CURRICULUM VITAE

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Career Summary

I am a molecular biologist (*in vitro* pre-clinical pharmacologist) with 17-year experience in research and academics. With the much needed miniaturization and high throughput analysis in lab processes, microfluidics is an upcoming field with a lot of potential. I am currently developing a unique new field that leverages the miniaturization of microfluidics and couples it with pharmacological analyses. I have previously worked on a project funded by NASA to investigate the effects of deep space heavy ion radiation on Human DNA (genotoxicology) and studying the dose and temporal kinetics of subsequent bystander mutagenesis. Equipped with outstanding skills in 2D and 3D cell culture, I specialize in vascularized tumor- derived organoids (TDO).

Academic Distinctions and Awards

Sr #	**Name of award**	**Year**
1	Zhejiang foreign high level talent, China	2022-date
2	Tai'an High tech entrepreneurial award, China. High-tech Wangyue Climbing Leading Talent	2020
3	Marie Sklodowska Curie external fellowship award, University of Bologna, Italy	2018
4	Charles D. Tenney President's post-doctoral fellow, Tianjin University, China	2015
5	Keynote speaker Drug formulation conference, Beijing, China	2016
6	Griswold scholarship awardee, Colorado State University, USA	2011
7	Best graduate student leader award, Colorado State University, USA	2011
8	William J. Fulbright PhD scholar at Colorado State University, USA	2007-2012
9	Tuition remission award at Colorado State University, USA	2007-2009
10	Higher education commission's scholarship holder, Pakistan	2006
11	M.Sc., roll of honor award (summa cum laude), Pakistan	2000

Educational Background

Sr#	**Name of degree/training**	**Year**
1	Post-doctoral fellowship, Tianjin University, China	2015-2017
2	MS leading to Doctoral degree (PhD), Colorado State University, USA	2007-2012
3	Master's in computer science (MCS) ICS-NK FACT, Pakistan	2000-2002
4	Masters (MSc), University of the Punjab, Pakistan	1994-1996
5	Bachelors (BSc), University of the Punjab, Pakistan	1991-1994
6	Faculty of Science (FSc), Lahore Board, Pakistan	1989-1991
7	O' Level, University of Cambridge, London, UK	1986-1989

Academic research & teaching experience

Sr#	**Name of job/title**	**Year**
1	Consultant MOVE AI project (Biology cohort), California USA	2025-to date
2	Associate Professor, Oujiang Lab (Wenzhou, Zhejiang Province, China)	2022-to 2023
3	Associate Professor, Pak-Austria Fachhochschule, (KPK, Pakistan)	2022-2022
4	Adjunct Professor Nanjing University of Information Science and Technology (China)	2021- 2022
5	Assistant Professor Tianjin University (China)	2017-2019
6	Post-doc fellow Tianjin University (China)	2015-2017
7	Drug Regulatory Authority of Pakistan (DRAP)	2014-2014
8	Assistant Professor, National University of Sciences and Technology (NUST Pakistan)	2012-2014
9	Student Researcher, Colorado State University (USA)	2009-2012
10	Assistant professor, Forman Christian University, Pakistan	2003-2007

Research Skills

Sr #	**Skill**	**Experience Years**
1	2D and 3D Mammalian cell culture (BSL1/2), new cell line establishment	**12**
2	Tumor derived 3D organoid development and pre-clinical drug testing	**2**
3	Microfluidics design and pharmacology	**2**
4	Recombinant gene/protein expression/transfection/transient & stable cell line	**12**
5	Mutation analysis (Comet, migration, mutation frequency assays)	**5**
6	DNA damage and repair kinetics and quantification	**12**
7	FISH/COFISH	**3**
8	Fluorescence microscopy of live and fixed cells	**13**
9	Anti-cancer lead compounds testing	**8**

10	Western Analysis, immunocytochemistry, ELISA	**12**
11	PCR, RT-qPCR	**4-5**
12	96-well plate assays for quantification of IC_{50}, genotoxicity, cytotoxicity	**7**
13	ROS and mitochondrial fluorescent probes screening	**3**
14	*In-vitro* and *in-vivo* (mostly small rodents) breeding, necropsy skills	**5**
15	GLP, CMR toxicology, GMP	**2**
16	Several research softwares (Paravision 6.0.1, Graphpad prism, SPSS, ImageJ, BioImageXD, NIS element 3.1, Biochemdraw, Corel draw, Adobe Photoshop)	**12**
17	Magnetic Resonance Imaging (MRI) of small animals (Bruker Paravision 6.0.1)	**1**
18	Project management, strategic planning for product development	**1**
19	Raising investment capital for product development and commercialization	**3**

