

**Dr. Najam us Sahar Sadaf Zaidi, PhD**

Professor/ Chairperson  
Department of Allied Health Sciences  
Pak-Austria Institute of Applied Sciences and Technology,  
Haripur, Pakistan.



**Education:**

- **PhD:** Biochemistry and Biotechnology (SBS, **Pakistan**)
- **Post Doc:** Development of intragenotypic chimeric viruses for Hepatitis C Virus (Pasteur Institute, Lille, **France**)

**Experience:**

- 15 years' experience in the fields of research & academics currently serving as Professor and Chairperson/Head of Department)
- Main focus of research is on Vaccine and Therapeutic Development against RNA viruses
- 06 PhDs produced on vaccinal and therapeutics related projects
- Almost 06 years of experience as Head of Department Industrial Biotechnology at ASAB-NUST (1<sup>st</sup> HoD of the Dept.)
- In charge Animal House Facility at NUST
- Head Institutional Review Board (IRB)
- Head Institutional Curriculum Review Committee (ICRC)

**Research Grants as Principal Investigator:**

- Cloning and characterization of full length Dengue virus Genome of Pakistani origin. **PSF Grant** (PKR 2.0 M- Completed)
- Design and Development of Water Purification Technologies using Nanotechnology. **MoST Grant PC-1** (PKR 7.5 M – Completed)
- Immunization with Peptides against HCV. **HEC Grant** (PKR- 8.6 M- Completed)
- PC-I submitted to MoST (PKR 214 Million)

**Publications:**

1. **Najam us Sahar Sadaf Zaidi et al** (2004) Evaluation of serum testosterone levels among Pakistani women with a history of infertility. *Pakistan Journal of Medical Research*. Jan-March 2004. Vol:43:1. ISSN no: 0030-9842

2. **Najam us Sahar Sadaf Zaidi**, Saima Sadaf and Waheed Akhtar (2008) Cloning and overexpression of *Pyrococcus furiosus* endoglucanase eglA in *Escherchia coli*. *Pakistan Journal of Biochemistry and Molecular Biology*. December 2008. Vol:41:4.pp 172-175.
3. M Faheem, Ummar Raheel, M Nasir Riaz, Naghmana Kanwal, Farakh Javed, **Najam us Sahar Sadaf Zaidi**, Ishtiaq Qadri "A Molecular Evaluation of Dengue Virus Pathogenesis and Its Latest Vaccine Strategies " (2010) *Molecular Biology Reports*. 38:3731–3740. (2.316)
4. Ummar Raheel, M Faheem, m Nasir Riaz, Naghmana Kanwal, Farakh Javed, **Najam us Sahar Sadaf Zaidi**, Ishtiaq Qadri." Dengue in Indian Subcontinent "(2011) *Journal of Infection in Developing Countries*. 5(4):239-247. (0.968)
5. M Sohail Afzal, Sadia Tahir, **Najam us Sahar Sadaf Zaidi**, Ishtiaq Qadri "Analysis of interlekin-10 gene polymorphism and hepatitis C susceptibility in Pakistan (2011) *Journal of Infection in Developing Countries*. 5(6):473-479. (0.968)
6. **Najam us Sahar Sadaf Zaidi**, Waheed Akhtar "Inactivation of *Pyrococcus furiosus* Endoglucanase A Gene (eglA) by Signal Peptide Deletion " (2011) *NUST Journal of Natural Science* Vol:1 pp:6-9
7. **Najam us Sahar Sadaf Zaidi**, Naghmana Kanwal, Farakh Javed, Awaisa Ghazal, Kaneez Fatima, Ishtiaq Qadri. "Phylogenetic and structural analysis of HCV non structural protein 4a from Pakistani patients" (2011) *Virus Genes*. 44:1-7. (2.332)
8. Zia-ur-Rehman Farooqi, Muhammad Sohail Afzal, Sadia Tahir, **Najam-us-Sahar Sadaf Zaidi** and Ishtaiq Qadri. Interleukin-12 *P40* (IL-12 B) *Taq-1* Polymorphism association in pharmacogenomics of HCV genotype 3a infection from Pakistani population (2011). 2011 International Conference on Environmental, Biomedical and Biotechnology IPCBEE vol.16. IACSIT Press, Singapore.

