

CURRICULUM VITAE
Nicholas R. Patton
nicholasrpatton.weebly.com

EDUCATION

2018- 2022

University of Canterbury, NZ - The University of Queensland, AUS (transferred)

- PhD: Geology
- Focus: Geomorphology, GIS, landscape evolution, and geochronology
- Thesis: Landscape evolution of the southeast Queensland dune fields

2014-2016

Idaho State University, USA

- MSc: Geology
- Focus: Soil science, biogeochemistry, geomorphology, and GIS
- Thesis: Topographic controls on total mobile regolith and total soil organic carbon in complex terrain

2010-2013

California University of Pennsylvania, USA

- BSc (Dual): Chemistry and Geology
- Focus: Environmental chemistry, aqueous chemistry, and hydrology
- Thesis: Using aqueous chemistry to understand above and below ground flow paths within the Oregon Hollow wetland, PA

WORK EXPERIENCE

2022-Present

Postdoctoral Researcher, Desert Research Institute – NV, USA

- Conduct soil, geomorphic, and terrain analysis for Department of Defense contracts in relations to vehicle mobility studies, and remote predictive soil/landform mapping applications

2019-2020

Health, Safety and Wellness Representative, School of Earth and Environmental Science – QLD, AUS

2016-2017

Lab/Field Manager, Center for Ecological Research and Education – ID, USA

- Collected and processed ecological samples on a WestCo Scientific SmartChem discrete analyzer, DIONEX ion chromatograph, and Shimadzu TOC/TN and SSM

2016-2017

Hydrologic Technician GS-1316-07, USDA-ARS Boise Office – ID, USA

- Assisted in field/lab research for both USDA-ARS and graduate students, collected and processed soil, water and vegetation samples, and installed a suite of *in situ* instruments

2013-2014

Scientist 1, Hatch Mott MacDonald – PA, USA

- Aided in subsidence mitigation, sampled wells and streams, measured hydraulic head and discharge, monitored fish kills, and located fractures and no-flow stream sections

2012

Safety Manager, FCI (Federal Correction Institute) Morgantown - Internship – WV, USA

- Audited government facility to maintain safety code and regulation for government, OSHA, DEP, and EPA standards

2012

Scientist 1, Comtech Industries Inc. - Internship – PA, USA

- Conducted water treatments and mitigation for hydraulic fracturing, assisting in NORM radiation surveys, and aided in OSHA safety inspections

TEACHING EXPERIENCES

2020-2022

School of Earth and Environment, University of Canterbury

- GEOL 246: Earth Surface Dynamics (*Course Coordinator*)
- ENVR 101: Introduction to Environmental Science
- Advised student on masters research project (on going)

2018-2020

School of Earth and Environmental Science, The University of Queensland

- GEOS 1100: Environment and Society Field Trip
- GEOS 1100L: Environment and Society
- GEOS 2103/7103: Biogeography and Geomorphology Lab
- Advised students on undergraduate research projects

2014-2017

Department of Geosciences, Idaho State University

- GEOL 1100: The Dynamic Earth
- GEOL 1100L: The Dynamic Earth Labs
- GEOL 1101: Physical Geology
- GEOL 3306: Environmental Geology
- Mentored seven students granted a Career Path Internship (CPI)
- Mentored three students granted a MILES Undergraduate Research Internships (MURI)

2011-2013

Department of Earth Sciences, California University of Pennsylvania

- EAS 391: Northwest United States Field Geology
- EAS 331: Mineralogy

LABORATORY EXPERIENCE

2020-2022

University of Canterbury Cosmogenic Lab – Christchurch, NZ

- *In situ* and meteoric ^{10}Be (Sacha Baldwin and James Shulmeister)

2018-2020

Australia's Nuclear Science and Technology Organization (ANSTO) – Lucas Heights, NSW, AUS

- *In situ* and meteoric ^{10}Be and ^{26}Al (Toshiyuki Fujioka and David Fink)
- Radiocarbon dating (^{14}C) (Quan Hua)

2018-2019

British Geological Survey (BGS) – Keyworth, UK

- Stable isotopes ^{13}C , ^{15}N , and ^{18}O (Melanie Leng and Angela Lamb)

