

Curriculum Vitae: Dr. Joseph Ivin Thomas

MBBS, ANLP, BSc (Theoretical Physics), MSc (Theoretical Neuroscience), MD (Medical Physiology), ISCA

- Assistant Professor, Department of Physiology, East Point College of Medical Sciences & Research Center, Bangalore-49
- Adjunct Faculty, School of Natural Sciences & Engineering, National Institute of Advanced Studies (NIAS), Bangalore-54
Mob: 0091 88 6124 0282 (India) / 00971 56 217 1114 (UAE)
E Mail: dr.ivinthomas@yahoo.com

Nov 2019



I work as an Assistant Professor of Medical Physiology at East Point College of Medical Sciences & Research Center, Bangalore. I also hold an Adjunct Faculty position in the School of Natural Sciences & Engineering of the National Institute of Advanced Studies (NIAS), Bangalore. My Educational and Research background is both 'inter-' and 'multi-' disciplinary in nature, covering a broad range of distinct fields, as summarized below:

Educational Background (2 Master Degrees and 2 Bachelor Degrees)

- 1) MD in Medical Physiology (MS Ramaiah Medical College; Rajiv Gandhi University of Health Sciences, Karnataka)
- 2) MSc in Cognitive and Computational Neuroscience (Dept. of Psychology, University of Sheffield, United Kingdom)
- 3) BSc in Physics (Major) and Mathematics (Minor) (St. Albert's College, Cochin; Indira Gandhi University, New Delhi)
- 4) MBBS (MOSC Medical College; Mahatma Gandhi University, Kerala)

Papers Published:

1. [Mathematical Metaphysics: Modeling Determinism and Free-will along the lines of Theological Compatibilism:](#)
[International Journal of Philosophy \(2019\).](#)
2. [The Classical Double Slit Interference Experiment: A New Geometrical Approach:](#)
[American Journal of Optics and Photonics \(2019\).](#)
3. [Current Status of Consciousness Research from the Neuroscience Perspective:](#)
[Acta Scientific Neurology \(2019\).](#)
4. [A Comparative Study of the Effects of Superbrain Yoga and the Aerobic Exercise on Cognitive functions:](#)
[National Journal of Physiology, Pharmacy and Pharmacology \(2017\).](#)
5. [A Comparative Study of Sensory-motor coordination, Executive function and Testosterone levels in Hypothyroid and Euthyroid Males:](#)
[National Journal of Physiology, Pharmacy and Pharmacology \(2017\).](#)

Dissertation for MSc Cognitive & Computational Neuroscience Program:

[A Cartesian Approach to Modeling the Rodent Whisker Barrel Cortex System \(2013\):](#)

- Dr. Joseph Ivin Thomas & Dr. Stuart P Wilson, Dept. of Psychology, University of Sheffield, United Kingdom

Dissertation for MD Medical Physiology Program:

A Comparative Study of Sensory-motor coordination, Executive function and Testosterone levels in Hypothyroid and Euthyroid Males (2017):

- Dr. Joseph Ivin Thomas & Dr. Venkatesh D, Dept. of Physiology, MS Ramaiah Medical College, Bangalore
- Dr. Pramila Kalra, Dept. of Endocrinology, MS Ramaiah Medical College, Bangalore

Oral Paper Presentations:

1. Harmony in the Metaphysics of Determinism and Free-will (2019):
International Conference on Harmony – Interface of Cosmic, Ethical & Religious Orders, Christ University, Bangalore
2. Current Status of Consciousness Research from the Neuroscience Perspective (2019):
International Conference on Quantum Physics, Brain Functions in Modern Science & Buddhist Philosophy hosted by Tibet House, Cultural Center of HH Dalai Lama, New Delhi
3. A Comparative Study of Attention Control & Working Memory in newly diagnosed Hypothyroid & Euthyroid Males (2016):
International Conference on Environment and Occupational Health hosted by Sree Balaji Medical College, Chennai

Poster Presentations:

1. On the Classical Double Slit Interference Experiment (2019):
11th Annual Karnataka Science and Technology Conference hosted by NMKRV College, Bangalore
2. Influence of Anthropometric Factors in Audiovisual Response Latency (2015):
36th Annual Conference of Indian Association of Biomedical Sciences hosted by Pondicherry University, Pondicherry.

