Chad Curtis

Data Media and Design | Nevada State College

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Academic Appointments

Nevada State College Department of Data Media and Design	Assistant Professor of Data Science/Analytics	2021-present
University of Washington Department of Chemical Engineering College of Engineering	Full-Time Lecturer	2019-2021

Education

University of Washington Department of Chemical Engineering College of Engineering	Ph.D. in Chemical Engineering Data Science option Dissertation: *Trajectory features as surrogate measures of the nanoparticle-microenvironment interaction space* Committee: Elizabeth Nance (chair), Cole DeForest, David Beck, Ariel Rokem, Gary Goldbaum	2019
University of Washington Department of Chemical Engineering College of Engineering	M.S. in Chemical Engineering	2017
University of Utah Department of Chemical Engineering College of Engineering	B.S. in Chemical Engineering Double Minor in Chemistry and German *Magna Cum Laude*	2015

Publications

Journal Articles

Shailee Shroff, **Chad Curtis**, "The Effect of Ligands on Noble Metal Nanoparticles as Drug Delivery Systems to the Brain," *Journal of Student Research*, 10(3), doi: 10.47611/jsrhs.v10i3.1552	2021
Chad Curtis, David Beck, and Caitlyn Wolf, "Enrichment of Student Learning and Homework Management With Use of GitHub in an Introductory Cross-Disciplinary Engineering Course Series on Software Engineering and Data Science," *Chemical Engineering Education,* 54(4) 189-200, doi:10.18260/2-1-370.660-119316	2020

Chad Curtis, Mike McKenna, Hugo Pontes, Dorsa Toghani, Alex Choe, <u>Elizabeth Nance</u>, "Predicting *in situ* nanoparticle behavior using multiple particle tracking and artificial neural networks," *Nanoscale*, 11(46) 22515-22530, doi: 10.1039/c9nr06327g	2019
Chad Curtis, Ariel Rokem, <u>Elizabeth Nance</u>, "diff_classifier: Parallelization of multiple particle tracking video analyses," *Journal of Open Source Software*, 4(36) 989, doi: 10.21105/joss.00989	2019
S. Cem Millik, Ashley M. Dostie, Dylan G. Karis, Patrick T. Smith, Michael McKenna, Nathan Chan, **Chad Curtis**, Elizabeth Nance, <u>Ashleigh B. Theberge</u>, and <u>Alshakin Nelson</u>, "3D printed coaxial nozzles for the extrusion of hydrogel tubes toward modeling vascular endothelium," *Biofabrication*, 11(4) 045009, doi:10.1088/1758-5090/ab2b4d	2019
Chad Curtis, Dorsa Toghani, Ben Wong, and <u>Elizabeth Nance</u>, "Colloidal stability as a determinant of nanoparticle behavior in the brain," *Colloids and Surfaces B: Biointerfaces*, 170 673-682, doi:10.1016/j.colsurfb.2018.06.050	2018
Jay Vornhagen, Blair Armistead, Verónica Santana-Ufret, Claire Gendrin, Sean Merillat, Michelle Coleman, Phoenicia Quach, Erica Boldenow, Varchita Alishetti, Christina Leonhard-Melief, Lisa Y Ngo, Christopher Whidbey, Kelly S Doran, **Chad Curtis**, Kristina M Adams Waldorf, Elizabeth Nance, and <u>Lakshmi Rajagopal</u>, "Group B streptococcus exploits vaginal epithelial exfoliation for ascending infection," *The Journal of Clinical Investigation*, 128(5) 1985-1999, doi:10.1172/JCI97043	2018
Thomas Wood, Daniel Moralejo, Kylie Corry, Jessica M Snyder, Christopher Traudt, **Chad Curtis**, Elizabeth Nance, Pratik Parikh, and <u>Sandra E Juul</u>, "A ferret model of encephalopathy of prematurity," *Developmental Neuroscience*, 40(5-6):475-489, doi: 10.1159/000498968	2018
Chad Curtis, Mengying Zhang, Rick Liao, Thomas Wood, <u>Elizabeth Nance</u>, "Systems-level thinking for nanoparticle-mediated therapeutic delivery to neurological diseases," *Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology*, 9(2) e1422, doi: 10.1002/wnan.1422	2017

Working Papers
Chad Curtis, "Invited guest speakers: Taking the curriculum beyond the classroom"

Chad Curtis, Krystle Oates, "Dungeons, Dragons, and Data: Using Immersive Role-Playing Games to Contextualize Statistics Courses"

Software Packages
batch_issues: Submit GitHub issues in batches	github.com/UWDIRECT-2019/batch_issues	Co-author
diff_register: Alignment of microscopy video with histological images	github.com/Nance-Lab/diff_register	Author
diff_classifier: Parallelization of MPT analyses	github.com/Nance-Lab/diff_classifier	Co-author