2018-2019

Utah State University Luminescence Laboratory – Logan, Utah, USA

- Optically-Stimulated Luminescence dating (Tammy Rittenour)

2016-2017

Center for Ecological Research and Education – Pocatello, ID, USA

- DOC, DIC, TOC, anions and cations (Kathleen Lohse and Colden Baxter)

2014-2016

ISU Stable Isotope Laboratory – Pocatello, ID, USA

- Stable isotopes ^{13}C , ^{15}N , and ^{18}O (Bruce Finney)

PUBLICATIONS (ORCID: 0000-0002-4137-0636)

Primary Author

2023

- **Patton, N. R.**, Shulmeister, Hua, Q., Almond, P., Rittenour, T., Hanson, J. M., Greal, A., Gilroy, J., & Ellerton, D. (2023) Reconstructing Holocene fire records using dune foot-slope deposits at the Cooloola Sand Mass, Australia. *Quaternary Research* 1–23. <https://doi.org/10.1017/qua.2023.14>

2022

- **Patton, N. R.**, Shulmeister, J., Rittenour, T., Ellerton, D., Almond, P., & Santini, T. (2022). Using surface roughness to determine Holocene coastal dune ages at K'gari (Fraser Island) and the Cooloola Sand Mass, Australia. *Earth Surface Processes and Landforms* 47(10), 2455– 2470. <https://onlinelibrary.wiley.com/doi/10.1002/esp.5387>
- **Patton, N. R.**, Shulmeister, J., Ellerton, D., & Seropian, G. (2022). Measuring landscape evolution from inception to maturity: insights from a coastal dune system. *Earth and Planetary Science Letters*, 584, 17448 <https://doi.org/10.1016/j.epsl.2022.117448>

2019

- **Patton, N. R.**, Ellerton, D., & Shulmeister, J. (2019). High-resolution remapping of the coastal dune fields of south east Queensland, Australia: a morphometric approach. *Journal of Maps*, 15(2), 578-589. <https://doi.org/10.1080/17445647.2019.1642246>
- **Patton, N. R.**, Lohse, K. A., Seyfried, M. S., Godsey, S. E., & Parsons, S. B. (2019). Topographic controls of soil organic carbon on soil-mantled landscapes. *Scientific Reports*, 9(1), 1-15. <https://doi.org/10.1038/s41598-019-42556-5>
- **Patton, N. R.**, Lohse, K. A., Seyfried, M., Will, R., & Benner, S. G. (2019). Lithology and coarse fraction adjusted bulk density estimates for determining total organic carbon stocks in dryland soils. *Geoderma*, 337, 844-852. <https://doi.org/10.1016/j.geoderma.2018.10.036>

2018

- **Patton, N. R.**, Lohse, K. A., Godsey, S. E., Crosby, B. T., & Seyfried, M. S. (2018). Predicting soil thickness on soil mantled hillslopes. *Nature communications*, 9(1), 1-10. <https://doi.org/10.1038/s41467-018-05743-y>

Co-Author

2022

- Ellerton, D., Rittenour, T., Shulmeister, J., Roberts, A.P., Miot da Silva, G., Gontz, A., Hesp, P., Moss, P., **Patton, N. R.**, Santini, T., Welsh, K., & Zhao, X. (2022) Middle Pleistocene sea-level change linked to the formation of Fraser Island and initiation of the Great Barrier Reef. *Nature Geoscience*, 1752-0894. <https://doi.org/10.1038/s41561-022-01062-6>
- Lohse, K., Pierson, D., **Patton, N. R.**, Sanderman, J., Huber, D. P., Finney, B., Facer, J., Meyers, J., & Seyfried, M. (2022) Wildfire results in development of novel multi-scale ecosystem structure and function in non-forested shrubland ecosystems. *Scientific Reports*, 12(1). <https://doi.org/10.1038/s41598-022-26849-w>
- Pierson, D., Lohse, K., Wieder, W., **Patton, N. R.**, Facer, J., de Graaff, M., Georgiou, K., Seyfried, M., Flerchinger, G., & Will, R. (2022) Optimizing process-based models to predict current and future soil organic carbon stocks at high-resolution. *Scientific Reports*, 12, 10824. <https://doi.org/10.1038/s41598-022-14224-8>
- Ya-na, J., Zhang, Y., Huang, C. C., Wang, N., Qiu, H., Wang, H., Xiao, Q., Chen, D., Lin, X., Zhu, Y., Fu, L., Gu, K., & **Patton, N. R.** (2022) Late Pleistocene-Holocene aeolian loess-paleosol sections in the Yellow River source area on the northeast Tibetan Plateau: chronostratigraphy, sediment provenance, and implications for paleoclimate reconstruction. *Catena*. <https://doi.org/10.1016/j.catena.2021.105777>

