**Curriculum Vitae**

**Dr. Towseef Akram, BVSc, MVSc PhD Animal Biotechnology**

**BIRAC Post Doctoral Innovation Fellow**

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**BRIEF BIOGRAPHY:**

I have done my graduation in veterinary sciences and opted Animal Biotechnology for my Master’s degree with the dream to enter the research and **Teaching Field**. With the help of my guide, the topic for my research was very fascinating & very much advanced. ‘Stem cell research in small ruminants’ During my master's, we were able to isolate mesenchymal stem cells from a novel source of bone chips. Where the yield was 3000 times more than the common/preferred source of bone marrow. The research was published in a reputed journal in veterinary science. Further, I presented this idea at National Bio Entrepreneurship Competition NBEC 2022 CCAMP. Among the 3000 applicants, I was selected among the Top seven team leaders for the final presentation of Grand Finale on 8th of December 2022.

During my doctorate (2016-22) I was involved in solving the global problem of infectious bursal disease vaccine safety concern, that is, reversion to virulence. Title of my thesis was “Lethal mutagenesis for enhancing genetic stability of infectious bursal disease virus”. During unavoidable circumstances of 2019 in Kashmir followed by covid restrictions, I continued my research work. I want to mention that I was alone in the entire faculty of veterinary science and animal husbandry living in the lab and kept my research alive in very harsh conditions. Further during that time, I arranged equipment and consumables for covid testing at SKIMS and SMHS. No matter what was going on outside, I worked day and night and never missed a day of work. All of this paid off when we developed a stable live infectious bursal disease vaccine candidate at the end of the study. We generated three potential genetic stability markers in the stable virus, which can be incorporated to any live attenuated virus of infectious bursal disease to create a stable vaccine. I am hopeful that my Ph.D. work of six years will generate high-impact research publications; few are in communication and applying for the grant of patent for generating a stable virus. **During my Ph.D. I was also involved in teaching and training junior students.**

Furthermore, I have experience of 5 years working in different projects as JRF, SRF and Research associate. **Then I prefer to work as a contractual lecturer at SKUAST K for one year to teach and training masters’ students**.

Recently I was selected for BIRAC E-YUVA Post-Doctoral Innovation Fellowship to develop region specific vaccine of IBDV and NCD and currently I am working on the same project.

**EDUCATION**

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| **2016-2022** | **Ph.D. in Animal Biotechnology** **Specialisation in Vaccine Biotechnology****Thesis Title: Lethal Mutagenesis for Enhancing Genetic Stability of Infectious Bursal Disease Virus****Sher-e-Kashmir University of Agriculture Sciences and Technology of Kashmir (SKUAST-K)**  |
| **2013-2016** | **Master of Veterinary Science in Animal Biotechnology** **Specialization in Mesenchymal Stem Cells Isolation and Therapy****Masters work: Isolation Characterization and Therapy of Mesenchymal Stem Cells from Bone Chip and Bone Marrow.**  |
| **2008-2013** | **Doctor of Veterinary Medicine (DVM)****Faculty of Veterinary Sciences and Animal husbandry (SKUAST-K)** |

