

Mukesh Thakur, Ph.D.

Scientist - C
 Centre for DNA Taxonomy, Molecular Systematics Division
 Zoological Survey of India, Prani Vigyan Bhawan, M Block
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MEMBER- IUCN/SSC- Deer Specialist Group

CV updated on Jan. 25th 2018

CAREER INTERESTS:

Landscape Genetics, Conservation Genomics, Molecular Ecology and Wildlife Conservation.

ACADEMIC CREDENTIALS:

- 2008-2012 **Ph.D. Biotechnology**, Kurukshetra University, Haryana, India
Research Topic: *Molecular genetic diversity of Red Junglefowl (Gallus gallus) in northern India and its admixture with domestic chicken*
Supervisor: Prof. R.P. Mandhan, Deptt. of Biotechnology, KUK, Haryana
Co-Supervisor: Prof. S. Sathyakumar, WII, Dehradun
- 2004-2006 **M.Sc. Biotechnology, (71.80 %)**, C.C.S. University, Meerut, UP, India
Research Topic: *Cloning and Transformation of Large Subunit of Rubisco (rbcL) gene isolated from Brinjal (Solanum melongena).*
Supervisor: Dr. Manjusha Verma, NRC on DNA Fingerprinting, New Delhi.
- 2004-2005 **Post Graduate Diploma in Journalism and Mass Communication (64.6 %)**, Uttar Pradesh Rajarshi Tandon Open University, Allahabad –Distant Learning Programme.
- 2001-2004 **B.Sc. Biological Sciences (73.17%)**, C.C.S. University, Meerut, UP, India

PROFESSIONAL RESEARCH EXPERIENCE:

- April 2018- till date **Scientist- C**, Zoological Survey of India, Head Quarter, Kolkata 700053, West Bengal.
- June 2016-April 2018 **Visiting Scientist/CAS PIFI Fellow** (equivalent to Associate Professor), Kunming Institute of Zoology, Kunming, Yunnan 650203, P.R. China
- July 2015- March 2017 **Assistant Professor**, Amity Institute of Wildlife Sciences (AIWS), Amity University, Sector 125, Noida 201 313, Uttar Pradesh, India
- July 2013- June 2015 **Young Scientist Affiliate**, Wildlife Institute of India, Dehradun, Uttarakhand, India (Project: *Distribution, Population Status and Conservation Genetics of Cheer Pheasant (Catreus wallichii) in Himachal Pradesh*).
- June 2012-March 2013 **Research Associate**, National Dairy Research Institute, Karnal, Haryana, India (Project: *Elucidating the physiological and genomic regulation process of follicular development, oocyte maturation and embryogenesis in buffalo*).
- June 2011- May 2012 **Senior Research Fellow**, Wildlife Institute of India, Dehradun,

	Uttarakhand, India (Project: <i>Population genetics of Asiatic Black Bear Ursus thibetanus in Dachigam landscape, Jammu & Kashmir, India</i>).
March 2009- Oct. 2010	Senior Research Fellow , Wildlife Institute of India, Dehradun, Uttarakhand, India (Project: <i>Conservation of Red Junglefowl Gallus gallus in India</i>).
March 2007- March 2009	Junior Research Fellow , Wildlife Institute of India, Dehradun, Uttarakhand, India (Project: <i>Conservation of Red Junglefowl Gallus gallus in India</i>).
Dec 2006- March 2007	Lecturer , Shyamlal Saraswati Mahavidhyalaya (P.G) College, Shikarpur, Bulandsaher, UP.

TRAINING/PROJECT/DIPLOMA PURSUED:

1. **"3rd International Training Course on Frontiers in Animal Ecology and Conservation Biology"** held at Institute of Zoology, Chinese Academy of Sciences, Beijing, 29th Aug to 7th Sept. 2016.
2. **"Faculty Development Programme"** at Amity Academic Staff College, Amity University, Noida, UP, India (12th to 14th August, 2015).
3. **"Nikon School workshop on Basic D-SLR"** at Dehradun, Uttarakhand, India (14th Feb. 2015).
4. **"Spring school: A practical hands-on introduction to landscape genetics"** at University of Göttingen, Germany (10th to 15th March 2014).
5. **"School and Discussion Meeting on Population Genetics and Evolution"** at International Centre for Theoretical Sciences, Indian Institute of Sciences, Bangalore (15th to 24th February 2014).
6. **"Cloning Research for Quality Animal Production"** at Animal Biotechnology Center, National Dairy Research Institute, Karnal, Haryana (21st to 30th November 2011).
7. **"Bioinformatics Applications in Genomics & Proteomics"** at DISC, Deptt. of Biotechnology, Guru Nanak Dev University, Amritsar, Punjab, India (5th to 6th November 2011).
8. **"Bioinformatics and Computation Biology"** at Indian Institute of Technology (IIT), New Delhi, India. (10th to 11th August 2010).
9. **"Genetic Analyzer Sequencing & Fragment Analysis Applications"** state of art genomics and proteomics training facility Lab India Research and Development Laboratory, Gurgaon, Haryana, India (7th to 9th January 2009).
10. **"Bioinformatics tools used in molecular biology"** at ACS, Biotech Park, Lucknow, India- 6th June to 5th July 2007).
11. M.Sc. summer training on **"Estimation of Andrographolide Content from the plant Andrographis paniculata and Estimation of Essential Oil Content, Physiochemical Constants and Aroma Constituents in Ocimum species"** from National Bureau of Plant Genetic Resources Germplasm Evaluation Division, Pusa campus, New Delhi (18th June to 24th August 2005).

