

# Aondover TARHULE, Ph.D.

Interim President, Illinois State University  
Professor, Department of Geography, Geology, and the Environment

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## **Profile**

An accomplished and forward-thinking university administrator with profound knowledge of the national and international higher education landscape ♦ Leadership strengths include big-idea thinking, entrepreneurship, strategic planning, and evidence-informed decision-making ♦ Significant accomplishments in leading and managing institutional change, fostering collaborative and effective relationships with university-shared governance leaders, donors, legislatures, and industry partners ♦ An active listener and an inspiring communicator ♦ Personal philosophy guided by empowering others and leadership by example ♦ A diligent scholar with over \$5 M in funded research as P.I. or Co-PI ♦ Actively engaged in AAPLU Initiatives and the national discourse on public education ♦ Extensive international experience in student recruitment, partnership development, research collaboration, and consultancy.

## **Education and Academic Preparation**

- 1999 **Canada Science Advisory Council Post-Doctoral Fellowship**, Queens University, Kinston, Ontario, Canada
- 1998 **Rockefeller Foundation Post-Doctoral Fellowship**, University of Jos, Plateau State, Nigeria
- 1997 **Ph.D. Geography**, McMaster University, Hamilton, Ontario, Canada
- 1993 **M.Sc. Geography**, McMaster University, Hamilton, Ontario, Canada
- 1991 **M.Sc. Environmental Resources Planning**, University of Jos, Plateau State, Nigeria
- 1989 **National Youth Service Corp**, Katsina State, Nigeria
- 1988 **B.Sc. Geography (1<sup>st</sup> Class Honors)**, University of Jos, Plateau State, Nigeria

## **Administrative Appointments and Leadership Accomplishments**

**Interim President, Illinois State University, Normal, February 2023 to Present**

### ***Leadership Profile and Responsibilities***

I am privileged to serve as Illinois State University's Interim President. Illinois State offers over 160 undergraduate and graduate degrees, annually producing 525,000 credit hours, and is a Carnegie Classified High Research Activity (R2) doctoral university. The university has 5,406 employees and an operating budget of \$561 million. *Washington Monthly* ranks Illinois State #64 in its 2022 National University Rankings (<https://washingtonmonthly.com/2022-college-guide/national/>). As Interim President, I liaise between the Board of Trustees and the University, provide intellectual leadership and direction, exercise final authority on budget and fiscal management, supervise a cabinet of 10 members, and serve as the face of the university in stakeholder engagement (donors, alums, legislators, community, and industry leaders).

***Significant Ongoing Projects and Accomplishments***

- (i) Enrollment success. Under my leadership, Illinois State University continues to defy regional trends to maintain strong enrollments. This year, enrollment of First Time in College (FTIC) students grew by 4% and total headcount by 1.5%, making ISU one of only three public universities in Illinois with a growing student population.
- (ii) Fundraising. I am leading and engaged in gift discussions with major donors totaling nearly \$40 M. As interim President, I am brought into these conversations to help ‘close the deal,’ meaning that discussions have reached an advanced stage with promising prospects.
- (iii) Diversity. The diversity of ISU FTIC students expanded to 41% this year, making this cohort more diverse than the general population of Illinois. Faculty Diversity also grew by 3%, driven by our Faculty Diversity Enhancement Program.
- (iv) Capital and fiscal management. I am overseeing the renovation and planned or ongoing capital development projects that total \$400 M. I provide leadership to keep these projects moving forward, troubleshoot when problems arise, and liaise with numerous groups, including the Board of Trustees, the President’s Cabinet, the legislatures, Architects and Contractors as necessary.
- (v) Strategic Plan. The university’s current strategic plan, *Educate, Connect, Elevate Illinois*, ends in 2023. Therefore, I am leading the 2024-2029 strategic plan development. Designed to be visionary, bold, and transformational, the plan will guide ISU as it navigates what promises to be a pivotal moment in higher education.
- (vi) Higher Learning Commission Accreditation. Illinois State is undergoing a mandated 10-year accreditation review by the Higher Learning Commission. I am working closely with the Provost and Vice President for Academic Affairs to coordinate the university’s preparation for this vital activity.
- (vii) Communication. I created a new President’s Forum consisting of the university’s senior leadership from across the campus, including shared governance partners, to improve communication, break down silos, strengthen a sense of shared purpose, strategic priorities, and direction, and enhance opportunities for synergy.
- (viii) Equity Funding Formula. I serve on the Illinois Board of Higher Education Equity Funding Commission. The Commission’s task is to develop a new funding formula that more equitably funds Illinois’s 12 public universities.
- (ix) Innovate Illinois. The Governor’s Office invited me to serve on the Innovate Illinois Taskforce. Comprising education leaders, NGOs, industry leaders, and policymakers, the task force’s charge is to help attract more federal funding from Washington to Illinois.

**Vice President for Academic Affairs and Provost, Illinois State University, 2020 to Present**

***Leadership Profile and Responsibilities***

As Provost, I am the university's Chief Academic Officer (CAO) and second in command to the President. In this capacity, I provide administrative leadership, vision, strategic direction, creation, implementation, and evaluation for all university academic programs, activities, and faculty affairs. I am responsible for allocating and approving new tenure-track faculty positions to departments and colleges, tenure and promotion decisions, faculty sabbaticals and administrative leave, and faculty professional development and mentoring. In addition to eight academic colleges, I supervise Enrollment Management, the Registrar's Office, Financial Aid, The Office of International Engagement, The Graduate School,

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Research and Sponsored Programs, Online Education, and the Center for Integrated Professional Development. I manage a budget of \$180+ million, supervise eight deans, one associate Provost, six associate vice presidents, more than 1,300 faculty (tenured, tenure-track, and non-tenure track), and 850+ administrative staff.

### *Significant Accomplishments*

- (i) **New College of Engineering.** I led Illinois State's efforts to establish a new engineering college. The initiative required working with consultants to develop the concept and obtaining several levels of approval, including the Academic Senate and shared governance constituencies, the university Board of Trustees, and the Illinois Board of Higher Education. Significantly, the original proposal envisioned a department-level program. I successfully argued for upgrading the plans to a college. A national search for the college's founding dean is in progress, the academic curriculum is in development, and the administrative infrastructure required for a college is being created.
- (ii) I organized and led a comprehensive bottom-up Academic Affairs retreat comprising 120 unique individuals and ten working groups. The retreat identified six priority areas that will guide the Division of Academic Affairs over the next three years (see <https://provost.illinoisstate.edu/spring-2021-retreat>).
- (iii) **Faculty Diversity Enhancement Plan.** I conceptualized and created a \$4.5M five-year plan to help bring Illinois State's faculty diversity on par with student diversity. Funding for this initiative has come from my and the President's offices (see <https://news.illinoisstate.edu/2022/03/illinois-state-university-announces-4-5-million-faculty-diversity-enhancement-plan/>).
- (iv) **'Close-the-Gap' Undergraduate Student Scholarship and Mentoring Program.** I created and funded an innovative \$450,000 three-year pilot program based on best practices to help close the outcomes and achievement gap between underrepresented students and the general student body. The program has 32 predominantly black male students enrolled in its second cohort.
- (v) **Fundraising.** I helped negotiate and obtain a \$6.3M donation from Memorial Hospital to establish a training facility for nursing programs in Springfield, Illinois.
- (vi) Conceptualized, created, and funded a \$3.25M 5-year program to foster pillars of research excellence. This first-of-its-kind initiative at Illinois State will help incentivize interdisciplinary and creative scholarship at the university.
- (vii) **Provost's Innovation and Enhancement (PIE) Grant.** Working closely with Academic Senate and shared governance partners, I created a pilot \$400,000 initiative to provide funding to departments and individuals with innovative ideas to improve enrollment, support student success, seed new research, and enhance program prestige and visibility (see <https://provost.illinoisstate.edu/downloads/budget/PIE-pilot-program-guidelines.pdf>).
- (viii) **Facility Construction and Renovations:** I collaborated with the CFO to secure BOT approval for \$15M in renovations to academic facilities over the next two years (2022-2024). Additionally, we obtained BOT approval for an \$18M, 20,000 ft<sup>2</sup> new simulation laboratory facility to support planned enrollment growth in our College of Nursing (see <https://news.illinoisstate.edu/2021/05/illinois-state-universitys-mennonite-college-of-nursing-announces-new-simulation-lab-building/>).

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- (ix) New Online Education Unit. The COVID-19 pandemic exposed Illinois State's need for more capacity and expertise in online education. As a result, I conceptualized and established a new unit for online education to mitigate this deficiency. Further, I conducted a national search and hired a Director of Online Education and a Chief Online Learning Officer (<https://prodev.illinoisstate.edu/online/>).
- (x) Financial Management and Planning. To control the escalating cost of instruction, I introduced a curriculum and finance model that saved \$400,000 in just one year. In addition, I have hired Grant Thornton's Higher Education unit to review and potentially implement an Activity Cost model with a target of \$3M and \$5M in cost savings.
- (xi) Restructured Office of International Engagement. Illinois State's internationalization efforts and programs operated disjointedly from several reporting lines and budgets. I reorganized and consolidated all these units into a coherent entity and renamed the Office of International Engagement (<https://internationalstudies.illinoisstate.edu/>). Further, I conducted a national search and hired a new executive director to head the unit.
- (xii) Faculty Job Satisfaction Survey. To better understand factors impacting faculty morale and develop effective retention strategies, I contracted with the Collaborative on Academic Careers in Higher Education (COACHE, <https://coache.gse.harvard.edu/>) to create the first systematic survey of faculty job satisfaction at ISU. I also worked with the President's Office to develop a companion survey for staff throughout the university.

