

**Alaa Khaled Bawaneh, MD, PhD**

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**Education**

- 2006-2012 Jordan University of Science and Technology, Irbid, Jordan  
B.Sc. of Medicine and Surgery– Faculty of Medicine
- 2017-2022 Wake Forest University, Winston-Salem, NC, USA  
Ph.D. Candidate at Integrative Physiology and Pharmacology Program

**Training and Work**

- 2012-2013 Medical Internship at King Abdulla University Hospital, Irbid, Jordan
- 2013-2015 General Physician at Al Esraa Hospital, Amman, Jordan
- 2015-2017 Research and Teaching Assistant at University of Jordan,  
Amman Jordan

**Teaching Experience**

- 2015-2017 Teaching Assistant at University of Jordan School of Medicine,  
Amman, Jordan.
- Spring 2020 Teaching Assistant at Wake Forest University School of Medicine,  
IP graduate students.

**Research Experience**

- 2015-2016 Clinical Research to investigate Irisin level in healthy adults  
between smokers and non-smokers. Physiology and Biochemistry  
Department, University of Jordan, Amman, Jordan.
- 2015-2017 Clinical Research to investigate Irisin level during pregnancy  
trimesters in healthy, gestational diabetic, and Preeclamptic women.  
Physiology and Biochemistry Department, University of Jordan,  
Amman, Jordan.
- 2017- 2022 Harnessing the microbiome to impact chemotherapy  
responsiveness in Triple-negative breast cancer. Hypertension and  
Vascular Research Center, Wake Forest University, NC, USA.

### **Grants and Awards (Bold indicate funded award)**

- 2006-2012**      **Full Scholarship from Royal Jordanian Court to study Medicine and Surgery at Jordan University of Science and Technology Irbid, Jordan**
- 2017-2021**      **Scholarship from the University of Jordan to study Ph.D. in Physiology and Pharmacology at Wake Forest University, NC, USA**
- 2019**              **Wake Forest Comprehensive Cancer Center Deal Fund Travel Award to attend Annual AACR meeting -2019, Georgia, USA**
- 2020**              **Wake Forest Comprehensive Cancer Center Deal Fund Travel Award to attend Microbiome, Viruses and Cancer AACR Meeting, Florida, USA**
- 2020                Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship (Parent F31) (PA-21-051)
- 2021-2022**      **Graduate Fellowship from Wake Forest University for the 2021-2022 Academic Year, Graduate School at Wake Forest University, NC, USA**

### **Professional Memberships**

- 2013-Present      Jordan Medical Association
- 2018-Present      American Association for Cancer Research.
- 2021-Present      Wake Forest School of Medicine Cardiovascular Research Center.

### **Conferences and Meetings**

- Fall 2017            Poster Presentation, Impact of Diet on the Gut Microbiome to Mediate Breast Cancer Risk.  
Wake Forest School of Medicine Surgical Sciences Research Day
- Spring 2018        Poster Presentation, Impact of The Microbiome on Therapeutic Response in Triple-Negative Breast Cancer  
Women Health Research Day
- Fall 2018            Poster Presentation, Gut Microbiota Population May be Used to Predict Chemotherapeutic Responsive Triple-Negative Breast Cancer  
Wake Forest School of Medicine Surgical Sciences Research Day
- Spring 2019        Poster Presentation, Gut Microbiota Population May Be Used to Predict Chemotherapeutic Responsive Triple-Negative Breast Cancer  
One of the Top 10 Scored Abstracts  
Women Health Research Day

