Economy*. Ed. J. Oberholtzer, J. Hagy. Running Press, 2016. Print. 135-146.
2. Landherr, L. Contributor, *Mechanobiology Handbook*. Ed. J. Nagatomi, E. E. Ebong. Taylor & Francis, 2019.

Illustrations:

1. Landherr, L.J.T. (w) and Keszler, M. (p) "Cartography", Figure 1 in "Materials Science "Cartography": The MAP Scale after a One-Year Journey" by Cranford, S. *Matter*, 2020, 3(6), P1814-1817.
2. Landherr, L.J.T. (w) and Hitt, S. (p) "Citation Economy", Figure 1 in "C.R.E.A.M: Citations Rule Everything Around Me" by Cranford, S. *Matter*, 2020, 2(6), P1343-1347.
3. Landherr, L.J.T. (w) and Nguyen, D. (p) "4 Archetype Reasons for Editorial Rejection", Figure 1 in "4 Archetype Reasons for Editorial Rejection" by Chin, S.; Cranford, S. *Matter*, 2020, 2(1), P4-6.
4. Landherr, L.J.T. (w) and Kim, E. (p) "The "Applied" Science Time Frame", Figure 1 in "Fifty Years Is Not A Lot of Time!" by Zadpoor, A. *Matter*, 2019, 1(5), P1096-1098.
5. Landherr, L.J.T. (w) and Keszler, M. (p) "Limited Building Materials on Mars", Figure 1 in "Martian Material Sourcing Challenges Propel Earth Construction Opportunities" by Troemner, M. and Cusatis, G. *Matter*, 2019, 1(3), P547-549.
6. Landherr, L.J.T. (w) and Keszler, M. (p) " 'Applied' Sensory Evaluation", Figure 1 in "On the Sensory Analysis

of Matter and Materials" by Pan, N. and Pan, T. *Matter*, 2019, 1(2), P13-16.

7. Landherr, L.J.T. (w) and Sparks, B. (p) "Seaborgium", element 106 in the Illustrated Periodic Table. Created in the Lab- Interpreting Science Through Comics, 23 Sep. 2016 – 11 Nov. 2016, Waterfall Arts, Belfast, ME.
8. Landherr, L.J.T. (w) and Sparks, B. (p) "Thorium", element 90 in the Illustrated Periodic Table. Created in the Lab- Interpreting Science Through Comics, 23 Sep. 2016 – 11 Nov. 2016, Waterfall Arts, Belfast, ME.
9. Landherr, L.J.T. (w) and Sparks, B. (p) "Osmium", element 76 in the Illustrated Periodic Table. Created in the Lab- Interpreting Science Through Comics, 23 Sep. 2016 – 11 Nov. 2016, Waterfall Arts, Belfast, ME.

Video Series:

All CrashCourse videos were created in collaboration with PBS Digital; Lucas Landherr was the series' engineering consultant, developing and outlining all content, editing all writing, and reviewing all video.

