



## **VISHNA DEVI V NADARAJAH**

### **Curriculum Vitae**

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## **1.1 SUMMARY**

Vishna Devi V Nadarajah is currently, Professor in the School of Medicine and Pro-Vice Chancellor, Education at the International Medical University in Kuala Lumpur, Malaysia. She graduated with a First Class Honours degree in Biochemistry from the University of Malaya (1994) and obtained her PhD at the University of Cambridge in biochemistry (2000). She is also a graduate of the Masters in Health Professions Education from Maastricht University (2014). She has published and presented research papers in both biomedical sciences and medical education, supervises research students and reviews for indexed and international journals. She is a member of the international editorial board of the journal Medical Education. She was awarded the Malaysian Womens Weekly (2012), Great Women of Our Time award for her contribution in Science and Technology in Malaysia. Her areas of research for health professions education is in Faculty development, Assessment and Innovative Teaching Learning methods. Vishna has shared her experience and expertise in health professions education via invitations to speak at conferences, conducting faculty development workshops, consultancies and collaborative research, appreciating that she has also learnt very much from these collaborative sessions with other educators. As Pro Vice Chancellor, Education, she leads and engages with faculty across the five schools in the University on strategic planning, resource development and implementation of its academic programmes including medicine, dentistry, pharmacy and other health sciences programmes. She also continues to teach and facilitate in both undergraduate and post graduate programmes for subjects related to biochemistry, genetics and molecular biology, a role she values and keeps her engaged with students.

## **1.2 PERSONAL DATA**

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Office address: International Medical University, No 126, Jalan Jalil Perkasa 19, Bukit Jalil, 57000 Kuala Lumpur

## **1.3 EDUCATION**

1.3.1	B.Sc (Hons) First Class (Biochemistry)	University of Malaya	1994
1.3.2	PhD (Biochemistry)	University of Cambridge	2001
1.3.3	Masters in Health Professions Education	University of Maastricht	2014

## **1.4 AWARDS AND KEY CERTIFICATIONS**

### **1.4.1 AWARDS**

- a. University Malaya Book Prize 1994
- b. Malaysian Society for Biochemistry and Molecular Biology: Best Thesis Award for the Honours Year session 1994
- c. The Society for Invertebrate Pathology: Student Paper Presentation Award 1997 (International)

- d. The Frederick Sanger Travel Fund Recipient (August, 1997, Department of Biochemistry, University of Cambridge)
- e. Chevening Award from the Foreign and Commonwealth Office, United Kingdom (1996 to 1999)
- f. The Cambridge Commonwealth Trust Bursary Award (1996 to 1998)
- g. The Ranjeet Singh Bhagwan Medical Research Grant (2002) from the Academy of Sciences Malaysia.
- h. MAKNA Cancer Research Grant (2003), National Cancer Association.
- i. Association Française contre les Myopathies (AFM) Research Award 2010
- j. **Award winner of the The Malaysian Women Weekly, Great Women of Our Times Award in Science and Technology (2012)**
- k. **ASPIRE-AMEE Award for Student Engagement 2013 in a Medical School.** (Project Lead and Award recipient in Association for Medical Education in Europe, Prague, Czech, Republic August 2013)
- l. **National outstanding educator award 2018 (university category),** awarded by Private Education Cooperation Malaysia.

#### 1.4.2 KEY CERTIFICATIONS

- a. GCP certified, recognized by the Ministry of Health Malaysia.
- b. Certification courses for Intellectual Property Management and Total Quality Management.
- c. Investors in People Champion (IIP). IIP is the UK's leading people management standard. IIP is a business improvement tool designed to help all kinds of organisations develop performance through their people.
- d. Kepner Tregoe (KT) Problem Solving and Decision Making workshop. KT implements strategies by embedding problem-solving, decision-making, and project execution methods through individual and team skill development and issue resolution process improvement.
- e. Coaching for Performance workshop. Learning to become a solution enabler to bring the best possibilities in people.
- f. Presentations Alive. How to effectively communicate using multimedia presentations.
- g. Certified by the Malaysian Qualifications Agency for Programme Accreditation in Malaysia
- h. Completed the International Advanced Assessment Course (Singapore 2016)

### 1.5 **EMPLOYMENT HISTORY**

- |       |  |              |
|-------|--|--------------|
| 1.5.1 | Faculty of Medicine, University Malaya<br>(Tutor)  | 1994 to 1995 |
| 1.5.2 | Department of Biochemistry, University of Cambridge<br>(Graduate Student: Full time, Demonstrator /Tutor: Part time)                     | 1995 to 1999 |
| 1.5.3 | International Medical University, Kuala Lumpur<br>(Faculty member: Lecturer, Senior Lecturer, Associate Professor at School of Medicine) | 1999 to 2008 |

- 1.5.4 Department of Human Genetics, Leiden University Medical Centre 2009 to 2011  
(Post-doctoral Scientist)
- 1.5.5 International Medical University, Kuala Lumpur 2011 to current  
(Faculty member: Professor, Human Biology, School of Medicine; Dean for Teaching and Learning 2014-2017; and currently Pro-Vice Chancellor, Education)

