

NAIRA IBRAHIM

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SUMMARY

- A dynamic professional researcher with a strong foundation in the remediation of soil and water from pollutants; with experience in establishing a successful environmental lab at JSU and greenhouse, and performing new techniques such as ICP-OES, digestion of samples (i.e. soil and plants) scanning electron microscope (SEM/EDX), and developing uptake model to predict and evaluate the ability of plants to remediate soil from pollution.
- Extensive experience with plant production using tissue culture, DNA and RNA extraction, metabolic profile using ICP-MS
- Exceptional skills with dealing and using high resolution satellites as ArcGIS and different Indexes in determining and calculating the uptake of elements from soil.
- Excellent records in writing strong proposals, submitting paper and chapters in books, procuring strong funds, as I submitted four grants at different programs and organizations (e.g. NSF in two programs Excellence in Research (EiR) and Research Initiation Award (RIA), NASA at one program “E9 Biology in space, USDA, DOE) since working at JSU, as a PI on the grant, others as a Co-PI.
- Experience with supervising and leading another researcher. As I am mentoring and training students whom under my supervision; exceptional problem- solving skills, as during my work at Tuskegee university, I used to work as postdoctoral and assist students during their research and the problems that they weren’t able to solve. Also, at JSU I used to work as research assistant with Dr. Han at his lab to help PhD students at their experiments and solving any problems at the lab. Moreover, my job as assistant professor encourages me to lead my students at the lab. Recently, I am leadership on one of the proposals that will be funded by DOE to represent HBCU schools.
- Excellent presentation and posters since I was postdoctoral at Tuskegee university.
- Excellent seeking a position as researcher biological and environmental science, as I used to work as researcher at Agriculture research center, Cairo, Egypt at horticulture Institution.

EXPERIENCE

Assistant Professor, Department of Biology, Jackson State University, MS- August 2021 to present:

- Writing Grants and papers through many collaborations such as:
- South Dakota University (NSF),
- West Virginia University (USDA),
- NOAA (NSF)
- Oak Ridge National (DOE).
- Brown University
- Teaching undergraduate and graduate courses
- Advising graduates and undergraduate and a committee member for four PhD theses.
- By training undergraduate and graduate students on new techniques in pollution such as ICP-MS, Scanning Electron Microscope (SEM-EDX), ICP-OES, inserting new Growth chamber into the greenhouse, inserting new filtration for the irrigation system, using techniques of transcriptomic in plants

Postdoctoral, Department of Agriculture and Environmental Sciences, Tuskegee university, Alabama- September 2019 To March 2021.

Teaching Assistant: for some courses (e.g. Air Quality course for graduate and undergraduate students during Spring 2019 and Soil Science fall 2020).

Writing papers and presenting at conferences

Assists PhD and Master students:

In their research, writing papers and Abstracts for presentation

Researcher, Agriculture Research Center, Cairo, Egypt, Horticulture institution- November 2011 to August 2019.

Developing new research in the field of plant production:

Through new techniques e.g. Tissue culture, gene transformation, and finally using ornamental plants as phytoremediation.

Writing proposals, paper and submitting grants:

Advising graduate students:

Through assisting them in their research and thesis

EDUCATION

PH.D. ENVIRONMENTAL SCIENCE, JULY 2019

UNIVERSITY OF SADAT CITY (ENVIRONMENTAL STUDIES AND RESEARCH INSTITUTION).

- Thesis: **“Phytoremediation of the Air Pollution Using Some plants in Three Different Location of Alexandria City”.**
- The GPA is 3.9
- Major field: Doctoral degree awarded in Philosophy: Environmental science.
- Minor field: Phytoremediation

M.S. DEGREE, AGRICULTURE, JUNE 2012

UNIVERSITY OF ALEXANDRIA

- Thesis: **“Conservation of Some Endangered Plant Genera Using Invitro Propagation”**
- The GPA is 3.8
- Major field: Agriculture Science (Horticulture-Ornamental plants).
- Minor field: Plant Production “Tissue Culture”

B.S. DEGREE, AGRICULTURE, JUNE 2008

ALEXANDRIA UNIVERSITY

GPA is 3.8 with very good honors

Major field: Agriculture Science

Minor field: Horticulture-Ornamental Plants-Landscape.