RESEARCH GRANTS :

- 2017 **Research Grant of Rs. 35.00 lakhs** from Department of Science and Technology (DST) under INSPIRE- Faculty Award to carry out a research project entitled "Conservation of Red Panda (*Ailurus fulgens*) in the Eastern Himalaya: evaluating distribution, population status and conservation genetics for long term management and implications in conservation" Grant No. DST/INSPIRE/04/2016/002246.
- 2014 **Research Grant of \$ 48,000** from Kunming Institute of Zoology (KIZ), Chinese Academy of Sciences (CAS), Kunming, Yunnan 650 223, P.R. China to undertake a project entitled "Re-sequencing of genome of *Gallus gallus* in India" Grant No. 2016VBB049.
- 2013 **Research Grant of Rs. 21.75 lakhs** from Department of Science and Technology (DST) under Young Scientist Fast Track Scheme to carry out a research project entitled "Distribution, Population Status and Conservation Genetics of Cheer Pheasant (*Catreus wallichi*) in Himachal Pradesh"- Grant No. SB/FT/LS-223/2012.

ACADEMIC HONORS:

- Feb 2017 **INSPIRE Faculty Award** from Science and Engineering Research Board, DST, New Delhi.
- June 2016 **Visiting Professorship** under Chinese Academy of Sciences-President's International Fellowship Initiative (CAS-PIFI) to work at Kunming Institute of Zoology, Kunming, China.
- July 2013 **Young Scientist Award** from Science and Engineering Research Board, DST, New Delhi.
- Sept. 2009 **Second Best Presentation Award in XXIII Annual Research Seminar** at Wildlife Institute of India, Dehradun, 19th -20th September, 2009

TRAVEL GRANTS AND HONORARIUM:

- Oct. 2016 **Travel Grant (¥ 4700)** from the Organizing Committee to attend 6th *International Galliformes Symposium organized -World Pheasants Association (WPA), Beijing Forestry University, China, 21st-23rd October 2016*
- Aug. 2016 **Travel Grant (\$700.00)** from the Organizing Committee to attend 3rd International Training Course on Frontiers in Animal Ecology and Conservation Biology held at Beijing, 29th Aug to 7th Sept. 2016.
- Oct. 2015 **Travel Grant (\$ 550.00)** from the Organizing Committee of Beijing Forum to attend Student Conference for Conservation Science (SCCS) held at Peking University, Beijing during 5th to 8th Nov. 2015.
- Oct. 2015 **Travel Grant (Rs. 23,000.00)** from Amity University, Noida to attend Student Conference for Conservation Science (SCCS) held at Peking University, Beijing during 5th to 8th Nov. 2015.
- June 2014 **Travel Grant (¥ 8000.00)** from the Organizing Committee to attend the 34th International Society of Animal Genetics Conference held at Xi'an, China during July 28th – August 1st 2014.

June 2014	Grant (Rs. 45,832.00) under International Travel Scheme from the SERB-DST to attend the 34 th International Society of Animal Genetics Conference held at Xi'an, China during July 28 th – August 1 st 2014.
Mar. 2014	Travel Grant (€ 800.00) from the organizing Committee to attend spring school: Landscape Genetics held at University of Gottingen, Germany during Mar 10 th -15 th 2014.
Sept. 2013	Honorarium of United Arab Emirates Dirham (AED 4800.00) to host a hands on training on DNA barcoding at Advanced Biotechnology Centre, Dubai, UAE from 14th to 18th Sept 2013
Sept. 2013	Travel Grant (\$ 1000.00) from Organizing Committee of Beijing Forum to attend Student Conference for Conservation Science (SCCS) held at Peking University, Beijing during 1 st to 5 th Nov. 2013.
Nov. 2010	Travel Grant (€ 250.00) from World Pheasants Association to attend 5th International Galliformes Symposium held at Chiang Mai, Thailand, 7-14 November 2010.
May 2010	Honorarium of Rs.1500/- from NISCAIR, Pusa, New Delhi for contributing a popular article in <i>Science Reporter</i> , Vol.47 (5), May 2010.
Oct. 2007	Travel Grant (€ 397.165) from World Pheasants Association to attend 4th International Galliformes Symposium held at Chengdu, Sichuan, China, 14- 21 October, 2007.

