CURRICULUM VITAE

30th March 2021

Suzan Matar
(PhD in Medical Microbiology and Immunology)
Associate Professor.
The University of Jordan
School of Science
Department of Clinical Laboratory Sciences

To Whom It May Concern:

I am Suzan Matar, associate professor of medical microbiology and immunology working for The University of Jordan since 2005 until now. I am experienced, dedicated and enthusiastic individual. In order to maintain the outstanding academic and research skills, I am continuously aiming to obtain ample research fund, conduct active and high quality research outputs, effective supervision of research students. I am motivated individual when working in a stable and dynamic workplace.

My research has provided me with the opportunity to draw connections between the University of Jordan and universities abroad, such as University of Nottingham/UK, Nottingham Trent University/UK, University of Al-Azhar/ Gaza, Near East University Faculty of Medicine, Turkey. I am very responsible to uphold standards and to encourage and challenge MSc students to work up to their potential in hope to create critical thinkers who will advance in science and research.

My research interests range from microbial phenotypic and genotypic characterization in biofilm related infections, to exploring non-antibiotic therapies such as immunotherapy and phage therapy. Excessive research is ongoing to isolate and characterize bacteriophages from soil and sewage for treating MDR bacterial infections in Biofilm and Extended Spectrum β -Lactamases (ESBL) Gram negative related infections.

In the era of antibiotic resistance, my research team is very active in applying antimicrobial susceptibility tests to screen for the antimicrobial activity of synthetic substances and plant extracts. We believe that they could play a vital role as potential and novel antimicrobial agents solely or in combination with antibiotics.

In the field of immunology, the serum bactericidal activity against different MDR microbes in conjunction with antibiotics has been investigated. Vaccination and immunomodulation are two areas have been recently introduced into our research interests. Many molecular techniques have been applied such as PCR, PFGE, DNA and plasmid extraction, designing primers for cloning and DNA sequencing, SDS-PAGE, protein extraction and western blotting in our diverse projects.

In the field of medical technologies and advanced materials, detection of innate immunity responses in macrophages and fibroblasts to bacterial biofilm conditioned biomaterials using the measurement of free radical generation by chemiluminescence has been proposed by Prof. John Hunt to be investigated based on very promising results which were achieved from a joint project (2019/2020) titled "effects of cold atmospheric plasma (cap) on neutrophils and monocytes/macrophages responsiveness."

EDUCATION

June 1994 University of Jordan Amman Bsc. From biological department as medical technician Feb 1997 University of Jordan Amman Graduated with MSc. In biology/animal physiology **University of Nottingham** Nottingham Graduate with PhD in medical and diagnostic microbiology and December 2004 immunology Ministry of Health Jordan Certified as professional biomedical scientist in medical June 2010 Amman microbiology and immunology **COURSES AND WORKSHOPS**

Jan-Dec 1994	Private Laboratory	Amman
	Trained in private laboratory in medical analysis and documentation of patients' data in the computer system	
Jan 1998-Nov 1998	Ministry of Water and Irrigation Laboratory Trained in microbiology laboratory in water and sewage water analysis.	Amman
Jan 1999 – Dec 2000	 The University of Nottingham Developing the skills of negotiation and team work. Finishing my thesis and preparing for viva. An introduction to creating and publishing web pages. An introduction to image and photo editing. Skills of spoken and written communication. Introduction to SPSS. 	Nottingham
Autumn 2000/2001	The University of Nottingham Course in using Microsoft packages for documenting professional scientific theses. Packages including Word, Excel, PowerPoint, and SPSS.	Nottingham
Jan 15 th –Feb 6 th 2012	The University of Jordan Workshop for Development Faculty member 50 credit hours	Amman
Nov 6 th 2013	Grand Hyatt Hotel Memmert CO ₂ Incubators Applications in Stem Cells and IVF	Amman
28Dec 2013- 22 Feb 2014 12 -16 Jan 2014	The University of Jordan/ Centre of Consultation SPSS: Software package for Statistical Analysis Royal Scientific Society	Amman
	INTERPOL Middle East Regional Biosecurity Workshop	Amman

