جامعة الملك سعود
King Saud University

CLS Research Booklet

2025-2026



Hematology | Immunology | Microbiology | Biochemistry | Genetics | Embryology

About this booklet

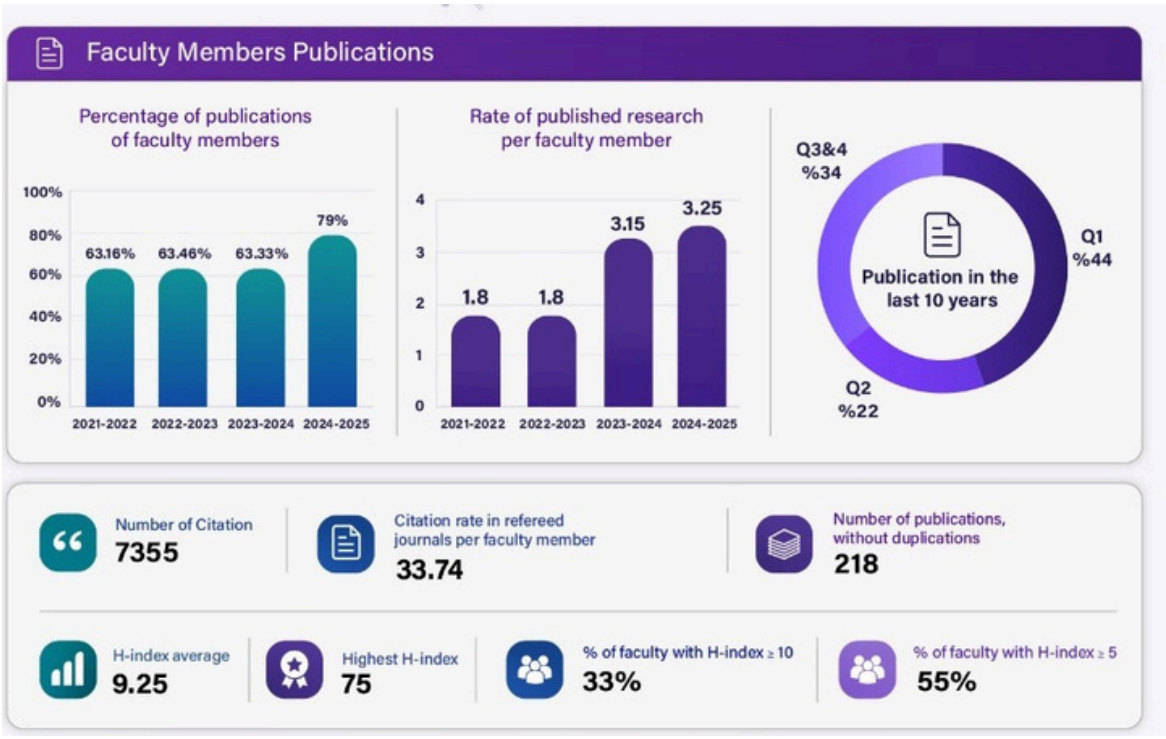
Research activities within the Department of Clinical Laboratory Sciences cover a wide range of laboratory medicine disciplines, including genetics, microbiology, immunology, hematology, biochemistry, and reproductive and embryology sciences.

Faculty members contribute to scientific research through publications, funded projects, postgraduate supervision, and participation in national and international collaborations.

This booklet highlights the research activities and scholarly contributions of faculty members in the Department of Clinical Laboratory Sciences during the 2025 - 2026 academic year. It also showcases selected outcomes from the CLS Research Day, including award-winning student research and departmental research achievements.

CLS Research at glance

Key research metrics and achievements of the Department of Clinical Laboratory Sciences



Research performance indicators based on departmental records and bibliometric analysis.

🏆 **90+ Awards & Recognition**

💰 **65+ Research Grants**

Faculty Research Profiles



Prof. Khalid K. Alharbi

Professor of Medical Molecular Genetics

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Scopus ID: 8635036500

Khalid Alharbi is a professor in Medical Molecular Genetics in College of Applied Medical Sciences in King Saud University. He obtained MSc in Medical Molecular Genetics (2000) and PhD (2004) in Human Genetics in UK. He became a head of Clinical Laboratory Sciences then Dean College of Nursing. He created Saudi Society for Clinical Laboratory Sciences in 2009. He has published more than 95 papers in ISI Journals, and supervisor for MSc and PhD students. Prof. Alharbi works as consultant and evaluator for promotion and ethical approval for more than 20 Universities and research centres. He is now Chairman of SSCLS.

Research Focus:

My major filed of interest is Human Molecular Genetics. I am specifically interested in Human Mutations genes. **95** papers were published as full-length articles in international, peer-reviewed journals. And **3** different chapter books were published
https://pubmed.ncbi.nlm.nih.gov/?sort=date&term=Alharbi+KK&cauthor_id=40407519

Key publications:

- Bokhari HA et al., Neonatal Screen, 2025
- Alharbi KK et al., Saudi J Biol Sci, 2020
- Alharbi KK et al., J Int Med Res, 2014
- Alharbi KK, Acta Biochim Pol, 2015



Prof. Fahad Mohammed Aldakheel

PhD, PMP

Professor of Clinical Immunology

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Web of Science ID: F-6406-2017

Research Focus:

Research interests are clinical immunology, allergy, asthma, oxidative stress biomarkers, and cancer immunology

Key publications:

- Aldakheel, F.M., 2024. Discovering potential asthma therapeutics targeting hematopoietic prostaglandin D2 synthase: An integrated computational approach. *Archives of Biochemistry and Biophysics*, **761**, p.110157.
- Attar, R.M., Abbas, B., Aldakheel, F.M., Aljohani, W., Aldaiji, L.A., Al-Megrin, W.A.I. and Allemailem, K.S., 2026. Targeting Pathogenic Desulfovibrio Species with a Novel Multi-Epitope Vaccine: A Reverse Vaccinology and Computational Approach. *Journal of Computational Biophysics and Chemistry*, **25**(01), pp.25-54.
- Aldakheel, F.M. and Alduraywish, S.A., 2025. Discovery of novel DdlA inhibitors in multidrug-resistant Pseudomonas aeruginosa using virtual screening, molecular docking, and dynamics simulations. *Scientific Reports*, **15**(1), p.15290.

Collaboration Interests:

Open to collaborate in Allergy, asthma, and cancer immunology



Prof. Taghreed Abdulaziz Hafiz

Professor of Molecular and Medical Microbiology

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Research Focus:

Professor Taghreed Hafiz specializes in the epidemiology of opportunistic nosocomial infections and antimicrobial resistance among hospital-acquired pathogens. Her research focuses on resistance mechanisms, clinical outcomes, and molecular epidemiology of multidrug-resistant Gram-negative bacteria. Current projects include investigating efflux pump expression in Gram-negative isolates from kidney transplant patients with urinary tract infections, as well as microbiome-related research and studies on *Klebsiella pneumoniae* pathogenicity.

Core Expertise:

- Molecular characterization of resistance genes
- Clinical microbiology and epidemiological analysis
- qRT-PCR and gene expression analysis
- Microbiome and resistome analysis

Key publications:

- Hafiz TA et al., Journal of Infection and Public Health, 2023
- Hafiz TA et al., Tropical Medicine and Infectious Disease, 2023
- Hafiz TA et al., Microorganisms, 2022



Prof. Manal Abudawood

Professor of Cancer and Molecular Genetics
Director, Central Research Laboratory

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Research Focus:

Cancer and molecular biology with a focus on molecular genetics, hematological malignancies, and translational research. Current work includes genomic profiling, multi-omics approaches, and development of innovative diagnostic and therapeutic strategies.

Core technical Expertise:

Techniques: Molecular genetics and genomics

Models: Hematological malignancies, clinical samples

Tools: Multi-omics platforms, ISO 17025 systems

Key publications:

- Binhassan S. et al., Frontiers in Oncology, 2025
- Bahattab S. et al., Saudi Pharmaceutical Journal, 2024
- **Alatawi D. et al., Children, 2023**

Collaboration Interests:

Open to collaboration in cancer genomics, molecular diagnostics, and translational research.