General Online Articles:

1. What makes a great scientist? [ResearchGate](#) (2014)
2. Actually, they are disservice calls: [The Hindu Newspaper Opinion page](#) (2010)

Past Research Pre-prints (to be published soon):

1. A Mathematical Treatise on Polychronous Wavefront Computation and its Application into Modeling Neurosensory Systems ([ResearchGate](#) 2014)
2. The Geometry of Polychronous Wavefront Computation ([ResearchGate](#) 2015)

Citations received for work done in Computational Neuroscience (Polychronous Wavefront Computation):

1. Adaptation of Spike-Timing-Dependent Plasticity to Unsupervised Learning for Polychronous Wavefront Computation: Fred Highland & Corey Hart (2015); Lockheed Martin, USA; *Procedia Computer Science*, 61, 314-321
2. Implementing Multilayer Neural Network Behavior Using Polychronous Wavefront Computation: Fred Highland & Corey Hart (2016); University of Maryland, USA; *Procedia Computer Science*, 95, 159-167
3. Unsupervised Learning of Patterns Using Multilayer Reverberating Configurations of Polychronous Wavefront Computation: Fred Highland & Corey Hart (2016); University of Maryland, USA; *Procedia Computer Science*, 95, 175-184
4. Unsupervised Learning of Polychronous Wavefront Computation Configurations for Pattern Recognition: Fred Highland (2018); University of Maryland, Baltimore, USA; *Procedia Computer Science*, 140, 134-143

Citations received for work done in Medical Physiology:

1. Role of yoga in attention, concentration and memory of medical students:
Joice SP, Manik KA & Sudhir PK (2018). National Journal of Physiology, Pharmacy and Pharmacology, 8(11): 1526-8
2. The effectiveness of superbrain yoga on concentration, memory and confidence in school students.
Jois SN & D'Souza L (2018). Indian Journal of Traditional Knowledge, 17(4): 741-44

Work Experience in Academia (Total of 5½ Years):

1. While working at Ramaiah Medical College, Bangalore as a Tutor cum Postgraduate (MD) Candidate for 3 years (spanning 2014 - 2017), I taught 3 successive batches of students, the theoretical and experimental aspects of Medical Physiology. The total number of students taught during this period was around 750 and they belonged to the following professional degree streams: Medicine (MBBS), Physiotherapy (BPT), Dentistry (BDS).
2. Currently, as an Assistant Professor at East Point Medical College of Medical Sciences & Research Centre in Bangalore (from 2017 till date), I teach Medical Physiology and Biophysics to the following professional degree streams (the total number again comes to around 750 students thus far): Medicine (MBBS), Nursing (BSc), Physiotherapy (BPT), Paramedical & Allied Health Sciences (Degree & Diploma courses).

Administrative Roles & Responsibilities at East Point College of Medical Sciences & Research Center:

- 1) Formerly Provost & Warden of the Men's (Medical) Hostel & Resident's Quarters (2017-2019)
- 2) Member of Research & Publication Committee
- 4) Member of Anti-Ragging Committee
- 5) Member of Sports Committee
- 6) Mentor of the MBBS Students Committee
- 7) Coordinator of the MBBS Physiology Program

Certifications & Affiliations:

Membership/Certification		Awarding/Affiliating Body	Year
1)	Member of the Association of Neurolinguistic Programmers (ANLP)	David J Lincoln International United Kingdom	2009
2)	Observership in Neurophysiology	National Institute of Mental Health & Neurosciences, Bangalore	2015
3)	Member of the Indian Science Congress Association (ISCA)	Indian Science Congress Association Kolkata	2019