Courses Designed and Taught

Sr#	**Name of course and level**	**Year**
1	Cell biology (Undergrad) Core [100 level]	2022-2022
2	Bio-entrepreneurship (Grad) [800 level]	2022-2022
3	Pharmacology (Under-grad) Core [300 level]	2018-2019
4	Microbiology (Under-grad) Core [200 level]	2017-2018
5	Cell cycle regulation (Post-grad) elective [800 level]	2012-2014
6	DNA damage and repair (Post-grad) elective [900 level]	2012-2014
7	Membrane topology and signal transduction (Post-grad) elective [800 level]	2013-2014
8	Human health and disease (Post-grad) core [800 level]	2013-2014
9	Enzymology (under-grad) elective [200 level]	2012-2014
10	Mycology (Post-grad) [800 level]	2003-2007

Research grants & patents

Year	**Title**	**Funding agency**	**Amount in USD**
2023	Microfluidics device for extracting DNA Application #: 6998	United States PTO	N/A
2023	A microfluidics device for extracting DNA Patent file# :202310410476.1	China IPRO	**N/A**
*2020-2023	Biotech company establishment in Tai'an, Shandong, China. Title: "Rapid diagnostic test development for Breast cancers"	Tai'an High Tech Zone, China	80,000

**2016-2019	Semi-automated Tele-Micromanipulator Cell Injection System. File#: 12-2019 https://mci.seecs.nust.edu.pk/team.html	National ICT R&D Fund, Pakistan	382,769
**2016-2019	Investigation of a new class of glycyl radical enzymes, YjjI, in anaerobic DNA repair" Grant #:3157010593	NSFC, China	140,000
**2014-2016	Deficiency of Artemis protein leads to increase in mutation load of TK6 cells due to p53 activation.	HEC, Pakistan	$4,784
**2019	Mechanical Micromanipulator cell injection system. File #: 20156-D/2019 (IPO file# 769/2019)	NUST, research fund	$500

Peer-reviewed publications (cumulative IF= 88.06)

https://scholar.google.com/citations?user=XK0Ow9EAAAAJ&hl=en

	All	Since 2015
Citations	673	598
h-index	12	11
i10-index	13	11
Q1 publications	4	
Q2 publications	5	
Total publications	23	17

Selected Papers and significance

For a complete list please click on the google scholar link:

https://scholar.google.com/citations?user=XK0Ow9EAAAAJ&hl=en

Rank	Title and authors	Major finding
SCI-Q1 IF=8.4	Maryam Bashir, Usman Abdullah, Sadia Nazir, Farhan Siddique*, **Nasir Jalal*** (2025) Computational Advances in the Design and Discovery of Artemis Inhibitors for Radiosensitization in Cancer Therapy. Frontiers in Chemistry. Vol 13, 2025, ISSN 2296-2246, DOI=10.3389/fchem.2025.1597454 https://www.frontiersin.org/journals/chemistry/articles/10.3389/fchem.2025.1597454/full	A new approach introduced for adjuvant cancer therapy by combining chemotherapy with radiotherapy, it is possible to radiosensitize cancer cells and improve the radiation biological efficiency (RBE) by inhibiting Artemis in target cells.
SCI-Q1 IF 7.2	Iqbal S, Begum F, Ullah I, **Jalal N**, Shaw P. Peeling off the layers from microbial dark matter (MDM): recent advances, future challenges, and opportunities. Crit Rev Microbiol. 2024 Feb 22:1-21. doi: 10.1080/1040841X.2024.2319669. Epub ahead of print. PMID: 38385313.	This publication contributes to expanding our knowledge of the microbial world (microbial dark matter) that have implications for various fields of science, including Biotechnology, Bioprospecting,