Dr. Raed Farzan

HOD
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Medical and Molecular Genetics

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Research Focus:

My research interest is about genes that are involved/ susceptible to have a role in cancer. Primarily in colon and breast cancer, as they are quite prominent is Saudi, and to find a clear linkage between certain set of genes and progression of cancers, i.e. if they are acting as a driver mutation or not. I am also using gene editing technology mainly CRISPR to study role of different genes in different cancer cell lines. I've successfully generated edited cell lines such as MCF-7, BT474, SKBR3, and HCT116 for the following set of genes (p53, APOBEC3B, APOBEC3C, APOBEC3H) and conducted sanger seq., RT-PCR, RNAseq and several other approach. I am also actively participated in COVID-19 validation tests for local research to establish alternative rapid test as a point of care testing. We do involve CRISPR in Varity of projects as a sophisticated technique with multiple applications.

Key publications:

- Manikandan Periyasamy, Anup K. Singh, Carolina Gemma, Christian Kranjec, Raed Farzan, Damien A. Leach, Naveenan Navaratnam, Hajnalka L. Pálinkás, Beata G. Vértessy, Tim R. Fenton, John Doorbar, Frances Fuller-Pace, David W. Meek, R. Charles Coombes, Laki Buluwela, Simak Ali, "p53 controls expression of the DNA deaminase APOBEC3B to limit its potential mutagenic activity in cancer cells." Nucleic acids research vol. 45,19 (2017): 11056-11069. doi:10.1093/nar/gkx721
- Linda Smith, Raed Farzan, Simak Ali, Laki Buluwela, Adrian T. Saurin & David W. Meek "Author Correction: The responses of cancer cells to PLK1 inhibitors reveal a novel protective role for p53 in maintaining centrosome separation." Scientific reports vol. 8,1 5237. 22 Mar. 2018, doi:10.1038/s41598-018-23384-5



Dr. Ahmed M. Basudan

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Human Genetics & Cancer Genomics

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Research Focus:

My research focuses on the molecular mechanisms underlying breast cancer progression, metastasis, and endocrine resistance, with particular emphasis on invasive lobular carcinoma (ILC) and ESR1 genomic alterations. I employ genomic and bioinformatics approaches to identify novel therapeutic targets in advanced and metastatic breast cancer. I also investigate the anticancer potential of bioactive compounds as innovative therapeutic strategies.

Core technical Expertise:

- **Technique / Method:** Next-generation sequencing (NGS), qPCR, flow cytometry, molecular diagnostics, and biomarker discovery.
- **Model/ System:** Clinical patient cohorts, cancer registries, human samples, cancer genomic datasets.
- **Tools / Platform:** R, Unix/Linux, Python, and other bioinformatics tools.

Key publications:

Perillyl alcohol-induced hematological modulations: insights into human blood cells damage, eryptosis, and systemic perturbations. Basudan AM, Alsughayyir J, Al-Sheikh YA, Alfhili MA. J Toxicol Sci. 2026;51(1):45-55. doi: 10.2131/jts.51.45.

A Comprehensive Two-Decade Analysis of Lymphoma Incidence Patterns in Saudi Arabia. Basudan AM, Althani M, Abudawood M, Farzan R, Alshuweishi Y, Alfhili MA. J Clin Med. 2024 Mar 13;13(6):1652. doi: 10.3390/jcm13061652.

Comprehensive Retrospective Analysis of Colorectal Cancer Incidence Patterns in Saudi Arabia. Basudan AM, Basuwdan AM, Abudawood M, Farzan R, Alfhili MA. Life (Basel). 2023 Nov 11;13(11):2198. doi: 10.3390/life13112198.

Collaboration Interests:

- Open to collaborations in cancer genomics, molecular diagnostics, biomarker discovery, bioinformatics, and translational clinical research.
- Expertise offered in NGS data analysis, prognostic model development, survival analysis, biomarker validation, and study design for clinical laboratory research.



Dr. Sabiha Fatima

Associate Professor

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Research Focus:

Dr. Sabiha Fatima is a biomedical researcher specializing in cancer biology, nanotechnology, molecular toxicology, and oxidative stress. Her research focuses on the development and biomedical applications of nanoparticles, cancer therapeutics, antioxidant interventions, and the mechanisms underlying chemical and drug-induced organ toxicity. Current projects include nanoparticle-based therapies, cancer biology, and translational biomedical research.

Core technical Expertise:

- **Techniques / Methods:** Cell culture, Nanoparticle synthesis and characterization, Oxidative stress assays, Molecular biology techniques, Histopathology, Biochemical and toxicological analyses, Animal experimentation
- **Models / Systems:** Cancer cell lines, Rodent models of nephrotoxicity and hepatotoxicity, Oxidative stress and inflammation models
- **Tools / Platforms:** Spectrophotometry, Cell viability and apoptosis assays, ROS analysis, Nanotechnology-based drug delivery systems, Statistical tools

Key publications:

- Alsubaie et al., ACS omega. 2025
- Fatima S et al., J Biochem Mol Toxicol, 2025
- Fatima S et al., International Journal of Molecular Sciences, 2023
- Fatima S et al., International Journal of Nanomedicine. 2021

Collaboration Interests:

- Open to collaborate in cancer biology, nanomedicine, toxicology, oxidative stress research, precision medicine, stem cell biology, and translational biomedical research.
- Expertise offered in nanoparticle synthesis and biomedical applications, experimental toxicology, animal models, oxidative stress and antioxidant research, cancer therapeutics, molecular and cellular biology, and biomedical research design.



Dr. May Alrashed

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Research Focus:

Molecular characterization of genetic disorders using next generation sequencing in addition to studying cancer genetics and genetic basis of antibiotic-resistant bacteria.

Key publications:

- Rehman G, Khan J, Alrashed MM, et al. Development and characterization of dual drug loaded magnetic gold nanohybrid system for osteoarthritis. *Journal of Biomaterials Applications*. 2025;39(10):1222-1239.
- Jabeen, S., Khan, R., Alrashed, M.M. *et al.* Modulation of glucose metabolism and insulin resistance following hepatitis C virus clearance via direct-acting antivirals. *Sci Rep* 15, 14663 (2025). https://doi.org/10.1038/s41598-025-97827-1
- Tabassum, H., Alrashoudi, R.H., Abudawood, M. *et al.* State-of-the-art Investigation on the Role of Indium, Terbium, Yttrium, and Lanthanum in Recurrent Pregnancy Loss. *Biol Trace Elem Res* 203, 1444–1452 (2025). https://doi.org/10.1007/s12011-024-04456-2



Dr. Esraa Aldawood

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Microbiology

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Research Focus:

My research focuses on clinical and applied microbiology, with an emphasis on antimicrobial resistance (AMR), host–pathogen interactions, and microbiota-related health. My work integrates retrospective surveillance of AMR trends in clinical settings with investigations of AMR in food and environmental sources, alongside experimental studies on multidrug-resistant organisms, bioactive compounds, and infectious disease survey-based research assessing public knowledge, awareness, and behavioral determinants.

Core technical Expertise:

Techniques / Methods: Antimicrobial susceptibility testing, bacterial culture and infection assays, biofilm assays, retrospective AMR surveillance analysis, infectious disease survey design and analysis, flow cytometry (FACS; annexin-based eryptosis), PCR and quantitative RT-PCR (qRT-PCR), compound screening and activity assessment, surface–microbe interaction assays
•**Models / Systems:** Clinical bacterial isolates (e.g., MDR pathogens), food and environmental samples, retrospective hospital datasets, in vitro infection models, medical device–related surface models, red blood cells (hemolysis/eryptosis), infectious disease and microbiota-related human survey cohorts

Key publications:

- Al-Tamimi, Abdulsalam A., and Esraa Aldawood. International Journal of Bioprinting, 2024
- Aldawood, Esraa, et al. Healthcare, MDPI, 2025
- Aldawood, Esraa, et al. Medicina, 2024

Collaboration Interests:

• Open to collaboration in antimicrobial resistance, retrospective AMR surveillance, bacteriophage applications, food and environmental microbiology, infectious disease epidemiology, and bioactive compound research

• Interested in investigating the antibacterial, antibiofilm properties, and biocompatibility of materials and surfaces used in medical devices to optimize performance and reduce infection risk

• Interested in interdisciplinary work integrating clinical microbiology, biomaterials science, One Health approaches, and molecular biology.