1. CrashCourse. "What Is Engineering?: Crash Course Engineering #1." YouTube, 17 May 2018, https://youtu.be/btGYcizV0iI.
2. CrashCourse. "Civil Engineering: Crash Course Engineering #2." YouTube, 24 May 2018, https://youtu.be/-xbtnz4wdaA.
3. CrashCourse. "Mechanical Engineering: Crash Course Engineering #3." YouTube, 31 May 2018, https://youtu.be/A1V-QQ5wFU4.
4. CrashCourse. "The History of Electrical Engineering: Crash Course Engineering #4." YouTube, 7 Jun. 2018, https://youtu.be/3nB1Ntku06w.
5. CrashCourse. "The History of Chemical Engineering: Crash Course Engineering #5." YouTube, 14 Jun. 2018, https://youtu.be/aRKyJRAxjpM.
6. CrashCourse. "Biomedical & Industrial Engineering: Crash Course Engineering #6." YouTube, 21 Jun. 2018, https://youtu.be/O6lENrRANxY.
7. CrashCourse. "The Law of Conservation: Crash Course Engineering #7." YouTube, 28 Jun. 2018, https://youtu.be/VxCORJ8dN3Y.
8. CrashCourse. "Reversibility & Irreversibility: Crash Course Engineering #8." YouTube, 5 Jul. 2018, https://youtu.be/RKOPoJzqH94.
9. CrashCourse. "The First & Zeroth Laws of Thermodynamics: Crash Course Engineering #9." YouTube, 12 Jul. 2018, https://youtu.be/fSEFfWf2au0.
10. CrashCourse. "Why We Can't Invent A Perfect Engine: Crash Course Engineering #10." YouTube, 19 Jul. 2018, https://youtu.be/2B81W6nNds0.
11. CrashCourse. "Heat Engines, Refrigerators, and Cycles: Crash Course Engineering #11." YouTube, 2 Aug. 2018, https://youtu.be/iZOXW5aaCZg.
12. CrashCourse. "Stress, Strain & Quicksand: Crash Course Engineering #12." YouTube, 9 Aug. 2018, https://youtu.be/ouTJkNLepF0.
13. CrashCourse. "Fluid Flow & Equipment: Crash Course Engineering #13." YouTube, 16 Aug. 2018, https://youtu.be/bRrfsv9hiX4.
14. CrashCourse. "Heat Transfer: Crash Course Engineering #14." YouTube, 23 Aug. 2018, https://youtu.be/YK7G6l_K6sA.
15. CrashCourse. "How Not to Set Your Pizza on Fire: Crash Course Engineering #15." YouTube, 30 Aug. 2018, https://youtu.be/B0CwRyBlt1s.
16. CrashCourse. "Drugs, Dyes, and Mass Transfer: Crash Course Engineering #16." YouTube, 6 Sep. 2018, https://youtu.be/-YTC3A6dEGM.
17. CrashCourse. "Mass Separation: Crash Course Engineering #17." YouTube, 13 Sep. 2018, https://youtu.be/YjuZs8PFIEU.
18. CrashCourse. "Reaching Breaking Point: Materials, Stresses, and Toughness: Crash Course Engineering #18." YouTube, 20 Sep. 2018, https://youtu.be/GpiBSFMFe-w.
19. CrashCourse. "Metals & Ceramics: Crash Course Engineering #19." YouTube, 27 Sep. 2018, https://youtu.be/NOK1nMiiTWU.
20. CrashCourse. "The Polymer Explosion: Crash Course Engineering #20." YouTube, 4 Oct. 2018, https://youtu.be/XjDDHnByfuo.
21. CrashCourse. "Electrical Power, Conductors, and Your Dream Home: Crash Course Engineering #21." YouTube, 18 Oct. 2018, https://youtu.be/uTWHMchUlws.
22. CrashCourse. "Silicon, Semiconductors, & Solar Cells: Crash Course Engineering #22." YouTube, 25 Oct.

