

Anandh Babu Pon Velayutham, Ph.D.

Associate Professor (Tenured)

Department of Nutrition and Integrative Physiology

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CURRICULUM VITAE

I. EDUCATION

Ph.D.	Biochemistry. Emphasis: Nutrition. University of Madras, Chennai, India. 2006
M.Phil.	Biochemistry. Emphasis: Nutrition. University of Madras, Chennai, India. 1993
M.Sc.	Biochemistry. University of Madras, Chennai, India. 1992
B.Sc.	Biochemistry. University of Madras, Chennai, India. 1990

II. EMPLOYMENT

Associate Professor (Tenured), Dept. of Nutrition & Int. Physiology, University of Utah.	2019 - Present
Assistant Professor, Dept. of Nutrition & Integrative Physiology, University of Utah.	2012-2019
Postdoctoral Research Associate, Department of Human Nutrition, Virginia Tech, VA.	2007-2012
Lecturer, PG Department of Biochemistry, Islamiah College, Vaniyambadi, India.	1997-2007
Lecturer, Department of Biochemistry, Sengunthar College, Tiruchengode, India	1995-1997
Lecturer, Department of Biochemistry, Kanchi Krishna College, Kilambi, India.	1994-1995
Lecturer, Department of Biochemistry, Islamiah College, Vaniyambadi, India.	1993-1994

III. HONORS AND AWARDS

Teacher of the Year Award	2021
Nominee for the University of Utah Distinguished Teaching Award	2021
Grant Reviewer for NIH Director's New Innovator Award	2021
Celebrate U! Research Honoree: Recognition for Excellence in Research	2020
Academic Editor for PLOS One	2020
VPCAT Research Scholar success story featured @ University of Utah News Room	2019
Grant Reviewer for Poland Government Executive Agency of National Science Center	2018
<i>J Nutr Biochem</i> Article: One of the 5 most highly cited papers (Jan 2014 - Jun 2016)	2016
Selected for Vice President Clinical and Translational (VPCAT) Research Program	2015-2016
Guest Editor: <i>Oxidative Medicine and Cellular Longevity</i> Special Issues	2015 & 2017
Media Report: Interview featured in <i>Shape</i> Magazine website	2014
Journal article listed as Top25 Hottest Articles (Ranked 2; <i>Elsevier-Science Direct</i>)	2013
American Heart Association Postdoctoral Fellowship Award	2010-2012
Media: Interview featured in <i>Life Extension</i> Magazine	2008
Four journal articles listed as Top25 hottest articles (<i>Elsevier-Science Direct</i>)	2006-2008

IV. PUBLICATIONS

Total citation: 1784 and H-index: 20 (Scopus)

Underlined author represents current or former student mentee, †Undergraduate students.

* Corresponding author, # Citation more than 50 times, § Citation more than 300 times

§cite NIH Percentile; ‡ Journal impact factor (published/submitted year)

Peer-reviewed articles

1. P. Mokhtari, J. Metos, **P.V. Anandh Babu***. Impact of Type 1 Diabetes on the Composition and Functional Potential of Gut Microbiome in Children and Adolescents: Possible Mechanisms, Current Knowledge and Challenges. *Gut Microbes*, 13, 1-18 (2021). [Impact factor: 10.245‡]