- March 2019 Poster Presentation, Gut Microbiota Population May be Used to Predict Chemotherapeutic Responsive Triple-Negative Breast Cancer  
American Association of Cancer Research AACR Annual Meeting, Atlanta, GA
- Fall 2019 Poster Presentation, Gut Microbiota Population May be Used to Predict Chemotherapeutic Responsiveness in Triple-Negative Breast Cancer  
Wake Forest School of Medicine Surgical Sciences Research Day
- Fall 2019 Poster Presentation, Gut Microbiota Population May be Used to Predict Chemotherapeutic Responsiveness in Triple-Negative Breast Cancer  
Wake Forest Graduate School Research Day
- Feb 2020 Poster Presentation, Gut Microbiome Populations Modulate Neoadjuvant Chemotherapy Responsiveness in Preclinical Triple-Negative Breast Cancer Murine Model  
Microbiome, Viruses and Cancer AACR Meeting, Orlando, FL
- Oct 2020 Participant at Virtual 32nd EORTC-NCI-AACR symposium Molecular Targets and Cancer Therapeutics, Brussels (live streaming), Belgium
- Nov 2020 Presentation, Harnessing the Microbiome to Impact Chemotherapeutic Responsiveness in Triple-Negative Breast Cancer  
Virtual Wake Forest School of Medicine Surgical Sciences Research Day
- Fall 2020 Poster Presentation, Harnessing the Microbiome to Impact Chemotherapeutic Responsiveness in Triple-Negative Breast Cancer  
Virtual Wake Forest Graduate School Research Day
- Spring 2021 Poster Presentation, Harnessing the Microbiome to Impact Chemotherapeutic Responsiveness in Triple-Negative Breast Cancer  
Virtual Women Health Research Day
- Fall 2021 Poster Presentation, Harnessing the Microbiome to Impact Chemotherapeutic Responsiveness in Triple-Negative Breast Cancer  
Wake Forest School of Medicine Surgical Sciences Research Day
- Spring 2022 Poster Presentation, Harnessing the Microbiome to Impact Chemotherapeutic Responsiveness in Triple-Negative Breast Cancer  
One of the Top 10 Scored Abstracts  
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## **Publications Manuscripts**

### ***Peer Reviewed***

#### **Intestinal Microbiota Influence Doxorubicin Responsiveness in Triple-Negative Breast Cancer**

**Alaa Bawaneh**, Adam S Wilson, Nicole Levi, Marissa M Howard-McNatt, Akiko Chiba, David R. Soto-Pantoja, Katherine L Cook. *Cancers* **2022**, *14*(19), 4849; <https://doi.org/10.3390/cancers14194849> (registering DOI).

#### **Impact of gut permeability on the breast microbiome using a non-human primate model**

**Alaa Bawaneh**, Carol Shively, and Janet A. Tooze, Katherine L. Cook. *UNDER REVIEW at Gut Microbiome Journal*.

#### **Diet impacts triple-negative breast cancer growth, metastatic potential, chemotherapy responsiveness, and doxorubicin-mediated cardiac dysfunction.**

Manuel U Ramirez, Kenysha Y J Clear, Zipporah Cornelius, **Alaa Bawaneh**, Yismelin R Feliz-Mosquea, Adam S Wilson, Alistaire D Ruggiero, Nildris Cruz-Diaz, Lihong Shi, Bethany A Kerr, David R Soto-Pantoja, Katherine L Cook. *Physiol Rep*. 2022 Apr;10(8): e15192. doi: 10.14814/phy2.15192

#### **Neoadjuvant Chemotherapy Shifts Breast Tumor Microbiota Populations to Regulate Drug Responsiveness and the Development of Metastasis.**

Akiko Chiba, **Alaa Bawaneh**, Christine Velazquez, Kenysha Y.J. Clear, Adam S. Wilson, Marissa Howard-McNatt, Edward Levine, Nicole Levi-Polyachenko, Shaina A. Yates- Alston, Stephen Diggle, David R. Soto-Pantoja, and Katherine L. Cook. (2019). *Molecular Cancer Research*, molcanres.0451.2019. doi:10.1158/1541-7786.Mcr-19- 0451

#### **Analytical Solution of the Non-linear Michaelis–Menten Pharmacokinetics Equation**

Omari, D., Alomari, A. K., Mansour, A., **Bawaneh, A.**, & Mansour, A. (2020). Analytical Solution of the Non-linear Michaelis–Menten Pharmacokinetics Equation. *International Journal of Applied and Computational Mathematics*, *6*(1), 10. doi:10.1007/s40819-019- 0761-5

## **Research Technical Expertise**

Mammalian and Primary Cell Culture, Cell Infection, Western Blot, RT-qPCR, Immunohistochemistry, Immunofluorescence, ELISA, Light Microscopy, H&E staining, Alcian Blue Staining, Mucicarmine Staining, Data Analysis, inForm® Cell Analys, ImageJ, Image Lab, GraphPad Prism, Microsoft Office Suite, In Vivo Imaging Systems Expert, Proper mouse care, handling, and intraperitoneal and Subcutaneous Injections.

## **Skills and Trainings**

Excellent Medical Writing Skills, Bilingual; Arabic: Native, English: Fluent.  
Excellent MS Skills, and work well under time constraints and ability to work independently and as a team member.