

## CURRICULUM VITAE

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### Joseph T. Zume

Department of Geography and Earth Sciences  
Shippensburg University of Pennsylvania  
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#### EDUCATION

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- 2007 Ph.D.** Geography, **University of Oklahoma.**
- 1999 M. S.** Applied Geophysics, **Ahmadu Bello University, Zaria, Nigeria.**
- 1992 B. S.** Physics (2<sup>nd</sup> class honors “upper division”), **University of Jos, Nigeria.**

#### EMPLOYMENT

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2020 -	<b>Professor</b>	Department of Geography and Earth Science, Shippensburg University
2012 - 2020	<b>Associate Professor</b>	Department of Geography and Earth Science,
2007 – 2012	<b>Assistant Professor</b>	Department of Geography and Earth Science
2005 – 2007	<b>Carl Albert Executive Fellow</b>	Oklahoma Water Resources Board, Oklahoma
2005 – 2006	<b>Adjunct Instructor</b>	Department of Geography, University of Oklahoma
2001 – 2005	<b>Graduate Teaching Assistant</b>	Department of Geography, University of Oklahoma
1996 – 2001	<b>Lecturer</b>	Department of Physics, University of Jos, Nigeria
1993 - 1996	<b>Lecturer</b>	Samaru College of Agriculture, A.B.U. Zaria, Nigeria

## RECENT PUBLICATIONS

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- 2021 **Joseph Zume**, Mariwah, S. & Boateng, E.N.K. Evaluating the impacts of on-site sanitation facilities and saltwater intrusion on shallow groundwater quality in peri-urban communities of Cape Coast, Ghana. *Environmental Monitoring & Assessment* **193**, 264. <https://doi.org/10.1007/s10661-021-09059-1>
- 2020 **Joseph Zume**. Using an Applied Geophysical Imaging Course to Enhance Quantitative Reasoning and Environmental Problem-solving skills for Environmental Geography Students. *International Journal of Teaching and Learning in Higher Education*. Volume 32, no. 3.
- 2019 Emad Hassan, Aondover Tarhule, **Joseph Zume**, and Pierre-Emmanuel Kirstetter. +50 Years of Terrestrial Water Storage Variability in Africa's Transboundary Waters. *Nature Scientific Reports*, 9:12327. <https://doi.org/10.1038/s41598-019-48813-x>
- 2018 Aboagye, Dacosta and **Joseph Zume**. Assessing Groundwater Quality in Peri-urban Localities of Kumasi, Ghana. *African Geographical Review* (published online: DOI: [10.1080/19376812.2018.1484781](https://doi.org/10.1080/19376812.2018.1484781)).
- 2016 **Joseph Zume** and Kelsey Kilhoffer. The Marcellus Shale Fracking Controversy: Baseline Water Resources data are needed. *The Pennsylvanian Geographer* vol. 54(1), p 2-18.
- 2015 Aondover Tarhule, **Joseph Zume**, Johan Grijzen, Amal Talbi-Jordan, Abdou Guero, Robert Y. Dessouassi, Hilaire Doffou, Soungalo Kone, Bréhima Coulibal, and Nagaraja Harshadeep. Exploring temporal hydroclimatic variability in the Niger Basin (1901–2006) using observed and gridded data. *International Journal of Climatology*. **35** (520-539).

## RECENT CONFERENCE PRESENTATIONS

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- 2024 **Joseph Zume**, Kebreab Ghebremichael, Sarina Ergas, Allan Feldman, Simon Mariwah, Peter Obeng, & Kofi Acheau Owusu. Engaging US Students in Interdisciplinary Water Quality, Sanitation, and Climate Change Research in Ghana, West Africa. Annual conference of the Pennsylvania Geographical Society, Philadelphia (November 15, 2024).

