

Prof. Dr. RM. PITCHAPPAN

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RECENT HONOURS:

Life Time Achievement- by Genomic Medicine – UK:

In 2020 Dec, Prof. Pitchappan has been honoured with– Life Time Achievement for his pioneering work on Leprosy, Tuberculosis, Human population Genetics and The Genographic by the Genomic Medicine Consortium, UK. He is one of the eight from India and one of 30 from the world.

Visiting Professor – MKU – aDNA

From 2019 on, on the invitation of TNG archaeology and Madurai Kamaraj University, Pitchappan is directing the aDNA research in Tamil Nadu: Many recently excavated archaeological sites from Tamil Nadu, including Keezhadi, Athichanallur, and datee of 600-900 BC thus preponing the Sangam age. The last 2020 excavation in Konthagai/Keezhadi burial yard has yielded 30 skeletal remains and these are analysed by Prof. Kumaresan, Chairman, School of Biological sciences for aDNA by WGS techniques under the guidance of Prof. Pitchappan. A state of the art aDNA laboratory, seconf of its kind in India, funded by UGC and State Govt is being set up at MKU in the School of Biological Sciences: they work in close association with stalwarts from within and outside India.

Key note speaker - plenary - 10th world Tamil Conference, Chicago, USA

Prof. Pitchappan & Dr. Spencer Wells The Director, The Genographic project, were the key note speakers in the plenary of the 10th world Tamil Conference, Chicago, USA - 7th July 2019: their lectures on 'The Genographic' and 'The Dravidian - a living civilization of yester millenia' were well received. The event organized by Federation of Tamil Societies in USA was inaugurated by the Minister for Culture, Moifa PandiaRajan, Tamil Nadu Govt and was attended by 3,000 Tamils living in USA. On 5th July Prof. Pitchappan also presented a lecture on 'Arrival of Nagarathar in Chettinad', in the Nagarathar Convention, organized by NSNA, Nagarathar Sangam of North America, at Baltimore. Following these meetings he toured Eastern parts of USA and delivered lectures at Columbus Tamil Sangam, visited National Geographic society and discussed about future research research on aDNA and Mankind in India. On return, Shanmuganathapuram Nagarathar and Nattar offered a facilitation to Justice Chokalingam and Prof. Pitchappan for participating in the World Tamil Conference and Nagarathar convention.

PAPERS:

His recent paper in 2019, defined the pre-Aryan heritage of the Brokpa, a Dardic speaking hill tribes from Dah-Hanu Leh, Ladak - Jammu & Kashmir J&K region ([web link](#)). He has also deciphered and published the modus operandi of caste formation in India by studying his own Nattukottai Nagarathar community ([web link](#)): it was indeed the migration of disparate male lineages arriving at a given province, amalgamated with pre-existing early settlers as a disparate marriageable clan thus forming a caste. Other communities in India also seems to follow similar pattern, that suggesting an overall template for caste formation in India.

VISITORS:

The “Virumandi” legacy, the descendants of the first Out of Africa immigrants into India, is still celebrated and many international visitors all are surprised to hear the history and culture of the community. An NGO run by Ms. Lily Bhavna, at Allahabad and Perth, Australia and Mr. Roger Perry the Boomerang player and international champion was hosted by MKU. They demonstrated the returnable boomerang in three places on three days and was also were also excited to see the iron Boomerang collections, worshiped in hundreds, in Kovilankulam temple – near Jothirmanickam village. Many are amazed to see the link between Africa and India and a Botswana-India tourism corridor is planned by philanthropic entrepreneurs from Kerala and Prof. Pitchappan is an advisor to them.

COMING YEARS:

The coming years will be very important **for him** and the country, in understanding the pride and antiquity of Tamils, Prof. Pitchappan feels. He also continues his research on tribal health as the Vice-President of NAWA (Nilgiri Adivasi Welfare association, Kotagiri), a 60 year old NGO established by Late Dr. Padmashree Narasimhan.