### **Vice Provost and Dean of the Graduate School, State University of New York (SUNY) Binghamton, 2017-2020**

#### *Leadership Profile and Responsibilities*

As Vice Provost and dean of the Graduate School, I provided leadership for graduate education. Binghamton University is the number one-ranked public university in New York and among the most selective public universities in the country. The university enrolls more than 18,000 undergraduate and graduate students and is a Very High Research Activity (R1) doctoral institution. As Dean, I was the principal academic and administrative officer of the Graduate School (4000+ students). I supervised a staff of 17 and managed a budget of \$3M, including more than one million of state funds dedicated to diversifying the graduate student body. My responsibilities included overseeing international and domestic student recruitment, admissions, academic progress, career and professional development, Award of degrees at the graduate level, new graduate program development and assessment, allocating and administering state support for graduate students, and fundraising to support the Graduate School. In addition, as vice provost, I organized orientation and onboarding events for new faculty, arranged and conducted academic program reviews, and coordinated with the Vice President for Research to facilitate the university's research mission. I also represented the Provost in his absence.

#### *Significant Accomplishments*

- (i) Academic Program Development. I was the lead point of contact between Binghamton University and SUNY/NYSED (State University of New York/New York State Education Department) on all matters related to developing and approving new graduate academic programs, curriculum revisions, graduate scholarships, and awards. In this capacity, I worked closely with the Graduate

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Council, the Faculty Senate, and academic departments to create and secure approval for 10+ new M.S. and Ph.D. degrees and certificate programs.

- (ii) Process optimization. I created the position of Faculty Fellow in the Graduate School to cut the time for new program approval from 24 months to 14 months. Further, I initiated significant technological upgrades and process automation projects, including payment options, application for graduation procedures, workflow, and DegreeWorks® to replace inefficient, manual, and error-prone processes,
- (iii) Process Improvement. I created a university-wide task force to review graduate education and scholarship administration at Binghamton-themed *Inspiring Change to Enhance Competitiveness*. Subsequently, I instituted the first external review of the Graduate School to produce a prioritized list of actions to guide the university toward best practices in advocacy, organization, administration, and communications to achieve its stated mission, strategic goals, and vision for graduate education.
- (iv) Financial Management and Gift Stewardship. I managed a diverse portfolio of \$2.5+ M dedicated to graduate student recruitment, diversity, support for graduate student research and professional development, mentoring, support to Organized Research Centers, and Provost's summer doctoral fellowships. In addition, through careful budget review and reorganization, I identified more than \$100,000 to support graduate student travel (up to \$ 1,000 per Award) and instituted \$20,000 a year for graduate student awards in research, teaching, and community service.
- (v) Fundraising Engagement. I championed and successfully included funding for a new Graduate Student Life Center as part of Binghamton University's fundraising campaign theme. Further, through a focused and intensified fundraising letter-writing campaign to alums, I increased donations to the Graduate School by 68% between 2017 and 2019.
- (vi) Internationalization. I developed three new international partnerships in Uganda, Kenya, and Taiwan to create recruitment opportunities and expand Binghamton University's internationalization efforts. These partnerships required considerable travel.
- (vii) Physical Facilities Renovation. I undertook a \$150,000+ renovation of the Graduate School to create an airy, welcoming waiting area with modern furniture that enhanced workspace flow and functionality.
- (viii) Data Dissemination. To increase efficiency and support data-informed decision-making, I created new Graduate School Dashboards in Visual Analytics to improve data dissemination.

### **Executive Associate Dean and Faculty Fellow (Office of the Provost), College of Atmospheric and Geographic Sciences, University of Oklahoma, 2015-2017**

#### ***Leadership Profile and Responsibilities***

As Executive Associate Dean of the College of Atmospheric and Geographic Sciences, I reported to the Dean and represented him in his absence. My responsibilities included leading the tenure and promotion review process, leading the colleges' efforts related to diversity and inclusion, and mentoring.

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Department chairs and overseeing the annual review of the college. In addition, as a Faculty Fellow, I worked on special projects as assigned by the Provost and collaborated with other faculty fellows.

### *Significant Accomplishments*

- (i) College's First Board of Advisors. I collaborated with the College Director of Development to constitute the *first AGS external board of advisors* headed by a retired director of the National Weather Service.
- (ii) First College Diversity Council. I Created and led the first *college diversity council*.
- (iii) College Social and Fall Event. I Introduced an *annual State of the College and Fall Fair* to provide a platform for a yearly review, expectations of the coming academic year, and networking.
- (iv) Senior University Leadership Recruitment. I Co-chaired a cluster hire search for three environmental leadership positions, including the CORIX-endowed professor and Director of the new Plains Institute, the Director of the Oklahoma Water Survey, and a senior water leadership position.
- (v) University Civic Engagement Effort. I was a member of the Provost's Task Force on Community Impact and Engagement, charged with securing for the University of Oklahoma the Carnegie Foundation's "Engaged University" designation by 2020.
- (vi) Fostering Interdisciplinarity. As a Faculty Fellow, I led academic departments on the Provost's Task Force to identify and address impediments to interdisciplinary collaboration.

### **Chair, Dept of Geography and Environmental Sustainability, University of Oklahoma, 2009-2015**

#### *Leadership Profile and Responsibilities*

I led the department's strategic direction and day-to-day operations as department chair. I presided over the delivery of academic programs according to departmental, college, and university strategic plans; I hired and evaluated department personnel, including faculty and staff, and managed the department's budget and resources. In addition, I collaborated with chairs in other units to ensure the implementation of the college priorities. Finally, I presented and advocated for the department to the upper administration and interpreted university policy and directions.

#### *Significant Accomplishments*

- (i) Academic Program Creation. I established two new academic degrees and secured approval through the University Academic Programs Committee and the Oklahoma State Regents for Higher Education; I concluded planning for a graduate certificate program later approved. Further, I successfully oversaw the merger of the GIS degree (previously a separate, standalone program) with the Department of Geography.
- (ii) Department Transformation and Growth. Under my leadership, the department changed its name from "Geography" to "Geography and Environmental Sustainability"; increased undergraduate

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Majors by over 300%; raised new tenured/tenure-track faculty lines by 80%; increased office, labs, and physical space by 300%; and expanded computer inventory by 500%.

- (iii) Process Improvement. I developed faculty evaluation guidelines and streamlined the evaluation process, significantly clarifying tenure and promotion requirements.
- (iv) Technological Innovation. I created an innovative audio-visual system that allowed one instructor to teach students in two different classrooms simultaneously.
- (v) People Management. Despite a long-standing reputation as an uncooperative department, I successfully refocused the department on new strategic priorities and fostered a more collegiate and collaborative environment.

### **Miscellaneous Leadership Positions**

**Associate Director, Crisis and Risk Communication Center, University of Oklahoma 2009-2010**

I stepped into this vacant position created after the departure of the previous Director and maintained Center operations, including a budget, personnel, and research management, while helping to recruit new leadership.

**Co-Chair, College of Geosciences Transition and Reorganization Committee, University of Oklahoma 2005-2006**

In a significant restructuring, the University President decided to remove two units from the College of Geosciences to create a new College of Earth and Energy, necessitating the reorganization of the remnants of the old college. Although relatively junior and only recently tenured, I was appointed to co-chair the transition committee that named and developed a blueprint for reconstitution the College of Atmospheric and Geographic Sciences.

**Technical Liaison, Jos-McMaster Drought Research Project, Collaborative Project between McMaster University, Hamilton, ON, Canada and University of Jos, Benue State, Nigeria (Funded by the Canadian International Development Agency for \$CAD 1.5M) 1997-1998**

I provided skillful leadership and communication that bridged institutional practices (e.g., financial reporting) and cultures between these universities and systems. As a result, I accomplished partnership objectives and successfully closed the research as planned.

### **Relevant University Committee Service and Memberships**

**Illinois State University, July 2020- Present**

- (i) Member, President's Cabinet.
- (ii) Co-Chair (with the President): Higher Learning Commission Review Planning Group.

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- (iii) Co-lead (with President) Strategic Planning Executive Committee.
- (iv) Member, Vice Presidents Leadership Group.
- (v) Co-Lead, Campus Climate, and Diversity Implementation Team.
- (vi) Member, University Naming Committee.
- (vii) Ex-officio member, Academic Senate Executive Committee.
- (viii) Ex Officio member, Faculty Caucus.
- (ix) Member, Board of Directors, Adlai E. Stevenson Lecture Series Board of Directors.
- (x) Member, Illinois State University Foundations Board.
- (xi) Member, Executive Planning Committee, Illinois State's Next Strategic Plan (2023-2028).
- (xii) Convener, Deans Council.