## **1.6 ADMINISTRATIVE AND TEACHING POSITIONS AT IMU**

- 1.6.1 Systems Coordinator: Endocrine 1999 - 2004
- 1.6.2 Acting Associate Dean (Student Affairs) July 2004 - June 2005
- 1.6.3 Deputy Director (Quality) Centre for Medical Education June 2007 - Dec 2008
- 1.6.4 Programme Coordinator Medical Biotechnology July 2007 - Dec 2008
- 1.6.5 Associate Dean (Teaching and Learning) Oct 2011 - June 2014
- 1.6.6 Dean (Teaching and Learning) July 2014 - Dec 2017  
Chair of the University Teaching Learning Committee, Member of the University Senate, Faculty Board, Joint Committee for Research and Ethics, Academic Quality Committee and Dean's Committee.
- 1.6.7 Pro Vice Chancellor, Education Jan 2018 - present

My current role includes leading at the university level and engaging with faculty across the five schools at IMU (School of Medicine, School of Dentistry, School of Pharmacy, School of Health Sciences and School of Postgraduate Studies). My role also includes raising IMU's profile by collaborating with Health Professional Educators at the National, Regional and International level. Areas under my purview include

- Formulation of strategies, policies and guidelines related to the improvement of teaching/learning in the University's academic programmes based on a student-centred and work ready learning model
- Advisor for Curriculum review and design for medicine, dentistry, pharmacy and health sciences
- Manage and allocate funds for major initiatives towards improving the quality of teaching and implementing innovative approaches to teaching
- Planning and Coordinating IMU's annual Professional Educational Advisory Committee (Members Include eminent medical educationists like Prof Trudie Roberts, the late Professor Karen Mann, Professor Richard Hays, Professors Jim McKillop from UK, Canada and Australia)
- Manage the Teaching Excellence Awards and Faculty Competencies Assessment Test (Fac-CAT) and advise on Faculty Functionality with Human Resources
- Promote, monitor and evaluate best practice, including use of technology in the delivery of IMU programmes via the ICE, CSSC and Learning Resources team.
- Advise on the Accreditation of academic programmes at IMU, including academic lead for self-accreditation status of IMU
- Dissemination of knowledge of best practice, through bulletins, website maintenance, seminars, and other means
- Align, Develop and Deliver Faculty Development Activities related to Faculty Competencies, Student Engagement, Curricula Development and Instructional Design of programmes
- Advise on Student assessment procedures

- Internationalisation and Partner School Linkages related to Health Professional Education including playing major roles in international conferences , associations and journals
- Leading a core team of associate deans and resource centre directors as part of the Learning Enhancement team
- Mentoring faculty members for their personal and professional development
- Leading and advising on Health Professionals Education Research at National and Asia Pacific Region. (Via the Asia Pacific Medical Education Network, Asean Medical Education Alliance)
- Teaching biochemistry (related concepts), facilitating Problem Based Learning or laboratory sessions in the medical, dental, pharmacy, biomedical and medical biotechnology programme at IMU.

## **1.7 EXAMPLES OF KEY CONTRIBUTIONS AND IMPACT TO IMU**

- 1.7.1 1999-2009 (in addition to day to day teaching, research and admin responsibilities)
- a. Developed IMU Intellectual Property Policy and assisted in setting up of the research facilities with Prof Mak Joon Wah
  - b. Systems coordinator and curriculum review member for MBBS
  - c. Investors in People Initiative to analyse IMU's contribution to staff development
  - d. Review of Students Evaluation at CtME including implementation of IMU DREEM
  - e. Early publications related to medical education in IMU.
  - f. Started internal and external faculty development for IMU
  - g. IMU Scholarship and Bursary Directorate (listing Funding opportunities for students, during brief period as Associate Dean Student Affairs)
  - h. Development of the Medical Biotechnology and Biomedical Sciences Degree Programme
  - i. Co-developed the PBL Induction Week for MBBS
  - j. Secured funding from Academy of Sciences and MAKNA (this funding in addition to the BMedSci funding) helped jumped start research activities independently in IMU
  - k. Supervised 13 BMedSci students since the inception of the programme as at that time researchers with funding were limited.
- 1.7.2 2011-2018 (in addition to day to day teaching, research and admin responsibilities)
- a. Realign curriculum 2011 in phase 1 of the IMU MBBS for implementation, these including faculty engagement and buy in (the main lead had left for Australia)
  - b. Developed policies and guidelines for IMU in relation to teaching and learning as reference and streamlining standards across programmes.
  - c. Aligned faculty development in IMU to staff PPD needs and institutional direction, including introduction of the recent Fac-CAT and ensuring the IMU training calendar for T&L is published early.
  - d. Designed the Fundamentals in Teaching and Learning Course and committed to continuously enhancing it using technology enhanced learning. Also developed the popular and well received facilitator training programme, case writing workshop and reflective practice workshop for IMU.

- e. Continuously enhanced the format and proceedings of PEAC and AC with reviews and topics related to IMU's needs (until 2017).
- f. Raised profile of IMU in Health Professions Education via IMEC (with increasing participation), winning the international AMEE ASPIRE award for student engagement, hosting AMEA 2019 and Ottawa 2020 being invited to national and international conferences, and increasing research publications.
- g. Contributed significantly to the Self-accreditation status (rewriting of documentation with appropriate evidence /offered strategies for governance etc)
- h. Teaching and Learning lead for the open and distance learning (ODL) initiative via redesigning the learning experience using our LMS
- i. Implemented and used the International Student Barometer for continuous enhancement of the student learning experience
- j. Lead in the design and implementation of the Online Assessment System

