

GEORGE WILLIAM KAJJUMBA

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EDUCATION

PhD, Civil and Environmental Engineering University of Nevada Las Vegas (UNLV), USA	Aug 2018–Present
MSc, Environmental Engineering Istanbul University, Turkey	Aug 2016–Jun 2018
MBA, Makerere University (MUK), Uganda	Aug 2013–Jun 2015
BSc, Engineering Makerere University, Uganda	Aug 2008–Jun 2012

RELEVANT EXPERIENCE

Program Reviewer: Umm Al Qura University Feb 2019—Present

I have reviewed and helped faculty members meet the course and project objectives through critical and constructive feedback of student works. I have examined over 10 student projects and examined different programs.

- Provide written, unbiased, constructive feedback in a timely manner on the scholarly merits and the scientific value of the work, together with the documented basis for the reviewer's opinion
- Indicate whether the writing is clear, concise, and relevant by rating the work's composition, scientific accuracy, and originality
- Maintaining the confidentiality of the process: not sharing, discussing with third parties, or disclosing information from reviewed projects/programs

Teaching assistant: University of Nevada, Las Vegas, USA Aug 2018—Present

I have mentored, shared, and transferred knowledge with Vietnamese & S. Korean scholars to manage arsenic, chromium, & TCE contamination. ***Wrote and won grants/fellowships worth over \$120,000.***

- Supervised/mentored students through Louis Stokes Alliance for Minority Participation (LSAMP) and Research and Mentorship Program ([RAMP](#))
- Trained aspiring engineers the usage of modelling tools and research applicability in day-to-day operations and processes
- Developed efficient dye treatment mechanism through advanced oxidation process and adsorption
- Developed innovative recovery mechanism of nutrients from municipal sewage sludge to better reuse them in irrigation systems and for human consumption
- Investigated the cytotoxicity and genotoxicity of lanthanides, an emerging class of phosphorus coagulants in water treatment

Co-Founder & CFO: UZURI Health & Beauty, Uganda Feb 2015—Present

[UZURI Health](#) is a healthcare startup changing Ugandans' *sick-care mentality* by providing preventive and primary care at beauty centers which are trusted and popular community spaces.

- Provided technical, planning, development, and evaluation of financial policies and systems, including strategic financial plan and budget to ensure prudent management and control of financial resources
- Developed business plans that enabled UZURI to raise over \$50,000 in convertible debt seed capital
- Monitored the utilisation of capital, revenues, and expenditures against approved plans and ensured that any variances were justified following the approved plans
- Worked with Human Resource to create good employee relations to ensure productivity and organisational effectiveness

Wastewater Research Assistant: Istanbul University, Turkey Aug 2016–Jun 2018

I mentored and worked with undergraduate and graduate students. They were able to develop research ideas, present and write publications.

- Researched and collected water data through complex techniques and procedures, library research, structured interviews or other project specific methodology
- Planned and modified wastewater treatment techniques, procedures, and tests
- Wrote and edited water related publications and presentations

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Operations Engineer: Delta Petroleum Ltd, Uganda

Sept 2012–Apr 2015

Responsible for retail operation with 100+ staff, 10 direct reports and accountable for the revenue of \$1.2m per month. I instituted changes that reduced operating costs while maximizing turnover.

- Ensured that all fuel stations conformed to Health and Environmental standards as set by the oil industry and government
- Ensured all oil spills were managed and restored before they contaminated soil and water
- Oversaw all operational activities at 12 petroleum stations for Eastern Region to ensure that margins & sales results met monthly targets and fostered high performance amongst team members
- Analysed data to find the most efficient sales methods & opportunities and marketing strategies through customer research
- Presented and promoted new products and services to present and prospective customers
- Monitored competition within assigned region, prepared and submitted reports to the Sales Director
- Advised dealers on station staff requirements and followed up on their welfare and training
- Tracked and monitored fuel trucks in transit to ensure smooth logistics of the goods