### **Binghamton University (2017 – June 2020)**

- (i) Senior Officer Group +: A leadership group of about 30 comprises the President, Provost, CFO, Vice Presidents, Vice Provosts, and Deans meets monthly to review matters related to university governance, policies, and strategic planning.
- (ii) Provosts Senior Group: A leadership group of about 12 individuals comprised of the Provost, Vice Provosts, Associate Provosts, and senior directors meet periodically to review matters related to academic affairs throughout the university.
- (iii) Deans Council: The leadership group is comprised of eight deans who meet periodically to review matters related to academic policies, data, and initiatives.
- (iv) The Graduate Council: This leadership group, which I chaired, comprised 31 individuals from across the entire university and acts as the Graduate School's legislative arm of the Faculty Senate.
- (v) Co-Chair, Joint Task Force on Graduate Education and Scholarship.
- (vi) Strategic Priority 5 Steering Group: Optimizing acquisition and allocation of human, technological, financial, and physical resources.
- (vii) Academic Standards and Policy Committee (Graduate Council).
- (viii) Graduate Council Curriculum Committee (Graduate Council).
- (ix) Educational Policy and Planning Committee (Faculty Senate Committee).
- (x) Graduate Recruitment Committee.
- (xi) Enrollment Management Group (Graduate and Undergraduate).
- (xii) Member of the Advisory Committee on Scholarship and Research. The Committee Awarded \$300,000 annually to graduate students to support organized research centers). Also responsible for reviewing the university's 30 research centers, approving new centers, and proposing the closure of inactive/nonperforming centers.
- (xiii) Review Panel: Chancellor's Award for Excellence in Scholarship and Creative Activities.
- (xiv) International Education Advisory Group. Responsible for approving study abroad proposals and new international partnerships.



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- (xv) Member, Binghamton University Team, Middle State Commission on Higher Education (MSCHE), self-study design workshop.

### **The University of Oklahoma (1999-2017)**

- (i) The University of Oklahoma Diversity and Inclusivity Academic Council (<http://www.ou.edu/community/diversitycouncil.html>), 2015-2017.
- (ii) AAG Research Grants Committee, 2013-2016
- (iii) Chair, Awards Committee, Water Resources Specialty Group, AAG, 2004, 2010, 2013-2016.
- (iv) Search Committee for the Provost of the University of Oklahoma position. 2014-2015.
- (v) Search Committee: Social Science mini-cluster, 2012.
- (vi) University of Oklahoma Social Science Strategic Plan Committee, 2012.
- (vii) Lead, Provosts Committee for the Evaluation of Dean of AGS, 2012.
- (viii) Graduate Committee, Department of Geography and Env. Sustainability, University of Oklahoma, 2007-2012.
- (ix) Curriculum Committee, Department of Geography and Env. Sustainability, University of Oklahoma, 2007-2012.
- (x) Sustainability Committee, Department of Geography and Env. Sustainability, University of Oklahoma, 2007-2013.
- (xi) Geography Awareness Week, Planning Committee, 2010-2012.
- (xii) Steering Committee of OKAGE, 2009-2012.
- (xiii) Advisory Committee, OSLEP, University of Oklahoma, 2009-2011.
- (xiv) Steering Committee of the WaTER Center, University of Oklahoma, 2010-2017.
- (xv) Search Committee for Founding Director of the Oklahoma Water Survey, 2011.
- (xvi) Search Committee for the Dean of the College of Atmospheric and Geographic Sciences and Director of the National Weather Center, 2009-2010.
- (xvii) Social Science Strategic Plan and Cluster Hire, 2008.
- (xviii) Co-Chair College of Geosciences Transition Committee, 2005-2006.
- (xix) The University of Oklahoma Budget Council, 2006.
- (xx) Presidents Storm Water Management Committee, 2006.
- (xxi) The University of Oklahoma Academic Programs Committee, 2005.
- (xxii) Planning Committee for SWAAG, University of Oklahoma, 2005.
- (xxiii) Search Committee, Remote Sensing Faculty Position, Department of Geography, 2005.
- (xxiv) African Specialty Group AAG centennial organizing committee, 2000-2004.
- (xxv) Co-colloquium convener, Department of Geography, The University of Oklahoma, 2003.
- (xxvi) College of Geosciences representative to Faculty Senate, 2003.

- (xxvii) Academic Misconduct Board, 2000.
- (xxviii) Revised Departmental Tenure and Promotions handbook, 2000.

### **National and International Consultancy/Leadership Experience**

- (i) Member, Illinois Public University's Presidents and Chancellors Group, 2023-Present.
- (ii) Member of the American Association of Geographers Healthy Departments Group (provides advocacy and consultation to help Geography Departments in the USA navigate difficult times due to financial, leadership, and personnel challenges).
- (iii) Convener, Provosts' of Illinois Public Universities, 2022 – 2023.
- (iv) Member, VSA Analytics Advisory Board, American Association of Public and Land Grant Universities/ American Association of State Colleges and Universities (AASCU), 2022-2024.
- (v) Invited Reviewer CR4D Fellowships, African Academy of Sciences, 2019.
- (vi) Member, CODESRIA College of Mentors. Mentor to six Ph.D. students in African Universities, 2016-Present.
- (vii) Non-Executive Board Member, Walker Institute, University of Reading, England., 2017-Present.
- (viii) Invited Reviewer: National Institute for the Humanities and Social Sciences (NIHSS), South Africa.
- (ix) Consultant, Tertiary Education Trust Fund Project, University of Abuja, Nigeria., 2016-Present.
- (x) Consultant, People-centered Climate Services in the Sahel, U.K. Department for International Development (DFID), 2016.
- (xi) Member, Executive Committee (Board on Oceans, Atmosphere, and Climate, BOAC), Association of Public and Land Grant Universities (APLU), 2015-2017.
- (xii) Consultant, Africa Risk Capacity, West Africa rainfall evaluation and comparison with remotely sensed data, 2014.
- (xiii) Consultant, World Bank/Niger Basin Development Authority. Climate risk assessment of the \$8 billion Niger River Basin Sustainable Development Action Plan, 2009-2013.

### **Areas of Research Focus**

- Africa
- Climate Information Dissemination and Use
- Hydroclimatic Variability
- Environmental Change
- Hydrology and Water Resources

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## **Grants, Awards, and Contracts – Total > \$5 Million**

- Council of Graduate Schools, Binghamton University P.I., Career Pathways Survey, \$30,000.
- ALERT! (Academy for Lecturer Excellence in Research and Teaching). CODESRIA African Diaspora Visiting Professorship, University of Abuja, Nigeria and Benue State University, Makurdi, Nigeria, June 2016, \$8,000.
- The University of Oklahoma Presidential Dream Course (Water for a Thirsty World, economics, technology, and emerging ideas) spring 2016: \$20,000 (with Jadwiga Ziolkowska).
- Carnegie Diaspora Africa Fellowship, Kaduna State University, Nigeria. June-July 2015. P.I. \$15,000.
- International Institute for Environment and Development (IN-IIED). Establishment of Local Adaptation Funds in the Sahel. P.I. \$7,498, July 2014-May 2015.
- National Institute of Health (NIH) 1R21 ES022598-01. Climate Change, Heat Exposure, and Acute Morbidity in a Native American Population Co-PI (P.I.: H. Basara), \$403,802, July 1, 2013 – June 30, 2015.
- United States Geological Survey (USGS). South Central Climate Science Center, University of Oklahoma Co-PI (P.I.: B. Moore), U.S. Department of the Interior (OU-PI), continuing grant. Total Award is \$3,992,893 over four years, 2012-2016.
- Office of the Vice President for Research, The University of Oklahoma. Climate, Health, Environment, and Socio-Systems: Health Impacts of Saharan Dust in Burkina Faso. O.U. Faculty Challenge Grant, \$35,000, August 2012-March 2014.
- The University of Oklahoma Presidential Dream Course. Water and Society, \$20,000, Fall 2012.
- The University of Oklahoma Presidential Dream Course. Water and Society, \$20,000, Fall 2008.
- Oklahoma Water Resources Board. Hydroclimatic Reconstruction of the Arbuckle-Simpson Aquifer in Southern Oklahoma using tree rings, (Sole PI), \$50,000, July 2004-July 2008.
- Oklahoma Water Resources Research Institute. Springs in time: Comparison of Present and Historical Flows, (P.I., with E. Bergey), \$24,999, March 2004-February 2005.
- National Science Foundation (Earth Systems History). High-Resolution Paleoclimatic Records from Tree Rings in the Soudan Sahel of West Africa, (sole P.I.), \$100,337, March 2004– August 2006.
- National Science Foundation (CCLI-A & I). Instrumentation and Equipment for Undergraduate Field Laboratory and Fieldwork Curriculum in Geography (P.I. with four others), \$100,028, April 15, 2002-April 14, 2005.
- Oklahoma Water Resources Research Institute. Resistivity Tomographic Imaging and Visualization of Groundwater in Karst Systems. Funded by the Oklahoma Department of Environmental Quality (ODEQ) (P.I., with T. Dewers and R. Tarhule-Lips), \$50,000, July 2001-September 2004.
- United States Agency for International Development (USAID). Water Resources of the Eastern Basin of the West Banks' Mountain Aquifer, (B. Wallach (P.I.), with A. Tarhule, B. Vieux and R. Nairn), \$100,000, November 2000- October 2002.
- National Science Foundation (Paleoclimate Program). Application of Tree-rings Analysis for Hydro-climatic Reconstruction in the Sahel. \$49,760. May 1999-April 2002 (Co-Pi with M. Hughes).
- The University of Oklahoma Research Council funds. Towards climate reconstruction from tree rings for the African Sahel zone, \$5,940, 2003.
- The University of Oklahoma Vice President for Research, Pilot program to stimulate competitive research

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(PI, with Peter Lamb, with supplementary Award from CIMMS), \$20,000, 2001-2003.

