Yoseph Datu Adiatma, Ph.D.

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Education

PhD in Earth Science, *The Ohio State University* Fall 2023
Dissertation title: Chemostratigraphic and numerical modeling constraints on Ordovician climate, carbon cycling, and carbonate diagenesis
Advisor: *Matthew R. Saltzman*

MS in Earth Science, *The Ohio State University* Fall 2018
Thesis title: Did early land plants produce a step-change in atmospheric oxygen centered on the Late Ordovician Sandbian Age ~458 Ma?
Advisor: *Matthew R. Saltzman*

BS in Geology, *Institut Teknologi Bandung* Spring 2014
Thesis title: The geology and shale gas reservoir potential of Tanjung Formation in Suato District, Barito Basin, Indonesia
Advisors: *Benyamin Sapiie* and *Dwiharso Nugroho*

Academic Appointments and Research Experience

Postdoctoral Research Associate, Florida State University 2024 - present
Conducted a field campaign to collect samples and perform geochemical analyses (trace metal concentrations, Fe speciation, I/Ca) on Paleozoic-aged sedimentary rocks to reconstruct the paleoredox states of Cambrian - Ordovician oceans, and mentor undergraduate and graduate students.

Postdoctoral Research Associate, The Ohio State University Fall 2023
Performed calcium isotope analyses ($\delta^{44/40}Ca$) on Paleozoic-aged carbonate rocks and developed numerical models to constrain the role of diagenesis in affecting geochemical proxies in carbonate rocks.

Graduate Research Associate, The Ohio State University 2019 - 2023
Performed laboratory maintenance (e.g., repairing Milli-Q system, replacing fume hood motors, and scroll pump maintenance), assisted visiting scientists in the Clean Lab and TIMS Lab, collected samples, performed geochemical analyses ($\delta^{7}Li$, $^{87}Sr/^{86}Sr$, ε_{Nd}, Sr/Ca, $\delta^{44/40}Ca$) on Ordovician-aged carbonate rocks, and developed a suite of numerical models to reconstruct changes in global silicate weathering and its role in causing climate cooling.

Professional Experience

Subsurface Geologist, Vico Indonesia (contract-via LAPI ITB) 2014 – 2016
Developed static reservoir models for the Semberah Field (Kutai Basin), using integrated geological and petrophysical data, performed petrophysical analysis and resource estimation using industry-standard software (Petrel and Geolog), collaborated with multidisciplinary teams to characterize reservoir properties and estimate remaining hydrocarbon resources.

Field Geologist, Noras Nusantara Summer 2012

Conducted comprehensive geological mapping of coal seam formations to support client exploration and development projects. Executed intensive 10-day field campaign in Nanga Mentebah, West Kalimantan, collecting geological data and samples across diverse terrain conditions. Prepared detailed technical reports documenting coal seam characteristics, geological interpretations, and resource assessments for client deliverables. Demonstrated proficiency in field data collection, geological logging, and translating complex geological findings into actionable recommendations for mining operations.

Field Engineer Intern, Schlumberger Summer 2011

Gained hands-on experience in oilfield operations through direct participation in drilling and measurement activities at Limau Field South Sumatra. Assisted senior field engineers with tool lay down procedures and Measurement While Drilling (MWD) operations. Assisted in various sensor calibration processes to maintain accuracy of downhole measurement tools. Completed comprehensive intern project utilizing Petrel software for reservoir modeling and analysis.

Publications

Peer-reviewed articles

2024 Adiatma, Y.D., Saltzman, M.R., Liu X-M., Wang, X-K., Edwards, C.T., Lithium isotope stratigraphy and Ordovician weathering. *Earth and Planetary Science Letters* 647, 119030.

2024 Adiatma, Y.D., Saltzman, M.R., Griffith, E.M., 2024. Calcium isotope constraints on a Middle Ordovician carbon isotope excursion. *Earth and Planetary Science Letters* 641, 118805.

2022 Avila, T.D., Saltzman, M.R., Adiatma, Y.D., Joachimski, M.M., Griffith, E.M., Olesik, J.W., 2022. Role of seafloor production versus continental basalt weathering in Middle to Late Ordovician seawater $^{87}Sr/^{86}Sr$ and climate. *Earth and Planetary Science Letters* 593, 117641.

2022 Conwell, C.T., Saltzman, M.R., Edwards, C.T., Griffith, E.M., Adiatma, Y.D., 2022. Nd isotopic evidence for enhanced mafic weathering leading to Ordovician cooling. *Geology* 50, 886-890.