2018, https://youtu.be/ivWXuOd5SrI.
23. CrashCourse. "The Mighty Power of Nanomaterials: Crash Course Engineering #23." YouTube, 1 Nov. 2018, https://youtu.be/IkYimZBzguw.
24. CrashCourse. "Biomaterials: Crash Course Engineering #24." YouTube, 8 Nov. 2018, https://youtu.be/-jw8osY5QJM.
25. CrashCourse. "Cheese, Catastrophes, and Process Control: Crash Course Engineering #25." YouTube, 15 Nov. 2018, https://youtu.be/BT_JUbpZ1lQ.
26. CrashCourse. "Skyscrapers, Statics, and Dynamics: Crash Course Engineering #26." YouTube, 29 Nov. 2018, https://youtu.be/xOkJFrXg8V0.
27. CrashCourse. "Engineering Ethics: Crash Course Engineering #27." YouTube, 6 Dec. 2018, https://youtu.be/5KZx81crb48.
28. CrashCourse. "Flirting With Disaster – The Importance of Safety: Crash Course Engineering #28." YouTube, 13 Dec. 2018, https://youtu.be/WavEcAsI2AY.
29. CrashCourse. "Preventing Flint – Environmental Engineering: Crash Course Engineering #29." YouTube, 20 Dec. 2018, https://youtu.be/uHUO6PrsOzg.
30. CrashCourse. "The Engineering Challenges of Renewable Energy: Crash Course Engineering #30." YouTube, 3 Jan. 2019, https://youtu.be/4k5gyYAAEEU.
31. CrashCourse. "The Future of Clean Energy: Crash Course Engineering #31." YouTube, 10 Jan. 2019, https://youtu.be/v6uRuNboy4A.
32. CrashCourse. "Why It's So Hard To Make Better Batteries: Crash Course Engineering #32." YouTube, 17 Jan. 2019, https://youtu.be/A5GgBTFSUu4.
33. CrashCourse. "How Engineering Robots Works: Crash Course Engineering #33." YouTube, 24 Jan. 2019, https://youtu.be/uNfUAJBuZ0s.
34. CrashCourse. "To The Moons & Mars – Aerospace Engineering: Crash Course Engineering #34." YouTube, 31 Jan. 2019, https://youtu.be/UvtYn2j78gw.
35. CrashCourse. "Computer Engineering and the End of Moore's Law: Crash Course Engineering #35." YouTube, 7 Feb. 2019, https://youtu.be/04ht0kSJ0I4.
36. CrashCourse. "How to Engineer Health – Drug Discovery & Delivery: Crash Course Engineering #36." YouTube, 14 Feb. 2019, https://youtu.be/gIkMNn-A_Y4.
37. CrashCourse. "Smart Tattoos & Tiny Robots: Crash Course Engineering #37." YouTube, 21 Feb. 2019, https://youtu.be/EyYdZYqTLFU.
38. CrashCourse. "Changing the Blueprints of Life – Genetic Engineering: Crash Course Engineering #38." YouTube, 28 Feb. 2019, https://youtu.be/FY_ZUEKWhBc.
39. CrashCourse. "Mass-Producing Ice Cream with Food Engineering: Crash Course Engineering #39." YouTube, 7 Mar. 2019, https://youtu.be/MH4GgKsf7-U.
40. CrashCourse. "How the Leaning Tower of Pisa Was Saved: Crash Course Engineering #40." YouTube, 14 Mar. 2019, https://youtu.be/5mkeoVpTaMA.
41. CrashCourse. "Why Moving People is Complicated: Crash Course Engineering #41." YouTube, 28 Mar. 2019, https://youtu.be/erYf6NNw8Ec.
42. CrashCourse. "YouTube Couldn't Exist Without Communications and Signal Processing: Crash Course Engineering #42." YouTube, 4 Apr. 2019, https://youtu.be/VjuFaPAIOHw.
43. CrashCourse. "How Seawater Sabotages Ships: Crash Course Engineering #43." YouTube, 11 Apr. 2019, https://youtu.be/J9A55q7AR6E.
44. CrashCourse. "Building a Desalination Plant from Scratch: Crash Course Engineering #44." YouTube, 18 Apr. 2019, https://youtu.be/ke5jUHe4fII.
45. CrashCourse. "How To Become An Engineer: Crash Course Engineering #45." YouTube, 25 Apr. 2019, https://youtu.be/77xMVKOEZ5g.
46. CrashCourse. "The Biggest Problems We're Facing Today & The Future of Engineering: Crash Course Engineering #46." YouTube, 2 May 2019, https://youtu.be/Fzq_yuj-oZM.

Websites:

1. Shepherd, D. *Surviving the World*. http://survivingtheworld.com 2008-2018.
2. Shepherd, D. (w) and Cooke, J. (p). *PhD Unknown.* http://phdunknown.com 2013-present.

Other Significant Publications

1. Landherr, L.J.T. (w) and Song, J. (p). Laser Assembly for Microfluidics – the Abigail Koppes Research Group. Boston, MA: Northeastern University. 2019 [8 1/2" X 11" comic. 1-3]
2. Landherr, L.J.T. "A graphic textbook imagines conversations about physics." Physics Today 2018, 71 (9), p58.
3. Landherr, L.J.T. "Real World Applications For Friction and Lubrication." Cornell's Learning Initiative in Medicine and Bioengineering. Module: (http://climb.bme.cornell.edu/friction.html)

MEETINGS AND CONFERENCES

Presenter indicated in italics; ‡ = undergraduate student; ‡‡ = high school student; ** = award-winning poster