• Expertise offered in study design (laboratory and survey-based), retrospective clinical data analysis, molecular and culture-based assays, AMR investigation, and surface–microbe interaction studies



Dr. Sana Saeed Alqarni

Associate Professor of Cancer Molecular Genetics

Consultant in Laboratory – Genetics

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Web of Science ID: KHY-8733-2024

Research Focus:

Dr. Alqarni research focuses on molecular genetics in cancer and inherited diseases, with a strong emphasis on precision and personalized medicine. Current work includes mutation profiling in hematological malignancies, colon cancer, breast cancer and pharmacogenomics of anticancer therapies, and genomic applications in the Saudi population. Her particularly interested in integrating genomic data with clinical outcomes to improve diagnosis, prognosis, and therapeutic strategies.

Core technical Expertise:

- **Advanced molecular and genomic techniques:** NGS and whole genome analysis, RT-PCR, qPCR, gene expression profiling, epigenetic investigations such as DNA methylation studies, molecular pathway analysis focusing on key signaling cascades including NF-κB, PI3K/Akt, and oxidative stress mechanisms.
- **In vitro and in vivo experimental approaches**
- **Diverse biological models** encompassing hematological malignancies such as acute myeloid leukemia (AML) and lymphoma, neuroinflammatory disorders including autism and depression models, metabolic and toxicological disease models, alongside applications in cancer pharmacology and nanomedicine.
- **Bioinformatics and genomic analysis tools**
- **Experimental animal models and translational research frameworks**

Key publications:

- Alqarni, S.S., Khan, N.U. Mol Biol Rep 2025
- Alqarni SS et al., Int Immunopharacol, 2025
- Khan, N. U. et al., Journal of Translational Medicine, 2026

Collaboration Interests:

Dr. Alqarni is open to national and international collaborations in cancer genomics and precision oncology, population genomics with a focus on Saudi-specific studies, pharmacogenomics and drug response research, as well as AI applications in genomic medicine. She offers expertise in molecular diagnostics and mutation profiling, clinical–genomic data integration, and the design of retrospective and cohort studies, with extensive experience in IRB-reviewed clinical research.



Dr. Jawaher Alsughayyir

Associate Professor

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Research Focus:

I am interested in translational applications of immune profiling to support precision medicine approaches in diverse populations. My research interests focus on clinical immunology and cancer immunology, with particular emphasis on the tumor immune microenvironment and its impact on colorectal cancer outcomes. I am also interested in investigating the prognostic and clinical utility of immune-based biomarkers alongside molecular and clinicopathological factors to improve risk stratification and guide patient management.

Core technical Expertise:

- Flow cytometry and confocal Microscopy
- Standard protein and molecular techniques
- Advanced statistics (SPSS, R, PRISM)

Key publications:

- Alsughayyir et al., Correlation of Neutrophil-Lymphocyte Ratio and Critical Illness in Adults on Vancomycin: A Cross-Sectional Study, Int J Gen Med. 2025 Jul 31;18:4157-4167. doi: 10.2147/IJGM.S537039. eCollection 2025.
- Alsughayyir et al., Reducing blood product wastage: Insights from a retrospective study in a tertiary health facility. PMID: 40766859. PLoS One. 2026
- Alsughayyir et al., Assessing the Current Status of Artificial Intelligence Applications for Predicting Microsatellite Instability in Colon Cancer. RJBT. 2025

Collaboration Interests:

Open to collaborate in immunology related projects



Dr. Abdullah Aljedai

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Research Focus:

Signalling pathways in hematopoietic stem cell and cancer stem cells, molecular targeted therapy in leukaemia and lymphoma, genetic alterations in plasma cell myeloma, Proteomics and Genetic of sickle cell anaemia, haematological and metabolic assessment of blood donors, haemostasis abnormalities in chronic disease.

Core technical Expertise:

- Flow cytometry and cell sorting techniques
- Isolation & characterisation of hematopoietic and cancer stem cells
- Immunophenotyping of leukemia and lymphoma

Key publications:

- **Aljedai A**, Buckle A-M, Hiwarkar P, Syed F. Potential Role of Notch Signalling in CD34+ Chronic Myeloid Leukaemia Cells: Cross-Talk between Notch and BCR-ABL. PLoS ONE (2015) 10(4).
- Alsubaie M, Matou-Nasri S, **Aljedai A**, Alaskar A, Al-Eidi H, Albabtain SA, Aldilaijan KE, Alsayegh M, Alabdulkareem IB. In vitro assessment of the efficiency of the PIM-1 kinase pharmacological inhibitor as a potential treatment for Burkitt's lymphoma. Oncol Lett. 2021 Aug;22(2):622. doi: 10.3892/ol.2021.12883. Epub 2021 Jun 29. PMID: 34267815; PMCID: PMC8258613.
- **Aljedai A**, Saeed Aldosari, Mourad Aboul-Soud, Khalid Batarfi, Waleed Altamimi, Abdulrahman Al-shalani. Impact of Frequent Blood Donations on Red Blood Cell Indices, Reticulocyte Parameters, and Iron Metabolism in Saudi Donors. Submitted to: Journal of clinical medicine, 2025.

Collaboration Interests:

Open to collaborate in cellular and molecular research in areas diagnostics and therapeutics of malignant and nonmalignant hematologic disorders



Dr. Abdulhadi Alabdulwahed

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Research Focus:

Translational cancer researcher investigating molecular and cellular mechanisms of tumorigenesis, with emphasis on DNA damage, genomic instability, and chemotherapy resistance in ovarian and breast cancers. Current work integrates AI-driven precision oncology (Harvard Medical School certified), pharmacophore-guided drug design targeting tumor angiogenesis, and gold nanoparticle biosensors for early cancer detection, alongside investigations of environmental carcinogenesis and oxidative stress.

Core technical Expertise:

- Alkaline and high-throughput comet assay for DNA damage assessment
- Fluorescence In Situ Hybridization (FISH) and gene-positioning analysis in chemoresistant tumor cells
- Gold nanoparticle biosensor development for cancer biomarkers
- E-pharmacophore modelling and targeted drug-delivery design
- AI-driven predictive analytics for precision oncology
- Oxidative stress assays and chemoresistance profiling

Key publications:

- Collins A et al., Nature Protocols, 2023
- Abdulwahed AM, Advancements in Life Sciences, 2025
- Abdulwahed AM. International Journal of Pharmaceutical Investigation, 2025
- Abdulwahed AM, Medicine, 2026

Collaboration Interests:

- Open to collaborate in cancer biomarker discovery, AI-driven precision oncology, DNA damage and chemoresistance, pharmacophore-guided drug design, and environmental carcinogenesis (microplastics).
- Techniques offered: comet assay (alkaline/high-throughput), FISH, oxidative-stress profiling, gold nanoparticle biosensors, e-pharmacophore modelling, and translational cancer research mentorship and collaborative supervision



Dr. Hamood AlSudais

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Research Focus:

My lab focuses on biomarker discovery for chronic inflammatory and neurodegenerative diseases. We investigate the genetic architecture of these conditions and apply advanced bioinformatics to integrate complex datasets, enabling biomarker identification and precision diagnostics.

Core technical Expertise:

- Next-Generation sequencing (RNA-, DNA-Seq)
- Tissue culture, Genetic modification
- Bioinformatics

Key publications:

- AlSudais, H., et al. Novel Inflammatory Indices in Clinical Anemia: SII and SIRI Assessment in a Large Middle Eastern General Population. Bratisl. Med. J. 126, 3677–3690 (2025).
- Neena Lala-Tabbert, Hamood AlSudais,et al, CCAAT/enhancer-binding protein beta promotes muscle stem cell quiescence through regulation of quiescence-associated genes, Stem Cells, 2021
- AlSudais H., et al. C/EBPβ promotes the expression of atrophy-inducing factors by tumours and is a central regulator of cancer cachexia, Journal of Cachexia, Sarcopenia and Muscle (2022).
- AlSudais, H.; et al . Short-Term Laboratory Outcomes of SGLT2 Inhibitor Use in Type 2 Diabetic Patients: A Retrospective Analysis. J. Clin. Med. 2025



Dr. Abdulrahman Alshalani

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Research Focus:

My research focuses on hematology and transfusion medicine, with emphasis on red blood cell biology, blood donor characteristics, RBC storage lesion, transfusion efficacy, and hematological biomarkers in clinical populations. Current projects include donor-related determinants of transfusion outcomes, blood bank quality and wastage, iron metabolism in blood donors, and hematological and biochemical changes associated with diabetes.