RESEARCH PUBLICATIONS: († indicates corresponding author)

2017

1. Brook, S.M., Donnithorne-Tait, D., Lorenzini, R., Lovari, S., Masseti, M., Pereladova, O., Ahmad, K. & **Thakur, M.** 2017. *Cervus hanglu*. The IUCN Red List of Threatened Species 2017: e.T4261A120733024.
2. Shukla, M., Joshi, B.D., Kumar, V.P., **Thakur, M.**, Mehta, A.K., Sathyakumar, S. Goyal, S.P. (2017). Species dilemma of musk deer (*Moschus spp*) in India: Molecular data on Cytochrome 2 Oxidase I suggest distinct genetic lineage in Uttarakhand than other species. *Mitochondrial DNA Part A*. Submitted (GDNA-FLRP-2017-0335).
3. Kumar, V.P., Shukla, M., Rajpoot, A., **Thakur, M.**, Nigam, P., Kumar, D. and Goyal, S.P. (2017). Sustainable DNA Barcoding of Indian Cervidae and their Proposition in Wildlife Forensic and Conservation: A Documentary Approach. *Mitochondrial DNA Part B: Resources*. Submitted (TMDN-2017-0338).
4. **Thakur, M.**, Schättin, E.W. and William, M.J. (2017). Questioning ignorance of widespread species in conservation plannings and recovery actions. *Biodiversity and Conservation*, Submitted (MS ID: BIOC-S-17-00804).
5. Brook, S.M., **Thakur, M.**, Ranjitsinh, M.K., Donnithorne-Tait, D. & Ahmad, K. 2017. *Cervus hanglu ssp. hanglu*. The IUCN Red List of Threatened Species 2017: e.T113259123A113281791.
6. **Thakur M.**, Javed, R. Kumar, V.P., Shukla, M., Singh, N., Maheshwari, A., Dong Dong, Wu and Zhang, Y.P. (2017). DNA forensics in combating food frauds: a case study from China in identifying canned meat labeled as deer origin. *Current Science*, 112, 12, Pp.2449-2442 [Impact factor- 0.833] doi: 10.18520/cs/v112/i12/2449-2452.

2016

7. Kumar, V. P., Rajpoot, A., **Mukesh**, Kumar, D. and Goyal, S.P. (2016). Genetic Based Species Identification and Tracking of the Geographic Origin of a Fully Tanned Animal Skin in Wildlife Forensics. *Forensic Res Criminol Int J*, 2(3): 00058, Pp. 1-7. [Peer reviewed international journal]
8. Kumar, V. P., Rajpoot, A., **Mukesh**, Shukla, M., Kumar, D. and Goyal, S.P. (2016). Illegal trade of Indian Pangolin (*Manis crassicaudata*): Genetic study from scales based on mitochondrial genes, *Egyptian Journal of Forensic Sciences*. <http://dx.doi.org/10.1016/j.ejfs.2016.06.008>. [Peer reviewed international journal]
9. Kumar, V. P., **Thakur**, M., Rajpoot, A., Joshi, B. D., Nigam, P., Ahmad, K., Kumar, D. and Goyal, S. P.(2016). Resolving the Phylogenetic Status and Taxonomic Relationships of the Hangul (*Cervus elaphus hanglu*) in the Family Cervidae. *Mitochondrial DNA Part A*. <http://dx.doi.org/10.1080/24701394.2016.1197217> [Impact factor- 1.760]
10. Li, X., Han, X., Bao, J., Liu, Y., Ye, A., **Thakur**, M., Liu, H. (2016). Nicotine increases eclampsia-like seizure threshold and attenuates microglial activity in rat hippocampus through the $\alpha 7$ nicotinic acetylcholine receptor. *Brain Research*, 2016 Apr 19. pii: S0006-8993(16)30263-3. doi: 10.1016/j.brainres.2016.04.043. ISSN No. 0006-8993 [Impact factor-2.856].
11. **Mukesh**†, Sharma, L.K. and Sathyakumar, S. (2016). Hangul cry for discrete conservation status. IUCN/SSC- *Deer Specialist Group Newsletter May 2016*.
12. Maheshwari, A., Niraj, S.K., Sathyakumar, S., **Thakur**, M. and Sharma, L.K. (2016). Snow leopard illegal trade in Afghanistan: A rapid survey. *CATnews* 64 Autumn 2016
13. **Mukesh**†, Garg, S., Javed, R., Sood, S. and Singh, H. (2016). Genetic evaluation of ex situ conservation breeding projects of cheer pheasant (*Catreus wallichii*) and western tragopan (*Tragopan melanocephalus*) in India. *Zoo Biology*, 35: 269 – 273. ISSN 1098-2361 (online) doi: 10.1002/zoo.21263 [Impact factor- 0.953]. <http://onlinelibrary.wiley.com/doi/10.1002/zoo.21263/abstract>
14. Vipin, Sharma, V. and **Mukesh** (2016). A Novel Model Approach for Detecting Wild Animals through Blood Fed Mosquitoes: Scope in Indirect Wildlife Sampling and Wildlife Forensics. *International Journal of Allied Practice, Research and Review*, 5, Pp. 01-08, ISSN 2350-1294 [Peer reviewed international journal].