SCIENTIFIC JOURNEY:

Prof. Ramasamy Pitchappan, a Fellow of the National Academy of Medical Sciences and a Fellow of the Indian Academy of Sciences is a pioneer in Immunology of Infectious diseases, Transplantation Immunology and Human Genomics in India. He served as the Co-ordinator, School of Biological sciences (2005-6) and Professor of Immunology (1986-2006) at Madurai Kamaraj University. During this period, he also served as Director, Educational Media research centre, and organized many Science Exhibitions in collaboration with All India Radio and Science Congress. He undertook many International Collaborations with The European commission, The Wellcome Trust – University of Oxford, ISERM - France, all studying Mycobacterioses. Post-retirement from MKU in 2006-13 he undertook a global “The Genographic project” funded by National Geographic, IBM and Ted Wait Family foundation, USA, tracing the migration of man through the globe. This centre was one of the twelve centres around the world and only one from India dedicated for this study. Pitchappan also served as the Director - Research at Chettinad Academy of Research and Education, Chennai, from 2010 to 2016 Feb: Here he established a state of the art research facilities for Human Genomics, Microbial Genomics, Nano and Biotechnology - thus interfacing bio-medical research evaluating disease risks and environmental pollution monitoring. Pitchappan has synthesized the available evidences and proposed ‘Lotus & Cactus’ Model ^a, invoking immunogenome in infectious disease susceptibility in tribal populations of India, and Indian Council of Medical Research has empanelled him as Adjunct Professor, attached with RMRC-ICMR, Port Blair, Andaman Nicobar Islands, India. Of late he has been invited by Govt Tamil Nadu, Dept Archaeology to be the advisor to their aDNA programme. And he has been appointed as the Honorary Visiting Professor, by his alma mater, Madurai Kamaraj university to coordinate the aDNA lab and its programme with Govt. Tamil Nadu.

Pitchappan’s credentials along with handful of International collaborators from Oxford, London, Cambridge, Stanford, Washington, Estonia, India and many others goes to the discovery of the genome predisposing for Leprosy (Nature Genetics 2001^b), Immunogenetic dictum in Tuberculosis, First migration of Man to India and peopling of Tamil Nadu (Wells et al, 2001, Arunkumar et al 2012), HLA immunogenetics of HIV susceptibility in India, Population diversity and infectious disease susceptibility in TB & psoriasis, HLA and KIR polymorphisms and their implications in disease susceptibility. His seminal paper on Leprosy Genome Scan was instrumental in starting Human Genomics teaching and research programme, at Madurai Kamaraj University. While the seminal discovery published in Nature Genetics in 2001, along with Oxford Group changed the whole concept of infectious diseases from pathogen to host i.e., host is equally or more important in the clinical manifestation of the infection and “not all the infected develop the disease”, as his recent review depicts ^a. His exciting and providential findings, the discovery of ‘Virumandi’, the descendant of the first migrant Man *Homo sapiens* to India, west of Madurai, published in PNAS 2001^d (with Oxford Group), and the ensuing documentary Journey of Man 2002^e, National Geographic Channel, were awesome. The Story of India 2007 BBC documentaries and his SUN TV interview 2013 on “Peopling of Tamil Nadu” have been the land marks in his scientific journey, taking science to common man.

With his great conviction in science, wisdom of learning and stringent training by his mentors Dausset Nobel, 1980, Muthukkaruppan & Samuel Raj, “*not to compromise in science*”, he aims at India centric research and requisite technologies, the science very much required for developing countries - a holistic approach to study diseases and to deliver in science. His 100+ impact making papers in reputed journals and reviews and chapters in renowned books successfully employed appropriate state of the art DNA tools - Whole Genome Scans, Expression profiling, Sequencing and Computational approaches in his studies. He has participated and chaired sessions in many International conferences, UNESCO conference, Elsevier’s Emerging infectious diseases, Histocompatibility workshops setting standards for HLA tissue matching services and Indian

science. He is a pioneer in the field of Transplantation matching services in India, as early as 1981 offering ~3000 renal kidney transplantation matching and ~200 Bone marrow tissue matching services from Madurai Kamaraj university, a model the country requires. He is a member and advisor of various governmental bodies, funding and regulatory authorities, reviewer of journal articles. He continues his science and science education at various levels as on date. The next leap has come in the way in the form of aDNA and is working on both ancient and modern DNAs to tell the story of India.

Prof. Dr. RM. PITCHAPPAN

Curriculum vitae:

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Professional Career :

Advisor – aDNA project (MKU/TNG.Arch) 2019-

The role is to advice, establish and work on aDNA from the excavations in Tamil Nadu and nearby states, to know of the identity and culture of these Sangam people.

Visiting Professor,

School of Biological sciences, Madurai Karmaraj University

Vice-President 2018(06)-

Nilgiri Adivasi Welfare Association, Fair Glenne Annexe, Kota Hall Road, Kotagiri, Tamil Nadu, 643217

www.nawatribes.com (NAWA is a 60 year old Tribal Welfare association, started by Padmashree Dr. Narasimhan, a physician, with 200 employees now strive hard to “Empower Tribals in Their Own Land”, with Dr. Rajalakshmi, (a Physician herself) the daughter of Dr. Narasimhan now as the President of the association, has ~200 employees, catering to the needs of the tribals of Nilgiris.