9. Naghmana Kanwal, **Najam us Sahar Sadaf Zaidi**, Farakh Javed, Ishtiaq Qadri, Marium Kathleen Gomez "HCV Non Structural Protein 4B- A Membraneous Web Inducer" (2012) Asian Pacific Journal of Tropical Disease. 457-501.
10. Hashaam Akhtar, Yasmeen Badshah, Samar Akhtar, Naghmana Kanwal, Maha Nadeem Akhtar, **Najam us Sahar Sadaf Zaidi**, Ishtiaq Qadri. Prevalence of Human Immunodeficiency Virus infection among Transgender men in Rawalpindi (Pakistan). (2012) Virology Journal 9:229 doi:10.1186/1743-422X-9-229. (4.099)
11. Abbas Raza, Kashif Mehmood, Fakhira Begum, Mustafeez Mujtaba Babar, Suleman Riaz, Umer Javed, Zaira Rehman, **Najam us Sahar Sadaf Zaidi**, Aleem Siddiqui and Ishtiaq Qadri. Immunological profiling of Hepatitis B virus surface gene in Pakistani Population. (2012) Novusscientia.
12. Anwar, S., Tahir, M., **Zaidi, N.S.S.**, Briddon, R. W. (2012). First report of Clerodendron yellow mosaic virus infecting Croton. Journal of Plant Pathology. DOI: 10.4454/JPP.DN.2012.036.(1.729)
13. Mustafeez Mujtaba Babar, Muhammad Suleman Riaz and **Najam us Sahar Sadaf Zaidi** (2012) Influenza Pandemics and Biodiversity Loss: A Case Study of Virus- Host Phylogenetic Relationship at the International Conference on Climate Babar-Curriculum Vitae-3 Change: Opportunities and Challenges held on 9th -11th May 2012 held by Ministry of Science and Technology and Ministry of Climate Change, Government of Pakistan.
14. Saman Khan, Ishtiaq A Qazi, Imran Hashmi Hashmi, Muhammad Ali Awan, and **Sadaf Zaidi** (2013) .Synthesis of silver doped titanium TiO<sub>2</sub> powder-coated surfaces and its ability to inactivate Pseudomonas aeruginosa and Bacillus subtilis. Journal of Nanomaterials. doi.org/10.1155/2013/531010. (2.986)
15. Hashaam Akhtar, Samar Akhtar, Ummar Raheel, Muhammad Faheem, Muhammad Arshad, Muhammad Yameen, **Najam us Sahar Sadaf Zaidi** (2013). Interferons as

immune regulators: A rivalry between HCV and Interferons. *J Clin Cell Immunol* 3: 136.  
doi:10.4172/2155-9899.1000136.