## **1.8 RESEARCH (FOR EVIDENCE OF IMPACT AND EXPERTISE IN THE FIELD OF HEALTH PROFESSIONS EDUCATION AND BIOMEDICAL RESEARCH)**

### **Total Publications : Health Professionals Education and Biomedical Research**

<b>No.</b>	<b>Publication</b>	<b>Quantity</b>
1.	Journal Articles	42
2.	Books	2 (chapters)

### **1.8.1 HEALTH PROFESSIONS EDUCATION**

#### **HEALTH PROFESSIONS EDUCATION RESEARCH (areas of research)**

- a. Script Concordance Test to assess Professional practice decision making
  - b. Clinical supervisors perception and preferences for attributes needed for clinical preparedness
  - c. Final year undergraduate students and health professionals perception of Interprofessional practice
  - d. Peer tutor for clinical skills teaching and learning
  - e. Problem based learning
  - f. Graduate work readiness
  - g. Developing faculty competencies through Individual Development Programmes
- Grants are obtained from the International Medical University Research Fund.  
2002 to 2016, Amount Received: RM 200000.

External Research Collaboration in Health Professionals Education has recently been initiated and ongoing with the University of Newcastle, Australia (topic Personal quality attributes of students); University of Tasmania, Australia (epistemological beliefs of students); and University of Adelaide, Australia (Script concordance test).

#### **Full research papers in peer reviewed and indexed journals, for example:**

1. Twelve tips for enhancing student engagement. Harm Peters, Marko Zdravkovic, Manuel João Costa, Tony Celenza, Kulsoom Ghias, Debra Klamen, Liz Mossop, Michael Rieder, **Vishna Devi Nadarajah**, Danai Wangsaturaka, Martin Wohlin, and Margot Weggemans. Medical Teacher (2018 Apr 22:1-6. doi: 10.1080/0142159X.2018.1459530.)
2. Pharmacy Students' Perceptions of Reflective Portfolios, and the Effect of the Portfolio on Students' Deep Information-Processing Skills. Hui Meng Er, Marcus Kuek Jia Ming, Pei Sin Keng, **Vishna Devi Nadarajah**. American Journal of Pharmacy Education (Accepted March 2018, in press)
3. Personal domains assessed in multiple mini interviews (MMIs) for healthcare student selection: a narrative synthesis systematic review. Callwood A, Kotronoulas G, Schneider A, Jeevaratnam K, Lewis L, **Nadarajah VD**. Nurse Education Today (2018 May;64:56-64. doi:

10.1016/j.nedt.2018.01.016. Epub 2018 Jan 31)

4. Development of an Institutional Assessment Framework. Er HM, **Nadarajah VD**, Radhakrishnan AK. Medical Education (Accepted January 2018. Mar 24. doi: 10.1111/medu.13568) Theme: Really Good Stuff.
5. Problem based Learning , a time to reflect and remediate. **Nadarajah VD**, Ravindrananth S, Banneheke,H. South East Asian Journal of Medical Education (SEAJME),(Volume 10 Number 2 / 2016).
6. PS Wong <sup>1</sup>, SS Hasan<sup>1</sup>, JL Ooi<sup>2</sup>, LSH Lim<sup>3</sup> and **VD Nadarajah<sup>1</sup>** Assessment of attitudes for interprofessional team working and knowledge of health professions competencies for final year health professional students. Published online: 2 January, TAPS 2018, 3(1), 27-37
7. Banneheke H, **Nadarajah VD**, Ramamurthy S, Sumera A, Ravindranath S, Jeevaratnam K, Efendie B, Chellamuthu L, Krishnappa P, Peterson R. Student preparedness characteristics important for clinical learning: perspectives of supervisors from medicine, pharmacy and nursing. BMC Med Educ. 2017 Aug 8;17(1):130. doi: 10.1186/s12909-017-0966-4
8. Medical students' epistemological beliefs: Implications for curriculum. D Assenheimer, K Knox, **VD Nadarajah**, C Zimitat Education for Health 29 (2), 107,2016
9. Student's perception of mind mapping in Problem-based learning. S Ravindranath, WK de Abrew, **VD Nadarajah\***. J Contemp Med Edu 4 (2), 61, 2016
10. Study on impact of open and closed book formative examinations on pharmacy students performance, perception and learning approach. Ramamurthy S, Er HM, Pook PCK, **Nadarajah VD\***. Currents in Pharmacy Teaching and Learning , 8 (3), 364-374, 2015
11. The near-peer tutoring programme: embracing the 'doctors-to-teach' philosophy--a comparison of the effects of participation between the senior and junior near-peer tutors. Liew SC, Sow CF, Sidhu J, **Nadarajah VD\***. Med Educ Online. 2015 Sep 8;20:27959. doi: 10.3402/meo.v20.27959. eCollection 2015
12. Implementation of the restaurant-type problem-based learning in a chiropractic program in Malaysia.Win NN, **Nadarajah VD\***, Win DK. J Educ Eval Health Prof. 2015 May 8. doi: 10.3352/jeehp.2015.12.17.
13. Learning for the Future: The IMU Experiment, Chapter: The 8 Principles of Learning in the IMU. Victor Lim, Allan Pau Kah Heng, Winnie Chee, **Vishna Devi V Nadarajah** [...] Muneer Gohar Babar Publisher: International Medical University, Editors: P.K.C. Lim, J.W. Mak, pp.146 – 155. Book Chapter 2015
14. Institute for Research, Development and Innovation (IRDI) of the International Medical University (IMU), Malaysia. Wan-Loy Chu, Eng-Lai Tan, Stephen Ambu, Chee-Onn Leong,



