



AMANI KRAISHAN



Dr. Amani Kraishan

Department of Physics, College of Science

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PROFESSIONAL SUMMARY

Accomplished Assistant Professor with over 10 years of experience in nuclear and radiation physics. Demonstrated expertise in both research and teaching, with significant contributions to the field and an extensive publication record. Recognized for excellence in teaching and research, receiving awards from institutions such as Temple University, Battelle Memorial Institute, and Stony Brook University. Proficient in experimental design, data analysis, and the development of innovative experimental techniques.

ACADEMIC QUALIFICATIONS

- **Ph.D. in Physics** | Temple University, College of Science and Technology, Philadelphia, PA, USA | 2018
 - ◇ Dissertation: [Measurement of Longitudinal Single-Spin Asymmetry for W^\pm Boson Production in Polarized Proton-Proton Collisions at Star at Forward Rapidity]
- **M.Sc. in Physics** | University of Delaware, College of Arts and Sciences, Newark, DE, USA | 2012
 - ◇ Thesis: [The Role of Cooper Pairing in Atomic Nuclei]
- **B.Sc. in Physics** | Al-Hussein Bin Talal University, College of Science, Ma'an, Jordan | 2006

SPECIALTY

General Specialization: Physics

Specific Specialization: Nuclear and Radiation Physics



CAREER HISTORY

ASSISTANT PROFESSOR

Department of Physics, College of Science, Al-Hussein Bin Talal University, Ma'an, Jordan
September 2018 - Present

- Lead research projects in nuclear and radiation physics
- Design and teach undergraduate courses
- Supervise student research projects, theses, and dissertations
- Collaborate with national and international research teams

RESEARCH ASSISTANT

Department of Physics, Temple University, Philadelphia, PA
June 2015 – June 2018

- Conducted research on nuclear physics
- Played a key role in developing innovative experimental techniques
- Published findings in peer-reviewed journals

TEACHING ASSISTANT

Department of Physics, Temple University, Philadelphia, PA
August 2013 – May 2015

- Assisted with undergraduate and graduate physics courses
- Supported research projects and experiments in nuclear and radiation physics

RESEARCH AND TEACHING ASSISTANT

Department of Physics, College of Science, Al-Hussein Bin Talal University, Ma'an, Jordan
June 2006- June 2009

- Conducted laboratory sessions, demonstrating experiments, and ensuring students understood the procedures and concepts.
- Provided individual and group tutoring sessions to help students grasp difficult concepts and improve their problem-solving skills.
- Graded assignments, exams, and lab reports, providing constructive feedback to students.



ONLINE TEACHING EXPERIENCE

Since the COVID-19 pandemic (2020), I have successfully incorporated **online teaching** using **Microsoft technologies, Zoom, and the university's learning platform (learning.ahu.edu.jo)** to ensure **flexible and effective education**.

Currently, at least **one course per semester is still conducted online**, allowing for continued digital engagement and accessibility for students.

Key responsibilities and achievements:

- **Utilized Microsoft Teams and Zoom** to deliver interactive virtual lectures, conduct live Q&A sessions, and manage assignments.
- **Leveraged Microsoft OneNote and SharePoint** for collaborative learning, resource sharing, and real-time student engagement.
- **Designed and administered assessments using Microsoft Forms and the university's learning platform (learning.ahu.edu.jo)** for homework, quizzes, and online exams.
- **Integrated Microsoft 365 tools** to enhance digital learning, streamline communication, and maintain academic integrity.
- **Continued to train students and colleagues** on best practices for online learning, improving digital literacy and adaptability.
- **Developed and updated course materials** to optimize the online learning experience.

This experience has reinforced my ability to deliver **high-quality remote education** while adapting to evolving educational technologies and student needs.

HONORS, SCHOLARSHIPS, AWARDS, AND GRANTS

2018	Recognition Award by Battelle Memorial Institute and Stony Brook University, USA.
2016	Outstanding Teaching Assistant Award in Physics, Temple University, USA.
2009 - 2014	Fellowship for M.Sc. and PhD research, Al-Hussein Bin Talal University, Jordan.
2006	Highest honor B.Sc. Student award, Al-Hussein Bin Talal University, Jordan.
2003 - 2006	Fellowship for Bachelor studies, Al-Hussein Bin Talal University, Jordan.

