

CURRICULUM VITAE

Balachandar Kathirvelu, MBBS, PhD

Clinical Assistant Professor,
College of Health Sciences – Physical Therapy & Movement Sciences/ Occupational Therapy
The University of Texas at El Paso

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HIGHER EDUCATION

<u>Date Awarded</u>	<u>Degree</u>	<u>Major/ Emphasis</u>	<u>Institution</u>
2013	PhD	Behavioral Neuroscience	Tulane University, New Orleans, LA, USA
2010	MS	Behavioral Neuroscience	Tulane University, New Orleans, LA, USA
2002	MBBS	Bachelor of Medicine Bachelor of Surgery	The Tamil Nadu Dr. MGR Medical Univ. Kilpauk Medical College, Chennai, INDIA

EMPLOYMENT HISTORY

<u>Dates</u>	<u>Rank/ Title</u>	<u>Institution</u>
June 2024 - Present	Clinical Associate Professor	The University of Texas at El Paso,
June 2019 – May 2024	Clinical Assistant Professor, College of Health Sciences -Physical Therapy & Movt. Sci. -Occupational Therapy	
August 2018 – May 2019	Instructor of Anatomy, College of Medicine	Central Michigan University
November 2017 – May 2019	Postdoctoral Research Associate Neuroscience Program	Central Michigan University
2012 - 2017	Postdoctoral Scholar David Geffen School of Medicine, Department of Neurology	University of California, Los Angeles (UCLA)
2006 – 2012	Teaching Assistant Neuroscience Program & Department of Psychology	Tulane University, New Orleans
2004- 2005	Research Assistant	Department of Public Health & Preventive Medicine, Chennai, India

2002- 2004	Resident Medical Officer	YR Gaitonde Centre for AIDS Research and Education (YRG CARE), Chennai, INDIA
2001- 2002	Resident Intern in the following departments/ specialties <ul style="list-style-type: none"> - General Medicine - General Surgery - Pediatrics - Obstetrics and Gynecology - Intensive Medical Care - Orthopedic Surgery - Trauma & Casualty - Community Medicine - Respiratory Medicine - Dermatology - Forensic Medicine - Diabetology - Primary Health Care Centers 	Kilpauk Medical College, Chennai, INDIA

TEACHING EXPERIENCE

Dates	Course Title	Level of Effort
<u>At University of Texas at El Paso -Grad level courses</u>		
Fall 2024	<ul style="list-style-type: none"> - DRSC 6495- Anatomy for Rehab Sciences (16301) - DRSC 6495- Anatomy for Health Sciences -Lab (14609) - DRSC 6495- Anatomy for Health Sciences -Lab (14610) - DRSC 6388- Pathophysiology (14611)) - PT 6116- PT Capstone Project I (14353) 	Instructor Instructor Advisor
Summer 2024	<ul style="list-style-type: none"> - DRSC 6301- Normal Physiology/ Embryology (33039) - PT 6205- Pharmacology in PT (32369) 	Instructor
Spring 2024	<ul style="list-style-type: none"> - DRSC 6495 Anatomy for Rehab Sciences (26404) - DRSC 6495 Anatomy for Rehab Sciences (26409)-Lab - PT 6109 Imaging (23733) - PT 6117 PT Capstone Project II (23753) - PT 6117 PT Capstone Project II (23757) - Lectured on the special topic "autonomic nervous system" for DRSC 6390 Neuroscience course. 	Instructor Instructor Advisor Guest lecture
Fall 2023	<ul style="list-style-type: none"> - DRSC 6495- Anatomy for Rehab Sciences (15671) - DRSC 6495- Anatomy for Health Sciences -Lab (15672) - DRSC 6495- Anatomy for Health Sciences -Lab (15673) - DRSC 6388- Pathophysiology (15674)) - PT 6116- PT Capstone Project I (15321) 	Instructor Instructor Advisor
Summer 2023	<ul style="list-style-type: none"> - DRSC 6301- Normal Physiology/ Embryology (35668) - PT 6205- Pharmacology in PT (34620) 	Instructor
Spring 2023	<ul style="list-style-type: none"> - DRSC 6495 Anatomy for Rehab Sciences (26744) - DRSC 6495 Anatomy for Rehab Sciences (26745)-Lab - PT 6109 Imaging (24174) 	Instructor