29 Jan-6 Feb 2014	The University of Jordan / Centre of Accreditation and Quality Assurance SPSS Advanced: Regression, Factorial Analysis, Multivariate Analysis of Variance, Discriminant Analysis The University of Jordan	Amman
28 th -30 Dec 2014	E-learning workshop	Amman
16 th -29 th Feb 2014	The University of Jordan / Centre of Accreditation and Quality Assurance Quality Control Managements	Amman
19 th -23 rd Oct 2014	The Hashemite University UNESCO Bioethics Teachers' Training Course	Amman
3 rd Nov 2015	The University of Jordan Author Academy: How to write for and get published in journals	Amman
The University of Jor Quality Assurance	rdan / Centre of Accreditation and	Amman
22,23 Feb 2017 24 th April 2017 9 th Mar 2017 17 th Sep 2017	Open educational resources Recent Trends in University Teaching - Project and flipping learning Evaluation of students' learning without tests Creating and Editing video resources for blended learning	
7 th May 2018 31 st March-1 st April	Ethics Of Teaching From A Practical Perspective Medical technology and laboratory society	- Amman
2017 4 th -5 th April 2018	Polymerase chain reaction, Art & Science Jordanian trainers society Quality control practices in medical labs	Amman
4 th -5 th May 2018	Medical technology and laboratory society Cancer Biomarkers: Molecular approach, detection and monitoring	Amman
$25^{th}-28^{th}\ 2018$	MonoJO Hybridoma technology workshop	Amman
31 May 2019	Biorisk Management By frontline healthcare workers safety foundation	Online Frontline
16 th Feb 2021	NIDA Clinical Trial Network For Good Clinical Practice (12 modules) This training has been funded in whole or in part with Federal funds from the National Institute on Drug Abuse, National Institutes of Health, Department of Health and Human Services, under Contract No. HHSN27201201000024C.	Online
1 st March 2021 - Ongoing	Diagnostic Medical Mycology Course By ISHAM ' international Society For Human and Animal Mycology (12 modules) Accredited by the European accreditation Council for Continuing Medical Education	Online

EXPERIENCE

Sep 2020 –Ongoing	<u>Civil Service Bureau</u> Committee member for Developing competitive examinations and evaluations for medical and health personnel	Amman
3 rd Sep 2020- Feb 2021	Abdul Hameed Showman Education/Arab Bank Committee member for Showman Award for Creative Productions for Children and Young People 'IBDAA'	Amman
Sep 2019-Sep 2020	Nottingham Trent University Visiting researcher (sabbatical leave) working with Prof. John Hunt on a project titked 'Effects of Cold Atmospheric Plasma (CAP) on Neutrophils and Monocytes/Macrophages Responsiveness".	Nottingham
Sep 2017- Sep 2018	The University of Jordan Head of Clinical Laboratory Sciences Department Faculty of Science	Amman
Jan-May 2018	Accreditation and Quality Assurance Commission for Higher Education Competency based test for Jordanian university students in clinical laboratory sciences	Amman
10 th May 2017	Jordan Science Fair Jordan future scientist fair 2017 referee	Amman
Sep 2013- Sep 2014	The University of Jordan Head of Biology and Medical Analysis Department Faculty of Science	Amman
Nov 2011- On going	The Ministry of Health Licensure of clinical laboratory science personnel dealing with certification and licensing issues at the Ministry of Health.	Amman
Jun 2012-Aug 2012	 The University of Nottingham Collaborating with Dr. Alan Cockayne (associate professor) working at school of molecular and medical sciences on two projects: 1. Generation of mutants in <i>Clostridium difficle</i> in genes involved in metal ion uptake. 2. Studies on proteins involved in haemin binding to the surface of staphylococci 	Nottingham
Jun 2011-Aug 2011	The University of Nottingham Collaborating work with molecular microbiology and immunology group (Dr. Neil Oldfield) in studying the carrier status of <i>Neisseria meningitides</i> among students at The University of Nottingham	Nottingham

Feb2005/until now

The University of Jordan

Amman

- Working as full time at University teaching

General Biology 101 General Biology 102

General Biology Laboratory 111

Applied Microbiology

Applied microbiology Laboratory

Medical Microbiology for CLS students

Medical Microbiology Laboratory for CLS students

Microbiology and Immunology for Nursing

Immunology for biology and CLS students

Immunology Laboratory for biology and CLS students

Serology and Immunology for CLS students

Serology and Immunology laboratory classes for CLS students

Diagnostic Microbiology for CLS students

Diagnostic Microbiology Laboratory

Diagnostic Mycology for CLS students

Biotechnology

Introduction to Microbiology for Medicine students

Microbiology and Immunology for dentistry students

Microbiology (2) for dentistry students

Pathology for CLS students

Medical Terminology for CLS students

- **Mentor** in clinical laboratory sciences training course for CLS students
- A curriculum committee member for developing the studying plan of the undergraduate and postgraduate courses in biology, biotechnology and clinical laboratory sciences.