2021

- O'Bryan, C. J., **Patton, N. R.**, Hone, J., Lewis, J. S., Berdejo-Espinola, V., Risch, D. R., Holden M. H., & McDonald-Madden, E. (2021). Invasive wild pigs (*Sus scrofa*) as a human-mediated source of soil

carbon emissions: Uncertainties and future directions. *Global Change Biology*.
<https://doi.org/10.1111/gcb.15992>

- O'Bryan, C. J., **Patton, N. R.**, Hone, J., Lewis, J. S., Berdejo-Espinola, V., Risch, D. R., Holden M. H., & McDonald-Madden, E. (2021). Unrecognized threat to global soil carbon by a widespread invasive species. *Global Change Biology*. <https://doi.org/10.1111/gcb.15769>
- Florin, S. A., Roberts, P., Marwick, B., **Patton, N. R.**, Shulmeister, J., Lovelock, C. E., Barry, L. A., Hua, Q., Nango, M., Djandjomerr, D., Fullagar, R., Wallis, L. A., Fairbairn, A. S., & Clarkson, C. (2021). Pandanus nutshell generates a palaeoprecipitation record for human occupation at Madjedbebe, northern Australia. *Nature Ecology & Evolution*, 5(3), 295-303.
<http://dx.doi.org/10.1177/09596836211019092>
- Köhler, M., Shulmeister, J., **Patton, N. R.**, Rittenour, T. M., McSweeney, S., Ellerton, Daniel T., Ellerton, Justin C. Stout, & Hüneke, H. (2021). Holocene evolution of a barrier-spit complex and the interaction of tidal and wave processes, Inskip Peninsula, SE Queensland, Australia. *The Holocene*, 09596836211019092. <http://dx.doi.org/10.1177/09596836211019092>
- Ya-na, J., Zhang, Y., Huang, C. C., Wang, N., Qiu, H., Wang, H., Yu, Y., Seilbike, A., Zou, M., Lin, X., Tan, Z., Liu, W., Hu, S., & **Patton, N. R.** (2021) Chronostratigraphic framework and paleoenvironmental interpretation of the Holocene loess-paleosol sequence in the Luoyang Basin, Central China. *Aeolian Research*. <https://doi.org/10.1016/j.aeolia.2020.100657>

2020

- Gontz, A., McCallum, A., Ellerton, D., **Patton, N. R.**, & Shulmeister, J. (2020). The Teewah Transect: GPR-Derived Insights into the Younger Dune Morphosequences on the Great Sandy Coast, Queensland, Australia. *Journal of Coastal Research*, 95(SI), 500-504. <https://doi.org/10.2112/SI95-097.1>
- Ellerton, D., Rittenour, T., Shulmeister, J., Gontz, A., Welsh, K. J., & **Patton, N. R.** (2020). An 800 kyr record of dune emplacement in relationship to high sea level forcing, Cooloolo Sand Mass, Queensland, Australia. *Geomorphology*, 354, 106999.
<https://doi.org/10.1016/j.geomorph.2019.106999>

