Jake Ross Ph.D.

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EMPLOYMENT

Data Integration Manager, New Mexico Bureau of Geology --- 2023—Present
Improve the flow of data from producer to consumer. Lead the development of software solutions for the Bureau of Geology's research and data sharing missions.

Argon Lab Technical Manager and Software Engineer, New Mexico Bureau of Geology — 2021—2022
Develop scientific software for the Bureau of Geology. Serve as the Technical Lead and Principal Developer for the New Mexico Water Data Initiative.

Research Scientist, New Mexico Bureau of Geology — 2016—2021
Advancing software, hardware and analytical procedures for noble gas mass spectrometry and Ar-Ar geochronology.

Consultant, Pychron Labs LLC — 2015—Present
Founder and principal developer for Pychron Labs LLC, a small consulting firming provide custom scientific software for noble gas mass spectrometry.

Network Administrator, New Mexico Bureau of Geology — 2015—2018
Day to day network administration for the New Mexico Bureau of Geology, an organization of ~70 geoscientists and staff. Network setup and management for New Mexico Geochronology Research Laboratory.

Post-Doctoral Researcher, NMGRL — 2014—2015
Post-doctoral researcher at the New Mexico Geochronology Research Laboratory. Responsibilities include, software developer/advisor, network/database admin, design and fabrication of custom scientific tools, such as a Diode Laser Furnace.

Python Instructor, New Mexico Tech; Socorro, NM — 2014
Taught the CS/IT 107 course "Introduction to Computer Programming with Python". Semi-weekly 90 minute lectures and weekly 3 hour labs.

Research Assistant, NMGRL — 2006–2014
Research assistant at the New Mexico Geochronology Research Laboratory. Developed multiple software products that are now used globally, for example, Pychron, a full featured data acquisition and processing suite for Ar-Ar thermo-geochronology

EDUCATION
New Mexico Tech, NM — Ph.D Geochronology, 2014
New Mexico Tech, NM — M.Sc Geochemistry, 2009
McGill University, QC — B.Sc Earth and Planetary Science, 2006

SELECTED PUBLICATIONS

1. Timmons, S., Pine, R., Ross, J., Rawlings, G., Hobbs, R., Newton, T. 2023 NM Water data initiative project: Groundwater level monitoring network planning. 2023 New Mexico Geological Society Annual Spring Meeting. pp. 103, https://doi.org/10.56577/SM-2023.2907

2. Hobbs, R., Cox, C., Ross, J., Timmons, S. 2023 The New Mexico Water Data Initiative: Building Collaborative Data Sharing for Water Management Along the Pecos River, New Mexico. 2023 New Mexico Geological Society Annual Spring Meeting 10.56577/SM-2023.2903

3. Cantrell, T., Heizler, M., and Ross, J. 2022 The double-edged sword of ultra-high precision 40Ar/39Ar geochronology: Investigating previously unresolved complexities in sanidine age distributions. 2022 New Mexico Geological Society Annual Spring Meeting & Ft. Stanton Cave Conference. 10.56577/SM-2022.2859

4. Heizler, M., Cantrell, T., Ross, J., and McIntosh W. 2022 DISPERSION HAPPENS: EVALUATING THE UBIQUITOUS SCATTER IN ULTRA-PRECISE 40AR/39AR SANIDINE DISTRIBUTIONS. GSA Connects 2022 meeting in Denver, Colorado. 10.1130/abs/2022AM-383054

5. Louback, V.S., de Castro Valente, S., de Almeida, C.N., Ross, J. and Borghi, L., 2023. Aptian flood basalts in Bacalhau oil and gas field: petrogenesis and geodynamics of post-rift tholeiites in the pre-salt sequence of Santos Basin, Brazil. Contributions to Mineralogy and Petrology, 178(3), p.15.

6. Louback, V.S., de Castro Valente, S., de Almeida, C.N., Ross, J. and Borghi, L., 2021. Petrogenesis and geodynamics of Eocene alkaline intrusions in the pre-salt sedimentary sequence of Santos Basin, Brazil. *Lithos*, *400*, p.106400.

7. Schaen, A.J., Jicha, B.R., Hodges, K.V., Vermeesch, P., Stelten, M.E., Mercer, C.M., Phillips, D., Rivera, T.A., Jourdan, F., Matchan, E.L. and Hemming, S.R., 2021. Interpreting and reporting 40Ar/39Ar geochronologic data. *GSA Bulletin*, *133*(3-4), pp.461-487.

8. Quinn, D., Linzmeier, B., Sundell, K., Gehrels, G., Goring, S., Marcott, S., Meyers, S., Peters, S., Ross, J., Schmitz, M. and Singer, B., 2021, April. Implementing the Sparrow laboratory data system in multiple subdomains of

geochronology and geochemistry. In *EGU General Assembly Conference Abstracts* (pp. EGU21-13832).

9. Lutz, B.M., Ketcham, R.A., Axen, G.J., Beyene, M.A., Wells, M.L., van Wijk, J.W., Stockli, D.F. and Ross, J.I., 2021. Thermo-kinematic modeling of detachment-dominated extension, northeastern Death Valley area, USA: Implications for mid-crustal thermal-rheological evolution. *Tectonophysics*, p.228755.