Academic Honors and Fellowships

Teaching Academy: Foundations of Teaching Certificate	Center for Teaching and Learning Excellence Nevada State College	2023
Teaching Excellence Award	Data Media & Design Department Nevada State College	2022
Science & Engineering as Art Competition, 2nd Place cheme.washington.edu/news/article/2019-05-09/2019-science-engineering-art-competition cheme.washington.edu/news/article/2018-12-12/students-transform-science-art-chemes-3rd-annual-science-engineering-art	University of Washington Department of Chemical Engineering	2018 & 2019
Data Science Incubator Award	University of Washington eScience Institute github.com/uwescience/incubator2018	2018
Graduate and Professional Student Association Travel Award	University of Washington	2017
TL-1 Fellow	University of Washington Institute of Translational Health Sciences	2016
A. Pat Miller Endowed Fellow	University of Washington Department of Chemical Engineering	2015
Outstanding Senior	University of Utah & American Institute of Chemical Engineers	2015
Departmental Tuition Waiver Scholarship Recipient	University of Utah Department of Chemical Engineering	2014
LoPrest Book Award for Excellence in the Humanities	University of Utah College of Humanities	2013
Sophomore Academic Excellence Award	University of Utah & American Institute of Chemical Engineers	2012
	Thatcher Company University of Utah	2012

Teaching

Artificial Intelligence	Nevada State College	Spring 2023
Pre-Calculus I	Nevada State College	Fall 2022

Computer Science I	Nevada State College	Fall 2021-present,
Computer Science II	Nevada State College	Spring 2022-present
Applied Statistics for Biological Sciences	Nevada State College	Fall 2021-present
Fundamentals of College Mathematics	Nevada State College	Fall 2021 (online)
Image Analysis for Scientists and Engineers https://uw-cheme599.github.io/	University of Washington	Spring 2021 (online), Spring 2020 (online)
Process Design II https://uw-cheme486.github.io/	University of Washington	Spring 2021 (online), Spring 2020 (online)
Process Dynamics and Control Co-taught with Dr. Kyle Caldwell	University of Washington	Winter 2020 (online)
Chemical Engineering Computer Skills https://uw-cheme375.github.io/	University of Washington	Winter 2020 (online), Winter 2019
Process Design I https://uw-cheme485.github.io/	University of Washington	Winter 2019
Methods of Engineering Analysis https://uw-cheme512.github.io/	University of Washington	Fall 2020 (online), Fall 2019
Chemical Engineering Lab I https://uw-cheme436.github.io/	University of Washington	Fall 2020 (online), Fall 2019
Data Science Methods for Clean Energy Research Mentored teaching experience under Dr. Dave Beck	University of Washington	Spring 2019
Process Dynamics and Control TA for Dr. Brad Holt	University of Washington	Winter 2017
Process Design II TA for Dr. Stu Adler and Dr. Eric Stuve	University of Washington	Spring 2016
Organic Chemistry I TA for Dr. Janis Louie	University of Washington	Spring 2014

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Conferences, Workshops, and Talks

Research presentations and conference participation

Chad Curtis, "Monumental Consequence: Using Roleplaying Games to Increase Student Agency in the Classroom," Intermountain Teaching for Learning Conference, Nevada State College, Henderson, NV.	2023
Laura Rosales Lagarde, Erica Tietjen, Jennifer Edmonds, Morgan Iommi, Susan Growe, Adrianna Varga, **Chad Curtis**, Heather Lang-Cassera, Jessica Parks, Michelle Region-Sebest, Alena Manjuck, "Using a Faculty Learning Community to Incorporate University Sustainability (or Other) Goals," Intermountain Teaching for Learning Conference, Nevada State College, Henderson, NV.	2023
Chad Curtis, "Sustainability Storytelling: A Data Visualization Case Study Using Jupyter Notebooks," Intermountain Teaching for Learning Conference, Nevada State College, Henderson, NV.	2023
Chad Curtis, "Monumental Consequence: Using Roleplaying Games to Increase Student Agency in the Classroom," Symposium for Teaching and Learning, Nevada State College, Henderson, NV.	2023
Chad Curtis, "The Signal in the Noise: Using Simulations to Inform the Interpretation of Student Evaluations During Faculty Review," Symposium for Teaching and Learning, Nevada State College, Henderson, NV.	2023
Laura Rosales Lagarde, Erica Tietjen, Jennifer Edmonds, Morgan Iommi, Susan Growe, Adrianna Varga, **Chad Curtis**, Heather Lang-Cassera, Jessica Parks, Michelle Region-Sebest, Alena Manjuck, "Incorporating Sustainability into Any Course," Symposium for Teaching and Learning, Nevada State College, Henderson, NV.	2023
Chad Curtis, "Nanoparticle trajectories as biomarkers of anisotropy and directed motion in gel models of the tissue microenvironment," INBRE annual statewide meeting, University of Nevada Reno, Reno, NV.	2022
Chad Curtis, "Nanoparticle trajectories as biomarkers of anisotropy and directed motion in gel models of the tissue microenvironment," INBRE External Advisory Committee Meeting, online.	2022
Chad Curtis, "Invited guest speakers: Taking the curriculum beyond the classroom," annual Teaching and Learning Symposium, Nevada State College, Henderson, NV	2020
Chad Curtis, Griffin Ruehl, and Jack Rumptz, "Git version control tools enhance instructor feedback and team interactions," annual Teaching and Learning Symposium, University of Washington, Seattle, WA	2019