Core technical Expertise:

- **Technique / Method:** Hematological profiling, transfusion medicine research, RBC quality assessment, donor-recipient outcome analysis, retrospective clinical studies, cross-sectional survey design, animal studies, cell culture techniques, flow cytometry, ELISA, and biostatistical analysis.
- **Tools / Platform:** hematology analyzers, coagulation/chemistry platforms, transfusion techniques, flow cytometry platforms and FlowJo analysis software, SPSS, GraphPad Prism, and EndNote.

Key publications:

- Alshalani A, AlSudais H, Binhassan S, Juffermans NP. Sex discrepancies in blood donation: Implications for red blood cell characteristics and transfusion efficacy. Transfus Apher Sci. 2024;63(6):104016.
- Aljedai A, Aldosari SMS, Alshalani A, Batarfi KA, Tamimi W, et al. Impact of frequent blood donations on red blood cell indices, reticulocyte parameters, and iron metabolism. Indian J Hematol Blood Transfus. 2025;1–12.
- Alshalani A, AlAhmari N, Amin HA, Aljedai A, AlSudais H. Biochemical profile variations among type 2 diabetic patients stratified by hemoglobin A1c levels in a Saudi cohort: a retrospective study. J Clin Med. 2025;14(15):5324.

Collaboration Interests:

- Open to collaborate in transfusion medicine, blood donor health, RBC biology, anemia and iron metabolism, blood bank quality improvement, and clinical laboratory-based research.
- Expertise offered includes study design, clinical laboratory data analysis, hematology and transfusion interpretation, manuscript development, and multicenter research collaboration.



Dr. Yazeed Abdullah Alshuweishi

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Research Interest:

My research interests focus on metabolic and molecular mechanisms underlying chronic diseases, particularly obesity, type 2 diabetes mellitus (T2D), and cardiovascular diseases (CVDs), with a strong emphasis on protein biology, metabolic signaling, and biomarker discovery. I am particularly interested in investigating circulating protein-based biomarkers, adipokines, cytokines, and metabolism-related molecular pathways involved in inflammation, insulin resistance, dyslipidemia, and cardiometabolic dysfunction. My work also explores the integration of molecular biology, proteomics, transcriptomics, and other multi-omics approaches to better understand disease pathophysiology and identify novel diagnostic, prognostic, and therapeutic targets. In addition, I am interested in the translational application of advanced molecular and biotechnological approaches to develop mechanism-based strategies for the diagnosis and management of chronic metabolic diseases.

Current Research Projects:

- Obesity, Metabolic Health, and Biomarker Discovery – Ongoing PhD Research Program (2025–2028)
- Immunometabolic Mechanisms in Chronic Metabolic Disorders – Ongoing PhD Research Program (2025–2028)
- Molecular and Clinical Aspects of Dyslipidemia and Type 2 Diabetes Mellitus – Ongoing PhD Research Program (2025–2028)
- Endocrine and Metabolic Disorders in Women's Health – Ongoing Research Program (2025–2028)

Key publications:

- Alshuweishi Y et al., Healthcare (Basel). 2025
- Alshuweishi Y et al., Cells, 2025
- Alkudmani ZS et al., Diabetol Metab Syndr. 2025
- Alshuweishi Y, Medicina (Kaunas). 2025



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Research Focus:

My research focuses on medical virology, molecular epidemiology, and infectious disease diagnostics, with particular interest in respiratory viruses, blood-borne viral infections, and host inflammatory and hematological biomarkers. My current work includes molecular surveillance and evolutionary analysis of respiratory viruses such as influenza, RSV, HMPV, and coronaviruses, as well as retrospective clinical studies evaluating laboratory-derived biomarkers in viral infections, anemia, liver abnormalities, dysglycemia, and metabolic disorders.

Core technical Expertise:

- Molecular virology and infectious disease diagnostics
- Molecular epidemiology and phylogenetic analysis
- Viral genomic surveillance and sequence analysis
- Clinical laboratory sciences and diagnostic microbiology
- Hematological, inflammatory, biochemical, and metabolic biomarker analysis
- Retrospective clinical and laboratory-based research
- Clinical data analysis and interpretation of laboratory outcomes

Key publications:

- Almuqrin AM et al., Molecular epidemiology and genetic diversity of human metapneumovirus among hospitalized children in Saudi Arabia during the COVID-19 era. BMC Infectious Diseases, 2025.Author et al., Journal, Year
- Almuqrin AM, Alrezaihi AF, Aljasser AA, Alqarni I, Alshuweishi Y, Alfhili MA. Association Between Neutrophil-to-HDL Ratio and Full-Spectrum Dysglycemia: Insights from a Large Middle Eastern Population Study. Healthcare. 2025;13(23):3021. doi:10.3390/healthcare13233021.



Dr. Abdulrahman F. Alrezaihi

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Research Focus:

My research focuses on molecular virology, respiratory viruses, genomic surveillance, and sequencing applications for emerging infectious diseases. Current work includes the development of genomic surveillance approaches for respiratory viruses in Saudi Arabia using nanopore sequencing and metagenomic analysis.

Core technical Expertise:

- **Technique / Method:** Viral genomics and whole-genome sequencing, Metagenomics and microbiome analysis, Molecular epidemiology and genomic surveillance, Bioinformatics and phylogenetic analysis
- **Model/ System:** Clinical respiratory samples, SARS-CoV-2, MERS-CoV, Influenza A, and seasonal coronaviruses, K18-hACE2 mouse model
- **Tools / Platform:** Oxford Nanopore Technologies (GridION, MinION), Illumina sequencing platforms, R and bioinformatics pipelines

Key publications:

- Alrezaihi et al., Journal of Clinical Virology, 2023
- Alrezaihi et al., International Journal of Molecular Sciences, 2026
- Alrezaihi et al., ASM Journals, 2021

Collaboration Interests:

- **Collaboration Interests**: Genomic surveillance of respiratory and emerging viruses, Public health genomics and outbreak preparedness, Metagenomics, microbiome research, and pathogen discovery, AI and data-driven approaches for infectious disease surveillance
- **Expertise Offered:** Study design and implementation of sequencing-based projects, Oxford Nanopore sequencing workflows and training, Viral genomics and metagenomic data analysis, Bioinformatics support for pathogen surveillance and outbreak investigations



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Web of Science ID: ABD-1944-2020

Research Focus:

My research portfolio centers on stem cell and tumor biology, with a particular focus on mesenchymal stem cells, cancer stem cells, and the molecular crosstalk within the tumor microenvironment. I integrate expertise in anatomy, molecular cell biology, cellular pathology, and histopathology to investigate mechanisms underlying cancer progression and disease pathology. In parallel, I explore innovative applications of artificial intelligence in health sciences and medical education to advance research, diagnostics, and transformative learning experiences.

Core technical Expertise:

My core technical expertise encompasses stem cell isolation and culture, mesenchymal stem cell characterization, histopathology, immunohistochemistry, molecular and cellular pathology, and advanced microscopy analysis, with a particular focus on tumor biology and tumor–stem cell interactions. I work extensively with human tissue samples, in vitro cell culture systems, stem cell and cancer cell models, and tumor microenvironment studies.

Key publications:

Collaboration Interests:

I am open to interdisciplinary collaborations in stem cell biology, tumor biology, cancer stem cells, molecular and cellular pathology, histopathology, and anatomy-related research. I am particularly interested in collaborative projects involving tumor microenvironment studies, translational biomedical research, and digital health innovation.