FELLOWSHIPS, AWARDS, AND HONORS

- The [70th Lindau Nobel Laureate Meeting \(LNLM\)](#), 28th June -3rd July, 2020. The prestigious LNLM is an opportunity for excellent young scientists from around the world to meet Nobel Laureates and share ideas. Because of the interdisciplinary nature of my research, I was among the 650 participants selected worldwide to be a part of the 70th LNLM in Lindau, Germany.
- [Dr. Pankaj Parekh Memorial Scholarship](#): In 2020, I became the [first UNLV](#) from Civil & Environmental Engineering to be awarded this scholarship because of my contribution towards water quality—\$5,000
- [UNLV Foundation Board of Trustees Fellowship](#): The fellowship recognizes top graduate students whose research is helping to advance both the community and the academic world. In 2020, I became the [first student](#) from the College of Engineering to win this fellowship. The fellowship is valued at **\$60,000**.
- **2020 Gauteng Accelerator Program (GAP) Innovation Grant**: We won the 1st prize of 2020 medical category accelerator award that aims at improving the supply chain of malaria artemisinin-based drugs in developing economies. The award is valued at [S.A Rands 300,000](#) (≈\$20,000).
- In 2020, I was awarded Roy and Helen Kelsall scholarship fund, value \$1000
- [Nevada Water Resources Association](#) (NWRA): NWRA focuses at advancing the water solutions in Nevada. In 2020, I was among the recipients who received a **\$500** award because of my contribution towards advancing water treatment technology.
- [Nevada WaterReuse Association](#) (NWA) offers graduate scholarship (**\$1,000**) to a student in the water field. NWA recognized my contribution and commitment to water field and awarded me this scholarship both in 2019 and 2020.
- [American Chemical Society \(ACS\), Southern Nevada section](#) facilitates students from Southern Nevada to attend different conferences; in 2020, I was awarded with **\$ 300.00** to attend [ACS conference](#).
- The [Rebel Grad Slam](#) awards students at UNLV who can pitch their research—why you study it, what your research question is, how you're analyzing it, and —why it matters to folks outside your field using a 1-PowerPoint slide in less than 3 minutes! I have won this award (**\$250.00**) both in 2018 and 2019
- [Association of Energy Engineers](#) awards merit and career-focus based individuals that are pursuing a career in engineering and technical fields including environmental science, architecture; in 2019, I was awarded **\$1500**.
- Every year UNLV awards outstanding students who have elicited academic excellency; I have won this award in 2019 and 2020; award value **\$ 2,150**
- Turkey Government Scholarship, 2016-2018—MSc. Environmental Engineering at Istanbul University: ≈\$ 20,000
- Delta Petroleum (U) Limited sponsorship—MBA at Makerere University, 2013-2015: ≈\$ 4,000
- Uganda government Scholarship—BSc. Engineering at Makerere University, 2008-2012: ≈\$ 6,000

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GRANTS AND PROPOSALS

- 1) **Title:** Alternative DOE tank waste processing: Phosphate encapsulation of radionuclides using a waste product from wastewater treatment. **PI:** Erica J. Marti, PhD, UNLV. **Funder:** Department of Energy, USA: \$ 272,780, pending. **Role:** Novel idea development, proposal writing, and methodology development
- 2) **Title:** Generating volatile fatty acids from secondary sludge and/or Waste juice for biological phosphorus removal. **PI:** Erica J. Marti, PhD, UNLV. **Funder:** City of Henderson Water Reclamation Facility, NV, US: \$59,863.49. Pending. **Role:** Novel idea development, proposal writing, and methodology development
- 3) **Title:** Cytotoxicity of lanthanide elements: an evaluation of in-vitro bioassays. **PI:** Erica J. Marti, PhD, UNLV. **Funder:** Graduate & Professional Student Association, UNLV: \$ 1,250.00. Awarded. **Role:** Novel idea development, proposal writing, and methodology development
- 4) **Designer/Researcher:** Upgrading and improving phosphorus recovery in return streams of a wastewater treatment plant. **PI:** Erica J. Marti, PhD, UNLV. **Funder:** Clark county wastewater reclamation district, NV US: \$ 49,988.00 Awarded. **Role:** Novel idea development, proposal writing, and methodology development
- 5) **Researcher:** Synthesis, characterisation, and optimisation of hydrophilic biochar produced from waste biomass, which would be used as a drinking water filter media for application in rural and disadvantaged communities whose groundwaters are suffering from contamination by perchlorate or a mixture of perchlorate and nitrate. **Funder:** U.S. Environmental Protection Agency: \$ 25,000.00. Not awarded.

