

DR. NIRAJ RAI

Scientist C

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EDUCATION:

Ph.D (2014), CSIR-Centre for Cellular and Molecular Biology, Hyderabad (Degree obtained from JNU, New Delhi).

M.Sc Biotechnology (2006), Guru Jambheshwer University, Hissar, Haryana.

RESEARCH EXPERIENCE:

- PhD student (2007-2014) at **CSIR-CCMB, Hyderabad**
- Research Associate (2014-2016) at **CSIR- CCMB, Hyderabad**
- Visiting studentship (2008-2009) at **Leverhulme Centre for Human Evolutionary Studies, University of Cambridge, UK.**
- Visiting Research Fellow (2016-2017) at **Harvard Medical School, Harvard University, Boston**

PUBLICATIONS:

- **Rai N**, Chaubey G, Tamang R, Pathak AK, Singh VK, Karmin M, Singh M, Rani DS, Kashyap M, Narvariya S, Reddy AG, van Driem G, Underhill PA, Villemans R, Kivisild T, Singh L, Thangaraj K (2012). *The phylogeography of y-chromosome haplogroup h1a1a-m82 reveals the likely Indian origin of the European Romani populations.* **PLoS One** 7:e48477
- **Rai N**, Taher N, Singh M, Chaubey G, Jha AN, Singh L, Thangaraj K (2014) *Relic excavated in western India is probably of Georgian Queen Ketevan.* **Mitochondrion** 2014 Jan;14(1):1-6
- Raj SM*, Halebeedu P, Kadandale JS, Mirazon-Lahr M, Romero IG, Yadhav JR, Iliescu M, **Rai N**, Crivellaro F, Chaubey G, Villemans R, Thangaraj K*, Muniyappa K, Chandra HS, Kivisild T* (2013). *Patterns of variation at diabetes and obesity associated loci may mirror neutral patterns of human population diversity and diabetes prevalence in India.* **Ann. Hum. Genet.** 77:392-408.
- Mallick CB, Iliescu M, Möls M, Hill S, Tamang R, Chaubey G, Goto R, Simon YW, Irene GR, Crivellaro F, Hudjashov G, **Rai Niraj**, Metspalu M, Taylor NM, Pitchappan R, Singh L, Lahr MM, Thangaraj K, Villemans R, and Kivisild T (2013). *SLC24A5 gene is the main determinant of skin pigmentation variation in South Asia* **Plos Genetics**, 2013 Nov;9(11):e1003912.
- Chaubey G, Singh M, Crivellaro F, Tamang R, Nandan A, Singh K, Sharma V, Pathak A, Shah A, Sharma V, Ilumae AM, Singh VK, **Rai Niraj**, Karmin M, Phillip A, Verma A, Prank E, Singh VK, Li B, Periyasamy G, Rani DS, Reddy AG, Premkumar K, Vishnupriya S, Pande V, Parik J, Roots S, Endicott P, Metspalu M, Lahr MM, Driem GV, Villemans R, Kivisild T, Singh L, and Thangaraj K. (2014) *Genetic variation amongst the Tharu: A linguistic founder lineage and*

subsequent population history and genetic structure evolution. **European Journal of Human Genetics**, 2014, 1-9, doi: 10.1038/ejhg. 2014.36