2015

15. **Mukesh**†, Kumar VP, Sharma LK, Shukla M, Sathyakumar S. (2015). Pragmatic Perspective on Conservation genetics and demographic history of the last surviving population of Kashmir red deer (*Cervus elaphus hanglu*) in India. *PLoS ONE* 10(2): e0117069. ISSN No. 1932-6203. doi:10.1371/journal.pone.0117069. [Impact factor- 3.54]. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0117069>
16. **Mukesh**†, Sharma LK, Charoo SA, Sathyakumar S (2015). Conflict Bear Translocation: Investigating Population Genetics and Fate of Bear Translocation in Dachigam National Park, Jammu and Kashmir, India. *PLoS ONE* 10(8): e0132005. ISSN No. 1932-6203. doi:10.1371/journal.pone.0132005. [Impact factor- 3.54]. <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0132005>

17. **Mukesh†**, Sharma, L.K., Charoo, S.A. and Sathyakumar, S. (2015). Species identification and molecular sexing from feces of Kashmir stag (*Cervus elaphus hanglu*). *Conservation Genetics Resources*. 7, 3: 677-680. ISSN: 1877-7260 (Online) [Impact factor- 0.446] <http://link.springer.com/article/10.1007/s12686-015-0475-x>

2013

18. **Mukesh†**, Fernandes M., Jianlin, H. and Sathyakumar, S. (2013). Genetics driven interventions for *ex situ* conservation of red junglefowl (*Gallus gallus murghi*) populations in India. *Zoo Biology*, 32(5):476-83 ISSN 1098-2361 (online), DOI: 10.1002/zoo.21081. [Impact factor- 0.953]. <http://onlinelibrary.wiley.com/doi/10.1002/zoo.21081/abstract>
19. **Mukesh†**, Sharma, L.K., Kumar, V.P., Charoo, S.A., Mohan, N., Sathyakumar, S. and Goyal, S.P. (2013). Loss of genetic diversity and inbreeding in Kashmir red deer (*Cervus elaphus hanglu*) of Dachigam National Park, Jammu & Kashmir, India. *BMC Research Notes*, 6:326. ISSN 1756- 0500. [Peer reviewed international journal] <http://www.biomedcentral.com/content/pdf/1756-0500-6-326.pdf>
20. **Mukesh†**, Sharma, L.K., Charoo, S. A. and Sathyakumar, S. (2013). An improved and reliable molecular sexing technique for Asiatic black bears, *Ursus thibetanus*. *Conservation Genetics Resources*, 4, 1079-1082. ISSN: 1877-7260 (Online) [Impact factor- 0.446] <http://link.springer.com/article/10.1007/s12686-013-9988-3>
21. **Mukesh†**, Singh, S.K., Shukla, M., Sharma, L.K., Mohan, N., Goyal S.P. and Sathyakumar, S. (2013). Identification of galliformes through Forensically Informative Nucleotide Sequencing (FINS) and its implication in wildlife forensics. *Journal of Forensic Research*. 4:195, ISSN 2157-7145. doi: 10.4172/2157-7145.S3-001 [Impact factor- 0.564] <http://www.omicsonline.org/ArchiveJFR/ArticleinpressJFR.php>