Recent Presentations

Talks

1. *Landherr, L.J.T.* "Replacing Exams with Projects: Advantages and Disadvantages As Observed during Hybrid and Remote Learning and Broader Efforts Towards Equitable Assessment". AIChE Annual Meeting, Boston, November 2021.
2. *Ford, L.P.;* Brennan, J.; Cole, J.; Dahm, K.D.; Jamieson, M.V.; Landherr, L.J.T.; Silverstein, D.L.; Thiel, S.W.; Wheeler West, C. "How We Teach: Material & Energy Balances". AIChE Annual Meeting, Boston, November 2021.
3. *Landherr, L.J.T.* "Work in Progress: Creative Projects Supplementing Exams so Students Can Better Demonstrate Their Understanding". ASEE Annual Conference, virtual, July 2021.
4. *Ford, L.P.;* Brennan, J.; Silverstein, D.L.; Landherr, L.J.T.; Wheeler West, C.; Thiel, S.W.; Dahm, K.D.; Cole, J.; Jamieson, M.V. "How We Teach: Kinetics and Reactor Design". ASEE Annual Conference, virtual, July 2021.
5. *Landherr, L.J.T.* "Conceptests for Process Controls Courses: By Students, for Students". AIChE Annual Meeting, virtual, November 2020.
6. *Ford, L.P.;* Brennan, J.; Cole, J.; Dahm, K.D.; Jamieson, M.V.; Landherr, L.J.T.; Silverstein, D.L.; Vaughen, B.K.; Wheeler-West, C. "How We Teach: Kinetics and Reactor Design". AIChE Annual Meeting, virtual, November 2020.
7. *Landherr, L.J.T.* "AIChE and K-12 Outreach". AIChE Spring Meeting, virtual, August 2020.
8. *Landherr, L.J.T.* "By Students for Students: Using Course Projects to Create Learning Materials for Future Classes". ASEE Annual Conference, virtual, June 2020.
9. *Landherr, L.J.T.* "Work in Progress: The Development and Applied Use of Crash Course Engineering Videos for Formal and Informal Learning". ASEE Annual Conference, virtual, June 2020.
10. *Ford, L.P.; Brennan, J.; Cole, J.; Dahm, K.D.; Jamieson, M.V.; Landherr, L.J.T.; Silverstein, D.L.; Vaughen, B.K.; Vigeant, M.A.; Thiel, S.W.* "How We Teach: Chemical Engineering in the First Year". ASEE Annual Conference, virtual, June 2020.
11. *Landherr, L.J.T.* "AIChE's K-12 STEM Showcase / STEM Outreach Competition: Results from the First Event and Future Plans". AIChE Annual Meeting, Orlando, FL, November 2019.
12. *Landherr, L.J.T.* "Integrating Comics Into Engineering Education To Promote Student Interest, Confidence, and Understanding". 2019 Annual Conference of American Society of Engineering Education, Tampa, FL, June 2019.
13. *Vigeant, M.A.*; Cole, J.; Dahm, K.D.; Ford, L.P.; Landherr, L.J.T.; Silverstein, D.L.; West, C.W. "How We Teach: Thermodynamics". 2019 Annual Conference of American Society of Engineering Education, Tampa, FL, June 2019.
14. *Landherr, L.J.T.* "By Students for Students: Using Course Projects to Create Learning Materials for Future Classes" AIChE Annual Meeting, Pittsburgh, PA, October 2018.
15. *Vigeant, M.*; Silverstein, D.L.; Dahm, K.D.; Ford, L.P.; Cole, J.; Landherr, L.J.T.. "How We Teach: Thermodynamics". AIChE Annual Meeting, Pittsburgh, PA, October 2018.
16. *Landherr, L.J.T.*; Pfluger, C.; Koppes, R.A. "The River Project: an Open-Ended Engineering Design Challenge from Bench-Scale to Pilot-Scale" ASEE Annual Conference, Salt Lake City, UT, June 2018.
17. *Vigeant, M.*; Silverstein, D.L.; Dahm, K.D.; Ford, L.P.; Cole, J.; Landherr, L.J.T.. "How We Teach: Unit Operations Laboratory" ASEE Annual Conference, Salt Lake City, UT, June 2018.
18. *Carter, T.*; Koppes, A.; Landherr, L.J.T.; Willey, R. "Aligning the Unit Operations Laboratory and the National Academy's Grand Challenges" AIChE Annual Meeting, Minneapolis, MN, October 2017.