2019

- Zhang, Y., Huang, C. C., Tan, Z., Chen, Y., Qiu, H., Huang, C., Li Y., Zhang Y., Li, X., Shulmeister, J., **Patton, N. R.**, Liu, L., Zhu, Y., & Wang, N. (2019). Prehistoric and historic overbank floods in the Luoyang Basin along the Luohe River, middle Yellow River basin, China. *Quaternary international*, 521, 118-128. <https://doi.org/10.1016/j.quaint.2019.06.023>
- Zhang, Y., Huang, C. C., Shulmeister, J., Guo, Y., Liu, T., Kemp, J., **Patton, N. R.**, Liu, L., Chen, Y., Zhou, Q., Cuan, Y., Zhao, H., & Wang, N. (2019). Formation and evolution of the Holocene massive landslide-dammed lakes in the Jishixia Gorges along the upper Yellow River: No relation to China's Great Flood and the Xia Dynasty. *Quaternary Science Reviews*, 218, 267-280.
<https://doi.org/10.1016/j.quascirev.2019.06.011>
- Shulmeister, J., Thackray, G. D., Rittenour, T. M., Fink, D., & **Patton, N. R.** (2019). The timing and nature of the last glacial cycle in New Zealand. *Quaternary Science Reviews*, 206, 1-20.
<https://doi.org/10.1016/j.quascirev.2018.12.020>
- Fellows, A. W., Flerchinger, G. N., Seyfried, M. S., Lohse, K. A., & **Patton, N. R.** (2019). Controls on gross production in an aspen-sagebrush vegetation mosaic. *Ecohydrology*, 12(1), e2046.
<https://doi.org/10.1002/eco.2046>

Published Datasets

2018

- **Patton, N. R.**, K. A. Lohse, M. S. Seyfried, & M. D. Murdock. (2018). Dataset for Soil Properties Determined at the Reynolds Creek Experimental Watershed (RCEW), Idaho [Idaho State University Collections 2010-2016]. (*Boise State University Scholar Works*)
<https://doi.org/10.18122/reynoldscreek/11/boisestate>

- **Patton, N. R.**, K. A. Lohse, S. E. Godsey, S. B. Parsons, & M. Seyfried. (2018). Dataset for topographic controls on total soil carbon in semi-arid environments (**Boise State University Scholar Works**) <https://doi.org/10.18122/B2XT55>
- **Patton, N. R.**, K. A. Lohse, M. Seyfried, S. Benner & R. Will. (2018). Dataset for lithology and coarse fraction adjusted bulk density estimates for determining total organic carbon stocks in dryland soils (**Boise State University Scholar Works**) <https://doi.org/10.18122/B22M6Q>
- **Patton, N. R.**, K. A. Lohse, M. Seyfried, & M. D. Murdock. (2018). Dataset: Soil properties of Johnston Draw a subcatchment of Reynolds Creek, Idaho. (**Boise State University Scholar Works**) <https://doi.org/10.18122/B2612K>
- **Patton, N. R.**, K. A. Lohse, M. Seyfried, A. G. Radke, & S. E. Godsey. (2018). Dataset: Soil properties of Reynolds Mountain East a subcatchment of Reynolds Creek, Idaho. (**Boise State University Scholar Works**) <https://doi.org/10.18122/B29T3T>
- Murdock, M. D., D. P. Huber, M. S. Seyfried, **N. R. Patton**, & K. A. Lohse. (2018). Dataset for soil hydraulic parameter estimates along an elevation gradient in dryland soils (**Boise State University Scholar Works**) <https://doi.org/10.18122/reynoldscreek10boisestate>

2017

- **Patton, N. R.**, K. A. Lohse, M. Seyfried, B.T. Crosby & S.E. Godsey. (2017). Dataset for predicting soil thickness on soil mantled hillslopes (**Boise State University Scholar Works**) <https://doi.org/10.18122/B2PM69>
- Will, R. M., S. Benner, N. F. Glenn, J. Pierce, K. A. Lohse, **N. R. Patton**, L. P. Spaete, & C. Stanbery. (2017) Mapping SOC distribution in semi-arid mountainous regions using variables from hyperspectral, LiDAR and traditional datasets (**Boise State University Scholar Works**) <https://doi.org/10.18122/B2Q598>

Patents

- Lohse, K. A., **Patton, N. R.**, Godsey, S. E., & Crosby, B. T. (2023). Soil depth measurement system and method. United States Patent, US 11567055.