Queens University, Kingston, ON, CA. Science Advisory Research Council Post-Doctoral Fellowship, \$42,000, July 1998-September 1999.

Rockefeller Foundation Post-Doctoral Research Fellowship, \$36,000, 1997-1998.

Rockefeller Foundation Sub-Saharan African Dissertation Internship Award, \$20,000, 1994-1997.

### Honors and Media

New research shows that water scarcity could impact 85% of Africa by 2050. Binghamton University Press Release, September 2019.

B.U. Forms new partnership with Kenyatta University, *Pipe Dream*, August 29, 2019.

We use satellites to measure water scarcity. *The Conversation*, August 16, 2019, <http://theconversation.com/we-use-satellites-to-measure-water-scarcity-120055>

Story reprinted in 40 newspapers and outlets around the world\* Examples:

Associated Press: <http://www.chicagotribune.com/sns-we-use-satellites-to-measure-water-scarcity-120055-20190813-story.html>

National Geographic, Indonesia: <https://nationalgeographic.grid.id/read/131840583/menggunakan-satelit-cara-baru-mengukur-kelangkaan-air-dunia?page=2>

The Huffington Post: [https://www.huffpost.com/entry/satellites-water-scarcity-africa-climate\\_b\\_5d6036fae4b0f2a0e77f2a18](https://www.huffpost.com/entry/satellites-water-scarcity-africa-climate_b_5d6036fae4b0f2a0e77f2a18)

Africa Space News: <https://africanews.space/researchers-use-satellites-to-measure-water-scarcity-in-Africa/>

CNBC Africa: <https://www.cnbc.com/africa/news/technology/2019/08/14/heres-how-satellites-are-used-to-measure-water-scarcity/>

Water Security: <https://watersecuritynewswire.com/2019/08/19/we-use-satellites-to-measure-water-scarcity/>

Houston Chronicle: <https://www.chron.com/news/article/We-use-satellites-to-measure-water-scarcity-14300195.php>

San Francisco Chronicle: <https://www.sfgate.com/news/article/We-use-satellites-to-measure-water-scarcity-14300195.php>

Guest speaker: Building capacity for research excellence in Nigeria's universities. Call in Radio program. Radio Benue, Makurdi, Nigeria. Thursday, November 22, 2018.

Invited Research Fellow, Cooperative Institute for Mesoscale Meteorological Studies, CIMMS, University of Oklahoma, 2012-2017.

Recipient, Carnegie Foundation African Diasporan Scholar Award to help develop faculty and graduate student research capabilities at Kaduna State University, Nigeria, June 2015.

Funding, Tribal, and Religious Politics bane of Nigerian education. *Leadership*, July 3, 2015. <http://leadership.ng/news/444537/funding-tribal-religious-politics-bane-of-nigerian-education-don>

UNISDR, 2013. Using Science for Disaster Risk Reduction. Report of the UNISDR Scientific and Technical Advisory Group. Case Study #5.

Building successful international collaborations. Public lecture delivered at Kaduna State University as the Carnegie Diasporan Fellow. <https://www.mynewswatchtimesng.com/40-lecturing-positions-in-Nigerian-varsities-unfilled-don>

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Watching the Rains to Build Resilience in the African Sahel (Case Study 5). One of eight case studies featured in Southgate RJ, Roth C, Schneider J, Shi P, Onishi T, Wenger D, Amman W, Ogallo L, Beddington J, Murray V. Using Science for Disaster Risk Reduction. 2013. [www.preventionweb.net/go/scitech](http://www.preventionweb.net/go/scitech).

Rainwatch Keeps Watch on Rainfall for West African Farmers <http://researchmatters.noaa.gov/news/Pages/IndianOceanPartnership.aspx>. NOAA Research News Digest: Special Year End Wrap-Up. A mention of our article on Rainwatch in the Bulletin of the AMS.

Adapting to climate change: Increasing the flow of Data (ICT Update), <http://ictupdate.cta.int/mobileen/Feature-Articles/Increasing-the-flow-of-data>. A magazine feature based on the application of Rainwatch. ICT is a technology magazine based in the Netherlands.

O.U. adds sustainability degree option. *The Journal Record*, Vol. 118, No. 152, Monday, August 5, 2013. Byline: Sarah Terry-Cobo.

President's Distinguished Faculty Mentoring Program, The University of Oklahoma, 2003-2007.

Scholar-Teacher Award, College of Geosciences, Jan 2005 (for Excellence in Teaching and the innovative use of research for teaching).

Outstanding Overall Graduating Student in Academic Excellence, University of Jos, Nigeria, 1988.

Outstanding Graduating Student in the College of Environmental Sciences, University of Jos, Nigeria, 1988.

### **Program and Proposal Review Experience**

#### **National Oceanic and Atmospheric Administration (NOAA)**

- (i) NOAA Joint Institute Technical Program Reviewer, CIASTA, Desert Research Institute, Reno, Nevada. May 2004.
- (ii) NOAA Joint Institute Technical Program Reviewer, Fort Collins, Colorado. November 4-7, 2003.
- (iii) Small Business Innovation Research (SBIR) Program.

#### **National Science Foundation (NSF)**

- (i) NSF panel review member, MSP, March 4-5<sup>th</sup>, 2013, Washington, D.C.
- (ii) Invited panel reviewer, NSF (MSP), March 30<sup>th</sup>-31<sup>st</sup>, 2009.
- (iii) Invited panel reviewer, NSF (IGERT preproposal), June 1-2<sup>nd</sup>, 2009.
- (iv) Chair, NSF/S-STEM panel review, Sept 30- Oct 2<sup>nd</sup>, 2008. Washington D.C
- (v) Invited panel reviewer, NSF-MSP, April 24-25<sup>th</sup>, 2008. Washington D.C.
- (vi) Chair, NSF/S-STEM panel review, Jan. 22-25, 2008. Washington D.C.
- (vii) Chair, panel review, NSF-CCLI, Phase 2&3, April 2007.
- (viii) Invited panel reviewer, CCLI Phase 3, March 2006, Arlington, VA.
- (ix) Chair NSF review panel, July 2005, CCLI Phase 2 and 3, Arlington, VA
- (x) Invited panel reviewer NSF-CCLI, March 2005, Crystal City, VA.

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- (xi) NSF-CCLI (A&I) Panel Review member, January 22-25, 2004, Crystal City, VA.
- (xii) NSF-CCLI (A&I) Panel Review member, July 2004, Crystal City, VA.
- (xiii) NSF-CCLI (A&I) Panel Review member, January 22-25, 2003, Arlington, VA.

### **Other Regular Review Activities**

- National Geographic Society, NGS.
- National Institute for Water Resources, NIWR
- United States Department of Defense, DoD.
- United States Department of Energy, DoE.
- United States Geological Survey, USGS.

### **Peer Review for Journals and Publishers**

- (i) African Geographical Review
- (ii) African Journal of Environmental Science and Technology
- (iii) Canadian Water Resources Journal
- (iv) Climate Change
- (v) Climate Research
- (vi) Earth Interactions
- (vii) Environmental Engineering Science
- (viii) ERDKUNDE
- (ix) Geoforum
- (x) Geomorphology
- (xi) Geophysical Research Letters
- (xii) Hydrologic Processes
- (xiii) Hydrological Science Journal
- (xiv) International Journal of Applied Meteorology and Climatology
- (xv) International Journal of Climatology
- (xvi) Journal of Applied Meteorology
- (xvii) Journal of Applied Meteorology and Climatology
- (xviii) Journal of Geography
- (xix) Journal of Hydrology
- (xx) Journal of International Development
- (xxi) NHESS
- (xxii) Physical Geography

- (xxiii) Professional Geographer
- (xxiv) Tree Ring Research

### **Mentoring and Assessments**

- Number of Post-Docs supervised or sponsored – 6
- Number of Ph.D. and M.A. students successfully graduated as principal advisors – 10
- Participation as a committee member or external examiner of graduate student committees – 52
- Number of dossier reviews to associate professor – 4
- Number of dossier reviews to professor – 6

### **Editorial Boards and Membership in Professional Organizations**

- **Guest Editor, *Atmosphere*, Special Issue "African Rainfall Variability: Science and Society," 2019.**
- **Editorial Board Member, *African Geographical Journal*, 2014 to present.**
- **Editorial Board member, *Scientific World Journal*, 2012 -2017.**
- **Invited Guest Editor (Special Issue): *Climate Research*, 2014.**
- **American Meteorological Society (AMS).**
- **American Association of Geographers (AAG).**
- **Nigerian Geographical Association (NGA).**
- **Geological Society of America (GSA).**
- **National Groundwater Association (USA).**
- **International Association of Hydrological Sciences (IAHS).**
- **American Geophysical Union (AGU).**

### **Research Publication**

#### **Editorials & Book Chapters**

Hasan, E., A. Tarhule, (2020). Recent Advances in Physical Water Scarcity Assessment Using GRACE Satellite Data. 2018-Sep-CH-0853.R1. In K. Zhang and Y. Hong (Eds.), Book chapter, AGU Books "*Remote Sensing and Natural Hazards*."

Cornforth R. and Aondover Tarhule, Guest Editors, 2018. Special Issue "African Rainfall Variability: Science and Society" *Atmosphere*, [https://www.mdpi.com/journal/atmosphere/special\\_issues/precipitation\\_Africa\\_Society](https://www.mdpi.com/journal/atmosphere/special_issues/precipitation_Africa_Society).