**SALIENT RESEARCH PUBLICATIONS**

1. **Akram, Towseef**, Irfan Gul, Mahrukh Parveez Zia, Amreena Hassan, Amina Khatun, Riaz Ahmad Shah, Syed Mudasir Ahmad et al. "Ribavirin inhibits the replication of infectious bursal disease virus predominantly through depletion of cellular guanosine pool." *Frontiers in Veterinary Science* 10 (2023) (**Impact factor 3.471**) Doi 10.3389/fvets.2023.1192583
2. **Akram T**, Shah RA, Mudasir H, Mir BA, Hussain SS, Ahmad SM, Dar PA, Ganai NA, Shabir N. 2017. Comparative efficiency of goat mesenchymal stem cell isolation from bone marrow and bone chip. Small Ruminant Research 153: 87-94, Cited by 6, (**Impact factor 1.893**) DOI: http://dx.doi.org/doi:10.1016/j.smallrumres.2017.05.007
3. Gul, I., Hassan, A., Muneeb, J. M., **Akram, T**., Haq, E., Shah, R. A., ... & Shabir, N. A Multiepitope Vaccine Candidate against Infectious Bursal Disease Virus using Immunoinformatics based Reverse Vaccinology Approach. *Frontiers in Veterinary Science*, *9*, 2121. **Impact Factor 3.471** <https://doi.org/10.3389/fvets.2022.1116400>
4. Sofi, H.S., **Akram, T**., Shabir, N., Vasita, R., Jadhav, A.H. and Sheikh, F.A., 2021. Regenerated cellulose nanofibers from cellulose acetate: Incorporating hydroxyapatite (HAp) and silver (Ag) nanoparticles (NPs), as a scaffold for tissue engineering applications. Materials Science and Engineering: C, 118, p.111547. Cited by 41, **Impact factor 8.457** DOI https://doi.org/10.1016/j.msec.2020.111547
5. Sofi, H.S., **Akram, T**., Tamboli, A.H., Majeed, A., Shabir, N. and Sheikh, F.A., 2019. Novel lavender oil and silver nanoparticles simultaneously loaded onto polyurethane nanofibers for wound-healing applications. International journal of pharmaceutics, 569, p.118590. Cited by 68, **Impact factor 5.875, DOI** <https://doi.org/10.1016/j.ijpharm.2019.118590>
6. Ashraf, R., Sofi, H.S., **Akram, T.,** Rather, H.A., Abdal‐hay, A., Shabir, N., Vasita, R., Alrokayan, S.H., Khan, H.A. and Sheikh, F.A., 2020. Fabrication of multifunctional cellulose/TiO2/Ag composite nanofibers scaffold with antibacterial and bioactivity properties for future tissue engineering applications. Journal of Biomedical Materials Research Part A, 108(4), pp.947-962. Cited by 27, **Impact factor 4.854 DOI** [**https://doi.org/10.1002/jbm.a.36872**](https://doi.org/10.1002/jbm.a.36872)
7. Wani, T.A., Masoodi, F.A., Akhter, R., **Akram, T**., Gani, A. and Shabir, N., 2022. Nanoencapsulation of hydroxytyrosol in chitosan cross-linked with sodium bisulfate tandem ultrasonication: Techno-characterization, release and antiproliferative properties. Ultrasonics Sonochemistry, 82, p.105900. **Impact factor 9.336,** ISSN No 1350-4177 cited by 6 <https://doi.org/10.1016/j.ultsonch.2021.105900>
8. **Towseef Akram**, Jan Mohd Muneeb, Irfan Gul1, Mahrukh Parveez, Riaz Ahmad Shah, Syed Mudasir Ahmad, Ishfaqul Hussain, Shayaib A Kamil, Nadeem Shabir. Isolation of infectious bursal disease virus from a poultry farm in Srinagar district of Jammu and Kashmir SKUAST Journal of Research 22(2): 86-91; (2020) ISSN No 0972-1126 (**NAAS Rating 4.17)**
9. Hakim, M.M., Ganai, N.A., Ahmad, S.M., Asmi, O., **Akram, T**., Hussain, S. and Gora, A.H., 2018. Nutrigenomics: Omics approach in aquaculture research to mitigate the deficits in conventional nutritional practices. Journal of Entomology and Zoology Studies, 6(4), pp.582-587. **NASS Rating 5.53** cited by 2
10. Ahmad, B., Amin, I., **Akram, T.,** Ur-Rehman, M., Ahmad, S. and Rasool, S., 2016. Zingerone (4-(4-hydroxy-3-methoxyphenyl)-2-butanone) protects against acetaminophen induced hepatotoxicity in Wistar rats via alleviation of oxidative stress and inflammation. AJAVA, 11(12), pp.832-839. Cited by 3
11. Ashaq Manzoor, H.M Khan, Tahir Nazir, Anees Ahmad Shah, **Towseef Akram**, Insha Afzal And Asra Khursheed. 2020. Socio-Economics Of Sheep Rearers In Anantnag District Of Jammu And Kashmir. Journal Of Entomology And Zoology Studies, 8(4): 2400-2406 cited by 4
12. Manzoor A, Patoo RA, **Akram T**, Shah AA And Nazir T. 2017. Sperm Sexing And Its Utility In Commercial Cattle Production -A Review. Advances In Animal And Veterinary Sciences 5(7): 293-298. Cited by 6
13. Manzoor A., Khan, H., Maqbool, I., Dar, Z., **Akram, T**. And Banday, M. 2018. Disorders Compromising Reproductive Health And Their Therapeutics In Dairy Animals- A Review. International Journal Of Livestock Research, 8(3) 24-38.
14. Manzoor, A., Nazir, T., Untoo, M., Fayaz, A., Zaffer, B., Afzal, I., **Akram, T**. and Dar, Z.A., 2018. Calf scour: an obstacle in successful dairying. *Journal of Entomology and Zoology Studies*, *6*, pp.2001-2005.
15. **First Author** Sequences submitted in NCBI Under Infectious bursal disease virus isolate FVSKG1 polyprotein and VP5 genes, partial cds Accession No. OP185535, Infectious bursal disease virus isolate FVSKG2 RNA dependent RNA polymerase (VP1) gene, partial cds ACCESSION OP161172, Infectious bursal disease virus isolate FVSKG4 VP5 gene, partial cdsACCESSION OP168885
16. **Towseef Akram**, Riaz Ahmad Shah, Mujeeb ur Rehman FazilI, Beenish Qureshi, Ashaq manzoor, Sajad Beigh, Nadeem Shabir, **Role of autologous mesenchymal stem cells on supernumerary teat ablation wound contraction in goats**. (communicated)