RESEARCH AND PROPOSALS

- proposal at Oak Ridge National Lab in visiting faculty program (VFP) -spring 2023 *“Identification of Genes that may be involved in Heavy Metals Uptake and Tolerance in Populus trichocarpa”*
- proposal at Lawrence Berkeley National Lab in visiting faculty program (VFP) -summer 2023 *“Using Nerium oleander, Pennisetum purpureum (Elephant Grass), and Salix alba Species to Remove Heavy metals and Broaden Applicability of Rock Amendments for C Sequestration”.*
- Microbial modeling related to heavy metal's effect, such as Arsenic, on enzyme activities and the growth of microbes in soil
- Modeling and predictions of air quality by applying the HYSPLIT model to calculate the source of the pollutants and their emission hourly and daily.
- Conservation of some endangered plant genera using In vivo, in vitro propagation and molecular markers: Antoniadis Botanical Gardens, a case study. Funded from Agricultural Research and Development Fund (ARDF), 2010 – 2014.
- Phytoremediation uptake models for calculating the pollutant source as heavy metals and others inside the parts of the plant.
- Experienced with the Wind Erosion Prediction System Model (WEPS).

GRANTS

Accepted status Project at National Science Foundation (NSF) in Excellence Research program as PI *“Unravelling the Genetic Basis for Heavy-Metal Uptake*

and Tolerance in Nerium oleander Through Transcriptomic Kaleidoscope"" (\$1 million).

Pending status Preproposal at DOE in Climate resilience as PI “Climate Resilience Center in South Central Mississippi (CRC-M): Predicting switchgrass feedstock and soil carbon resiliency to drought using plant-fungi-soil models”.

Pending status: Proposal at NSF in Excellence Research Program as Co-PI “Collaborative Research: EiR: Exploring Innovative Approach to Establishing Domain-Specific Knowledge Graph and Its Novel Application for Autonomous Personalized Learning Support”

Mineral and heavy metal metabolism in crop plants that grow in martian soil composition. NASA Biological and Physical Sciences Space Biology (2023-2026), \$300,000, PI: Ibrahim N (Jackson State University), CoPI: Nanjundaswamy A (Alcorn State University) (Submitted on: 05/15/2023, award status: pending)

SKILLS

- Statistical computer data analysis including R language, and SAS.
- ArcGIS and Satellites program (Remote Sensing).
- Microsoft programs (Word, PowerPoint, and Excel).
- The Hybrid Single Particle Lagrangian Integrated TRAJECTORY (HYSPLIT) Model in calculating the trajectory of pollution in air.
- Tissue culture and Gene Transcriptomic
- English Language oral and written
- Teaching undergraduate and graduate student courses

CERTIFICATIONS/ ACHIEVEMENTS/AWARDS

- Completed 278 hours of Department of Energy (DOE) fundamental and site academic lessons.
- Awarded Certificate of Completion for DOE Radiological Control Technician Certification Program (RCT) training program from Universal Training and Testing Academy of America RCT Core Fundamental Comprehensive Exam.
- Completed 14 hours of professional development and soft skills training.
- Professor of Game Certification at JSU.
- Awarded Certificate of completion for Introduction to RNA-seq bioinformatics pipelines

ACTIVITIES

- Member of faculty committee at Beta Beta Biology Honor at JSU.
- Advisor for one PhD student, and mentor for four undergraduate students at JSU
- Committee member on proposals and thesis of four PhD students at JSU.

- Member faculty from JSU at NOAA CCME-I.
- Member of faculty committee of Social, Faculty graduate Committee, Safe Committee, STRATEGIC INITIATIVES COMMITTEE, and book adaptation at the Department of Biology

PROFESSIONAL MEMBERSHIP:

- Member of Beta Beta of Biology at JSU (2022).
- Member of the Honor Society of Agriculture (Gamma Sigma Delta) at Tuskegee University (2020).
- Membership of the Geological Society of America (2019).
- Membership in AGU annual meeting in San Francisco