16. Mustafeez Mujtaba Babar, Muhammad Suleman Riaz, **Najam-us-Sahar Sadaf Zaidi**, Farhan Afzal and Muhammad Sabir Farooq (2013). Production of avian influenza virus vaccine using primary cell cultures generated from host organs. *Journal of Industrial Microbiology and Biotechnology*. 40:625–632.
17. M. Sohail, Saadia Anjum and **Najam us Sahar Sadaf Zaidi** (2013). Effect of functional Interleukin-10 polymorphism on pegylated interferon- $\alpha$  plus ribavirin therapy response in chronic Hepatitis C Virus Patients infected with 3a genotype in Pakistani population. *Hepatitis Monthly*. 13(6):e10274.DOI: 10.5812/hepatmon.10274. (0.660)
18. Mustafeez Babar, **Najam us Sahar Sadaf Zaidi**, M Asraf and A Kazi (2013). Antiviral Drug Therapy- Exploiting Medicinal Plants. *Antivirals & Antiretrovirals*. doi.org/10.4172/jaa.1000060.
19. Hashaam Akhtar, Samar Akhtar, Syed Umer Jan, Azka Khan, **Najam us Sahar Sadaf Zaidi** and Ishtiaq Qadri (2013). Over Expression of a Synthetic Gene Encoding Interferon Lambda using Relative Synonymous Codon Usage Bias in E.coli. *Pak. J. Pharm. Sci.* 26:6. Pp 1181-1188. (0.684)
20. Ummar Raheel and **Najam us Sahar Sadaf Zaidi**. (2013) siRNA based inhibition of DENV2 in mammalian cell line. siRNA based inhibition of DENV2 in mammalian cell line. *Viral Immunology*. doi: [10.1089/vim.2015.0034](https://doi.org/10.1089/vim.2015.0034) (2.257)
21. Mustafeez Mujtaba Babar and **Najam us Sahar Sadaf Zaidi** (2013) Virosomes as biomimetic drug delivery systems. Pakistan Society of Biochemistry and Molecular Biology 11th Biennial Conference Molecular Biosciences- Challenges and Opportunities held during November 25-28, 2013 at the University of the Punjab, Lahore, Pakistan.
22. Muhammad Sohail Afzal, Sadia Anjum and **Najam us Sahar Sadaf Zaidi**. Changing of HCV Clade Pattern in Iran; the Possible Means for Something Good. *Hepat Mon.* (2014) January; 14(1): e11879. DOI: 10.5812/hepatmon.11879. (0.660)

23. Muhammad Sohail Afzal, Tahir Ahmed and **Najam us Sahar Sadaf Zaidi**. Comparison of HCV prevalence in Pakistan and Iran: An insight into future. *Hepat Mon.* (2014) January; 14(1): e11466. DOI: 10.5812/hepatmon.11466.(0.660)
24. Mustafeez Babar, **Najam us Sahar Sadaf Zaidi**, A Kazi and Abdul Rehman (2013). Virosomes: Hybrid Drug Delivery Systems. *Antivirals & Antiretrovirals*. doi.org/10.4172/jaa.1000083.
25. Muhammad Sohail Afzal, **Najam us Sahar Sadaf Zaidi**, Jean Dubuisson and Yves Rouille. HCV Capsid Protein and intracellular lipids interplay and its relationship with hepatic steatosis (2014). *Hepat Mon.* 2014 August; 14(8): e17812. (0.660)
26. Muhammad Sohail Afzal, Muhammad Yousaf Khan, Muhammad Ammar, Sadia Anjum, **Najam us Sahar Sadaf Zaidi**. Diagnostically untypable hepatitis C virus variants: It is time to resolve the problem (2014). *World Journal of Gastroenterology*. 20(46): 17690-2. (5.742)
27. Ummar Raheel and **Najam us Sahar Sadaf Zaidi**. Inhibition of Dengue Virus 3 in Mammalian Cell Culture by synthetic Small Interfering RNAs Targeting Highly Conserved Sequences. (2014) *Tropical Journal of Pharmaceutical Research*. October 2014; 13 (10): 1319-1326. (0.533)
28. Mustafeez Babar, **Najam us Sahar Sadaf Zaidi** and M. Tahir (2014). Global genoproteomic analysis reveals cross-continental sequence conservation and druggable sites among Influenza virus Polymerases. *Antiviral Research*. 112:120-31.(5.970)
29. Muhammad Sohail Afzal, Khaled Alsaleh, Rayan Farhat, Sandrine Belouzard, Adeline Danneels, Véronique Descamps, Gilles Duverlie, Czeslaw Wychowski, **Najam us Sahar Sadaf Zaidi**, Jean Dubuisson, and Yves Rouillé (2014) Regulation of core expression during the hepatitis C virus life cycle. *Journal of General Virology*. 96(2):311-21 (3.891)