Tarhule, A. (2016). The future of water: Prospects and challenges for water management in the 21st Century, 442-453 in J.R. Ziolkowska, J.M. Peterson, editors. *Competition for Water Resources: Experiences and Management Approaches in the U.S. and Europe*. Elsevier: Cambridge, MA.

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- Tarhule, A., D.D. Dabi, M-k Woo, and N. Mbachiantim (2015). Did we really make a difference? A 10-year post-project review of a north-south partnership in northern Nigeria. In, Dogo, et al., (Ed.). Studies in climate change, physical geography, and human resources utilization and development in Nigeria. Festschrift in Honor of Prof. A. A. Adepetu, 2-18.
- Dogo, B., A.L. Tukur, J.G. La'ah and A. Tarhule (Eds.). 2015. Studies in Climate Change, Physical Geography and Human Resources Utilization and Development in Nigeria: Festschrift in Honor of Professor A.A. Adepetu. Kaduna State University, Nigeria, 445 pp.
- Tarhule, A. and Zewdu. T. Segele (Guest Editors). Regional Climate Modeling: Advances, Constraints and Use for Adaptation Planning. A special issue of *Climate* (ISSN 2225-1154). [https://www.mdpi.com/journal/climate/special issues/regional climate model?view=default&listby=date](https://www.mdpi.com/journal/climate/special%20issues/regional%20climate%20model?view=default&listby=date).
- Grijzen, J.G., C. Brown, A. Tarhule, Y. B. Ghile, Ü. Taner, A. Talbi-Jordan, H. N. Doffou, A. Guero, R. Y. Dessouassi, S. Kone, B. Coulibaly and N. Harshadeep (2013). Climate risk assessment for water resources development in the Niger River Basin Part I: Context and climate projections. pp. 37-56. Available online at <http://www.intechopen.com/books/climate-variability-regional-and-thematic-patterns>.
- Grijzen, J.G., A. Tarhule, C. Brown, Y.B. Ghile, Ü. Taner, A. Talbi-Jordan, H. N. Doffou, A. Guero, R. Y. Dessouassi, S. Kone, B. Coulibaly and N. Harshadeep (2013). Climate risk assessment for water resources development in the Niger River Basin Part II: Runoff elasticity and probabilistic analysis, pp. 57-72. Available online at <http://www.intechopen.com/books/climate-variability-regional-and-thematic-patterns>.
- Tarhule, A. (Ed.). (2013). Climate Variability: Regional and Thematic Patterns. *Intech Publishers* (Open Access). 203 pp. Available online at <http://www.intechopen.com/books/climate-variability-regional-and-thematic-patterns>.
- Tarhule, A. (2013). Preface in Climate Variability: Regional and Thematic Patterns. pp. vii-ix. Available online at <http://www.intechopen.com/books/climate-variability-regional-and-thematic-patterns>.
- Tarhule, A. (2011). Climate change adaptation in developing countries: Beyond rhetoric. *Climate Variability*, Intech Open Access Publisher. 163-180.
- Tarhule, A. (2006). Water Resources Scarcity in West Africa: The imperatives of regional cooperation. *Water in the Jordan Valley: Technical Solutions & Regional Cooperation*. In K. David Hambright, F. Jamil Ragep, and Joseph Ginat, (Eds.) "*Water in the Middle East: Cooperation and Technological Solutions in the Jordan Valley*" Sussex Academic Press.
- Tarhule A. (2005). Sahel. McGraw-Hill Encyclopedia of Science and Technology. Available online: [http://www.accessscience.com/server-java/Arknoide/science/AS/Encyclopedia/8/80/Est\\_800300\\_frameset.html](http://www.accessscience.com/server-java/Arknoide/science/AS/Encyclopedia/8/80/Est_800300_frameset.html).
- Tarhule, A. (2002). Environment and conflict in West Africa. In (Max G. Manwaring, ed): *Environmental security and global stability: Problems and responses*. Lexington Books, 51-83.

### **Research Articles**

- Hasan, E., A. Tarhule. Comparison of Decadal Water Storage Trends from Common GRACE Releases (RL05, RL06) Using Spatial Diagnostics and Modified Triple Collocation Approach. *Journal of Hydrology X*; 13, 2021, 100108, <https://doi.org/10.1016/j.hydroa.2021.100108>.
- Hasan, E., A. Tarhule, P. E. Kirstetter. Twentieth and twenty-first century Water Storage Changes in the Nile River Basin from GRACE/GRACE-FO and Modeling. *Remote Sensing*, 2021; 13(5):953. <https://doi.org/10.3390/rs13050953>.



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- Hasan, E., A. Tarhule (2020). GRACE: Gravity Recovery and Climate Experiment Long-term trend investigation over Nile River Basin: Spatial variability drivers. *Journal of Hydrology*, 2020, <https://doi.org/10.1016/j.jhydrol.2020.124870>.
- Hasan, E., A. Tarhule, Joseph Zume, Pierre Kirstetter, (2019). 50+ Years of Terrestrial Water Storage Variability in Africa's Transboundary Waters. *Scientific Reports*, 9:12327. <https://www.nature.com/articles/s41598-019-48813-x>
- Hasan, E., A. Tarhule, Y. Hong, and B. Moore, III. (2019). Assessment of physical water scarcity in Africa using GRACE and TRMM satellite data. *Remote Sensing*, 11, 904; doi:10.3390/rs11080904.
- Hasan, E., A. Tarhule, P. Kirstetter, R. Clark, and Y. Hong (2018). Runoff sensitivity to climate change in the Nile River Basin. *Journal of Hydrology*, V. 561, P 312-321. 10.1016/j.jhydrol.2018.04.004
- Akumaga, U., A. Tarhule (2018). Projected changes in intra-season rainfall characteristics in the Niger River Basin, West Africa. *Atmosphere* 2018, 9(12), 497; <https://doi.org/10.3390/atmos9120497>.
- Akumaga, U., A. Tarhule, C. Piani, B. Traore and A.A. Yusuf (2018). Utilizing process-based modeling to assess the impact of climate change on crop yields and adaptation options in the Niger River Basin, West Africa. *Agronomy*, Published online.
- Akumaga, U., A. Tarhule, and A.A. Yusuf (2017). Validation and testing of the FAO Aquacrop model under different levels of nitrogen fertilizer on rainfed maize in Nigeria, West Africa. *Agricultural and Forest Meteorology*, 232, 225-234.
- Zewdu, T.S.; L.M. Leslie and A. Tarhule. (2015). Sensitivity of Horn of Africa rainfall to regional sea surface temperature forcing. *Climate*, 3(2), 365-390. Doi:10.3390/cli3020365.
- Tarhule, A., J. T. Zume, J. Grijnsen, A. Talbi-Jordan, A. Guero, R. Yaovi Dessouassi, H. Doffou, S. Kone, B. Coulibaly, and N. Harshdeep (2014). Exploring temporal hydroclimatic variability in the Niger Basin (1901-2006) using observed and gridded data. *International Journal of Climatology*, (wileyonlinelibrary.com) DOI: 10.1002/joc.3999.
- Goldstein, C.J. and A. Tarhule (2014). Evaluating the impact of climate change and switchgrass production on a semi-arid basin. *Hydrological Processes*, (wileyonlinelibrary.com) DOI: 10.1002/hyp.10159.
- Goldstein, C.J., A. Tarhule and D.P. Brauer (2014). Simulating the hydrologic response of a semi-arid watershed to switchgrass cultivation. *Hydrology Research*, HYDROLOGY-D-12-00163R1.
- Sambu, D.K. and A. Tarhule (2013). Progress of water service providers in meeting millennium development goals in Kenya. *African Geographical Review*, 1-20.
- Boyd, E., R. J. Conforth, P.J. Lamb, A. Tarhule, M. Issa Lélé and A. Brouder (2013). Building resilience to face recurring environmental crisis in African Sahel. *Nature Climate Change*, 3, 631-637. DOI:10.1038/nclimate1856.
- Sambu, D.K. and A. Tarhule (2013). Institutional water reforms in Kenya: an analytical review. *Water Policy*, 15, 777-793.
- Zume J.T. and A. Tarhule (2011). Modeling the response of an alluvial aquifer to anthropogenic and recharge stresses in United States Southern Great Plains. *J. Earth System Science*, 120(4), 557-572.
- Tarhule, A., Z. Saley-Bana, and P.J. Lamb (2009). Rainwatch: A prototype GIS for rainfall monitoring in West Africa. *Bulletin of the American Meteorological Society*, 1607-1614.
- Tarhule, A. (2007). Climate information for development: An integrated dissemination model. *Africa Development*, Vol XXXII, No. 4, 145-156.
- Zume, J. and A. Tarhule (2007). Simulating the impacts of groundwater pumping on stream-aquifer dynamics in semi-arid northwestern Oklahoma, USA. *Hydrogeology Journal*. Available online at DOI

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10.1007/s10040-007-0268-8.

