

Curriculum Vitae

Maram Mustafa Jalal Alakhras

Department of Allied Medical Sciences

Faculty of Allied Medical Sciences-Faculty member

Jordan University of Science and Technology

Personal

Position:	Assistance professor, Jordan University of Sciences and Technology
Address:	P.O. Box: 3030 Department of Allied Medical Sciences Jordan University of Science and Technology Irbid 22110, Jordan
Date of Birth:	22 July, 1983
Phone:	+96227201000 Ext: 26947
Email:	mmalakhras@just.edu.jo
Website:	https://www.just.edu.jo/eportfolio/Pages/Default.aspx?email=mmalakhras
Google scholar:	https://scholar.google.com/citations?view_op=list_works&hl=en&user=DGNOqxUAAAAJ
Research Gate:	https://www.researchgate.net/profile/Maram-Alakhras-2

Research Interests

My research interests involve exploring new and innovative methods and techniques to enhance detection of all types of cancer in general and breast cancer in particular with the minimum radiation dose to the patient. With a specific focus on the use of Artificial intelligence in medical imaging.

My areas of research are also in improving the health service provided to the patient in radiology department with the lowest cost possible and in occupational health of radiographers and radiologists. These include evidence-based imaging, patient satisfaction, and job satisfaction.

Academic Qualifications

2016	Doctor of Philosophy	University of Sydney
2009	Master of Medical Imaging Science	Curtin University of Technology
2005	Bachelor of Radiologic Technology	Jordan University of Sciences and Technology

Employment Record

31 October 2017- current	Assistant Professor Department of Allied Medical Sciences, Jordan University of science and Technology
September 2018 - 2019	Part-time Assistant Professor Department of Medical Imaging. The Hashemite University
August 2019 - 2021	Part-time Assistant Professor Nossibah College, Al-Balqa' Applied University
4 Jan 2016–17 October 2017	Lecturer- Teaching and Research The University of Sydney
7 Sep 2015 - 17 Dec 2015	Lecturer- Teaching and Research The University of Sydney
2 March 2015- 20 August 2015	Casual academic staff The University of Sydney
20 April 2014 – 16 October 2014	Casual academic staff The University of Sydney
15 Feb 2009–25 July 2011	Lecturer and Clinical Supervisor Jordan University of Science and Technology, Jordan
1 March 2006-31 January 2008	Teaching Assistant/Laboratory Technician Jordan University of Science and Technology

Area of teaching and clinical supervision

Participation in students' OSCE assessments at The University of Sydney. Clinical and practical supervision of a variety of medical imaging related subjects including; central osseous system radiography lab, general and advanced radiography practice, magnetic resonance imaging lab, oral & dental radiography lab, peripheral osseous system radiography lab, principles of diagnostic imaging lab 1 & 2, radiographic cross sectional anatomy lab, radiographic surface anatomy lab.

Teaching wide range of areas in the field of medical imaging including; central osseous system radiography, evidence-based imaging, introduction to radiation biology & radiation protection, introduction to radiologic technology, magnetic resonance imaging, mammography, nuclear medicine and radiation therapy, oral & dental radiography, patient care in radiology department, peripheral osseous system radiography, principles of diagnostic imaging 1 & 2, radiographic cross sectional anatomy, radiographic equipment, radiographic surface anatomy, radiologic pathology, special radiographic procedures, vascular radiography.