RESEARCH INTERESTS



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- Nuclear Physics, focusing on interactions and structure of atomic nuclei
- Radiation Physics, with emphasis on radiation effects on materials and biological systems
- Hadron Structure, studying quark-gluon interactions and confinement
- Detector Development for Particle Physics, including design and optimization of detectors for high-energy experiments

PUBLICATIONS

Contributed to over 80 publications with more than 9,000 citations for the STAR collaboration in peer-reviewed journals. The following represents both STAR collaboration work and independent research:

1. **Kraishan, Amani**, Ahmad M. Refaat, Jenan A. Almhaini, Alaa Saeed Bazuhair, Saeed M. Al-Qahtani, Marwan A. Althomali, Hatem Al-Ameryeen, Ali H. Alomari, and Abdul-Wali Ajlouni. "Resilient STR loci under gamma radiation: A preliminary study on DNA stability in buccal swabs." *Applied Radiation and Isotopes* (2025): 111762.
2. Agyare, Benjamin, Joseph Asare, **Amani Kraishan**, Isaac Nkrumah, and Daniel Kwasi Adjekum. "A Cross-National Assessment of Artificial Intelligence (AI) Chatbot User Perceptions in Collegiate Physics Education." *Computers and Education: Artificial Intelligence* (2025): 100365.
3. Saleh, Batool A. Abu, **Amani Kraishan**, Ziad M. Elimat, Islam Abu Karaki, Ruba I. Alzubi, and Hassan K. Juwhari. "Effect of gamma radiation on the optical properties of PMMA composites with varying Al concentrations." *Radiation Physics and Chemistry* 226 (2025): 112342.
4. Ajlouni, Abdul-Wali, Ahmad M. Refaat, Jenan A. Almhaini, Alaa Saeed Bazuhair, Saeed M. Al-Qahtani, Marwan A. Althomali, **Amani Kraishan**, Hatem Al ameryeen, and Ali H. Alomari. "Impact of gamma rays on DNA quality and genetic traits in human blood samples." *Radiation Effects and Defects in Solids* (2024): 1-11.
5. Baloch, Muzahir Ali, Hannan Younis, Mohammad Abu Shayeb, Khan Alam, Hina Younis, Khadeeja Azmat, and **Amani Kraishan**. "Concentration level of radionuclides in road dust in the urban atmosphere of two cities of Pakistan." *Annals of Nuclear Energy* 206 (2024): 110654.
6. **Kraishan, Amani**, Mohammad Abu Shayeb, Hafedh Belmabrouk, Ahmad Ali Husein Qwasmeh, and Muzahir Ali Baloch. "Assessment of natural radioactivity in soil and olive mill pomace utilizing nal (TI) gamma-ray spectrometry and low background alpha/beta counting system." *Nuclear Engineering and Technology* 56, no. 5 (2024): 1925-1931.



7. **Kraishan, A. F.**, Mohammad Abu Shayeb, Hafedh Belmabrouk, and Bahaa Hamad. "Transfer factors for natural radioactivity into olive mill pomace." *Applied Radiation and Isotopes* 204 (2024): 111136.
8. Al-Badawi, Ahmad, and **Amani Kraishan**. "Dirac perturbations of Hayward black hole with quintessence: Quasinormal modes and greybody factor." *Chinese Journal of Physics* 87 (2024): 59-69.
9. Al-Badawi, Ahmad, and **Amani Kraishan**. "Fermionic greybody factors and quasinormal modes of black holes in Kalb–Ramond gravity." *Annals of Physics* 458 (2023): 169467.
10. Adam, Jaroslav, Leszek Adamczyk, J. R. Adams, J. K. Adkins, Geydar Agakishiev, M. M. Aggarwal, Zubayer Ahammed et al. "Measurement of the longitudinal spin asymmetries for weak boson production in proton-proton collisions at $\sqrt{s} = 510$ GeV." *Physical review D* 99, no. 5 (2019): 051102. (STAR Collaboration)