- 2023 **Joseph Zume** and Simon Mariwah. Assessing the vulnerability of coastal groundwater quality to climate change impacts in Cape Coast, Ghana. XIV World Water Congress, Beijing, China (September 10 – 16, 2023).
- 2023 **Joseph Zume** and Simon Mariwah. Assessing the vulnerability of coastal groundwater quality to climate change impacts in Cape Coast, Ghana. *Annual meeting of the American Association of Geographers (AAG), Denver, CO (March 22 -26, 2023).*
- 2023 Katherine Zanotti **and Joseph Zume**. Archaeogeophysical investigation of the historic Locust Grove Cemetery in Shippensburg, Pennsylvania. *Annual meeting of the American Association of Geographers (AAG), Denver, CO (March 22 -26, 2023).*
- 2022 **Joseph Zume**. Pennsylvania's Streams and Small Rivers: examining surface water quality for anthropogenic impacts. *Annual meeting of the American Association of Geographers (AAG), New York City, NY (February 25 -March 1, 2022).*
- 2021 **Joseph Zume** and Simon Mariwah. Identifying sources of elevated Sodium and Chloride ion concentrations in domestic wells in Cape Coast communities, Ghana. *Annual meeting of the American Association of Geographers (AAG), Seattle, WA (April 7-11, 2021).*
- 2020 **Joseph Zume**, Simon Mariwah, and Ebenezer Boateng. Evaluating impacts of on-site sanitation systems on shallow groundwater quality in low-income neighborhoods of Cape Coast, Ghana. *Annual meeting of the American Association of Geographers (AAG), Denver, CO (April 6-10, 2020).*
- 2019 **Joseph Zume**, Simon Mariwah, and Ebenezer Boateng. Implications of household waste management on groundwater quality and human health in low-income urban communities of Cape Coast, Ghana. *Annual meeting of the American Association of Geographers (AAG), Washington DC (April 3-7, 2019).*
- 2019 Benjamin Clemmer and **Joseph Zume**. Examining water quality in two small streams draining agricultural and urban lands around Shippensburg, Pennsylvania. *Annual meeting of the American Association of Geographers (AAG), Washington DC (April 3-7, 2019).*
- 2018 Emad Hasan, Aondover Tarhule, Pierre Kirstetter, and **Joseph Zume**. Hydroclimatic variability in Africa's transboundary River Basins using +50 years of extended terrestrial water storage. *Annual meeting of the American Geophysical Union (AGU), Washington DC, December 2018.*
- 2018 **Joseph Zume**. Analysis of In-situ Water Quality measurements on tributary streams of the Conococheague Creek near Shippensburg, in the Cumberland Valley,

Pennsylvania. *Annual meeting of the American Association of Geographers (AAG), New Orleans, LA.*

- 2018 Ross Heidi and **Joseph Zume**. Assessing groundwater level changes with respect to hydroclimatic variables and groundwater withdrawals in Pennsylvania. *Annual meeting of the American Association of Geographers (AAG), New Orleans, LA.*
- 2017 **Joseph Zume**. Learning by doing: An instructional model for teaching environmental Geophysics to students with limited Physics and Math exposure. *Annual meeting of the American Association of Geographers (AAG), Boston, MA.*
- 2016 **Joseph Zume**. Hydraulically Fracturing the Marcellus Shales of Pennsylvania; Facts, Speculations, and Confusions. *Annual meeting of the American Association of Geographers (AAG), San Francisco, CA.*
- 2015 **Joseph Zume**. Curriculum integration in an interdisciplinary Geography program. *Annual meeting of the American Association of Geographers (AAG), Chicago, IL.*

## **SESSIONS AND PANELS ORGANIZED AT NATIONAL CONFERENCES**

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**2018 American Association of Geographers (AAG) annual conference, New Orleans, LA**

**Session:** Water Resources Assessment and Monitoring Strategies (*Organizer and session chair*)

**Panel:** Perspectives on the Carnegie African Diaspora Fellowship Intervention Program in African Universities (*Organizer*)

**2017 American Association of Geographers (AAG) annual conference, Boston, MA**

- Sessions:**
1. Instructional Models for active Student learning in Geography Departments (*Organizer and session chair*)
  2. Surface and Groundwater Quality Challenges in the 21st Century (*Organizer and session chair*)

3. Application of GIS and Geospatial Studies in Sub-Saharan Africa (*Co-organizer*)
4. Perspectives on Development & Social Change Across Africa and the Diaspora (*Co-organizer*)
5. Emerging geographies of Post-Apartheid South Africa (*Co-organizer*)

- Panel:**
1. Preparing for the Tenure Track Job and Achieving Success in Tenure-track Positions (*Co-organizer & panelist*)
  2. Reflections on the Carnegie and CODESRIA African Diaspora Fellowship Initiatives (*Co-organizer & panelist*)