Dr. Arwa abdulaziz Alageel

Assistant Professor and Consultant Clinical Embryologist
Chair of the National Accreditation and Licensing Committee for Fertility sector and IVF centres (MOH Saudi Arabia)
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Research Focus:

Dr. Arwa Alageel's research focuses on assisted reproductive technologies (ART), clinical embryology, reproductive genetics, and translational reproductive medicine. Her work investigates the molecular and genetic mechanisms underlying infertility, reproductive ageing, polycystic ovary syndrome (PCOS), and gamete competence through the application of reproductive genomics, single-cell transcriptomics, and molecular diagnostics. She is also actively engaged in fertility preservation, reproductive health innovation, and the development of evidence-based quality, governance, and regulatory frameworks to advance reproductive healthcare delivery.

Core technical Expertise:

• Extensive hands-on expertise in advanced Assisted Reproductive Technologies (ART): IVF, ICSI, embryo biopsy, cryopreservation, fertility preservation, and preimplantation genetic testing (PGT), with applications in clinical practice, laboratory leadership, and translational research.
• Expertise in reproductive genetics, genomics, and omics technologies: single-cell transcriptomics and Next-Generation Sequencing (NGS) applications.
• Proficiency in molecular diagnostic and genomic platforms: qPCR, OpenArray RT-PCR, Sanger sequencing, and associated molecular analysis workflows.
• Experience in fertility centre establishment, laboratory design, operational optimization, and the development of regulatory, accreditation, IVF laboratory governance and governance frameworks for ART services, Quality Management Systems (QMS), laboratory accreditation standards, CAP-aligned quality frameworks,
• Expertise in translational reproductive medicine, research design, postgraduate supervision, and the development of academic and clinical research programmes.

Key publications:

Alageel AA, Archives of Gynecology and Obstetrics, 2026

Alageel AA, Ali Khan I. Genes. 2024.
Alageel AA, Alshammary AF, Ali Khan I. Frontiers in Endocrinology. 2023.
Alageel AA, Alhaizan MA, Neyazi SM, Al-Hakeem MM, Ali Khan I, Applied Sciences. 2023

Collaboration Interests:

- Open to collaborate in ART and Clinical Embryology Training, Mentorship, and Workforce Development Techniques
- National and International Regulatory Frameworks, Licensing, Accreditation, and Inspection Systems for IVF Services
- Research Design, Grant Development, Postgraduate Supervision, and Multidisciplinary Research Collaboration

Dr. Sarah Saeed Binhassan

Assistant Professor



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Web of Science ID: KJL-2744-2024

Research Focus:

Investigating of abnormal transcription factor expression during Cancer cell development, as well as studying the genomic landscape of haematological malignancies and rare disorders.

Core technical Expertise:

- Next Generation Sequencing (NGS)/ ChIP-seq, RNA-seq, ATAC-seq, WES, WGS
- Human and Animal/ Primary patient and Animal samples, cell lines
- Cytogenetics & molecular genetics/ Karyotype & FISH, NGS (Illumina, Sanger Sequencing, Galaxy, ACMG, etc.)

Key publications:

- Binhassan S et al., Front Oncol, 2025
- Binhassan S et al., Sci Rep, 2025
- Stanulović VS et al., Haematologica, 2025

Collaboration Interests:

Open to collaborate in Cancer research



Dr. Sarah Alharbi

Deputy HOD
Assistant professor
Molecular Microbiology

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Web of Science ID: Sarah Alharbi

Research Focus:

My research focuses on antimicrobial resistance (AMR) in clinically important bacterial pathogens, with particular emphasis on the molecular epidemiology and genomic characterization of resistance determinants. Current projects investigate carbapenem resistant Gram-negative bacteria, mobile genetic elements involved in resistance gene transfer, and AMR surveillance using genomic approaches. I am also interested in AMR awareness and public health education to support antimicrobial stewardship efforts.

Key publications:

- Alharbi, S. R., L. Alzamil, Z. S. Alkudmani, A. Alhani, L. Faqih and E. Aldawood (2025). "Knowledge and Misconceptions About Antibiotic Use and Resistance Among Dental Clinic Visitors in Saudi Arabia—A Cross-Sectional Study." Healthcare **13**(16): 1971.

- Alharbi, S. R., L. Alzamil, A. A. Shorbatli, Y. H. Ghunaim, M. Almutairi, E. Aldawood, L. Faqih, B. Alrashidi and K. Binkhamis (2026). "Epidemiology and carbapenemase gene distribution among carbapenem-resistant enterobacterales: a two-year retrospective study in a Saudi tertiary hospital." BMC Microbiology **26**(1): 156.

- Alharbi, S., Aldawood E., Jamil, N., Alshehri, F., Ashour, M., Elfaky, M. (2024). Mobile Genetic Elements and the Evolution of Microbes. In Sylwia Okoń, Beata Zimowska, & Mahendra Rai (Eds.), Microbial Genetics. Chapter 7. Routledge Taylor & Francis Group.



Dr. Deemah M. Aldabbagh

Assistant Professor

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Linkedin

Research Focus:

Molecular Virology, Virus-Host interactions, Virus Restriction (PSGL-1/SHREK), bnAb engineering, Public Health Microbiology

Core technical Expertise:

- **Molecular biology and immune techniques**: PCR, restriction cloning, western blotting, western blotting, ELISA, Immuno-magnetic pulldown, surface staining, FACS/flow cytometry, yeast display, directed evolution, NextSeq/MiSeq, among others.
- **Virology models:** VLPs, Viral vectors (AAV, lentivirus), HIV-1 reporter infection models, single-cycle infectivity/viral restriction assays
- **Public health microbiology:** Cross-sectional research methodologies for investigating vaccine knowledge and hesitancy (e.g., HPV) and attitudes towards AMR.

Key publications:

- Liu et al., Nature Microbiology, 2019
- Dabbagh et al., Viruses, 2021
- Fu et al., PNAS, 2020

Collaboration Interests:

Open to collaborate in the broader area of microbiology and infectious diseases.



Dr. Nada Fahad Almebairik

Assistant professor
Deputy Director for Technical Affairs, CEBR

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Research Focus:

Research Focus

Genomic surveillance of antimicrobial resistance (AMR)

Specialization

AMR, Bioinformatics, microbial genomics

Current Project – Riyadh

Molecular epidemiology of Uropathogenic ESBL-producing *E. coli*

- Prevalence assessment
- Whole-genome sequencing (WGS)
- Bioinformatics-driven resistance gene profiling

Core technical Expertise:

- Technique / Method: DNA & RNA extraction, PCR, qPCR
- Model/ System
- Tools / Platform: Bioinformatics tools required for WGS, ARG analysis, mobile genetic elements analysis, and Python

Key publications:

- Ohoud S Alhumaidan et al., Letters in Medical Sciences, 2025
- Magdalena Wysocka et al., Journal of Global Antimicrobial Resistance, 2021
- Nada Almebairik et al., Frontiers in Microbiology, 2020

Collaboration Interests:

- Open to collaborating in microbiology research, antimicrobial resistance, and microbiome.
- Techniques / expertise offered: lab work, data analysis, bbioinformatic analysis



Dr. Nahla Bakhamis

Assistant Professor
Senior Embryologist

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Web of Science ID: Nahla Bakhamis
Scopus ID: 57210554789

Research Focus:

Reproductive Genetics, Reproductive Immunology, Women's Reproductive Health, Genome Editing, Prenatal Gene Therapy, Fertility Preservation, Nanomedicine, and Emerging Reproductive Technologies.

Technical Expertise:

- **ART and Clinical Embryology**
- **Molecular & Cellular Techniques:** DNA/RNA extraction, PCR, qPCR, single cell RNAseq, flow cytometry, cell signaling and IHC, 2D/3D cell culture.
- **Nanomedicine & Translational Research:** Nanoparticle design, synthesis, characterization, targeted drug delivery systems,
- ***Ex vivo* perfusion models**
- **Omics & Research Methodology:** Proteomics sample preparation and data analysis, Study design, survey research, systematic reviews, evidence synthesis, and grant development.

Key publications:

- Shangaris et al., In Utero Gene Therapy. Scientific Reports. 2019.
- Alsalamah et al., EmbryoTrust: Data Governance in IVF, Electronics, 2025
- Bakhamis et al., Nanoparticles therapy in Pregnancy, Int Journal of Nanomedicine, 2025

Collaboration Interests:

Open to multidisciplinary collaborations in translational biotechnology, reproductive medicine, digital health innovation, and women's reproductive health research, with interests spanning the scientific, ethical, regulatory, and policy dimensions.



