




Shivaji College Faculty Details Proforma

Title	DR.	First Name	PARUL	Last Name	KULSHRESHTHA	Photograph
Designation	ASSISTANT PROFESSOR					
Address	F-023, GULSHAN VIVANTE, SECTOR 137, NOIDA					
Office Phone No.						
Residence						
Mobile						
Email	parulkuls26@gmail.com					
Web-Page	https://microcosmos.foldscope.com/?author=8764					
Educational Qualifications	MSc. ZOOLOGY, Phd. BIOTECHNOLOGY					
Degree	University/Institute				Year	
Ph.D.	School of Biotechnology, Jawaharlal Nehru University				2012	
M.Phil./M.Tech.	NA					
PG	Department of Zoology, University of Delhi				2006	
UG	Hindu College, Department of Zoology, University of Delhi				2004	
Any Other Qualification						
Career Profile						

- Working as Assistant Professor at Department of Zoology, Shivaji College, University of Delhi since 24th July 2013 till date.
- Worked as Assistant Professor from 23rd July 2012 to 31st Oct. 2012
At Department of Zoology of Acharya Narendra Dev College, University of Delhi.

Administrative Assignments

Contribution to the Corporate Life of College:

- Hosted the Principal Scientific Advisor to Government of India, **Prof.K.VijayRaghavan** at Shivaji College in a special visit on 1st May 2019 to encourage and appreciate the work done by the team of students guided by Dr.Sunita Gupta and Dr.Parul Kulshreshtha in their research project.
- Hosted **Dr.Shailja Vaidya Gupta**, from the office of the Principal Scientific Advisor to Govt.of India on 15th April 2019 and 1st May 2019.
- Hosted **Dr.Jim Cybulski**, a Stanford Alumni, Co-inventor of foldscope and CEO, Foldscope Instruments, Inc. on 15th April 2019 and 1st May 2019.

Areas of Interest/Specialisation

Animal diseases and vaccinology , Zoology, Biotechnology, Science Education, Educational Technology.

Subjects Taught

1. Invertebrate Zoology: BSc.(H) ZOOLOGY, Semester I (Practical and Theory)
2. Biochemistry and Immunology: BSc. LIFE SCIENCE, Semester V (Practical and Theory)
3. Cell Biology: BSc.(H) ZOOLOGY, Semester II (Practical and Theory)
4. Cell Biology: BSc.(H) ZOOLOGY, Semester IV (Practical and Theory)
5. Molecular Biology: BSc. LIFE SCIENCE, Semester IV (Practical and Theory)
6. Genetics and Genomics: BSc.(H) ZOOLOGY, Semester V (Practical and Theory)
7. Comparative Anatomy of Vertebrates: BSc.(H) ZOOLOGY, Semester II (Theory)
8. Comparative Anatomy of Vertebrates: BSc.(H) ZOOLOGY, Semester IV (Practical and Theory)
9. Applied Biology and Biotechnology: BSc. LIFE SCIENCE, Semester V (Practical and Theory)
10. Developmental Biology: BSc.(H) ZOOLOGY, Semester V (Practical and Theory)
11. Evolutionary Biology: BSc.(H) ZOOLOGY, Semester V (Practical and Theory)
12. Medical Diagnostics: BSc. LIFE SCIENCE, Semester III (Practical and Theory)
13. Developmental Biology and Comparative Anatomy of Vertebrates : BSc. LIFE SCIENCE, Semester II (Theory)
14. Cell and Cellular Processes: BSc.(H) ZOOLOGY, Semester II (Theory and Practical)
15. Food, Health and Nutrition: BSc. (H) Biochemistry. Semester III (Theory and Practical)
16. Medical Diagnostics: BSc. LIFE SCIENCE, Semester III (Theory and Practical)
17. Animal Diversity : BSc (H) Botany/ BSc (H), Semester I (theory)
18. Principles of ecology : BSc.(H) ZOOLOGY, Semester I (Practical and Theory)

19. Research Methodology: BSc. LIFE SCIENCE, Semester IV (Theory and Practical)
20. Animal Physiology: BSc (H) Botany/ BSc (H) Biochemistry, Semester II (theory)
21. Animal Biotechnology: BSc. LIFE SCIENCE, Semester V (Theory and Practical)
22. Immunology: BSc. LIFE SCIENCE, Semester VI (Theory and Practical)

Innovation Project/Research Projects (Major Grants/Research Collaboration)