**Vishna Devi Nadarajah**, Patricia Kim-Chooi Lim, Shew-Fung Wong, Geok-Lin Khor, James Michael Menke, Joon-Wah Mak. The Malaysia Japan Model of Technology Partnership. International Proceeding 2013 of the Malaysia-Japan Academic Scholar Conference. [springer.com/978-4-431-54438-8](http://springer.com/978-4-431-54438-8) (Book chapter)

15. Pau A, Jeevaratnam K, Chen YS, Fall Abdoul Aziz, Khoo C, **Nadarajah VD**. The Multiple Mini-Interview (MMI) for students selection in health professions training – a systematic review. *Med Teach*. 2013 Sep 20. [Epub ahead of print].
16. **Nadarajah, VD\***, Ponnudurai, G. and Chen YS. Relations between Student Profile and their Perception of Problem Based Learning. *SEAMEO-Innotech Journal*. 2005:XXIX (1):55-66.
17. Ponnudurai G, **Nadarajah VD**, Chen YS. Problem Based Learning Induction Programme at the International Medical University: Students' Perceptions. *J of Medical Education*. 2005, 9(2): 131-137
18. Chen YS, **Nadarajah VD\***, Ponnudurai G. Perception of facilitators in a medical curriculum. *J of Medical Education*. 2003, 7(4): 425-431.
19. **Nadarajah, VD\***, Yusoff, N., Ogle, J.J. and Pereira, X. Investors in People, a strategy to improve existing good practice. *Southeast Asian Journal of Institutional Research (JIRSEA)*. 2003, 2(1): 4-11.
20. **Nadarajah, VD\***, Ponnudurai, G. and Chen Y.S. Monitoring the Effectiveness of PBL amongst Undergraduate Medical Students at a Malaysian Medical School. *J. Medical Education*. 2002; 6(1):110-116.

## **1.8.2 BIOMEDICAL RESEARCH**

### **a. Anti-cancer toxins from *Bacillus thuringiensis***

Grant from MAKNA Cancer Research Grant (2003), IMU Research Grant, Ranjeet Singh Bhagwan Research Grant (2002), B.Med.Sci. Research Grant, **Nadarajah VD**, as principal investigator

2002-2007 received RM200000

**Key Findings: Our research group has identified GAPDH as a putative receptor to initiate apoptosis in the leukemic cells treated with *Bacillus thuringiensis* parasporal proteins (see Appendix 7). This finding adds new knowledge to both *Bacillus thuringiensis* literature and on the role of GAPDH as a receptor for on the plasma membrane of the leukemic cell. Through collaboration with the Institute for Medical Research (IMR) we have filed a patent for the novel application of this *Bacillus* protein**

### **b. Serum Biomarkers for Neuromuscular Disorders**

Grants from BIO-NMD (EU funded), ZON-MW (Dutch funding), **Nadarajah VD** as scientific researcher 2009-2011. (grant received as part of consortium, PA 't Hoen and Annemieke Aarstma Rus, principle investigators)

Grants from AFM (France), **Nadarajah VD** as co-principal investigator, for 210000 euros.

**Key Findings: Our key finding was the identification of Matrix Metalloproteinase (MMP)-9 as a biomarker to detect disease progression in patients with Duchenne Muscular Dystrophy (DMD). There is potential for MMP-9 to replace Creatinine Kinase as a serum biomarker for this disease as MMP-9 levels increases with disease progression and severity unlike Creatinine Kinase.**

### **c. Biomarkers for Pregnancy Induced Hypertension**

IMU Research Grant, **Nadarajah VD** as senior/principal investigator

2003 to 2007 received RM 120000

**Key Findings: Our group was the first to report the significance of plasma levels sFlt-1 and PlGF in patients with Gestational Hypertension and in the South east Asian population. We also did post-partum follow-up studies and detected that sFlt-1 levels were significantly elevated in mothers who had Gestational Hypertension.**

### **d. Title: Evaluation of DNA dipstick for diagnosis of enteric pathogens.**

Grant from NBD 06-02-09-1001-PR001, awarded by the Ministry of Science and Technology Malaysia. USM Main recipient (Prof Asma Ismail, principal investigator), IMU as collaborator, **Nadarajah VD** as senior investigator

2002-2007 received RM300,000.