Adjunct Professor. 2017(02) – to 2019(03)

Regional Medical Research Centre (ICMR), Port Blair - 744 103,

Andaman and Nicobar Islands, INDIA Phone: Off: +91 3192 251158; Res: +91 4522 569889; Mobile: +91 9443066798

Director, Research

2010-2016(02) : Chettinad Academy of Research & Education

Rajiv Gandhi Salai (OMR Road), Kelambakkam, (Chennai) 603 103, India

Regional Director –

2006-2014 “The Genographic Project”, India, Madurai Kamaraj University

Professor&HOD

1987-2006 Department of Immunology School of Biological Sciences, Madurai Kamaraj University, Madurai 625021 INDIA

Head & Co-Ordinator

2005-2006 School of Biological Sciences, Madurai Kamaraj University, Madurai 625021 INDIA

Elected Fellow

2002 National Academy of Medical Sciences, New Delhi

2002 Indian Academy of Sciences, Bangalore

Patent:

“A simple adaptor for preparing cell smears” Indian Patent No: 147908 of 28-02-1979.

This is a simple adapter, fitted to a laboratory table top centrifuge to concentrate & prepare smears from cells suspended in solutions. The advantage is that the preparation is restricted to a defined area for convenient scanning, concentrated and viewed at single optical plane. It is very cheap, costing one thousandth of the imported cytocentrifuges. It is an import substitution.

Expertise:

Human Genomics, Human Immunogenetics, Immunology of Infectious diseases, Transplantation immunology

International Collaborations

aDNA programme, Chicago, USA, Cambridge-UK, Denmark

The Genographic Project – NGS-IBM, Tedd Waitt Family Foundation, USA

Welcome Trust Centre for Human Genetics, Universities of Oxford,

INSERM Hospital St. Louis, University of Paris,

Commission of European Community

MRC TB Hammersmith Hospital, London

Various International Histocompatibility workshops

Honorary Positions:

Director

2019 – date	Advisor, aDNA programme, Tamil Nadu Govt, Dept.Arch. Visiting Professor, Madurai Kamaraj University
2017 – 2019	Adjunct Professor, RMRC-ICMR, Port Blair, Andaman Nicobar – 744103 - INDIA
2010-2016	Research - Chettinad Academy of Research & Education
May 2005 – 2014	Genographic India – National Geographic society-IBM- Waitt Family foundation
Nov 1998 to May 2000	Educational Media Research Centre, Madurai Kamaraj University
May-Nov 1981-1983	Science Education Centre, Madurai Kamaraj University

Consultant & Advisor

Transplantation Matching programme

2019-	Advisor, aDNA programme (MKU – Tamil Nadu Govt.)
2001 - 2009	Bone Marrow Transplant, Kothari Centre, Calcutta
1994 - 1999	TamilNad Hospital, Madras
1983 -1993	Christian Medical College, Vellore Bangalore, Chennai,

Career Highlights:

'Rigorous, precise and conscientious'

- Prof. Jean Dausset - 1981
- his mentor, Nobel Laureate in Physiology & Medicine, 1980, Paris, France
- the discoverer of the HLA

First to describe

Genome predisposing for Leprosy
(in collaboration with Oxford),
Immunogenetic & Functional Genomics of Tuberculosis,
HLA diversity in India
First coastal Migration of Man through India.

Research Documentaries

- 'The story of India', by Michael Wood, Maya Vision, London, 10th min Madurai Chapter appears **BBC World**, first telecast 24th Aug, 2007–2008 in USA
- **Discovery Channel**, India 16th April, 2008
- 'Journey of Man' by Spencer Wells, National Geographic Channel International / PBS Channel, first telecast: 15 Dec 2002

Invited speaker 2008 UNESCO, Paris : Conference

"The First Great Migrations of Peoples" 19 July. One of the sixteen in the world, and only one from India.

Regional Director - India

2005-Date National Geographic Society-IBM-Tedd Wait
USA @ Madurai Kamaraj Univerisyt (MKU), Madurai

Director-Research CHC

2010-Date Chettinad Academy of Research & Education
Chettinad Health City, Kelampakkam (Chennai) 603103

Director

1981-1982 Science Education Centre, Madurai Kamaraj University

1998-2000 Educational Media Research Centre, MKU

Elected Fellow

2002 National Academy of Medical Sciences, New Delhi

2002 Indian Academy of Sciences, Bangalore

Awards

- **2020** "Life Time Achievement Award" Genome Medicine Consortium, UK
- **2018** STAR award IBCN-2019 (International Business Conference of Nagarathar)
- **2015** "Life Time Achievement Award" Indian Association of Applied Microbiologists, India
- **2011** "Darwin of India" Award, American Tamil Medical Association Washington Greater Area, USA
- **2001** H.M.Bhatia Oration Award ICMR-IIH, Mumbai
- **1995** Investigator Award for Tuberculosis, Lancet, Washington DC, USA
- **1986** Jaycee's "Outstanding Young Person Award - Tamil Nadu"

