Dr. MUHAMMAD SULEMAN

HEC Approved Supervisor ID-194304
HEC PHD Country Directory NO-25878
Name: **DR. MUHAMMAD SULEMAN (PH.D. in MATHEMATICS)**
Specialization: **MATHEMATICAL MODELING & SIMULATIONS IN BIOLOGY**
Position: **SENIOR LECTURER MATHEMATICS**
Department: **MATHEMATICS, RIPHAH INSTITUTE OF COMPUTING AND APPLIED SCIENCES (RICAS)**
University: **RIPHAH INTERNATIONAL UNIVERSITY, LAHORE**
Official contact: **muhammad.suleman@riphah.edu.pk, muh_sul@yahoo.com**
Cell No: **+92-0334-4636223, +92-0312-4603284**
Postal/Home/Permanent Address:
HOUSE NO. 390, IQBAL BLOCK, MOHALLAH AL-JANNAT HOMES, POST OFFICE KAHNA NAU, SHAHZADA, TEHSIL MODEL TOWN, DISTRICT LAHORE
Postal Code: **53100 KAHNA NAU, LAHORE**

OBJECTIVE

I see myself becoming a professional university professor and researcher producing skilled engineers and scientists by providing them quality education and research with modern teaching techniques or working in a hi-tech environment to offer my contributions to serve this nation.

PROFILE

Dr. Muhammad Suleman is currently working as a senior faculty member at the Department of Mathematics, Riphah Institute of Computing and Applied Science (RICAS), Riphah International University, Lahore, Pakistan. He did his Matriculation and Intermediate (ICS) from the Board of Intermediate & Secondary Education, Faisalabad in 2000 and 2002 respectively. He earned his degrees of Bachelor of Science (Physics & Double Math) and Master of Science in Physics from the University of the Punjab, Lahore, Pakistan in 2004 and 2006 respectively. He earned his degrees of Master of Science in Mathematics and Master of Philosophy in Mathematics from the University of Engineering & Technology, Lahore, Pakistan in 2010 and 2016 respectively. He completed his Ph.D. in Mathematics with a specialization in mathematical modelling and simulation of biological phenomena in 2022 from the University of Engineering & Technology, Lahore, Pakistan. By profession, he is a teacher, who has taught at the college and university level. He is an active researcher and is involved in many research activities. He has published a book and many quality research articles in reputed journals which are being followed by many clinicians, modelers, scientists, and biomedical engineers from all over the World.

FAMILY MEMBERS

- Marital Status:
  MARRIED
- Spouse Name:
  KHADIJA SULEMAN
- Children:
  SHEHROZ SULEMAN

RECENT ACTIVITIES

- Working as senior lecture Mathematics at Riphah International University, Lahore.
- Four courses are teaching.
- Six M. Phil students are under supervision.
- Four research papers have been submitted in W category journal.
- Contributing to hold Riphah Mathematical Olympiad

PERSONAL BIO-DATA

- Domiciled in:
  TEHSIL MODEL TOWN LAHORE
- Father's Name:
  MUHAMMAD HUSSAIN
- D.O.B:
  02 JAN 1985
- Nationality:
  PAKISTANI
- Passport No:
  FM5752262

PROFESSIONAL EXPERIENCE (Total Experience 12 Years)

#	Dates	Position
1.	21 Sep 2021 to Present	Senior Lecturer Mathematics, Department of Mathematics, Riphah Institute of Computing and Applied Science, Riphah International University, 13-KM, Main Raiwind Road, Lahore, Pakistan.
2.	15 Sep 2020 to 15 Aug 2021	Visiting Faculty Mathematics, Department of Mathematics, Government College University, Lahore-54000, Pakistan.
3.	14 Dec 2020 to 14 May 2021	Visiting Faculty Mathematics, Institute of Agricultural Sciences, University of Punjab, Quaid-e-Azam Campus, Lahore-54590, Pakistan.
4.	24 Oct 2011 to 24 July 2020	Senior Lecturer in Mathematics, Department of Computer Sciences & Information Technology, Superior University, 17-KM, Main, Raiwind Road, Lahore, Pakistan.
5.	01 Dec 2010 to 31 May 2011	College Teacher Intern, Govt. Islamia College, Civil Lines, Lahore.