Higher Degree Research Supervision

As a Primary Supervisor:

- The efficacy of chest X-ray and computed tomography scan in detection and evaluation of Covid-19 features in correlation with Reverse transcription polymerase chain reaction (RT-PCR) and vaccination status of patients. Jordan University of Science and technology.
- Accuracy of radiographers reporting mammograms: A performance study. Jordan University of Science and technology.
- Artificial Intelligence Applied to Breast Magnetic Resonance Imaging and Digital Mammography for Improved Diagnosis of Breast Cancer. Jordan University of Science and technology.
- Assessment of clinical features affecting the development of bone metastasis in breast cancer patients. Jordan University of Science and technology
- Prediction of osteoporosis using machine-learning analysis with radiomics features in the chest or abdomen-pelvic computed tomography scans as a screening tool in Jordan: a preliminary study. Jordan University of Science and technology
- Impact of COVID-19 pandemic on the radiation dose received by radiographers utilizing mobile x-ray. Jordan University of Science and technology
- The Impact of the Application of Artificial Intelligence in Digital Breast Tomosynthesis and Digital Mammography to Improve Breast Cancer Diagnosis in Jordan. Jordan

As a Co-Supervisor

- Radiologists' visual search behaviour in mammography reading. The University of Sydney.
- Assessment of knowledge, attitude and practice of emergency technicians and physicians towards point-of-care ultrasound. Jordan University of Science and technology
- The impact of using point-of-care ultrasound on the patients' outcome in the emergency department. Jordan University of Science and technology

Examining Services

- Haneen Sabaneh (2020), The influence of breast density and key demographics of radiographers on mammography reporting performance—a pilot study.
- Review of literature review papers submitted by Honors' students at The University of Sydney.
- Examination of an honor's and a Masters student thesis at the University of Sydney.
- Reviewing and writing a peer review report about the scientific content of the study outline of a PhD student.
- Marking RANZCR research applications to run a research project with BREAST at RANZCR meeting 2016.

Scientific, Academic, and Administrative Activity

- Member of the Committee for the Development of Competitive Examinations and Assessment Tools to Measure Professional and Specialized Competencies for the Bachelor of Radiology / Jordanian Civil Service Bureau.
- Member of Media Committee, Allied Medical Sciences Department
- Member of Scientific Research Committee, Allied Medical Sciences Department
- Member of Community Service Committee, Allied Medical Sciences Department
- Member of Programs Curriculum Committee,
- Member of Library Committee, Allied Medical Sciences Department
- Member of Excellence Committee, Allied Medical Sciences Department
- Member of Graduate studies Committee, Allied Medical Sciences Department
- Member of Accreditation of Academic Majors Committee, Allied Medical Sciences Department
- Member of Students Affairs Committee, Allied Medical Sciences Department
- Member of Media Committee, Faculty of Applied Medical Sciences
- Member of Students Affairs Committee, Faculty of Applied Medical Sciences
- Member of Quality Assurance Committee, Faculty of Applied Medical Sciences
- Member of Scientific Research Committee, Faculty of Applied Medical Sciences
- Member of Library Committee, Faculty of Applied Medical Sciences
- Member of Community Service Committee, Faculty of Applied Medical Sciences
- Member of Academic Curriculum Committee, Faculty of Applied Medical Sciences
- Member of the Scientific, Conferences and Scientific Days Committee, Faculty of Applied Medical Sciences
- Member of Allied Medical Sciences Department Council
- A reviewer for different radiology journals including Journal of Medical Radiation Sciences, Cancer Medicine and Diagnostic and Interventional Radiology.

Scientific Memberships

- Jordanian Society of Radiographers (JSR).

- European Society of Radiology (ESR)

