

Lauren N. Pincus, PhD

Princeton University, Department of Civil & Environmental Engineering

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ACADEMIC APPOINTMENTS

The George Washington University, Department of Chemistry Washington DC
Assistant Research Professor (Assistant Prof. effective Aug. 2024) (July 2023 – Aug. 2024)

Princeton University, Department of Civil & Environmental Engineering Princeton, NJ
Postdoctoral Research Associate (Sept. 2023 – Aug. 2024)

Princeton University, Department of Geosciences Princeton, NJ
National Science Foundation Earth Sciences Postdoctoral Fellow (Sept. 2021 – Sept. 2023)

Harry H. Hess Postdoctoral Research Fellow (Sept., 2020 – Sept. 2021)

EDUCATION

Yale University, School of the Environment New Haven, CT
Doctor of Philosophy, May 2020

Focus: Green Chemistry and Green Engineering, GPA: 4.00/4.00

Advisor: Dr. Julie Zimmerman

Committee Members: Dr. Paul Anastas, Dr. Menachem Elimelech, Dr. Desirée Plata

Dissertation: Towards Sustainable Water Treatment: Design of Multifunctional and Selective Water Treatment Technologies

Middlebury College Middlebury, VT

Bachelor of Arts, Chemistry and Geology, May 2014

GPA: 3.61/4.00, Magna Cum Laude, Departmental Honors in Geology, College Scholar

Advisors: Dr. Peter Ryan, Dr. Molly Costanza-Robinson

Senior Thesis: Variations in Cation Exchange Capacity of Soils Along a Tropical Landscape

University of Canterbury Christchurch, NZ

Research Program Focused on the Geology of New Zealand, 2013

GPA: 3.78/4.00

AWARDS/FELLOWSHIPS

2021 RSC Outstanding Reviewer- Environmental Science: Processes & Impacts

2021 Best Talk Princeton Postdoctoral Council Seminar Series

2021 NSF Earth Sciences Postdoctoral Fellowship

2020 Schmidt Science Fellowship Nominee

2020 Harry H. Hess Postdoctoral Research Fellowship

2019 ACS ENVR Graduate Student Award

2019 AAAS/Science Program for Excellence in Science

2018 Nathan Hale Associates Fellowship for Academic Achievement and Potential, Yale Graduate School Alumni Fund

2017 Yale Institute for Biospheric Science Fellowship

2017 Certificate of Merit for Outstanding Oral Presentation, ACS Environmental Chemistry Division

2016 NSF Graduate Research Fellowship (GRFP) Honorable Mention

2016 ACS Green Chemistry Institute CIBA Travel Award
2016 Best Poster, ACS Green Chemistry and Green Engineering Conference
2015 Yale Institute for Biospheric Science Fellowship
2015 Yale School of Forestry and Environmental Studies Doctoral Fellowship
2012 Middlebury College Geology Department Baldwin Cooney Scholarship
2012 Middlebury College Gretchen A. Reilly '60 Environmental Studies Endowment

PUBLICATIONS IN REFEREED JOURNALS Undergraduate co-authors underlined

11. M.S. Costanza-Robinson, E. M. Payne, E. Dellinger, K. Fink, R.C. Bunt, M. Littlefield, B. Mejaes, R. Morris, **L. N. Pincus**, and E. Wilcox, Influence of Hydration on Interlayer Properties of HDTMA-, HDTMP-, and HDPy-Modified Montmorillonite Organoclays. Submitted.
10. **L. N. Pincus**, A. Pattammattel, D. Leshchev, E. Stavitski, Y. Chu, S. C. B. Myneni, Rapid Accumulation of Soil-Inorganics on Plastics- Implications for Plastic Degradation and Contaminant Fate. *Environmental Science & Technology Letters*. (2023). 10 (6), 538-542. DOI: 10.1021/acs.estlett.3c00241
9. **L. N. Pincus**, P. V. Petrovic, I. S. Gonzalez, E. Stavitzki, Z. Fishman, H. E. Rudel, P. T. Anastas, J. B. Zimmerman, Development of Selective Adsorption of Arsenic Over Phosphate by Transition Metal Cross-linked Chitosan. *Chemical Engineering Journal*. (2021). 412. 128582. DOI: 10.1016/j.cej.2021.128582
8. **L. N. Pincus**, I. S. Gonzalez, E. Stavitski, J. B. Zimmerman, Aerobic Oxidation of Arsenite to Arsenate by Cu(II)-chitosan/O₂ in Fenton-like Reaction, a XANES Investigation. *Environmental Science: Water Research & Technology*. (2020). 6 (10), 2713-2722. DOI: 10.1039/D0EW00326C
7. **L. N. Pincus**, H. E. Rudel, P. V. Petrovic, S. Gupta, P. Westerhoff, C .L. Muhich, J. B. Zimmerman, Design of Selective Adsorbents for Oxoanion Removal in Water Treatment- a Review of Oxoanion Competition and the Development and Quantification of Selective Adsorption. *Environmental Science & Technology*. (2020). 54 (16), 9769-9790. DOI: 10.1021/acs.est.0c01666
6. P. C. Ryan, F. J. Huertas, **L. N. Pincus**, W. Painter, Arsenic-bearing Serpentine Group Minerals: Mineral Synthesis with Insights for the Arsenic Cycle. *Clays and Clay Minerals* (2019). 67 (6), 488-506. DOI: 10.1007/s42860-019-00040-1
5. **L. N. Pincus**, A. W. Lounsbury, J. B. Zimmerman, Toward Realizing Multifunctionality: Photoactive and Selective Adsorbents for the Removal of Inorganics in Water Treatment, *Accounts of Chemical Research*. (2019), 52 (5), 1206-1214. DOI: 10.1021/acs.accounts.8b00668
4. **L. N. Pincus**, F. Melnikov, J. S. Yamani, J. B. Zimmerman, Multifunctional Photoactive and Selective Adsorbent for Arsenite and Arsenate: Evaluation of Nano Titanium Dioxide-Enabled Chitosan Cross-Linked with Copper, *Journal of Hazardous Materials*. (2018), 358, 145-154. DOI: 10.1016/j.jhazmat.2018.06.033.
3. H. C. Erythropel, J. B. Zimmerman, T.M. de Winter, L. Petitjean, F. Melnikov, C. Ho Lam, A. W. Lounsbury, K. E. Mellor, N. Z. Janković, Q. Tu, **L. N. Pincus**, M. M. Falinski, W. Shi, P. Coish, D. L. Plata, P. T. Anastas, The Green ChemisTREE: 20 years after taking root with the 12 principles, *Green Chemistry*. (2018), 20 (9), 1929-1961. DOI:10.1039/C8GC00482J.