Dr. MUHAMMAD SULEMAN

						EDUCATION				
Level	Program	Discipline	Institute	Start date	End date	CGPA/ Marks obtained	Total CGPA/ Marks	Percentage	Division	Grade
SSC/Matriculation/O-Level	Matriculation	Science	BISE FSD	30 June 1998	30 June 2000	697	850	82.00	1st	A1
HSSC/Intermediate/A-Level	ICS	General Science	BISE FSD	21 June 2000	21 June 2002	850	1100	77.27	1st	A
Bachelor (14 Years) Degree	B.SC	Physical Science	University of the Punjab Lahore	30 Aug 2002	30 Aug 2004	551	800	68.88	1st	B
Masters (16 Years) Degree	M.Sc Physics	Physical Science	University of the Punjab Lahore	31 Aug 2004	31 Feb 2007	937	1200	78.08	1st	A
Masters (16 Years) Degree	M. Sc Applied Mathematics	Physical Science	University of Engineering & Technology, Lahore	30 Dec 2008	30 Dec 2010	1781	2000	89.05	1st	A1
MPhil (18 Years) Degree	M.Phil Applied Mathematics**	Physical Science	University of Engineering & Technology, Lahore	30 Dec013	26 Aug 2016	3.28	4.00	80.81	1st	A1
Doctorate Degree	Ph.D Mathematics*	Physical Science	University of Engineering & Technology, Lahore	6 Jan 2017	18 March 2022	3.45	4.00	86.22	1st	A1

*Ph.D. Thesis Title:
In Silico Study of Cancer Treatment Using Nanoparticles Induced Hyperthermia

**M.Phil Thesis Title:
Numerical Approximation of Hepatitis B Virus (HBV) with Stability Analysis

Dr. MUHAMMAD SULEMAN

RESEARCH INTERESTS

- Mathematical Biology
- Computational Biology
- Mathematical modeling and simulations in infectious diseases
- Modeling magnetic fluid hyperthermia for cancer treatment.
- Finite Element Analysis in Biology.
- Numerical modeling and optimal control of infectious diseases.
- Heat and Mass transfer in magnetic fluid hyperthermia.
- Optimal control applied to biology.

RESEARCH PUBLICATIONS

[1] Suleman M, Gas P. Analytical, Experimental and Computational Analysis of Heat Released from a Hot Mug of Tea Coupled with Convection, Conduction, and Radiation Thermal Energy Modes. Internal Journal of Heat and Technology, 42(2) (2024) 359-72. I.F = 0.9
ELSEVIER, ISSN of Journal: 0392-8764
Published Date: 30 April 2024
https://iieta.org/journals/ijht/paper/10.18280/ijht.420201

[2] M. Suleman and S. Riaz, Computational modeling of poroelastic brain tumor therapy during heat transfer carrying temperature-dependent blood perfusion, Medical Engineering & Physics, 103(2022) 103792. I.F = 2.242
ELSEVIER, ISSN of Journal: 1350-4533
Published Date: 24 March 2022
https://doi.org/10.1016/j.medengphy.2022.103792

[3] M. Suleman and S. Riaz, In silico study of enhance permeation and retention effect and hyperthermia of porous tumor, Medical Engineering & Physics, 86 (2020) 128-137. I.F = 2.242 ELSEVIER, ISSN of Journal: 1350-4533
Published Date: 12 November 2020
https://doi.org/10.1016/j.medengphy.2020.11.003

[4] M. Suleman and S. Riaz, In silico study of hyperthermia treatment of liver cancer using core-shell $CoFe_2O_4@MnFe_2O_4$ magnetic nanoparticles, Journal of Magnetism and Magnetic Materials, 498 (2020) 166143. I.F = 2.993 ELSEVIER, ISSN of Journal: 0304-8853
Published Date: 14 November 2019
https://doi.org/10.1016/j.jmmm.2019.166143

[5] M. Suleman, S. Riaz, R. Jalil, A mathematical modeling approach towards magnetic fluid hyperthermia of cancer and unfolding heating mechanism. Journal of Thermal Analysis and Calorimetry, 146 (2021) 1193–1219. I.F = 4.626 SPRINGER, ISSN of Journal: 1588-2926
Published Date: 03 August 2020
https://doi.org/10.1007/s10973-020-10080-8

[6] M. Suleman and S. Riaz, 3D in silico study of magnetic fluid hyperthermia of breast tumor using Fe_3O_4 magnetic nanoparticles, Journal of Thermal Biology, 91(2020) 102635. I.F = 2.902 ELSEVIER, ISSN of Journal: 0306-4565
Published Date: 05 June 2020
https://doi.org/10.1016/j.jtherbio.2020.102635