In Preparation

- **Patton, N. R.**, Shulmeister, J., Leng, M., Jones, M., Hua, Q., & Hughes, C. Evaluating $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ variations within a modern Biggenden Banded snail (*Figuladra bayensis*) shell using radiocarbon dating: application for past climate reconstruction.
- **Patton, N. R.**, Shulmeister, J., Leng, M., Jones, M., Hua, Q., Welsh, K., Moss, P., & Hanson J. Late Pleistocene and Holocene stable isotope and pollen records from the subtropical Coalstoun Lakes, Queensland Australia.
- Shulmeister, J., **Patton, N. R.**, Rittenour, T., Ellerton, D., Hesp, P., Santini, T, Miot da Silva, G., Forman, S., Gontz, A., Bowyer, H., Kelly, J., McCallum, A., T., & Welsh, K. Chronology and evolution of the world's largest sand island; K'gari (Fraser Island), Southeast Queensland, Australia.
- Sutherland, J., Shulmeister, J., Rittenour, T., Davies, T., & **Patton, N.** Evolution of proglacial Lake Speight within the Waimakariri Valley, New Zealand. (ESPL Special Issue on feedbacks between valley incision, sedimentation and glacier/ice sheet stability).

CONFERENCE PRESENTATIONS AND POSTERS**2023**

- **Patton, N. R.** Reconstructing Holocene fire records using dune footslope deposits at the Cooloola Sand Mass, Australia. Friends of the Pleistocene (Invited Online Presentation).

2022

- **Patton, N. R.** Career development: pursuing your masters and/or doctorates degree. Pennsylvania Western University. California, PA (Invited Presentation).

- **Patton, N. R.**, Shulmeister, J., Hua, Q., Almond, P., Rittenour, T. M., Hanson, J. M., Ellerton, D. T., and Seropian, G. The geomorphic influence of wildfire on stabilized dune fields, an example from the Cooloola Sand Mass, Australia. Geological Society of America (GSA) Denver, Colorado, USA (Presentation).
- **Patton, N. R.**, Shulmeister, J., Rittenour, T. M., Almond, P., Ellerton, D., & Santini, T. Using surface-roughness dating to estimate coastal dune ages at Fraser Island and the Cooloola Sand Mass, Australia. New World Luminescence Dating Workshop. Grand Junction, Colorado, USA (Presentation).
- **Patton, N. R.** Overview of research and experience. Desert Research Institute. Online (Presentation).

2021

- **Patton, N. R.** Evaluating seasonal variability from carbon and oxygen stable isotope measurements of a modern Biggenden Banded snail (*Figuladra bayensis*). 15th International Conference on Accelerator Mass Spectrometry (AMS-15). Online (Presentation).
- **Patton, N. R.** Utilizing meteoric ¹⁰Be to define the mobile-stable regolith boundary within unconsolidated sediment. 15th International Conference on Accelerator Mass Spectrometry (AMS-15). Online (Presentation).
- **Patton, N. R.** Validating seasonal variability from carbon and oxygen stable isotope measurements of a modern Biggenden Banded snail (*Figuladra bayensis*). Australasian Environmental Isotope Conference (AEIC). Online (Invited Talk).
- **Patton, N. R.** Using surface roughness to determine ages of coastal dunes at K'gari (Fraser Island) and the Cooloola Sand Mass, Australia. Australasian Quaternary Association (AQUA) Pop-Up E Conference. Online (Presentation).
- Gontz, A., McCallum, A., Ellerton, D., **Patton, N. R.**, & Shulmeister, J. The Teewah Transect – GPR-derived insights into the aeolian-soils relationships of the Southern Cooloola Sand Mass, Queensland, Australia. International Coastal Symposium Online from Seville (Spain) (Poster).

2020

- **Patton, N. R.** Measuring landscape evolution from inception to senescence; an example from the Cooloola Sand Mass, Australia. Geoscience Society of New Zealand (GSNZ) Annual Conference. Christchurch, NZ (Presentation).