2011

22. **Thakur Mukesh**, Rai, I.D., Mandhan R.P. and Sathyakumar S. (2011). A panel of polymorphic microsatellite markers in Himalayan monal *Lophophorus impejanus* developed by cross-species amplification and their applicability in other Galliformes. *European Journal of Wildlife Research*, 57:983–989, ISSN 1439-0574 (online) DOI 10.1007/s10344-011-0494-1.[Impact factor- 1.403] (<http://www.springerlink.com/index/Q053535578TH087M.pdf>)
23. **Mukesh†** and Sathyakumar, S. (2011). Eighteen polymorphic microsatellites for domestic pigeon *Columba livia* var. *domestica* developed by cross species amplification of chicken markers. *Journal of Genetics*, 90, e86–e89, ISSN 0973-7731(online) [Impact factor- 1.108]. (<http://www.springerlink.com/content/0808785333r56016/>)
24. **Mukesh†**, Javed, R., Gaur, U., Jianlin, H. and Sathyakumar, S. (2011). Cross species applicability of chicken microsatellite markers for investigation of genetic diversity of Indian duck *Anas platyrhynchos* populations. *African Journal of Biotechnology*, 10 (76), 17623-17631. ISSN: 1684-5315 [Impact factor- 0.573] <http://www.academicjournals.org/ajb/PDF/pdf2011/30Nov/Mukesh%20et%20al.pdf>

25. **Mukesh**, R.S. Kalsi, R.P. Mandhan and S. Sathyakumar. (2011). Genetic diversity studies of red jungle fowl across its distribution range in Northern India. *Asian Journal of Biotechnology*, 3: 293-301, ISSN 1996- 0700. [Peer reviewed international journal] (<http://scialert.net/qredirect.php?doi=ajbkr.2011.293.301&linkid=pdf>)
26. **Mukesh**, Fernandes, M., Mandhan R.P. and Sathyakumar, S. (2011). Comparison of different parameters of invasive and non invasive sampling methods for microsatellite genotyping: a case study from Red Junglefowl and its application for other Galliformes, *Journal of Research in Biology*, 1: 38- 43, ISSN 2231- 6299 (online) [Peer reviewed international journal] <http://jresearchbiology.com/Documents/RA0017.pdf>

2010

27. Javed R. and **Mukesh** (2010). Current Research Status, Databases and Application of Single Nucleotide Polymorphism. *Pakistan Journal of Biological Science*, 13: 657-663, ISSN 1028-8880. [Peer reviewed international journal] (<http://scialert.net/qredirect.php?doi=pjbs.2010.657.663&linkid=pdf>)

2009

28. Fernandes, M., **Mukesh**, Sathyakumar, S., Kaul, Kalsi R.S. and Sharma D. (2009). Conservation of Red Junglefowl *Gallus gallus* in India. *International Journal for Galliformes Conservation*, 1, Pp: 94–101, ISSN 2046- 2190 [Peer reviewed international journal] <http://www.pheasant.org.uk/uploads/Fernandes%20et%20al%2094-101.pdf>

POPULAR ARTICLES:

1. **Mukesh Thakur** (2014). Role of DNA Forensics in curbing illegal wildlife trade. *WWF Newsletter PANDA*, Illegal Wildlife Trade in India: Special Issue. Pp.11-12
2. **Mukesh Thakur** and Esther Wullschleger Schättin (2014). Die Ahnen des Haushuhns sind gefährdet. *Geflügel*, TIERWELT / 1/ 2, 9th January, 2014 (article published in *German language*).
3. **Mukesh Thakur** and Ruhina Javed. (2010). Frozen Zoos. *Science Reporter*, Vol.47 (05), May 2010, Pp.44-48, ISSN 0036-8512. (<http://www.nopr.niscair.res.in/handle/123456789/8798>)
4. Ruhina Javed and **Mukesh**. (2010). Gene Therapy: A Challenge for World. *Emerging Science*, Vol. 2 (4), Sept 2010, Pp. 11-15, ISSN 09764100.

BOOK CHAPTERS:

1. Fernandes, M., **Mukesh**, Sathyakumar, S., Kaul, R., Kalsi, R.S. and Sharma, D. (2007). Conservation of Red Junglefowl (*Gallus gallus*) in India- A Research Initiative. (Eds: Sathyakumar, S and Shivakumar K.) *ENVIS Bulletin*, Galliformes of India, Wildlife Institute of India, Dehradun. (http://www.wiienvis.nic.in/galliformes/WII_ENVIS_Galliformes_of_India.pdf)

RESEARCH REPORTS:

1. **Mukesh** and Sathyakumar, S. (2015). Population genetics of Asiatic black bear (*Ursus thibetanus*) in Dachigam Landscape, Kashmir, India. *Final Project Report*. Submitted to International Bear Research & Management (IBA). 27Pp.
2. **Mukesh** (2012). Molecular genetic diversity of Red Junglefowl (*Gallus gallus*) in northern India and its admixture with domestic chicken. *Ph.D. thesis*. Kurukshetra University, Kurukshetra, Haryana. 167 Pp.
3. Sathyakumar, S., Fernandes, Merwyn, **Mukesh**, Kaul, R. and Kalsi, R.S., (2012). Conservation of Red Junglefowl *Gallus gallus* in India. *Final Project Report*. Wildlife Institute of India, Dehradun. 98 Pp.
4. Fernandes, M., **Mukesh**, Sathyakumar, S., Kaul, R., and Kalsi, R.S. (2008). *Conservation of Red Junglefowl Gallus gallus in India. Interim Report – Phase I*. Wildlife Institute of India, Dehradun. 49 Pp.
5. **Mukesh** (2006). *Cloning and Transformation of Large Subunit of Rubisco (rbc L) gene isolated from Brinjal. M.Sc. Thesis*. Chaudhary Charan Singh University, Meerut. 52 Pp.