	- DRSC 6390 Neuroscience (26747)	
	- PT 6117 PT Capstone Project II (24197)	Advisor
	- PT 6117 PT Capstone Project II (24198)	
	- Lectured on the topic "Physical Examination" for Differential Diagnosis PT 6203	Guest Lecture
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Fall 2022	- DRSC 6495- Anatomy for Rehab Sciences	Instructor
	- DRSC 6495- Anatomy for Health Sciences -Lab	
	- DRSC 6495- Anatomy for Health Sciences -Lab	
	- DRSC 6388- Pathophysiology (5202310)	
	- - PT 6116- PT Capstone Project I (20002)	
Summer 2022	- DRSC 5301- Normal Physiology/ Embryology (35412)	Instructor
	- PT 6205- Pharmacology in PT (35379)	
Spring 2022	- DRSC 5495 Anatomy for Health Sciences (23433)	Instructor
	- DRSC 5495 Anatomy for Health Sciences (23473)-Lab	
	- PT 6109 Imaging (25986)	
	- PT 6117 PT Capstone Project II (27522)	Advisor
	- PT 6117 PT Capstone Project II (27523)	
	- Lectured on the topic "Physical Examination" for Differential Diagnosis PT 6203	Guest Lecture
Fall 2021	- DRSC 5495- Anatomy for Health Sciences (12380)	Instructor
	- DRSC 5495- Anatomy for Health Sciences (12717)-Lab	
	- DRSC 5495- Anatomy for Health Sciences (12960)-Lab	
	- DRSC 5388- Pathophysiology for Health Sci. (12379)	
	- PT 6116- PT Capstone Project I (19970)	Advisor
	- PT 6116- PT Capstone Project I (19971)	
Summer 2021	- DRSC 5301- Normal Physiology/ Embryology (35503)	Instructor
	- PT 6205- Pharmacology in PT (35496)	
Spring 2021	- DRSC 5495 Anatomy for Health Sciences (23761)	Instructor
	- DRSC 5495 Anatomy for Health Sciences (23805)-Lab	
	- PT 6109 Imaging (26720)	
Fall 2020	- DRSC 5495- Anatomy for Health Sciences (12536)	Instructor
	- DRSC 5495- Anatomy for Health Sciences (12908)-Lab	
	- DRSC 5495- Anatomy for Health Sciences (13157)-Lab	
	- DRSC 5388- Pathophysiology for Health Sci. (12535)	
	- PT 6116- PT Capstone Project I (19803)	Advisor
	- PT 6116- PT Capstone Project I (19804)	
Summer 2020	- DRSC 5301- Normal Physiology/ Embryology (35521)	Instructor
	- PT 6205- Pharmacology in PT (35552)	
Spring 2020	- DRSC 5495 Anatomy for Health Sciences (24259)	Instructor
	- DRSC 5495 Anatomy for Health Sciences (24306)-Lab	
	- PT 6109 Imaging (27878)	
	- Lectured on the topic "Physical Examination" for Differential Diagnosis PT 6203	Guest Lecture
Fall 2019	- DRSC 5495- Anatomy for Health Sciences (12712)	Instructor
	- DRSC 5495- Anatomy for Health Sciences (13104)-Lab	
	- DRSC 5495- Anatomy for Health Sciences (13369)-Lab	

	- DRSC 5388- Pathophysiology for Health Sci. (12711)	
Summer 2019	- DRSC 5301- Normal Physiology/ Embryology (34921) - PT 6205- Pharmacology in PT (34934)	Instructor
<u>At Central Michigan University -College of Medicine</u>		
Spring 2019	- Foundational Sciences/ Anatomy Lab – Session 1 - Foundational Sciences/ Anatomy Lab – Session 2	Instructor
Fall 2018	- Foundational Sciences/ Anatomy Lab – Session 1 - Foundational Sciences/ Anatomy Lab – Session 2 - Foundational Sciences/ Neuroanatomy Part 1 - Foundational Sciences/ Neuroanatomy Part 2	Instructor Special topic Guest Lecture
<u>University of California, Los Angeles (UCLA)</u>		
2012 – 2017	- Taught laboratory techniques - Supervised in experimental and thesis writing	Postdoctoral scholar
<u>Tulane University, New Orleans</u>		
2006 – 2012	- Psychopharmacology (Lab) - Biopsychology (Lab) - Neurobiology of Learning and Memory (Lab) - Drug and Behavior (Lab)	Teaching Assistant
<u>Kilpauk Medical College/ Public and Private institutions</u>		
2002- 2005	- Taught Patients screening methods and protocols to interns - Taught Nursing and Medical students about handling patients, minor medical procedures and gathering data for epidemiological surveys - Taught junior interns to follow protocols for invasive/ non-invasive medical procedures, diagnose and treat medical conditions.	Research Assistant Resident Medical Officer Medical Intern