Dr. Sarah Almuhayya

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Clinical Microbiology
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Web of Science ID: MSW-7075-2025

Research Focus:

Assistant Professor in Clinical Microbiology with research interests in microbiology, biofilm research, probiotics, and microbiome-related health studies. Research focuses on microbial interactions, antimicrobial approaches, and the role of probiotics in health and disease. Current projects include biofilm-associated infections, probiotic applications, biomaterial-related microbiology, and microbiome awareness studies within the Saudi population. Actively involved in supervising student research projects and collaborating in interdisciplinary research related to microbiology and health sciences.

Key publications:

● Almuhayya S., Alshahrani R., Alsania R., Albassam A., Alnemari H., Babaier R. Biofilm Formation on Three High-Performance Polymeric CAD/CAM Composites: An In Vitro Study. Polymers, 2025.

● Almuhayya S., Aldehalan F., Alzamil L., Ibrahem K., Alharbi S.R., Aldawood E. Vaginal Microbiome Knowledge and Hygiene Practices among Women in Saudi Arabia: A Cross-Sectional Study. BMC Public Health, 2025.

● Aldawood E., Alzamil L., Dabbagh D., Alharbi S., Muzzaffar M., Moqnas A., Alwelaie Y., Almuhayya S. Knowledge of Vaginal Microbiota and Perceptions of Vulvovaginal Aesthetic Procedures among Women in Saudi Arabia. Healthcare, 2025.

Collaboration Interests:

• Open to collaborate in oral probiotics applications, oral microbiome and biofilm-related research, microbiome-based health enhancement, women's health studies, and bacterial interaction research.

• Techniques / expertise offered: biofilm adhesion assays, intermicrobiome interaction assays, probiotic and antimicrobial testing, metagenomics and QIIME analysis, qPCR, CLSM imaging, and in vitro microbiology models including Galleria mellonella infection models.



Dr. Areej Ibrahim Alshayea

Assistant Professor
Immunology and Immunotherapy

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Web of Science ID: PVE-1663-2026

Research Focus:

My research interests focus on immunology, immunotherapy, vaccine design, and host–pathogen interactions, particularly in infectious diseases. My work explores immune responses to infection, vaccine-induced protective immunity, inflammatory pathways, and mechanisms involved in antibody targeting and immune regulation. I am especially interested in understanding how vaccines generate effective and long-lasting immune protection and how immune responses can be optimized to improve vaccine efficacy.

In addition to vaccinology and immunology, I am deeply interested in understanding clinical microbiology and antimicrobial resistance, focusing on investigating resistance mechanisms and studying the immune responses to multidrug-resistant bacterial strains

Key publications:

- Vaccine-induced antibodies are sufficient to limit Salmonella infection in the absence of complement or macrophages,2026.
- Discrete and conserved inflammatory signatures drive thrombosis in different organs after Salmonella infection, 2025.
- Wild-type and single-O-antigen repeat outer-membrane vesicles induce equivalent protection against homologous and heterologous Salmonella challenge.
- Salmonella infection induces the reorganization of follicular dendritic cell networks concomitant with the failure to generate germinal centers.



Dr. Hala Aldahshan

Assistant professor

Supervisor of the Biomedical Animal Research Unit (BARU)

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Web of Science ID: MIP-6743-2025

Research Focus:

My research interests lie at the intersection of cell and gene therapy, molecular genetics, immunogenetics, and advanced therapy medicinal products (ATMPs). I am particularly interested in translating emerging genomic and cellular technologies into clinically relevant therapies for cancer, rare genetic disorders, and immune-mediated diseases. My work encompasses genome engineering, cellular immunotherapy, molecular diagnostics, and advanced gene-editing technologies, with a focus on bridging basic research and clinical translation. In addition, I am interested in the ethical, societal, and regulatory aspects of emerging genetic technologies and their implementation within healthcare systems.

Technical Expertise:

- Molecular and Cellular Biology Techniques
- Flow Cytometry and Immunophenotyping
- CRISPR-Cas9 and Base Editing Technologies
- Genome Engineering and Targeted Gene Integration
- Molecular Cloning and Genetic Construct Design
- Lentiviral Vector Design and Production
- CAR T-Cell Engineering and Cellular Immunotherapy

Key publications:

● Qasim W, Georgiadis C, et al. Base-Edited CAR7 T Cells for Relapsed T-Cell Acute Lymphoblastic Leukemia. New England Journal of Medicine, 2023.

● Aldahshan H, Bakhamis N, Alessa T, et al. Public Acceptance of Genome Editing in Saudi Arabia Is Driven by Therapeutic Benefit Despite Limited Awareness. Frontiers in Medicine, 2026.

Collaboration Interests:

• Open to collaborations in cell and gene therapy, molecular genetics, immunogenetics, cancer research, and translational medicine.
• Expertise in genome editing, CAR T-cell engineering, molecular biology, bioinformatics-guided gRNA design, and cellular immunotherapy.



Dr. Basmah Almaarik

Assistant professor

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Web of Science ID: HCH-3161-2022

Research Focus:

My research interests focus on oral and pathogenic bacteria and their interactions with the immune system in both planktonic and biofilm forms. I have also investigated the effects of nanoparticles on medically important bacteria. Currently, my research is centred on *Candida auris* and its interplay with the innate immune system.

Core technical Expertise:

- **Techniques / Methods:** Bacterial culturing and identification, biofilm assays, antimicrobial susceptibility testing, DNA extraction, PCR, ELISA, immune-based assays, microscopy, SEM sample preparation, anaerobic bacterial culturing.
- **Models / Systems:** Oral and pathogenic bacteria in planktonic and biofilm models, host–pathogen interaction models, innate immune response studies, antimicrobial and nanoparticle-based treatment models, fungal pathogen studies including *Candida auris*.
- **Tools / Platforms:** ELISA platforms, fluorescence and confocal microscopy, SEM imaging, anaerobic workstations, biofilm quantification assays.

Key publications:

- **ALMAARIK, B.** M., ALI, R., COOPER, P. R., MILWARD, M. R. & HIRSCHFELD, J. 2025. Bidirectional effects of neutrophils on *Streptococcus oralis* biofilms in vitro. *Journal of Oral Microbiology,* 17**,** 2453986.
- ABORAGAH, A., AL-BAADANI, H., ALHARTHI, A., **ALMAARIK, B**. & ALHIDARY, I. 2025. Effects of different feeding regimes on growth performance, intake, digestibility, and ruminai metabolic and morphological characteristics in Awassi lambs. *South African Journal of Animal Science,* 55**,** 561-576.
- ALMEKHLAFI, S. A., FARRAG, M. A., AL-WAHIBI, M. S., AL-RASHED, S., **ALMAARIK, B. M.** & MARRAIKI, N. A. Y. 2026. Encapsulation of Bacteriophages in Alginate Beads: Improved Viability Under Harsh Simulated Gastric and Intestinal Conditions for Phage Therapy Applications. *Pharmaceuticals,* 19**,** 363.

Collaboration Interests

- Open to collaboration in: periodontal disease, oral microbiology, biofilm-associated infections, and host–pathogen interactions.
- Expertise offered: bacterial culturing and identification, biofilm models and quantification, antimicrobial susceptibility testing, microscopy techniques and SEM.



Dr. Arwa Almutlaq

Assistant Professor

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Web of Science ID: QJV-2982-2026

Research Focus:

- Reproductive genetics and molecular mechanisms in assisted reproduction, with a current focus on miRNA-based regulation and embryo quality assessment.
- Genetic and transcriptomic studies of reproductive disorders, particularly polycystic ovary syndrome (PCOS) and its underlying molecular pathways.

Core technical Expertise:

- **Techniques:** Gene expression analysis (RT-qPCR, Sequencing, Microarray). Bioinformatics analysis.
- **Models:** Human reproductive and embryonic samples.
- **Platforms:** R, SPSS, Gene ontology and pathway analysis tools.