2. P. Nallasamy, Z.Y.Kang, X.Sun, **P.V. Anandh Babu**, D. Liu, Z. Jia. Natural compound resveratrol attenuates TNF- α induced vascular dysfunction in mice and human endothelial cells: The involvement of the NF κ B signaling pathway, *International Journal of Molecular Sciences*, 22, 12486 (2021). [Impact factor: 5.923#]
3. M. Kalita, J.S. Chua, R.S. Boothello, A. Joice, O. Antelope, A. Roy, **P.V. Anandh Babu**, Y. Saijoh, U.R. Desai, B. Kuberan. Visualizing antithrombin-binding 3-O-sulfated heparan sulfate motifs on cell surfaces. *Chemical Communications*, 59, 14423-14426 (2020). [Impact factor: 5.9#]
4. C. Petersen, U.D. Wankhade, D. Bharat, K. Wong, J.E. Mueller, S.V. Chintapalli, B.D. Piccolo, T. Jalili, Z. Jia, J.D. Symons, K. Shankar, **P.V. Anandh Babu***. Dietary supplementation of strawberry induces marked changes in the composition and functional potential of the gut microbiome in diabetic mice. *Journal of Nutritional Biochemistry*, 66, 63-69 (2019). PMID: PMC6490960 [Impact factor: 4.4#] \$cite NIH Percentile: 87.3
5. C. Petersen, D. Bharat, B.R. Cutler, S. Gholami, C. Denetso, J.E. Mueller, J.M. Cho, J.S. Kim, J.D. Symons, **P.V. Anandh Babu***. Circulating metabolites of strawberry mediate reductions in vascular inflammation and endothelial dysfunction in *db/db* mice. *International Journal of Cardiology*, 263, 111-117 (2018). PMC5951765 [Impact factor: 4.18#] \$cite NIH Percentile: 69.2
6. B.R. Cutler, S. Gholami, J.S. Chua, K. Balagurunthan, **P.V. Anandh Babu***. Blueberry metabolites restore cell surface glycosaminoglycans and improve endothelial dysfunction in diabetic human aortic endothelial cells. PMC5902641 *International Journal of Cardiology*, 261, 155-158 (2018). PMC5902641 [Impact factor: 4.18#] \$cite NIH Percentile: 67.9
7. D. Bharat, R.R.M. Cavalcanti, N. Begaye, C. Petersen, B.R. Cutler, M.M.A. Costa, R.K.L.G. Ramos, M.R. Ferreira, Y.Y. Li, L.P. Bharath, E. Toolson, P. Sebahar, R.E. Looper, T. Jalili, N.S. Rajasekaran, Z. Jia, J.D. Symons, **P.V. Anandh Babu***. Blueberry metabolites attenuate lipotoxicity-induced endothelial dysfunction. *Molecular Nutrition and Food Research*, 62, 1700601 (2018). [Impact factor: 4.32#] \$cite NIH Percentile: 92.1
8. L. Bharath, J. Cho, S. Park, T. Ruan, Y. Li, R. Mueller, T. Bean, V. Reese, R. Richardson, J. Cai, A. Sargsyan, K. Pires, **P.V. Anandh Babu**, S. Boudina, T. Graham, and J.D. Symons. Endothelial cell autophagy maintains shear-stress-induced nitric oxide generation via glycolysis-dependent purinergic signaling to eNOS. *Arteriosclerosis, Thrombosis, and Vascular Biology*, 37: 1646-1656 (2017). PMC5693355 [Impact factor: 6.6#] \$cite NIH Percentile: 83
9. B.R. Cutler, C.P. Mower, **P.V.A. Babu***. Mechanistic insights in the vascular effects of blueberries: Evidence from recent studies (Review). *Molecular Nutrition and Food Research*, 61: 1600271 (2017). [Impact factor: 4.3#] \$cite NIH Percentile: 72.6
10. Y. Qian, **P.V.A. Babu**, J.D. Symons, T. Jalili. Metabolites of flavonoid compounds preserve indices of endothelial cell nitric oxide bioavailability under glucotoxic conditions. *Nutrition and Diabetes*, 7: e286 (2017). PMC5637105 [Impact factor: 3.5#]
11. Y. Li, L.P. Bharath, Y. Qian, T. Ruan, **P.V. Anandh Babu**, R.S. Bruno, J.D. Symons, T. Jalili. Carboxyethyl hydroxychroman, a metabolite of α -tocopherol, preserves nitric oxide bioavailability in endothelial cells challenged with high glucose. *Experimental Biology and Medicine*, 241: 2056-62 (2016). PMC5102138 [Impact factor: 2.2#]
12. # L. P. Bharath, T. Ruan, Y. Li, A. Ravindran, X. Wan, J. Nhan, M. Walker, L. Deeter, R. Goodrich, E. Johnson, D. Munday, R. Mueller, D. Kunz, D. Jones, V. Reese, S. Summers, **P.V.A. Babu**, W. Holland, A.Q.J. Zhang, E. Abel, J.D. Symons. Ceramide initiated protein phosphatase 2A activation contributes to arterial dysfunction in vivo. *Diabetes*, 64: 3914-26 (2015). PMC4613970 [Impact factor: 8.3#] \$cite NIH Percentile: 82
13. # L. Panneerseeelan-Bharath, R. Mueller, Y. Li, D. Kunz, R. Goodrich, T. Mills, L. Deeter, A. Sargsyan, **P.V.A. Babu**, T. E. Graham, J.D. Symons. Impairment of autophagy in endothelial cells prevents shear stress

- induced increases in nitric oxide bioavailability. *Canadian Journal of Pharmacology and Physiology*, 92: 605-612 (2014). [Impact factor: 1.8[‡]] [§]icite NIH Percentile: 82.7
14. # P. Nallasamy, H. Si, **P.V.A. Babu**, D. Pan, Y. Fu, E.A.S. Brooke, H. Shah, W. Zhen, H. Zhu, D. Liu, Y. Li, Z. Jia. Sulforaphane reduces vascular inflammation in mice and prevents TNF- α -induced monocyte adhesion to primary endothelial cells through interfering with the NF- κ B pathway. *Journal of Nutritional Biochemistry*, 25: 824-833 (2014). PMC4087147 *Listed in Top25 Hottest Articles within the Journal, Jul-Sep 2014*. [Impact factor: 4.5[‡]] [§]icite NIH Percentile: 77.8
 15. X. Li, J. Luo, **P.V.A. Babu**, W. Zhang, E. Gilbert, M. Clline, R. McMillan, M. Hulver, H. Alkhalidy, W. Zhen, H. Zhang, D. Liu. Dietary supplementation of Chinese Ginseng prevents obesity and metabolic syndrome in high-fat diet-fed mice. *Journal of Medicinal Food*, 17:1287-97 (2014). PMC4259183 [Impact factor: 1.7[‡]]
 16. Z. Jia, **P.V.A. Babu**, H. Si, P. Nallasamy, H. Zhu, W. Zhen, H.P. Misra, Y. Li, D. Liu. Genistein inhibits TNF- α -induced endothelial inflammation through the protein kinase pathway A and improves vascular inflammation in C57BL/6 mice. *International Journal of Cardiology*, 168: 2637-2645 (2013). PMC3758913 [Impact factor: 5.5[‡]] [§]icite NIH Percentile: 74.3
 17. [§] **P.V.A. Babu**, D. Liu, E.R. Gilbert. Recent advances in understanding the antidiabetic actions of dietary flavonoids (Review). *Journal of Nutritional Biochemistry*, 24: 1777-1789 (2013). PMC3821977 *Listed in Top25 Hottest Articles within the Journal, Jan 2013 - Dec 2016. One of the 5 most highly cited papers in between Jan 2014 - Jun 2016*. [Impact factor: 4.5[‡]] [§]icite NIH Percentile: 98.7
 18. Z. Jia, W. Zhen, **P.V.A. Babu**, D. Liu. Phytoestrogen genistein protects against endothelial barrier dysfunction in vascular endothelial cells through PKA-mediated suppression of RhoA signaling. *Endocrinology*, 154: 727-737 (2013). PMC3548180 [Impact factor: 4.8[‡]]
 19. **P.V.A. Babu**, H. Si, D. Liu. Epigallocatechin gallate reduces vascular inflammation and improves vascular function in db/db mice possibly through NF κ B-mediated mechanism. *Molecular Nutrition and Food Research* 56: 1424-1432 (2012). PMC3816509 [Impact factor: 4.31[‡]] [§]icite NIH Percentile: 54.7
 20. # **P.V.A. Babu**, H. Si, Z. Fu, W. Zhen, D. Liu. Genistein prevents hyperglycemia-induced monocytes adhesion to endothelial cells partially through preservation of cAMP signaling pathway. *Journal of Nutrition* 142: 724-730 (2012). PMC3301991 [Impact factor: 4.19[‡]] [§]icite NIH Percentile: 78.9
 21. # H. Si, Z. Fu, **P.V.A. Babu**, W. Zhen, T. LeRoith, M.P. Meaney, K.A. Voelker, Z. Jia, R.W. Grange, D. Liu. Dietary epicatechin promotes survival of obese diabetic mice and *Drosophila melanogaster*. *Journal of Nutrition*, 141:1095-100 (2011). PMC3095141 [Impact factor: 3.91[‡]] [§]icite NIH Percentile: 71.4
 22. R. Sivakumar, **P.V.A. Babu**, C.S. Shyamaladevi. Aspartate and glutamate prevent isoproterenol-induced cardiac toxicity by alleviating oxidative stress in rats. *Experimental Toxicology & Pathology*, 63: 137-142 (2011). PMID: 19962869
 23. [§] **P.V.A. Babu**, D. Liu. Green tea catechins and cardiovascular health: An update (Review). *Current Medicinal Chemistry*, 15: 1840-1850 (2008). PMC2748751 [Impact factor: 4.8[‡]] [§]icite NIH Percentile: 97.3
 24. **P.V.A. Babu**, K.E. Sabitha, C.S. Shyamaladevi. Effect of Green tea extract on advanced glycation and cross-linking of tail tendon collagen in streptozotocin induced diabetic rats. *Food and Chemical Toxicology*, 46: 280-285 (2008). PMID: 17884275
 25. P. Srinivasan, S. Suchalatha, **P.V.A. Babu**, R.S. Devi, S. Narayan, K.E. Sabitha, C.S. Shyamaladevi. Chemopreventive and therapeutic modulation of green tea polyphenols on drug metabolizing enzymes in 4-Nitroquinoline 1-oxide induced oral cancer. *Chemico Biological Interactions*, 172: 224-234 (2008). PMID: 18336807. *Listed in Top25 Hottest Articles within the Journal, Apr-Jun 2008*.
 26. R. Sivakumar, **P.V.A. Babu**, C.S. Shyamaladevi. Protective effect of aspartate and glutamate on cardiac mitochondrial function during myocardial infarction in experimental rats. *Chemico Biological Interactions*, 176: 227-233 (2008). PMID: 18786522