Courses and workshops

- Completion of “Foundations of Research Supervision” Forum at The University of Sydney
- Completion of “An Introduction to Teaching at Sydney” program at The University of Sydney
- Participating in schools outreach project- a program that gives students of regional Australian schools hands on experience with medical research
- Principles and Practice University Certificate at The University of Sydney
- Participation in “Peer Evaluation of University Teaching in the Faculty of Health Sciences” project at The University of Sydney
- Participation as a panel member in research students’ progress reviews at The University of Sydney
- Finishing "Enhancing the Student Experience Workshop" Education at The University of Sydney
- Attendance of “Establishing Multidisciplinary Teams in Breast Cancer Research” seminar at The University of Sydney
- Attendance of 2017 Faculty of Health Sciences Education Forum at The University of Sydney
- Assessment workshop at The University of Sydney
- Development of Curriculum & Study plans at Jordan University of Science and Technology (JUST)
- Statistical Data Analysis Using Minitab at JUST
- Teaching Methods and Strategies at JUST
- Statistical Data Analysis Using SPSS at JUST
- Designing Effective E-Learning at JUST
- Participating in the filming project of X-ray positioning aimed to provide videos to students to aid in their understanding of the practical side of radiographic positioning.
- Participating as a panel member for annual progress review of HDR students
- Participation in the Open Day held by The University of Sydney 2016
- Participation in the FHS Automated External Defibrillation Training
- Completion of radiographic online accredited courses including, Adaptive Radiography, Tips and Tricks, Advanced Bone Mineral Density Practice, The Evolution of Diagnostic Imaging of the Breast, Fluoroscopy: Physical Principles and Strategies for Managing Radiation Dose, Foundations of Radiologic Science, Conventional Imaging Then and Now, Digital Imaging in Radiography,

Mammography: Back to Basics, Pulse Sequences Concept.

Awards

- Fellowship of the Higher Education Academy in recognition of attainment against the UK Professional Standards Framework for teaching and learning support in higher education.
- Full funded Master scholarship, Jordan University of Science and Technology (2008)
- Full funded PhD scholarship, Jordan University of Science and Technology (2011)
- Research Support Scheme, The University of Sydney
- SPIE Medical Imaging travel grant
- Faculty Early Career Researcher Conference Travel Support scheme. The University of Sydney

Grants

- | | |
|------|---|
| 2019 | Diagnostic monitors quality control and viewing environment within Jordanian Hospitals,
Jordan University of Science and Technology
6200 JOD |
| 2019 | Patient satisfaction in radiology department at Jordanian hospitals
Jordan University of Science and Technology
2990 JOD |
| 2018 | Knowledge, attitude and practice around breast cancer and breast cancer screening methods among women from public and healthcare professionals in Jordan
Jordan University of Science and Technology
4200 JOD |
| 2018 | Digital Tomosynthesis: A New Breast Imaging Tool in Jordan
Jordan University of Science and Technology
9650 JOD |

- 2018 Job satisfaction among radiologists, radiographers and other allied health workers in Jordan
Jordan University of Science and Technology
3050 JOD
- 2016 Mammographic breast density in Jordan
Jordan University of Science and Technology
9600 JOD
- 2021 The efficacy of chest X-ray and computed tomography scan in detection and evaluation of Covid-19 features in correlation with Reverse transcription polymerase chain reaction (RT-PCR) and vaccination status of patients
Jordan University of Science and Technology
2494 JOD
- 2022 The Impact of the Application of Artificial Intelligence in Digital Breast Tomosynthesis and Digital Mammography to Improve Breast Cancer Diagnosis in Jordan
Jordan University of Science and Technology
5125
- 2022 Prediction of osteoporosis using machine-learning analysis with radiomics features in the chest or abdomen-pelvic computed tomography scans as a screening tool in Jordan: a preliminary
Jordan University of Science and Technology
4960
- 2022 Impact of COVID-19 pandemic on the radiation dose received by radiographers utilizing mobile x-ray.
Jordan University of Science and Technology
2550

Publications

1. **Alakhras, M.**, Al-Mousa, D. S., & Alwawi, D. (2022). Jordanian Radiologists' Perspectives and Application of Evidence-Based Radiology in Clinical Practice. *Advances in Medical Education and Practice*, 13, 177.
2. **Alakhras, M.**, Al-Mousa, D. S., Mahasneh, A., & AlSa'di, A. G. (2020). Factors Affecting Compliance of Infection Control Measures among Dental

