

## Rand A. Al-Waqfi

**Assistant Professor** at the Department of Medicinal Chemistry and Pharmacognosy, Faculty of Pharmacy  
Jordan University of Science and Technology

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### CONTACT INFORMATION

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Department of Medicinal Chemistry and Pharmacognosy, Faculty of Pharmacy  
Jordan University of Science and Technology  
P.O. Box 3030, Irbid 22110, Jordan

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### EDUCATION

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University of Birmingham July, 2025  
PhD (Doctor of Philosophy)  
Thesis Title: "Multifunctional Nanopipettes: from DNA Crowding to  
Nanoscale Sensing"  
Advisor: Prof. Tim Albrecht

Jordan University of Science and Technology Aug, 2018  
MSc of Medicinal Chemistry and Pharmacognosy  
Thesis Title: "Identification of Possible Glyoxalase-I Inhibitors Using  
Structure Based Pharmacophore Modeling, Virtual Screening and  
Molecular Dynamics-Guided Docking"  
Advisors: Prof. Nizar Al-Shar'i and Prof. Qosay Al-Balas (co-advisor)

Jordan University of Science and Technology Feb, 2015  
BSc of Pharmacy

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### PROFESSIONAL LICENSURES

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Pharmacist (Active), Jordan 2015-present

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### EMPLOYMENT HISTORY

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Jordan University of Science and Technology, College of Pharmacy 9/2025-present  
**Assistant Professor**  
Department of Medicinal Chemistry and Pharmacognosy

University of Birmingham, School of Chemistry 11/2021-4/2025  
**PhD researcher in nanopore sensing in the Albrecht lab**  
Conducted interdisciplinary research (nanopore sensing and complex  
data analysis)

University of Tennessee Health Science Center/Dr. Hevener Lab <b>Graduate Research Assistant (Remotely in Jordan)</b> Computer aided drug discovery methods for identifying anti-infectious agents	6/2020-6/2021
Jordan University of Science and Technology <b>Teaching Assistant (part-time)</b> Assisted in Teaching practical courses at the department of Medicinal Chemistry and Pharmacognosy.	2/2016-6/2018
Pella Pharmaceuticals, Irbid, Jordan <b>Research &amp; Development – formulation section</b> Pre-formulation and formulation studies	3/2015-9/2015

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#### PROFESSIONAL SOCIETY MEMBERSHIPS

Jordanian Pharmaceutical Association (Active)	2015-present
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#### HONORS AND AWARDS

<b>PGR Symposium</b> , School of Chemistry, University of Birmingham, United Kingdom, 2nd Place Poster Prize.	June 30, 2023
<b>Five Minutes Thesis Competition (SMT)</b> , 2nd Place and Audience Vote Award, Jordan University of Science and Technology /Faculty of Graduate studies	Mar 25, 2018

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#### PEER-REVIEWED PUBLICATIONS

1. "Constructing a Nanopipette-based DNA Electro-Mechanical Device" Cengiz J. Khan, Oliver J. Irving, **Rand A. Al-Waqfi**, Giorgio Ferrari, Tim Albrecht, *Nano Letters* (2025).
2. "Crowding Effects during DNA Translocation in Nanopipettes". **Rand A Al-Waqfi**, Cengiz J. Khan, Oliver J. Irving, Lauren Matthews and Tim Albrecht, *ACS Nano* (2025).
3. "Identification of Dual-Target Compounds with Antifungal and Anti-NLRP3 Inflammasome Activity". David J Lowes, Jian Miao, **Rand A Al-Waqfi**, Kristiana A. Avad, Kirk E Hevener and Brian M Peters, *ACS Infectious Diseases* (2021).
4. "Discovery of a nanomolar inhibitor of the human glyoxalase-I enzyme using structure-based poly-pharmacophore modelling and molecular docking". Al-Nizar A Shar'i, Qosay A Al-Balas, **Rand A Al-Waqfi**, Mohammad A Hassan, Nehad E Ayoub, Amer M Al-khalifa, *Journal of Computer-Aided Molecular Design* (2019).

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## CONFERENCE PRESENTATIONS

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### *Oral Presentations:*

1. "DNA Crowding Effects in Nanopipettes and a New Paradigm for Single-Molecule Bioanalytical Analysis". Tim Albrecht, **Rand A Al-Waqfi**, Cengiz J. Khan, Oliver J. Irving, Lauren Matthews. Oral presentation at the 76th Annual Meeting of the International Society of Electrochemistry (ISE), Mainz, Germany (2025).
2. "Crowding Effects during DNA Translocation in Nanopipettes". **Rand A Al-Waqfi**, Oliver J. Irving, Lauren Matthews, Tim Albrecht. Oral presentation at Electrochem2024, Manchester Metropolitan University, Manchester, United Kingdom (2024).
3. "Direction Matters for DNA Translocation in Nanopipettes". Tim Albrecht, **Rand A Al-Waqfi**, Oliver Irving, Cengiz Khan, Lauren Matthews. Oral presentation at the 75th Annual Meeting of the International Society of Electrochemistry (ISE), Montréal, Canada (2024).
4. "Finding a Needle in a Haystack: An AI Approach Toward Identifying Potential Antibacterial Compounds". **Rand A Al-Waqfi**, Liam Cox, Linjiang Chen, Tim Albrecht. Interfaces and Sensing (I2S) Section Seminar Series, School of Chemistry, University of Birmingham, UK (2023).

### *Poster Presentations:*

1. "Label-Free Long Non-Coding RNA Assay on a String for Bladder Cancer Detection". **Rand A Al-Waqfi**, Oliver J Irving, Tim Albrecht. Biophysical Journal, Volume 123, Issue 3, 439a (2024).
2. "RNA-Assay-on-a-String for Bladder Cancer Detection". **Rand A Al-Waqfi**, Linjiang Chen, Tim Albrecht. Poster presentation at the PGR Symposium, School of Chemistry, University of Birmingham, UK (2023). 2nd Place Poster Award.
3. "In Silico Screening Leads to Novel Scaffolds with Both Antifungal and Anti-NLRP3 Inflammasome Activity". David Lowes, **Rand A Al-Waqfi**, Kirk Hevener, Brian Peters. Access Microbiology, 3(12), po0093 (2021).