# Matthew J. Kohn

### **Contact Information**

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# **Educational Experience**

1991: Ph. D. in Geology, Rensselaer Polytechnic Institute, Troy, NY 12180
1989: M. S. in Geology, Rensselaer Polytechnic Institute, Troy, NY 12180

1986: B. S. in Geology, Massachusetts Institute of Technology, Cambridge, MA 02139

# **Research Interests and Expertise**

Development and use of geochemical techniques to investigate ecology, climate, petrogenesis, and orogenesis, including major elements, trace elements, stable isotopes, and radiogenic isotopes. Climatic and physiological analysis of organic phosphates. Chemical and isotopic analysis of metamorphic minerals. Stable isotope, electron probe, ICP-MS, ion probe, and Raman microscope analysis; geochronology; thermodynamics, kinetics and phase equilibria.

## **Professional profiles**

Google Scholar: https://scholar.google.com/citations?user=xSyB1KQAAAAJ&hl=en&oi=sra

ORCID: <a href="https://orcid.org/0000-0002-7202-4525">https://orcid.org/0000-0002-7202-4525</a>

# Outreach channels (>500,000 hits, total)

YouTube "OpticalMineral": https://www.youtube.com/user/@OpticalMineral

YouTube "Matt Kohn": https://www.youtube.com/channel/UC hMpllR88i2uZbQ4S1OPhQ

Bilibili "MJKohn": https://space.bilibili.com/2031848148

Minpet on-line textbook (Perkins, Kohn, and Brady): https://optical.minpet.org/

# Research, Teaching, and Professional Positions

2011-	University Distinguished Professor, Boise State University
2024-2024	President's International Fellow, Chinese Academy of Sciences
2021-2021	Distinguished Scientist International Fellow, Chinese Academy of Sciences
2010-2011	Professor, Boise State University
2007-2010	Associate Professor, Boise State University
2005-2006	Visiting Professor, sabbatical leave, Washington State University
2004-2007	Associate Professor, University of South Carolina
1998-2004	Assistant Professor, University of South Carolina
1996-1998	Post-Doctoral research staff, Lawrence Livermore National Laboratory
1994-1996	Research scientist, University of Wisconsin - Madison.
1995-1995	Visiting Assistant Professor, Northern Illinois University (Fall Semester).
1991-1993	NSF Post-Doctoral fellow, stable isotope geochemistry, UW-Madison.
1986-1991	NSF graduate fellow, RA, TA, metamorphic petrology, RPI.
1983-1986	Undergraduate researcher, sedimentology and structural geology, MIT.

## Awards, Fellowships, and Honors

# **Undergraduate Research (MIT):**

Goetze Grant, 1985 Sea Grant, 1984, 1985

# **Graduate Research (RPI):**

NSF graduate fellowship, 1986-1989 GSA research grant, 1987, 1988 Sigma Xi grant, 1987

# **Professional:**

President's International Fellow, Chinese Academy of Sciences (2024)

Zhongguancun Award for International Cooperation, Beijing (2024)

Distinguished Scientist International Fellow, Chinese Academy of Sciences (2021)

Dana medal, Mineralogical Society of America (2019)

Champion for Science, American Geophysical Union (2018)

Fellow, American Geophysical Union (2017)

Shell London Lecturer (2013)

Mineralogical Society of America Distinguished Lecturer (2012-2013)

Outstanding Reviewer, AGU (2012)

University Distinguished Professor, BSU (2011; permanent designation)

Fellow, Geological Society of America (2008)

Fellow, Mineralogical Society of America (2007)

Undergraduate Research Mentor of the Year Award, 2004 (USC; 1 recipient each year)

Two Thumbs Up Teaching/Service Award, 2002 (USC; multiple recipients each year)

NSF post-doctoral fellowship, 1991-1993

Proposals Funded (~\$11M)

Proposal title	Source/dates	Amount
Uptake mechanisms of REE in sedimentary phosphorite mineral	DOE – Basic Energy 2023-2027 (lead PI with B. Mazumder)	\$889k
Collaborative Research: How do ultrahigh pressure metamorphic sheets form and exhume? A case study from the Tso Morari complex, India	NSF - Tectonics 2022-2025 (lead PI with S. Long)	\$341k
Thermal structure of subduction zones: Metamorphic and geophysical perspectives	Chinese Acad. Sciences, President's International Fellowship 2021 (sole PI)	\$15k
MRI: Acquisition of an inductively coupled plasma mass spectrometer and UV excimer laser platform for trace element analysis and U-Th-Pb petrochronology	NSF - Facilities and Instrumentation 2019-2021 (co- PI; D. Wanless, lead PI at BSU)	\$405k
Reevaluation of metamorphic garnet-based P-T paths and their tectonic implications	NSF-Tectonics 2019-2022 (sole PI)	\$258k
Conference: Petrochronology 2017, Seattle, Washington	NSF-Petrology and Geochemistry 2017-2018 (sole PI)	\$15k
PIRE: ExTerra Field Institute and Research Endeavor (E-FIRE)	NSF-PIRE/OIA 2016-2023 (lead PI with S. Penniston- Dorland and M. Feineman)	\$4.02M
Collaborative Research: Experimental determination of trace element diffusion rates in tooth enamel	NSF-Geobiology, low-Temp Geochemistry 2016-2019 (lead PI with R. Hervig)	\$171k
Field testing Raman microspectroscopic thermobarometers in garnet	NSF-Petrology and Geochemistry 2015-2017 (sole PI)	\$147k
MRI: Acquisition of an electron probe microanalyzer for Earth Science and Materials research and education	NSF-Instrumentation and Facilities. 2014-2016 (lead PI with M. Schmitz, J. Crowley, R. Ubic, and D. Wanless)	\$988k
Collaborative research: Deciphering subduction dynamics: Case study of the Catalina Schist	NSF-Tectonics. 2014-2016 (co-PI with S. Penniston-Dorland)	\$42k
Collaborative research: calibrating mid-Miocene greenhouse climate and ecology in a key high southern latitude locale	NSF-Sedimentary Geology and Paleobiology. 2014-2016 (lead PI with C. Strömberg and R. Kay)	\$99k
Metamorphic and tectonic evolution of the Tethyan Himalaya, central Nepal	NSF-Tectonics. 2013-2015 (sole PI)	\$191k
Experimental calibration of stable isotope and REE partitioning in bioapatite	NSF-Geobiology, low-Temp Geochemistry. 2013-2015 (sole PI)	\$143k
RAPID: An unusual opportunity to track snow ablation using stable isotope evolution of the 2011-2012 snowpack near Boise, Idaho	NSF-Hydrologic Sciences. 2012-2013 (co-PI; S. Evans, lead PI at BSU)	\$20k
Petrologic and chronologic evaluation of Himalayan tectonic models in southern Bhutan	NSF-Tectonics. 2011-2014 (sole PI)	\$205k