Key publications:

- Almutlaq et al., Frontiers in Reproductive Health (2024).
- Gonzalez et al., Journal of Assisted Reproduction and Genetics (2023).

Collaboration Interests:

- Open to collaborate in reproductive genetics, women's health-related oncology, transcriptomics, and biomarker discovery.
- Techniques / expertise offered: Gene expression and bioinformatics analysis.



Dr. Lama Aldawsari

Assistant professor in infection and immunity

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Research Focus:

Infectious diseases and immunity.

Key publications:

- Alsharif A, Aldawsari L, Koukkidis G, Freestone P. The Impact of Compounds Released from Damaged Salad Leaves on the Growth and Virulence of *Listeria monocytogenes*. *Microorganisms*. 2025; 13(2):252. https://doi.org/10.3390/microorganisms13020252



Dr. Dalal Alsowaida

Assistant Professor

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ORCID ID: https://orcid.org/my-orcid?orcid=0000-0002-9053-2937

Research Focus:

DNA damage and repair, Genomics, Epigenetics, non-death role of Caspases, Myogenesis.

Core technical Expertise:

- **Technique / Method** Experienced in a range of molecular and cellular biology techniques, including Western blotting, mass spectrometry, immunofluorescence staining, CUT&Tag (Cleavage Under Targets and Tagmentation), chromatin immunoprecipitation (ChIP), and immunoprecipitation (IP).
- **Model/ System** Worked with in vitro and primary model systems in developmental biology, including differentiating skeletal muscle cells, primary myoblast cultures, T cells, and brain cells, to study cellular and molecular mechanisms of development and function. In addition to cancer cell lines to study cancer mechanisms.

Key publications:

- Self-inflicted DNA breaks in cell differentiation and cancer, Jan Benada, Dalal Alsowaida, Lynn A Megeney, Claus S Sørensen
- Chromatin Reorganization during Myoblast Differentiation Involves the Caspase-Dependent Removal of SATB2, Ryan A V Bell, Mohammad H Al-Khalaf , Steve Brunette, Dalal Alsowaida , Alphonse Chu, Hina Bandukwala, Georg Dechant, Galina Apostolova, F Jeffrey Dilworth, Lynn A Megeney
- Destruction as a creative process: CAD-induced DNA strand breaks promote macrophage differentiation, Dalal Alsowaida, Lynn A Megeney

Collaboration Interests:

Open to collaborative research in DNA damage and repair mechanisms, as well as epigenetics. I am also interested in research related to systemic lupus erythematosus, brain development, and diseases.

Mohrah Alalshikh



Lecturer
Immunology

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Web of Science ID: HJH-1545-2023

Research Focus:

My research focuses on transfusion sciences, including transfusion safety and advanced techniques for phenotyping and genotyping red blood cell and platelet antigens. I am also interested in transplantation science, particularly immune responses to allografts, human leukocyte antigen typing methodologies, and hematopoietic stem cell manipulation techniques.

Currently, my work includes systematic reviews in transfusion medicine and applications of artificial intelligence in histopathological screening.

Core technical Expertise:

Hematology assays ،Immunohematology testing ،Flow cytometer ،PCR and molecular diagnostics platforms ،Data analysis software (SPSS) ،Systematic review tools (Rayyan, RevMan) ،In vitro red blood cell models (erythrocyte physiology and pathology)

Key publications:

- lalshaikh MA et al. Nerol activates Ca^{2+}-dependent oxidative eryptosis and hemolysis-like cell death via caspase/PKC/RIP1/p38 MAPK/CK1α, energy depletion, and ceramide accumulation (2025).
- Alalshaikh MA et al. Molecular background of RhD-positive and RhD-negative phenotypes in a Saudi population. Saudi Journal of Medicine & Medical Sciences (2024).
- Alalshaikh MA et al. Frequency of Rh and K antigens in blood donors in Riyadh. Hematology, Transfusion and Cell Therapy (2022).

Collaboration Interests:

Open to collaborate in Immunohematology and oncology-related studies.

Reem Abdulrahman Bin SUAYDAN



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Microbiology
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Web of Science ID: OXA-9920-2025

Research Focus:

Molecular microbiology with a specialization in viral hemorrhagic fevers (VHFs), vector-borne diseases, and endemic diseases in Saudi Arabia and public health.

Current projects focus on the molecular characterization of moderate and severe dengue virus cases in Saudi Arabia to identify genetic determinants of disease severity, transmission dynamics, and the evolution of endemic strains.

Core Technical Expertise:

- **Technique / Method:** PCR (conventional and real-time), RNA extraction, serology methods, library preparation for nanopore sequencing
- **Model/System:** Clinical samples (human blood/serum), dengue virus field isolates, arbovirus surveillance models, endemic viral pathogens
- **Tools / Platform:** Oxford Nanopore sequencing (MinION), EPI2ME, MinKNOW, sequence analysis tools (e.g., BLAST, MEGA, phylogenetic software)

Key publications:

- Senok A, Ehricht R, Monecke S, Al-Saedan R, Somily A. Molecular characterization of methicillin-resistant Staphylococcus aureus in nosocomial infections in a tertiary-care facility: emergence of new clonal complexes in Saudi Arabia. New Microbes New Infect. 2016 Jul 29;14:13-8. doi: 10.1016/j.nmni.2016.07.009. PMID: 27621823; PMCID: PMC5009225.
- Bin Suaydan RA, Alsalem WS, Zaki EA, Stead ZS, Alhejaili AY, Rajeh AA, Alabbad SS, Bukhari D, Aljurayyan AN, Alshuwaier A, Alsalamah R, Alzaidi AA, Molyneux D, Alsubki RA. Combining non-structural protein 1 and IgM tests for acute dengue diagnosis in Saudi Arabia. Int Health. 2025 Nov 6:ihaf116. doi: 10.1093/inthealth/ihaf116. Epub ahead of print. PMID: 41206443.
- Bin Suaydan RA, Al Salem WS, Zaki EA, Stead ZS, Alsubki RA. Characterising secondary dengue infections in Saudi Arabia using combined IgG and PCR testing. Trans R Soc Trop Med Hyg. 2026 Apr 1;120(4):329-337. doi: 10.1093/trstmh/traf137. PMID: 41408936; PMCID: PMC13042222.



Ohoud Alidriss

Lecturer at KSU
PhD candidate at University of Strathclyde
Scientific researcher at Alfaisal University
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Research Focus:

Throughout my career, I have demonstrated a commitment to advancing the fields of bio-nanotechnology and clinical laboratory sciences. My roles as a lecturer and medical technologist, combined with leadership experience, have equipped me with a broad set of skills that support innovative research and academic excellence.

Key skills: Medical Education • Analytical Skills • Clinical Research • Laboratory Skills.

Core technical Expertise:

- SELEX
- Electrochemical biosensors

Key publications:

- Journal of Pharmaceutics- MDPI (2025): Targeted Drug Delivery Strategies in Overcoming Antimicrobial Resistance: Advances and Future Directions.

  DOI:10.3390/pharmaceutics17111426Author et al., Journal, Year

- Published Paper - Journal of Nanomaterials (2022): Antibacterial, Cytotoxic, and Cellular Mechanisms of Green Synthesized Silver

  Nanoparticles against Some Cariogenic Bacteria (Streptococcus mutans and Actinomyces viscosus).

  https://doi.org/10.1155/2022/9721736

Collaboration Interests:

- Open to collaborating with other universities in teaching CLS courses.
- Open to collaborating with other organizations for scientific publications and research in any medical field.
- Open to collaborating with other organizations in designing new biosensors.



Fadiyah Alrusayyis

Lecturer
Clinical Immunology and Virology

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Research Interests:

My research interests focus on the intersection of immunology, virology, vaccinology, cancer biology, and public health. I am particularly interested in host immune responses to viral infections and virus-associated cancers, immune evasion mechanisms, vaccine-induced immunity, and translational immunology. My goal is to leverage advanced immunological and genomic approaches to identify novel biomarkers, therapeutic targets, and vaccination strategies that improve disease prevention, patient outcomes, and population health.