27. # **P.V.A. Babu**, K.E. Sabitha, P. Srinivasan, C.S. Shyamaladevi. Modulatory effect of green tea extract on myocardial collagen characteristics in streptozotocin diabetic rats. *Pharmacological Research*, 55: 433-440 (2007). PMID: 17329138. *Listed in Top25 Hottest Articles within the Journal, Apr-Jun 2007.*
28. **P.V.A. Babu***, A. Gokulakrishnan, R. Dhandayuthapani, D.A. Khan, C.V.P.Kumar, M.I.N.Ahamed. Protective effect of *Withania somnifera* (Solanaceae) on collagen glycation and cross-linking. *Comparative Biochemistry and Physiology - Part B*, 147: 308-313 (2007). PMID: 17329138. *Listed in Top25 Hottest Articles within the Journal, Apr-Jun 2007.*
29. # **P.V.A. Babu**, K.E. Sabitha, C.S. Shyamaladevi. Therapeutic effect of green tea extract on oxidative stress in aorta and heart of streptozotocin diabetic rats. *Chemico Biological Interactions*, 162:114-20 (2006). PMID: 16860299. *Listed in Top25 Hottest Articles within the Journal, Jul-Dec 2006 (Two quarters)*. \$cite NIH Percentile: 73.8
30. # **P.V. Anandh Babu**, K.E. Sabitha, C.S. Shyamaladevi. Green tea extract impedes dyslipidemia and development of cardiac dysfunction in streptozotocin diabetic rats. *Clinical & Experimental Pharmacology and Physiology*, 33: 1184-9 (2006). PMID: 17184499
31. **P.V.A. Babu**, K.E. Sabitha, C.S. Shyamaladevi. Therapeutic effect of green tea extract on advanced glycation and cross-linking of collagen in the aorta of streptozotocin diabetic rats. *Clinical & Experimental Pharmacology and Physiology*, 33: 351-7 (2006). PMID: 16620300
32. **P.V.A. Babu**, K.E. Sabitha, C.S. Shyamaladevi. Green tea impedes dyslipidemia, lipid peroxidation, protein glycation and ameliorates Ca²⁺-ATPase and Na⁺/K⁺-ATPase activity in the heart of streptozotocin diabetic rats. *Chemico Biological Interactions*, 162: 157-64 (2006). PMID: 16846594

Editorial

33. Z. Jia, **P.V. Anandh Babu**, W. Chen, X. Sun. Editorial: Natural Products Targeting on Oxidative Stress and Inflammation: Mechanisms, Therapies, and Safety Assessment. *Oxidative Medicine and Cellular Longevity*, Article ID: 6576093 (2018). [Impact factor: 4.59#]
34. W. Chen, Z. Jia, M.H. Pan, **P.V. Anandh Babu**. Editorial: Natural Products for the Prevention of Oxidative Stress-Related Diseases: Mechanisms and Strategies. *Oxidative Medicine and Cellular Longevity*, 2016: Article ID: 4628502 (2016). [Impact factor: 4.59#]