2019

- **Patton, N. R.** Spatial Distribution and Prediction of Hillslope Soil Organic Carbon. American Geophysical Union. San Francisco, CA, USA (Invited Speaker).
- **Patton, N. R.** Systematic relaxation of geomorphic features: Application on the southeast Queensland dune fields, Australia. American Geophysical Union. San Francisco, CA, USA (Poster).
- **Patton, N. R.** Landscape evolution of the southeast Queensland dune field, Australia. Australia's Nuclear Science and Technology Organization (ANSTO). Sydney, New South Wales, AUS (Presentation).
- **Patton, N. R.** Evaluation of steady-state topography of the Cooloola Sand Mass, Australia. University of Utah Luminescence Laboratory. Logan, UT, USA. (Presentation).
- **Patton, N. R.**, D. Ellerton, J. Shulmeister, V. Bianchi, & K. Welsh. Creeping towards a steady-state topography: landscape evolution of the Cooloola Sand Mass, QLD. The Australian and New Zealand Geomorphology Group (ANZGG). Inverloch, VIC, AUS. (Poster).
- **Patton, N. R.** Creeping towards a steady-state topography: landscape evolution of the Cooloola Sand Mass, QLD. The Australian and New Zealand Geomorphology Group (ANZGG). Inverloch, VIC, AUS. (Presentation).

2018

- **Patton, N. R.** Remapping the coastal dune fields of South-east Queensland: a morphometric approach. University of Queensland. St. Lucia, QLD, AUS. (Presentation).
- **Patton, N. R.** Predicting soil thickness on soil-mantled hillslopes. University of Queensland. St. Lucia, QLD, AUS. (Presentation).
- **Patton, N. R.** Predicting soil thickness and its potential applications in Quaternary science. University of Nottingham. Beeston, UK. (Invited Speaker).

- Lohse, K. A., **N. R. Patton**, C. Renner, A. Commendador, J. Thomas, B. Finney, R. Macneille, K. Gossner, Z. V. Orsdel, A. Millard, S. Hill, C. Durfee, K. Hawkes, J. Facer, K. Ferguson, A. Rozin, K. Aho, M. Seyfried, & F. Pierson. Temporal variation in soil carbon cycling in response to wildfire in the Reynolds Creek Critical Zone Observatory, Idaho, USA. American Geophysical Union. San Francisco, CA, USA. (Poster).
- Zellman, M. S., C. B. DuRoss, G. D. Thackray, R. W. Briggs, N. Cholewinski, T. Reyes, **N. R. Patton**, and S. A. Mahan. A paleoseismic investigation of the northern Teton fault at the Steamboat Mountain trench site, Grand Teton National Park, Wyoming. Seismological Society of America. Miami, FL. (Poster).

2017

- Radke, A. G., S. E. Godsey, K. A. Lohse, M. S. Seyfried, D. P. Huber, **N. R. Patton**, & W. S. Holbrook. Spatiotemporal heterogeneity of dissolved organic carbon in waters and soils of a snow-dominated headwater catchment. American Geophysical Union. New Orleans, LA, USA. (Poster).
- **Patton, N. R.** Continuing your education in graduate school. California University of Pennsylvania. California, PA, USA (*Invited Speaker*).
- **Patton, N. R.**, K. Lohse, M. Seyfried, B. Crosby, & S. Godsey. Predicting soil thickness and total organic carbon on soil mantled hillslopes. Critical Zone All Hands Meeting. Washington, DC, USA. (Poster).
- Ripley, K., **N. R. Patton**, & K. Lohse. Examining and comparing unique soil profiles in Reynolds Creek, Idaho. Idaho State University Research Symposium. Pocatello, ID, USA. (Poster).

2016

- **Patton, N. R.**, K. Lohse, R. Will, S. Benner, & M. Seyfried. Coarse fraction adjusted bulk density estimates using soil organic carbon and matter in a complex terrain. Critical Zone All Hands Meeting. Boise, ID, USA (Poster).
- Commendador, A., B. Finney, **N. R. Patton**, & K. Lohse. Stable carbon and nitrogen isotopes in soils and plants along a climatic gradient. Critical Zone All Hands Meeting. Boise, ID, USA. (Poster).
- Radke, A., **N. R. Patton**, K. Lohse, & S. Godsey. Hydrologic-geophysical impacts on soil carbon export in a snow-dominated headwater catchment. Critical Zone All Hands Meeting. Boise, ID, USA. (Poster).
- Lohse, K. A., **N. R. Patton**, A. Fellows, P. Kormos, G. Flerchinger, M. Seyfried, E. McCorkle, & R. MacNeill. Taking the pulse of the skin of the earth: quantifying the spatial and temporal variability in soil biogeochemical cycling. American Geophysical Union. San Francisco, CA, USA. (Poster).