Special Postings attended during my MD Medical Physiology Program 2014 - 2017:

	Posting	Area of Training	Year & Duration
1)	National Institute of Mental Health and Neurosciences, Bangalore	Neurophysiology	2015, 2 Weeks
2)	Institute of Aerospace Medicine	Aviation Physiology	2015, 1 Week
3)	Sports Authority of India	Sports & Exercise Physiology	2015, 2 Weeks

Scores attained on revised Graduate Record Examination (GRE) & International English Language Testing System (IELTS):

Name of Examination	Date of Exam	Aggregate Score & Remarks
1) GRE (General Test)	14 Oct 2013	*QR: 158 (72 nd Percentile) VR: 157 (73 rd Percentile) AW: 4 (54 th Percentile) QR & VR Scale: 130-170 AW Scale: 0-6
	3 Oct 2019	*QR: 157 (64 nd Percentile) VR: 161 (88 th Percentile) AW: 3.5 (39 th Percentile) QR & VR Scale: 130-170 AW Scale: 0-6
2) IELTS (Academic)	12 Oct 2013	Reading: 8.5 Listening: 8.5 Writing: 8.5 Speaking: 8.5 Overall Band Score: 8.5 (Band Scale: 0-9)
	10 Oct 2019	Reading: 9.0 Listening: 8.5 Writing: 7.0 Speaking: 8.5 Overall Band Score: 8.5 (Band Scale: 0-9) CEFR Level: C2 (Mastery Level)

* QR = Quantitative Reasoning; VR = Verbal Reasoning; AW = Analytical Writing

Current Projects (in progress):

1. Forthcoming Original Research & Review Articles:

- a. The Classical Double Slit Experiment: A study of the distribution of interference fringes on distant screens of varied shapes
- b. N-Slit Interference: A New Geometrical Approach
- c. Polychronous Wavefront Computation: Theory & Applications
- d. A Survey of the History and Applications of Artificial Intelligence

2. Forthcoming Presentations:

- a. The Classical Double Slit Experiment: A study of interference fringe distribution using a new geometrical approach – at the 107th Indian Science Congress Conference hosted by University of Agricultural Sciences, GKVK campus, Bangalore (2020)
- b. Scope of Consciousness Research in Neuroscience, Philosophy and Physics – at the Indian Institute of World Culture, Bangalore (2020)
- c. Artificial Intelligence Simplified – at the DePaul Institute of Religion and Philosophy, Bangalore (2019)

Conferences participated in:

	Conference Name	Hosting Venue & Organizing Body	Year
1)	NBNI Workshop on Neurobiology & Neuroinformatics	Cochin University of Science & Technology Centre for Neuroscience, Department of Biotechnology, Cochin	2008
2)	Translational Sciences: Bridging Ancient & Modern Biomedicine, 36 th Annual Conference of Indian Association of Biomedical Sciences	Pondicherry University, Department of Biotechnology, School of Life Sciences, Pondicherry	2015
3)	CME Program: "E = M4 Rediscovered Formula of Well Being" (in association with APPI – Bangalore Chapter)	Adichunchanagiri Institute of Medical Sciences, Department of Physiology, Mandya	2015

Conferences participated in (Continuation from previous page):