[7] M. Suleman and S. Riaz, An Optimal Control of Vaccination Applied to Whooping Cough Model, Punjab University Journal of Mathematics, Vol. 51(5)(2019) pp. 121-136. , I.F = 1.00, ISSN of Journal: 1016-2526
Published Date: 05 March 2019
http://pu.edu.pk/images/journal/maths/PDF/Paper-9_51_5_2019.pdf

[8] M. Suleman and S. Riaz, Unconditionally Stable Numerical Scheme to Study the Dynamics of Hepatitis B Disease, Punjab University Journal of Mathematics, Vol. 49(3)(2017) pp. 99-118. I.F = 1.00, ISSN of Journal: 1016-2526
Published Date: 17 August 2017
http://pu.edu.pk/images/journal/maths/PDF/Paper-9_49_3_17.pdf

[9] M. Suleman and M. U. Hashmi, A Comparative Study of Tumor Regression Efficiency under the Impact of Cytokines Interleukin-21 and Interleukin-2 for Cancer Treatment Cultured with Chemo-Immunotherapy: A Mathematical Modeling Approach, Punjab University Journal of Mathematics, Vol. 50(2)(2018) pp. 69-84. I.F = 1.00, ISSN of Journal: 1016-2526
Published Date: 18 January 2018
http://pu.edu.pk/images/journal/maths/PDF/Paper-6_50_2_2018.pdf

[10] M. U. Hashmi, M. Suleman, S. M. Junaid Zaidi, Mathematical Modeling of Cancer Treatment Cultured with Chemo-Immunotherapy by Cytokine Interleukin IL-12, World Journal of Zoology, 9(3) (2014) pp. 190-196. HEC X-Category, ISSN of Journal: 1817-3098
Published Date: 09 March 2014

Dr. MUHAMMAD SULEMAN

https://www.idosi.org/wjz/wjz9(3)14/8.pdf

[11] M. U. Hashmi, M. Suleman, S. M. Junaid Zaidi, Modelling the Tumor-immune Interaction Cultured with Chemotherapy and Cytokine Interleukin IL-12 Under the Influence of Immunodeficient Viruses, American Eurasian Journal of Toxicological Sciences, 6(4) (2014) pp. 74-82. HEC X-Category, ISSN of Journal: 2079-2050
Published Date: 06 April 2014
https://www.idosi.org/aejts/6(4)14/1.pdf

BOOKS PUBLISHED

[12]

Title	In Silico Approach Towards Magnetic Fluid Hyperthermia of Cancer Treatment: Modeling and Simulation
Author	Muhammad Suleman
Publisher	Elsevier Science, 2023
ISBN	0443132860, 9780443132865
1st Edition	28 Feb 2023

Citation:
Suleman, M. *In Silico Approach Towards Magnetic Fluid Hyperthermia of Cancer Treatment: Modeling and Simulation*. Elsevier Science, 2023.

Online Link:
https://www.elsevier.com/books/in-silico-approach-towards-magnetic-fluid-hyperthermia-of-cancer-treatment/suleman/978-0-443-13286-5

COURSES TAUGHT

- Vector and Tensor Analysis
- Numerical solution of ODEs
- Software Packages/Math Type MATHEMATICA/MATLAB
- Advanced Partial Differential Equations
- Introduction to Mechanics
- Analytical /Classical Mechanics
- Numerical Analysis & Computing
- Probability & Statistics
- Linear Algebra
- Elementary Mathematics
- Calculus & Analytical Geometry
- Multivariable Calculus
- Differential Equations

M.PHIL STUDENTS UNDER SUPERVISION

- Aneela Nazeer **Reg.No. F21C14G06027** Completed
MATHEMATICAL MODELING CRIMEAN CONGO HEMORRHAGIC FEVER OUTBREAK IN PAKISTAN WITH OPTIMAL CONTROL
- Muhammad Iqbal **Reg.No. F21C14G06022** Completed
MATHEMATICAL MODELING AND SIMULATION OF ELECTRODE HYPER THERAPY OF TUMOR ALONG WITH ELECTROCHEMISTRY
- Farah Khalid **Reg.No. F21CI4G06015 Completed**
Working on Nanoparticles induced hyperthermia of skin tumor.
- Hafiz Muhammad Waqar **Reg. No. F22C14G06019 Under progress**
MATHEMATICAL MODELING AND SIMULATION OF BRONCHOPNEMONIA
- Muhammad Ashraf **Reg. No. F22C14G06017 Under progress**
MODELING THE IMPACT OF POROSITY ON HEAT AND MASS TRANSFER THROUGH BIOLOGICAL TISSUE