Acquisition of a stable isotope mass spectrometer for Earth science and ecological research	NSF-Instrumentation and Facilities 2009-2010 (lead PI with M. Schmitz, J. Heath, J. Belthoff, and C. Hill)	\$377k
Acquisition of a 213nm laser and cathodo- luminescence-detector for microanalysis of zircon and other Earth materials	NSF-Instrumentation and Facilities, 2008-2009 (lead PI with M. Schmitz and J Crowley)	\$138k
Collaborative research: Testing mechanical models of Himalayan orogenesis in NW India	NSF-Tectonics, 2008-2012 (co-Pl with D. Robinson)	\$275k
Collaborative research: How did the grassland biome evolve in South America?	NSF-Paleobiology, 2008-2012 (co-PI with C.A.E. Strömberg and R.H. Madden)	\$120k
Collaborative Research: Tectonic rates from differential garnet geochronology	NSF-Petrology & Geochem., (lead PI) 2008-2010	\$105k
Acquisition of a stable isotope ratio mass spectrometer for climate change research	NSF-Instrumentation and Facilities, 2006-2007 (co-PI; lead PI R. Thunell)	\$336k
Testing paleoenvironmental models of the Cretaceous Western Interior Seaway via stable isotopes of fossil turtles and fish	PRF (American Chemical Society), 2006-2008 (sole PI)	\$79k
Timing, conditions, and rates of thrust transport in the Nepalese Himalaya	NSF-Tectonics, 2005-2008 (sole PI)	\$130k
Testing Paleozoic vs. Cenozoic metamorphism in the Greater Himalaya, Nepal	NSF-Petrology & Geochem., 2005-2006 (sole PI)	\$36k
Collaborative Research: Extensional unroofing of the central Menderes metamorphic complex, southwestern Turkey (Co-PI with E. Catlos)	NSF-Tectonics, 2005-2008 (sole PI)	\$50k
Timing and magnitude of climate change across the Eocene-Oligocene transition, northern Great Plains, USA,	NSF – Paleoclimate, 2004-2007 (sole PI)	\$231k
Evolution of LREE+Th distributions in minerals during prograde metamorphism	NSF-Petrology & Geochem., 2003-2005 (sole PI)	\$88k
SGER: Fossil bone as a paleoclimate indicator	NSF – Geology and Paleontology 2003-2005 (sole PI)	\$24k
Collaborative Research: Acadian vs. Taconian tectonism in the southern Appalachian Western Blue Ridge – Implications for models of terrane accretion.	NSF - Tectonics, 2003-2005 (lead PI with W. Hames and J. Tull)	\$135k
Metamorphic evolution of the Main Central Thrust, Nepal	NSF-Petrology & Geochem., 2000-2004 (sole PI)	\$209k
Monazite dating via the electron microprobe: a new geochronologic technique	USC, 2001-2002 (sole PI)	\$12k
Constraints on Miocene uplift of the central Cascade Range, Oregon	NSF – Tectonics, 2000-2002 (sole PI)	\$136K
Mountain building and climate change	USC, 1999-2000 (sole PI)	\$10k

Oxygen isotope compositions of fossil biogenic phosphates: climate reconstruction in East Africa.	NSF – Archaeometry, 1996-1997 (lead PI with M. Schoeninger and J. Valley)	\$60k
Case study investigation of the relationships between fluid infiltration and deformation using oxygen isotope zoning in metamorphic porphyroblasts	NSF- Petrology & Geochem., 1994-1996 (sole PI)	\$92k
Determination of the importance of fluid infiltration during regional metamorphism via modeling and measurement of oxygen isotope zonation in garnet	NSF – Postdoctoral fellow-ship, 1991-1993 (sole PI)	\$70k

# Supervision of Postdoctoral Scholars.

- 1. Christopher Parkinson. Himalayan tectonics. 2001 2003
- 2. Jennifer Chambers. Himalayan tectonics. 2008 2010
- 3. Stacey Corrie. Himalayan tectonics. 2010 2013
- 4. Celina Suarez. Trace elements in fossils. 2011 2012
- 5. Besim Dragovic. Subduction zone petrology and geochronology. 2016 2019

# **Supervision of Doctoral Students.**

- 1. Alessandro Zanazzi "Paleoclimatology and paleoecology of the Eocene-Oligocene transition, central North America" PhD 2005-2009.
- 2. Alan B. Coulson. "Ecologic and paleontologic utility of marine turtle bone phosphate oxygen isotopes" PhD 2005-2009.
- Stacey Corrie "Geochemical and geochronological constraints on the tectonothermal history of the central and eastern Nepal Himalaya." PhD 2005-2010.
- 4. Amanda Drewicz "Paleoclimatic and paleoecological response of the American Southwest Desert to abrupt Pleistocene climate change." PhD 2013-2019.
- 5. Robin Trayler "Geochemical partitioning of synthetic bioapatites and mid-Miocene climates of southern South America." PhD 2013 2019.
- 6. Shaina Cohen "Raman spectroscopy of mineral inclusions" 2016-2017.
- 7. Buchanan Kerswell "Computational approaches to understanding subduction zone geodynamics: surface heat flow and the metamorphic rock record." PhD 2022.
- 8. John Fink "Uptake of rare-earth elements in fossils and potential for unconventional rare earth resources." PhD 2026.
- 9. Sajjad Shah "Petrochronologic and tectonic evolution of the Tso Morari ultrahigh-pressure metamorphic complex, Ladakh, India." PhD 2027.
- 10. Gloria Roman [TBD]. PhD 2029.

### **Supervision of Masters Students.**

- 1. Jennifer Josef "Continental paleoclimate of Southern Argentina, 38 Ma to the present" M.S. 2002.
- 2. Robert King "Characterization of fluid flow and metasomatism in the mantle wedge from Franciscan Complex ultramafic blocks" M.S. 2002.
- 3. Stacey Corrie "Age of metamorphism and tectonic evolution of the Western Blue Ridge, Great Smoky Mountains, NC." M.S. 2005
- Jessica Sousa "Measuring the rate of garnet growth: implications for Rb-Sr garnet geochronology"
   M.S. 2011.
- Andrea Wolfowicz "Ti-in-quartz temperatures of mylonitic orthogneiss, Scandinavian Caledonides"
   M.S. 2012.
- Jesse Walters "Protracted thrusting followed by late rapid cooling of the Greater Himalayan Sequence, Annapurna Himalaya, central Nepal: Insights from titanite petrochronology. MS Boise State University" M.S. 2016.
- 7. Mayara Cizina "Optimizing Raman spectral collection for quartz and zircon crystals for elastic geothermobarometry" M.S. 2020.
- 8. Samuel Couch "Re-evaluation of the first metamorphic P-T path using QuiG barometry and equilibrium thermodynamics." M.S. 2021.
- 9. Alexis Thomas "Using Raman spectroscopy to validate metamorphic P-T paths from western New Hampshire." M.S. 2024

- 10. Emily Chojnacky, MS Earth Sci (non-thesis). M.S. 2024.
- 11. Alexus Wuertemburg [TBD] M.S. 2027.

# Supervision of Undergraduate Senior Theses.

- 1. Jennifer Miselis "Oxygen isotope record of Cascade Range uplift" 2001.
- 2. Stacey Russo "Paleoclimate record of Plio-Pleistocene Idaho from oxygen isotope compositions of fossil teeth" 2002.
- 3. Cari Fuller "Ultrahigh-pressure metamorphism in Brazil" 2003.

# <u>Supervision of Undergraduate Research</u> (Underlined name = research resulted in student co-authored journal publication).