**Full research papers in peer reviewed and indexed journals in biomedical sciences, for example:**

1. Drug-like dietary vanilloids induce anticancer activity through proliferation inhibition and regulation of bcl-related apoptotic proteins. Mai CW, Kang YB, **Nadarajah VD**, Sazali A, Pichika MR. *Phytotherapy Research* (2018 Feb 21. doi: 10.1002/ptr.6051. [Epub ahead of print])
2. Loubakos A, Yau N, de Bruijn P, Hiller M, Kozaczynska K, Jean-Baptiste R, Reza M, Wolterbeek R, Koeks Z, Ayoglu B, de Klerk D, Champion G, Zaharieva I, **Nadarajah VD**, Nilsson P, Al-Khalili Szigyarto C, Muntoni F, Lochmüller H, Verschuuren JJ, Goemans N, Tulinius M, Niks EH, de Kimpe S, Aartsma-Rus A, 't Hoen PAC, Spitali P. Evaluation of serum MMP-9 as predictive biomarker for antisense therapy in Duchenne. *Sci Rep*. 2017 Dec 20;7(1):17888. doi: 10.1038/s41598-017-17982-y
3. Van Putten M, van der Pijl EM, Hulsker M, Verhaart IE, **Nadarajah VD**, van der Weerd L, Aartsma-Rus A. Low dystrophin levels in heart can delay heart failure in mdx mice. *J Mol Cell Cardiol*. 2014 Apr; 69:17-23. doi: 10.1016/j.yjmcc.2014.01.009. Epub 2014 Jan 29.
4. Mitra NK, Goh T, Bala Krishnan T, **Nadarajah VD**, Vasavaraj AK, Soga T. Effect of intracisternal application of kainic acid on the spinal cord and locomotor activity in rats. *International Journal of Clinical and Experimental Pathology*. 2013 Jul 15;6(8):1505-15.
5. van Putten M, Hulsker M, Young C, **Nadarajah VD**, Heemskerk H, van der Weerd L, 't Hoen PA, van Ommen GJ, Aartsma-Rus AM. Low dystrophin levels increase survival and improve muscle pathology and function in dystrophin/utrophin double-knockout mice. *FASEB J*. 2013 Jun;27(6):2484-95. doi: 10.1096/fj.12-224170. Epub 2013 Mar.

6. **Vishna D Nadarajah**, Bart J Mertens, Hans Dalebout, Marco R Bladegroen, Sharmini Alagaratnam, Penny Garrood, Volker Straub, Andre M Deelder, Johan T den Dunnen, Gert Jan B van Ommen, Peter A 'tHoen, Yuri E.M. van der Burgt. Serum Peptide Profiles of Duchenne Muscular Dystrophy (DMD) Patients Evaluated by Data Handling Strategies for High Resolution Content. *Journal of Proteomics & Bioinformatics* 5: 096-103. doi:10.4172/jpb.1000219.
7. Chan KK, Wong SY, Mohammed SM, Abdullah M, Azmi T, **Nadarajah VD\***. Bacillus thuringiensis parasporal proteins induce cell-cycle arrest and caspase-dependant apoptotic cell death in leukemic cells. *Journal of Environmental Pathology, Toxicology and Oncology* 2012;31(1):75-86.
8. Van Putten M, Hulsker M, **Nadarajah VD**, van Heiningen SH, van Huizen E, van Iterson M, Admiraal P, Messemaker T, den Dunnen JT, 't Hoen PA, Aartsma-Rus A. The effects of low levels of dystrophin on mouse muscle function and pathology. *van Putten PLoS One*. 2012;7(2): e31937. Epub 2012 Feb 16.
9. **Nadarajah VD**, van Putten M, Chaouch A, Garrood P, Straub V, Lochmüller H, Ginjaar HB, Aartsma-Rus AM, van Ommen GJ, den Dunnen JT, 't Hoen PA. Serum matrix metalloproteinase-9 (MMP-9) as a biomarker for monitoring disease progression in Duchenne muscular dystrophy (DMD). *Neuromuscul Disord*. 2011 Jul 1(Epub ahead) 21(8):569-78.
10. Lim KL, Tay A, **Nadarajah VD**, Mitra NK. The effect of consequent exposure of stress and dermal application of low doses of chlorpyrifos on the expression of glial fibrillary acidic protein in the hippocampus of adult mice. *J Occup Med Toxicol*. 2011 Mar 8;6(1):4.
11. Krishnan K, Ker JE, Mohammed SM, **Nadarajah VD\***. Identification of glyceraldehyde-3-phosphate dehydrogenase (GAPDH) as a binding protein for a 68-kDa Bacillus thuringiensis parasporal protein cytotoxic against leukaemic cells. *J Biomed Sci*. 2010 Nov 13; 17:86.
12. John Paul Judson, Lee Pui Fun, **Vishna Devi Nadarajah\***, Sivalingam Nalliah, Srikumar Chakravarthi, P. Thanikacalamand, L. Santharaj. Ultrastructural and Immunofluorescence Studies of Placental Tissue in Hypertensive Diseases of Pregnancy. *Research Journal of Biological Sciences*. 2010 Volume: 5 (2), 155-163
13. Jeevaratnam K, **Nadarajah VD\***, Judson JP, Nalliah S, Abdullah MF. Periodic assessment of plasma sFlt-1 and PlGF concentrations and its association with placental morphometry in gestational hypertension (GH) - a prospective follow-up study. *BMC Pregnancy Childbirth*. 2010 Sep 28; 10:58.
14. Wong RS, Mohamed SM, **Nadarajah VD\***, Tengku IA. Characterisation of the binding properties of Bacillus thuringiensis 18 toxin on leukaemic cells. *J Exp Clin Cancer Res*. 2010 Jun 30; 29:86.
15. Mitra NK, Lee MS, **Nadarajah VD**. Evaluation of difference in the neurotoxicity produced by dermal application of chlorpyrifos on the neonatal and adult mice. *Trop Biomed*. 2010 Apr;27(1):19-29.
16. **Nadarajah VD\***, Min RG, Judson JP, Jegasothy R, Ling EH. Maternal plasma soluble fms-like tyrosine kinase-1 and placental growth factor levels as biochemical markers of gestational hypertension for Malaysian mothers. *J Obstet Gynaecol Res*. 2009 Oct;35(5):855-63.