CONFERENCES AND PROCEEDINGS

- "Measurement of Longitudinal Single-Spin Asymmetry for W Boson Production in Polarized Proton-Proton Collisions at STAR," Poster, RHIC/AGS Users Meeting, Brookhaven National Lab, NY, June 2018.
- "Measurement of the Longitudinal Single-Spin Asymmetry for W Boson Production in Polarized Proton-Proton Collisions at STAR," APS Division of Nuclear Physics Fall Meeting, Pittsburgh, PA, October 2017.
- "Probing Helicity and Unpolarized Quark/Anti-quark Distribution Function Using W Boson Production at RHIC," RHIC/AGS Users Meeting, Brookhaven National Lab, NY, June 2017.
- "Measurement of Longitudinal Single-Spin Asymmetry for W Boson Production at Forward Pseudocapacitive in Polarized Proton-Proton Collisions at STAR," Poster, RHIC/AGS Users Meeting, Brookhaven National Lab, NY, June 2017.
- "Measurement of Longitudinal Single-Spin Asymmetry for W Boson Production at STAR at Forward Rapidity," APS April Meeting, Washington, DC, January 2017.
- "The Forward GEM Tracker (FGT) of STAR at RHIC," Poster, RHIC/AGS Users Meeting, Brookhaven National Lab, NY, June 2016.
- "Test of Commercially Manufactured Large Single Mask GEM Foils," APS Division of Nuclear Physics Fall Meeting, Santa Fe, NM, October 2015.

LICENSES & CERTIFICATIONS

- **Communicating with Confidence**



Issued by LinkedIn, August 2024

- Skills: Self-confidence
- **Building Resilience (2014)**

Issued by LinkedIn, July 2024

- Skills: Resiliency
- **Communicating with Emotional Intelligence**

Issued by LinkedIn, July 2024

- Skills: Emotional Intelligence, Interpersonal Communication
- **Communication Foundations (2018)**

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- Skills: Communication
- **Effective Listening**

Issued by LinkedIn, July 2024

- Skills: Active Listening
- **How to Use LinkedIn Learning**

Issued by LinkedIn, July 2024

- Skills: LinkedIn Learning
- **Learning Microsoft 365 Copilot**

Issued by LinkedIn, July 2024

- Skills: Artificial Intelligence for Business, Microsoft 365, Microsoft Copilot
- **Prioritizing Your Tasks**

Issued by LinkedIn, July 2024

- Skills: Priority Management, Task Management
- **Productive Leadership**

Issued by LinkedIn, July 2024

- Skills: Leadership
- **Speaking Confidently and Effectively**

Issued by LinkedIn, July 2024



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- Skills: Presentation Skills, Public Speaking
- **Writing Articles**
Issued by LinkedIn, July 2024
 - Skills: Article Writing
- **RCR for Physical Sciences**
Issued by CITI Program, September 2023 (Expires September 2025)
 - Credential ID: 58648413
- **Social and Behavioral Research - Basic/Refresher**
Issued by CITI Program, September 2023 (Expires September 2026)
 - Credential ID: 58648791

PROFESSIONAL SERVICE

Peer Reviewer (2023 – Present)

Conduct peer reviews for several scientific journals, specializing in nuclear and radiation physics. Responsibilities include evaluating research manuscripts, providing constructive feedback, and ensuring the quality and integrity of published studies.

PROFESSIONAL MEMBERSHIPS

American Physical Society (APS), Member

TEACHING

Courses Taught – Undergraduate

- *Al-Hussein Bin Talal University*
 - General Physics I & II
 - General Physics Lab I & II
 - Mathematical Physics I & II
 - Classical Physics I & II
 - Vibration and Waves Physics
 - Thermodynamics



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- Optics I & II
- Intermediate Lab
- Introduction to Astrophysics
- Elementary Particle Physics
- *Temple University*
 - Introduction to General Physics I Lab
 - Introduction to General Physics II Lab
 - Elementary Classical Physics II Lab

SKILLS

Languages

- Arabic: Native
- English: Excellent

Technical Skills

- Programming: C/C++, Bash Scripts
- Scientific Software: ROOT, Mathematica
- Operating Systems: Linux
- Document Preparation: LaTeX
- Computer Literacy: ICDL Certification

Soft Skills

- Communication: Excellent written and verbal communication skills
- Teamwork: Proven ability to work effectively in collaborative environments
- Problem-Solving: Strong analytical and problem-solving abilities
- Time Management: Skilled in managing multiple projects and meeting deadlines
- Attention to Detail: Meticulous in research and data analysis

Relevant Competencies

- **Clean Room Experience:** Conducted sensitive experiments in controlled clean room



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environments, ensuring precision and compliance with safety protocols.

- **Measurement Skills:** Proficient in measuring current leakage for GEM foil, with expertise in handling specialized equipment for precise data collection.