- 1. L. Childs Cantey. 1999-1999. "Electron microprobe characterization of South Carolina eclogites". B.S.,
- Jennifer Miselis. 1999–2001. "Paleoclimate evolution of central Oregon as a monitor of Cascade Range uplift". B.S., 2001
- 3. Stacia Russo. 2001–2002. "Oxygen Isotopes of teeth". B.S., 2002
- 4. <u>Margaret Malloy</u>. 2001–2002. "Electron microprobe dating of metamorphic monazite, Great Smoky Mountains, NC". B.S. 2002.
- 5. Cari Fuller. 2002–2003. "UHP metamorphism in Brazil." B.S. 2003.
- 6. <u>J. McIver Law</u>. 2001–2003. "Oxygen isotopic and climatic history of central Oregon and western Idaho during the last 5 million years." B.S. 2003.
- 7. Lauren Byrne. 2001–2002. "Oxygen isotopes of teeth, and carbon isotopes of plant phytoliths".
- 8. Kim Davis. 2002–2003. "Stable isotope composition of fossil bone vs. paleosol carbonate use for paleoclimate studies". B.S. 2004
- Moriah McKay. 2003–2005. "Carbon isotope compositions of Pleistocene fauna, South Carolina". B.S. 2005
- 10. Michael Grigsby. 2009–2009. "Stable isotope compositions of modern herbivore, omnivore, and carnivore teeth from Idaho." B.S. 2009
- 11. Michelle Gordon. 2009–2010. "Stable isotope compositions of fossil teeth from southern Argentina. B.S. 2011.
- 12. Jennifer Morris. 2010–2011. "Trace elements in modern teeth from Idaho" B.S., 2011
- 13. <u>Alma Palacios</u>. 2011–2012. "Stable isotope paleoecology of the mid-Pliocene, Hagerman Fossil Beds National Monument, Idaho" B.S. 2015.
- 14. Joey Dean. 2011–2012. "Oxygen and hydrogen isotope systematics in grasshoppers" B.S. 2012.
- 15. Christopher Markley. 2011–2012 "Zr and zircon systematics in eclogites" B.S. 2012.
- 16. Eliza Schulz. 2012–2013 "Stable isotope systematics of grasshoppers" B.S. 2013.
- 17. Remington Brooks. 2013. "Calibration of keratin stable isotope analysis." B.S. 2013
- Jean Carlos Santana Ferreira (Brazilian exchange student). 2015. "Thermometry and geochronology of Santa Catalina subduction zone rocks."
- 19. Tainah Pinto dos Santos (Brazilian exchange student). 2015. "Thermometry and geochronology of Himalayan metacarbonates, central Bhutan."
- 20. Jessie Bohn. 2016. "Trace element partitioning of synthetic bioapatite"
- 21. Benjamin Bruck. 2016. "Raman spectroscopy of mineral inclusions" B.S.2017
- 22. Mariah Holloway. 2017. "Stable hydrogen isotopes of modern teeth" B.S. 2017
- 23. Mayara Cizina. 2017-2018. "Trace element zoning and thermometry in accessory minerals". B.S. 2018
- 24. Yashvardhan Gaur. 2018. "Raman spectroscopy of zircon inclusions in quartz and feldspar"

- 25. Allie Howell. 2018-2019. "Raman spectroscopic reevaluation of metamorphic P-T paths"
- 26. <u>Kyra Schroeder/Croft</u>. 2019 2021 "Pressure-temperature conditions of rocks from the Tauern Window, central Alps, Austria," and "Zircon petrochronology, Tso Morari massif". B.S. 2021
- 27. Akira Byrne. 2022 2023. "Stable isotope compositions of archeological materials" B.S. 2024
- 28. Jayna Thompson. 2023. "Thermometry of UHP rocks from the Tso Morari complex, India." B.S. 2023
- 29. Kathryn Markthaler. 2023-2024. "Zr-in-rutile thermometry of UHP rocks from the Tso Morari complex, India." B.S. 2024
- 30. Alex Morton. 2024-2024. "Diffusion of trace elements in tooth enamel." BS 2025
- 31. Myla Negrete. 2024-2025. "Spectroscopy of modern and fossil tooth enamel." BS 2025
- 32. Armando Lopez. 2024-2025. "Detrital zircon from the Gangdese batholith." BS 2026.
- 33. Madeline Makowski. 2025-2025. "Chemically-induced stress gradients in garnets" BS 2026.

# Other Research Supervision.

- 1. Mark Wieland. Electron microprobe analyst, 2002 2003.
- 2. J. McIver Law. Stable isotope analyst, 2003 2005.
- 3. Emily Hinz. PhD candidate, geophysics. Trace elements in teeth, 2008 2009.
- 4. Shannon Murray. PhD candidate, geophysics. Trace elements in wood, 2009 2010.
- 5. Erika Akin. Stable isotope analyst, 2009 2010.
- 6. Dr. Celina Suarez. Trace element analyst, 2010 2011.
- 7. Eliza Schulz. Stable isotope analyst, 2014, 2016.
- 8. Steven Obert. Stable isotope analyst, 2018.
- 9. Kathryn Markthaler. Trace element and geochronology analyst, 2025.

## **Professional Memberships (current only)**

American Association for the Advancement of Science (AAAS) 2007 -

American Geophysical Union (AGU) 1988 -

Geochemical Society (GS) 2014 -

Geological Society of America (GSA) 2001 -

Mineralogical Society of America (MSA) 1987 -

National Association of Geoscience Teachers (NAGT) 2021 -

# **Classes Taught**

Geology of the National Parks (non-majors)

Introduction to geology (Physical Geology; non-majors)

Introductory mineralogy (undergraduate majors)

Rocks and minerals/Earth materials (undergraduate majors)

Evolution of mountain belts (undergraduate majors)

Field Geology (undergraduate majors)

Senior Seminar/Capstone (undergraduate majors)

Igneous and metamorphic petrology (undergraduate- and graduate-level)

Stable isotope geochemistry (undergraduate- and graduate-level)

Radiogenic isotope geochemistry (undergraduate- and graduate-level)

Paleoclimatology and Paleoceanography (graduate-level)

Methods in stable isotope geochemistry (graduate-level)

Analytical methods (graduate-level)

Geochemical Kinetics (graduate-level)

Tectonics of the Southern Appalachians (graduate-level)

Tectonics of the Scandinavian Caledonides (graduate-level)

Tectonics of the Himalaya (graduate-level)

Tectonics and climate change (graduate-level)

### Field Work

# **North America:**

New England Appalachians (Vermont, New Hampshire; 1986-1995, 1998, 2022)

Grenville Province, Central Ontario, Adirondacks (1992, 1995)

Death Valley, California (1993)

Northern New Mexico (1995)

Northern California (1998, 1999, 2013)

Southern Appalachians (Tennessee, North Carolina; 1999-2005)

Central and southeastern Oregon (2000-2005)

Southern Colorado, northern New Mexico (field camp; 2004-2008)

Northwest Nebraska and East Central Wyoming (2005-2006)

Santa Catalina Island, California (2013-2016)

NW Nevada (2025)

## Asia:

Central Nepal (1997, 2001, 2014)

Western Turkey (2006)

NW India (2007, 2009, 2018, 2023)

Bhutan (2008, 2011)

China and Tibet (2021, 2024)

# **South America:**

Southern Chile (1987)

Southern Argentina (2009, 2010, 2012, 2015)

Northern Argentina (2016)

# Europe:

Austria (1993, 2023)

Switzerland (1993, 2009)

Italy (2009, 2017, 2024)

Northern Norway (2010)

France (2019)

Greece (2019)

### Africa:

Mozambique (2015)

# Service (external):

Member, MSA Short Course Committee (2023- )

Editor, Treatise on Geochemistry, volume 2 "Earth's Lithosphere" (2021-2024)

Chair, AGU/VGP Kuno (young scientist) Award Committee (2019-2022)

Member, Executive Committee, AGU/VGP (2019-2022)

GPPC representative, GSA Rocky Mountain Section (2018-2021)

Member, GSA Geology and Public Policy Committee (2018-2021)

Member, AGU/VGP Kuno (young scientist) Award Committee (2018-2022)

Chair, Dana Award Committee, Mineralogical Society of America (2016-2017)

Member, Mineralogical Society of America Centennial Committee (2015-2018)

Chair, Mineralogical Society of America Nominations Committee (2015-2016)

Councilor (elected), Mineralogical Society of America (2015-2017)

Theme Session Co-Chair, "Mineralogy and Mineral Physics" Goldschmidt Meeting (2015-2016)

Chair, MSA Shortcourse Committee (2014-2015)

Chair, GSA Mineralogy-Geochemistry-Petrology-Volcanology Award committee (2013-2015)

Member, GSA Mineralogy-Geochemistry-Petrology-Volcanology Award committee (2012-2015)