17. Dugasani S, Pichika MR, **Nadarajah VD**, Balijepalli MK, Tandra S, Korlakunta JN. Comparative antioxidant and anti-inflammatory effects of [6]-gingerol, [8]-gingerol, [10]-gingerol and [6]-shogaol. *J Ethnopharmacol.* 2010 Feb 3;127(2):515-20. Epub 2009 Oct 13.
18. Mitra NK, **Nadarajah VD**, Siong HH. Effect of concurrent application of heat, swim stress and repeated dermal application of chlorpyrifos on the hippocampal neurons in mice. *Folia Neuropathol.* 2009;47(1):60-8.
19. Mitra NK, Siong HH, **Nadarajah VD**. Evaluation of neurotoxicity of repeated dermal application of chlorpyrifos on hippocampus of adult mice. *Ann Agric Environ Med.* 2008 Dec;15(2):211-6.
20. Ramasamy BR, **Nadarajah VD\***, Soong ZK, Mohammad SM, Lee HL A preliminary study of the bioactivity of Vegetative Proteins extracted from Malaysian *Bacillus thuringiensis* isolates. *Tropical Biomedicine* 25(1): 64-74 (2008)
21. **Nadarajah, VD.** \*, Ting, D., Chan, KK., Mohammed, SM., Kanakeswary, K. and Lee, HL. Selective Cytotoxic Activity Against Leukaemic cell lines from Mosquitocidal *Bacillus thuringiensis* parasporal inclusions. *Southeast Asian J Trop Med Public Health.* 2008; 39 (2).
22. Chan, KK., **Nadarajah, VD\***. and Tay, JL. Development of a purification method of pure primary lymphocytes for cell viability assays. *Malay J Med Sc.* 2007; 14(1): 38 - 45.
23. **Nadarajah, VD.** \*, Chai, SH., Mohammed, SM., Chan, KK. and Kanakeswary, K. Malaysian mosquitocidal Soil Bacterium (*Bacillus thuringiensis*) strains with selective hemolytic and lectin activity against human and rat erythrocytes. *Southeast Asian J Trop Med Public Health.* 2006; 37: 67 - 78.
24. Judson, JP, **Nadarajah VD\***, Bong, YC, Kalavathy, S, Sivalingam N. Immunohistochemical localisation and distribution of placental angiotensin receptor subtypes in normal and pre-eclamptic pregnancies. *Medical Journal of Malaysia.* 2006: 61(2): 173-180.

### **1.8.3 REVIEWED PAPERS FOR SCIENTIFIC JOURNALS**

#### **1.8.3.1 Health Professions Education:**

- a. Medical Teacher
- b. Journal of Educational Evaluation in Health Professions
- c. International e-Journal of Science, Medicine & Education (IeJSME)
- d. Medical Education (also international editorial board member)
- e. The Asia Pacific Scholar
- f. Southeast Asian Journal of Medical Education
- g. Anatomical Sciences Education

#### **1.8.3.2 Biomedical:**

- a. Tropical Biomedicine
- b. Journal of Obstetrics and Gynaecological Research
- c. Journal of Vascular Research
- d. Malaysian Journal of Biomedical Sciences
- e. Journal of Invertebrate Pathology

#### **1.8.4 RESEARCH SUPERVISION, THESIS EXAMINER AND PATENT APPLICATION**

- a. Supervisor to 1 PhD, 4 Masters and 13 BMed Sci and 7 BPharm students at IMU. List of PhD and Masters students.

<b>No.</b>	<b>Name of Students</b>	<b>Master/ PhD</b>	<b>Year of Graduation</b>	<b>Remarks</b>
1	Chan Kok Keong	PhD	2012	Thesis: Cloning of Bacillus Thuringiensis 18(BT18) Parasporal Inclusions and Its Effect on Leukaemic Cell Lines (CCRF-SB, CCRF-HSB-2 and CEM-SS) Compared with Normal Lymphocytes
2	Dr Rebecca Wong Shin Yee	Master	2010	Thesis: A Study on the Mechanism of Cell Death Induced by Basillus Thuringiensis 18 Toxin on Leukemic Cells
3	Farah bt Shamsuddin	Master	2009	Thesis: Serotype Distribution and Molecular Characteristic of Vibrio parahaemolyticus Isolates in Malaysia
4	Kanakeswary A/P Karisnan @ Krishnan	Master	2009	Thesis: Development of an Immunoblot Assay (Western Blot) to Detect Bacillus thuringiensis 18 (Bt 18) Parasporal Inclusions and Localisation of Bt 18 Parasporal Inclusions on CEM-SS Leukaimic Cells by Immunostaining
5	Dr Kamalan Jeevaratham	Master	2008	Thesis: Structural and Vascular Changes in the Placenta and Umbilical Cord and its Association with Maternal Levels of Selected Biomarkers in Pre-eclampsia

- b. Examiner for BMedSci, MSc and PhD research thesis. List of Master and PhD students examined.