2019 Adiatma, Y.D., Saltzman, M.R., Young, S.A., Griffith, E.M., Kozik, N.P., Edwards, C.T., Leslie, S.A., Bancroft, A.M., 2019. Did early land plants produce a stepwise change in atmospheric oxygen during the Late Ordovician (Sandbian ~458 Ma)?. *Palaeogeography, Palaeoclimatology, Palaeoecology* 534, 109341.

Manuscripts in review / in preparation

in review Wang, X-K., Liu, X-M., Husinec, A., Cao, C., Dera, G., Adiatma, Y. D., Lithium isotope evidence for enhanced hydrothermal activity in the Jurassic, in review for *Earth and Planetary Science Letters*

in preparation Adiatma, Y.D., Schwarts, M.J., Ahlberg, P., Young, S.A, Owens, J.D., Multiproxy chemostratigraphic constraints on paleoredox conditions during the Early to Middle Ordovician interval in the Baltic Basin, *in preparation*

Research Grants

2025	CRC Seed Grant Research Fund ($70,000)
2020	Graduate Student Research Grants, Geological Society of America ($2,800)
2020	Grants-in-Aid, American Association of Petroleum Geologist ($2,500)
2017 - 2021	Friends of Orton Hall, The Ohio State University, School of Earth Sciences (varied from $1,500 to $5,000)
2013	L. Austin Weeks Grant American Association of Petroleum Geologist ($500)

Teaching Experience

Lecturer, ESC1000 Introductory Earth Science (Instructor of Record) Fall 2024
Florida State University, Dept. Earth Ocean & Atmospheric Science
Designed and delivered lectures, developed course materials, and assessed student learning in a large introductory class (207 students); Integrated active learning strategies to enhance student engagement and foster critical thinking.

Guest Lecturer, ES2155/ENR2155 Energy and Environment Spring 2023
The Ohio State University, School of Earth Sciences
Delivered a lecture focused on Earth system dynamics and anthropogenic climate change; led and facilitated students in discussion that focused on connecting earth science concepts to current anthropogenic global warming.

Teaching Assistant, ES5189 Field Geology Summer 2023
The Ohio State University, School of Earth Sciences
Supported a six-week field camp in Utah, guided students through hands-on geological mapping and data collection exercises and coordinated field logistics to ensure safety and effective learning experiences for a group of students with diverse physical fitness, abilities, and academic backgrounds.

Teaching Assistant, ES1200 Introduction to Earth Science (Lab) Spring 2022
The Ohio State University, School of Earth Sciences
Taught lab sessions for introductory Earth science, incorporating practical exercises to solidify student comprehension of basic earth science concepts, and provided one-on-one support during office hours

Teaching Assistant, ES1122 Earth through Time (Lab) Fall 2020
The Ohio State University, School of Earth Sciences
Developed online lab materials and spearheaded efforts to transition the course to a virtual format during the pandemic, ensuring continuity in student learning, taught lab. sessions and provided academic support through virtual office hours, adapting teaching methods to remote learning.

Teaching Assistant, ES1121 Dynamic Earth (Lab) Spring 2019
The Ohio State University, School of Earth Sciences
Taught lab sessions for introductory Earth science, incorporating practical exercises a solidify student comprehension of basic earth science concepts and provided one-on-one support during office hours

Head Teaching Assistant, Sedimentology Spring – Fall 2013
Institut Teknologi Bandung, Geology Study Program
Led and managed a team of teaching assistants, developed lab materials, and organized geologic field trips for a class of over 80 students.

Teaching Assistant, Petroleum Geology and Well Logging & Petrophysics Fall 2013
Institut Teknologi Bandung, Geology Study Program
Taught lab sessions for Petroleum Geology and Well Logging & Petrophysics. Provided one-on-one support during office hours.

Undergraduate Student Mentoring

Mackenzie Fravel, Florida State University Summer 2024 - Present
Thesis title: Records of Early Ordovician Carbon Cycling in Deep Water Settings from Baltica

Josh Crassey, Florida State University Fall 2024 - Present
Thesis title: Records of Middle Ordovician Carbon Cycling in Deep Water Settings from Baltica

Blake Roberts Florida State University Spring 2025 - Present
Thesis title: -

Lucas Carter, The Ohio State University Spring 2019 – Fall 2022
Thesis title: Lithofacies and Neodymium Isotope Stratigraphy of the Knox Unconformity in the Central Appalachian Basin

Graduate Student Mentoring

Gwen Barnes, Florida State University (PhD) Spring 2024 - Present
Thesis title: *TBD*

Charlie Smith, Florida State University (MS) Fall 2024 - Present
Thesis title: *TBD*