2. **L. N. Pincus**, P. C. Ryan, F. J. Huertas, G. E. Alvarado, The influence of soil age and regional climate on clay mineralogy and cation exchange capacity of moist tropical soils: A case study from Late Quaternary chronosequences in Costa Rica, *Geoderma*. (2017), *308*, 130–148. DOI: 10.1016/j.geoderma.2017.08.033.
1. P. C. Ryan, F. J. Huertas, F. Hobbs, **L. N. Pincus**, Kaolinite and halloysite derived from sequential transformation of pedogenic smectite and kaolinite-smectite in a 120 ka tropical soil chronosequence, *Clays and Clay Minerals*. (2016), *64* (5), 639-667. DOI: 10.1346/CCMN.2016.064030.

FUNDED GRANTS

2021-2023 National Science Foundation: Earth Sciences Postdoctoral Fellowship (EAR-PF) Microplastics and Nanoplastics as Vectors for Inorganic Pollution: Examining the Effect of Environmental Systems Conditions on Degradation Pathway and Sorption Potential
PI; Total budget: \$174,000

ABSTRACTS AND CONFERENCE PRESENTATIONS

1. **L. N. Pincus**, A. Pattammattel, D. Leshchev, E. Stavitski, K. Zhao, S. C. B. Myneni, Examining the Effect of Environmental Systems Conditions on Plastic Degradation Pathway and Inorganic Contaminant Sorption Potential. AEESP. 2023. Poster.
2. **L. N. Pincus**, A. Pattammattel, D. Leshchev, E. Stavitski, S. C. B. Myneni, Rapid Accumulation of Soil-Inorganics on Plastics- Implications for Contaminant Fate, Gordon Research Seminar (GRS) Environmental Sciences: Water. 2022. **Invited Talk**.
3. **L. N. Pincus**, A. Pattammattel, D. Leshchev, E. Stavitski, S. C. B. Myneni, Rapid Accumulation of Soil-Inorganics on Plastics- Implications for Contaminant Fate, Gordon Research Conference (GRC) Environmental Sciences: Water. 2022. Poster.
4. **L. N. Pincus**, Examining Interactions of Inorganic Contaminants with Polymers Using Synchrotron-Based Spectroscopy, Princeton Postdoctoral Council Seminar Series, Princeton, NJ, 2021. **Awarded Best Talk**.
5. **L. N. Pincus**, Examining Interactions of Inorganic Contaminants with Polymers Using Synchrotron-Based Spectroscopy. Middlebury College Chemistry and Geology Departments, Middlebury, VT, 2021. **Invited talk**.
6. **L. N. Pincus**, Synchrotron Applications Studying Interactions of Inorganic Contaminants with Polymers, Cornell High Energy Synchrotron Source (CHESS) 2030 Workshop, Cornell University, Ithaca, NY, 2021. **Invited talk**.
7. **L. N. Pincus**, A. W. Lounsbury, J. B. Zimmerman, Toward realizing multifunctionality: Photoactive and selective adsorbents for the removal of inorganics in water treatment, 258th ACS National Meeting, San Diego, CA. 2019. **Invited talk**.
8. **L. N. Pincus**, J. B. Zimmerman, Towards sustainable water treatment: Selective adsorption of arsenic over competing phosphate by transition metal cross-linked chitosan, 258th ACS National Meeting, San Diego, CA. 2019. Oral presentation.
9. **L. N. Pincus**, F. Melnikov, A. W. Lounsbury, J. B. Zimmerman, Towards a Mechanistic Understanding of the Selective Adsorption of Arsenic Over Competing Phosphate by Nano-enabled, Transition Metal Cross-linked Chitosan, 256th ACS National Meeting, Boston, MA. 2018. Oral Presentation.
10. **L. N. Pincus**, F. Melnikov, A. W. Lounsbury, J. B. Zimmerman, Towards a Mechanistic