International Collaborations

Welcome Trust Centre for Human Genetics, Universities of Oxford, Hospital St. Louis, University of Paris, Commission of European Community - MRC TB Hammersmith Hospital, London

Patent


"A simple adaptor for preparing cell smears" Indian Patent No:147908 of 28-02-1979

Service to Society – Consultant & Advisor

HLA matching in Kidney & Bone marrow transplantation: CMC Vellore 1083-199 & many hospitals in southern India; Kothari Med Foundation Kolkata

Expertise

Immunology of Infectious diseases, Human Genomics; Immunogenetics; Transplantation Immunology; Computer Data Base for Human Immunogenetics 1980s – still in use!


COLLABORATIONS – INTERNATIONAL:

I. Prof. Philippe Lagrange, INDO-INSERM PROJECT Hopital St. Louis, University of Paris, Paris

II. Prof. Juraj Ivanyi, COMMISSION OF EUROPEAN COMMUNITIES Hammersmith Hospital, University of London, LONDON, UK

III. Prof. Adrian Hill, WELCOME TRUST The Welcome Trust Centre for Human Genetics, Oxford UK

iv. Prof. Walter Bodmer & Dr. Spencer Wells, The Welcome Trust Centre for Human Genetics, Oxford UK

V. National Geographic Society, IBM, The Ted Wait Foundation – The Global Team

Publications:

107. Syama A, Arun VS, ArunKumar G, Subhadeepta R, Friez K, **Pitchappan R** & The Genographic Consortium. 2019. Origin and identity of the Brokpa of Dah-Hanu, Himalayas – an NRY-HG L1a2 (M357) legacy. ANNALS OF HUMAN BIOLOGY <https://doi.org/10.1080/03014460.2019.1694700>
106. **Pitchappan RM** 2019. “Nattukottai Nagartharkalin Cheetinadu Varugai” In Tamil. In ‘Achi Vanthachu’ – monthly. Madurai
105. **Pitchappan RM** 2018. Arrival of Nagarathar in Chettinad Expanse, In Shanmugnathapuram Kumbabishega Malar,
104. Vani S, Govindaraju S & **Pitchappan RM**. 2017 Human Leukocyte Antigen A, B and Hepatitis B infection outcome: A Meta-analysis. - World Journal of Gastroenterology (In Press)
103. **Pitchappan RM** & Arunkumar G. 2016. Evolution and Implications of Genomic Diversity on “Human Kind” in India. In ‘On Human Nature’ Edtd by F. Ayala & M. Tibayrenc, Elsevier Press. 111-123.
102. Sreekanth MS, Esdan Basha SK, Arun Kumar G, Govindaraju S, Pradeep Nayar N, **Pitchappan R**. 2016 Association of IL-1 尾 +3953 C and HLA-DRB1*15 with Coronary Artery and Rheumatic Heart Diseases in South India. Hum Immunol. Aug 9. pii: S0198-8859(16)30404-9. doi: 10.1016/j.humimm.2016.08.003. [Epub ahead of print].
101. **Pitchappan RM**. 2016 Not all the infected develop the disease - A "Lotus and Cactus" model. Infect Genet Evol. 40:303-9. doi: 10.1016/j.meegid.2015.11.007. Epub 2015 Nov 21. PMID:26611827
100. **Pitchappan RM**. 2015 Personalized Medicine – Perspective. Chettinad Health City Medical Journal 2015; 4(1): 6 – 7
99. **Pitchappan RM**. 2015 Ancestry of South India Population. Symposium on People of India, Department of Anthropology, Delhi University pp 16 PC Joshi Edt.
98. ArunKumar G, Tatarinova TV, Duty J, Rollo D, Syama A, Arun VS, Kavitha VJ, Triska P, Greenspan B, Wells RS, **Pitchappan R**; Genographic Consortium 2015 Genome-wide signatures of male-mediated migration shaping the Indian gene pool. J Hum Genet. 2015 Sep;60(9):493-9.
97. GaneshPrasad Arunkumar^{1,2}, Lan-Hai Wei³, Valampuri John Kavitha^{1,4}, Adhikarla Syama¹, Varatharajan Santhakumari Arun¹, Surendra Sathua⁵, Raghunath Sahoo⁶, R. Balakrishnan⁷, Tomo Riba⁸, Jharna Chakravarthy⁹, Bapukan Chaudhury¹⁰, Premanada Panda¹¹, Pradipta K. Das¹², Prasanna K. Nayak¹³, Hui Li³, Ramasamy **Pitchappan**^{1,14,*} and The Genographic Consortium. 2015 A late Neolithic expansion of Y chromosomal haplogroup O2a1-M95 from east to west. Journal of Systematics and Evolution Volume 53, Issue 6, pages 546–560, November 2015
96. Elhaik E, Tatarinova T, Chebotarev D, Piras IS, Maria Calò C, De Montis A, Atzori M, Marini M, Tofanelli S, Francalacci P, Pagani L, Tyler-Smith C, Xue Y, Cucca F, Schurr TG, Gaieski JB, Melendez C, Vilar MG, Owings AC, Gómez R, Fujita R, Santos FR, Comas D, Balanovsky O, Balanovska E, Zalloua P, Soodyall H, **Pitchappan R**, Ganeshprasad A, Hammer M, Matisoo-Smith L, Wells RS; Genographic Consortium. 2014 Geographic population structure analysis of worldwide human populations infers their biogeographical origins. Nat Commun. 2014 Apr 29;5:3513. doi: 10.1038/ncomms4513.