Feb- 2007

Committee Member

Authenticating the Medical Analysis Bachelor Program at

Jordanian Universities

Ministry of Higher Education – Amman

Jul-Sep2005

Al-Sukhtian Households and Toiletries (FFF project).

Sahab / The

Worked as consultant for the development and improvement of Industrial City / microbiology department with special reference in introducing Jordan

quality control procedures and new methodology of diagnosis

and staff awareness. The national program "Faculty For

Factory" is considered one of the new channels aiming to create a genuine partnership between industrial sectors and faculty members.

Jan-Dec 2004 Queen's Medical Centre Nottingham

Trained and worked in diagnostic laboratories

Sept 1998-Mar 1999 University of Jordan Amman

Working as full-time university teaching assistant

1994-1997 University of Jordan Amman

Working as teaching and researching assistant in animal physiology, general biology, invertebrate and parasite,

laboratory animals' lab.

<u>City Hospital</u> Amman

1993-1994 Trained and worked in clinical laboratories.

SCIENTIFIC PUBLICATIONS

> Journal Paper

Sallam, Malik; Dababseh, Deema; Eid, Huda; Hasan, Hanan; Taim, Duaa; Al-Mahzoum, Kholoud; Al-Haidar, Ayat; Yaseen, Alaa; Ababneh, Nidaa A.; Assaf, Areej; Bakri, Faris G.; **Matar, Suzan**; Mahafzah, Azmi. **2021**. "**Low COVID-19 Vaccine Acceptance Is Correlated with Conspiracy Beliefs among University Students in Jordan**" Int. J. Environ. Res. Public Health 18, no. 5: 2407. https://doi.org/10.3390/ijerph18052407

> Journal Paper

Muhamad Al-Limoun, Haitham N Qaralleh, Khaled M Khleifat, Mohammed Al-Anber, Amjad Al-Tarawneh, Khalid Al-sharafa, Mohammed H Kailani, Mohammed A Zaitoun, **Suzan A Matar**, Toqa Alsoub. **Culture Media Composition and Reduction Potential Optimization of Mycelia-free Filtrate for the Biosynthesis of Silver Nanoparticles Using the Fungus Tritirachium oryzae W5H.** *Current Nanoscience* **(2020) 16 (5): 757-269**

> Journal Paper

Malath A Al - Qtaitat, Mustafa M El - Abadelah, Salim S Sabri, **Suzan A Matar**, Hana M Hammad, Mohammad S Mubarak. **Synthesis, Characterization, and Bioactivity of Novel Bicinnolines Having 1-Piperazinyl Moieties.** *Journal of Heterocyclic Chemistry* (2019) 56(1): 158-164.

> Journal Paper

Khaled M Khleifat, Suzan A Matar, Mohammad Jaafreh, Haitham Qaralleh, Muhamad O Al-limoun, Khalid Y Alsharafa. Essential Oil of Centaurea damascena Aerial Parts, Antibacterial and Synergistic Effect. *Journal of Essential Oil Bearing Plants* (2019) 22(2): 356-367.

> Journal Paper

Ahmad H Abdullah, Jalal A Zahra, Mustafa M El-Abadelah, Salim S Sabri, Monther A Khanfar, **Suzan A Matar**, Wolfgang Voelter. **Synthesis and antibacterial activity of N1-(carbazol-3-yl)amidrazones incorporating piperazines and related congeners**. *Zeitschrift für Naturforschung* B (2016) 71 (8): 857-867.

> Journal Paper

<u>S.A. Matar</u>, W.H. Talib, M.S. Mustafa, M.S. Mubarak, M.A. AlDamen. <u>Synthesis</u>, <u>Characterization</u>, and <u>Antimicrobial Activity of Schiff Bases Derived from Benzaldehydes and 3,3'-Diaminodipropylamine</u>, *Arabian Journal of Chemistry* 2015, 8(6), 850–857

> Journal Paper

Hana M. Hammad, <u>Suzan A. Matar</u>, Simona-Carmen Litescu, Sawsan Abuhamdah Hala I. Al Jaber, and Fatma U. Afifi. <u>Biological Activities of the Hydro-alcoholic and Aqueous Extracts of Achillea fragrantissima</u> (Forssk.) Grown in Jordan. *Journal of Natural Science*. 2014., Vol 6: No. (1): 23-30.