PUBLICATIONS

- Lanre Olafuyi., **Naira Ibrahim.**, Jing Niea., Precious Cooper., Steven L. Larson., John H. Ballard., Ahmet Celik., Shaloam Dasari., Saiful M. Islam., Fengxiang X. Han. (2022). A laboratory preparation procedure for studying bioaccumulation of U and its subcellular form in earthworms (*Diplocardia spp.*), <https://doi.org/10.1016/j.mex.2022.101755>.
- Joshua E. Lou., Lucas F. Larson., Samuel M. Han., **Naira Ibrahim.**, Fengxiang X. Han.(2022). Developing a novel computer visualization system to simulate the uranium upward transport mechanism: Uranium pollution in arid landscapes, <https://doi.org/10.1016/j.mex.2022.101794>.
- Precious Coopera, Lanre Olafuyi a, **Naira Ibrahim** a, Steven L. Larsonb, John H. Ballardb, Ahmet Celika, Shalom Dasaria, Saiful M. Islama, Fengxiang X. Hana. (2022). A laboratory simulation to investigate effects of moistures on U distribution among solid phase components in army test range soils. *ElSevier, MethodsX*, Vol (9): 101678, <https://doi.org/10.1016/j.mex.2022.101678>.
- **Naira Ibrahim** and FengXiang Han. (2022). Chapter” Phytoremediation of Uranium and Other Radionuclides in Soil and Water and Effects of Biogeochemical Conditions”: subtitle at book ""Bioremediation of toxic Metaloids"". Edited by Anju Malik. Chapter 11, 12 pages. ""Taylor and Francis Group"".
- **Naira Ibrahim.** and ElAfandi G. (2020). Phytoremediation uptake model of heavy metals (Pb, Cd and Zn) in soil using *Nerium oleander*. *Science Direct, Helyion*. Vol (6),Issue (7).
- **Naira Ibrahim** and ElAfandi, G. (2020). Evaluation of the phytoremediation uptakemodel for predicting heavy metals (Pb, Cd, and Zn) from the soil using *Nerium oleander* L. *Environ Sci Pollut Res*

Int (30):38120-38133.

- **Naira. A. Ahmed**, Nader A. Elshanhorey, Inas Z. Abdelsalam and Ashraf A. Zahran (2019). Bioremediation of Heavy metals by using some shrubs in three different locations of Alexandria city. (B) *Nerium oleander*. Alexandria Science Exchange Journal, 40(1):100-114.
- **Naira. A. Ahmed**, Inas Z. Abdelsalam, Nader A. Elshanhorey, and Ashraf A. Zahran (2018). Bioremediation of Heavy metals by using some shrubs in three different locations of Alexandria city. (A) *Pittosporum tobira*. Journal of the advance in agricultural research, 23(2):366-388.
- Ashraf A. Zahran, Inas Z. Abdelsalam, Nader A. Elshanhorey, and **Naira. A. Ahmed** (2017). Phytoremediation of air pollution by using some plants in three different locations of Alexandria city. Journal of the advance in agricultural research. Vol (22):2, 314-325.
- **Naira A. Ahmed**, Naglaa M. Esmail and Abido A.I. (2012). Conservation of Some Endangered Plant Genera Using Invitro Propagation. 1st International Conference on Biotechnology Applications in Agriculture, Moshtohor and Hurgada. 18-22, February, Egypt.

CONFERENCE PRESENTATIONS:

- **Naira Ibrahim**, Patricia Fox, Peter Nico; Bhavna Arora. (2023). Using *Nerium oleander* and *Salix alba* Species to Remove Heavy Metals and Broaden Applicability of Rock Amendments for C Sequestration. AGU 23 Conference San Francisco, CA USA on 11-15 December 2023. (As Poster).
- **Naira Ibrahim**; Gamal El Afandi. (2018). Phytoremediation uptake model of heavy metals (Pb, Cd, and Zn) in soil using *Nerium oleander*. PAWC conference Tuskegee University, Alabama state, USA December 2018. (As poster)
- **Naira Ibrahim.**, Gamal El Afandi, Ramble Ankumah and Raymon. Shange (2019). Evaluation of a Microbial Model forecasting the Effect of Arsenic Contamination on Biomass of Bacteria and the Activity of enzymes in Soil. PAWC conference Tuskegee University Alabama state, USA December 2019. PAWC conference Tuskegee University Alabama state, USA December 2019. (As oral presentation).

VISITING FACULTY ATTENDANCE

- Proposal funded by the Department of Energy (DOE) as PI in visiting faculty program (VFP) - spring 2023 "Identification of Genes that may be involved in Heavy Metals Uptake and Tolerance in *Populus trichocarpa*

- Proposal at the Department of Energy (DOE) as PI in visiting faculty program (VFP)
- summer 2023 “Using *Nerium oleander*, and *Salix alba* Species to Remove Heavy metals and Broaden Applicability of Rock Amendments for C Sequestration”

REFERENCES:

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