- Gyaneshwer Chaubey*, Manvendra Singh*, **Niraj Rai***, Mini Kariappa,*, Kamayani Singh, Ashish Singh, Deepankar Pratap Singh, Rakesh Tamang, Deepa Selvi Rani, Alla G. Reddy, Vijay Kumar Singh, Lalji Singh & Kumarasamy Thangaraj *Genetic affinities of the Jewish populations of India*. **Nature Scientific Reports**, 2016 Jan 13; 6:19166. doi: 10.1038/srep19166. (* equal first author).
- Anshuman Mishra, Sheikh Nizammuddin, Chandana Basu Mallick, Sakshi Singh, Satya Prakash, Niyamat A. Siddiqui, **Niraj Rai**, S. Justin Carlus, D.V.S. Sudhakar, Vishnu P Tripathi, Märt Möls, Xana Kim-Howard, Hemlata Dewangan, Abhishek Mishra, Alla G. Reddy, Biswajit Roy, Krishna Pandey, Gyaneshwer Chaubey, Pradeep Das, Swapan K. Nath, Lalji Singh, Kumarasamy Thangaraj *Genotype-phenotype study of middle Gangetic plain in India reveals association of rs2470102 with skin pigmentation* **Journal of Investigative Dermatology, Nature Publishing Group**, Volume 137, Issue 3, March 2017, Pages 670–677
- Iliescu, F. M., Chaplin, G., Mallick, C. B., **Rai, Niraj.**, Mishra, A., Goto, R., & Pitchappan, R. 2016. *Unravelling the evolutionary forces driving skin color diversity in India*. **American Journal of Physical Anthropology** (Vol. 159, pp. 181-181). 111 River ST, Hoboken 07030-5774, NJ USA: Wiley-Blackwell.
- Nathan Joel Nakatsuka, Priya Moorjani, **Niraj Rai**, Biswanath Sarkar, Arti Tandon, Nick Patterson, Lalji Singh, David Reich, Kumarasamy Thangaraj. *The promise of disease gene discovery in India* (**Nature Genetics**, under minor revision).
- W Tabasum, S Ara, **N Rai**, K Thangaraj, A Gaur *Complete mitochondrial genome sequence of Asiatic lion (Panthera leo persica)* **Mitochondrial DNA Part B**, 2016
- Gyaneshwer Chaubey*, Manvendra Singh*, **Niraj Rai***, Mini Kariappa, Kamayani Singh, Ashish Singh, Deepankar Pratap Singh, Rakesh Tamang, Deepa Selvi Rani, Alla G Reddy, Vijay Kumar Singh, Lalji Singh, Kumarasamy Thangaraj *Corrigendum: Genetic affinities of the Jewish populations of India*, **Nature Scientific Reports, vol 6** (* equal first author)
- Gyaneshwer Chaubey, Periyasamy Govindaraj, **Niraj Rai**, George van Driem and Kumarasamy Thangaraj *THE GENOME-WIDE ANALYSIS OF THE BHILS: THE SECOND LARGEST TRIBAL POPULATION OF INDIA*, **Man In India**, 95 (4): 279–289, Serial Publications, 2016
- Gyaneshwer Chaubey, Rakesh Tamang, Erwan Pennarun, Pavan Dubey, **Niraj Rai**, George van Driem, Kumarasamy Thangaraj Mait Metspalu and Richard Villem, *Reconstructing the population history of the largest tribe of India: the Dravidian SpeakingGond* **European Journal of Human Genetics (2017) 25, 493-498**
- Sonal Jain, **Niraj Rai**, Giriraj Kumar, Parul Aggarwal Pruthi, Kumarasamy Thangaraj, Sunil Bajpai*, Vikas Pruthi *Ancient DNA reveals Late Pleistocene existence of ostriches in Indian sub-continent*, **Plos One, e0164823, 2017**
- Gyaneshwer Chaubey, Periyasamy Govindaraj, **Niraj Rai**, George van Driem and Kumarasamy Thangaraj *THE GENOME-WIDE ANALYSIS OF THE BHILS: THE SECOND*

LARGEST TRIBAL POPULATION OF INDIA, Man in India, Serial publication, No.97 (2017)
Issue No. :1 (2017)

- Gyaneshwer Chaubey*, Qasim Ayub*, **Niraj Rai***, Satya Prakash, Veena Mushrif-Tripathy, Massimo Mezzavilla, Ajai Kumar Pathak, Rakesh Tamang, Sadaf Firasat, Maere Reidla, Monika Karmin, Deepa Selvi Rani, Alla G Reddy, Juri Parik, Ene Metspalu, Siiri Roots, Kurush Dalal, Sagufta Khaliq, Syed Qasim Mehdi, Lalji Singh, Mait Metspalu, Toomas Kivisild, Chris Tyler-Smith, Richard Villems, Kumarasamy Thangaraj *Like Sugar in Milk: Reconstructing the genetic history of the Parsi population* **Genome Biology** (* Equal first author)
- Hovhannes Sahakyan, Baharak Hooshiar Kashani, Rakesh Tamang, Niraj Rai, Kumarasamy Thangaraj, Phillip Endicott, Gyaneshwer Chaubey, Antonio Torroni, Richard Villems, *Origin and spread of human mitochondrial DNA haplogroup U7*, **Nature Scientific Reports**, 2017; 7: 46044.

ORAL PRESENTATION IN INTERNATIONAL/NATIONAL CONFERENCES:

- An oral presentation at 9th International Society of Applied Biology conference held at Croatia during July 26-28, 2015.
- An invited plenary lecture in International Seminar on New Frontiers in Biotechnology during September 27–28, 2014 at Invertis University, Bareilly.
- An oral presentation at “26th Foundation day symposium of CCMB” held on 26th November, 2013 at CCMB, Hyderabad.
- An oral presentation at “36th Annual Conference of the Indian Society of Human Genetics” at Manipal University, Manipal, India, 2011.
- An oral presentation at “12th Annual Conference of the British Association for Biological Anthropology and Osteoarchaeology (BABAO)”, 17th –19th September 2010, University of Cambridge, UK.
- An oral presentation at “35th Annual Conference of the Indian Society of Human Genetics” at Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India during 6–8 March, 2010.
- An oral presentation at International UKIERI one day symposium entitled “Major issues on the origin and evolution of modern human in India” on November 1st, 2008 at University of Cambridge, Cambridge, UK.