Technical Expertise:

Techniques / Methods: Flow cytometry and multiparametric immune phenotyping, cell culture and primary cell isolation, ELISA, ELISpot, and cytokine profiling, PCR, qPCR, and molecular biology techniques, immunohistochemistry (IHC) and histopathological analysis, experimental design, data analysis, and biostatistics, immune monitoring and translational immunology research.

Models / Systems: human immune cell models, peripheral blood mononuclear cells, virus-associated cancer models, tumour microenvironment and immune-oncology studies, host–pathogen interaction systems and vaccine immunogenicity and immune response assessment.

Tools & Platforms: flow cytometry platforms, GraphPad Prism, SPSS, bioinformatics and statistical analysis software and R programming.

Collaboration Interests:

Collaboration interest: Open to interdisciplinary collaborations in immunology, virology, vaccinology, cancer immunology, and infectious diseases. Interested in projects addressing public health challenges, infectious disease surveillance, outbreak preparedness, and evidence-based prevention strategies. Keen to partner with academic, clinical, public health, and industry stakeholders to translate research into meaningful improvements in population health and healthcare outcomes.

Expertise Offered: immunology, virology, cancer immunology, and vaccinology, with advanced proficiency in immune profiling, host–pathogen interactions, and translational biomedical research. Skilled in flow cytometry, PBMC/MNC-based functional assays, cell culture, molecular immunology techniques, experimental design, data analysis, FlowJo, GraphPad Prism scientific writing, and multidisciplinary research collaboration.



Daheeya Alenazi

Lecturer
Clinical Biochemistry

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Web of Science ID:

Research Focus:

My research interests focus on clinical biochemistry, particularly diabetes, metabolic disorders, and cellular pathways, with expertise in advanced laboratory techniques. My current projects aim to improve healthcare outcomes in Saudi Arabia by investigating diabetic cases to identify novel genes and enhance cellular metabolism against disease progression.

Core technical Expertise:

- ELISA, HPLC, Electrophoresis, Mass spectrometry, RT-PCR, DNA extraction, Tissue culture, and Flow cytometry

Key publications:

- Alenazi D et al. Int J Community Med Public Health 2023
- Alidriss O et al., Pharmaceutics 2025
- Alanazi KKE et al. Int J Community Med Public Health 2026



Ghada Abdulrahman Alotaibi

Teaching Assistant in Medical Microbiology and Immunology.
Senior Specialist

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Research Focus:

My research focuses on the intersection of immune disorders and cytokine dysregulation, with an emphasis on underlying molecular pathways. I specialize in the immunomodulatory role of Heat Shock Protein 70 (HSP70), particularly its involvement in cancer progression and immune regulation. My current work investigates HSP70 modulation as a therapeutic strategy to overcome chemoresistance and regulate plasma cytokine levels in cytokine-based and anticancer treatments.

Key publications:

- Alfhili MA, Alotaibi GA, Alfaifi M, Almoghrabi Y, Alsughayyir J. Association of Platelet-Monocyte Ratio with Dyslipidemia in Saudi Arabia: A Large, Population-Based Study. Life (Basel). 2023 Aug 4;13(8):1685. doi: 10.3390/life13081685.

- Alfhili MA, Alghareeb SA, Alotaibi GA, Alsughayyir J. Galangin Triggers Eryptosis and Hemolysis Through Ca2+ Nucleation and Metabolic Collapse Mediated by PKC/CK1α/COX/p38/Rac1 Signaling Axis. IJMS (Basel). 2024 Nov 15;25(22):12267. doi: 10.3390/ijms252212267.

CLS Research Day 2026

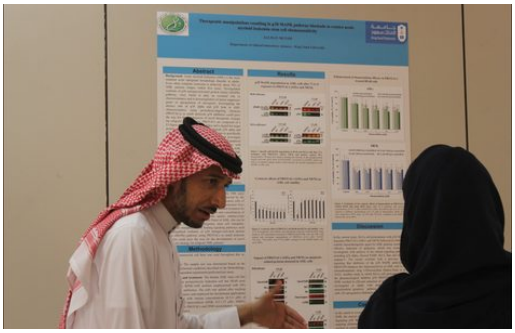
CLS Research Day 2026

The CLS Research Day 2026, organized in collaboration with the Biomedical Engineering Program (BME) as part of the Healthcare Innovation and Technology Forum, brought together faculty members, researchers, and postgraduate students to showcase research achievements, exchange scientific knowledge, strengthen interdisciplinary collaboration, and celebrate excellence in research and innovation. The event also featured invited scientific talks, student poster presentations, and research awards

Research Day Highlights

- Number of Posters: 34
- BSc, MSc & PhD Participation
- Scientific Lectures and Research Presentation
- Research Awards and Recognition













Faculty Research Awards & Recognition

Best Publication Award 2025

Dr. Fahad Aldakheel
Ms. Hadeel Al Najran

Analysing DNA methylation and transcriptomic signatures to predict prostate cancer recurrence risk. Discov Oncol. (2025)

Best Researcher 2025

Dr. Sabiha Mehdi

Early Career Researcher 2025

Dr. Abdulaziz Almuqrin

Excellence in Securing External Research Grants Award 2025

Dr. Arwa Bagasi

Patent Award

Prof. Khalid Alharbi

Senior Researcher Award 2025

Prof. Yazeed Al-Asheikh

Poster Awards & Recognition

PhD Category

1st Place

Alhanouf Abdulaziz Alomani
Supervised by: Dr. Sarah Alharbi

Research Title: Explaining phenotypic carbapenem resistance in GeneXpert-negative Gram-negative bacteria and evaluating concordance with whole-genome sequencing

2nd Place

Shatha Ata Yaseen Abdulgader
Supervised by: Dr. Abdulhadi Mohammed Alabdulwahed

Research Title: Genetic Variation of HA and NA Genes of Influenza Viruses Samples collected from King Khalid University Hospital, Riyadh, Saudi Arabia: Molecular, Epidemiology, phylogenetic analysis, and vaccine strain match 2024-2025

3rd Place

Hadeel Alnajran
Supervised by: Prof. Fahad Mohammed Aldakheel

Research Title: Design of a peptide-based vaccine human respiratory syncytial virus using a reverse vaccinology approach: evaluation of iagainstmmunogenicity, antigenicity, allergenicity, and toxicity

Poster Awards & Recognition

MSc Category

1st Place (Tie)

Fayz Saeed Alasmari
Supervised by: Dr. Nabeel Alzahrani

Research Title: Characterization Of Staphylococcus Argenteus: Diagnostic Differentiation, Antimicrobial Susceptibility, And Clinical Characteristics

1st Place (Tie)

Saud Ghyyadh M Alruwaili
Supervised by: Dr. Dr.Abdullah Aljedai

Research Title: Evaluating CBC-Derived Inflammatory Indices as Novel Markers for the Iron Depletion Cascade in Frequent Male Blood Donors

2nd Place

Razan Mahmoud Alqwehes
Supervised by: Dr. Sana Alqarni and Dr.Hala Aldahshan

Research Title: Mutation Profiling in Acute Myeloid Leukemia (AML): Frequency and Clinical Impact of FLT3, NPM1, PML-RARA, and BCR-ABL1 : A Retrospective Cohort Study from Saudi Arabia

Poster Awards & Recognition

BSc Category

The dean award for young scientist

1st Place

Turky AbdulHakim AlSulaiman
Supervised by: Dr. Hamood AlSudais
Research Title: Short-Term Laboratory Outcomes of SGLT2 Inhibitor Use in Type 2 Diabetic Patients: A Retrospective Analysis

2nd Place

Abdullah Alghamdi
Supervised by: Dr. Hamood AlSudais
Research Title: From Brain to Blood: Discovering Parkinson's Disease Biomarkers from Transcription Data

3rd Place (Tie)

Hameed faleh alanazi
Supervised by: Dr. Ibrahim Bahabri
Research Title: Characteristics and Outcomes of Nocardiosis and Actinomycosis in Saudi Arabia: A Retrospective Cohort study

3rd Place (Tie)

Asim Mohammed Al-Shehri
Supervised by: Dr.Hala Aldahshan,Dr.Hamood AlSudais
Research Title: Prevalence and Clinical Significance of Human Anti-Mouse Antibodies (HAMAs) in the Saudi

Acknowledgements

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