PUBLICATIONS

Published

- Abbas, T., Kajjumba, G.W., Ejjada, M., Masrura, S.U., Marti, E.J., Khan, E., Jones-lepp, T.L., 2020. Recent advancements in the removal of cyanotoxins from water using conventional and modified adsorbents—a contemporary review. *Water*. <https://doi.org/10.3390/w12102756>
- Kajjumba, G. W., Nagitta, O. P., Mkansi, M. & Osra, F. A. Offshoring-Outsourcing and Onshoring Tradeoffs: The Impact of Coronavirus on Global Supply Chain. in (Intechopen, 2020). <http://dx.doi.org/10.5772/intechopen.95281>
- Kajjumba G.W., Yildirim E., Aydın S., Emik S., Ağun T., Osra F., Wasswa J., 2019. A facile polymerisation of magnetic coal to enhanced phosphate removal from solution. *J. Environ. Manage.* 247, 356–362. <https://doi.org/10.1016/j.jenvman.2019.06.088>
- Kajjumba, G. W., Yildirim, E., Osra, F., Aydın, S., Ngan, T. T. K., & Emik, S. (2019). Insights into nonlinear adsorption kinetics and isotherms of vanadium using magnetised coal-polyaniline. *Desalination and Water Treatment*, 172, 158–166. <https://doi.org/10.5004/dwt.2019.24985>
- Osra, F.A., Kajjumba, G.W., 2019. Landfill site selection for Makkah using GIS and analytical hierarchy process. *Waste Manag. Res. Vol. 38(3)* 245–253. <https://doi.org/10.1177/0734242X19833153>
- Kajjumba, G.W., Emik, S., Öngen, A., Özcan, H.K., Aydın, S., 2018. Modelling of adsorption kinetic processes—Errors, theory and application. *Advanced Sorption Process Applications. IntechOpen*, 1–19. <https://doi.org/10.5772/intechopen.80495>
- Kajjumba, G.W., Aydın, S., Güneysu, S., 2018. Adsorption isotherms and kinetics of vanadium by shale and coal waste. *Adsorpt. Sci. Technol.* 36, 936–952. <https://doi.org/10.1177/0263617417733586>

Accepted

P.O. Nagitta, M. Mkansi, G.W. Kajjumba, “The relationship between market environment dimensions and availability of malarial pills in Uganda”, *Journal: Global Advances in Health and Medicine*

Under review

G.W. Kajjumba, M. Attene-Ramos, E.J. Marti, “A comprehensive toxicity assessment of rare earth elements (lanthanides) used in wastewater treatment” *Journal: Environmental Science & Technology*

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In preparation

- G.W. Kajjumba**, M. Attene-Ramos, E.J. Marti, "Inhibition of mitochondria activity in a human carcinoma (HepG2) cell exposed to disinfection byproduct mixtures using mitochondria membrane potential indicator assay" *Journal: Environmental Science & Technology*
- G.W. Kajjumba**, M. Attene-Ramos, E.J. Marti, "Screening potential of six in vitro bioassays as toxicity indicators of disinfection byproducts (DBPs)" *Journal: Environmental Science & Technology*
- G.W. Kajjumba**, B. Peng, D. Koury E.J. Marti, "Phosphorus management in wastewater treatment plants using cerium, aluminium, and iron", *Chemical Engineering Journal*
- Kajjumba**, Vu, Ejjada, Obra, Marti, "*In situ* regeneration of granular activated carbon column through advanced oxidation process", *Journal: Science of Total Environment*
- P.O. Nagitta, M. Mkansi, **G.W. Kajjumba**, "A structural equation modelling of supply chain determinants for Artemisinin-based Combination Therapies in Uganda", *Journal: Public health in Practice*
- Kajjumba**, Meena, Ejjada, Krishnaswamy, Haider, Gajurel, Marti, "Exploring disinfection byproducts management at household level", *Journal: Water research*