- Radiographers. *International Journal of Dentistry*, 2020.
3. **Alakhras, M.**, Al-Mousa, D. S., Alqadi, A. K., Sabaneh, H. A., Karasneh, R. M., & Spuur, K. M. (2021). The influence of breast density and key demographics of radiographers on mammography reporting performance—a pilot study. *Journal of Medical Radiation Sciences*.
 4. **Alakhras, M.**, Al-Mousa DS, Lewis S, Assessment and correlation between job satisfaction and burnout among radiographers 2021. *Radiography*.
 5. **Alakhras, M. M.**, Mello-Thoms, C., Bourne, R., Rickard, M., Diffey, J., & Brennan, P. C. (2017). Relationship between radiation dose and image quality in digital breast tomosynthesis. *Radiation protection dosimetry*, 173(4), 351-360.
 6. **Alakhras, M. M.**, Mello-Thoms, C., Bourne, R., Rickard, M., Diffey, J., & Brennan, P. C. (2016, March). Radiation dose differences between digital mammography and digital breast tomosynthesis are dependent on breast thickness. In *Medical Imaging 2016: Physics of Medical Imaging* (Vol. 9783, p. 97832R). International Society for Optics and Photonics.
 7. **Alakhras, M. M.**, Brennan, P. C., Rickard, M., Bourne, R., & Mello-Thoms, C. (2015). Effect of radiologists' experience on breast cancer detection and localization using digital breast tomosynthesis. *European radiology*, 25(2), 402-409.
 8. **Alakhras, M.**, Mello-Thoms, C., Rickard, M., Bourne, R., & Brennan, P. C. (2015, March). The role of digital tomosynthesis in reducing the number of equivocal breast reportings. *Medical Imaging 2015: Image Perception, Observer Performance, and Technology Assessment* (Vol. 9416, p. 94161G). International Society for Optics and Photonics.
 9. **Alakhras, M.**, Mello-Thoms, C., Bourne, R., Rickard, M., & Brennan, P. C. (2016, June). Equivocal Breast Findings Are Reduced with Digital Tomosynthesis. In *International Workshop on Breast Imaging* (pp. 89-97). Springer, Cham.
 10. **Alakhras, M.**, Almousa, D., Brennan, P. C., Taba, A. T., AbuTaimai, R., & Rickard, M. (2020, May). Impact of digital breast tomosynthesis on readers with different experience. In *15th International Workshop on Breast Imaging (IWBI2020)* (Vol. 11513, p. 1151329). International Society for Optics and

Photonics.

11. Taba, S. T., Gureyev, T. E., **Alakhras, M.**, Lewis, S., Lockie, D., & Brennan, P. C. (2018). X-ray phase-contrast technology in breast imaging: principles, options, and clinical application. *American Journal of Roentgenology*, 211(1), 133-145.
12. Mahasneh, A. M., **Alakhras, M.**, Khabour, O. F., Al-Sa'di, A. G., & Al-Mousa, D. S. (2020). Practices of Infection Control Among Dental Care Providers: A Cross Sectional Study. *Clinical, Cosmetic and Investigational Dentistry*, 12, 281.
13. Mahasneh, A. M., Al-Mousa, D. S., Khabour, O. F., Al-Sa'di, A. G., & **Alakhras, M.** (2021). Attitudes and Knowledge of Dental Radiography among Students of Dentistry and Related Fields. *European Journal of Dental Education*.
14. Ekpo, E. U., **Alakhras, M.**, & Brennan, P. (2018). Errors in mammography cannot be solved through technology alone. *Asian Pacific journal of cancer prevention: APJCP*, 19(2), 291.
15. Ekpo, E. U., **Alakhras, M.**, & Brennan, P. (2018). Errors in mammography cannot be solved through technology alone. *Asian Pacific journal of cancer prevention: APJCP*, 19(2), 291.
16. Ganesan, A., **Alakhras, M.**, Brennan, P. C., & Mello-Thoms, C. (2018). A review of factors influencing radiologists' visual search behaviour. *Journal of medical imaging and radiation oncology*, 62(6), 747-757.
17. Ganesan, A., **Alakhras, M.**, Brennan, P. C., Lee, W., Tapia, K., & Mello-Thoms, C. (2018, March). Characteristics of the group of radiologists that benefits the most using Breast Screen Reader Assessment Strategy (BREAST). In *Medical Imaging 2018: Image Perception, Observer Performance, and Technology Assessment* (Vol. 10577, p. 1057718). International Society for Optics and Photonics.
18. Al-Mousa D.S., **Alakhras M.**, Hossain S.Z, Al-Sa'di M., Al-Hasan M., Al-Hayek Y., Brennan PC. Knowledge, attitude and practice around breast cancer and mammography screening among Jordanian women. Accepted. *Breast Cancer: Targets and Therapy*. 2020
19. Jackson, Rhianna L., Callan R. Double, Hayden J. Munro, Jessica Lynch, Kriscia A. Tapia, Phuong Dung Trieu, **Maram Alakhras** et al. "Breast cancer