Chad Curtis, Mike McKenna, Elizabeth Nance, "Using feature datasets of nanoparticle diffusion to predict parameters of the brain microenvironment," annual meeting of the Society for Biomaterials in a poster session entitled "Exploring the Nexus of Research and Application", Seattle, WA

2019

Hugo Pontes, Mike McKenna, **Chad Curtis**, Elizabeth Nance, "Characterizing microstructural changes in perineuronal nets in mGluR5 knockout model with hallmarks of autism spectrum disorder," annual meeting of the Pediatric Academic Societies, Baltimore, MD

2019

Chad Curtis, Ariel Rokem, Elizabeth Nance, "Using feature datasets of nanoparticle diffusion to predict nanoparticle behavior in the brain microenvironment," annual Graduate Student Symposium hosted by the Department of Chemical Engineering, University of Washington, Seattle, WA

2018

Mike McKenna, Hugo Pontes, **Chad Curtis**, Sam Broadwell, Elizabeth Nance, "Using a multiple particle tracking technique to identify changes in extracellular matrix structure in the developing brain," 11th annual Nano Drug Delivery Symposium, Oregon State University, Portland, OR

2018

Chad Curtis, Mike McKenna, Ariel Rokem, Elizabeth Nance, "Nano-based probes to extract tissue structure-function in the developing brain," annual Hershey Conference on Developmental Brain Injury, Asilomar, CA

2018

Chad Curtis, Dorsa Toghani, Ben Wong, Elizabeth Nance, "Aggregation kinetics in biological environments as a determinant of nanoparticle behavior in the brain," AIChE annual meeting, Materials Engineering and Sciences Division poster session, Minneapolis, MN

2017

Dorsa Toghani, **Chad Curtis**, Elizabeth Nance, "Colloidal stability of brain-penetrating nanoparticles: Examining the role of divalent cations," annual Woman in Science and Engineering Research Symposium, University of Washington, Seattle, WA, 1st place in overall research

2017

Andrew Kirk, **Chad Curtis,** Elizabeth Nance, "Stability of biologically safe, surfactant-coated nanoparticles in complex media: Implications for drug delivery," annual Undergraduate Research Symposium, University of Washington, Seattle, WA

2017

Andrew Kirk, Cayen Panlillio, **Chad Curtis**, Elizabeth Nance, "Nanoparticle stability in complex media containing divalent cations: Implications for drug delivery to the brain," annual Undergraduate Research Symposium, University of Washington, Seattle, WA

2016

Talks and Workshops

Chad Curtis, "Transdisciplinary approaches i.e. How chemical engineers get their hands into everything," Biology and Environmental Science Colloquium Series, Nevada State College, Henderson, NV.

2022

Chad Curtis, "Introduction to machine learning," Annual meeting of the Electrochemical Society, 1st annual Hackweek, Dallas, TX

Project repo: github.com/OlivierRynne/nVision

2019

Chad Curtis, Ariel Rokem, Elizabeth Nance, "Experimental diffusion analysis to extract changes in tissue structure-function in the diseased brain," eScience Institute annual Winter Incubator, University of Washington, Seattle, WA

2018

Chad Curtis, "Activities to engage your students in the classroom," annual TA Conference on Teaching and Learning, University of Washington, Seattle, WA

2017

Chad Curtis, Dorsa Toghani, Ben Wong, Elizabeth Nance, "Aggregation kinetics in biological environments as a determinant of nanoparticle behavior in the brain," Institute of Translational Health Sciences TL-1 Research Training Program, University of Washington, Seattle, WA

2017

Chad Curtis, Elizabeth Nance, "Particle behavior in complex microenvironments: Characterization of nanoparticles in cerebrospinal fluid," Biomaterials Seminar Series, University of Washington

2017

Holly Sullivan, **Chad Curtis**, Binh Dang, Elizabeth Nance, "Region-dependent changes in microglial morphology and density as a predictor of neurological diseases", poster mixer hosted by Nikon, University of Washington, Seattle, WA

2017

Chad Curtis, Rick Liao, Ian Faulkner, Elizabeth Nance, "Graphically exploring diffusion of brain-penetrating particles," poster session with the theme "Data Science in Engineering," University of Washington, Seattle, WA