> Journal Paper

<u>Suzan Matar</u>, Nahed Al-laham, Ibrahim Masalhaand Luay F Abu-Qatouseh. <u>Characterization of capsule expression of both MSSA/MRSA isolates</u> from various body sites from colonization and infections cases. *The International Arabic Journal of Antimicrobial Agents*. 2014., Vol 4, Issue 2:4. Pages 1-9.

> Journal Paper

<u>Suzan A. Matar</u>, Eman M. Mahmoud and Hamdallah A. Hodali. **The antibacterial biofilm activity of metal-doped mullite ceramics against pathogenic bacteria.** *African Journal of Microbiology Research* **2013**; 7(23), 2939-2947.

> Journal Paper

Hana M. Hammad, Camelia Albu, <u>Suzan A. Matar</u>, Simona-Carmen Litescu, Hala I. Al Jaber, Amal S. Abualraghib and Fatma U. Afifi. **Biological activities of the hydro-alchoholic and aqueous extracts of** *Achillea biebersteinii* **Afan.** (**Asteraceae**) **grown in Jordan.** *African Journal of Pharmacy and Pharmacology* **2013**, 7(25): 1686-1694.

> Journal Paper

Eman Awad, Mustafa EL-Abadelah, <u>Suzan Matar</u>, Malek Zihlif, Randa Naffa, Ehab Al-momani, and Mohammad Mubarak. **Synthesis and Biological Activity of Some 3-(4-(Substituted)-piperazin-1-yl) cinnolines.** *Molecules*. **2011 Dec** 28;17(1):227-39.

Doi: 10.3390/molecules17010227.

Journal Paper

Oldfield NJ, <u>Matar S</u>, Bidmos FA, Alamro M, Neal KR, *et al.* **Prevalence and Phase Variable Expression Status of Two Autotransporters, NalP and MspA, in Carriage and Disease Isolates of** *Neisseria meningitidis. PLoS ONE* **2013; 8(7): e69746.**

Doi:10.1371/journal.pone.0069746.

> Journal Paper

Rana Zeidan, Sawsan Oran, Khaled Khleifat, <u>Suzan Matar</u>. Antimicrobial Activity of Leaf and Fruit Extracts of Jordanian *Rubus sanguineus* Friv. (Rosaceae). *African journal of Microbiology Research* 2013; 7(44): 5114-5118. Doi: 10.5897/AJMR2013.5770

> Journal Paper

Hana M. Hammad, Simona-Carmen Litescu, Suzan A. Matar, Hala I. Al Jaber, Fatma U. Afifi.

Biological Activities of the Hydro-alcoholic and Aqueous Extracts of Achillea falcata L. (Asteraceae) Grown in Jordan. *European journal of Medicinal Plants*. 2013.,Vol.: 4, Issue.: 3 (March)
ISSN: 2231-0894

Abstract and Poster

<u>Suzan Matar</u>, Roger Bayston (2001). The Pathogenic Role of *Staphylococcus epidermidis* small colony variants in biomaterial related infection. **101 ASM Meeting Florida, USA**

> Abstract and Poster

<u>Suzan Matar</u>, Shtaywy Abdalla (1997). Effects of Selected Chemical Ingredients Extracted from *Inula* (*Dittrichia*) *viscose* on Smooth Muscle and Perfused Heart, and on Inflammation in the Rat. 8th Arab Conference of Biological Sciences & the 4th Jordanian Conference of Biological Sciences. University of Jordan. Amman.

> Abstract and Poster

Neil J. Oldfield, <u>Suzan Matar</u>, Fadil A. Bidmos, Mohamed Alamro, David P.J. Turner, Christopher D. Bayliss & Dlawer A.A. Ala'Aldeen. Phase variation of *nalP* and *mspA* occurs during meningococcal carriage, abstr P-059, p 200. Abstr. XVIIIth International Pathogenic Neisseria Conference (IPNC)

➤ Abstract and Poster

Hammad HM, <u>Matar SA</u>, Al-Jaber HI, Afifi FU. Comparative Screening of Chemical Composition and Biological Activities of Achillea species in Jordan. The 15th International Congress of the International Society for Ethnopharmacology 2015, Petra, Jordan