		Functional genomics, Medicine, Evolutionary and Planetary biology.
SCI-Q2 IF 4.927	Iqbal, Sajid, Farida Begum, Dorothy Wavinya Nyamai, **Nasir Jalal**, and Peter Shaw. 2023. "An Integrated Computational Analysis of High-Risk SNPs in Angiopoietin-like Proteins (ANGPTL3 and ANGPTL8) Reveals Perturbed Protein Dynamics Associated with Cancer" Molecules 28, no. 12: 4648. https://doi.org/10.3390/molecules28124648	This study revealed that both ANGPTL3 and ANGPTL8 constitute potential prognostic biomarkers for cancer; moreover, nsSNPs in these proteins might lead to the progression of cancer. However, further in vivo investigation will be helpful to validate the role of these proteins in the biology of cancer.
SCI-Q2 IF 7.8	Abdullah, U.; Saleh, N.; Shaw, P.; **Jalal, N.** COVID-19: The Ethno-Geographic Perspective of Differential Immunity. Vaccines 2023, 11, 319. https://www.mdpi.com/2076-393X/11/2/319	New approaches to previously undiscussed genetic, epigenetic, and molecular immune resistance mechanisms in correlation with the pathophysiology of SARS-CoV-2 and varied ethnicity-based immunological responses against it.
SCI-Q1 IF 4.1	Khan, Faria; Kwapiszewska, Karina; Zhang, Yue; Chen, Yuzhi; Lambe, Andrew; Kolodziejczyk, Agata; **Jalal, Nasir;** Rudziński, Krzysztof; Martinez-Romero, Alicia; Fry, Rebecca; Surratt, Jason; Szmigielski, Rafał (2020) "Toxicological Responses of α-Pinene-Derived Secondary Organic Aerosol and its Molecular Tracers in Human Lung Cell Lines." Chemical Research in Toxicology (ACS). *https://doi.org/10.1021/acs.chemrestox.0c00409*	Organic aerosol products of burnt plant material have the capacity to induce primary tumorigenic changes in the target normal lung cell lines. *https://pubs.acs.org/doi/10.1021/acs.chemrestox.0c00409?fbclid=IwAR0Jm1s0CKWW1mFQA4FASovgHEa3HqjsiGnsVSlPffalG98vTE29duyWOug&*
SCI-Q1 IF 6.4	Khan, F., Akhtar, N., **Jalal, N.** et al. Carbon-dot wrapped ZnO nanoparticle-based photoelectrochemical sensor for selective monitoring of H2O2 released from cancer cells. *Microchimica Acta* 186, 127 (2019) doi:10.1007/s00604-019-3227-x **https://link.springer.com/article/10.1007/s00604-019-3227-x#citeas**	Fabrication of an electrode modified with biocompatible C-dot wrapped ZnO nanoparticles for selective photoelectrochemical monitoring of H2O2 released from living cells.
SCI-Q2 IF 3.16	Noreen Akhtar, Ishrat Jabeen*, **Nasir Jalal**, Jon Antilla. (2018) Structure-Based Pharmacophore Models to Probe Anticancer Activity of Inhibitors of Protein Kinase B- beta (PKB β). DOI: 10.1111/cbdd.13418. Chem Biol Drug. 93 (3): 325-336. **https://onlinelibrary.wiley.com/doi/10.1111/cbdd.13418**	In order to find novel and potent Akt2 inhibitors, structure-based pharmacophore models have been developed and validated by the test set prediction.

SCI-Q2 IF 5.518	Uzair Hashmi, Faria Khan, Asad Abdullah Shahid, Aqib Javed, Tehseen Alam, **Nasir Jalal**, Qasim Hayat, Hussnain A. Janjua. (2017) Hydrogels incorporated with silver nanocolloids prepared from antioxidant rich Aerva javanica as disruptive agents against burn wound infections. Colloids and Surfaces A: Physicochemical and Engineering Aspects. Volume 529, 20 September 2017, Pages 475-486 **http://dx.doi.org/10.1016/j.colsurfa.2017.06.036**	Synthesis of biocompatible AgNPs from antioxidant- rich aqueous extract of *Aerva javanica*. assembled antibacterial AgNPs were assessed for their radical scavenging properties and cytotoxic potential on both primary (HCEC) and cancerous cell lines (Huh-7, HeLa).
SCI-Q1 IF 22.1 *Nature Publication*	Venkatrao Nunna, **Nasir Jalal**, Matthias Bureik.* (2017) Anti-CYP4Z1 autoantibodies detected in breast cancer patients. Cellular & Molecular Immunology 14:1–3. doi:10.1038/cmi. 2017.21, Nature publishing group. https://www.nature.com/articles/cmi201721	The presence of human cytochrome P450 enzyme CYP4Z1 on the outer surface of the plasma membrane of MCF-7 breast cancer cells is demonstrated by immunofluorescence.
SCI-Q2 IF 4.345 *Cited in Nature*	Humaira Sawal, Kashif Asghar, Matthias Bureik, Nasir Jalal* (2017) Bystander signaling via oxidative metabolism. OncoTargets and Therapy 10:3925-3940. https://doi.org/10.2147/OTT.S136076	This review provides the background information on how reactive oxygen species (ROS) act as bystander signals.
SCI-Q2 IF 3.95 *Science Direct Publication*	Nasir Jalal*, Austin R. Surendranath, Janak L. Pathak, Shi Yu, Chang Y. Chung. (2017) “Bisphenol A: the mighty and the mutagenic.” Toxicology Reports ISSN: 2214-7500 https://doi.org/10.1016/j.toxrep.2017.12.013	Analysis has been made on how low dose BPA could interact with several signaling pathways such as NFκB, JNK, MAPK, ER and AR that eventually lead to disease morphology and even tumorigenesis.
SCI-Q2 IF 4.345	Bilal Zulfiqar, Kaenat Nasir, Amnah Mahroo, Rai Khalid Farooq, Nasir Jalal, Gui-Bo Yang, Muhammad Usman Rashid, Kashif Asghar, Muhammad Ali A Shah,* (2017) Nanomedicine and cancer immunotherapy targeting indoleamine 2, 3- dioxygenase. OncoTargets and Therapy 2017:10 463–476. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5268369/	Review of the natural and synthetic inhibitors of IDO. These inhibitors are classified according to their source, inhibitory concentrations, the chemical structure, and the mechanism of action.