2016

Grants

Pilot Grant Plus Award	Nevada IDEA Network of Biomedical Research	2022
	Funded project: "Nanoparticle trajectories as biomarkers of anisotropy and directed motion in gel models of the tissue microenvironment"	
Seed Award	Sponsored Projects Seed Program	2022

Service

Search Committee Member	Data Science Lecturer, Nevada State College	2022-2023
Search Committee Member	Assistant Professor of Microbiology, Nevada State College	2022-2023
Student Club Founder	Math and Data Science Club Nevada State College	2022
Game Jam 2022	Dept. of Data, Media, & Design, Nevada State College	2022
Search Committee Member	Admin. Asst. II search, Nevada State College	2021-2022
Committee Member	Undergraduate Committee, Infrastructure Committee Department of Chemical Engineering University of Washington	2019-2020
Instructor	eScience Institute Software Carpentry University of Washington	2018-2021
Instructor	Electrochemical Society Hackweek, Dallas, TX	2019
Student Representative	College of Engineering Student Advisory Committee University of Washington	2017
Graduate Student Symposium Chair	Department of Chemical Engineering Association of Chemical Engineering Graduate Students University of Washington	2016-2017
Student Mentor	Math Academy University of Washington	2016

Volunteer	Discovery Days University of Washington	2016
Student Mentor	Bryant Elementary Science Fair	2016
Seminar Coordinator	Department of Chemical Engineering Distinguished Young Scholars Seminar Series University of Washington	2016
Coordinating Secretary	Tau Beta Pi University of Utah	2014-2015
Peer Mentor	English Conversation Corner University of Utah	2014
Student Ambassador	Office of Admissions University of Utah	2013

Pedagogical Training

Reacting to the Past Game: "Charles Darwin, the Copley Medal, and the Rise of Naturalism"	Annual Reacting Winter Conference Reacting Consortium	2023
Summer Active Learning Retreat	Center for Teaching and Learning Nevada State College	2022
ECMC Assessment Retreat	Data Media and Design Department Nevada State College	2022
Online Quality Assurance Peer Review Program	Center for Teaching and Learning Nevada State College	2022
Faculty Learning Community: Teaching Change	Center for Teaching and Learning Nevada State College	2022
FOCI Professional Learning Series: Statistics Teaching and Learning	Dana Center Mathematics Pathways	2021
Evidence-Based Teaching Training	Center for Teaching and Learning University of Washington	2019

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Industry Experience

Actavis, plc *Internship program*	Stability R&D Scientist *Relevant skills: Good Manufacturing Practices, ANDA submissions, quality control, HPLC and GC assays, drug release profiles, viscosity and pH quantification, adhesion testing, microscopy*	2012-2015

Mentees

Graduate Students

Mike McKenna *Achievement Rewards for college Scientists (ARCS) fellow*	University of Washington Graduated Fall 2021	2016-2019
Hawley Helmbrecht	University of Washington	2018-2019

Masters Students

David Shackelford	University of Washington Graduated Fall 2020	2018-2019

Undergraduate Students

Aubree Tannehill	Nevada State College	2022
Miguel Correo Galicia	Nevada State College	2022
Kaydie Claude Aquino	Nevada State College	2022
Ariana Rodriguez	Nevada State College	2022
TaiYan Yu *Tuding mentee*	East China University of Science and Technology	2020
Andrew Kirk	University of Washington Graduated Spring 2017	2015-2017
Belinda Garana *Mary Gates Scholar*	University of Washington Graduated Spring 2018	2016-2018
Dorsa Toghani *Mary Gates Scholar*	University of Washington	2017-2019
Emily Rhodes *Center for Sensorimotor Neural Engineering (CSNE) trainee*	University of Washington	2017-2018
Hugo Pontes *CoMotion Intern* *Washington Research Foundation (WRF) fellow*	University of Washington	2018-2019
Evan Epstein	University of Washington	2018-2019
Tom McAlister	University of Washington	2018

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High School Students

Ethan Dawn Tuding mentee Project: github.com/stickfighter342/nistscraper	Taipei American School	2020
Charles Minh Tuding mentee Project: github.com/pmont056/62k-crystals	Cranbrook Schools	2020
Shailee Shroff Tuding mentee Publication: "The effect of ligands on noble metal nanoparticles as drug delivery systems to the brain"	Windermere Preparatory School	2020
Rishabh Jain Tuding mentee Project: https://github.com/MysteriousHo-Oh123/RSI-Predictor	Sanskaar Valley School	2020
Tongda Lou Tuding mentee	Worcester Academy	2020
Eddie Lee Tuding mentee	Putai Senior High School	2020
Benjamin Wong Math Academy mentee	Jericho Senior High School	2020

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