30. Munazza Fatima, Deeba Amraiz, **Najam-us-Sahar Sadaf Zaidi** (2015) High Level Expression and Purification of Hemagglutinin Subtype H9 of Influenza Virus. 978-1-4799-6369-0/15/IEEE.
31. Zaman Ashraf, Muhammad Rafique, Sung Yum Seo, Mustafeez Mujtaba Babar, **Najam-us-Sahar Sadaf Zaidi**. (2015) Design, synthesis and bioevaluation of novel umbelliferone analogues as potential mushroom tyrosinase inhibitors. J of Enzyme Inhibition & Medicinal Chemistry. 3(1): 1-10 (10.1)
32. Zaman Ashraf, Muhammad Rafiq, Sung-Yum Seo, Kang Sung Kwon, Mustafeez Mujtaba Babar and **Najam-us-Sahar Sadaf Zaidi** (2015). Kinetic and in silico studies of novel hydroxy-based thymol analogues as inhibitors of mushroom tyrosinase. European Journal of Medicinal Chemistry 98. 203-211 (6.514)
33. Zaman Ashraf, Muhammad Rafiq, Sung-Yum Seo, Mustafeez Mujtaba Babar and **Najam-us-Sahar Sadaf Zaidi** (2015). Synthesis, kinetic mechanism and docking studies of vanillin derivatives as inhibitors of mushroom tyrosinase. Bioorganic and Medicinal Chemistry. 23(17): 5870-80.
34. Mustafeez Mujtaba Babar and **Najam-us-Sahar Sadaf Zaidi** (2015). Protein Sequence Conservation and Stable Molecular Evolution reveals Influenza virus Nucleoprotein as a Universal Druggable Target. Infection, Genetics and Evolution. 34:200-10
35. Ummar Raheel, Muhsin Jamal and **Najam-us-Sahar Sadaf Zaidi** (2015). A Molecular Approach designed to limit the Replication of Mature DENV2 in Host Cells. Viral Immunology. 28(7):378-84
36. Munazza Fatima, **Najam-us-Sahar Sadaf Zaidi**, Deeba Amraiz, Farhan Afzal (2015). *In vitro* antiviral activity of *Cinnamomum cassia* and its nanopartilces against H7N3 influenza A virus. Journal of Microbiology and Biotechnology. DOI: 10.4014/jmb.1508.08024 (2.351)
37. Tahir Ahmad, Sadia Anjum, **Najam us Sahar Sadaf Zaidi**, Amjad Ali, Muhammad Waqas, M. Sohail Azal and Najma Arshad (2015). Frequency of hepatitis E and A virus

in water samples collected from Faisalabad, Pakistan. *Annals of Agriculture and Environmental Medicine*. 22(4): 714-717.