CONFERENCE ATTENDANCE AND PARTICIPATIONS

5 th -8 th May 2015	Abstract and Presentation	Petra, Jordan
	Hammad HM, Matar SA , Al-Jaber HI, Afifi FU. Comparative Screening of Chemical Composition and Biological Activities of <i>Achillea</i> species in Jordan. The 15 th International Congress of the International Society for Ethnopharmacology 2015	
17 th Dec 2014	<u>Presentation</u>	Intercontinental Amman, Jordan
	Surgical Site Infection Symposium Biofilms and Surgical Site Infections	
28 th -30 th May 2014	Abstract and Presentation	Holiday Inn Hotel, Amman, Jordan
	The 5th International Jordanian Congress of Allergy & Immunology	
	'Phase Variations of Staphylococcal Biofilm Proteins Induced by Antibiotic Combination Therapy:	

A Possible Cause for Antibiotic Treatment Failure. '

2nd-4th April 2014 **Abstract and Presentation** Dead Sea Movenpick Hotel, Jordan The third conference of the federation of Arabs societies of clinical microbiology and infectious diseases & the tenth conference of Arab alliance for prudent use of antimicrobial agents. "Diversity of Clinical Isolates of Staphylococcus aureus Capsule Expression in the Middle East." 13th -14th Aug/ 2009 **Conference Attendance** Le Meridien Hotel. Amman, Jordan The 17th King Hussein Cancer Center Conference: "Infections in the Immuno compromised Cancer Patients" 5th-8th Nov/2008 **Conference Attendance** Radisson SAS. 3rd JSP international conference, 2008 Amman-Jordan 2nd Hellenic-Jordanian Pathology Congress Amman-Jordan 18-20 Oct/ 2007 **Abstract and Presentation** The 5th Arab conference for antimicrobial Agents Faculty of Medicine, Characterisation of Staphylococcal Small Colony University of Jordan Variants in biomaterial-related infections with Special References to Staphylococcus epidermidis 31 Aug-3 Sep/ 2006 **Conference Attendance** Le Royal Hotel, Amman-Jordan 2nd JSP international Conference 2006 Amman Dead Sea April 25-27/2006 **Conference Attendance** Bioinformatics Conference and Launch of Library of Life Project Bridging the Rift Foundation Sep 2005 Abstract University of Jordan The National Program Faculty-For-Factory, Third cycle Development and improvement of microbiology department with special reference in introducing quality control procedures and new methodology of diagnosis and staff awareness.

19-25 May 2001 Poster Florida, 101 ASM Meeting USA

The Pathogenic Role of *Staphylococcus epidermidis* small colony variants in biomaterial related infection.

26 Jan 2001 Conference Attendance Queen Elizabeth II

Conference Centre/

Topics in Infection London

30th Nov 2000 Abstract and Presentation School of Clinical

Laboratory Sciences,

Postgraduate Conference University of **Selection and Characterisation of Staphylococcal Small** Nottingham

Colony Variants in biomaterial-related infections with Special References to *Staphylococcus epidermidis*.

<u>Abstract</u> 8th Arab Conference

of Biological

Effects of Selected Chemical Ingredients Extracted
from Inula (Dittrichia) viscose on Smooth Muscle and

Jordanian Conference

Perfused Heart, and on Inflammation in the Rat. of Biological Sciences.

University of Jordan.

Amman

RESEARCH INTERESTS:

8-11Aug/1997

1) Interested in Biofilm related infections (chronicity and treatment failure).

- Genotypic and phenotypic characterization of biomaterial related infections caused by Staphylococcal strains
- Specific selection of virulence genes related to Biofilm formation and antibiotic resistance in *Escherichia coli* isolates from catheter related UTI.
- Biological activity of synthetic chemical substance and plant extracts: Cytotoxicity, Mutagenicity (AMES test), antimicrobial activity.
- Inhibiting growth of Methicillin resistant *Staphylococcus aureus (MRSA)* by egg yolk antibody production for an attempt in exploring immunotherapy possibility to control MRSA sepsis in neonates transmitted from mother during birth delivery.
- 2) Mesenchymal stem cell therapy for diabetic patients.

(In collaboration with Cell therapy Centre at The University of Jordan)

- Modulation of Dendritic Cells from Type 1 Diabetic Patients by Autologous and Allogeneic Bone Marrow Derived Mesenchymal Stem Cells
- 3) Developing breakthrough therapies to repair, replace, augment and in the future regenerate diseased, infected and damaged tissues in humans using material interventions.