POSTER PRESENTATIONS:

- Poster presented at Annual Conference of the ISHG and International Symposium on Genetics Revisited: The Genomics and Proteomics Advantage, February 11-13, 2008.
- Poster presented at International Symposium on Genetic and Epigenetic basis of Complex Diseases, Hyderabad.
- Poster presented at 15th Annual ADNAT Convention, a three day symposium in “Genomics and Biodiversity” at Centre for Cellular and Molecular Biology (CCMB) Hyderabad, Feb. 23-25, 2011.

- Poster presented at An International symposium on “Genetic and epigenetic basis of complex diseases” at Centre for Cellular and Molecular Biology (CCMB), Hyderabad, India from 5th -7th December 2009.
- Poster presented at International conference on Genes, Genetics and Genomics: Today and tomorrow health concerns at XXXVII annual conference of Indian Society of Human Genetics, 3rd-5th March 2012, Punjab University, Chandigarh.
- Poster presented at International symposium on developmental and complex disorders at 38th annual conference of the Indian Society of Human Genetics, December 9-11, 2012, BHU, Varanasi.
- Poster presented at American Society of Human Genetics conference (ASHG- 2013), Boston, USA, October 22 to 26th, 2013.
- Poster Presented at European Human Genetics Conference (ESHG-2016) at Barcelona Spain, May 21-24, 2016.

PARTICIPATION IN INTERNATIONAL/NATIONAL CONFERENCES:

- Participated in International symposium on chromosome to genome, July 3-5, 2007, CCMB, Hyderabad.
- Participated in International symposium on dissecting the role of Genes and Environment in complex diseases, December 6- 8, 2007, CCMB, Hyderabad.
- Participated in EU-India Grid workshop on Application in computational Biology at MANIT, Bhopal during May 5th to 9th, 2008.
- Participated in 13th Human Genome Meeting: Genomics and future of the medicine” September, 27th to 30th 2008, Hyderabad.
- Participated in International conference on Genomics, Genetic diseases and diagnostic at XXXVI annual meeting of Indian Society of Human Genetics, February 14th to 16th, 2011, Manipal, India.
- Participated in International UKIERI one-day symposium entitled “Major issues on the origin and evolution of modern human in India” on November 1st, 2008 at University of Cambridge, Cambridge, UK.
- Participated in Indo-French conference “RNAi in genome control” at Centre for Cellular and Molecular Biology (CCMB), Hyderabad, India from 12th - 14th December 2007.
- Participated in hands on training of Next Generation Sequencing and Bioinformatics for Genomic and Health care held at Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram, Kerala during December 16th to 17th, 2011.
- Participated in Young Investigator Meeting 2015 organized by Indian Biosciences at Srinagar during March 27th to April 1st, 2015.
- Participated in 2015 NextGen Genomics, Biology, Bioinformatics and Technologies (NGBT) Conference.
- Participated in Hands-on Nextgen Sequencing and Bioinformatics Workshop during 24th – 30th September, 2015.
- Participated in 14th FAOBMB congress & 84th Annual meeting of Society of Biochemistry Congress during 27 - 30 November 2015.

AWARDS/FELLOWSHIP:

- Received Young Investigator Award from International Society of Applied Biology, Croatia, 2015.
- Received Young Scientist Award in “36th Annual Conference of the Indian Society of Human Genetics” at Manipal University, Manipal, India, 2011.
- Received UKIERI visiting fellowship award and spent 9 Months at University of Cambridge, UK (2007-2008).
- Invited to attend the Royal society meeting, UK, 2013.
- Qualified for Junior Research Fellowship (2007) conducted by Indian Council of Medical Research, India.
- National Test for Research Associate / Project Assistant by CSIR-Centre for Cellular and Molecular Biology, Hyderabad, A.P., India. (2014).
- Qualified NET (2006) in Life Science (CSIR-NET) by Council of Scientific & Industrial Research, Human Resource and Development Group, Government of India, New Delhi, India. (2006).
- All India Combined Entrance Examination for M.Sc. in Biotechnology conducted by Jawaharlal Nehru University, New Delhi. (2004).
- Studentship by Department of Biotechnology, Government of India for M.Sc. Biotechnology Program for two years. (2004-2006).
- Qualified GATE exam for M. Tech and PhD and secured 97 percentiles in 2007.
- Received travel grant from EMBL, Heidelberg to attend the 12th EMBL International Symposium: "From Science Fiction to Science Fact: What's next?" at European Molecular Biology Laboratory (EMBL), 21 - 23 October 2010, Heidelberg (Germany).
- Received bursary from EMBL, Heidelberg to attend the 15th EMBL International Symposium: "Competition in Biology: at European Molecular Biology Laboratory (EMBL), 21 - 23 November 2013, Heidelberg (Germany).
- Received travel grant from CSIR to attend 9th ISABS Conference at Croatia, 2015.