- Zume, J. and A. Tarhule (2006). Precipitation and streamflow variability in Northwestern Oklahoma, 1894-2003. *Physical Geography*, 27, 1-17.
- Zume, J., A. Tarhule, and S. Christenson (2006). Subsurface imaging of a closed municipal solid waste landfill near Norman, Oklahoma. *Groundwater Monitoring and Remediation* 26(2), 62-69.
- Tarhule A. (2005). Damaging rainfall and floods: The other Sahel disasters. *Climate Change*, 72 (3), October, 355-377. DOI:10.1007/s10584-005-6792-4.
- Tarhule, A. and S.W. Leavitt (2004). Comparison of Stable - Carbon Isotope composition in annual rings of Isorberlinia doka, Daniella oliveri, and Tamarindus indica and West African climate. *Dendrochronologia*, 22, 61-70.
- Tarhule, A. and P.J. Lamb (2003). Climate research and seasonal forecasting for West Africans: Perceptions, Dissemination, and Use? *Bulletin of the American Meteorological Society*, 84(12), 1741-1759.
- Tarhule A., T. Dewers, R. Young, A. Witten, and T. Halihan, (2003). Integrated subsurface imaging techniques for detecting cavities in the Gypsum Karst of Oklahoma. *Oklahoma Geological Survey, Circular 109, 77-83*.
- Miller, G., T. Dewers, and A. Tarhule (2003). Laser positioning and 3-dimensional digital mapping of Gypsum Karst, Western Oklahoma, USA. *Oklahoma Geological Survey, Circular 109, 71-75*.
- Tarhule, A. and M. Hughes (2002). Tree ring research in West Africa: need and potential. *Tree ring Research*, 58(1), 35-50.
- Tarhule, A., and M-k. Woo (2002). Adaptations to the dynamics of rural water supply from natural sources: a village example in semi-arid Nigeria. *Mitigation and Adaptation Strategies for Global Change*, 7, 215-237.
- Tarhule, A. and R. Tarhule-Lips (2001). Discontinuities in precipitation series in the West African Sahel. *Physical Geography*, 22(5), 430-448.
- Tarhule, A., and M-k. Woo (1999). Reply to comment on "Towards an interpretation of historical droughts in northern Nigeria". *Climatic Change*, 41, 261-262
- Tarhule, A., and M-k. Woo (1998). Changes in rainfall characteristics in northern Nigeria. *International Journal of Climatology*, 18, 1261-1271.
- Tarhule, A., and M-k. Woo (1997). Towards an interpretation of historical droughts in northern Nigeria. *Climatic Change*, 37, 601-616.
- Tarhule, A., and M-k. Woo (1997). Characteristics and use of shallow wells in a stream fadama: a case study in northern Nigeria. *Applied Geography*, 17, 29-42.
- Woo, M-k. and A. Tarhule (1994). Streamflow droughts of northern Nigerian rivers. *Hydrological Sciences Journal*, 39, 19-34.

### **Major Research Reports**

- Daron, J., G. Horsfield, C. Petty, R. Cornforth, F. Gallo, R. Graham, C. Kane, H. Osbahr, S. Cardey, A. Tarhule (2017). People-Centered Climate Services in the Sahel. *DfiD, Norwegian Refugee Council*, 74 pp.
- NBA/World Bank. (2014). Climate risk assessment of the Niger River Basin Sustainable Development Action Plan. *Final Report, volume 3*, 93 pp.
- Tarhule, A. (2014). Climate change impacts on rainfed agriculture in Niger Basin. Final Report *submitted*

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*to the NBA/World Bank CRA study, 43 pp.*

Tarhule, A., C. Brown., J. Grijssen, and M. Boulaye. (2009). Building resilience and increasing mitigation for climate-related risks (droughts and floods) in investments in the Niger Basin. Portfolio Screening for Climate Risk Management Final Inception Report, submitted to Africa Sustainable Development Department, The World Bank, August 2009, 94 pp.

Tarhule, A., C. Brown. and J. Grijssen. (2009). The Water Resources Profile of the Niger Basin. Draft report submitted to Africa Sustainable Development Department, The World Bank, December 2009, 36 pp.

Tarhule, A. (2008). Hydroclimatic Reconstruction of the Arbuckle-Simpson Aquifer in Oklahoma, Final Research Report submitted to the Oklahoma Water Resources Board, 43 pp.

Tarhule, A. (2007). High-Resolution Paleoclimatic Records from Tree Rings in the Soudan Sahel of West, *NSF ATM-0402622*.

Tarhule, A. and E. Bergey (2006). Springs in time: Comparison of present and historical flows. Annual Report submitted to the Oklahoma Water Resources Research Institute. 70 pp.

### **Conference Presentation (>100, 20+ countries)**

Tarhule Aondoover. Illinois State University's new model for equity and diversity in engineering facility design. Tradeline. University Facilities for the Sciences and Advanced Technologies, San Antonio, Texas, October 10-11, 2022.

Calarco, Trevor; Shinewald, Alix; Tomaszewski, Matthew; and Aondoover Tarhule. Buildings for next-gen engineers: Critical thinkers and doers, physician-innovators, and surgeons. Tradeline. University Facilities for the Sciences and Advanced Technologies, San Antonio, Texas, October 10-11, 2022.

Tarhule Aondoover. Status of water stress in Africa: insights from satellite gravity missions, in-situ, teleconnections, reanalysis, and modeling. Invited Keynote Address. The University of Oklahoma International Water Conference, Norman, Oklahoma. September 26-27, 2022.

Tarhule Aondoover. Nigerian Universities going native in the age of globalization. Invited keynote address. Annual meeting of the Association of Governing Councils of State Universities in Nigeria. March 5, 2020, Benue State University, Makurdi, Nigeria.

Tarhule, A. Recent developments in water scarcity analysis and implications for water resources planning and development. Invited keynote address. The University of Zimbabwe Geological Society Summer Symposium. November 29, 2019.

Tarhule, A and E Hasan. +50 years of terrestrial water storage variability in Africa's transboundary river basins. Presented at the Association of American Geographers Annual Meeting, Washington DC, April 3-7, 2019.

Hasan, E., A. Tarhule, Pierre Kirstetter, Joseph Zume. Hydroclimatic Variability in Africa's Transboundary River Basin Using +50 Years of Extended Terrestrial Water Storage. Earth and Space Science Open Archive (ESSOAr). AGU 2018 Fall Meeting, 10-14 December 2018, Washington, DC. Doi, <https://doi.org/10.1002/essoar.10500631.1>. Online source: <https://www.essoar.org/doi/abs/10.1002/essoar.10500631.1>

Tarhule, A. Emerging localism and insularism in Nigeria's universities: An insider's view from without. Invited keynote lecture, Benue State University 2<sup>nd</sup> Council Lecture Series, Makurdi, Nigeria. Friday, November 23<sup>rd</sup>, 2018.

Tarhule, A. and E. Hasan. Hydroclimatic variability in international river basins in Africa. Presented at the Annual Meeting of the American Association of Geographers, April 10-14, 2018. New Orleans,

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USA.

Tarhule, A. Ros Cornforth, and Galine Yanon. Rainwatch Alliance. Where we have come from...where we are headed. Presented at the Rainwatch learning event March, 2018, in Kampala, Uganda.

Tarhule, A. Ros Cornforth, and Galine Yanon. Rainwatch Alliance: Ongoing development. Presented at the PRESASS meeting on seasonal rainfall forecasting for West Africa, 15 May, 2017 in Accra, Ghana.

Tarhule, A. Session moderator: Lessons learned in climate data implementation and a path toward sustainability. UNDP CIRDA REGIONAL WORKSHOP. Towards Sustainability for Climate Information Services: Achievements, Impacts, Lessons Learned and Next Steps. 29-1 Dec, 2017. Lusaka, Zambia.

Tarhule, A. and E. Hasan. A revised water scarcity index for Africa using GRACE satellite data. Presented at the Annual meeting of the American Association of Geographers, Boston, April, 2017. USA.

Tarhule A., R. Cornforth, M. Issa Lele. Building Climate Resilient Society in the Sahel: The Rainwatch-AfClix Experience. 96<sup>th</sup> American Meteorological Society Annual Meeting. The Peter J. Lamb Symposium – "Helping Africa to Help Itself". New Orleans, 10-14 Jan, 2016.

Cornforth, R and A. Tarhule. Toward community-based early warning systems: Review, Rainwatch, Reflect. NCAS-Climate, Department of Meteorology, University of Reading. July, 2016.

Tarhule, A. and B. Dogo. International Development Assistance: A conceptual new model of how Africa can Empower itself. Presented at the Annual Meeting of the Association of American Geographers, San Francisco, April, 2016.

Tarhule A. Strengthening International Research and Development Linkages. Carnegie African Diaspora Fellowship Lecture. Kaduna State University, Kaduna, Nigeria. July 8th, 2015.

Tarhule A. Writing a Successful Grant Proposal. Carnegie African Diaspora Fellowship, Public Lecture. Kaduna State University, Kaduna, Nigeria. June 12, 2015.

Tarhule, A. Climate change as national development imperative. Invited keynote presentation. Presented at the International climate change and development conference, Nigerian Meteorological Society, November 8-10, 2014. Held at Benue State University, Makurdi, Nigeria.

Tarhule, A. and R. Cornforth. Building stakeholder partnerships in climate change adaptation using Rainwatch/AfClix. Paper presented at the fourth international conference on climate change for development in Marrakesh, Morocco, October 5-10<sup>th</sup>. Organized by the United Nations Economic Commission for Africa. 2014.

Tarhule, A. Climate change impacts on rainfed agriculture and crop yields in the Niger Basin. Presented at the NBA & WB-AFR Natural Resources Niger Basin Climate Risk Assessment Workshop, January 6-7, 2014, Niamey, Niger.