**Research Experience**

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| S. No. | Department  | Worked as  | From  | T0 | No of years | Responsibilities |
| 1 | Animal Biotechnology | JRF | 16 August 2017 | 15 August 2019 | 2 | St**able Vaccine Development****Detection of zoonotic viral disease through PCR** |
| 2 | Animal Biotechnology | SRF | 16 August 2019 | 25 February 2021 | **1 year****6 month****10 days** | **Bioinformatics****Development of biomaterials****Molecular modelling in drug design and discovery** |
| 3 | Animal Biotechnology | Research Asociate  | 13-03-2021 | 02-06-2022 | **1 year****2 month****19 days** | **Reproductive Biotechnology****Genome editing using CRISPR/Cas****Cloning and Transgenesis****Breed preservation** |
| 4 | Animal Biotechnology | Contractual Lecturer | 03-06-2022 | 30-04-2023 | **11 month** | **Reproductive biotechnology Bioinformatics** **Animal genomics** |
| 5 | Panjab University Chandigarh | Post Doctoral Innovation Fellow BIRAC E YUWA | 01-05-2023 | Present | **4 month, 16 days** | **Development of stable attenuated vaccine of Infectious Bursal Disease and Newcastle Disease of Poultry** |

**Book Chapters**

1. Enhancing Heterologous Protection Against Porcine Reproductive and Respiratory Syndrome Virus: Challenges and Opportunities Nadeem Shabir\*, Amina Khatun, Salik Nazki, Riaz A Shah, Nazir A Ganai, Syed Shanaz, Mahak Khan, Abrar A Malik, **Towseef Akram**, Won-Il Kim and Vikas Mahajan, Modern Developments in Livestock Health and Production ISBN-10. 9388020138, Publisher ‏ : ‎ Satish Serial Publishing House (1 January 2019) Vikas Mahajan Dhirendra Kumar (Author)
2. Enhancing Safety of Live-Attenuated Vaccines Against RNA Viruses Affecting Livestock and Poultry Production: Where Do We Stand? Nadeem Shabir and **Towseef Akram**, ICAR Summer School Production And Post Production Interventions to Increase Returns tfrom Livestock Enterprises: A Step Towards Doubling Farmers’ Income, June 19, 2018 - July 9, 2018
3. Published chapter on ‘Mesenchymal **Stem Cells: Therapeutic Applications for Farm Animal Health and Production**” in ISSRF NEWSLETTER, A publication of the Indian Society for the Study of Reproduction and Fertility, Issue 21: February, 2018 ISSN 2395-2806
4. Book chapters: 02 in Book: Progressive Agriculture: Recent Trends and Innovation, ISBN 978-81-953069-7-8, Learning media publications, 2021