(In collaboration with Professor John Hunt at Nottingham Trent University)

- Effects of Cold Atmospheric Plasma (CAP) on Neutrophils and Monocytes/Macrophages Responsiveness".
- Detection of Innate Immunity Responses in Macrophages and Fibroblasts responses to bacterial biofilm conditioned biomaterials Using the Measurement of Free Radical

4) COVID -19 Related Project

(In collaboration with University Hospital and Department of Medicine, Amman, Jordan)

- Clinical and viral genetic correlation study on SARS-CoV-2 in Jordan: Phylogenetic study using the spike gene region.
- Low COVID-19 Vaccine Acceptance is Correlated with Conspiracy Beliefs among University Students in Jordan: A Never-ending Story of COVID-19 and Conspiracy (Article submitted)

SUPERVISION:

- 1. MSc project titled: Understanding Bacterial Pathogenicity: Would Iron Overland in Hospitalized Patients Increase the Risk of Infection or Aggravate Ongoing Infection? Collaboration with King Hussein Cancer Center, Jordan-Amman. (Jordan 2013/2014".
- 2. MSc project "Antimicrobial Activity of *Rubus sanguineus* Friv. (Rosaceae) leaves and fruit". *The University of Jordan. Department of biology. Jordan 2012/2013*".
- 3. MSc project "In vitro effect of subinhibitory concentration of selected antibiotics on *Methicillin-resistant Staphylococcus aureus* for capsule and biofilm formation.

 The Hashemite University. Department of biology and biotechnology. Jordan 2016-2017.
- 4. **MSc** project "Immunomodulatory Function of Dendritic Cells Induced by Human Mesenchymal Stem Cells in Type 1 Diabetic Patients.

The University of Jordan with collaboration with Cell Therapy Center. Jordan 2017-2018.

5. **MSc project with collaboration with Near East University Faculty of Medicine, Turkey.** Effect of Vancomycin sub-MICs on biofilm production of Methicillin-resistant *Staphylococcus aureus* (**2018- on going**)

GRANTS:

- Suzan Matar.

Phase Variations of Staphylococcal Biofilm Proteins Induced by Antibiotic Combination Therapy: A Possible Cause for Antibiotic Treatment Failure. Grant awarded by Deanship of academic Research (**December 2009**). The University Of Jordan.

- Suzan Matar.

Understanding Bacterial Pathogenicity: Would Iron Overlaod in Hospitalized Patients Increase the Risk of Infection or Aggravate Ongoing Infection? Grant awarded by Deanship of academic Research (**December 2013**). The University Of Jordan.

- Suzan Matar.

Detection of Polyomavirus BK and JC in Urine Specimens by Real Time PCR. Grant awarded by Deanship of academic Research (**December 2017**). The University Of Jordan.

- Suzan Matar.

Specific selection of virulence genes related to Biofilm formation and antibiotic resistance in *Escherichia coli* isolates from catheter related UTI. Grant awarded by Deanship of academic Research (**January 2020**). The University Of Jordan.

LANGUAGES

English, Arabic and Bosnian - Proficiency: Excellent, both written and verbal in all

French - Proficiency: Good, both written and verbal.

REFEREES

The University of Nottingham

Prof. Dlawer Ala'Aldeen PhD, MRCPath

Professor of Clinical Microbiology Head, Molecular Bacteriology and

Immunology Group Division of Microbiology

University Hospital, Nottingham NG7 2UH Tel. 0115 849 3321, Fax. 0115 970 9233

Secretary: 0115 970 9162

Website: HTUwww.nottingham.ac.uk/mbigU

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Dr. Neil Oldfield

Senior Research Fellow

Molecular Bacteriology and Immunology Group

Centre for Biomolecular Sciences

University of Nottingham

University Park Nottingham NG7 2RD

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Nottingham Trent University

Professor John Hunt, BSc, PhD, DSc, FRSC Head of Medical Technologies and Advanced Materials

Nottingham Trent University

Yasser El-Sherbiny Badawy, Senior Lecturer

School of Science & Technology Nottingham Trent University

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The University of Jordan

Prof. Yousif Bilto

Professor of Hematology & Clinical

Chemistry

Head of the Department of Clinical

Laboratory Sciences
The University of Jordan

School of Science

Department of Clinical Laboratory Sciences

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