Member, MSA Shortcourse Committee (2012-2016)

Secretary (elected), Volcanology-Geochemistry-Petrology section, AGU (2010-2012)

Member, Executive Committee, VGP section, AGU (2010-2012)

Member, Proposal Review Panel, NSF (2007-2009, 2015, 2017)

Member, Development Committee, SVP (2005-2015)

Member, Bowen Award Committee, VGP, AGU (2004-2006)

Editor, Reviews in Mineralogy and Geochemistry (2001-2002, 2006-2007, 2016-2017)

AE: Geological Society of America Bulletin (2001-2010)

AE: Journal of Geophysical Research (1998-2001)

Member, Proposal Review Panel, IGPP-LLNL (1998)

### **Reviewer for Funding Agencies (16):**

**US National Science Foundation:** 

Anthropology

**Continental Dynamics** 

Instrumentation and Facilities

Major Research Instrumentation

Petrology & Geochemistry

Post-doctoral Fellows

Sedimentary Geology and Paleobiology

**Tectonics** 

German Research Foundation

Graduate Women in Science

**IGPP-LLNL** 

Leakey Foundation

Petroleum Research Fund

Polish National Science Centre

Stanford Synchrotron Radiation Lightsource (SLAC National Accelerator Laboratory)

Swiss National Science Foundation

# Reviewer for Journals (36):

American Journal of Physical Anthropology

American Journal of Science

American Mineralogist

Biogeography

Canadian Mineralogist

**Chemical Geology** 

Contributions to Mineralogy and Petrology

**Current Anthropology** 

Earth and Planetary Science Letters

Geochimica et Cosmochimica Acta

Geological Society of America Bulletin

Geology

Geosphere

Geostandards and Geoanalytical Research

Journal of Archaeological Science

Journal of Biogeography

Journal of Ecology

Journal of Geology

Journal of the Geological Society

Journal of Geophysical Research

Journal of Metamorphic Geology

Journal of Petrology

Journal of South American Earth Sciences

Nature

**Nature Communications** 

Oecologia

Ore Geology Reviews

Palaeogeography, Palaeoclimatology, Palaeoecology

**Palaios** 

Paleobiology

PLoS One

Proceedings of the Idaho Academy of Science

Proceedings of the National Academy of Sciences

**Quaternary Science Reviews** 

Science

Science Advances

## **Other Review:**

IPCC AR6, chapters 1, 2, 3, 5, 7, 8, 9

# Service (internal – college, university, or administrative positions only):

Chair, Tenure and Promotion Committee, Department of Geosciences (2017-2021, 2022-present)

Member, Department Leadership Council (Geosciences) (2023-present)

Chair, Assistant Teaching Professor in Climate Search Committee (2024-2025)

Member, BSU Interdisciplinary Studies Committee (2008-present)

Chair, Geophysics Faculty Search Committee (2023-2024)

Judge, Graduate Student Showcase, Graduate College (2021-2024)

Chair, BSU Distinguished Professor Award Committee (2017-2019)

Chair, College of Arts and Sciences Tenure and Promotion Committee (2018-2019)

Chair, Department of Geosciences Lecturer Search Committee (2018-2019)

Member, BSU Distinguished Professor Award Committee (2011-2023)

Member, BSU Marshall Scholarship Committee (2015)

Member, BSU Honorary Doctorate Committee (2010-2013)

Member, BSU Employee Campaign Committee (2009-2011)

Member, BSU College of Arts and Sciences Awards and Honors Committee (2009-2011, 2016-2017, 2018-2019)

Director, Field Camp, Geological Sciences, USC (2005-2007)

Director, Undergraduate Studies, Geological Sciences, USC (2004-2005)

Member Electron Microscopy Center Advisory Committee, USC (2000-2006)

Chair, Ethics Committee, Geological Sciences, USC (1999-2006)

# Successful nominations and support for awards and recognitions:

AGU Bucher Medal (union award): Mark Harrison, Frank Spear

GSA Donath Medal (young scientist award): Elizabeth Catlos, Carmala Garzione

GSA Fellow: Dan Breecker, Bonnie Jacobs, Nadine McQuarrie, Delores Robinson, Caroline Strömberg, Bishal Upreti (international)

Metamorphic Studies Group Barrow Award: Pierre Lanari, Frank Spear

MSA Dana Medal (mid-career award): Daniela Rubatto, Frank Spear

SEPM Dickinson Medal (mid-career award): Carmala Garzione

## Professional development workshops and webinars (bold = multi-day)

### **Boise State University (134 hours total):**

2025 Access, accommodations and working with blind and low vision students. Spring, 2025, 1 hour

Student engagement techniques. Spring 2025, 1 hour

CITI training, Biosafety essentials. Spring 2025, 5 hours

CITI training, OSHA bloodborne pathogens. Spring 2025, 2 hours.

Cybersecurity awareness training (state-mandated). Spring, 2025, 1 hour

Workplace Training (state-mandated). Spring, 2025, 1 hour

2024 Artificial Intelligence 101. Spring, 2024, 1 hour

Cybersecurity awareness training (state-mandated). Spring, 2024, 1 hour.

Trauma-informed teaching. Spring, 2024, 2 hours.

Partners in student success: Integrating library resources in Canvas. Spring 2024, 1 hour

Hearing from your students: Strategies for soliciting mid-semester feedback. Fall 2024, 2 hours

Al prompt engineering for students. Fall 2024, 1.5 hours

2023 Respectful workplace training. Spring, 2023, 1 hour

Cybersecurity awareness training (state-mandated). Spring, 2023, 1 hour.

Queer Idaho History. Fall, 2023, 1 1/4 hours.

Cybersecurity awareness training (state-mandated). Fall, 2023, 1 hour.

Maintaining academic integrity in the age of artificial intelligence. Fall, 2023, 1 1/4 hours.

2022 Strategies for helping students feel heard. Spring, 2022, 1 hour

Responding to multilingual writers. Spring, 2022, 1 hour

Using online educational resources inclusively. Spring, 2022, 1 ½ hours

Supporting first-generation students. Spring, 2022, 3 hours

Cybersecurity awareness training (state-mandated). Spring, 2022, 1 hour

CITI training, Responsible Conduct of Research, Physical Sciences. Fall, 2022, 5 hours

CITI training, Social and Behavioral Researchers (IRB). Fall, 2022, 2 hours

CITI training, Foreign influence. Fall, 2022, 1 hour

Cybersecurity awareness training (state-mandated). Fall, 2022, 1 hour

LGBTQIA+ fundamentals. Fall, 2022, 1 hour

LGBTQIA+ allyship. Fall, 2022, 1 hour

2021 Multilingual students' advice for their instructors. Spring, 2021, 1 hour

Multilingual students and timed testing: What's Fair? Spring, 2021, 1 hour

2020 Building team growth mindset: Ways to help students learn from team projects, Spring, 2020, 1 hour Online flexible teaching institute, Summer, 2020, 3 weeks (36 hours).