CONFERENCE PRESENTATIONS

- G.W. Kajjumba**, E.J. Marti "Making a case to switch coagulants: Lanthanum applicability in wastewater treatment", WEFTEC 2021- 94th Annual Technical Exhibition and Conference, 16-20 Oct 2021 Chicago, IL.
- G.W. Kajjumba**, S. Vacek, E.J. Marti "Application of lanthanum reclaimed wastewater to stimulate corn germination and biomass development" 3rd International Conference for Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability, May16-19, 2021, Riva del Garda, Italy
- S. Vacek, **G.W. Kajjumba**, E.J. Marti "The Effect of Lanthanides on Corn Growth", 2021 NWRA Annual Conference, 19–21 Jan 2021
- G.W. Kajjumba**, M. Attene-Ramos, E.J. Marti "An alternative to analytical chemistry for assessing disinfection byproducts in potable water reuse", 259th American Chemical Society National meeting, Virtual Meeting & Expo, 17 – 20 Aug 2020
- G.W. Kajjumba**, M. Ejjada, T. Jones-Lepp, E.J. Marti, "Comparison of extracted and non-extracted calibration curves in the GCMS determination of method detection limits for haloacetonitriles", 68th Annual American Society for Mass Spectrometry, Houston, Texas, May 31 -Jun 4 2020
- E.J. Marti, **G.W. Kajjumba**, M. Attene-Ramos, "Toxicity Bioassays for Assessing Disinfection Byproducts in Potable Water Reuse". WateReuse Association Annual Conference, San Francisco, California, 15-17, March 2020
- G.W. Kajjumba**, M. Attene-Ramos, E.J. Marti "Mitochondrial membrane potential assay as a quick water quality assessment tool", Nevada Water Resources Association, Las Vegas, Nevada, 11th Feb 2020
- G.W. Kajjumba**, M. Attene-Ramos, E.J. Marti "Effect of lanthanide coagulants on mitochondrial membrane potential", 6th American Chemical Society—Southern Nevada Section Student Poster Competition Exposition, Las Vegas, Nevada, 23rd Nov 2019
- P.B. Masiko, P. O. Nagitta, M. K. Barifaijo, **G. W. Kajjumba**, "Linking the Technology and Human Resource Competences with Productivity of the Petroleum Industry in Uganda: The Situation in Buliisa District", Uganda Management Institute, 2nd International conference on governance and service delivery in developing economies, Kampala, Uganda, Oct 22nd-26th 2019
- C. Obra, V. X. Tran, **G.W. Kajjumba**, M. Ejjada, E. J. Marti, "Adsorption of methylene blue and in-situ reactivation of granular activated carbon (GAC) with ozone". OUR-UNLV 2019 Fall Undergraduate Research Symposium. UNLV: University of Nevada, Las Vegas, Oct 2019
- M. Ejjada, C. Obra, V. X. Vu, **G. W. Kajjumba**, E. J. Marti "Adsorption of methylene blue and in-situ reactivation of granular activated carbon with ozone" Water Quality Technology Conference, Dallas, Texas, 3rd Nov. 2019

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- G.W. Kajjumba**, E.J. Marti, "Toxicity of rare earth elements on mammalian cells" Rebel Grad Slam competition, Las Vegas, Nevada, 30th Oct 2019
- G.W. Kajjumba**, M. Attene-Ramos, E.J. Marti "Cytotoxicity and genotoxicity of lanthanides", 26th NSF EPSCoR National Conference, Columbia, SC, 29th Oct 2019
- E.J. Marti, **G.W. Kajjumba**, M. Attene-Ramos, "Joining Forces for Safe Water: Interdisciplinary Research on Toxicity of Disinfected Drinking Water", 26th NSF EPSCoR National Conference, Columbia, SC, 28th Oct. 2019
- Masrura, Ejjada, **Kajjumba**, et al. "Equalization basin design and biosolids conveying system upgrade for the city of North Las Vegas water reclamation facility", 92nd Water Environment Federation's Technical Exhibition and Conference, Chicago, Illinois, 22nd Sept 2019
- G.W. Kajjumba**, E.J. Marti, "Solving the catch-22 of phosphorus", [Rebel Grad Slam competition](#), presented, Oct 2018
- G.W. Kajjumba**, "Think of the next generation", 4th Contemporary Topics in Environmental Engineering, Istanbul, Turkey, 11th May 2018
- F. A. Osra, **G.W. Kajjumba**; H. K Ozcan, "Review of influencing solid waste landfill site selection parameters of Makkah city", EurAsia Waste Management Symposium, presented on 3rd May 2018
- N. Karabağ, **G. W. Kajjumba**, A. Öngen, "Application of computer-aided modeling in thermal processes", 3rd ICOCEE Conference, presented on 25th April 2018
- G. W. Kajjumba**, S. Aydin, and S. Guneyusu, "Assessing the potential of shale in the adsorption of vanadium ions from wastewater systems", 3rd Annual Istanbul University Nanotechnology research symposium, presented on 4th May 2017
- G. W. Kajjumba** and H. Selçuk, "Brackish water treatment using capacitive deionization technology-A review", Istanbul University Environmental Engineering Symposium, presented on 14th December 2016

SKILLS AND INTERESTS

Skills: Environmental audit | Research | Structural Equation Modeling (SEM) | Water treatment | Water quality assessment | Waste management | Strategy & Project development | Finance & budgeting | Quantitative & qualitative analysis | Investment analysis | MS Office | LandGEM | Origin Pro | Solid Edge | SPPS | AMOS | GCMS | LCMS

Languages: English (Excellent), Ganda (Good), Turkish (Intermediate)

INTERESTS AND COMMUNITY ENGAGEMENTS

LinoExpo

LinoExpo is a branch [Lindau Noble Laureates](#) that aim to increase the number of nobles from developing countries. Academic resources are unequally distributed worldwide; countries such as Switzerland, Austria or Denmark have more than 15 Laureates/10 million in their population, whereas countries such as Paraguay, South Sudan or the United Arab Emirates have no Laureates at all. As a result, students, and young scientists in developing economies are unable to be exposed or be part of the scientific and technological innovations that change the course of history. In [LinoExpo](#) we connect local minds with top global scientists.