Ashaq Manzoor, Tahir Nazir, Hilal Musadiq Khan, **Towseef Akram** and Amir Ahmad Bhat. 2021. Calf management: An indicator of success of the dairy industry.ISBN 978-93-90833-98-6, Book Name: Progressive Agriculture: Recent Trends and Innovation, Chapter -22; pp-324 -346. Editor Dr Joginder Sing, Learning media publications.2021

1. Ashaq Manzoor, **Towseef Akram,** Hardeep Kalkal, Rakesh Ahuja, Apoorva Argade and Tahir Nazir. 2021. Uterine infections and its management in dairy animals, ISBN 978-93-90833-98-6, Book Name: Advanced Research in Veterinary Sciences (Volume - 1) chapter 7. Scripow Publications, 2021, (containing 9 Book chapters), Scripow Publications, 2021, Chief Editor Dr. Nimai Ch. Patra
2. Ashaq Manzoor, Tahir Nazir, Anand kumar Singh, Rakesh Ahuja, **Towseef Akram**, and Palak Tripathi. 2021. Importance and Scope of Poultry farming in India, ISBN 978-93-90833-98-6, Book Name: Advanced Research in Veterinary Sciences (Volume - 1) chapter 5. Scripow Publications, 2021, Chief Editor Dr. Nimai Ch. Patra
3. Ashaq Manzoor, Tahir Nazir, Hilal Musadiq Khan, Islam UD Din Sheikh, M.T. Banday and **Towseef Akram**; Integrated Farming Systems, its Components and Benefits in Ecosystem, Emerging Trends in Biosciences, Editors Dr. Nikhil Agnihotri, Dr. Lalit Gupta, Dr. Yogesh Dixit, ISBN: 978-81-957441-2-1. Publisher InfoCapsule LLP
4. Ashaq Manzoor1 , Tahir Nazir , **Towseef Akram**3 , H.M.Khan And M.T. Banday Precision Dairy Farming In Light Of Management Of Dairy Animals, Smart Agriculture Technologies, Editor Dr Joginder Singh, 2023, Publisher Biotech Books ISBN: 978-81-7622-535-9
5. Ashaq Manzoor, MRoviada, M T Banday, I U Sheikh and **Towseef Akram**, Production and utility of sex sorted semen in Dairy Production, 2023, ISBN:978-93-91872-31-1, Editor Dr. joginder Sing, Publisher Learning Media Publication, Meerut
6. Aashaq Manzoor, H M Khan, **Towseef Akram**, Tahir Nazir, Economics of Sheep Farming in Pulwama District of Jammu & Kashmir, 2021 Global Approaches in natural Resources Management foe Climate Smart Agriculture (GNRSA-2020) During Pandemic Era of COVID-19; Publisher Learning Media Publication, ISBN 976-81-918789-5-4, Editor Dr Joginder Sing

**Awards**

* Awarded E-YUVA Post Doctoral fellowship as BIRAC Innovation fellow 2023
* Patent filed under patent application no. Indian Patent Application No. 202311030080 Title: EFFICIENT ISOLATION OF MEDICINAL SIGNALING CELLS FROM UNCONVENTIONAL SOURCE OF BONE CHIPS OF ANIMAL CARCASS
* Awarded Best Oral Presentation Award in the international conference on “Emerging and Re-Emerging Viral Infections Impacting Human, Animals, Plants, Fish and Environment” held on 5th and 6th November 2022 at SKUAST-Kashmir, VIROCON-2022 (PhD Research work)
* Awarded “JURY CHOICE AWARD” by Project contest innovation LLP for idea entitled FUNCTIONAL CHICKEN BITE on 25.09.2022 in “Campus Talent Version 2.0 - Virtual Innovative Symposium”.
* Awarded young scientist award in international conference on Innovative and Current Advances in Agriculture and Allied Science by Society for scientific Development in Agriculture & Technology during June 12-14, 2022, society for scientific development in agriculture and technology
* Awarded Best Ph.D Thesis Award on the occasion of 6th international conference on current issues in agriculture, biological and applied sciences for sustainable development (CIABASSID-2022) organised by department and directorate of extension education , uttar banga, ICAR and AEDS, held on june 11-13, 2022
* Best oral presentation in 4th international conference, global approaches in natural resource management for climate smart agriculture during pandemic era of COVID-19 (3rd author)