B. *Conference abstracts/papers/editorials:*

1. Nasir Jalal, Peter Shaw (2022). AI-assisted and Aretmis inhibited organ on a chip (OoC) platform for testing a combinatorial therapy of head and neck cancer (HNC). 12th National conference on soft matter and biological physics. Institute of Physics (28-31 Oct, 2022), Chinese Academy of Science https://as.iphy.ac.cn/video_detail.php?id=37960
2. Faria Khan, Karina Kwapiszewska, Alicia M. Romero, **Nasir Jalal,** Krzysztof Rudzinski, Jason D. Surratt, Rafal Szmigielski, *Exposure to Atmospheric 4-Nitrocatechol causes Mitochondrial Dys- function to Induce Apoptosis in the BEAS-2B Cells*, 12-16 March 2021, Annual Meeting of the Society of Toxicology (Virtual).

3. **Faria Khan**, Karina Kwapiszewska, Nasir Jalal, Krzysztof Rudzinski, Jason D. Surratt and Rafal Szmigielski., *Acute Exposure Effects of Biomass Burning Aerosol Components in BEAS-2B Cell Lines: Dosage-Time Dependent Cellular Response*, 25-30 August 2019, European Aerosol Confer- ence, Gothenburg, Sweden
4. Faria Khan, Jason Surrat, **Nasir Jalal**, Rafal Szmigielski (2018). Air Quality Monitoring through the impact of Aerosol Components on Human Health. DOI: 10.13140/RG.2.2.14535.34722. Instytut Chemii Fizycznej PAN.
5. A. Hameed, N. Kamal, S. BinQaiser, O. Hasan and N. Jalal, "Electronic Design of a Semi-Automated Micromanipulator Cell Injection System," *2018 12th International Symposium on Medical Information and Communication Technology (ISMICT)*, 2018, pp. 1-5, doi: 10.1109/ISMICT.2018.8573730. https://ieeexplore.ieee.org/document/8573730
6. **Nasir Jalal*** (2017) Binging on plastics containing bisphenol A. Microbial Biotechnology 1(1):1. https://www.pulsus.com/scholarly-articles/g-binging-on-plastics-containing- bisphenol-a.pdf
7. **Nasir Jalal*** (2016) DNA strand break associated bystander effect (DSB-ABE) linked to gene mutations. Journal of Pharmaceutics & Drug Delivery Research (ISSN: 2325-9604).
8. Saadia Nazir, Namrah Anwar, Saba Haq, **Nasir Jalal*** (2016) Artemis inhibition can radiosensitize primary breast cancer cells. Journal of Pharmaceutics & Drug Delivery Research (ISSN: 2325-9604). http://www.scitechnol.com/proceedings/artemis-inhibitor- a-new-approach- for-radiotherapy-635.html

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End of publications list

Professional Societies/Memberships

- Member Royal Society of Biologists (RSB), UK.
- Member American Association of Cancer Research (AACR), USA.
- Member Radiation Research Society (RRS), USA.

References

- Available on request

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End of Curriculum Vitae