***2016 American Association of Geographers (AAG) annual conference, San Francisco, CA***

- Session:**
1. Environmental Sustainability: Focus on Water Quality and Quantity Issues (**organizer**)
  2. Hydraulic Fracturing (Fracking), Concerns, and Responses
  3. Africa and sustainability (*Co-organizer*)
  4. Urbanization, Informality and Health in Africa (*Co-organizer*)

- Panel:**
1. Preparing for the tenure-track job (*co-organizer*)
  2. Navigating the Tenure and Promotion Processes (*co-organizer*)
  3. Strategies for Establishing Collaborative Networks between the ASG and Geography Departments of African Universities (*co-organizer*)

***2015 American Association of Geographers (AAG) annual conference, Chicago, IL***

- Sessions:**
1. Innovative Approaches to Implementing Field-based technology in Geography/Geoscience Programs (**Organizer & session chair**).
  2. Our Water, Our Future; the Critical Question of Water Resources Sustainability (**Organizer & session chair**).

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**RECENT FELLOWSHIPS AND GRANTS**

- 2024 **U.S. Department of State IDEAS grant:** Increasing and Diversifying Study Abroad Opportunities for Shippensburg University Students (**\$34,812.58**).
- 2023 **Carnegie African Diaspora Fellowship Program:** Mini grant for International Conference Presentation. With Simon Mariwah (**\$14,000**).

- 2023 **National Science Foundation (NSF-IRES) grant.** IRES TRACK 1: US-Ghana Student Research Experience: Understanding and conceptualizing threats and solutions of onsite sanitation and sea level rise on coastal groundwater resources (**\$291,818.00**). PI.
- 2021 **Pennsylvania State System of Higher Education (PASSHE), FPDC grant:** Isolating the interacting effects of saltwater intrusion and on-site sanitation facilities on coastal groundwater quality in Cape Coast, Ghana (**\$7,990.00**).
- 2021 **Fellowship: Council for the Development of Social Science Research in Africa (CODESRIA).** Integrating Research Collaboration and Capacity Building Initiatives for Addressing Urban Sanitation-Water Quality Challenges in Uganda (June-July 2021). Visiting Fellow to the Department of Geography, Geo-informatics, and climatic sciences, Makerere University, Uganda (summer 2021). (**\$13,500**).
- 2021 **National Science Foundation (NSF) grant.** GP-UP: Building a Geoscience Field Learning Ecosystem for the Pennsylvania State System of Higher Education (**\$397,822.00**). Senior Research Personnel.
- 2019 **SU Center for Faculty Excellence in Scholarship and Teaching (FPDC/CFEST) grant:** Evaluating the impacts of on-site sanitation systems on groundwater quality in low-income neighborhoods of Cape Coast, Ghana (**\$8000**).
- 2018 **Fellowship: Carnegie African Diaspora Fellowship Program.** Curriculum Enhancement for Coastal Water Resources Studies and Research Collaboration in Coastal Environmental Processes at the University of Cape Coast (UCC), Ghana. Extended visiting fellowship to the University of Cape Coast, Ghana (May-July 2018) (**\$14,000.00**).
- 2018 **Carnegie African Diaspora Fellowship Program: Supplemental grant for Knowledge Production and Workshops Grant.** With Simon Mariwah (**\$1500**).
- 2018 **SU CAS Summer Undergraduate Research Experience (SURE) Grant:** Assessing Nutrient Concentrations and Fluxes in Streams Draining Agricultural and Urban Lands around Shippensburg, PA. Extended award with undergraduate student, Benjamin Clemmer (**\$750**).
- 2018 **SU CAS Student/Faculty Research Engagement (SFRE) grant:** Assessing anthropogenic impacts on stream water quality in the Burd Run and Middle Spring Creeks. With undergraduate student, Justin Evans (**\$827**)