COMMITTEES, SERVICE ACTIVITIES & PROFESSIONAL APPOINTMENTS

<u>Year</u>	<u>Organization</u>	<u>Position</u>
2023- Present	Honors and Awards – College of Health Sciences	Co-Chair (2023 –2025)
2021 – Present	Honors and Awards – College of Health Sciences The University of Texas at El Paso (COLLEGE level)	Committee Member
2023- 2025	Faculty Annual Performance Evaluation Committee (Department level)	Committee member

2023 – 2024	Faculty Search Committee (Department level)	Committee member
2023 – Present	Research Committee – PT & Movement Sciences (Department level)	Committee Member
2019 – Present	DPT Admissions Committee– College of Health Sciences The University of Texas at El Paso (Department level)	Committee Member
2020 - 2021	College of Health Sciences- Faculty search committee Rehabilitation Sciences and Occupational Therapy	Committee Member
2022- Present	The American Association of Clinical Anatomists	Judge / Abstract reviewer
	2024 The American Association of Clinical Anatomists Annual meeting-Poster Presentation Weill Cornell Medicine, New York	Abstract Reviewer
	2023 The American Association of Clinical Anatomists Annual meeting-Poster Presentation Orlando, Florida	Judge
	2022 The American Association of Clinical Anatomists Annual meeting-Poster Presentation Dallas, Forth Worth Texas	Judge
2019- Present	Journal- Life Sciences-Elsevier	Reviewer
2019- Present	Journal- Neurorehabilitation and Neural Repair	Reviewer
2019- Present	Journal- Plos One	Reviewer
2015 - 2017	Journal- Behavioral Brain Research & Stroke	Reviewer

AWARDS & FELLOWSHIPS

<u>Year</u>	<u>Award</u>	<u>Organization</u>
2006 – 2012	Graduate Teaching Assistantship and Research Fellowship	Graduate School, Tulane University
2011	Dean’s Office Travel Award 300\$	School of Science and Engineering Tulane University
2010	Robert E. Flowerree Summer Research Fellowship – 2000\$ https://sse.tulane.edu/node/4011	Psychology, Graduate Awards, Tulane Univ.
2009	Graduate Student Travel Grant – 500\$	Provost’s Office Tulane University

2009	Robert E. Flowerree Summer Research Fellowship – 2000\$ https://sse.tulane.edu/node/4011	Psychology, Graduate Awards, Tulane Univ.
2009	Flowerree Travel Award – 300\$	Psychology, Tulane University
2007	Robert E. Flowerree Summer Research Fellowship – 2000\$	Psychology, Graduate Awards, Tulane Univ.

DISSERTATION AND MASTER'S THESIS

Dissertation: **Kathirvelu B (2013)**. Investigations of the role of the transcription factor CREB in memory formation, and interactions between the hippocampus and the striatum memory systems

Master's Thesis: **Kathirvelu B (2010)**. Learning-induced changes in CREB phosphorylation during memory formation: evidence for interaction between the hippocampus and dorsal striatum

PUBLICATIONS IN PEER-REVIEWED JOURNALS

Google Scholar link: <https://scholar.google.com/citations?user=aP8oWGQAAAAJ&hl=en>

S Narayanan, P Kandaswamy, N Arun, SN Ramachandran, **B Kathirvelu. 2023**/10/1. An Unusual case of Abdominal pain. Official journal of the American College of Gastroenterology| ACG

S Narayanan, P Kandaswamy, D Singh, S N Ramachandran, C Clark, N Arun, **B Kathirvelu. 2023**/10/1. Unusual Presentation of Metastatic Renal Cell Carcinomas as Upper Gastrointestinal Bleed. Official journal of the American College of Gastroenterology| ACG

Ramachandran, P., **Kathirvelu, B.**, Chakraborti, A., Gajendran, M., Zhahid, U., Ghanta, S., Onukogo I., Narh, JT, Wang JC., Anwer, F. (2020). COVID-19 in Cancer Patients From New York City: A Comparative Single Center Retrospective Analysis. Cancer Control, 27(1), 1073274820960457. doi:10.1177/1073274820960457