	Conference Name	Hosting Venue & Organizing Body	Year
4)	ENVOCCON 2016 International Conference on Environment & Occupational Health	Sree Balaji Medical College & Hospital Department of Physiology, Chennai, Tamil Nadu	2016
5)	CME Program: ENVIRONS 2016, Environmental Psychology	JSS Medical College, Department of Physiology, Mysore, Karnataka	2016
6)	CME Program: Art of Scientific Publication	MS Ramaiah Medical College International Medical School, Bangalore	2016
7)	Neuroscience 2017: Recent Advances in Research in Brain & Diseases	MS Ramaiah Medical College Department of Physiology, Bangalore	2017
8)	Medical Education Unit: Workshop on Mentoring Medical Students	East Point College of Medical Sciences & Research Center	2017
9)	Workshop on Modern Physics, Reality and Ancient Indian Wisdom (Supported by the Indian Council of Philosophical Research, Government of India)	National Institute of Advanced Studies, Bangalore	2018
10)	Quantum Physics & Brain Function in Modern Science & Buddhist Philosophy	Tibet House, Cultural Center of HH Dalai Lama, New Delhi (Indian Habitat Center)	2018
11)	Harmony – Interface of Cosmic, Ethical and Religious Orders	Christ University, Bangalore	2019
12)	11 th Annual Karnataka Science & Technology Conference on New Vistas in Science & Technology for the common good	NMKRV College, Bangalore	2019

Scholastic Achievements & Awards in College while studying for BSc, MSc and MD:

➤ **BSc Physics Major Degree:**

Topped the University Records of the past 5 years, averaging 92% for all the Physics modules combined & 85% for all the Mathematics modules combined. The Overall score which includes Humanities & Language was 80%. This achievement was acknowledged by a specially drafted letter, issued by the Director of the School of Sciences of the University.

➤ **MSc Cognitive & Computational Neuroscience Degree:**

Scored the highest marks in my batch at Sheffield University for the Computational modules in both the 1st and the 2nd Semesters. Passed the course with a Distinction and overall 2nd Position in the class.

The Department was also kind enough to award me a 'Special Department Bursary' amounting to UK Pounds 1500.

➤ **MD Medical Physiology Degree:**

Presented an Oral Paper in Sree Balaji Medical College, Chennai, as part of the ENVOCCON 2016 Conference.

It was based on my dissertation work.

The College was generous enough to award me the 1st Prize.

Scholastic Achievements & Awards in Senior High School:

- Won a **Silver Medal** (securing the **2nd Position**) in my Class for **Grade X** CBSE Board Examinations
- Received an **Honorary Award for coaching Physics** to **Grade XII students in my own School**, at the invitation of my School Principal, during the months between completion of Senior High School and joining Medical School
- I wrote an amateur Physics Thesis (unpublished) titled '**A Novel Theory of Evaporation Process**' while still studying in **Grade XII** (way back in 2002). It was informally reviewed by a Professor of Aeronautical Engineering working at the **Indian Institute of Technology (IIT), Madras**. The paper made use of an element of Einstein's theory of Photoelectric Effect, in relation to the process of surface evaporation from liquids. The good Professor in turn showed my manuscript to a visiting Physics faculty from a German University, who was kind enough to make the encouraging remark that I ought to focus on pursuing a research career (a direct PhD!) without losing any more time.

Complete Educational History (Starting from the Latest):

	Institution	University	Degree	Results	Period
1)	MS Ramaiah Medical College, Bangalore	Rajiv Gandhi University of Health Sciences	MD in Medical Physiology	Passed with 2 nd Class	Jun 2014 - Jul 2017
2)	Department of Psychology, Sheffield	University of Sheffield, United Kingdom	MSc in Cognitive & Computational Neuroscience	Passed with Distinction (2 nd Rank)	Sep 2012 - Aug 2013
3)	St Albert's College, Cochin	Indira Gandhi National Open University	BSc Degree Physics Major with Mathematics Minor	Passed with 1 st Division (1 st Rank)	Jun 2008 - Dec 2012
4)	MOSC Medical College, Ernakulum	Mahatma Gandhi University	MBBS – Medicine & Surgery	Passed with 2 nd Class	Aug 2002 - Jun 2008
5)	Indian High School, Ras Al Khaimah, UAE	CBSE, Delhi	Standards: IX to XII	Passed with Distinction	Jun 1998 - Jun 2002
6)	Indian Public School, Ras Al Khaimah, UAE	CBSE, Delhi	Standard VII to VIII	Passed with high grades in all subjects	Feb 1996 - Jun 1998
7)	English Speaking School, Ras Al Khaimah, UAE (British curriculum)	Managed by the British Community of Ras Al Khaimah	Nursery & Primary Classes until Standard VI (Junior 4)	Passed all Exams with Good Reports	Mar 1988 - Jan 1996