**Life membership**

* Life member of **Society for Reproductive Biology and Comparative Endocrinology**, with effect from 14.09.2022, Membership No. LM549-2022
* Life member of Agro Environmental Development Society (AEDS) with effect from June, 2022, Membership No. AEDS/LM/765/2022

**Training Courses and Programmes Attended at the National and International Level**

1. Resource person in short training workshop on GENOME EDITING TECHNOLOGIES: Applications of CRISPR-Cas for desired traits in mammalian systems on 15-17 february 2023 at FVSc, SKUAST K
2. Resource person in workshop on CRISPR EDITING TOOLS: BASIC CONCEPTS AND APPLICATIONS on 4th February 2023 at FVSc, SKUAST K
3. Participated in the international conference on “Emerging and Re-Emerging Viral Infections Impacting Human, Animals, Plants, Fish and Environment” held on 5th and 6th November 2022 at SKUAST-Kashmir, VIROCON-2022 (Presented PhD Research work titled “Ribavirin effectively inhibits the replication of avian birnavirus through multiple mechanisms”)
4. Participated in international conference on “Coronaviruses-Past, Present and Future” held on 10th and 11th May 2022 at SKUAST-Kashmir, Registered with Jammu & Kashmir medical council under CME registration for eight (8) credit hours
5. Oral presentation at International Conference on REPRODUCTIVE BIOLOGY, COMPARATIVE ENDOCRINOLOGY & DEVELOPMENT 39th Annual Meeting of SRBCE September 14 - 16, 2022, Hyderabad, INDIA
6. Participated in the International Conference on Recent Advances in Biomedical Sciences Regenerative Medicine (RABSRM) 2022, presented PhD research work
7. Certificate of participation: Attended lecture on “Genome Editing in Animals for enhancing Productivity” on 24 June 2022 organised as part of continue biotechnology education lecture series **DBT/Wellcome Trust India Alliance**
8. Participated in 6th international conference on Current issues in Agriculture, Biological & Applied Science for Sustainable Development(CIABASSD-2022) during 11-13 june, 2022
9. Presented Ph.D. research work in the International Conference on Innovative and Current Advances in Agriculture And Allied Science during June 12-14, 2022
10. Participated in a three-day workshop on ‘Reproductive technologies **in Wildlife Conservation**” between May 18-20, 2022 organised by LaCONES, CSIR – CCMB, Hyderabad, the University of Kashmir and CSIR-IIM, Srinagar
11. Participated in 10th National Seminar on “Agriculture and More: Beyond 4.0” from 26th to 28th May 2022 and presented Paper and Poster of PhD research work in the seminar
12. Oral presentation on **Lethal mutagenesis for enhancing genetic stability of infectious bursal disease virus** in International conference on “Recent Advances in Biomedical Sciences and Regenerative Medicine (RABSRM)” from 6th to 7th May, 2022 at SKUAST K and University of Kashmir.
13. Successfully completed the online modules of Researcher Academy of ELSEVIER on why write a book, How to prepare your manuscript, How to respond to Reviewers Comments, Social Media for Researchers, Successful Research Grant applications – getting it right, Using proper manuscript language (2018).
14. Presented a poster at ISSRF-2017 international conference on reproductive health with Emphasis on Strategies for Infertility, Assisted Reproduction and Family Planning from 23rd -25th jan. 2017 at New Delhi.
15. Abstracts accepted at the 40th Annual Congress of ISVS and International Symposium on ‘Biomaterials And Stem Cells For Tissue Repair And Regeneration In Veterinary Surgery’ held from 2nd to 4th December 2016 in the Department of Veterinary Surgery & Radiology, Madras Veterinary College, TANUVAS, Chennai-7 and ISSRF-2017 international conference on reproductive health with emphasis on Strategies for Infertility, Assisted Reproduction and Family Planning from 23 to 25 January. 2017 at New Delhi.