38. Deeba Amraiz, Munazza Fatima and **Najam-us-Sahar Sadaf Zaidi**. (2015) Recombinant NS5 protein of dengue type 2 virus expressed in *E. coli* exhibits RNA-dependent RNA polymerase activity. 10<sup>th</sup> Biennial International Conference of Pakistan Society for Microbiology Exploring Microbes for Future Endeavours (PSM10), Lahore.
39. Deeba Amraiz, Munazza Fatima and **Najam-us-Sahar Sadaf Zaidi**. (2015) Expression and Purification of Dengue virus Non-Structural (NS5) Protein. 12<sup>th</sup> International Bhurban Conference on Applied Sciences & Technology (IBCAST), Centers of Excellence & Applied Technologies (CESAT) Islamabad.
40. Munazza Fatima, Deeba Amraiz and **Najam-us-Sahar Sadaf Zaidi**. (2015) High level expression and purification of Hemagglutinin subtype H9 of Influenza Virus. 12<sup>th</sup> International Conference on Applied Sciences and Technology (IBCAST), Islamabad.
41. Munazza Fatima, Deeba Amraiz and **Najam-us-Sahar Sadaf Zaidi**. (2015) Design of an optimal antigen based on Haemagglutinin subtype H7 of Influenza Virus. 10<sup>th</sup> Biennial International Conference of Pakistan Society for Microbiology Exploring Microbes for Future Endeavours (PSM10), Lahore.
42. Zia-ur-Rehman Farooqi Andrew Curin Imran Tipu Philip J.R Day Najam-us-Sahar Sadaf Zaidi (2015). To Investigate the Efficiency of Surveyor Nuclease in Error Correction during Gene Synthesis. *Ann. Pak. Inst. Med. Sci.* 11(4): 176-179
43. Muhammad Nasir Riaz, Muhammad Faheem, Muhammad Ayaz Anwar, Ummar Raheel, Yasmeen Badshah, Hashaam Akhtar, Kosar Tamanna, Muhammad Tahir, **Najam us Sahar Sadaf Zaidi**, and Ishtiaq Qadri (2016). PCR-Based Molecular Diagnosis of Hepatitis Virus (HBV and HDV) in HCV Infected Patients and Their Biochemical Study. *Journal of Pathogens*. doi.org/10.1155/2016/3219793
44. Zia ur Rehman Farooqi, Samar Hayat Khan Tareen, Jamil Ahmed and **Najam-us-Sahar Sadaf Zaidi** (2016). Logical Analysis of Regulation of Interleukin-12 Expression

Pathway Regulation during HCV Infection. *Protein and Peptide Letters*. 23(6):581-9. (1.890)

45. Aamra Mahboob, Syeda Mehpara Farhat, Ghazala Iqbal, Mustafeez Mujtaba Babar, **Najam-us-Sahar Sadaf Zaidi**, Seyed Mohammad Nabavi, Touqeer Ahmed (2016). Alpha-lipoic acid-mediated activation of muscarinic receptors improves hippocampus- and amygdala-dependent memory. *Brain Research Bulletin* 122 .19–28 (4.077)
46. Deeba Amraiz, Najamus Sahar Sadaf Zaidi and Munazza Fatima (2016). Development of robust in vitro RNA-dependent RNA polymerase assay as a possible platform for antiviral drug testing against dengue. *Enzyme and Microbial Technology*. 92: 26-30 (3.493)
47. Deeba Amraiz, Najam us Sahar Sadaf Zaidi and Munazza Fatima (2017). Antiviral evaluation of an Hsp90 inhibitor, gedunin, against dengue virus. *Tropical Journal of Pharmaceutical Research*. 16 (5): 997-1004
48. Tahir Ahmad, Najma Arshad, Fazal Adnan, Najam-us-Sahar Sadaf Zaidi, Muhammad Talha Shahid, Usman Zahoor, Muhammad Sohail Afzal, Sadia Anjum (2016) Prevalence of rotavirus, adenovirus, hepatitis A virus and enterovirus in water samples collected from different region of Peshawar, Pakistan. *Annals of Agricultural and Environmental Medicine*, Vol 23, No 4, 576–580
49. Fariha Kanwal, Ting Chen, Yunlon Zhang, Altaf Simair, Cai Rujie, Najam us Sahar Sadaf Zaidi, Xinhang Gua, Xiaolong Wei, Geoffrey Siegel and Changrui Lu (2018). Large-Scale in Vitro Transcription, RNA Purification and Chemical Probing Analysis. *Cell Physiol Biochem* 2018;48:1915-1927
50. Duaa Ahmad Khan, Syed Damin Abbas Hamdani, Sahar Iftikhar, Sohaib Zafar Malik, Najam-us-Sahar Sadaf Zaidi, Alvina Gul, Mustafeez Mujtaba Babar, Munir Ozturk, Bengu Turkyilmaz Unal & Tuba Gonenc (2021): Pharmacoinformatics approaches in the discovery of drug-like antimicrobials of plant origin, *Journal of Biomolecular Structure and Dynamics*, DOI: 10.1080/07391102.2021.1894982