Journal reviewer

I have per reviewed and edited different journal articles for Journal of Hazardous material, Journal of Radioanalytical and Nuclear Chemistry, Desalination and Water Treatment Journal, Toxins, and South African Journal of Chemical Engineering

Tree planting

I have participated in different tree planting projects with the aim of curbing global warming. Personally, I have planted over 20,000 trees. This year, 2020, I planted 1500 trees

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Inclusion Council—College of Engineering

This council facilitates an inclusive environment at UNLV for all groups through relevant education, training, and strategic action. We identify challenges of excluded groups and formulate solutions and implement them. We work with University Diversity, Equity and Cultural Intelligence Council to provide education and training. Besides, we act as a first responder or first level of resource for victims.

World water day, Girl Scout Brownies

This community activity is aimed at teaching Brownies (grades 2-3) the value of water and how to conserve it; when they earn this award, they know the value of water. Trained the Brownies on the water cycle and ways of protecting water. The participants learned that runoff water is easily contaminated when people throw garbage on the ground, don't take care of leaking cars, or don't pick up after their pets.

Rebel STEM Academy and STEM Tank Judging

The Rebel STEM Academy aims to expose groups of high school seniors from the Las Vegas Valley to a laboratory experience at UNLV. STEM careers are defining Nevada's future. I educated high school seniors about the vital careers and motivated them to study STEM. Demonstrated GC-MS operation, dye removal by ozone, adsorption, and filtration with different media. I have also participated in 2020 STEM Tank as a judge for younger scientists and community leaders

Science Olympiad

Science Olympiad is a nationwide competition where students compete in more than 20 events that include earth science, biology, chemistry, physics, and engineering. Science Olympiad is designed to increase a student's interest in STEM fields and provide recognition for outstanding achievement in team events. Participated as a judge.

Springs/ well cleaning

Every day, families are gathering dirty, diseased water. In Uganda's suburbs and villages, families depend on spring water; therefore, they must be maintained to the highest standards. Participated in cleaning and maintaining community wells.

Leadership

Water Environmental Federation provides technical education and training for thousands of water quality professionals who clean water and return it safely to the environment. I co-founded WEF student chapter at UNLV and led the team in 2019 competition. As an undergraduate student, I was the chairperson of University Hall, MUK; presided over 5,000 students. Also invested in the local community by starting Uzuri health and beauty, an organisation that seeks to improve peoples' health using beauty as a conduit.

PROFESSIONAL MEMBERSHIPS

American Chemical Society (ACS)

Founded in 1876 and chartered by the U.S. Congress, ACS is the world's largest scientific society. It advances the broader chemistry enterprise and its practitioners for the benefit of Earth and its people. I joined ACS to improve people's lives through the transforming power of chemistry.

American Water Works Association (AWWA)

Founded in 1881, AWWA is the largest water organisation that brings all water professionals together. Joined AWWA to provide water solutions while ensuring the effective management of water on a global scale.

American Society for Mass Spectrometry (ASMS)

ASMS is a professional association that supports the scientific field of mass spectrometry. I joined ASMS to understand the analysis of emerging organic contaminants.

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Water Environment Federation (WEF)

Since 1928, WEF has provided technical education and training for thousands of water quality professionals who clean water and return it safely to the environment. Joined WEF to protect public health and support clean water worldwide. In 2019, we formed the WEF student chapter at UNLV.

Engineers Without Borders (EWB)

EWB builds a better world through engineering projects that empower communities to meet their basic human needs. Volunteered to collaborate with communities to find appropriate solutions for their infrastructure needs. Currently, the EWB UNLV chapter is engaged in a school construction project in rural Guatemala.

Association of Energy Engineers (AEE)

With over 26,000 certified energy professionals in 100 countries, AEE is at the cornerstone of fostering sustainable energy developments. Joined AEE to provide and further education in energy and management.

WateReuse Association (WRA), Nevada Chapter

WRA is solely dedicated to advancing laws, policy, funding, and public acceptance of recycled water. Joined WRA to be part of a coalition that recycle water, support the development of recycled water projects, and consumers of recycled water.

PROFESSIONAL LINKS

Scholar profile: <https://scholar.google.com/citations?user=BWNGrncAAAAJ&hl=en>

ResearchGate profile: https://www.researchgate.net/profile/George_William_Kajjumba