No.	Name of Students	Master/ PhD	Year of Graduation	Remarks
1.	Chua Ming Jang	Master	2013	Thesis: Inhibition of Cancer Cell Proliferation and Survival through Synergistic Effects of Traditional Anti-cancer Drug Action in Combination with Targeted Knockdown of Cancer-related Genes
2.	Tiong Kai Hung	PhD	2013	Thesis: RNAi Screening of Human Kinome Identified Fibroblast Growth Factor Receptor 4 (FGFR4) as Potential Molecular Target in Basal-like Breast Cancers (BLBC)
3.	Sitti Rahma Abdul Hafid	PhD	2014	Thesis: Molecular mechanisms of tocotrienol-rich fraction in dendritic cell based vaccines using a mouse model of breast cancer
4.	Siti Nurma Hanim	PhD	2017	Thesis: Development and Validation of the Cognitive Load Theory-Based Lecture Model and Evaluation of its Effectiveness in Anatomy Teaching

- c. As a result of our work on *Bacillus thuringiensis*, we have made a joint patent application with Institute for Medical Research (IMU) Malaysia (contact and collaborator Dr Lee Han Lim). The patent is on "ANTI-CANCER ACTIVITY OF CYTOTOXIC POLYPEPTIDES FROM MALAYSIAN ISOLATES OF BACILLUS THURINGIENSIS" and details are as follows: Application No.: PI 20093257, Date of Filing: 06.08.2009.

**1.9 SPEAKER, FACILITATOR AND OTHER PROFESSIONAL CONTRIBUTIONS** (FOR EVIDENCE OF IMPACT AND EXPERTISE IN THE FIELD OF HEALTH PROFESSIONS EDUCATION)

**1.9.1 SPEAKER and WORKSHOP FACILITATOR AT NATIONAL and INTERNATIONAL LEVELS**

1. Facilitator for JICA–University of Kabul training programme entitled: Quality Assurance in Medical Education- the IMU Perspective Sept 4 2007 and co-organised JICA programme.
2. Invited to Tashkent Paediatric Medical Institute in Tashkent, Uzbekistan, to deliver several training sessions on Medical Education 2007.
3. Invited to UITM to conduct a PBL training workshop for faculty 2002 and 2003.
4. Symposia Speaker. 6<sup>th</sup> Biennial Conference of the Asia-Pacific Association on Problem-Based Learning in Health Sciences Workshops, October 2008, Kuala Lumpur, Malaysia.
5. Invited Expert Speaker. TREAT-NMD Exon Skipping Meeting, Presentation title: Serum Biomarkers for DMD, November 2011, Paris, France.
6. Invited Speaker. International Medical Education Conference, Presentation title: ‘Time to Drop PBL’, March 2013, Kuala Lumpur, Malaysia
7. Invited Speaker. Perdana University-Royal College of Surgeons Ireland (RCSI) White Coat Ceremony. Presentation title: ‘Quality of Medical Education in Malaysia. February 2013. Kuala Lumpur, Malaysia.
8. Workshop Presenter. 5<sup>th</sup> National Dental Students Scientific Conference 2013, Workshop title: Tools to Enhance Learning, Flipped Classrooms
9. Workshop Presenter. AMEE 2013 Conference, Workshop Title: Flipped classrooms- the educators big stage for promoting learning. August 2013, Prague, Czech Republic.
10. Course director and Presenter. Training of Dental Faculty at UNNISULA for basic teaching learning principles. September 2013, Semarang Indonesia.
11. Facilitator for PBL training and basic teaching course 2012/2013 for faculty members from the Defense Services Medical Academy, Mingaladon, Myanmar.
12. Course organizer in medical education, licensing and accreditation for the Ministry of Health –Asian Development Bank project, Hanoi, Vietnam
13. Workshop facilitator and speaker for the Flipped classroom workshop in the Faculty of Medicine, August 2014 UITM, Malaysia
14. Plenary Speaker and Workshop facilitator for the International Conference on Health Professionals Education, 15 to 17<sup>th</sup> August 2014, Lahore, Pakistan
15. Workshop facilitator on Flipped Classroom for the 3rd SEARAME (FOSME) Conference - 12th to 15th November 2014, Colombo, Sri Lanka

16. Symposia speaker on faculty development at the 12<sup>th</sup> APMEC conference and 3<sup>rd</sup> International Conference on Faculty Development at Singapore, February 2015.
17. Workshop trainer for PBL facilitator training and trigger writing at the School of Medicine, MAHSA University and School of Dentistry, SEGi University between January to March 2015.
18. Speaker on Outcomes Based Education at the Faculty of Medicine, University of Manipal, India, February 2015.
19. Management committee for AMEA and presenter at ANZAHPE-AMEA 2015 Conference, Newcastle Australia, 29<sup>th</sup> March – 1<sup>st</sup> April 2015.
20. Invited Supervisor for the 1st APME-Net (Asian Pacific Medical Education Network) in Niigata Japan, 24<sup>th</sup> – 29<sup>th</sup> July 2015.
21. Workshop trainer for Case Based Learning and Trigger Writing at the Department of Oral and Maxillofacial Surgery, Faculty of Dentistry University of Malaya in July 2015 and January 2016.
22. Invited Speaker for the South East Asian Dental Education Conference, in Bali Indonesia, 12<sup>th</sup> – 15<sup>th</sup> August 2015.
23. Invited Speaker for the Symposiums on “The Recent Issues in Medical Education”, UniKL RCMP Main Campus, Ipoh, Perak, August 2015.
24. Chairpersons of poster sessions and oral presenter (Title: “Developing Problem Based Learning (PBL) facilitation skills through faculty development programmes that incorporate adult learning theoretical frameworks”) at AMEE 2015 Glasgow, 6<sup>th</sup> – 9<sup>th</sup> September 2015.
25. Workshop trainer for Case Based Learning at Faculty of Dentistry, SEGi University, October 2015.
26. Course Director and Facilitator for the IMU Leadership Course (2013 till present). Since 2015 this course is in Collaboration with ASME (with Professor Judy McKimm as main facilitator)
27. Workshop trainer for Flipped Classroom at the School of Dentistry UiTM, November 2015.
28. Symposia Speaker on Commodification of Medical Education at the 13<sup>th</sup> APMEC at Singapore, January 2016
29. Invited to review and advice on the newly developed outcomes based curriculum at University Muhammadiyah Sumatra Utara, Medan, Indonesia, July 2016.
30. Invited Supervisor for the Asia Pacific Research Network Meeting (APME-Net) (3<sup>rd</sup> Niigaata Meeting) and International Poster Session Judge at the Japan Society for Medical Education meeting in Osaka, Japan, July 2016.
31. Workshop facilitator and Symposia speaker on Experiential and Reflective Learning for the SEARAME conference in Yangon Myanmar, November 2016.