Brown, C., M. Umit-Tanner, A. Tarhule, J. Grijnsen. Overview of the Niger Climate Risk Assessment Study. Presented at the NBA & WB-AFR Natural Resources Niger Basin Climate Risk Assessment Workshop, January 6-7, 2014, Niamey, Niger.

Brown, C., M. Umit-Tanner, A. Tarhule, J. Grijnsen. Climate risk assessment by decision-scaling in the Niger River Basin. Presented at the NBA & WB-AFR Natural Resources Niger Basin Climate Risk Assessment Workshop, January 6-7, 2014, Niamey, Niger.

Brown, C., M. Umit-Tanner, A. Tarhule, J. Grijnsen. Climate risk assessment results. Presented at the NBA & WB-AFR Natural Resources Niger Basin Climate Risk Assessment Workshop, January 6-7, 2014, Niamey, Niger.

Brown, C., M. Umit-Tanner, A. Tarhule, J. Grijnsen. Tools for accessing climate information. Presented

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- at the NBA & WB-AFR Natural Resources Niger Basin Climate Risk Assessment Workshop, January 6-7, 2014, Niamey, Niger.
- Brown, C., M. Umit-Tanner, A. Tarhule, J. Grijzen. Climate change adaptation strategies for the Niger Basin. Presented at the NBA & WB-AFR Natural Resources Niger Basin Climate Risk Assessment Workshop, January 6-7, 2014, Niamey, Niger.
- Cornforth, R.J., P.J. Lamb, E. Boyd, A. Tarhule, M. Issa-Lele, A. Brouder. Weathering the drought: Resilience strategies for local adaptation and decision-making under extreme risk and uncertainty. Presented at the Ninth AMS Symposium on Policy and Socio-Economic Research Atlanta, GA, February 6, 2014.
- Tarhule A. Climate change adaptation for development: Strategic or risky? Presented at the third conference on Climate Change and Development in Africa, Addis Ababa, Ethiopia, October 21-23, 2013.
- Tarhule A., J.T. Zume, J.G. Grijzen. Toward improved understanding of hydroclimatic variability in the Niger Basin. Presented at the Economic Commission for Africa Climate Conference, Arusha, Tanzania, October 15-18, 2013.
- Tarhule A., C. Brown. J.G. Grijzen. Evidence-Based Climate Risk Management under uncertainty: A case study from the Niger River Basin. Presented at the Economic Commission for Africa Climate Conference, Arusha, Tanzania, October 15-18, 2013.
- Tarhule, A. P.J. Lamb, M. Issa Lélé. Rainfall Monitoring and Dissemination in West Africa. Presented at the Joint UNEP-OU-University of Reading-Afclix workshop in Khartoum, Sudan, June 9-13, 2013.
- Tarhule A. and U. Akumaga. Climate Change Impacts on Rain-fed Agriculture and Crop Yields in the Niger Basin. Presented at the University of Oklahoma International Water Conference on Sept. 23-25, 2013 in Norman, Oklahoma. Lamb, P.J., A. Tarhule, Z. Saley Bana, M. Bell, M. Issa Lele. Weather to Climate continuum challenges in Africa. Technical Partner Consultation Workshop, Khartoum, Sudan, June 9-13, 2013.
- Tarhule, A., J.T. Zume, J.G. Grijzen, A. Talbi. Exploring Temporal Hydroclimatic Variability in the Niger Basin (1901-2006) Using Gridded and Observed Data. Presented at the Annual Meeting of the Association of American Geographers, Los Angeles, April 9-13, 2013.
- Goldstein, J.C., A. Tarhule, C.P. Weaver. The hydrologic responses to climate-induced changes in precipitation and switchgrass cultivation of a Great Plains watershed. NCAR workshop, Boulder, Colorado, July 15-19, 2013.
- Grijzen, J., C. Brown, and A. Tarhule. Climate risk assessment for water resources development in the Niger Basin. Presented at HydroPredict, Special Session 3: Choosing Models for Resilient Water Resources Management, Vienna, September 2012.
- Tarhule, A. Climate risk assessment for development planning and disaster mitigation in the Niger Basin. Presented at the International Conference in Hydrologic Extremes and Prediction, HoHai University, Nanjing, China. Nov 29-Dec 1, 2011.
- Tarhule, A., R. Mundu, D. Sabatini, S. Aondoakaa and M. Magajji. Water quality in urban domestic water wells in Nigeria. Presented at the University of Oklahoma International WaTER Conference, October 24-27, 2011.
- Tarhule, A. Invited Keynote Address, The University of Kaduna Matriculation, June 6, 2011.
- Tarhule, A. Runoff response to climatic variability and watershed characteristics in the Upper Niger Basin. Presented at the Annual Meeting of the Association of American Geographers, Seattle, April 12-16, 2011.
- Tarhule, A. The physical parameters of disaster-risk science: Building a multidisciplinary framework for

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- Disaster Risk Science Curriculum and Management in Africa. Presented at the USAID/NSF workshop on Risk Science Scholarship and Sustainable Development: Building Educator-Practitioner Networks in Africa, held in Bahir Dar, Ethiopia, January 11-15, 2010.
- Grijzen, J., A. Tarhule, C. Brown, P. Kangah, and A. Tassiou. The historical climate variability of the Niger Basin. Presented at the Regional Consultation Workshop of the Climate Risk Assessment (CRA) for the Niger River Basin Strategic Development Action Plan (SDAP). Organized by the World Bank (Africa Sustainable Development Department), Splendid Hotel, Ouagadougou, May 21-27, 2010.
- Grijzen, J., A. Tarhule, C. Brown, P. Kangah, and A. Tassiou. Climate change and climate variability adaptation strategies and opportunities. Presented at the Regional Consultation Workshop of the Climate Risk Assessment (CRA) for the Niger River Basin Strategic Development Action Plan (SDAP). Organized by the World Bank (Africa Sustainable Development Department), Splendid Hotel, Ouagadougou, May 21-27, 2010.
- Tarhule A., D. Davou, and M-k. Woo. Did We Really Make a Difference: Lessons from a 10-year post-project review of a community water development project in northeastern Nigeria. Presented at the O.U. International Water Conference, University of Oklahoma, Norman, OK, October 26 – 27, 2009.
- Tarhule, A. Z. Saley Bana and P.J. Lamb. RAINWATCH: A Geographic Information System for Rainfall Monitoring in Niger. Presented at the 12<sup>th</sup> Regional Climate Outlook Forum, Niamey, Niger, May 21-22, 2009.
- Tarhule, A. Intra-Season Radial Growth Increments of Tree Species with Dendrochronological Potential in Semi-Arid West Africa. Presented at the 2009 Annual Meeting of the Association of American Geographers in Las Vegas, Nevada, March 22-27, 2009.
- Goldstein, J., A. Tarhule, and M. Richman. Trends in Precipitation in the United States Central and Southern Plains: 1948-2006. Presented at the 2009 Annual Meeting of the Association of American Geographers in Las Vegas, Nevada, March 22-27, 2009.
- Tarhule, A., Z. Saley Bana, and P.J. Lamb. RAINWATCH: A Geographic Information System for Rainfall Monitoring in Niger. Workshop presentation at ACMAD/AGHRYMET, Niamey, Niger. August 11-16, 2008.
- Yañez, C. and A. Tarhule. Spatially-Distributed Evapotranspiration Estimation Using Satellite and Ground-Based Data: A Demonstration Study. Presented at the 2008 Governor's Water Conference and OWRI Water Research Symposium, Nov 25-29, 2008.
- Tarhule, A., Z. Saley Bana, and P.J. Lamb. RAINWATCH: A Geographic Information System for Rainfall Monitoring in Niger. Presented at the African Center for Meteorological Applications for Development (ACMAD), Niamey, Republic of Niger, December 2007.
- Tarhule, A., Z. Saley Bana, and P.J. Lamb. RAINWATCH: A Geographic Information System for Rainfall Monitoring in Niger. Presented at the 2<sup>nd</sup> AMMA International Conference, Karlsruhe, Germany, November 26-30, 2007.
- Tarhule, A. Towards a drought monitoring system in Nigeria. Invited Presentation at the first Nigerian-USA international drought workshop held at Abubakar Tafawa Barewa University of Science and Technology, Bauchi, Bauchi State, Nigeria, November 11-18, 2007.
- Tarhule, A. Hydroclimatic reconstruction of the Arbuckle-Simpson Aquifer. Presented at the Technical Peer Review Team, Arbuckle Simpson Aquifer Study, Oklahoma Water Board, October 2007.
- Tarhule, A. Status of groundwater use, exploration and policy in Nigeria. Presented at the National Groundwater Association (NGWA) Water Summit held at the Albuquerque Convention Center, Albuquerque, New Mexico, April 29-May 3, 2007.
- Zume, J. and A. Tarhule. Sensitivity of a shallow aquifer to climate variability and groundwater pumping