**Trainings**

1. Training cum hands-on program advanced experimental techniques for material science on Synergistic Training Program Utilizing the Scientific & Technological Infrastructure, supported by DST, Govt. of India (STUTI) from 20th to 26th May, 2022
2. Coordinated the 7 day National workshop on “**Genomics and Stem cell technologies in animal research and production” from 17-24 july 2017**
3. Successfully completed the two-month training at the National institute of Agriculture Extension Management conducted under the Agri-business centres Scheme of Govt. of India from 15-09-2015 to 16-11-2015 at the AcABC centre Srinagar J&K under I.D. No. JAM 1592
4. Participated in International conference on Cellular and molecular mechanism of disease processes from 13th to 16th April, 2014 at Department of Biotechnology, university of Kashmir.
5. Training program on **poultry production in Kashmir: challenges and oppurtunities** for the period of three days, organized by Division of livestock production and managnent from 26th to 28th of march 2014 at faculty of veterinary science and animal husbandary, shuhama, alustang.
6. **Training program** on methods in Recombinant DNA Technology for ten days at division of veterinary biochemistry, faculty of veterinary science and animal husbandary, shuhama, alustang from 1st to 10th oct. 2013.
7. Training programme on **‘statistical techniques for analysis of life science data’** *for* **2 days** duration in the division of animal genetics and breeding of the faculty of veterinary science and animal husbandry, shuhama, alustang.
8. Traning at Oncquest laboratories pvt. Lmt for the period of three months through Biotec consortium india limited meant for providing practical industrial training at Oncquest Laboratories Ltd., 3, Factory Road, Adj. Safdarjung Hospital, New Delhi-110029
9. Participated in two-day national level conference CVEME-2013 on microbiology/ endocrinology update 2013 from 28th to 29th oct. 2013 at SKICC Srinagar.

**Invited Lectures**

* Delivered a lecture on ‘Potential **use of Stem Cell in Disorders/ Diseases of sheep - Kashmir Field Perspective”** invited by the Director Research Disease Investigation Laboratory sheep husbandry department Kashmir Nowshera, Srinagar on 28-06-2022
* **Invited as a resource person** for the seven (7) days High-End Workshop from 28th Nov. to 05th Dec. 2022 on “Mesenchymal Stem cells in Veterinary Regenerative Medicine sponsored by Science & Engineering Research Board (SERB), Govt. of India to deliver a lecture on **“Bone chip as rich mesenchymal stem cell source and their banking for allogenic therapy”**
* Coordinated and imparted training at the 7-day National workshop on “**Genomics and Stem cell technologies in animal research and production” from 17-24 July 2017 AT Division of Animal Biotechnology, FVSc & AH Shuhama SKUAST K**
* Invited as **Resource person** in 21 days national training program entitled “Advance approaches in genomics, bioinformatics and animal cell culture sponsored by Department of Biotechnology, Govt of India, held between 10th to 31st August 2015 at Division of Biotechnology, FVSc and AH Srinagar SKUAST K