19. *Landherr, L.J.T.* "Using Science Comics to Improve Undergraduate Chemical Engineering Education" 2016 AIChE Annual Meeting, San Francisco, CA, November 2016.
20. Pfluger, C., and *Landherr, L.J.T.* "Process Controls Final Projects Inspired By Real Unit Operations Laboratory Modules" AIChE Annual Meeting, San Francisco, CA, November 2016.
21. *Landherr, L.J.T.* "The Production of Science Comics To Improve Undergraduate Engineering Education" 2016 ASEE Northeast Section Meeting, Kingston, RI, April 2016.
22. *Landherr, L.J.T.* "The Production of Science Comics to Improve Education for Visual Learners" AIChE Annual Meeting, Salt Lake City, UT, November 2015.
23. *Landherr, L.J.T.*; Puzzo, C. ‡; Chamberlain, C. ‡; Podyma, J. ‡; Rapsilber, G. ‡ "Science The World: Developing structured, research and real-world inspired STEM experiments for K-12 curricula" ACS Annual Meeting, Boston, MA, August 2015.
24. *Landherr, L.J.T.*; Ziemer, K. "The River Project: Engineering Challenge-Based Learning from Bench-Scale to Pilot-Scale" AIChE Annual Meeting, Atlanta, GA, November 2014.
25. *Landherr, L.J.T.*. "Science The World: The Development of Structured, Research-Inspired STEM Discussions, Demonstrations, and Experiments For K-12 Curricula." AIChE Annual Meeting, San Francisco, CA, November 2013.
26. *Landherr, L.J.T.*; Hudson, S.D.; Migler, K. "Polymeric Fluid Flow Over Superhydrophobic Surfaces." APS March Meeting, Boston, MA, March 2012.
27. *Landherr, L.J.T.*; Hudson, S.D.; Migler, K. "Polymeric Fluid Flow Over Superhydrophobic Surfaces." AIChE Annual Meeting, Minneapolis, MN, October 2011.
28. *Cohen, C.*; Landherr, L.J.T.; Archer, L.A. "*Structural Effects on the Friction of Tethered PDMS Networks.*" 2011 March Meeting of the American Physical Society, Dallas, TX, March 2011.
29. *Landherr, L.J.T.*; Cohen, C.; Archer, L.A. "Thin Film Lubrication of Polymer Brushes." AIChE Annual Meeting, Salt Lake City, UT, November 2010.
30. *Landherr, L.J.T.*; Cohen, C.; Archer, L.A. "Thin Film Lubrication Based On PDMS Networks." AIChE Annual Meeting, Nashville, TN, November 2009.
31. *Landherr, L.J.T.*; Cohen, C.; Archer, L.A. "Tethered Lubricant Films Based On Crosslinked Polydimethylsiloxane." APS March Meeting, Pittsburgh, PA, March 2009.
32. *Landherr, L.J.T.*; Cohen, C.; Archer, L.A. "The Development of PDMS Networks as Nanoscale Lubricants." International Congress on Rheology, Monterey, CA, August 2008.

Posters

1. *Hysi, I.*‡, *Baskin, B.*‡‡; Landherr, L.J.T. "The Use of Comics to Educate K-12 Students on Voltaic Cells" AIChE Annual Meeting, Boston, MA, November 2021.
2. *Landherr, L.J.T.* "Integrating Student-Created STEM Comics into Chemical Engineering Education" AIChE Annual Meeting, Boston, MA, November 2021.
2. *Keszler, M.*‡; Landherr, L.J.T. "Paneled and Painless: Improving Student Interest, Confidence, and Understanding Through Comics" AIChE Annual Meeting, Minneapolis, MN, October 2017. **
3. *Natan, A* ‡; Landherr, L.J.T. "Electrolysis for STEM Education" Research, Innovation, and Scholarship Expo, Northeastern University, April 2017.
4. *Landherr, L.J.T.* "Using Comics To Teach Complex Chemical Engineering Concepts To Undergraduates" ASEE Chemical Engineering Division Summer School, Raleigh, NC, August 2017. **
5. *Cogswell, C.*; and Landherr, L.J.T. "Chemical Engineering Comics to Teach Assumption Making" AIChE Annual Meeting, San Francisco, CA, November 2016.
6. *Urick, D*‡.; Accetta, D. ‡; Landherr, L.J.T. "Science Comics for Improved Understanding of Chemical Engineering Concepts" AIChE Annual Student Meeting, San Francisco, CA, November 2016.**