- 2017 **Friends of Camp Security grant:** Subsurface Geophysical Imaging for Archaeological Artifacts at Camp Security, Springettsbury Township, York County, PA, with Paul Marr and Sean Cornell **(\$7360)**
- 2017 **Fellowship: Carnegie African Diaspora Fellowship Program.** Enhancing UCC's Hydrology Curriculum and Hydrologic Research Output through the Establishment of a Coastal Watershed and Wetlands Field Research Station. Visiting Fellow to the Department of Geography and Regional Planning, University of Cape Coast, Ghana. **(\$8,090.00)**
- 2017 **SU Undergraduate Research grant:** Assessing groundwater level changes with respect to hydroclimatic variables and groundwater withdrawals in Pennsylvania. With undergraduate student, Heidi Ross **(\$700)**
- 2017 **SU COAS Summer Undergraduate Research Experience (SURE) Grant:** Assessing Nutrient Concentrations and Fluxes in Streams Draining Agricultural and Urban Lands around Shippensburg, PA. With undergraduate student, Benjamin Clemmer **(\$1002)**
- 2016 **SU Graduate Research grant:** Assessing the Impacts of Urbanization on the water quality in the Paxton Creek Watershed, Dauphin County, Pennsylvania. With grad student, Abdoul Ahmed Saidou **(\$900)**
- 2016 **Fellowship: Council for the Development of Social Science Research in Africa (CODESRIA).** Collaboration on Teaching and Graduate research Mentoring in Hydrology. Visiting Fellow to the Department of Geography and rural Development, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana (March – May 2016). **(\$10,000)**

### **RECENT GRADUATE THESIS RESEARCH MENTORED**

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- Abdoul Ahmed Saidou (Advisor). Assessing the Impacts of Urbanization on Paxton Creek near Harrisburg, Pennsylvania **(Suspended)**.
- Joao Silverado (Committee member). Analysis of Magnetic Susceptibility Signatures from Vibracores of Depositional Environments in Modern Barrier Islands and Back Bays: Focus on Assateague, Chincoteague, and Wallops Islands, Virginia” **(Graduated in May 2019)**.

- Brett Guildner (Committee member). Spatial Analysis of Ghost Forest Soil Characteristics on Assateague Island, VA: Investigating Coastal Processes and Maritime Forest Loss on a Barrier Islands **(Graduated in January 2017)**
- Robert Koroncai (Committee member). Using Ground Penetrating Radar (GPR) to locate and map freshwater/saltwater interfaces on the Barrier Island of Wallops Island **(Graduated in Jan 2017)**.
- Michael Stefanic (Committee member). The Geologic and economic history of phosphate minerals located at South Mountain, Mount Holly Springs, PA **(Graduated in Jan 2016)**.
- Neal Kerrigan (Advisor). Geophysical investigation of an old, buried stream channel near Shippensburg University Campus **(Graduated Nov. 2013)**.

#### **GRADUATE NON-THESIS, ONE-SEMESTER INDEPENDENT RESEARCH**

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- Kelliann McWhorter (Advisor). Assessing the impacts of wastewater disposal from hydraulic fracturing on stream water quality in Blacklick Creek, Indiana County, Pennsylvania **(Graduated May, 2020)**.
- Shyanne Stouffer (advisor). Geophysical Mapping of Karst Features: A Comparison of Ground Penetrating Radar and Electromagnetic Induction around Shippensburg, Pennsylvania. **(Graduated in May 2018)**
- Kelsey Kilhoffer (advisor). Collecting and Analyzing Baseline Groundwater Chemistry Data for evaluating future Impacts of Hydraulic Fracturing on Groundwater quality in Bradford County, PA **(Graduated in March 2016)**. Won 3<sup>rd</sup> prize at the 2014 annual PGS graduate student paper contest in State College, PA.
- Stephanie Keiffer (Advisor): Deploying the EMP-400 Electromagnetic (EM) Induction system to characterize subsurface soils across a buried stream channel near Shippensburg University Campus. **(Graduated August 2015)**.

#### **RECENT UNDERGRADUATE RESEARCH MENTORSHIP**

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- Benjamin Clemmer (summer 2017 through fall 2018). Assessing Nutrient Concentrations and Fluxes in Streams Draining Agricultural and Urban Lands around Shippensburg, PA (funded twice by SURE grant).

- Heidi Ross (spring 2018). Assessing groundwater level changes with respect to hydroclimatic variables and groundwater withdrawals in Pennsylvania (funded through the Undergraduate Research Council grant).
- Justin Evan (summer 2018). Assessing anthropogenic impacts on stream water quality in the Burd Run and Middle Spring Creeks (funded through the SRFRE grant).