Ramachandran P, Perisetti A, **Kathirvelu B.** Gajendran M, Ghanta S, Onukogu I, Lao T, Anwer F. Low morbidity and mortality with COVID-19 in sickle cell disease: A single center experience. ejHaem. August 2020 <https://doi.org/10.1002/jha2.87>

Srinageshwar B, Dils A, Sturgis J, Wedster A, **Kathirvelu B.** Baiyasi S, Swanson D, Sharma A, Dunbar GL, Rossignol J. Surface-Modified G4 PAMAM Dendrimers Cross the Blood-Brain Barrier Following Multiple Tail-Vein Injections in C57BL/6J Mice. ACS Chem Neurosci. 2019 Sep 18;10(9):4145-4150. doi: 10.1021/acchemneuro.9b00347. Epub 2019 Aug 20.

Carmichael ST, **Kathirvelu B.** Schweppe CA, Nie EH. (2017). Molecular, cellular and functional events in axonal sprouting after stroke. Exp Neurol. 2017 Jan; 287(Pt 3):384- 394. doi: 10.1016/j.expneurol.2016.02.007.

Kathirvelu, B. & Carmichael, S. T. (2015). Intracerebral hemorrhage in mouse models: therapeutic interventions and functional recovery. Metab Brain Dis. 2015 Apr; 30(2):449- 59. doi: 10.1007/s11011-014-9559-7.

Kathirvelu, B., & Colombo, P. J. (2013). Effects of lentivirus-mediated CREB expression in the dorsolateral striatum: memory enhancement and evidence for competitive and cooperative interactions with the hippocampus. *Hippocampus*, 23(11), 1066-1074. doi: 10.1002/hipo.22188

Kathirvelu, B., East, B. S., Hill, A. R., Smith, C. A., & Colombo, P. J. (2013). Lentivirus-mediated chronic expression of dominant-negative CREB in the dorsal hippocampus impairs memory for place learning and contextual fear conditioning. *Neurobiol Learn Mem*, 99, 10-16. doi: 10.1016/j.nlm.2012.10.008

PRESENTATIONS AT PEER REVIEWED SCIENTIFIC MEETINGS

Pectoralis Intermedius: A rare accessory muscle in the pectoral region. **B Kathirvelu** & Daniel Conde, American Association of Clinical Anatomists **2023 Annual Meeting**, Florida

Unusual Presentation of Metastatic Renal Cell Carcinomas as Upper Gastrointestinal Bleed. S Narayanan, P Kandaswamy, D Singh, S N Ramachandran, C Clark, N Arun, **B Kathirvelu** **2023 ACG Annual Scientific Meeting**, Vancouver, Canada

An Unusual case of Abdominal pain. S Narayanan, P Kandaswamy, N Arun, S N Ramachandran, **B Kathirvelu**. **2023 ACG Annual Scientific Meeting**, Vancouver, Canada

Excellent Treatment response of an aggressive primary Duodenal neuroendocrine Carcinoma to Oxaliplatin-Based Chemotherapy. S Sigale, T Zollars, S Ramachandran, C R Burns, P Ramachandran, **B Kathirvelu**, ACG 2022, Charlotte, North Carolina

Comparison of Ovine and Bovine sources of GM1 Ganglioside as a treatment for Huntington's disease in YAC128 mice model. *S. Koneru, B. **Kathirvelu**, B. Macdonald, D. Eldred, M. Resk, N. Fettingner, M. I. Sandstrom, U. Hochgeschwender, P. Maiti, J. Rossignol, G. L. Dunbar. Society for Neuroscience, 2019, Chicago, IL

Potential application of the novel dendrimer-cystamine-curcumin nanoparticle technology for treatment of glioblastoma. M. Fana, N. Munro, B. Srinageshwar, **B.Kathirvelu**, D. Swanson, G. L. Dunbar, A. sharma, J. Rossignol. Society for Neuroscience, 2018, San Diego

Therapeutic effect of curcumin entrapped dendrimer nanoparticles on a mouse model of glioblastoma. N. Munro, B. Srinageshwar, M. Fana, C. Malkowski, S. Climie, **B. Kathirvelu**, D. Swanson, A. Sharma, G. Dunbar, J. Rossignol. Society for Neuroscience, 2018, San Diego.