7. *Antontsev,V.* ‡; Podyma, J.. ‡; Landherr, L.J.T. "Elastomeric Bouncy Balls - a Module to Connect Real-World Concepts and Current Engineering Research to K-12 Education." ASEE Northeast Section Meeting, Kingston, RI, April 2016.
8. *Antontsev,V.* ‡; Podyma, J.. ‡; Landherr, L.J.T. "Elastomeric Bouncy Balls - a Module to Connect Real-World Concepts and Current Engineering Research to K-12 Education." AIChE Annual Meeting, Salt Lake City, UT, November 2015.
9. *Puzzo, C.* ‡; *Chamberlain, C.* ‡; Landherr, L.J.T. "Science the World: Developing Modules to Connect Real-World Concepts and Current Engineering Research to K-12 Education." ASEE Northeast Section Conference, Boston, May 2015.

Workshops

1. *Landherr, L.J.T.* "Art as a Pathway to Inclusive Teaching: Using Comics to Improve Student Learning". Conference for Advancing Evidence-Based Learning, Northeastern University, virtual, May 2021.
2. *Landherr, L.J.T.; Pascal, J.* "VIRTUAL WORKSHOP: Art to STEM: Using Comics to Improve Student Learning in Engineering". ASEE Annual Conference, virtual, June 2020.

Panels

1. Organizer and moderator, "IDEAL Featured Session: A Conversation on Equity, Diversity, and Inclusion". AIChE Annual Meeting, Boston, MA, November 2021.
2. Invited panelist, "Unconscious Bias". AIChE Annual Meeting, Boston, MA, November 2021.

Invited/Plenary Talks

1. *Toms, S.; Landherr, L.J.T.; ElBedweihy, K.; and Iyengar, R*. "Perspectives on STEAM Experiential Learning." QS Reimagine Education Conference, virtual, December 2021.
2. *Landherr, L.J.T.* "Drawn To STEM: The Integration of Visualization Into Education Through Comics and Animation To Improve Learning". Northeastern University LGBTQ+ faculty seminar series, November 2021.
3. *Landherr, L.J.T.* "Drawn To STEM: The Integration of Visualization Into Education Through Comics and Animation To Improve Learning". Cornell University CBE graduate seminar series, October 2021.
4. *Landherr, L.J.T.* "Drawn to STEM: The Integration of Visualization into Education through Comics and Animation". Northeastern SF Bay area regional campus lecture series, October 2020.
5. *Landherr, L.J.T.* "The Integration of Visualization into Education through Comics and Animation". Education Division Award Winner Plenary, AIChE Annual Meeting, Orlando, FL, November 2019.
6. *Landherr, L.J.T.* "Drawn To STEM: The Integration of Visualization Into Education Through Comics and Animation To Improve Learning". G. Michael Howard Engineering Education Lectureship inaugural speaker, University of Connecticut, October 2018.
7. *Shepherd, D.** "The Activation Energy of Becoming A Professor." Story Collider presentation, Boston, MA, December 2014.
8. *Shepherd, D.** "The Use Of Rhetoric To Obscure A Lack Of Content". ASEE Northeast Section Conference, student banquet speaker, Boston, MA, May 2015
9. *Shepherd, D.** "The Use Of Rhetoric To Obscure A Lack Of Content". AIChE New England Regional Student Conference, session speaker, Boston, MA, March 2015
10. *Landherr, L.J.T.* "Surviving and Crowdfunding the World: Kickstarter, Patreon, and a Webcomic Side Project." Sherman Center For Engineering Entrepreneurship Education, Northeastern, Boston, MA, September 2014.

TEACHING

Courses Taught:

9 chemical engineering courses (8 undergrad, 1 grad; 7 classroom, 2 laboratory) – 66 total sections

Conservation Principles	*(CHME 2308)*	7 sections, 2013-2022
Transport Processes I	*(CHME 2310)*	5 sections, 2018-2020
UO Lab I	*(CHME 2311)*	4 sections, 2013-2016

Thermodynamics I	*(CHME 2320)*	1 section, 2016
Transport Processes II	*(CHME 3312)*	13 sections, 2016-2020
UO Lab II	*(CHME 3313/4315/4316)*	18 sections, 2012-2021
Thermodynamics II	*(CHME 3322)*	2 sections, 2012-2013
Process Control	*(CHME 4512)*	15 sections, 2014-2022
Transport Phenomena	*(CHME 7350)*	1 section, 2014