Honors and Awards

2022	The Michael S. Johnson Outstanding Graduate Student Award, The Ohio State University, School of Earth Sciences
2010 – 2013	Dean's List, Institut Teknologi Bandung, Faculty of Earth Sciences and Technology

Laboratory Technical Skills

Mass Spectrometry, Thermal Ionization Mass Spectrometer (TIMS)
- Isotope analysis for Sr, Nd, Sm, and Ca isotopes
- Basic maintenance and troubleshooting

Mass Spectrometry, Inductively Coupled Plasma Mass Spectrometer (ICP MS)

- High-precision trace element analysis
- Method development for trace element analysis in geologic materials
- Basic maintenance and troubleshooting

Mass Spectrometry, Inductively Coupled Plasma Optical Emission Spectrometer (ICP OES)

- High-precision major and trace element analysis

Geochemistry, Clean Lab. Protocols

- Column chemistry (Sr, Li, Nd, Sm, Ca, U, Tl)
- Ultra-low blank sample processing for sub ppb elemental concentration analysis
- Basic plumbing and lab. maintenance

Geochemistry

- Iron speciation
- Chromium Reducible Sulphate Extraction
- UV Spectrophotometry
- Basic lab. maintenance

Field Geology Technical Skills

Sedimentology and Stratigraphy

- High-resolution stratigraphic logging
- Facies analysis and sequence stratigraphy

Structural Geology and Tectonics

- Geologic Mapping
- Structural geology mapping and fault kinematic analysis

Computational Technical Skills

Programming and Data Analytics, Python and Matlab

- Statistical analysis
- Data visualization using Matplotlib and Seaborn
- Statistical learning techniques (regression and convolutional neural network) using Sci-Kit Learn and PyTorch
- Geochemical Modeling (isotope mixing model, reservoir box model, diagenesis model)
- Timeseries analysis
- Stochastic Inverse Modeling

Industry Standard Software and Application, Petroleum Geology

- Static reservoir modeling: Petrel
- Petrophysical analysis: Gelog, TehcLog, and Interactive Petrophysics
- Seismic Stratigraphy: Kingdom

Field Work Experience

Trail Creek, Idaho (USA), 12 days	2024
Colliers town, Virginia (USA), 7 days	2019
Germany Valley, West Virginia (USA), 7 days	2018
Antelope Range, Nevada (USA), 7 days	2018
East River Mountain, West Virginia (USA), 7 days	2017
Tapin District, South Kalimantan (Indonesia), 35 days	2013
Nanga Mentebah, West Kalimantan (Indonesia), *10* days	2013

Community Service and Leadership Roles

Reviewer 2023 - present

Conducted scientific manuscript review for scientific journals, which include Geology, Science Advances, Geochimica et Cosmochimica Acta, Journal of Marine and Petroleum Geology, Sedimentary Geology, Chemical Geology

Session Organizer, GSA Southeastern Section Meeting 2025

T19. Co-evolution of Life and its Environment: From Biodiversification Events to Mass Extinction and Everything in Between

Organized and coordinated a scientific session for the Geological Society of America Southeastern Section Meeting, managing abstract review, speaker selection, and session logistics.

Earth Science Delegate, Council of Graduate Student 2022

The Ohio State University

Represented graduate students at the School of Earth Sciences at a university-level graduate student government. Together with other council members, played an active role in passing resolutions to improve graduate students' well-being. One of the resolutions we passed proposed an increase in university/employee health insurance contribution from 85% to 100%, which was later brought up to the university senate, approved, and implemented starting in the Fall 2023 semester.

Student Representative, Graduate Study Committee 2022

The Ohio State University, School of Earth Sciences

Represented graduate students in the graduate study committee, hosted graduate student townhall meetings, conducted a survey to gauge graduate students' satisfaction and collected issues to bring up during townhall meetings, and together with other graduate study committee members, spearheaded efforts to improve graduate students' well-being (e.g., stipend adjustment, training for faculties and graduate student leaders).

Session Organizer, GSA Connect Online 2020

T63. The Ordovician Earth: New Insights to Environmental and Biotic Response in the Fossil and Rock Record

Organized and coordinated a scientific session for the Geological Society of America annual conference, managing abstract review, speaker selection, and session logistics.

Session Organizer, GSA Annual Meeting 2019

T116. The Ordovician Earth: Integrated Perspective on the Fossil and Rock Records

Organized and coordinated a scientific session for the Geological Society of America annual meeting in Phoenix, AZ, managing abstract review, speaker selection, and session logistics. Successfully managed session timeline and moderated discussions to ensure productive academic discourse.