2015

- **Patton, N. R.**, K. Lohse, M. Seyfried, B. Crosby, & S. Godsey. Determining total soil carbon storage in the critical zone using topography and lithology. American Geophysical Union. San Francisco, CA, USA. (Poster).
- **Patton, N. R.**, K. Lohse, M. Seyfried, B. Crosby, & S. Godsey. Determining soil thickness and carbon storage in the critical zone, Idaho State University Research Symposium. Pocatello, ID, USA (Poster).
- Will, R., Stanbery, C., Seyfried, M., Pierce, J., Lohse, K., Flores, A., Glenn, N., Spaete, L., **Patton, N. R.**, Black, C., Good, A., & S. Benner. Mapping the organic carbon content of soils (SOC) in the Reynolds Creek Watershed. Great Basin Consortium. Boise, ID, USA. (Poster).

2014

- **Patton, N. R.**, M. Seyfried, T. Link, & K.A. Lohse. Controls of parent material and topography on soil carbon storage in the critical zone. American Geophysical Union. San Francisco, CA, USA. (Poster).
- Seyfried, M., T. Link, Z. Klos, **N. R. Patton**, & K.A. Lohse. Ecohydrological implications of contrasting slope and aspect in complex terrain. American Geophysical Union. San Francisco, CA, USA. (Poster).
- Will, R., Stanbery, C., Seyfried, M., Pierce, J., Lohse, K., Flores, A., Glenn, N., Spaete, L., **Patton, N. R.**, Black, C., Good, A., & S. Benner. Mapping the organic carbon content of soils (SOC) in the Reynolds Creek Watershed. CZO All Hands Meeting. (Poster).
- **Patton, N. R.**, M. Seyfried, T. Link, & K.A. Lohse. Controls of parent material and topography on soil carbon storage. Critical Zone All Hands Meeting. Yosemite National Park, CA (Poster).
- Jurkowski, C., D. Harris, & **N. R. Patton**. Geochemical analysis and classification of the Gates-Adah kimberlite dike. American Geophysical Union Fall Meeting 2014. San Francisco, CA, USA. (Poster).

- **Patton, N. R.**, C. Killian, C. Jurkowski, & K. Fredrick. Inorganic ions contributing to elevated conductivity in Oregon Hollow wetland: A headwater tributary of Pike Run Watershed, Washington County, PA, USA. Pittsburgh Geological Society (*Poster*).
- 2013**
- **Patton, N. R.**, C. Killian, C. Jurkowski, & K. Fredrick. Water quality indicators of Oregon Hollow wetland: A headwater tributary of Pike Run Watershed, Washington County, Pennsylvania. Geological Society of America. Denver, CO, USA. (*Poster*).
 - **Patton, N. R.**, C. Killian, C. Jurkowski, M. Li & K. Fredrick. Investigation of inorganic species in Oregon Hollow wetland: Washington County, Pennsylvania. PASSHE Undergraduate Research Conference in Science, Technology, Engineering, and Mathematics. Slippery Rock University, PA, USA. (*Poster*).
- 2012**
- **Patton, N. R.** Identifying demographics surrounding parks: Frick, Schenley, Riverview and Highland Parks. Pittsburgh Park Conservancy, Pittsburgh, PA, USA. (*Poster*).