2019 Inclusive mentoring strategies in graduate education, Spring, 2019, 1 hour

The class ceiling in higher education: policies and practices that perpetuate class-based inequality, Spring, 2019, 1 hour

CITI training, Social and Behavioral Researchers (IRB), Fall, 2019, 2 hours

2018 Course Design Institute. Summer, 2018, 1 week (36 hours).

Integrating research and teaching: Three approaches, Fall, 2018, 1 hour

**2017** Inclusive excellence at Boise State: Creating an environment that values and supports all members, Fall 2017, 1 hour

Addressing barriers for students facing mental health challenges, Fall, 2017, 1 hour

Microaggressions in the classroom: What are they and what can I do about them? Fall, 2017, 1 hour Just-in-Time teaching, Spring, 2018, 1 hour

2016 CITI training, Social and Behavioral Researchers (IRB). Fall, 2016, 6 hours

## Society- or industry-sponsored (125 hours total):

- 2024 NOLS: Hybrid Wilderness First Responder recertification. Winter, 2024, 24 hours total
- 2023 NOLS: Hybrid Wilderness First Responder training. Spring, 2023, 30 hours online + 5 days inperson (80 hours total)
- 2022 AGU: Building antiracist spaces. Spring, 2022, 1 hour
  - NAGT: Climate survey of the Geosciences: Disproportionate impacts on historically excluded groups. Spring, 2022, 1 hour.
  - NAGT: Building inclusive communities for research and scholarly activities. Spring, 2022, 1 hour
  - AGU/AGI Heads & Chairs webinar The not so great outdoors? Questioning how we recruit students from historically marginalized communities into the geosciences. Spring, 2022, 1 hour
  - AGU Honors program sections committee chairs training and implicit bias training. Spring, 2022, 1 hour
  - NAGT: Towards a more inclusive geosciences: Teaching strategies and policies to support all students. Summer, 2022, 1 hour
  - NAGT: Promotion, tenure, and the value of diversity, equity, and inclusion work. Summer 2022, 1 hour.
- **2021** AGU: Share and learn: leading DEI practices and other potential initiatives for AGU sections. Spring, 2021, 1 hour
  - CONVERGE: Understanding and ending gender-based violence in fieldwork training module: A demonstration webinar, Spring 2021, 1 hour
- 2018 NAGT traveling workshop, Fall, 2018, 2 days (12 hours)

# Publications († = $\geq$ 100 citations; †† = $\geq$ 250 citations; ††† = $\geq$ 500 citations; ††† = $\geq$ 1000 citations; Google basis)

**Books:** 4 books edited, 2 textbooks coauthored, 1 popular book authored.

- **2025** (7) **Kohn, MJ**, editor, (2025) Treatise on Geochemistry, 3<sup>rd</sup> edition, volume 2 Earth's Lithosphere. Elsevier, 1018 pp.
  - (6) Glazner, A and **Kohn, MJ** (2025) Petrology and Plate Tectonics an Earth Systems Approach. Oxford University Press. 630 pp.
- **2024** (5) Perkins, D, **Kohn, MJ**, and Brady, JB (2024) Optical Mineralogy: an open-source textbook for college-level students and educators (online textbook, 1<sup>st</sup> ed., July 2024) <a href="https://optical.minpet.org/">https://optical.minpet.org/</a>.
- **2023** (4) **Kohn, MJ** (2023) Tested: Adventures of an American Scientist in Pandemic China. Two-Track Press. 383 pp.
- **2017** (3) **Kohn, MJ**, Engi, M, and Lanari, P, editors, (2017) Petrochronology: Methods and Applications. Rev. Mineral. Geochem., v. **83**, Mineralogical Society of America and Geochemical Society, Washington, D.C. 575 pp.
- 2007 (2) Kohn, MJ, editor, (2007) Paleoaltimetry: Geochemical and Thermodynamic Approaches. Rev. Mineral. Geochem., v. 66, Mineralogical Society of America and Geochemical Society, Washington D.C. 278 pp.
- ††2002 (1) Kohn, MJ, Rakovan, J, and Hughes, J, editors, (2002) Phosphates: Geochemical, Geobiological and Materials Importance. Rev. Mineral. Geochem., v. 48, Mineralogical Society of America and Geochemical Society, Washington, D.C. 742 pp.
- Articles: 167 peer-reviewed papers published or in press. After 1991, double underlined names are undergraduate students; underlined names are graduate students; Google Stats: >21,000 citations, h=78
- **Review:** Kohn, MJ and Schwartz, D (2025) Rebooting REE<sup>3+</sup> radii in common minerals a practical approach. Contrib. Mineral. Petrol., in review.

<u>lonescu, A, Long, SP, **Kohn, MJ**, Larson, KP, Soignard, E and <u>Thompson, J</u> (2025) Structural data and thermometry indicate that the Tso Morari UHP nappe (Indian Himalaya) was emplaced as a large-scale, structurally coherent sheet. Tectonics, in review.</u>

Li, J, Ji, W-Q, Liu, X-C, Liu, J, **Kohn, MJ**, and Wu, F-Y (2025) Massive carbon storage in the upper mantle via diapirism of subducted continental sediments. Earth-Science Reviews, in review.

**Kohn, MJ** and Schwartz, D (2025) Revision of Y<sup>3+</sup> in common minerals based on trace element partitioning. Am. Mineral., in press.

Reynard, LM and **Kohn, MJ** (2025) Oxygen and hydrogen isotope compositions in dentine collagen correlate strongly with oxygen isotope compositions of enamel carbonate. Geochim. Cosmochim. Acta, in review.

Ding, H-X, Zhang, Z-M, and **Kohn, MJ** (2025) "S-type" granites generated from I-type sources. PNAS. In review.

- Stiles, E, Strömberg, CAE, Canares, BAD, Gelfo, JN, Sol Raigemborn, M, Kohn, MJ, Trayler, RB, Ibañez-Mejia, M, Erra, G, and Goin, F (2025) Phytoliths reveal Paleocene forest expansions preceded dryland vegetation in southern South America, GSA Bulletin, In review.
- 2025 (163) Corecco, L, Kohn, MJ, Pereira, VP, Reynard, LM, and Schultz, CL (2025) Paleoenvironmental and paleoecological reconstruction of Santa Maria Supersequence units (Middle to Late Triassic, Brazil) based on preliminary stable isotope data: influence of the Carnian Pluvial Event. Chem. Geol., 674, 122589.
  - (162) **Kohn, MJ** (2025) A simple method to create mineral mounts in thin section for teaching optical mineralogy. Am. Mineral., **110**, 328-335.
  - (161) Xu, W, Liu, L, **Kohn, MJ**, Liu, P-H, and Cai, J (2025) Late Triassic Alpine-type eclogite in the central Tibetan Plateau reveals 2,500 km-long Paleo-Tethys continental subduction. Geology, **53**, 23-28.
- 2024 (160) Ding, H-X, Kohn, MJ, Zhang, Z-M, and Niu, Z-X (2025) Tectonic implications of Permian arc rocks and their Cretaceous to early Cenozoic reworking in the southern Lhasa terrane. J. Geophys. Res., e2024JB029242.
  - (159) Corecco, L, **Kohn, MJ**, and Schultz, CL (2024) Triassic climate and the rise of the dinosaur empire in South America. J. South Am. Earth Sci., **142**, 104977.
  - (158) **Kohn, MJ**, Long, SP, and Harrison, TM (2024) Himalayan leucogranites: a minimal role in deformation. Elements, **20**, 381-387.
  - (157) Liu, L, **Kohn, MJ**, and Guo, J (2024) A Jurassic metamorphic-anatectic event in the Jiaodong Peninsula, eastern China: Zircon and titanite U-Pb ages of migmatites and their implications. Lithos, **470-471**, 107525.
  - (156) Liu, X-C, **Kohn, MJ**, Wang, J-M, <u>He, S-X</u>, Wang, R-C, and Wu, F-Y (2024) Formation of lithium-rich pegmatites via rapid crystallization and shearing case study from the South Tibetan Detachment, Himalaya. Earth Planet. Sci. Lett., **629**, 118598.
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# **Unreviewed Commentary and popular pieces**