Lentivirus overexpression of CREB in the dorsolateral striatum facilitates long-term memory for cue learning and contextual fear conditioning: Evidence for a cooperative interaction between the striatum and the hippocampus. **B. Kathirvelu**, D.E. Kochli, G. S. Hill, P. J. Colombo. Society for Neuroscience, 2011, Washington, D.C.

Wasted on the young: overexpression of CREB in the hippocampus improves spatial memory in young, but not middle-aged, rats. B. S. East, Jr., **B. Kathirvelu**, D.E. Kochli, P. J. Colombo. Society for Neuroscience, 2011, Washington, D.C.

Learning-induced increases in histone acetylation after reinforcement of place and response strategies. M.E. Crawley, **B. Kathirvelu**, P. J. Colombo. Society for Neuroscience, 2011, Washington, D.C.

Lentivirus overexpression of mutant CREB in the dorsal hippocampus impairs long-term memory retention of place learning and contextual fear conditioning. **B. Kathirvelu**, B. S. East, Jr., A. R. Hill, C. A. Smith, P. J. Colombo. Poster presented at the 40th Annual meeting of the Society for Neuroscience, 2010, San Diego.

Lentivirus overexpression of CREB in the dorsolateral striatum impairs long-term memory for place learning: Evidence for a competitive interaction between the striatum and the hippocampus. P. J. Colombo, **B. Kathirvelu**, G. S. Hill, B. S. East, Jr., M. A. Musselman, Poster presented at the 40th Annual meeting of the Society for Neuroscience, 2010, San Diego.

Regional CREB phosphorylation is related to place and response learning and consistent with competition between hippocampus and dorsal striatum during memory formation. **B. Kathirvelu**, M. E. Crawley, I. F. Foster, M. A. Musselman, P. J. Colombo. Poster presented at the 39th Annual meeting of the Society for Neuroscience, 2009, Chicago.

Socially transmitted food preference (STFP) learning-associated changes in the levels of phosphorylated T286 Calcium/ Calmodulin-dependent protein kinase-II (pT286 CaMKII) in the hippocampal formation. **B. Kathirvelu**, C.A. Smith, & P.J. Colombo. Poster presented at the 37th Annual meeting of the Society for Neuroscience, 2007, San Diego.

MENTORING EXPERIENCE

Graduate Student Name (Doctor of Physical Therapy)	Project Title	Role
2024 Graduated		
1. Lachlan Cubbin 2. Kelli Kirkpatrick	Effects of using external biofeedback in improving ankle kinematics in those with chronic ankle instability compared to conventional therapy without external biofeedback: A systematic review	Advisor
1. Courtney Andrade 2. Casey David 3. Grace Hicks-Green 4. Riley Young	Investigating the efficacy of yoga vs traditional physical therapy in chronic low back pain: A systematic review	Advisor
2023 Graduated		
1. Justin Esparza 2. Bianca Magallanes 3. Alexis Mendez	Dry Needling as an alternative Physical Therapy treatment for patients with Cervicogenic Headaches: A Systematic Review	Advisor
1. Guillermo Mota 2. Halil Rodriguez 3. Edgar Hinojosa 4. Rebeca Baeza	Comparison of Aquatic and Land-based rehabilitation in post-stroke patients for balance and gait: A systematic review	Advisor
2022 Graduated		
1. Alexandra Gutierrez Loya 2. Gregory Bell 3. Kayla Harrell 4. Nora Salgado Chavez	Comparison of Treadmill Training for individual post-cerebrovascular accident in normalizing reciprocal gait and improving balance: A Systematic Review	Advisor
1. Nicholas Montoya 2. Megan Eckert 3. Josephine Hay 4. Jesus Ortegon Jr.	Effects of Pain coping skills training in addition to exercise on knee pain, knee function, and psychological factors in patients with knee osteoarthritis: A Systematic Review	Advisor

**Bio-Medical Engineering
PhD Candidate**

Project Title

Role

Deepali Bisht

Discovery of peptides for targeted delivery of mRNA lipid nanoparticles to cystic fibrosis lung epithelia

Dissertation
Committee
member

PROFESSIONAL MEMBERSHIPS

- The American Association of Clinical Anatomists
- Society for Neuroscience
- Tamilnadu Medical Council of India – Certified and Registered to practice Medicine in INDIA