PHOTO CREDITS: TIERWELT / 1/ 2 and EXOTIS AKTUELL- scientific magazines from Germany.

SEQUENCE PUBLISHED ON NCBI: 106 sequences submitted on NCBI/GenBank

Gallus gallus (HQ285909 - HQ285916); *Francolinus pondicerianus* (JQ796700, JQ796704); *Pavo cristatus* (JQ796703, JQ796706); *Ithaginis cruentus* (JQ796701); *Lophura nycthemera* (JQ796702), *Pavo muticus imperator* (JQ796707); *Lophophorus impejanus* (JQ796705); *Cervus elaphus hanglu* (KJ937024 to KJ937036), *Pseudois nayaur* (MG053415); *Alticola stoliczkanus* (MG053416); *Ursus thibetanus* (MG053417, MG053419, MG053420, MG053421); *Vulpes vulpes* (MG053418); *Ailurus fulgens* (MG053422); *Panthera tigris tigris* (MG053423), *Gallus gallus murghi* (MG053424- MG053491).

RESOURCE PERSON/INVITED TALK

1. Coordinator- "Hands-on-Traing, DNA Barcoding : Methods and Applications", at Freshwater Biology Regional Centre, ZSI, Hyderabad during 4th to 5th January, 2018.
2. Resource Person for the "Training on Bio-monitoring of Rivers and Aquatic Ecosystems" for Telangana State Pollution Control Board at ZSI, HQ, Kolkata during 16th to 19th January 2018.
3. Resource Person for the "Green Skill Development Programmae (GSDP) advance - Course (Biodiversity Conservationists)" ZSI, Kolakta, during 15th Nov to 8th Dec 2017.
4. Resource Person for the "Green Skill Development Programmae (GSDP) 1-Foundation Course (Biodiversity Conservationists)" ZSI, Kolakta, during 10th to 20th July 2017.
5. Delivered two days lecture series on "Conservation genetics and wildlife forensics research in India" at College of Life Sciences, Sichuan University, Chengdu, China, 10th - 11th April 2017.
6. Organized one day seminar on Contemporary & future prospects in Biotechnology under alumni initiative at I.P. College, Bulandshahr, Uttar Pradesh, India, 16th March 2017.

7. Invited talk on "Conservation genetics research in India with case studies" at State Key Laboratory for Conservation and Utilization of Bio-resource in Yunnan, Yunnan University, Kunming, China, 19th September 2016.
8. Organized hands on workshop entitled "Do's and Don'ts : from field sample collection to molecular genetic analysis for ecological studies" in Young Ecologist Talk & Interact (YETI) conference held at Amity University, Noida during 17th to 20th January 2016.
9. Invited talk on "Wildlife DNA forensics and its application in identifying species from various seizures and use of Forensic Kit with emphasis on Tigers and Ivory identification" in workshop on Strengthening Wildlife Law Enforcement and Conservation in India, at Bilaspur, Achanakmar Tiger Reserve, Chhattisgarh, 11th to 12th June 2014.
10. Invited talk on "Wildlife DNA forensics and its application in identifying species from various seizures and use of Forensic Kit with emphasis on Tigers and Ivory identification" in workshop on Strengthening Wildlife Law Enforcement and Conservation in India, Melghat Tiger Reserve, Maharashtra, 9th to 10th May 2014.
11. Invited talk on "Emerging needs of strengthening wildlife forensics and DNA based techniques for wildlife crime investigations, sample collection and use of Forensic Kit with emphasis on Tigers and Ivory identification" in workshop on Strengthening Wildlife Law Enforcement and Conservation in India, Simlipal Tiger Reserve, Odisha, 22nd to 23rd Jan 2014.
12. Organized specialized training on "DNA Barcoding: from field collection to data analysis" at Advanced Biotechnology Centre, Dubai, UAE during 14th to 19th Sept. 2013.