Book Chapter

35. B. Cutler, J.S. Chua, B. Kuberan, **P.V. Anandh Babu***. Chapter 37: Methods to Analyze the Effect of Diet-Derived Metabolites on Endothelial Inflammation and Cell Surface Glycosaminoglycans. In: *Methods in Molecular Biology 2303, Glycosaminoglycans – Chemistry and Biology*. Edited by Kuberan Balagurunathan, Hiroshi Nakato, Umesh Desai and Yukio Saijoh. Springer Publications (2021).
36. J.M. Cho, K. Ly, S. Ly, S.K. Park, **P.V. Anandh Babu**, B. Kuberan, J.D. Symons. Chapter 40: Procedures to Evaluate the Role of Heparan Sulfate in the Reactivity of Resistance and Conductance Arteries Ex Vivo. In: *Methods in Molecular Biology 2303, Glycosaminoglycans – Chemistry and Biology*. Edited by Kuberan Balagurunathan, Hiroshi Nakato, Umesh Desai and Yukio Saijoh. Springer Publications (2021).
37. **P.V.A. Babu***, C.P. Mower, Z. Jia. Chapter: Sulforaphane and atherosclerosis. In: *Reference series in Phytochemistry: Glucosinolates*. Edited by Jean-Michel Merillon and Kishan Ramawat. Springer Publications, DOI: 10.1007/978-3-319-26479-0_11-1 (2016).
38. **P.V.A. Babu**, D. Liu. Chapter 18: Flavonoids and cardiovascular health. In: *Complementary and Alternative Therapies and the Aging Population. An Evidence Based Approach*. Edited by Ronald Ross Watson, Academic press, 371-393 (2009).

Published Peer-Reviewed Conference Abstracts (selected from 24 abstracts)

J.C. Miller, M.N. Putich[¶], J.E. Mueller, A.S. O'Farrell[¶], S. Gholami[¶], J.D. Symons, **A.B.P. Velayutham***. Dietary supplementation of strawberry improves vascular inflammation without altering metabolic milieu in high-fat diet fed C57BL/6J mice. *Current Developments in Nutrition*, 031.P06-086-19 (2019).

A.B.P. Velayutham*, U.D. Wankhade, C. Petersen, K. Wong[¶], D. Bharat, S. Gholami[¶], S.V. Chintapalli, B.D. Piccolo, J.D. Symons, K. Shankar. Influence of blueberry supplementation on gut microbiome in diabetic db/db mice. *Current Developments in Nutrition*, 2: OR03-08 (2018). (Abstract selected for an oral presentation)

C. Petersen, U.D. Wankhade, K. Wong[¶], S.V. Chintapalli, B.D. Piccolo, T. Jalili, J.D. Symons, K. Shankar, **A.B.P. Velayutham***. Strawberry supplementation modifies gut microbiota in obese diabetic db/db mice. *Current Developments in Nutrition*, 2: P23-083 (2018).

D. Bharat, C. Petersen, C. Denestso[¶], S. Gholami[¶], B. Cutler[¶], J.S. Kim, J.D. Symons, **A.B.P. Velayutham***. Dietary Blueberries Attenuate Vascular Inflammation and Dysfunction in Diabetic db/db Mice. *The FASEB Journal*, 31:166.2 (2017). (Student Mentee Divya was a finalist in American Society for Nutrition's Emerging Leaders in Nutrition Sciences; Abstract selected for an oral presentation)

C. Petersen, D. Bharat, B. Cutler[¶], S. Gholami[¶], C. Denestso[¶], J.E. Mueller[¶], J. Cho, J.S. Kim, J.D. Symons, **A.B.P. Velayutham***. Strawberry Supplementation Lessens Vascular Inflammation and Dysfunction Displayed by Diabetic db/db Mice. *The FASEB Journal*, 31:431.5 (2017). (Abstract selected for an oral presentation)

B. Cutler[¶], J.S. Chua, B. Kuberan, **A.B.P. Velayutham***. Blueberry Metabolites Restore Composition of Glycosaminoglycan Structures in Diabetic Human Vascular Endothelial Cells. *The FASEB Journal*, 31:646.61 (2017). (Student Mentee Cutler received UROP Travel Grant)

D. Bharat, N. Begaye[¶], R. Ramos[¶], M. Ferreira[¶], Y. Li, B. Cutler[¶], L.P. Bharath, J.D. Symons, T. Jalili, **A.B.P. Velayutham***. Lipotoxicity-Evoked Reductions in Nitric Oxide Bioavailability and Exaggerated Oxidant Stress Are Blunted by Blueberry Metabolites in Human Vascular Endothelial Cells. *The FASEB Journal*, 30:1175.3 (2016).

R. Cavalcanti[¶], N. Begaye[¶], M. Costa[¶], L.P. Bharath, J.D. Symons, T. Jalili, N.S. Rajasekaran, Z. Jia, **P.V.A. Babu***. Metabolites of Blueberry Anthocyanins Suppress Lipotoxicity Induced Endothelial Inflammation. *The FASEB Journal*, 29:118.6 (2015). (Student Mentee Rafaela Cavalcanti was a finalist in American Society for Nutrition's Emerging Leaders in Nutrition Sciences; Abstract selected for an oral presentation)

V. PRESENTATIONS, INVITED LECTURES AND SYMPOSIA-FREE COMMUNICATIONS (selected)

Federal University of Viçosa, Vicoso, Minas Gerais, Brazil, Sep 8 (Virtual). Invited speaker. Gut microbes metabolize dietary compounds and mediate vascular health (2021).

6th Annual Translational Microbiome Conference, Boston, MA, Apr 21-24. Invited speaker. Gut microbiota mediates the vascular beneficial effects of dietary anthocyanins (2020). Converted to virtual meeting due to COVID.

American Society for Nutrition Meeting (Nutrition 2018), Boston, MA, Jun 9-12. Influence of blueberry supplementation on gut microbiome in diabetic db/db mice.

School of Medicine, University of Utah - Metabolism Interest Group Seminars, Feb 8. Title: Vascular effects of blueberry anthocyanins (2018).

Experimental Biology Meeting 2017, Chicago, IL, Apr 22-26. Dietary Blueberries Attenuate Vascular Inflammation and Dysfunction in Diabetic db/db Mice (2017).