Understanding of the Selective Adsorption of Arsenic Over Competing Phosphate by Nanoenabled Biomaterials, Gordon Research Conference (GRC) and Seminar (GRS) Environmental Sciences: Water. 2018. Poster.

11. **L. N. Pincus**, J. S. Yamani, J. B. Zimmerman, Towards Multifunctionality in water treatment: Developing Photoactive Selective Adsorbents for Inorganic Contaminants Using Nano-enabled Biomaterials, 253rd ACS National Meeting, San Francisco, CA. 2017. Oral Presentation. **(Awarded ACS ENVR Certificate of Merit for Outstanding Oral Presentation)**
12. **L. N. Pincus**, J. S. Yamani, J. B. Zimmerman, Towards Sustainable Water Treatment: Developing Selective Adsorbents for Inorganic Contaminants Using Nano-enabled Biomaterials, ACS Green Chemistry and Green Engineering Conference, Portland, OR. 2016. Poster. **(Awarded Best Poster Presentation)**
13. P. C. Ryan, **L. N. Pincus**, F. J. Huertas, Cation Exchange Capacity of Tropical Soil Clays as a Function of Time and Precipitation, Geologic Society of America Abstracts with Programs. Vol. 46, No. 6, p. 150. 2014. Poster.
14. P. C. Ryan, **L. N. Pincus**, K. Falcones, Mineralogical and Geochemical Evolution of Tropical Soils in a Coastal Terrace Sequence, Geologic Society of America Abstracts with Programs. Vol. 45, No. 7, p.586. 2013. Poster.

FUNDED GRANTS

2021-2024 National Science Foundation: Earth Sciences Postdoctoral Fellowship (EAR-PF) Microplastics and Nanoplastics as Vectors for Inorganic Pollution: Examining the Effect of Environmental Systems Conditions on Degradation Pathway and Sorption Potential
PI; Total budget: \$174,000

PROFESSIONAL AFFILIATIONS AND SERVICE

Peer Review

Environmental Science & Technology, Journal of Hazardous Materials, Chemical Engineering Journal, Journal of Environmental Chemical Engineering, Separation and Purification Technology, and Environmental Science: Processes & Impacts

National Review Panels

Panel reviewer for Department of Energy ESS (Environmental Systems Science), 2021
Reviewer for NSF CHE (Chemistry) and EAR (Earth Sciences) Divisions, 2022, 2023

Conference Committees

Co-chair of Organizing Committee, Yale School of the Environment Research Conference, 2017

Professional Societies

AEESP, 2019-present
Geochemical Society, 2019-present
American Chemical Society, ENVR and GEOC Divisions, 2015-present

TEACHING, MENTORING, and OUTREACH

Teaching

Yale Certificate in College Teaching Preparation (CCTP), 2020
Teaching Assistant, Green Engineering and Sustainable Design, Spring 2017, 2019

Teaching Assistant, Coastal Environments in a Changing World, Fall 2018
 Teaching Assistant, The Science of Water, Spring 2018

Mentoring

Undergraduate Lab Mentor, Princeton Chemistry Department, 2021-2023
 Princeton Women in Geoscience Mentor, 2020-2023
 Women in Science at Yale Mentor, 2017-2020
 Undergraduate Lab Mentor, Yale College, 2017-2020
 Undergraduate Lab Mentor, Dartmouth College Earth Science Department, 2014
 Undergraduate Lab Mentor, Middlebury College Geology Department, 2013

Outreach

Outreach Coordinator, Student Leadership Council, NSF Nanosystems Engineering
 Research Center for Nanotechnology-Enabled Water Treatment, 2017- 2019
 Admissions Interviewer Middlebury College, 2015 - present

ATHLETICS

Middlebury College Track and Field, Javelin	Middlebury, VT
Two-Time NCAA DIII finalist (9 th in the nation)	
Two-Time NCAA All Academic Track and Field Team	
All ECAC, All New England, All DIII New England, All NESCAC, NESCAC Champion	

RELEVANT WORK EXPERIENCE

Dartmouth College Toxic Metals Superfund Research Program	Hanover, NH
<u>Research Assistant</u> (2014-2015)	
Münzing Chemie	
<u>Research and Development Intern</u> (2009-2011)	Bloomfield, NJ