SEMINAR/CONFERENCE/SYMPOSIUM ATTENDED/PAPER PRESENTED:

International († indicates presenting author)

2016

1. **Mukesh†**, Garg, S., Javed, R. and Singh, H. (2016). Genetic Evaluation of Ex Situ Conservation Breeding Projects of Cheer Pheasant and Western Tragopan in India. **6th International Galliformes Symposium organized -World Pheasants Association (WPA), Beijing Forestry University, China**, 21st-23rd October 2016.
2. Javed, R. and **Mukesh** (2016). Interspecies heterologous chicken microsatellites of high cross species utility with special reference to Cheer Pheasant, Western Tragopan and Himalayan Monal. **6th International Galliformes Symposium organized -World Pheasants Association (WPA), Beijing Forestry University, China**, 21st-23rd October 2016.

2015

3. **Mukesh†**, Garg, S., Sood, S. and Singh, H. (2015). Be cautious with studbook records: understanding Cheer Pheasant and Western Tragopan ex-Situ conservation projects in India. **Student Conference on Conservation Science (SCCS), Peking University, Beijing, China**. 5th to 8th Nov., 2015.

2014

4. **Mukesh†**, Fernandes, M., Jianlin, H. and Sathyakumar, S. (2014). Assessment of genetic bottleneck and population structure of captive Red junglefowl (*Gallus gallus murghii*) populations in India. **34th International Society of Animal Genetics Conference**, Xi'an, China. 27th July to 1st August 2014.
5. Wang, C., Ashari, H., **Mukesh**, Thuy, L.T., Cabarles Jr., JC. and Jianlin, H. (2014). Molecular detection of genetic introgression of domestic chicken into green and red

junglefowls. **34th International Society of Animal Genetics Conference, Xi'an, China.** 27th July to 1st August 2014.

6. **Mukesh†**, Sharma, L.K., Charoo, S.A., and Sathyakumar, S. (2014). Genetic polymorphism and population structure of Asiatic black bear (*Ursus thibetanus*) population in Dachigam NP, Jammu & Kashmir, India. **Minisymposium on Landscape Genetics, University of Gottingen, Germany.** 10th to 15th March 2014.

2013

7. **Mukesh†**, Sharma, L.K., Kumar, V.P., Charoo, S.A., Mohan, N., Goyal, S.P. and Sathyakumar, S. (2013). Evidence of low genetic variability and high inbreeding estimates in Kashmir Red deer (*Cervus elaphus hanglu*) of Dachigam National Park, Jammu & Kashmir, India. **Student Conference on Conservation Science, Peking University, Beijing, China.** 1st to 5th November, 2013.
8. Pandey, P., **Mukesh**, Singh, S.K., Nigam, P., Sankar, K., Navaneethan, B. and Goyal, S.P. (2013). Genetic diversity assessment of Indian wild gaur (*Bos gaurus gaurus*) using bovine microsatellites in population of central India. **Student Conference on Conservation Science, Peking University, Beijing, China.** 1st to 5th November, 2013.

2012

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MEMBERSHIPS IN PROFESSIONAL SOCIETY:

- Member of IUCN- SSC Deer Specialist Group [2017-2020]
- Member of Review committee – PLoS One, Conservation Genetics Resources, Current Science, Mitochondrial DNA, African Journal of Biotechnology and Food Control
- International Society of Animal Genetics [Membership no. 91375]
- International Society of Zoological Sciences [Membership no.936-I]
- Society for Conservation of Domestic Animal Biodiversity [Membership no. SOCDAB-425]

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CERTIFICATION

I, the undersigned, certify that all statement made in the application are true, complete and correct to the best of my knowledge and belief and these data correctly describe my qualifications, my experience and me.



Date:

Place: Kolkata, India

[Mukesh, Ph.D.]

My brief description and significant scientific contribution

“Destiny is no matter of chance, it is a matter of choice. It is not a thing to be waited for, it is a thing to be achieved” - William Jennings Bryan.

With this philosophy, I remain chased the world that satisfies me from inside and constant pursuit of my curiosity has brought me to the science of conservation of biodiversity. Till my post graduation however pursued in biotechnology, I developed a strong affinity and keen interest to buildup my professional career in wildlife.

Master dissertation research on *“Cloning and transformation of Rubisco (rbc L) gene isolated from Brinjal”* studied at IARI, New Delhi imparted me a practical exposure in learning various lab tools and techniques. So, it is after carefully considering & reviewing my aptitude, interest and ultimate professional ambitions, I joined Wildlife Institute of India (WII), Dehradun in March 2007 as Junior Research Fellow with a national project on *“Conservation of Red Junglefowl (Gallus gallus) in India”* and pursued my Ph.D. on *“Molecular genetic diversity of Red Junglefowl (Gallus gallus) in northern India and its admixture with domestic chicken”*. Since 2007 till date, I studied mammals and birds including Asiatic Black Bears, red deer, red junglefowl, Cheer Pheasant and Western Tragopan, etc. Briefly, I carried out two research projects at WII in the

capacity of research scholar *i.e.* Red Junglefowl [*Gallus gallus murghii*; RJF] (2007-2011) project and Asiatic black bear [*Ursus thibetanus*; ABB] (2011-2012) project.