School of Medicine, University of Utah - Metabolism Interest Group, Jan 9. Title: Dietary flavonoids for the prevention of vascular disease (2014).

Experimental Biology Meeting 2015, Boston, MA, Mar 28 – Apr 1. Metabolites of Blueberry Anthocyanins Suppress Lipotoxicity Induced Endothelial Inflammation (2015).

Arteriosclerosis, Thrombosis, and Vascular Biology (ATVB) Scientific sessions 2010, San Francisco, CA, Apr 8-10. Genistein prevents vascular inflammation in obese diabetic mice (2010).

GTC Bio's 3rd Modern Drug Discovery & Development Summit – Translational Medicine, San Francisco, CA, Nov 28-30. Invited speaker. AGE attenuators and breakers to target diabetic heart (2007).

VI. RESEARCH SUPPORT

Active

- NIH/NCCIH – R01AT010247 (*Role: PI*) 09/21/18 – 08/20/22
Title: Biological signatures of blueberry derived microbial metabolites
- NIH/NCCIH – 3R01AT010247-03S1 Supplementary NCE (*Role: PI*) 09/01/20 – 08/30/22
Title: Biological signatures of blueberry derived microbial metabolites (Alzheimer focused)
- USDA/National Institute of Foods and Agriculture (NIFA) Award (*Role: PD*) 03/01/19 – 02/30/24
Title: Strawberry-derived microbial metabolites mediate the vascular effects of strawberries
- USDA/NIFA Predoctoral Fellowship Award (*Role: Mentor*) 06/15/21 - 05/14/24
PD: Chrissa Petersen (PhD Student)
Title: Strawberry and cardiovascular health
- NIH/NHLBI: 1R01HL141540-01 (*Role: Co-Investigator*, 4% Effort: Year 2-4) 07/01/18 – 06/30/22
PI: J David Symons, College of Health, University of Utah.
Title: Autophagy Maintains vascular function through a glycolysis-linked pathway regulating eNOS.

Completed

Undergraduate student support: Summer Program for Undergraduate Research (SPUR), 3 awards x \$4000 per award and partial housing/travel; University of Utah Undergraduate Research Opportunities Program (UROP), 15 awards x \$1200 per award; Native American Research Internship Program, 6 awards x \$5500 per award; Brazil Scientific Mobility Program x 4 students. Total award amount received by undergraduate students is > \$55,000 in addition to housing and travel support.

- USDA/National Institute of Foods and Agriculture (NIFA) Award (Role: PI) 03/01/18 – 02/31/21
Title: Dietary strawberry prevents vascular inflammation
- Wild Blueberry Association of North America Research Grant (Role: PI) 01/01/18 – 12/30/19
Title: Blueberry and healthy vascular aging
- NIH/NIA - R03 (Role: Collaborator) 01/01/17 – 12/31/19
Title: Vascular phenotyping of young and old mice with disrupted autophagy signaling in endothelial cells. PI: Dr. J David Symons, College of Health, University of Utah.
- NIH/5P01HL107152 (Role: Co-investigator) 09/23/15 – 07/31/18
Title: Defining vascular functions of proteoglycans through chemical biology approaches
PL: Kuberan Balagurunathan, Department of Medicinal Chemistry, University of Utah
- American Heart Association Grant in Aid (Role: Collaborator) 07/01/16 – 06/03/18
Title: Aging limits vascular autophagic flux and impairs endothelial cell nitric oxide generation
PI: Dr. J David Symons, College of Health, University of Utah
- University of Utah – Funding Incentive Seed Grant Program (Role: PI) 01/01/16 – 12/31/17
Title: Modulation of structure and function of endothelial heparan sulfate proteoglycans in diabetics
- College of Health Research Pilot Grant Program (Role: PI) 01/01/16 – 12/31/17
Title: Endothelial and vascular effects of strawberry metabolites

- NIH/NIDDK sponsored Pilot Program Award (Role: Collaborator) 12/01/15 – 11/30/16
PI: J David Symons
Title: Pathophysiological and genetic disruption of EC autophagy lowers EC NO production
- Diabetes and Metabolism Center Pilot Grant (Role: Collaborator) 12/01/14 – 11/30/16
PI: J David Symons
Title: Characterizing a novel mouse model to study vascular autophagy in obesity and T2DM
- Center on Aging Pilot and Feasibility Grant (Role: Collaborator) 01/01/15 - 12/31/15
PI: Dr. J David Symons, College of Health, University of Utah.
Title: Links among autophagy, mitophagy, and nitric oxide bioavailability in aging vasculature
- College of Health Seed Grant, University of Utah (Role: PI) 05/01/13 – 04/30/15
Title: Dietary anthocyanins for the prevention of vascular disease in diabetes.
- NIH/NIA – R03 (Role: Co-Investigator) (from Aug 14 – Feb 15) 08/01/12 – 02/31/15
Title: Activation of Antioxidant Defense Mechanisms through Nrf2/keap1 signaling in Aging Heart
PI: Dr. Rajasekaran N Soorappan, Division of Cardiology, School of Medicine, University of Utah.
- American Heart Association Postdoctoral Fellowship Award (Role: PI) 07/01/10 - 06/30/12
Title: Epigallocatechin gallate for the prevention and treatment of Diabetic Vascular Inflammation
- NIH/NCCAM – R21 (Role: Co-Investigator) 09/15/08 - 08/31/10
PI: Dongmin Liu, Department of Nutrition, Virginia Tech, VA.
Title: Genistein for the prevention and treatment of diabetic vascular inflammation

VII. TEACHING AND MENTORING

Instructional Summary

Dept. of Nutrition and Integrative Physiology, University of Utah, Salt Lake City, UT (2012 – Present)

NUIP 7970: Dissertation – Doctoral, Fall 2019 - Present

NUIP 6900: Directed Nutrition Research, Fall 2019 – Present

NUIP 6450: Nutritional Biochemistry, Spring 2017 - Present

NUTR 1020: Scientific Foundations of Human Nutrition and Health, Fall 2014 - 2018

NUIP 6440: Macronutrient Metabolism (Team taught), Fall 2012 – Present

NUTR 6970: Thesis Research – Masters, 2012 – Present

NUTR 6980: Faculty Consultation, 2012 – Present

NUTR 6910: Field Experience, 2012 – Present

Department of Biochemistry, Islamiah College, Vaniyambadi, India (1993-1994 & 1997-2007)

Graduate/ Undergraduate level courses: Physiology and Nutritional Biochemistry, Molecular Biology, Analytical Biochemistry, Bioorganic chemistry, Biochemistry labs.