- Facilitating Science Education via the Star College Scheme at Dept.of Zoology, Shivaji College. Funding Agency: Funded by Department of Biotechnology, Ministry of Science and Technology, Govt.ofIndia. May 2019 to till date.
- Foldscope Project: Making Science Education popular in India using Frugal inventions like Foldscope.. Funded by Department of Biotechnology, Ministry of Science and Technology, Govt.ofIndia, July 2018 to Oct.2019
- Co-Project Investigator of a research project, **“To record the seasonal variation of invertebrate biodiversity in Riparian zone of the Yamuna River in Delhi-NCR region by using foldscope as a research tool”**, sanctioned by the Department of Biotechnology, Govt. of India. Project extension from March 30th 2019 to 18th September 2019
- **TITLE:** “A Dried Blood Spot collection study for detection of Brucellosis in Bovine Population of India: an ELISA based system specific to Omp25 and Omp28 proteins of *Brucella abortus*.” **FUNDING AGENCY:** University of Delhi, July 2015 to July 2016

Publications Profile (Research Papers/Books)

List of patents

- **Rakesh Bhatnagar and Parul Kulshreshtha.** “A novel bispecific monoclonal antibody capable of cross reacting with the lethal factor(LF) and edema factor(EF) and neutralizing edema toxin(ET) as well as lethal toxin(LT) of *Bacillus anthracis*”.
 - **International [PCT] Patent Application No. PCT/IN2011/000191**
- LINK:**
<http://www.ncbi.nlm.nih.gov/pubmed?term=Kulshreshtha+Parul%5Bauthor%5D&cmd=detailssearch>
- Samer Singh, Divya Kandari, Manish, **Parul Kulshreshtha**, Shashi Kala Verma and Rakesh Bhatnagar. Anthrax Prevention through Vaccine and Post-Exposure therapy. 2020. Expert Opinion On Biological Therapy. (ACCEPTED INVITED REVIEW)
 - Kant N, **Kulshreshtha Parul**, Singh R, Mal A, Dwivedi A, Ahuja R, Mehra R, Tehlan M, Ahmed P, Kaushik S, Shipra, Kumar S, Mohammad A, Shukla S, Singh D, Bhatnagar R. A study to identify the practices of the buffalo keepers which inadvertently lead to the spread of brucellosis in Delhi. BMC Vet Res. 2018 Nov 6;14(1):329. doi: 10.1186/s12917-018-1670-2.
 - Prevalence of Brucellosis and awareness of its spread. 2018. Nimita Kant; **Parul Kulshreshtha**, Rashmi Singh; Anuradha Mal; Shashikant kumar, Mohit Tehlan, Amita Dwivedi; Rinkle Mehra; Riya Ahuja; Shilpa Kaushik and Paritosh Ahmed. DUJURI, Vol4:43-49.
 - Joon S, Gopalani M, Rahi A, **Parul Kulshreshtha**, Gogoi H, Bhatnagar S, Bhatnagar R. Biochemical characterization of the GTP sensing protein, CodY of *Bacillus anthracis*. Pathogens and Diseases. 2017 May 3. doi: 10.1093/femspd/ftx048. [Epub ahead of print]. **Impact Factor: 2.4**
 - **Parul Kulshreshtha**, Ashutosh Tiwari, Priyanka, Shikha Joon, Subrata Sinha and Rakesh Bhatnagar. Investigation of a panel of monoclonal antibodies and polyclonal sera against anthrax toxins resulted in identification of an anti-lethal factor antibody with disease-enhancing characteristics. *Molecular Immunology*. Volume 68, Issue 2, Part A, December 2015, Pages 185–193. **Impact factor: 3**
 - Alisha Dhiman, Sonika Bhatnagar, **Parul Kulshreshtha**, Rakesh Bhatnagar. (2014) Functional characterization of WalRK: A two-component signal transduction system from *Bacillus anthracis*.

FEBS Open Bio, 4 , 65–76

- **Parul Kulshreshtha**, Hemant Jaiswal, Sneha Agarwal and Rakesh Bhatnagar. (2012). Active immunization of S-layer homology motif protects mice model from anthrax challenge. *Molecular Immunology*. 50(1-2): 18-25. **Impact factor: 3**
- Abstract published in the abstract book of Bacillus ACT'2011, the international conference on *B.anthraxis, B.cereus&B.thuringiensis*.
- **Parul Kulshreshtha** and Rakesh Bhatnagar (2011). Inhibition of anthrax toxins with a bispecific monoclonal antibody that cross reacts with edema factor as well as lethal factor of *Bacillus anthracis*. *Molecular Immunology* 48(15-16):1958-65. **Impact factor: 3**
- Shivangi Agarwal*, **Parul Kulshreshtha***, D.B. Mukku* and Rakesh Bhatnagar (2008). α -enolase binds to human plasminogen on the surface of *Bacillus anthracis*. *Biochim.Biophys Acta*. 1784:986-94. **Impact factor: 3.3**