10. BRUCK, Benjamin T., QUINN, Daven P., SINGER, Brad S., JICHA, Brian R., ROSS, Jake and SCHMITZ, Mark D. A CYBER WORKFLOW FOR COLLECTION, MANAGEMENT, AND EXPLORATION OF $^{40}AR/^{39}AR$ AND U-PB GEOCHRONOLOGY DATA

11. QUINN, Daven P., LINZMEIER, Benjamin J., SUNDELL, Kurt, BRUCK, Benjamin T., YE, Shan, GEHRELS, G.E., GORING, Simon, MARCOTT, Shaun A., MEYERS, Stephen R., PETERS, Shanan E., ROSS, Jake, SCHMITZ, Mark D., SINGER, Bradley S. and WILLIAMS, John W. THE SPARROW LABORATORY INFORMATION MANAGEMENT SYSTEM — A TOOL FOR CONNECTING GEOCHEMICAL DATA TO CONTEXT AND COMMUNITY

12. Bruck, Benjamin; Quinn, Daven P.; Singer, Brad S.; Jicha, Brian R.; Ross, Jake; Schaen, Allen., 2020. A Cyber Workflow for Collection, Management, and Exploration of 40Ar/39Ar Geochronology Data.

13. Quinn, Daven P.; Linzmeier, Ben J.; Sundell, Kurt E.; Bruck, Ben T.; Ye, Shan; Gehrels, George G.; Goring, Simon M.; Marcott, Shaun A.; Meyers, Stephen R.; Peters, Shanan E.; Ross, Jake I.; Schmitz, Mark D.; Singer, Brad S.; Williams, Jack W., 2020. The Sparrow software interface for linking analytical data and metadata in laboratory archives.

14. Quinn, Daven Patel; Allen J., Schaen; Kurt, Sundell; George, Gehrels; Simon, Goring; Stephen R., Myers; Shanan, Peters; Jake, Ross; Mark, Schmitz; Brad S., Singer; Jack, Williams., 2019. Sparrow: a laboratory management software tool and distributed data infrastructure component for geochronology.

15. Ross, J. I. and McIntosh, W. C., 2012. Hardware and Software Interfacing at New Mexico Geochronology Research Laboratory: Distributed Control Using Pychron and RemoteControlServer.cs. AGU Fall Meeting Abstracts p. 1501

16. Ross, J. I., McIntosh, W. C., and Wilch, T.I., 2012. Detailed Ar-Ar Geochronology of Volcanism at Minna Bluff, Antarctica: Two-Phased Growth and Influence on Ross Ice Shelf. AGU Fall Meeting Abstracts p. 578

17. Ross, J. I., McIntosh, W. C., and Dunbar, N. W., 2012. Development of a precise and accurate age–depth model based on $^{40}Ar/^{39}Ar$ dating of volcanic material in the

ANDRILL (1B) drill core, Southern McMurdo Sound, Antarctica. Global and Planetary Change, v96-97, p. 118-130

18. Naish, T. R., Powell, R. D., Barrett P. J., Levy, R. H., Henrys, S., Wilson, G. S., Krissek, L. A., Niessen, F., Pompilio, M., Ross, J. I., Scherer, R., Talarico, F., Pyne, A., and the ANDRILL-MIS Science team. 2008. Late Cenozoic climate history of the Ross Embayment from the AND-1B drill hole: Culmination of three decades of Antarctic margin drilling." Antarctica: Keystone in a Changing World. Proceedings of the 10th International Symposium on Antarctic Earth Sciences. Washington DC: The National Academic Press.

19. Ross, J. I., McIntosh, W. C., and Dunbar, N. W., 2007. A-2 Preliminary ^{40}Ar/^{39}Ar results from the AND-1B core. The 10th International Symposium on Antarctic Earth Sciences.

20. Wilson, G. S., Levy, R. H., Browne, G., Florindo, F., Henrys, S. A., Graham, I., McIntosh, W. C., McKay, R. M., Naish T. R., Ohneiser, C., Powell, R. D., Ross, J. I., Sagnotti, L., Scherer, R., Sjunneskog, C., Strong, C. P., Taviani, M., and Winter D. A-3 Preliminary chronostratigraphy for the upper 700 m (upper Miocene-Pleistocene) of the AND-1B drillcore recovered from beneath the McMurdo Ice Shelf, Antarctica. The 10th International Symposium on Antarctic Earth Sciences.

21. Wilson, G., Levy, R., Browne, G., Dunbar, N., Florindo, F., Henry, S., Graham, I., McIntosh, W., McKay, R., Naish, T., Ohneiser, C., Powell, R., Ross, J., Sagnotti, L., Scherer, R., Sjunneskog, C., Strong, C.P., Taviani, M., Winter, D., and the ANDRILL MIS Science Team, 2007. Preliminary integrated chronostratigraphy of the AND-1B Core, ANDRILL McMurdo Ice Shelf Project, Antarctica. Terra Antarctica 14, p. 297-316.

FIELD EXPERIENCE
- New Mexico and Colorado, US, 2006-Present
- Minna Bluff, Southern McMurdo Sound, Antarctica, 2007-2008
- Mt. Erebus, Ross Island, Antarctica, 2006-2007
- Ol Doinyo Lengai, Tanzania, Africa, 2006
- International Volcanology Field Camp, Kamchatka, Russia, 2005

PROPOSALS FUNDED
- National Science Foundation Grant, "Continued development of Pychron for ^{40}Ar/^{39}Ar geochronology", $112,356 2015-2016
- Collaborative Proposal: EarthCube Integration: Geochronology Frontier at the Laboratory-Cyberinformatics Interface. $1,449,662 2017-2021 1740694

AWARDS

- David Harrington Memorial Prize for Geochemistry, McGill University, 2006

SKILLS

- Python, Django, Numpy, Scipy, Matplotlib, PySide, Qt, Enthought Tool Suite
- MySQL, HTML, CSS, Javascript
- Software/Hardware interface, Data acquisition, Data management, UX
- Machine vision
- Unix/Mac/Linux
- PIC Microcontrollers/Arduino/RaspberryPI
- Network management
- 2D/3D CAD