Department of Biochemistry, Sengunthar College, Tiruchengode, India (1995-1997)

Undergraduate courses: Physiology and Nutrition, Allied Biochemistry, Bio-organic chemistry, Analytical methods in Biochemistry, Biochemistry labs.

Department of Biochemistry, Kanchi Krishna College, Kilambi, India (1994-1995)

Undergraduate courses: Bioorganic chemistry, Allied Biochemistry, Biochemistry labs.

Trainee Supervision

Postdoctoral Fellows

Ceres Mattos Della Lucia, Postdoctoral Research Fellow, Aug 2021 – Present

Satheesh Babu Adhini Kuppaswamy, Postdoctoral fellow, May 2019 – Present

Graduate Students (11 students)

PhD students

Chrissa Petersen, Jan 2019 – Present; Pari Mokhtari, 2017 – 21.

MS students

Kai Benedict, Aug 2019 – Aug 2021; Miley Nguyen, Aug 2019 – May 2021; James Coleman Miller, May 2018 – May 2020; Michael Gjenvick, Sep 2017 – Feb 2018; Jennifer Ellen Mueller, Aug 2017 – Dec 2019; Chrissa Petersen, Aug 2014 – Oct 2017; Divya Bharat, Dec 2014 – Apr 2017; Youyou Li, volunteer, Feb – Jul 2015; Eui Min Kim, Aug 2013 – Apr 2014.

Undergraduate students (23 students)

Undergraduate Research Opportunity Program (UROP) Awardees

Rachel Compton (Spring 2022 & Fall 2021), Caitlin McCartney (Summer 2020), Sydney Larsen (Jul 2019 – Present), Miguel Saldivar-Gonzalez (Apr 2019 – Jan 2020), Aubrey O'Farrell (Oct 2018 – Jul 2019), Madison Putich (Jan 2018 – Apr 2020), Kiana Wong (Oct 2016 – Jan 2018), Samira Gholami (May 2016 – Jul 2019), Jennifer Mueller (Dec 2015 – May 2017), Brett Ronald Cutler (Aug 2014 – Dec 2016).

Summer Program for Undergraduate Research (SPUR) Awardees

Rachel Compton (2021), Madison Putich (2019), Samantha Nelson (2018), Jessica Bigley (2018).

Native American Research Internship Program (NARI) Awardees

Gem Wilson (2019), Aspen Johnson (Summer 2018), Christopher Denetso (Summer 2016), Nathan Begaye (Summer 2014 & 2015).

Brazil Scientific Mobility Program

Renata Kelly Luna Ramos (Summer 2015), Marina Ramos Ferreira (Summer 2015), Marcella Melo Assis Costa (Fall 2014), Rafaela Ramos Cavalcanti (Summer 2014).

Visiting volunteer

Harini Srinivasan (Summer 2020), Nancy Ursula Atieno (Aug – Oct 2014), Lucie Bertuleit (Mar – Aug 2013).

Graduate Student Committees

Committee Chair

PhD Committee Chair

Chrissa Petersen (2019-Present)

Graduated: Pari Mokhtari (2021) [Co-Chair; Chair: Dr. Julie Metos]

MS Committee Chair (7 students)

Graduated: Kai Benedict (2021), Miley Nguyen (2021), James Coleman Miller (2020), Madeleine Louise French (2020), Emily Rose Preib (2020), Chrissa Petersen (2017), Emily Tieu (2014).

Committee Member

PhD Committee

Ashley Lauren Pyne (Nov 2018 – present)

MS Committee (16 students)

Graduated: Kristen Moffatt (2021), Michele Hansen (2021), Chelsea Norman (2020), Jennifer Ellen Mueller (2020), Ashley Williams (2019), Kristen Pitcher (2018), Christine Mcgarry (2018), Micah Turney (2017), Juyeon Lee (2016), Emma Toolson (2016), Cynthia Wilson (2016), Daniel Burgess (2016), Maria Rolph (2014), Alice Ma (2014), Nicole Williams (2014), Ying Qian (2013).

External Examiner for PhD Thesis/ Member of Board of Examiners (International Examiner)

Served as a member of Board of Examiners and evaluated 19 Ph.D. Theses from the following Universities; 2013 – Present

University of Madras, Vellore Institute of Technology, Mother Teresa Women's University, Periyar University, Tiruvalluvar University and Vinayaka Mission University

Student Mentees awards/accomplishments

Undergraduate Research Opportunities Program (UROP) Award from the University of Utah to the following students (15 awards X \$1200): Rachel Compton (Spring 2022 & Fall 2021), Sydney Larson (Spring 2020 & Spring 2021), Madison Putich (Summer 2018 & Spring 2020), Miguel Saldivar-Gonzalez (Fall 2019), Aubrey Sarah O'Farrell (Spring 2019), Kiana Wong (Summer 2017), Samira Gholami (Fall 2016 & Summer 2017), Jennifer Ellen Mueller (Summer 2016 & Spring 2017), Brett Ronald Cutler (Spring 2015 & 2016).