AWARDS, GRANTS, & HONORS

- 2023**
- INQUA 2023 Congress in Rome Travel Grant: **\$2150**
- 2022**
- UC Foundation Doctoral Publication Prize: **\$2000**
- 2021**
- UC Foundation Doctoral Publication Prize: **\$500**
 - Mason Trust Grant – *Predicting dune emplacement ages*: **\$877**
 - Australasian Quaternary Association (AQUA) - *Best conference presentation*
 - ¹⁴C Award - *Centre of Excellence for Australian Biodiversity and Heritage*: **\$8,000**
- 2020**
- Mason Trust Grant - *Landscape evolution of coastal dunes*: **\$3,335**
 - ANSTO Research Portal Proposal - *Dune erosion rates using ¹⁴C dating*: **\$20,534**
 - ANSTO Research Portal Proposal - *Meteoritic ¹⁰Be*: **\$37,800**
 - ANSTO Research Portal Proposal - *Radiocarbon dating charcoal*: **\$4,440**
- 2019**
- ANSTO Research Portal Proposal - *Radiocarbon dating of terrestrial snail shells*: **\$5,920**
 - ANSTO Research Portal Proposal - *Insitu and meteoric ¹⁰Be*: **\$13,440**
 - Australian & New Zealand Geomorphology Group Travel Grant: **\$360**
- 2015**
- Idaho State University Travel Grant: **\$548**
- 2014**
- Idaho State University Travel Grant: **\$653**
 - Pittsburgh Geological Society Outstanding Student Research Poster
- 2013**
- California University of Pennsylvania Earth Science Award
 - Pennsylvania STEM Undergraduate Top Research Award
- 2011**
- California University Residence Life Academic Excellence Award
 - Certificate of Achievement for "The 7 Habits of Highly Effective People"

OUTREACH

- 2021**
- **Quaternary Australasian – Volume 38:** AQUA Conference Report

- **The Conversation:** One of the most damaging invasive species on Earth': wild pigs release the same emissions as 1 million cars each year. <https://theconversation.com/one-of-the-most-damaging-invasive-species-on-earth-wild-pigs-release-the-same-emissions-as-1-million-cars-each-year-163250>
- **The Conversation:** Los jabalíes, una de las especies invasoras más dañinas, liberan cada año las mismas emisiones que un millón de automoviles. https://theconversation.com/los-jabalies-una-de-las-especies-invasoras-mas-daninas-liberan-cada-ano-las-mismas-emisiones-que-un-millon-de-automoviles-164802?utm_source=twitter&utm_medium=bylinetwitterbutton
- **The Conversation:** Burnt ancient nutshells reveal the story of climate change at Kakadu — now drier than ever before. https://theconversation.com/burnt-ancient-nutshells-reveal-the-story-of-climate-change-at-kakadu-now-drier-than-ever-before-152760?utm_source=twitter&utm_medium=bylinetwitterbutton

2019

- **ANZGG Newsletter:** Digging for the truth- Landscape evolution of the Southeast Queensland Dune fields

2018

- **British Geological Survey (BGS) GEOBLOG Newsletter:** Getting a taste for Australian drought history. <http://britgeopeople.blogspot.com/2018/10/getting-taste-for-australian-drought.html>

PROFESSIONAL SERVICE & ACTIVITIES

Past and Current Affiliations

- American Geophysical Union (AGU)
- Australasian Environmental Isotope Group
- Australasian Quaternary Association (AQUA) - *NZ Representative*
- Australian & New Zealand Geomorphology Group (ANZGG)
- Australian Nuclear Science and Technology Organization (ANSTO)
- Australian Regolith Geoscientist Alliance (ARGA)
- British Geological Survey (BGS)
- British Society for Geomorphology (BSG)
- Center for Archaeology, Materials and Applied Spectroscopy (CAMAS)
- Center for Ecological Research and Education (CERE)
- Centre of Excellence for Australian Biodiversity and Heritage (CABAH)
- Critical Zone Observatories (CZO)
- European Geophysical Union (EGU) Geomorphology Division
- Geological Society of America (GSA)
- Pittsburgh Geological Society (PGS)
- Reynolds Creek Critical Zone Observatory (RC-CZO)

Invited Reviewer for Journal Publication

- Nature Geoscience
- Environmental Earth Science
- Soil Science Society of America
- Earth Surface Dynamics

Session Convener

- Australasian Quaternary Association/Friends of the Pleistocene Pop-up Conference: 2021 Session 1 – Lake, Rivers, and Landscapes

Community Outreach

- Reviewer on Undergraduate Research Opportunity Program (UROP) Summer 2023 and Academic Year 2023-2024
- Judge at the DRI's 2023 Research Symposium
- Reviewer on the 2023 INQUA/AQUA Student Travel Grant to Rome