- **Kohn, MJ** (2024) Tiny crystals capture millions of years of mountain range history a geologist excavates the Himalayas with a microscope. The Conversation. <a href="https://theconversation.com/tiny-crystals-capture-millions-of-years-of-mountain-range-history-a-geologist-excavates-the-himalayas-with-a-microscope-225415">https://theconversation.com/tiny-crystals-capture-millions-of-years-of-mountain-range-history-a-geologist-excavates-the-himalayas-with-a-microscope-225415</a>
- **Kohn, MJ** (2020) Acceptance of the Dana Medal of the Mineralogical Society of America for 2019. Am. Mineral., **105**, 768-769.
- **Kohn, M.J.**, <u>Castro, A.E.</u>, <u>Kerswell, B.C.</u>, Ranero, C.R., and Spear, F.S. (2019) Shear heating reconciles thermal models with the metamorphic rock record of subduction (vol 115, p 11706, 2018): Correction. Proc. Natl. Acad. Sci., **116**(33), 16651-16653.
- **Kohn, MJ** (2011) Reply to Freeman et al.: Carbon isotope discrimination by C3 plants. Proc. Natl. Acad. Sci., **108**, E61.
- **Kohn, MJ** (2008) Review of "Landmark Papers: Metamorphic Petrology" by Bernard Evans. Elements, **4**, 212.
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# **Presentations at International Meetings (\* = invited)**

- 86. **Kohn, MJ**, Thomas, L, and Couch, S (2025) Large QuiG datasets show large scatter implications of Raman spectroscopy for metamorphic barometry, mineral growth, and tectonics. Eclogite/Penrose Conference, Rohnert Park, CA.
- 85. Schwartz, DM and **Kohn, MJ** (2025) Ionic radii of the REE, 1: A novel method to refine ionic radii shows Y<sup>3+</sup> is smaller than assumed in common minerals. European Geosciences Union annual meeting, Vienna.
- 84. **Kohn, MJ** and Schwartz, DM (2025) Ionic radii of the REE, 2: A practical revision to REE<sup>3+</sup> radii in common minerals. European Geosciences Union annual meeting, Vienna.
- 83. Ding, HX, Zhang, ZM, **Kohn, MJ** (2024) Himalayan "S-type" granite generated from I-type sources. GSA annual meeting, Anaheim.
- 82. **Kohn, MJ** (2023) A simple method to create mineral mounts in thin section to teach comparative relief, color, pleochroism, and birefringence in optical mineralogy. GSA annual meeting, Pittsburgh.
- 81. **Kohn, MJ**; Liu, X-C; Wu, F-Y (2022) Lithium pegmatites in the Himalayan crest 2: A new fractionation model for water- and metal-rich melts. GSA annual meeting, Denver.
- 80. Liu, X-C, **Kohn, MJ**; Wang, J-M; Wang, R-C; Wu, FY (2022) Lithium pegmatites in the Himalayan crest, 1: Structural environment, geochemistry, and age. GSA annual meeting, Denver.
- 79. **Kohn, MJ** (2021) Optical mineralogy reference tutorials and unknowns on YouTube. Earth Educators' Rendezvous, virtual.
- Kohn, MJ, Long, SP, Kerswell, BC, Starnes, JK, Larson, KP, Blackford, NR and Soignard, E (2020) Quartz petrofabrics and RSCM thermometry constrain the P-T-t history of the UHP Tso Morari metamorphic complex, northern India: cool, shallow, and possibly slow. AGU annual meeting, San Francisco.
- \*Kohn, MJ, Harvey, KM, and Kerswell, BC (2020) Reducing uncertainties in Zr-in-rutile thermometry. GSA annual meeting, Montreal/on-line
- 76 \*Kohn, MJ (2019) MSA Dana medal lecture: New frontiers in metamorphic petrology and paleoecology. GSA annual meeting, Phoenix
- 75 **Kohn, MJ**, Castro, AE, and Spear, FS (2017) Shear heating and metamorphism in subduction zones, 1. Thermal models. AGU annual meeting, New Orleans.
- **\*Kohn, MJ** and Kelly, NM (2017) On the trail of metamorphic zircon growth. GSA annual meeting, Seattle.
- 73 **Kohn, MJ** and Penniston-Dorland, SC (2017) Diffusion: obstacles and opportunities in petrochronology. RiMG petrochronology workshop, Seattle.
- 72 **Kohn. MJ** (2017) Titanite petrochronology. RiMG petrochronology workshop. Seattle.
- 71 **Kohn, MJ** (2017) Shear heating inferred from heat flow data reconciles subduction zone thermal models with blueschist and eclogite P-T conditions. Goldschmidt annual meeting, Paris.
- 70 **Kohn, MJ** and Kelly, NM (2017) Quantitatively linking garnet and zircon REE chemistry to metamorphic P-T paths. EGU annual meeting, Vienna.
- 69 **Kohn, MJ** and Penniston-Dorland, SC (2017) Diffusion: obstacles and opportunities in petrochronology. RiMG petrochronology workshop, Vienna.
- 68 **Kohn, MJ** (2017) Titanite petrochronology. RiMG petrochronology workshop, Vienna.
- 67 **Kohn, MJ** and Penniston-Dorland, SC (2016) Reevaluating reaction rates from diffusion profiles in minerals and effects on trace element thermometers. AGU annual meeting, San Francisco.

- **Kohn, MJ** (2015) Carbon isotope discrimination in C3 land plants is independent of atmospheric P<sub>CO2</sub>. AGU annual meeting, San Francisco.
- 65 **Kohn, MJ**, Penniston-Dorland, SC, and Ketcham, RA (2015) Putting the brakes on geospeedometry why simple diffusion profiles yield maximum cooling rates. GSA annual meeting, Baltimore
- \*Kohn, MJ (2014) Himalayan metamorphic chronology comes of age review and prospects. GSA Annual Meeting, Vancouver.
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- \*Kohn, MJ (2014) No correction of terrestrial C3-plant carbon isotope compositions for pco2. North American Paleontological Convention, Gainesville, FL. Paleontological Society Special Publications, 13. 42.
- \*Kohn, MJ (2013) "Geoba-Raman-try": calibration of spectroscopic barometers for mineral inclusions. AGU fall meeting, San Francisco.
- 59 **Kohn, MJ** (2013) The leucogranite-migmatite problem in the east-central Himalaya. GSA annual meeting, Denver.
- Kohn, MJ, Strömberg, CAE, Madden, RH, Dunn, RE, Carlini, AA (2011) Stable isotope record of middle Eocene to early Miocene climate, Gran Barranca, southern Argentina. SVP Annual Meeting, Las Vegas.
- 57 **Kohn, MJ** and Corrie, SL (2011) Preserved Zr-temperatures and U-Pb ages in high-grade metamorphic titanite: evidence for a static hot channel in the Himalayan orogen. GSA annual meeting, Minneapolis
- 56 <u>Corrie SL</u> and **Kohn, MJ** (2010) Metamorphic history of the central Himalaya, Annapurna region, Nepal and implications for models of tectonic evolution. GSA annual meeting, Denver.
- \*Kohn, MJ (2010) Terrestrial carbon isotope paleoecology in a C3 world. SVP annual meeting, Pittsburgh.
- \*Kohn, MJ (2010) Distinguishing geodynamic models via Himalayan P-T-t histories. Collisional Orogenesis in the Scandinavian Caledonides planning meeting, Åre, Sweden.
- \*Kohn, MJ (2009) Metamorphic and chronologic constraints on Himalayan thermal-mechanical models. GSA annual meeting, Portland.
- 52 **Kohn, MJ**, Sachan, HK, Saxena, A, and Corrie, SL (2009) High Himalayan leucogranites indicate brief (≤3 Myr) ductile extension on the STDS. GSA annual meeting, Portland.
- \*Kohn, MJ (2009) Chronologic microanalysis of monazite. Goldschmidt annual meeting, Davos, Switzerland. [keynote]
- **Kohn, MJ** and Chambers JA (2009) Two nearly single-mineral monitors of the activity of rutile, 1: calibration. Goldschmidt annual meeting, Davos, Switzerland.
- **Kohn, MJ** and Zanazzi, A (2008) Carbon isotopes in fossil sequences as aridity proxies. GSA abs. prog., **40**.
- 48 **Kohn, MJ**, Corrie, SL, and Vervoort, JD (2007) The relationship between garnet growth and MSWD's in garnet Lu-Hf dating. EOS, **88**,
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- 144. Yakymchuk, C, and **Kohn, MJ** (2025) Chemical mohometry? A petrological modeling interrogation. Goldschmidt annual meeting, Prague.
- 143. Farfan, GA, <u>Fink, JT</u>, Negrete, M, **Kohn, MJ**, Rakovan, JF, Hsu, TY, Bemis, KE, and Hawkins, MT (2025) Crystal structure and chemistry of enamel and enameloid bioapatite from across the Tree of Life. Goldschmidt annual meeting, Prague.
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- 140 <u>Thompson, J, Markthaler, M, Kohn, MJ, Shah, S,</u> Ionescu, A, Long, S, and Schwartz, D (2024) Breaking new ground and revisiting the old: sampling underexplored regions of northernmost India while reassessing age and temperature the Himalaya's most studied metamorphic rock. Idaho Mining Conference, Boise.
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- 136 <u>Ionescu, A</u>, Long, SP, **Kohn, MJ** (2024) Geologic map of the Tso Morari ultrahigh pressure nappe, northwestern Indian Himalaya: implications for construction of a large-scale coherent UHP thrust sheet. GSA annual meeting, Anaheim.
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- 132 <u>Fink, J, Kohn, MJ</u>, and Mazumder, B (2024) Characterization of rare earth elements in fossilized enamel bioapatite for atom probe tomography. Graduate student showcase, Boise.
- 131 <u>Markthaler, M</u>, Thompson, J, **Kohn, MJ**, <u>Shah, S</u>, Ionescu, A, Long, S, and Schwartz, D (2024) Moving mountains: determining temperature distribution in the Himalaya's earliest metamorphic rocks. Undergraduate student showcase, Boise.