Dr. MUHAMMAD SULEMAN

▪ Discrete Mathematics ▪ Mathematics-Part I & 2 ICS/FSC	

DISTINCTION	**WEBSITE/LINKS**
Certificate of merit, 3rd position in UET, Lahore in M. Sc Applied Mathematics (2008-2010).	Google Scholar Profile URL https://scholar.google.com/citations?hl=en&user=58SDIWMAAAAJ Research Gate Profile URL https://www.researchgate.net/profile/Muhammad-Suleman-12/research Web of Science URL https://www.webofscience.com/wos/author/record/IVV-8654-2023 ORCID NO.URL https://orcid.org/0000-0003-3286-2329
TECHNICAL COMPUTING/SKILLS	**CONFERENCES ATTENDED**
▪ COMSOL Multiphysics ▪ MATLAB. ▪ MATHEMATICA ▪ LATEX/MATH TYPE ▪ Computer Sciences in ICS ▪ Programming in C++ and Database Management	1. Two days National Conference on Latest Trends in Mathematical Modelling and Simulation, December 14-15, 2021, at Abdus Salam School of Mathematical Sciences, Government College University, Lahore, Pakistan. 2. 1st UMT International Conference on Pure and Applied Science, March 5-7, 2016. At University of Management & Technology, Lahore, Pakistan. 3. 1st UMT National Conference on Pure and Applied Mathematics, March 7-8, 2015. At University of Management & Technology, Lahore, Pakistan.
GENERAL SOFT SKILLS	**TRAINING/WORKSHOPS**
▪ Teamwork, Problem-solving skills, Graphing, and sketching 2D & 3D geometrical diagrams. ▪ Possesses good potential to work in a competitive environment. ▪ Grip in his subject and all its related fields.	1. 1st Workshop on Advancements in Mathematics and its Applications (WAMA-2023) held on 3rd and 4rth June 2023 at the Department of Mathematics, Riphah International University, Lahore, Pakistan. 2. Workshop on International Workshop on recent trends in applied mathematics, Seminar Hall, Department of chemical engineering, U.E.T Lahore. 5 Dec 2017. 3. Workshop on Mathematical Modelling and its Applications, Department of Mathematics, U.E.T Lahore. 10 May 2017. 4. Training on Emotional Intelligence, Superior University Lahore, at Royal Palm Club, 12 Dec 2015. 5. CASM-PIEAS Workshop on Computational Fluid Dynamics and Scientific Computing at LUMS from Nov. 8-9, 2013. 6. Training workshop on "Understanding the Leadership Dynamics" by Superior University, Lahore, at Pearl Continental Hotel Lahore from 26th to 28th June 2012.
LANGUAGES	**ENGLISH LANGUAGE/COMMUNICATION SKILLS**
▪ English (Writing+Speaking+Reading) ▪ Urdu and Punjabi (Writing+Speaking+Reading) ▪ Arabic (Reading)	1. Certificate of IELTS British Council. 2. Certificate of English proficiency from SEB'S School of English, 12-Aibak Block, New Garden Town, Lahore. 3. Certificate in Communication Skills Development Course CSDC (Special emphasis on presentation skills) from Institute of Chemical Engineering Department, University of the Punjab, Lahore.

Dr. MUHAMMAD SULEMAN

CERTIFICATE OF APPRECIATION/AWARD

1. Certificate of Appreciation for extraordinary services for results and curricular activities by the Department of Mathematics, Riphah International University, Lahore, Pakistan.

REFERENCES/REFEREES

Contact details. Phone No: +92-332-4318476 **E-mail:** abdul.khaliq@riphah.edu.pk	Dr. Abdul Khaliq Associate Professor, Department of Mathematics, Riphah Institute of Computing and Applied Science, Riphah International University, Lahore.
Contact details. Phone No: +92-311-0042180 **E-mail:** rashidjalil@uet.edu.pk	Dr. Rashid Jalil Associate Professor, Department of Physics, University of Engineering & Technology, Lahore-54890, Pakistan.
Contact details. **E-mail:** piotr.gas@agh.edu.pl	Dr. Piotr Gas Associate Professor, Department of Electrical and Power Engineering, Faculty of Electrical Engineering, Automatics, Computer Science and Biomedical Engineering, AGH University of Krakow, Krakow 30059, Poland