- diagnostic efficacy in a developing south-east Asian country." Asian Pacific journal of cancer prevention: APJCP 20, no. 3 (2019): 727.
20. Al-Mousa D.S, Rawashdeh M, **Alakhras M**, Spuur K M, AbuTaimai R, Brennan P
C. Does mammographic density remain a radiological challenge in the digital era. Acta Radiologica. 2020; 1-8
 21. Al-Mousa D.S, **Alakhras M**, Spuur K M, Alewaidat H, Rawashdeh M, M Abdelrahman, Brennan P C. The implications of increased mammographic breast density for breast screening in Jordan. Journal of Medical Radiation Sciences 2020;1-7
 22. B Al Mohammad, SL Hillis, W Reed, **M Alakhras**, PC Brennan. Radiologist performance in the detection of lung cancer using CT 2019, Clinical radiology.
 23. Al-Mousa D.S, **Alakhras M**, Spuur K M, Alewaidat H, Rawashdeh M, M Abdelrahman, Brennan P C. Mammographic breast density profile of Jordanian women with normal and breast cancer findings. Breast Cancer: Basic and Clinical Research. 2020; 14:1-7
 24. Al-Mousa D.S, Brennan P, Ryan E, Lee W, Pietrzyk M, Reed W, **Alakhras M**, Li Y, Mello-Thoms C. Effect of mammographic breast density on radiologists' visual search pattern. Proceedings of SPIE Medical Imaging 2014: Image Perception, Observer Performance, and Technology Assessment, Bellingham, United States: SPIE Society of Photo-Optical Instrumentation Engineers. 2014
 25. Seyedamir Tavakoli Taba, Patrycja Baran, Sarah Lewis, Robert Heard, Serena Pacile, Yakov I Nesterets, Sherry C Mayo, Christian Dullin, Diego Dreossi, Fulvia Arfelli, Darren Thompson, Mikkaela McCormack, **Maram Alakhras**, Francesco Brun, Maurizio Pinamonti, Carolyn Nickson, Chris Hall, Fabrizio Zanconati, Darren Lockie, Harry M Quiney, Giuliana Tromba, Timur E Gureyev, Patrick C Brennan (2019). Toward improving breast cancer imaging: radiological assessment of propagation-based phase-contrast CT technology. Academic radiology, 26(6), e79-e89.