**Practical Skills gained during the research programme:**

* + Isolation and culture of fibroblasts
	+ Somatic Cell Nuclear Transfer
	+ Hands-on training in HPLC
	+ Vitrification of oocytes
	+ CRISPR/cas gene editing, vector construction using double guide RNA system, transfection through electroporation
	+ Transgenic cell production and animal cloning
	+ *In vitro* embryo production in sheep and goats
	+ Cryopreservation of gametes and embryos
	+ Estrus synchronisation and superovulution of sheep and goat
	+ **Virus isolation, culture, titration, preservation**
	+ Mutagen-driven lethal mutagenesis
	+ PCR, gel and PCR purification
	+ qRT-PCR, molecular diagnosis of infectious bursal disease in birds, viral RNA isolation,
	+ ***In silico* protein modelling and docking**
	+ *in ovo* culture of virus
	+ **Somatic cell culture, establishment of Primary cell cultures and maintenance of cell lines**.
	+ **Mesenchymal stem cell isolation, culture, characterisation, and therapy**
	+ Had a good experience with the **conduct of an independent research** study.
	+ Mastered the technique of **aspirating the bone marrow and bone chip** from live goats.
	+ **Culturing of Mesenchymal stem cells and characterisation on the basis of morphology and expression of mesenchymal specific molecular markers.**
	+ **In addition I was involved in Mesenchymal stem cell therapy on cutaneous wounds of goats**
	+ Handling of raw sequencing data through software DNASTAR
	+ Data analysis and graphs drawn through Graph Pad Prism
	+ Effective writing and publication of findings in journals of repute.

**SALIENT ACHIEVEMENTS**

* Successfully isolated Mesenchymal Stem Cells from bone marrow and bone chip for the first time at SKUAST K in 2016.
* Developed a **novel procedure** for the isolation of mesenchymal stem cells from **bone chips.**
* Selected in the **Biotech Industrial Training Programme (BITP) 2015-16**.
* A live attenuated stable infectious bursal disease vaccine candidate was generated
* Determined three **putative genetic stability** markers in the infectious bursal disease virus, which could be incorporated in live attenuated vaccines to reduce events of reversion to virulence

**RESEARCH INTERESTS**

* **Regenerative medicine and animal reproduction**
* **Transgenesis and reproductive biology**
* **Stem cell research** for biomedical applications using animal models.
* **Virology and sequence handling using bioinformatics**
* **Enhancement of Animal Productivity and Breed preservation** through the Use of Innovative Research methodologies
* **Project design** and their effective implementation to carry **out quality research**

**Extracurricular activities**

* **Awarded first in the slalom in advance snow skiing course (Indian Institute of skiing and mountaineering)**
* **Awarded first in Technique in advance snow skiing course (IISM)**
* **3rd position slalom in basic course of skiing (IISM)**
* **Participated twice in nationals of snow skiing competitions**

**Entrepreneurship Journey**

* **Selected by Biotech Consortium India Limited for 6 months practical industrial training**
* **Finalist in National Bio Entrepreneurship Competition NBEC 2022 CCAMP**
* **First position in idea presentation at the Lemon School of Entrepreneurship**

**MENTORS**

**Dr. Riaz Ahmad Shah (MVSc., Ph.D.) Professor**

**Division** of Animal Biotechnology,
Faculty of Veterinary Sciences & Animal Husbandry, Shuhama (190006),

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Jammu and Kashmir, India

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**Syed Mudasir Andrabi, PhD**

**Professor & Head**

**Animal Biotechnology**

**Faculty of Veterinary Sciences and AH**

**Shuhama, SKUAST-Kashmir, 190006**

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**email:**mudasirbio@gmail.co**m**

**Nadeem Shabir, DVM, MVSc, PhD**

[**Wellcome Trust India Alliance Fellow**](https://www.indiaalliance.org/fellow/nadeem-shabir)

[**Assistant Professor / Junior Scientist**](https://www.skuastkashmir.ac.in/DisplayDInformation.aspx?id=10032&did=91314),

[UK-ICN-Nominated member (Indian Subcontinent)](https://www.liverpool.ac.uk/health-and-life-sciences/research/uk-international-coronavirus-network/past-events/)

***Division of Animal Biotechnology,***

***Faculty of Veterinary Sciences & Animal Husbandry,***

[***SKUAST-Kashmir***](https://www.skuastkashmir.ac.in/),  **Jammu and Kashmir, India**

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[Scopus Author ID: 50462353200](http://www.scopus.com/inward/authorDetails.url?authorID=50462353200&partnerID=MN8TOARS)