3 mechanical engineering technology courses (2 classroom, 1 laboratory) – 3 total sections

Introduction to Thermodynamics	*(ETM 3311)*	1 section, 2013
Application of Thermodynamics	*(ETM 3313)*	1 section, 2013
Heating, Ventilation, and Air Conditioning	*(ETM 3321)*	1 section, 2015

Teaching achievements

- Developed science comics as teaching materials for use across many multidisciplinary courses in the College of Engineering, as well as nearly 100 colleges and institutions nationally and internationally
- Have developed lesson plans and skeleton notes for 9 courses, including experiments and projects
- Course plans/notes have been adopted and utilized by several other ChemE professors for their teaching
- Developed series of training videos for Unit Operations Laboratory modules and equipment

ADVISING AND RESEARCH SUPERVISION

Undergraduate Students supervised for Directed Research with Duration: 3 current students, 36 previous students
Undergraduate Students supervised for Capstone Project: 1 student
Graduate Student supervised for Directed Research with Duration: 1 student
Graduate Committee Memberships: 1 student through Gordon Engineering Leadership Program

SERVICE

Discipline/Professional Society

- Regular columnist for peer-reviewed journal *Chemical Engineering Education* (May 2017 – present)
- AIChE Societal Impact Operating Council: Past Chair (2020), Chair (2019), Vice Chair (2018), member (Sept 2015-2021)
    - Including authorship of the AIChE professional society Diversity, Equity and Inclusion statement
- Programming Co-Chair, 2021 AIChE Annual Conference
    - Including organization of the inaugural IDEAL joint session, panel and reception
- AIChE K-12 Outreach Committee, Chair (2020), Past Chair (2021), founding member (April 2017 – present), K-12 DEI Subcommittee Chair (2022)
- Founder, annual AIChE K-12 STEM Module Competition (originated in 2019), Organizer (2019, 2020, 2021)
- Founder, AIChE K-12 Community (2019-present)
- Founding member, AIChE Disabilities OutReach and Inclusion Community (April 2016 – present)
- AIChE Equity, Diversity, and Inclusion Joint Taskforce member (2020-present)
- Session chair or co-chair, AIChE Annual Conference (2014-2016, 2018)
- Session chair, 2015 ASEE Northeast Section Conference
- Paper reviewer, ASEE (2013-2014, 2018-2020)
- Undergraduate Poster Session judge, AIChE Annual Meeting (2013-2014)
- AIChE rep. for multi-engineering society committee forming engineering education standards (2017)
- Chair, Disability Unity Convocation, AIChE Annual Meeting (2016)

Northeastern University

- Northeastern University Undergraduate Commencement faculty marshall (2013-2019, 2021-2022)
- Representative, Northeastern, Curricular and Product Development working group (2021)

Northeastern University - College of Engineering

- Representative, College of Engineering Undergraduate Curriculum Committee (2017-2019, 2020-present)

- Representative, College of Engineering Student Awards Committee (Sept 2016 – Sept 2020)
- Faculty marshall, College of Engineering Undergraduate Commencement Ceremony (2013-2019, 2022)
- Teaching Professor Merit Review Committee (member 2016, vice-chair 2018, chair 2019)
- Teaching Professor Promotion Committee (2019-2020)
- Teaching Professor search committee (for 4 positions), Graduate Engineering Program (2017)
- Representative, College of Engineering Online Programs Committee (2020)
- Representative, College of Engineering, Teaching Professor Merit Review Restructuring Committee (2021)
- Representative, College of Engineering DEI Committee (2021-present)

Northeastern University - Department of Chemical Engineering

- Student Awards Committee (Chair, September 2014-August 2020; member, Sept 2012-present)
- Undergraduate Education Committee (Chair, August 2020-present; member, May 2016-present)
- Chair, Education Research Cluster (Dec 2014-2021)
- DEI Committee (Co-chair, 2020-2021; member, 2020-present)
- Chair, Curriculum Review Committee (2018)
- Department Chair search committee (2019-2020)
- Member, Transport Cluster Education Committee (2016-present)
- Unit Operations Laboratory summer manager (2013, 2014, 2015, 2021)
- Leader, Unit Operations Laboratory faculty training (2014, 2015, 2017)
- Faculty advisor for undergraduate students (2012-present)
- Manager, Department Twitter feed (2013-2018)