National/International Conferences, Workshops

1. **Alakhras M.** and Al-Mousa D.S. Mammographic breast density profile in Jordanian women as a baseline of establishment of a national screening program. European Congress of Radiology 2020
2. **Alakhras M.**, Al-Mousa D.S, Brennan P.C, Taba A.T, AbuTaimai R., Rickard M. Impact of digital breast tomosynthesis on readers with different experience. Fifteenth International Workshop on Breast Imaging 2020
3. **Alakhras, Maram**, Claudia Mello-Thoms, Mary Rickard, Roger Bourne, and Patrick C. Brennan. "The role of digital tomosynthesis in reducing the number of equivocal breast reportings." In Medical Imaging 2015: Image Perception, Observer Performance, and Technology Assessment, vol. 9416, p. 94161G. International Society for Optics and Photonics, 2015.
4. **Alakhras, Maram**, Mary Rickard, and Patrick C. "The effect of digital tomosynthesis on the number of equivocal breast reportings and lesion type description." Leura 8 International Breast Cancer Conference 2016. Sydney, Australia
5. Sarah Lewis, **Maram Alakhras**. "Learning CT imaging with remote lab access: the new world order of simulation education?" The 11th Annual Scientific Meeting of Medical Imaging and Radiation Therapy (ASMMIRT). Brisbane, Australia.
6. **Alakhras, Maram**, Mary Rickard, and Patrick C. "Equivocal Breast Findings Are Reduced with Digital Tomosynthesis" 13th International Workshop on Breast Imaging 2016. Malmö, Sweden
7. **Alakhras, Maram**, Mary Rickard, and Patrick C. "Radiation dose differences between digital mammography and digital breast tomosynthesis are dependent on breast thickness." SPIE Medical Imaging 2016. San Deigo, USA
8. **Alakhras, Maram**. "Digital Breast Tomosynthesis: a new understanding." Australian Institute of Radiography (AIR) 2015. MedRad Forum
9. **Alakhras, Maram**, Mary Rickard, and Patrick C. "Multi-faceted evaluation demonstrates a variety of benefits when digital breast tomosynthesis is used with digital mammography." The Medical Image Perception Conference (MIPS) 2015. Ghent, Belgium
10. **Alakhras, Maram**, Mary Rickard, and Patrick C. "Digital mammography alone versus digital mammography plus tomosynthesis for breast cancer detection." World Congress on Breast Cancer 2015. Birmingham, UK
11. **Alakhras, Maram**, Mary Rickard, and Patrick C. "The impact of digital breast tomosynthesis on radiologists' confidence for breast cancer diagnosis." HDR Conference: Image.U – Creating the Future 2014. The University of Sydney.
12. **Alakhras, Maram**. "Transforming breast cancer detection in Australia." Three Minute Thesis, The University of Sydney 2014.

13. **Alakhras, Maram**, Mary Rickard, and Patrick C. Efficacy of digital breast tomosynthesis for breast cancer diagnosis. SPIE Medical Imaging2014, San Deigo, USA
14. **Alakhras, Maram**, Mary Rickard, and Patrick C. Digital breast tomosynthesis: a new future for breast imaging. Physics and Perception Meeting, Brain and Mind Research Institute 2012. The University of Sydney.
15. Al-Mousa D.S and **Alakhras M**. Mammographic density on digitally acquired images effect on cancer detection amongst breast readers. European Congress of Radiology 2020
16. Lewis, S., Ryan, E., Liley, T., Rutledge, M., **Alakhras, M.**, & Brennan, P. Simulated Learning. Education, 4, 91-99.
17. Al-Mousa D.S, Brennan P, Ryan E, Lee W, Pietrzyk M, Reed W, **Alakhras M**, Li Y, Mello-Thoms C. Effect of mammographic breast density on radiologists' visual search pattern. SPIE 2014

Referees

1. Mahmoud Alwidyan, PhD

Disaster Science and Management
Assistant professor of paramedics
Head, Department of Allied Medical Sciences
Faculty of Applied Medical Sciences
Jordan University of Science and Technology
Email: mtalwidyan@just.edu.jo
Phone: +962-2-7201000 Ext: 26950

2. Alaa Oteir, PhD

Associate Professor, Paramedic Program
Department of Allied Medical Sciences
Vice Dean, Faculty of Applied Medical Sciences
Jordan University of Science and Technology, Jordan
Email: aoteir@just.edu.jo
Website: <https://www.just.edu.jo/~aoteir/>
Phone#: +962-2-7201000 ext. 26043