Chrissa Petersen received the '*Predoctoral Fellowship Award*' (Total award amount: \$180,000; \$60,000 per year for 3 years) from the USDA/ National Institute of Foods and Agriculture, 2021 - 2024.

Sydney Larsen received the '*Outstanding Undergraduate Researcher*' award from the Department of Nutrition and Integrative Physiology and '*Undergraduate Research Scholarship Award*' from the Department of Chemistry for the recognition of her research achievement, University of Utah, 2021.

Chrissa Petersen received the '*Doctoral Scholarship Award*' (\$15,000) from the Academy of Nutrition and Dietetics Foundation (Illinois), 2020 & 2021.

Madison Putich's abstract has been selected for an oral presentation at the Utah Conference on Undergraduate Research (UCUR) 2020, Utah State University, Feb 7, 2020.

Samira Gholami received the '*Outstanding Undergraduate Researcher Award*' in the College of Health', University of Utah, Apr 2019.

Samira Gholami received '*Travel Award*' to present her research (Oral presentation) at the Utah Conference on Undergraduate Research (UCUR), Cedar City, UT, Feb 9, 2018.

Brett Cutler was accepted to University of Utah School of Medicine in Fall 2017.

Divya Bharat was a finalist in American Society for Nutrition's '*Emerging Leaders in Nutrition Science Award*' at Experimental Biology Meeting, Chicago, Apr 22-26, 2017. Abstract selected for an oral presentation.

Chrissa Petersen's abstract has been selected for an oral presentation at the Experimental Biology Meeting, Chicago, Apr 22-26, 2017.

Brett received '*Travel Grant*' from University of Utah Office of Undergraduate Research to present his research at Experimental Biology Meeting, Chicago, Apr 22-26, 2017.

Brett Ronald Cutler has been selected for Utah Conference on Undergraduate research 2016 (UCUR) funding to present his research at UCUR 2016, University of Utah, Feb 19, 2016.

Rafaela Cavalcanti was a finalist in American Society for Nutrition's "*Emerging Leaders in Nutrition Science Award*" at Experimental Biology Meeting 2015. Abstract selected for an oral presentation.

Brett Ronald Cutler received 2015 '*Outstanding Undergraduate Researcher Award*' in the College of Health, University of Utah, Mar 2015.

Student Evaluation of Teaching & Mentoring

Instructor Rating: 1-6 Point scale and 6 being the highest.

NUIP 6450: Nutrition Biochemistry: 5.93 (2020), 6 (2018), 6 (2017).

NUIP 6440: Macronutrient Metabolism (Team Taught): 5.29 (2020), 5.87 (2019), 5.12 (2018), 5.71 (2017), 5.73 (2016), 5.74 (2015), 5.65 (2014), 5.06 (2013).

NUTR 1020: Scientific Foundations of Human Nutrition and Health: 5.3 (2018), 5.68 (2016), 5.72 (2015), 5.51 (2014).

NUIP 7970: Dissertation-Doctoral: 6 (2019).

NUIP 6970: Thesis Research-Masters: 5.5 (2020), 5.86 (2019), 6 (2019), 6 (2018), 6 (2014).

NUIP 6900: Directed Nutrition Research: 6 (2020).

NUTR 6980: Faculty Consultation: 6 (2015), 6 (2014).

NUTR 6910: Field Experience: 6 (2014).

VIII. EDITORIAL/REVIEWER EXPERIENCE

Academic Editor (2020- Present)

PLOS One

Guest Editor (2015 & 2017)

Oxidative Medicine and Cellular Longevity – Special Issue: Natural Products Targeting on Oxidative Stress and Inflammation: Mechanisms, Therapies, and Safety Assessment, 2017.

Oxidative Medicine and Cellular Longevity – Special Issue: Natural Products for the Prevention of Oxidative Stress – Related Diseases: Mechanisms and Strategies, 2015.

Editorial Board Member (2017 – Present)

Frontiers in Nutrition

Journal Reviewer (2007 – Present)

Reviewer for the following **60 journals** (Reviewed ~140 manuscripts)

Nature Publishing Group: *European Journal of Clinical Nutrition*; *Scientific Reports*; *International Journal of Obesity*.

American Society for Nutrition Publications: *Journal of Nutrition*.

American Chemical Society: *Journal of Agricultural and Food Chemistry*.

Cambridge Publications: *British Journal of Nutrition*.

Royal Society of Chemistry: *Food & Function*.

Elsevier: *Diabetes Research and Clinical Practice*, *Toxicology Letters*, *Food and Chemical Toxicology*, *Process Biochemistry*, *Injury*, *Journal of Cardiovascular Disease Research*, *Spectrochimica Acta - Part A*, *Journal of Nutritional Biochemistry*, *Nutrition*, *Nutrition Research*, *International journal of Biological Macromolecules*, *Toxicology and Applied Pharmacology*; *Pharmacological Reports*; *Life Sciences*; *Journal of Functional Foods*; *Experimental Cell Research*; *Biochimica Biophysica Acta*, *Journal of Chromatography B*; *Phytomedicine*, *Foods & Function*; *Experimental Eye Research*; *Journal of Chinese Integrative Medicine* (Currently *Journal of Integrative Medicine*), *International Immunopharmacology*.

Taylor & Francis Publication: *Achieves of Physiology and Biochemistry*, *Critical Reviews in Toxicology*.

PLOS: *PLOS One*

Springer: *Applied Biochemistry & Biotechnology*, *Investigational New Drugs*, *Molecular and Cellular Biochemistry*; *Journal of Molecular Neuroscience*, *European Journal of Nutrition*, *Inflammation Research*, *Springer Plus*.

Wiley-Blackwell: *Basic & Clinical Pharmacology & Toxicology*; *Trends in Food Science and Technology*.

Wiley: *The FASEB Journal*; *Diabetes/Metabolism Research and Reviews*; *Nutrition & Dietetics*; *Molecular Nutrition Food Research*.

BioMed Central: *BMC Complementary and Alternative Medicine*.