In RJF project, I along with my team investigated the extent of genetic hybridization of RJF with domestic chicken in wild as well as in captivity giving core emphasis on population structuring, purity assessment and genetic introgression in wild genome at national level. Briefly, we sampled over 350 birds in wild & captivity that covered 21 states and 18 captive facilities. The research has identified several hybrids (which were being reared unintentionally at several zoos). Among the 11 articles that I published during my PhD, Mukesh *et al.* 2013 (*Zoo Biol.*) laid down the foundation to use genetic tools in ex-situ conservation and captive management. This article was highly commended by the Zoo curators/ authorities. For instance, I received personal appreciations from Dr. Lydia Kolter (Curator, Berlin Zoo) and Dr. Zhang Jing (Curator, Beijing Zoo). While, Dr. Esther B. Wullschleger from Switzerland get so motivated that she wrote a popular article on this study in EXOTIS AKTUELL (a scientific magazine publishes in German language). The research conducted on RJF has yielded us collaboration with two global organizations *i.e.* INRA, France and Kunming Institute of Zoology (KIZ), China. With the overlapping interest of Chinese scientists, I undertook a research project on "Re-sequencing of genome of *Gallus gallus* in India" funded by KIZ, China.

In Asiatic Black Bear project, I with my colleagues established molecular sexing and non-invasive genotyping for individual identification of black bears using non invasively collected hair samples. We investigated the pragmatic fate of bear translocation exercise which wildlife deptt. of J&K is practicing since years as a strategy planning to mitigate bear-human conflicts in Dachigam landscape. We identified bears with homing tendency to repeatedly involve in conflicts. Our article, Mukesh *et al.* 2015 (*PLoS- ONE*) highlights factors responsible for returning of bears to their first capture after translocation and suggested in formulating better and effective management plans to mitigate bear-human conflicts having long term efficacy and success.

Soon after completing the bear project, I received Young Scientist Award from Department of Science and Technology, Govt. of India and awarded research funding to conduct research on *exsitu*-conservation of Cheer Pheasant [*Caterus wallichii*; CP] in Himachal Pradesh (2013- 2015). In this project, I facilitated the wildlife deptt. of HP in better planning policies/strategies for conservation breeding and reintroduction programmes of Cheer Pheasant. The genetic analysis of founder stock has been carried out and the results published recently (Mukesh *et al.* 2016; *Zoo Biol*). I have also gained about one year post doctoral research experience (2012-2013) with National Dairy Research Institute, Karnal where I was involved in reproduction genomics of livestock and undertook lab exercises such as oocyte aspiration, oocyte cell culture, semen collection, IVF and gene expression analysis.

In addition to my official engagements with the aforesaid projects, I also investigated *hangul* genetics in India. The *hangul*, is an eastern most and the Asiatic survivor of red deer species with a current population estimates of about 150 animals which is confined to Dachigam landscape only (lesser than the area of *ca.*1000km²). The IUCN Red List had considered *hangul* a subspecies of red deer and hence categorised as '*Least Concern*' until our group presented the real facts which stood opposite to the status, it had been given. I have supervised several studies on

hangul genetics, estimating sex ratio, understanding population demography and viability analyses [Mukesh *et al.* 2013 (BMC Res. Notes); Mukesh *et al.* 2015 (*Conserv. Gent. Resour*); Mukesh *et al.* 2015 (*PLoS ONE*) and Kumar *et al.* 2016 (*Mitochondrial DNA Part A*)]. Recently, I submitted the outcome of the research to the IUCN/SSC-Deer Specialist Group authority that has appeared in DSG News letter (Mukesh *et al.* 2016- IUCN/SSC-DSG Newsletter) to upgrade the conservation status of *hangul* discrete in the red deer complex. The IUCN/SSC-DSG authority has revised the conservation status of *hangul* from Least Concern to Critically Endangered by upgrade the subspecies to species level. This has been released and a new page for *Cervus hanglu hanglu* is created on IUCN. For this contribution, I have also been awarded the membership of IUCN/SSC-Deer Specialist Group for the quadrenium 2017-2020 and personal appreciation by the Chair-IUCN/SSC-DSG. I consider this as one of mine highest level of achievements and significant contribution to wildlife research for India.

With the extreme urge and skills that I have acquired largely in conservation biology, I am serving to science with the hope to transform my knowledge and understanding of wildlife conservation by putting scientific inputs and efforts for producing better management and conservation action plans.



[Dr. Mukesh Thakur]