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- on the United States' southern Great Plains. Presented at the Annual Meeting of the Association of American Geographers, San Francisco, California, April 17- 21, 2007.
- Tarhule, A. Hydroclimatic reconstruction of the Arbuckle-Simpson aquifer using tree rings. Presented at the Annual Meeting of the Board of Directors of the Oklahoma Water Resources Board, Oklahoma City, OK, August 9, 2006.
- Tarhule, A. I. Bouzou, and M. Engels. Towards tree-ring proxy climate records for the west African Sahel savanna zone. Presented at the International Tree-ring Conference, Friendship Hotel, Beijing, China, June 10-17, 2006.
- Baze, L, B. Paris, J. Robertson, and A. Tarhule. Diameter-Age relationship for *Quercus Stellata* in Central Oklahoma. Presented at the Association of American Geographers Annual Meeting in Chicago, Illinois, March 7-11, 2006.
- Zume, J and A. Tarhule. Simulating the effects of aquifer pumping on groundwater levels and streamflow in Northwestern Oklahoma. Presented at the 2006 Annual Meeting of the Association of American Geographers, Chicago, Illinois, March 7-11, 2006.
- Tarhule, A., and I. Bouzou. Towards High-Resolution Tree-Ring Proxy Climate Records for the West African Sahel Savanna Zone. Presented at the First International Conference of AMMA, Dakar. Nov 28-Dec. 4, 2005.
- Tarhule, A. Sahel Floods and Droughts: Lessons for Disaster Mitigation. Invited Presentation, OU-Mesonet International Workshop: Decision making in weather impacted disasters, University of Oklahoma, Norman, OK, October 18, 2005.
- Tarhule, A. Hydroclimatic reconstruction of the Arbuckle-Simpson aquifer using tree rings. Presented at Oklahoma Water 2005. Meeting of the Oklahoma Water Resources Research Institute, Tulsa, September 27-28, 2005.
- Tarhule, A. Wet and Dry rainfall regimes and years in the Sahel: Identifying the causes from empirical records. Presented at the Annual Meeting of the Association of American Geographers, Denver, Colorado, March 7-11, 2005.
- Tarhule, A. Emerging challenges and Opportunities to Geographic Fieldwork: Lessons from Geographic Fieldwork Experience at the University of Oklahoma. Presented at the Annual Meeting of the Southwestern Association of American Geographers, Stephen F. Austin University, Nacogdoches, Texas, Nov 12-13, 2004.
- Tarhule, A. Implementation of field laboratory and field work curriculum in physical geography and geotechniques. Invited poster presentation at the NSF/AAAS conference on Invention and Impact: Building Excellence in Undergraduate Science, Technology, Engineering, and Mathematics (STEM) education. Crystal City, Virginia, April 16-18, 2004.
- Tarhule, A. Climate information from tropical tree rings: Have we looked enough? Invited Poster presented at the International Conference on Tree Rings and Climate: Sharpening the Focus. Laboratory for tree ring research, University of Arizona, Tucson. April 5-9, 2004.
- Tarhule A. Heavy and extreme rainfall in Niger, West Africa. Presented at the 100th Annual Meeting of the Association of American Geographers, Philadelphia, March 14-19, 2004.
- Faulkner, M. and A. Tarhule and E. Bergey. Springs in Time: Comparison of Present and Historical Flows. Presented at the Annual Meeting of the Southwestern Association of American Geographers, Stephen F. Austin University, Nacogdoches, Texas, Nov 12-13, 2004.
- Zume, J. A. Tarhule, and S. Christenson. Surface imaging of a closed municipal solid waste landfill in Norman, Oklahoma. Presented at the 100th Annual Meeting of the Association of American Geographers, Philadelphia, March 14-19, 2004.

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- Turney, R. and A. Tarhule. Student experiences in Inquiry-Guided learning in Geography at the University of Oklahoma. Poster presentation at the 100th Annual Meeting of the Association of American Geographers, Philadelphia, March 14-19, 2004.
- Currens, S. and A. Tarhule. Tornado signal in tree-rings in Oklahoma. Poster presentation at the 100th Annual Meeting of the Association of American Geographers, Philadelphia, March 14-19, 2004.
- Tarhule, A. Climate research and seasonal forecasting for West Africans: Perceptions, Dissemination and Use. Presented at NOAA Review of CIMMS, October 15-16, 2003.
- Tarhule, A. The hydrology of the Red River. Presented at the Red River Symposium organized by the Southwestern Association of Naturalists (SWAN), University of Oklahoma, Norman, OK, April 19-22, 2003.
- Tarhule, A. The response of stable-carbon isotope to climatic variability in West African tree rings. Presented at the 99<sup>th</sup> Annual Meeting of the Association of American Geographers, New Orleans, Louisiana, March 4-8, 2003.
- Turney, R. and A. Tarhule. Inquiry-Guided Learning in Geography at the University of Oklahoma. Poster presentation at the Annual Meeting of SWAAG, Oklahoma State University, Stillwater, October 2003.
- Zume, J. and A. Tarhule. Wavelength transformation of West Africa Rainfall. Presented at the 99<sup>th</sup> Annual Meeting of the Association of American Geographers, New Orleans, Louisiana, March 4-8, 2003.
- Tarhule, A., T. Halihan, T. Dewers, R. Young, and A. Witten. Integrated subsurface imaging techniques for detecting cavities in Oklahoma evaporite karst. Presented at the Annual Meeting of the Geological Society of America, Denver, Colorado, October 26-30, 2002.
- Tarhule, A. The Potential for Tree Ring Analysis in Semi-arid West Africa. Presented at the 6<sup>th</sup> International Conference on Dendrochronology. University of Laval, Quebec City, Quebec, Canada. August 21-28, 2002.
- Tarhule, A., B. Wallach and T. Dewers. Progress Report: Report of the Partnership between the University of Oklahoma and Bethlehem University, PA. Presented at the Association Liaison Office Meeting for University Cooperation for Development (USAID), The Watergate Hotel, Washington D.C., August 11-14, 2002.
- Zume, J., A. Tarhule and S. Christenson. Resistivity/Conductivity anomalies at the Norman landfill site. Presented at the Annual Meeting of the Geological Society of America, Denver, Colorado, October 26-30, 2002.
- Galen, M., T. Dewers, and A. Tarhule. Laser positioning and 3-D mapping of Western Oklahoma karst. Presented at the Annual Meeting of the Geological Society of America, Denver, Colorado, October 26-30, 2002.
- Tarhule, A. Water Resources Scarcity in West Africa: The Imperatives of Regional Cooperation. Water in the Jordan Valley: Technical Solutions & Regional Cooperation. Presented at the conference organized by the International Programs Center, The University of Oklahoma, University of Oklahoma, Norman, OK, Nov. 13-14, 2001.
- Tarhule, A. Application of Electrical Resistivity Method to Map Shallow Alluvial Aquifers. Presented at 97<sup>th</sup> Annual meeting of the Association of American Geographers Convention, New York City, New York, Feb 28-March 3, 2001
- Hoagland, B. and A. Tarhule. Trees on the edge: composition and age of a *Pinus ponderosa* stand in Cimarron County, Oklahoma. Presented at SWAG Meeting, Forts Worth, Texas, Nov. 13-14, 2001.
- Tarhule, A. Subsurface imaging using high-resolution electrical resistivity tomography. Invited Guest speaker: Oklahoma State University Department of Geography colloquium series, December 4, 2000.



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- Tarhule, A. The potential and travails of dendrochronological analysis in the Sahel Savanna, West Africa. Presented at the 29th Annual Meeting of the International Geographic Union, Seoul, Korea, August 9-13, 2000.
- Tarhule, A., and M-K. Woo. Hydrology of village wells in Sahelian Nigeria. Presented at the 29<sup>th</sup> Annual Meeting of the International Geographic Union, Seoul, Korea. August 9-13, 2000.
- Tarhule, A. and R. Tarhule-Lips. Wet and dry years in the Sahel: what are they? Presented at the 96<sup>th</sup> Annual Meeting of the Association of American Geographers Convention, Pittsburgh, Pennsylvania, April 4-8, 2000.
- Tarhule, A. Hydro-geologic investigations of a fadama (alluvial) aquifer in northeastern Nigeria. Presented at the Annual Meeting and Exposition of the Geological Society of America. Metro-Toronto Convention Center, Toronto, ON, Canada, October 26-29, 1998.
- Woo, M-k. and A. Tarhule. Coping with drought: Sources of rural water supply for a village in semi-arid Nigeria. Presented at the International Geographical Union. Study Group on Environmental Change and Extreme Hydrological Events. Centro de Estudos Geograficos, University of Lisbon, Portugal, August 28-29, 1998.
- Tarhule, A. An investigation of the water resources potential of a fadama (alluvial) aquifer in northeastern Nigeria. Presented at the 94th Annual Meeting of the Association of American Geographers Convention, Boston, Massachusetts, March 25-29, 1998.
- Tarhule, A., and M-k. Woo. Hydrological and Agricultural Implications of Rainfall Trends in Northern Nigeria. Paper presented at the International Conference on Tropical Meteorology, Climatology and Hydrology, Brussels, Belgium, May 22-24, 1996.
- Tarhule, A., and M-k. Woo. Streamflow drought in northern Nigeria. Paper presented at the Annual Meeting of the Canadian Association of Geographers, Ontario Division (CAGONT) and the East Lakes Division of the Association of American Geographers (ELDAAG), University of Windsor, October 29-31, 1995.
- Tarhule, A., and M-k. Woo. The Role of Shallow Ground Water in Semi-Arid Environments: Case Study of north-eastern Nigeria. Presented at the International Symposium on African Drought, ICTP, Trieste, Italy, July 31 - August 4, 1995.
- Tarhule, A., and M-k. Woo. Analysis of streamflow drought in northern Nigeria. Presented at the first Annual McMaster/University at Buffalo Graduate Conference in Geography, University of Buffalo, New York, March 5-6, 1993.