***Equal contribution of the authors**

♣ [SEQUENCES IN GENE BANK](#)

- ♣ **VHLETscfv: Accession number: JN316285**, Sequence of Heavy chain variable region of full length antibody cross-reactive with toxins of anthrax
- ♣ **VLLETscfv: Accession number: JN316286**, Sequence of Light chain variable region of full length antibody cross-reactive with toxins of anthrax

Conference/Seminar/Faculty Development Programme/Workshop

- Resource Person for the online Star College summer training conducted on Bioinformatics of reverse-vaccinology on Zoom Pro platform, “Reverse Vaccinology: a relevant technique for vaccine generation in the post-pandemic era” from 6th July 2020 to 10th July 2020.
- Conducted Star College Practicals on Zoom Pro platform on 22nd June 2020, title, “To demonstrate diffusion of proteins of different sizes across the semi-permeable membrane/ dialysis tubing of different molecular weight cut off limits and detection by SDS-PAGE”
- Conducted online Career Orientation on the Departmental Zoom Pro platform, title of the talk, “The paths less considered by the Young scientists:some off-beat options and scholarships” on 16th June 2020.
- Member of the Organizing Committee for the Webinar, “Biodiversity and Public Health”, organized by the Eco-Club, Shivaji College, University in collaboration with Society for Ecological Research and Natural Resource Management on May 19th 2020 at Zoom Platform of Shivaji College.
- Member of the Organizing Committee for the Webinar, “Cyber Crime, Law and Security” at Zoom Platform of Shivaji College, Delhi, India on 12th May 2020.
- Member of the Organizing Committee for the Webinar, “Biosafety measures and Biocontainment of pathogens in Biological Research” on the Zoom Platform of Shivaji College, Delhi, India on 30th April 2020.
- Member of the Organizing Committee for the Webinar, “Immunity and Nutrition” on the Zoom Platform of Shivaji College, Delhi, India on 22nd April 2020.
- National Foldscope Trainer at the CodeIndia Training Program [an initiative of the office of the Principal Scientific Advisor to Govt. of India] conducted at the Jawahar Navodaya Vidyalaya, Jaffarpur Kalan, New Delhi, India on 6th Dec.2019.
- Resource Person at the Lab skill training program for Lab Assistants and attendants held between 27th Nov to 2nd Dec.2019 at Department of Zoology, Shivaji College.
- National Foldscope trainer for the workshop sponsored by Department of Biotechnology, Govt. of India for teachers and students of Aspirational Districts of Jharkhand at Birla Institute of Technology, Mesra, Ranchi, India on Oct.22nd and 23rd 2019.
- Workshop Instructor of the One-day workshop on “Assembly and Use of Foldscope” on 18th Oct.2019 at Deen Dayal Upadhyaya College, University of Delhi, India under the aegis of the Science Foundation.
- Member - Organizing committee National Seminar on “Recent Trends in Biological Research and Career Prospects” organized at Shivaji College, University of Delhi, India under the auspices of the