51. Naseeha Bibi, Najam us Sahar Sadaf Zaidi, Mustafeez M. Babar and M. Tahir (2021). Vaccinomics driven proteome-wide screening of *Haemophilus influenzae* for the prediction of common putative vaccine candidates. *Canadian Journal of Microbiology*. DOI. 10.1139/cjm-2020-0535 (3.22)
52. Mukhtar, M.; Wajeeha, A.W.; Zaidi, N.u.S.S.; Bibi, N. Engineering Modified mRNA-Based Vaccine against Dengue Virus Using Computational and Reverse Vaccinology Approaches (2022). *Int. J. Mol. Sci.* 2022, 23, 13911. <https://doi.org/10.3390/ijms232213911>. (6.3)
53. Hafeez, S.; Zaidi, N.U.S.S. Red Blood Cell Substitutes: Liposome Encapsulated Hemoglobin and Magnetite Nanoparticle Conjugates as Oxygen Carriers (2023). *Int. J. Mol. Sci.* 2023, 24, 1618. <https://doi.org/10.3390/ijms24021618> (6.3)
54. Mamuna Mukhtar, Haris Ahmed Khan and Najam us Sahar Sadaf Zaidi. Exploring the inhibitory potential of *Nigella sativa* against dengue virus NS2B/NS3 protease and NS5 polymerase using computational approaches. *RSC Adv.*, 2023,**13**, 18306-18322. (4.2)
55. Bibi, N.; Wajeeha, A.W.; Mukhtar, M.; Tahir, M.; Zaidi, N.u.S.S. In Vivo Validation of Novel Synthetic *tbp1* Peptide-Based Vaccine Candidates against *Haemophilus influenzae* Strains in BALB/c Mice. *Vaccines* **2023**, *11*, 1651. <https://doi.org/10.3390/vaccines11111651>

### **Book Chapters:**

1. Mustafeez Babar, **Najam us Sahar Sadaf Zaidi** and M. Ashraf and Alvina G. Kazi. (2015) Plant pharmacogenomics- From Drug Discovery to Personalized Ethnomedicine. In *PlantOmics: The Omics of Plant Science*. Springer, India. pp: 699-730.

2. Mustafeez Babar, **Najam us Sahar Sadaf Zaidi**, Mohamed Mahgoub Azooz and Alvina G. Kazi. (2015) Genetic and Molecular Responses of Legumes in a Changing Environment. In *Legumes under Environmental Stress; Yield, Improvement and Adaptations*. John Wiley, USA. pp: 199-214.
3. Mustafeez Babar, **Najam us Sahar Sadaf Zaidi**, Mohamed Mahgoub Azooz and Alvina G. Kazi. (2015) Biotechnology Approaches to Overcome Biotic and Abiotic Stress Constraints In Legumes. In *Legumes under Environmental Stress; Yield, Improvement and Adaptations*. John Wiley, USA. pp: 247-263.
4. Babar MM, Zaidi NSS, Azooz MM and Kazi AG (2015) Genetic and molecular responses of legumes in a changing environment In. (Ed.) Ahmad P. *Legumes under Environmental Stress: Yield, Improvement and Adaptations* (John Wiley & Sons, USA). pp. 199-214 doi.org/10.1002/9781118917091.ch12
5. Mustafeez Mujtaba Babar , Sumayyah Fareed Khan, Muhammad Kazim Zargaham , **Najam-us-Sahar Sadaf Zaidi** and Alvina Gul. (2016) Plant-Microbe Interactions: A Molecular Approach. *Plant Soil and Microbes*. Springer International Publishing, Switzerland.
6. Mustafeez Mujtaba Babar, **Najam-us-Sahar Sadaf Zaidi**, Zeeshan Ali, Hira Siddiqui, Mariam Fatima, Fatima Abid, Syed Bilal Nizami, Aneeqa Noor, Ayesha Nazir Khan, Sarah Faisal, and Alvina Gul. (2017) Transport and Metabolism of Nitrogen in Legume Nodules Under Phosphorus Deficiency. *Legume Nitrogen Fixation in Soils with Low Phosphorus Availability*. Springer International Publishing, Switzerland.
7. Babar MM, Zaidi NSS, Pothineni VR, Ali Z, Faisal S, Hakeem KR and Gul A. (2017) Application of Bioinformatics and Systems Biology in Medicinal Plant Studies In (Ed.s) Hakeem KR, Malik A, Vardar- Sukan F and Ozturk M. *Plant Bioinformatics: Decoding the Phyta* (Springer, Cham) pp. 375-393 doi.org/10.1007/978-3-319-67156-7\_15
8. Iftikhar S., Ali Z., Khan D.A., Zaidi NS.S., Gul A., Babar MM\* (2018) Arsenic Toxicity: A South Asian Perspective In (Ed.s) Hasanuzzaman M., Nahar K., Fujita M. *Mechanisms*