32. Symposia Speaker on Clinical Learning Experience in Different Worlds: Students' Perception and Performance in Various Healthcare Systems at the 14<sup>th</sup> APMEC at Singapore, January 2017
33. Speaker for i) Symposium on “Transcultural medical education”, ii) “Symposium on International curriculum: why and how” at Medical Education Conference (AMEC), Chulalongkorn University, Bangkok, Thailand, 16 – 20 May 2017
34. Speaker on “Tips for educators: Lessons learnt from the development of an online assessment system (OAS) for health professional programmes’ at Conference of Learning, Teaching and Training (COLT), Kuala Lumpur, 22 – 23 May 2017
35. Facilitator for workshop on CBL, University Malaya, Kuala Lumpur, 12 July 2017
36. Facilitator and resource person for IPE workshop, University of Nursing Yangon, Myanmar, 7 – 9 Aug 2017
37. Paper presenter (Title: Development, contextualisation and implementation of an online assessment system (OAS) for outcomes-based education (OBE) across health professions programmes at AMEE 2017, Helsinki, 26 – 30 Aug 2017
38. Workshop speaker on “Faculty Development Programmes : Trends, Innovations , Practicalities and Sustainability (TIPS)” at IMU Dental Conference (iDEC 2017), IMU, 23 – 24 Sept 2017
39. Invited Speaker for Seminar; Resource management and diversification in Malaysian universities: a discourse, organized by the University of Nottingham Malaysia, 24 Oct 2017
40. Resource person and speaker at the Colombo Conference 2017, Sri Lanka, 10 – 11 Nov 2017
41. Speaker for the session on Teaching Medicine in the Asian Context (Title: “Are We Different or Similar to the Rest of the World?”), AMEA 2017, Hong Kong, 14 - 16 Dec 2017
42. Pre-conference workshop speaker (Title: From Conceptualisation to Implementation: Development of an Online Assessment System), Moderator for Panel Discussion: Gamification in Higher Education - Usefulness and Impact on Learning and Practice, Chief Judge for Free Communications, 15<sup>th</sup> APMEC 2018, Singapore, 11 – 13 Jan 2018

### **1.9.2 OTHER CONTRIBUTIONS**

1. National and International Committees
  - a. Elected Committee Member of Chevening Alumni Malaysia (Education Sub Comm 2005 to 2007)
  - b. Invited panel member for Anugerah Akademik Negara 2007, 2008 (National Academic Awards, organised by the Ministry of Higher Education)
  - c. Invited member for a safety committee for Standards Malaysia on Microbial research (2007 to 2009). To review the national standards for microbial research and management.
  - d. Local Organising Comm. Member for the Ottawa Conference 2012
  - e. Chairperson Organising Comm. International Medical Education Conference (IMEC) 2015, Chairperson Scientific Comm. IMEC 2016 and Advisor IMEC 2017.

- f. International Organising Comm for APMEC 2015 and the 3<sup>rd</sup> Faculty Development Conference in Singapore
- g. Member of the International Editorial Board of the journal Medical Education (2016)
- h. MQA Panel Member for Accreditation of Science Programmes (2017 to 2020)
- i. Exco of Malaysian Association of Education in the Medical & Health Sciences (MAEHMS)
- j. Institutional Representative for the AMEA Committee
- k. Inaugural committee for ASEAN Medical Education Alliance 2017-2018
- l. Chairperson , Organising Comm Asian Medical Education Association 2019
- m. Chairperson, Local Organising Comm Ottawa 2020, support by AMEE , United Kingdom

2. Other Contributions

- a. Alumnus of Caius College, Cambridge
- b. Featured in UKAN (UK Alumni Network) as a Chevening scholar, delivered career talks for UK education fairs for biotechnology through British Council (2004-2005).
- c. Advisor to the National Health Sciences Debate/ Health Sciences Debate Open /HEP IPTS(2002 to current). Key achievements include developing the Health Sciences Debate, running it consequently for 15 years, with good participation from institutions of higher learning from across Malaysia.
- d. Invited Consultant for the Friend helping Friends Project (Mend a Friend), with the University of Adelaide, Australia (PIC: Dr Ray Peterson)
- e. Abstracts Reviewer for Ottawa Conference 2014 to be held in Ottawa, Canada
- f. Abstracts Reviewer for APMEC 2015, 2016 and 2017
- g. External examiner for Biochemistry, at Manipal University for the Melaka Manipal Medical Programme. (2014, 2015, 2017)
- h. External Examiner for the First Professional Part 1 exam, MBBS Programme, Royal College of Medicine Perak, UniKL, June 2016

**1.10 REFEREES**

Available upon request