- DBT Star College Scheme Program on 27th September 2019.
- Organizing Member of the International Seminar on Science, Environment and Spirituality held at Shivaji College, India on September 13, 2019.
 - Member of the Organizing Committee for the Annual Fest of Ecoclub Peepal held on 29th March 2019 at Shivaji College, India.
 - Workshop Instructor of the Department of Biotechnology [Government of India] sponsored, Field workshop on “Water and soil sampling techniques to study the Yamuna river biodiversity” on March 31st 2019.
 - Resource Person of the Department of Biotechnology [Government of India] sponsored, Hands-on workshop on Foldscope Assembly and uses” on April 2nd 2019 at Department of Zoology, Shivaji College, India.
 - Resource Person of the Department of Biotechnology [Government of India] sponsored, Research internship program to study the ecological parameters and invertebrate diversity of Yamuna River in Delhi till 15th April 2019, India.
 - Resource Person of the Department of Biotechnology [Government of India], hands-on workshop conducted by Dr. Jim Cybulski, “Unfolding the foldscope” on 15th April 2019 at the Department of Zoology, Shivaji College, India.
 - Presented the research work conducted for the research project “**To record the seasonal variation of invertebrate biodiversity in Riparian zone of the Yamuna River in Delhi-NCR region by using foldscope as a research tool**”, to the Principal Scientific Advisor to Govt. of India, Prof. K. Vijay Raghavan at a special visit to Shivaji College on 1st May 2019, based on the 1st year project report submitted to Dr. Shailja V. Gupta [the Senior Adviser to PSA to Govt. of India].
 - Member of the organizing committee of Nishkam-2019, the Annual Festival of NSS of Shivaji College.
 - Poster entitled, “Seroprevalence survey of brucellosis in buffalo population of Delhi NCR region” was presented at National symposium on Trends in research and Innovations in life sciences at Undergraduate level organized by Dept of Zoology of Deen Dayal Upadhyaya College, New Delhi at School of Biotechnology, Jawaharlal Nehru University, India on 30th March 2016.
 - Poster entitled, “Seroprevalence survey of brucellosis in buffalo population of Delhi NCR region” was presented at BioEpoch 2016 at School of Biotechnology, Jawaharlal Nehru University, India on 14th March 2016.
 - Poster entitled, “Investigation of a panel of monoclonal antibodies and polyclonal sera against anthrax toxins resulted in identification of an anti-lethal factor antibody with disease-enhancing characteristics” was presented at Bacillus ACT 2015 at Delhi, India on 29th Oct. 2015
 - **Best Poster Award** at Bacillus ACT ‘2011 on 13th August 2011, International conference on *B.anthraxis*, *B.cereus* and *B.thuringiensis* held at Belgium, for poster entitled, “A monoclonal antibody cross-reactive with edema toxin and lethal toxin of *B.anthraxis* protects mice from anthrax toxins.”
- **ORAL PRESENTATION** at ICMBBB International Conference at Dubai from 28th-29th January 2016. Title: “Capability of a Single Antigen to Induce Both Protective and Disease Enhancing Antibody: An Obstacle in the Creation of Vaccines and Passive Immunotherapies.”
- **ORAL PRESENTATION** at International Conference on Recent Research in Biomedical Engineering, Cancer Biology, Stem Cells, Bioinformatics and Applied Biotechnology (BECBAB-2017) Organized by “Krishi Sanskriti” on 25th February, 2017 at Jawaharlal Nehru University. Title: “3D Bioprinting: a Science of new possibilities and new cures.”

Research Guidance (Supervision of Doctoral Thesis/Dissertations)

Co-Guide of Junior Research Fellow Miss Deuvshree Sharma from 3rd July'2018 to 3rd July'2019. Project: ,“To record the seasonal variation of invertebrate biodiversity in Riparian zone of the Yamuna River in Delhi-NCR region by using foldscope as a research tool”, sanctioned by the Department of Biotechnology, Govt. of India.

Awards and Distinctions

- ◆ SERB division of Department of Science and Technology, Government of India awarded **Travel grant** to attend ICMBBB 2016 at Dubai from 28th-29th January 2016.
- ◆ Travel Grant by **American Society of Microbiology** to attend international Conference, Bacillus ACT 2015.
- ◆ **Best Poster Award** at Bacillus ACT '2011, International conference on *B.anthraxis*, *B.cereus* and *B.thuringiensis* held at Belgium, Title of poster, “A monoclonal antibody cross-reactive with edema toxin and lethal toxin of *B.anthraxis* protects mice from anthrax toxins.”
- ◆ Department of Science and Technology, Government of India awarded **Travel grant** to attend Bacillus ACT '2011.
- ◆ Qualified the **National Eligibility Test (NET) taken by Council of Scientific and Industrial Research-University Grants Commission** of India to do research and lectureship in India(held in Dec. 2005 and June 2006).
- ◆ Awarded **Senior Research Fellowship in 2010** by **Indian Council of Medical Research, India**, for project entitled, “Immunological characterization of the SLH domains present in S-layer proteins of *B.anthraxis*”.
- ◆ Awarded **Research Associate Fellowship in 2012** by **Indian Council of Medical Research, India** for project entitled, “Immunological characterization of the SLH domains present in S-layer proteins of *B.anthraxis*”.
- ◆ Awarded **SCIENCE MERITORIUS** Scholarship given by University of Delhi for highest marks in Zoology for year 2002

Memberships

1. Life Member of ‘Society for Biosafety,India’.
2. Member of SERNRM, the Society for Ecological Research and Natural Resources Management

Other Academic Activities

Foldscope Super Mentor for India: Making science education popular in India with frugal invention like foldscope.

Cultural/ Extracurricular Activities

Member of Eco-Club of Shivaji College, University of Delhi
Member of National Service Scheme till June 2020.

Signature of Faculty Member