- 130 <u>Thomas, A</u> and **Kohn, MJ** (2024) Using Raman spectroscopy to validate metamorphic P-T paths from western New Hampshire. Northeast GSA meeting, Manchester.
- 129 <u>Byrne, A</u>, **Kohn**, **MJ**, Reynard, L, and Plew, M (2023) Oxygen and carbon isotopes in modern and historic mussels from the Snake River, Idaho, may show modern rise of corn production. Undergraduate Research Showcase, Boise State University.
- 128 <u>Stiles, E, Strömberg, CAE, Canares, B, Erra, G., Gelfo, JN, Goin, F, **Kohn, MJ**, Madden, RH, Trayler, RB, Bauzá, N., and Galleher, T (2023) Early South American grasses (Paleocene-Eocene) occupied forested ecosystems. Botanical Society of America annual meeting.</u>
- 127 <u>Kerswell, B</u> and **Kohn, MJ** (2022) A comparison of surface heat flow interpolations near subduction zones. AGU Fall meeting, Chicago.
- 126 Long, S, **Kohn, MJ**, <u>Kerswell, B</u>, <u>Starnes, J</u>, Larson, K, Blackford, N, and Soignard, E (2021) Protracted Eocene to Oligocene exhumation of the Tso Morari UHP nappe, northwestern Himalaya: insights from thermometry and microstructural analysis. AGU Fall meeting, New Orleans.
- 125 <u>Phillips, A, Crowther, E, Reynard, LM, and **Kohn MJ** (2021) Testing the validity of Bogus Basin Ponderosa Pines as an atmospheric CO2 climate proxy. Boise State Undergraduate Research Symposium.</u>
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- 123 <u>DuPree, K</u>, Reynard, LM, Belthoff, JR and **Kohn MJ** (2021) Do barn owls flock to Idaho only to meet their demise?: An analysis of the geographic origin of road-killed owls along an interstate highway. Annual Meeting Raptor Research Foundation.
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- 120 <u>Yao, J</u>, Castro, AE, **Kohn, MJ**, and Spear FS (2021) Garnet nucleation overstepping: a potential mechanism for fluid production within the seismic-aseismic transition in subduction zones. Northeast GSA annual meeting.
- 119 <u>Couch, S, Kohn, MJ, Cizina, MF, Croft, KL</u>, and Garber, JM (2020) Petrologic re-evaluation of classic Tauern Window (Austria) rocks corroborates the first P-T path calculated from chemical zoning in garnet. AGU Fall meeting, San Francisco.
- 118 Long, SP and **Kohn, MJ** (2020) Distributed ductile thinning (DDT) during thrusting: an overlooked exhumation mechanism for mid-crustal rocks. AGU Fall meeting, San Francisco.
- 117 <u>Schroeder, K, Cizina, MF, Couch, S,</u> and **Kohn MJ** (2020) When Earth's tectonic plates collide: Reevaluation of the pressure and temperature history of metamorphic rocks in the eastern Alps. Boise State Undergraduate Research Symposium
- 116 Crifo, C, Bargo, MS, Cuitiño, JI, Kay, RF, **Kohn, MJ**, Trayler, RB, Vizcaíno, SF, Zucol, AF, and Strömberg, CAE (2020) Habitat heterogeneity and vegetation response to the middle-Miocene climatic optimum in the Santa Cruz Formation (Patagonia). Midcontinental Paleobotanical Colloquium
- 115 Stiles, E, Strömberg, CAE, Erra, G, Gelfo, J, Goin, F, Kohn, MJ, Madden, RH, Trayler, RB, Bauzá, N, Gallaher, T, Iglesias, A (2020) Paleocene Eocene vegetation and early grass ecology in the San Jorge Basin of Argentine Patagonia. Midcontinental Paleobotanical Colloquium