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93. Ganesh Prasad Arunkumar, David F. Soria-Hernanz, Valampuri John Kavitha, Varatharajan Santhakumari Arun, Adhikarla Syama, Kumaran Samy Ashokan, Kavandanpatti Thangaraj Gandhirajan, Koothapuli Vijayakumar, Muthuswamy Narayanan, Mariakuttikan Jayalakshmi, Janet S. Ziegler, Ajay K. Royyuru, Laxmi Parida, R. Spencer Wells, Colin Renfrew, Theodore G. Schurr, Chris Tyler Smith, Daniel E. Platt, Ramasamy **Pitchappan**. 2012. Population Differentiation of Southern Indian Male Lineages Correlates with Agricultural Expansions Predating the Caste System
92. Melé M, Javed A, Pybus M, Zalloua P, Haber M, Comas D, Netea MG, Balanovsky O, Balanovska E, Jin L, Yang Y, **Pitchappan** RM, Arunkumar G, Parida L, Calafell F, Bertranpetit J. 2012. Genographic Consortium. Recombination gives a new insight in the effective population size and the history of the old world human populations. *Mol Biol Evol.* 29:25-30. Impact factor: 5.51
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90. Javed A, Melé M, Pybus M, Zalloua P, Haber M, Comas D, Netea MG, Balanovsky O, Balanovska E, Jin L, Yang Y, Arunkumar G, **Pitchappan** R, Bertranpetit J, Calafell F, Parida L. 2012. Genographic Consortium. Recombination networks as genetic markers in a human variation study of the Old World. *Hum Genet.* 131(4):601-13. Impact factor: 5.047
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heritage and native identity of the Seaconke Wampanoag tribe of Massachusetts. *Am J Phys Anthropol.* 2010 Aug;142(4):579-89.

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85. Behar DM, Villems R, Soodyall H, Blue-Smith J, Pereira L, Metspalu E, Scozzari R, Makkan H, Tzur Comas D, Bertranpetit J, Quintana-Murci L, Tyler-Smith C, Wells RS, Rosset S; Genographic Consortium. Collaborators (19) Schurr TG, Santos FR, Quintana-Murci L, Bertranpetit J, Comas D, Tyler-Smith C, Balanovska E, Balanovsky O, Behar DM, Mitchell RJ, Soodyall H, **Pitchappan** R, Cooper A, Royyuru AK, Rosset S, Parida L, Blue-Smith J, Hernanz DS, Wells RS. The dawn of human matrilineal diversity. *Am J Hum Genet.* 2008 May;82(5):1130-40.

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82. Behar DM, Rosset S, Blue-Smith J, Balanovsky O, Tzur S, Comas D, Mitchell RJ, Quintana-Murci Tyler-Smith C, Wells RS; Genographic Consortium The Genographic Project public participation mitochondrial DNA database. *PLoS Genet.* 2007 Jun;3(6):e104. Erratum in: *PLoS Genet.* 2007 Sep 14;3(9):1785

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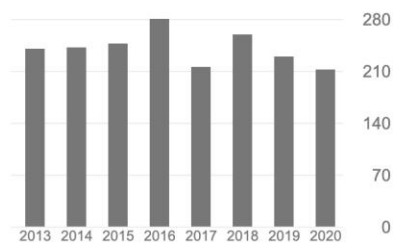
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