of Arsenic Toxicity and Tolerance in Plants (Springer, Singapore) pp. 483-502  
doi.org/10.1007/978-981-13-1292-2\_19

9. Babar MM, Afzaal H, Pothineni VR, Zaidi NSS, Ali Z, Zahid MA and Gul A. (2018) Omics Approaches in Industrial Biotechnology and Bioprocess Engineering In (Ed.s) Barrh D. and Azevedo V Omics Technologies and Bioengineering: Towards Improving Quality of Life (Academic Press) pp. 251-268 doi.org/10.1016/B978-0-12-815870-8.00014-0
10. Nizami SB, Kazmi SZH, Abid F, Babar MM, Noor A, Zaidi NSS, Khan SU, Hasan H, Ali M and Gul A. (2018) Omics Approaches in Forensic Biotechnology: Looking for Ancestry to Offence In (Ed.s) Azevedo V and Barrh D Omics Technologies and Bioengineering : Towards Improving Quality of Life (Academic Press) pp. 111-129 doi.org/10.1016/B978-0-12-804659-3.00006-3

### **Patents:**

- Saleha Hafeez and Najam us Sahar Sadaf Zaidi (2021). Human deoxyhemoglobin and magnetite nanoparticle encapsulated in liposomes based RBC substitute. Patent Application Number: 16811/2021
- Bilal Naveed and Najam us Sahar Sadaf Zaidi (2019). Chimeric Fibrin Specific Streptokinase. Patent Application Number: 753/2019

### **Teaching Assignments:**

- Cell Biology (MS/PhD)
- Phylogeny and Taxonomy of Viruses (UG)
- Immunization and Vaccine Development (MS/PhD)
- Cellular Signaling Mechanisms (UG)
- Advances in Molecular Biology (MS/PhD)
- Biotechnology (MS/PhD)
- Advances in Biotechnology (MS/PhD)
- Immunology (UG)
- Entrepreneurship (UG)
- Pharmacology (UG)
- Antiviral Approaches (UG)
- Mammalian Cell Processing (MS/PhD)

Developed the curriculum for BS Applied Biosciences, BS Biotechnology, BS Bioinformatics and MS Industrial Biotechnology.

**Student Supervision:**

**PhD: Completed**

1. Core protein differential expression/stability during HCV infection and its role in viral life cycle regulation. 2014 (M. Sohail Afzal)
2. siRNA based Inhibition of Dengue Virus and Prediction of Possible Vaccinal Targets. 2016 (Ummar Raheel)
3. Development of Virosome based Antiviral Strategies against Influenza Virus. 2016 (Mustafeez Babar)
4. Hemagglutinin based vaccinal and therapeutic approaches against influenza viruses. 2016 (Munazza Fatima)
5. A study of HCV induced IL12 expression by inhibiting JNK activated NFkB in human dendritic cells (Zia ur Rehman Farooqi)
6. Construction and characterization of DENV-2 and DENV-3 subgenomic replicon systems for antiviral compound testing (Deeba Amraiz)

**MS Supervision:** 38

**BS Supervision:** 12