## RECENT SERVICE

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### *UNIVERSITY SERVICE*

Fall 21 – date	Member, University-wide Tenure Committee
Fall 19 – Sp. 21	<b>Chair</b> University Forum (Elected spring 2019).
Fall 19 – Sp. 21	Member, <b>President’s Cabinet</b> .
Fall 19 – Sp. 21	Member, <b>APSCUF/SU Executive Council</b> .
Spring 17 – date	Member, <b>Tech Fee Committee</b> .
Fall 2019	Elected CAS rep (2 <sup>nd</sup> term ) and Chair of University Forum.
Fall 18 – sp. 19	<b>University Budget and Planning Council</b> (Elected Forum representative).
Fall 17 – date	APSCUF/SU representative to the H.O.P.E Diversity Scholarship Committee.
Fall 17 – date	APSCUF-SU representative to the Academic Success Program Advisory Board.
Fall 18 – date	Faculty Athletics mentor for the SU men’s soccer team.
Fall 18- sp. 19	Faculty in Residence (FIR) mentor for Lackhove Hall.
Spring 2017	Elected CAS representative to the University Forum
Sp. 16 – Sp. 17	Alternate member of University Forum for CAS.
Fall 15 – sp. 17	APSCUF/SU Rep. to University-wide Disciplinary Committee.
Fall 2016	<b>Invited presenter</b> at the 2016 SU <b>New Faculty Orientation</b> .
Fall 09 – sp. 15	<b>Chair/Co-chair</b> , APSCUF/SU student Affairs Committee.
Fall 09 – sp. 15	Member, <b>APSCUF/SU Executive Council</b> .
Fall 09 – sp. 15	Member, University Student Affairs committee.
Fall 12 - 19	Academic Day <b>presenter</b> and regular helper with <b>Move-in Day</b> .
Fall 14 – sp. 15	APSCUF-SU representative to the CFEST Campus Support Committee.

## Department Service

Fall 2021 – present Member, Department Professional Affairs Committee (DPAC)

Fall 2007 – present Member, Department FARM Committee

## **PROFESSIONAL SERVICE**

- 2021- date Past president, Pennsylvania Geographical Society (PGS)
- 2018 National Science Foundation (NSF) EPSCoR Reverse site visitation **Panelist** for Hawaii RII Track-1: Ike Wai: Securing Hawaii's Water Future" April 3-4, 2018, Alexandria, VA
- 2018 National Science Foundation (NSF) EPSCoR Reverse site visitation **Panelist** for Virgin Islands RII Track-1 "Mare Nostrum Caribbean: Stewardship through Strategic Research and Workforce Development" January 29-30, 2018, Alexandria, VA
- 2014 - 2020 **President**, Africa Specialty Group (ASG) of the American Association of Geographers (AAG). First elected, April 2014. Re-elected for a 3-yr term in 2017. Term ended in April 2020.
- 2019 - 2021 **President**, Pennsylvania Geographical Society (PGS).
- 2017 - 2019 **President-elect**, Pennsylvania Geographical Society (PGS).
- 2013 - 2017 **Awards Director**, Pennsylvania Geographical Society (PGS).
- 2015 - date Editorial Board member, **Middle States Geographer**, a regional journal.
- 2016 Member, Meeting Arrangement Committee, PGS 2016 meeting, Altoona, PA.
- 2015 - date **Review Panelist**, National Science Foundation, NSF-EPSCoR program.
- Standing **Reviewer** for several scholarly journals including *Acta Geophysica*, *Hydrology Research*, *Journal of Hydro-environment Research*, *Hydrology*, *Middle States Geographer*, *Water, Air, & Soil Pollution*, *Journal of environmental Monitoring and Assessment (EMAS)*, *African*

*Geographical Review, Journal of Environmental Management (JEMA), Environment and Pollution, Cogent Social Science, and many others.*

**COMMUNITY SERVICE**

- Aug. 2021-date     Board Member, **Pennsylvania Climate Leadership Academy**
- Jan 2020 – date     Board Member, **Cumberland County Planning Commission**
- 2013 -2017         Member, **Summit Physician Services Steering Committee.**
- 2021 - date         **Vice chair**, Parish Council, the Our Lady of the Visitation Catholic Parish, Shippensburg.

**RECENT AWARDS**

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- 2019     Shippensburg University Academic Mentorship Award 2018-2019 session.
- 2018     Shippensburg University Academic Mentorship Award 2017-2018 session.
- 2013     Shippensburg University Dr. Martin Luther King Jr. Humanitarian Award.