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- 113 <u>Kerswell, B</u>, **Kohn, MJ**, and Gerya, T (2019) Backarc Thermal Structure Controls Slab-Mantle Viscous Coupling Depth in Subduction Zones. Graduate Student Showcase, Boise State University.
- 112 Baker, R, **Kohn, MJ**, Penniston-Dorland, SC, and Feineman, MD (2019) Benefits of International Collaboration for Professional and Scholar-Network Development: A 4-year Evaluation of NSF PIRE: E-FIRE. AGU Fall Meeting, San Francisco.
- 111 <u>Cizina, MF</u>, **Kohn, MJ**, Mikesell, D, and Trayler, R (2019) Optimizing Raman analyses of quartz and zircon inclusions in garnet. AGU Fall Meeting, San Francisco.
- 110 <u>Howell, A</u>, and **Kohn, MJ** (2019) Disparities in reconstructing pressure temperature paths for Alpine metamorphic rocks: elastic geobarometry vs. thermodynamics. AGU Fall Meeting, San Francisco.
- 109 Hervig, RL, **Kohn, MJ**, <u>Drewicz, A</u>, (2019) Experimental evidence for slow diffusion of trace elements in tooth enamel. AGU Fall Meeting, San Francisco.
- 108 Penniston-Dorland, S, <u>Harvey, KM</u>, <u>Walker, S</u>, Starr, PG, **Kohn, MJ**, Baxter, E (2019) Evaluating the Timescales of Tectonic Mélange-forming Processes Using Sm-Nd Garnet Geochronology. AGU Fall Meeting, San Francisco.
- 107 \*Suarez, C, **Kohn, MJ**, Suarez, MB, Travis Taylor, LM, Yamamura, D, Jackson, T, Oberg, D, Park Boush, LE, Minzoni, RT, Titus, A, Tompkins, T, Frucci, MN, Antonietto, LS (2019) Big to small: biogeochemical signals of dinosaurs to ostracods and everything in between. GSA annual meeting, Phoenix.
- 106 Liu, X-C, Wu, F-Y, Kohn, MJ, Liu, Z-C, Yang, L, Ji, W-Q (2019) Two-mica granite as a complement to crystal accumulation: Insights from the Eocene Lhunze pluton-subvolcanic complex, South Tibet. HKT conference, Bozeman
- 105 <u>Crifò, C,</u> Bargo, MS, Cuitiño, JI, Kay, RF, **Kohn, MJ**, <u>Trayler, RB</u>, Vizcaíno, SF, Zucol, AF, Strömberg, CAE (2018). Phytolith assemblages record vegetation history during the Middle Miocene Climatic Optimum in the coastal Santa Cruz Formation, Patagonia, Argentina. AGU annual meeting, Washington, D.C.
- 104 <u>Harvey, KM</u>, Starr, PG, Walker, S, Penniston-Dorland, SC, **Kohn, MJ**, Baxter, E (2018) Petrochronologic constraints on the thermal evolution of the Catalina Schist. AGU annual meeting, Washington, D.C.
- 103 <u>Trayler, R</u>, Schmitz, M, and **Kohn, MJ** (2018) Using varied data types to assign realistic age uncertainties to stratigraphic sequences and proxy records. GSA abs. prog., **50**.
- 102 <u>Castro, AE, Spear, FS, and **Kohn, MJ** (2018). Shear heating in subduction zones: implications for thermal models and metamorphic P-T paths. GSA abs. prog., **50**, n2</u>
- 101 Kerswell, B, Gerya, T. and **Kohn, MJ** (2018). A physical mechanism explaining the common depth of slab-mantle coupling and formation of a rheologic backstop at ~80 km depth: Goldschmidt Conference Abstracts.
- 100 <u>Crifo, C, Bargo, MS, Cuitiño, JI, Kay, RF, **Kohn, MJ**, <u>Trayler, RB</u>, Vizcaíno, SF, Zucol, AF, and Strömberg, CAE (2018) Habitat shift during the Middle Miocene climatic optimum of southern Patagonia recorded in phytolith assemblages. International Paleontological Congress, Paris.</u>
- 99 <u>Drewicz, AE</u> and **Kohn, MJ** (2017) Stable isotopes in large herbivore tooth enamel capture a mid-Miocene precipitation spike in the interior Pacific Northwest. AGU annual meeting, New Orleans.

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- 97 <u>Crifo, C, Bargo, MS, Cuitiño, JI, Kay, RF, **Kohn, MJ**, <u>Trayler, RB</u>, Vizcaíno, SF, Zucol, AF, and Strömberg, CAE (2017) Fossil phytolith assemblages from Southern Patagonia indicate changing habitats during the Middle Miocene Climatic Optimum. GSA annual meeting, Seattle.</u>
- 96 <u>Harvey, KM</u>, Penniston-Dorland, SC, and **Kohn, MJ** (2017) Origin of exotic blocks in the Catalina schist: implications for movement along the subduction interface. GSA annual meeting, Seattle.
- 95 <u>Trayler, RB,</u> **Kohn, MJ**, Bargo, S, Cuitiño, JI, Kay RF, Strömberg, CAE, and Vizcaíno, SF (2017) Ecology and climate of the Miocene Santa Cruz Formation, Argentina. GSA annual meeting, Seattle.
- 94 <u>Trayler, RB</u>, Schmitz, MD, Bargo, S, Cuitiño, JI, Kay RF, Kohn, MJ, Strömberg, CAE, and Vizcaíno, SF (2017) A new approach for developing continuous age-depth models from dispersed chronologic data: applications to the Miocene Santa Cruz Formation, Argentina. GSA annual meeting, Seattle.
- 93 Moran, KA, Johnson, DH, Evans, S, **Kohn, MJ**, and Belthoff (2016) Investigation of the Geographic Origin of Burrowing Owl Fleas with Implications for the Ecology of Plague. Idaho Conference on Undergraduate Research, Boise.
- \*Strömberg, CAE, Dunn, RE, Madden, RH, **Kohn, MJ**, and Carlini, AA (2016) The curious case of Cenozoic South America: Assembling the grassland biome with almost no grasses. International Meeting for Phytolith Research, Aix-en-Provence.
- 91 Crifò, C, Bargo, MS, Kay, RF, **Kohn, MJ**, Vizcaíno, SF, Zucol, AF, and Strömberg, CAE (2016) Using phytolith to track vegetation changes during the MMCO of the Santa Cruz Formation, Patagonia (Argentina). Annual meeting of the International Palynological Conference/ International Organization of Botany Conference, Brazil.
- 90 Penniston-Dorland, SC, **Kohn, MJ**, Piccoli, PM (2016) Zr-in-rutile thermometry of the Catalina Schist mélange, estimating a<sub>SiO2</sub> in the absence of quartz, and implications for subduction interface rheology. GSA annual meeting, Denver.
- 89 Trayler, R, and **Kohn, MJ** (2016) Enamel maturation resets appositional isotope compositions. GSA annual meeting, Denver.
- 88 Drewicz, AE, **Kohn, MJ**, Pigati, JS and Springer, KB (2016) Understanding seasonal precipitation in the upper Las Vegas Wash during the late Quaternary using stable carbon and oxygen isotopes in fossil teeth and tufa. GSA annual meeting, Denver.
- 87 Trayler, R, and **Kohn, MJ** (2016) Enamel maturation is independent of appositional geometry. Society of Vertebrate Paleontology annual meeting, Salt Lake City.
- 86 Hartmann, CM, Evans, SL, **Kohn, MJ**, and Heath, JA (2016) Investigating deuterium depletion in American Kestrel (*Falco sparverius*) nestlings using growth rates. Idaho Conference for Undergraduate Research. Boise, ID.
- 85 Callery, KR, Burden, S, Hayden, EJ, Hartmann, CM, Evans, SL, **Kohn, MJ** and Heath JA (2016) What is more costly? The effect of migration and resident wintering strategies on telomeres of American Kestrels (*Falco sparverius*). Idaho Conference for Undergraduate Research. Boise, ID.
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- 83 Pucéat, E, Skrzypek, G, Joachimski, MM, **Kohn, MJ**, Dennis, K, Lécuyer, C, and Evans, S (2016) Determination of the stable oxygen isotope composition of bioapatites: an interlaboratory comparison study. Goldschmidt meeting, Yokohama.
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- 79 Penniston-Dorland, SC, **Kohn, MJ**, and Manning, C (2015) The global range of subduction zone thermal structures from exhumed blueschists and eclogites: rocks are hotter than models. AGU annual meeting San Francisco. T13H-07.
- 78 Lytle, M and **Kohn, MJ** (2015) Development of a laser ablation ICP-MS rutile standard. AGU annual meeting, San Francisco. V33D-3126.
- 77 McNamara, J, Marshall, H-P, **Kohn, MJ**, Evans, S and Flores, A (2015) Lateral flow in snow as a runoff generation mechanism. AGU annual meeting, San Francisco. C44B-01
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- 74 Drewicz, A, **Kohn, MJ**, and Fremd, TJ (2015). Stable isotopes in large herbivore tooth enamel show mid-Miocene soaking of central Oregon. GSA annual meeting, Baltimore.
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- 71 Penniston-Dorland, SC, **Kohn, MJ**, and Manning, C (2014) Exhumed blueschists and eclogites: Hotter than the average model. AGU annual meeting, San Francisco.
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- Robinson, DM, Khanal, S, **Kohn, MJ**, and Mandal, S (2014) A new model for building the Himalaya using the Greater Himalayan thrust system. GSA Annual Meeting, Vancouver.
- 68 Trayler, R, and **Kohn**, **MJ** (2014) Infrared spectroscopy of bioapatite from taxonomically diverse modern teeth implications for diagenesis. GSA Annual Meeting, Vancouver.
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