President, AAPG Student Chapter 2012
Institut Teknologi Bandung
Led student organization operations including event planning, member engagement, budget management, and liaison activities with faculty and industry partners. Successfully secured full sponsorship from major oil companies for two geological field trips to Mahakam Delta and Northwest Java Basin, eliminating student costs and providing hands-on industry exposure to chapter members. Organized and coordinated multiple guest lecture series featuring petroleum industry professionals from various oil companies, enhancing students' understanding of current industry practices and career opportunities. Strengthened chapter's industry connections while significantly expanding educational opportunities for geology students.

Professional Associations

Indonesia Association of Geologists (IAGI)
Geological Society of America (GSA)
American Geophysical Union (AGU)
American Association of Petroleum Geologists (AAPG)

Conference Abstracts

Selected abstracts from the past 3 years

2025 Saltzman, M.R., Griffith, E.M., **Adiatma, Y.D.**, Haber, P., Fantle, M. S., Pairing Ca and C isotopes to disentangle diagenesis and carbon cycling during Paleozoic carbon isotope excursions. Presented at Goldschmidt Conference 2025 in Prague, Czech Republic

2024 **Adiatma, Y.D**, Schwarts, M.J, Ahlberg, P., Owens, J.D. Young, S.A., Multiproxy chemostratigraphic constraints on paleoredox conditions during the Early to Middle Ordovician interval in the Baltic Basin. Presented at the GSA Connects 2024 meeting in Annaheim, California

2024 Goodin, J.T., Them, T.R., Caruthers, A.H., Hagen, A., Marroquin, S., McCabe, K., **Adiatma, Y.D.,** Grocke, D., Alexandre, J.T., Gill, B.C., Owens, J.D., A brief period of marine oxygenation during the End-Triassic Mass Extinction—a Thalium isotope modeling approach. Presented at the GSA Connects 2024 meeting in Annaheim, California

2024 Liu, X.M. Wang, X.K, Husinec, A., Cao, C., **Adiatma, Y.D.**, Tracing Ancient Hydrothermal Activity: Lithium Isotope Insights into the Jurassic Adriatic Platform. Presented at Goldschmidt Conference 2024 in Chicago, Illinois

2024 Saltzman, M.R., Griffith, E.M., **Adiatma, Y.D.**, Al-Musawi, M., The Cambrian SPICE event: perturbation of global carbon cycle or global diagenesis? Presented at Goldschmidt Conference 2024 in Chicago, Illinois

2023 **Adiatma, Y.D.**, Saltzman, M.R., Griffith, E.M., Haber, P.C., Braun, M.G., Edwards, C.T., Diamond, C.W., Calcium isotope constraints on the origin of the Mid-Darriwilian Carbon Isotope Excursion (MDICE). Presented at the GSA Connects 2023 meeting in Pittsburgh, Pennsylvania

2022 **Adiatma, Y.D.,** Saltzman, M.R., Wang, X.K., Liu, X.M., Constraining changes in silicate weathering during the Early Ordovician using lithium isotope chemostratigraphy. Presented at the GSA Connects 2024 meeting in Denver, Colorado

2022 Haber, P.C., Saltzman, M.R., Griffith, E.M., **Adiatma, Y.D.,** Bergmann, K.D., Anderson, N.T., The application of calcium isotopes to understand the effect of diagenesis on carbon isotope trends in ancient carbonate: an example from the Early Mississippian. Presented at the GSA Connects 2024 meeting in Denver, Colorado

2022 **Adiatma, Y.D.**, Saltzman, M.R., Griffith, E.M., Haber, P.C., Edwards, C.T., Diamond, C.W., Calcium isotope constraints on diagenetic effects in carbon isotope ($\delta^{13}C$) data: a case study from Middle Ordovician Carbonate Strata at Meiklejohn Peak, Nevada. Presented at the AGU 2023 Fall meeting in Chicago, Illinois

2022 **Adiatma, Y.D.**, Saltzman, M.R., Griffith, E.M., O'Neill, B.E., Chemostratigraphic correlation of a Darriwilian unconformity in the Appalachian Basin. Presented at the GSA North-Central and Southeastern 2024 Section meeting in Cincinnati, Ohio

2022 Carter, L.C., Saltzman, M.R., Griffith, E.M., **Adiatma, Y.D.**, Conwell, C.T., Lithofacies and Nd isotope stratigraphy of the Knox Unconformity in the Central Appalachian Basin. Presented at the GSA North-Central and Southeastern 2024 Section meeting in Cincinnati, Ohio

2022 Haber, P.C., Saltzman, M.R., Griffith, E.M., **Adiatma, Y.D.**, Early Mississippian calcium isotope stratigraphy and implications for conditions of carbonate deposition. Presented at the GSA North-Central and Southeastern 2024 Section meeting in Cincinnati, Ohio