Social Services and Humanitarian work rendered:

- Volunteered to be the '**Scribe**' for a **visually impaired** super-specialist Doctor for his DM Endocrinology University Examinations held in July 2016
 - Have offered **cost-free coaching** to Students with Special Needs and disabilities
 - Was inducted into the **Anti-Ragging Committee** of MS Ramaiah Medical College for 2 successive years, between 2015 and 2017. Conducted routine inspections of the hostel premises on a weekly basis. Took the initiative, at great risk to my person, to directly tackle the '**Drug Menace**' in the Hostel grounds of my college campus by distributing pamphlets, raising social awareness among the freshmen, and doing one-to-one counseling sessions with Drug addicted students. These persistent efforts eventually helped change the attitude of the College authorities to finally acknowledge the existence of a serious problem and spurred them to take the desperately needed corrective actions.
- (Continued on next page)

Social Services and Humanitarian work rendered (Continuation from previous page):

- Have **donated a number of useful instruments** to my former Physiology Department in MS Ramaiah Medical College, incurring substantial personal expenses. The Equipment donated included items such as Tuning Forks, Knee Hammers, Snellen's Distant Vision Charts and Jaeger's Near Vision Charts.
- **Helped fund a local orphanage** called Angels Orphanage in Bangalore with a sizeable one-time donation relative to my income. I have also donated a laptop so that the dear sweet children may benefit from the many blessings of e-literacy.
- In my spare time, I do General Practice **without charging any consultation fee** and also **dispense free medication** to the poor and needy.
- As a **Provost & Warden in-charge of the Medical Hostels**, I helped set up the Visitors/Entertainment room, furnishing it with chess boards, carrom boards, basketballs and reading material. Also, installed a First Aid box containing all the essentials in case of emergencies. Acted as an Election Commissioner, to oversee that the whole election process of the freshmen Student Council members was done in a free and transparent manner. During my tenure, I took very firm steps to ensure that the medical hostel premises were smoke, alcohol and drug (SAD) free zones.
- In tune with my personal mission to find and encourage bright, young talent in science, I have recently formed a small team of former students to collaborate on a general review article on AI.

Research Interests:

- Mathematical modelling of Neural Systems
- Computational aspects of Cognitive processes such as 'Learning & Memory' in particular and 'Human Consciousness' in general.
- Keen desire to understand the Physical and Neural Network basis of the Sensory-motor devices and Brain-machine interfaces.

Extra-Academic & Non-Academic Pursuits:

- Reading and discussing the Bible, Christian Apologetics, Western Philosophy, Popular Science, Recreational Mathematics and World History
- Watching TED Talks and NOVA Documentaries
- Playing the Violin, Pencil Sketching, Basketball & Swimming

Family Background:

- Self:
Date of Birth : 04 Dec 1984
Place of Birth : Ras Al Khaimah, UAE
Nationality : Indian
Religion : Christian
Marital Status : Married
- Wife : Dr. Shweta Pai (MD Pathology, ISCA, QMS&IA), Assistant Professor & Blood Bank Officer, EPCMS&RC, Bangalore
- Father : Mr. Thomas Varghese (BSc Mathematics, IATA), Training Manager, Aviation Training Centre, Dubai, UAE
- Mother : Dr. Annie Susan Thomas (MBBS DCH Pediatrics - Dublin, Ireland), Private Practice, Ras Al Khaimah, UAE.
- Sister : Dr. Shoba Mary Thomas (MBBS), Abu Dhabi, UAE
- Brother : Dr. Joe Thomas (MD Dermatology) - Private Practice, Bangalore, India

- Gloria in excelsis Deo -