Karger: *Cell Physiology and Biochemistry*.

Sage: *Journal of Parenteral and Enteral Nutrition*, *Experimental Biology Medicine*; *Human and Experimental Toxicology*.

Spandido Publications: *International Journal of Molecular Medicine*, *Molecular Medicine Reports*, *Experimental and Therapeutic Medicine*.

Bentham Science: *Current Drug Targets*.

Hindawi: *Evidence-Based Complementary and Alternative Medicine*.

Chinese Physiological Society Publication: *The Chinese Journal of Physiology*.

Other Publishers: *International Journal of Biological Sciences*; *Chemical Biology Letters*.

Abstract Reviewer (2012 – Present)

- American Society for Nutrition Meeting (Nutrition-2020, Seattle) Abstracts, Jan 2020.
- American Society for Nutrition Meeting (Nutrition-2019, Baltimore) Abstracts, Jan 2019.
- American Society for Nutrition Meeting (Nutrition-2018, Boston) Abstracts, Jan 2018.
- Experimental Biology Annual Meeting 2017 (Chicago) Abstracts, Nov 2016.
- American Heart Association Scientific Session 2016 (New Orleans) Abstracts, Jul 2016.
- Experimental Biology Annual Meeting 2016 (San Diego) Abstracts, Nov 2015.
- Experimental Biology Annual Meeting 2015 (Boston) Abstracts, Nov 2014.
- Great Wall International Congress of Cardiology (GW-ICC), Asia Pacific Heart Congress, Beijing, China - meeting abstracts, 10-13 Oct 2013.
- Great Wall International Congress of Cardiology, Beijing, China - meeting abstracts, 11-14 Oct 2012.

Book Chapter Reviewer (2013-2016)

- Book: Anti-Obesity Discovery and Development. Editor: Prof. Atta-ur-Rahman, FRS and Dr. M. Iqbal Choudhary, Bentham Science Publishers, 2016.
- Book: Systems Biology of Free Radicals & Anti-Oxidants. Editor: Dr. Issy Laher. Publisher: Springer-Verlag (Germany), 2013.

Book Proposal Reviewer (2015)

- Reviewed a book proposal entitled “Obesity: Oxidative stress and dietary antioxidants” for Elsevier.

IX. GRANT REVIEW COMMITTEE

- Grant Reviewer for research proposals submitted for NIH Director’s New Innovator Award (DP2), Dec 2021.
- University of Nebraska Collaboration Initiative Team Grants, Grant Reviewer, Jun 2021.
- Utah Center for Clinical and Translational Science Grants, Grant Reviewer, Nov 2020.
- Grant Reviewer for a research proposal submitted to the executive government agency of National Science Center (Narodowe Centrum Nauki, Poland), Mar 2018.
- Vice President for Research Funding Incentive Seed Grant Reviewer, May 2017.

X. SYMPOSIUM COORDINATOR/ COMPETITION JUDGE

- Judge for Bench 2 Bedside competition, Capitol Hill, Salt Lake City: 2017, 2019, 2020 & 2021.
- Poster Judge at the University of Utah Undergraduate Research Symposium, Apr 9, 2019.
- Poster Judge at the Diabetes Metabolism Research Center Fall Retreat, Oct 2, 2018.
- Judge for American Society for Nutrition’s (ASN) Emerging Leaders in Nutrition Science Poster Competition, ASN Annual Meeting – Nutrition-2018, Boston, MA, Jun 7-12, 2018.
- Judge for American Society for Nutrition’s Emerging Leaders in Nutrition Science Poster Competition, Experimental Biology Annual Meeting, Chicago, IL, Apr 22-26, 2017.
- Judge for American Society for Nutrition’s Emerging Leaders in Nutrition Science Poster Competition, Experimental Biology Annual Meeting, San Diego, CA, Apr 2-6, 2016.
- Judge for the poster competition, Diabetes Metabolism Center Spring Retreat, University of Utah, Mar 17, 2016.

Judge for the poster competition, Medical Student Scholarly Activity Symposium, School of Medicine, University of Utah, Mar 11, 2015.

Judge for the Annual Award competition and reviewed the abstracts submitted to Experimental Biology Annual Meeting, Boston, April 20-24, 2013.

Member and co-chair of the organizing committee in University Grants Commission (Govt. of India) supported State Level Seminar on Biosciences, Islamiah College, Vaniyambadi, India, 18-19 Feb 2004.

XI. PROFESSIONAL AFFILIATIONS

Member, American Physiological Society, 2021 - Present
Member, European Society of Neurogastroenterology & Motility, 2020 - Present
Member, Canadian Nutrition Society, 2018 - Present
Member, American Society for Nutrition, 2012-Present
Member, American Heart Association, 2009 – Present

XII. SERVICE

University Community Activities

University Level

Member, University of Utah Institutional Review Board (IRB), 2021 - Present
Safety Committee Representative for College of Health, 2021 - Present
Summer Program for Undergraduate Research (SPUR) Mentor, 2018 – Present
Undergraduate Research Opportunities Program (UROP) Mentor, 2015 – Present
Native American Research Internship (NARI) Program Mentor, 2014 - 2019
Research Mentor for Leap student, 2016 - 2017
Biology Honors Research Advisor, 2016 – 2019

College Level

Chair, College of Health Safety Committee, 2021 - Present
Member, College of Health Advisory Committee, 2019 – Present
Member, College of Health Computer Committee, 2012 - 2016
Member, College of Health Diversity and Inclusion Committee, 2012 - 2016

Department Level

Member, Diversity and Inclusion Committee, 2018 - Present
Member, Chair Advisory Committee, 2019
Member, Graduate selection committee: Co-ordinated Master's Degree Program, 2013 - 2016
Member, Graduate selection committee: Nutrition Sciences Master's Degree Program, 2013 – 2016

International level (Global impact)

International Grant Reviewer

Grant Reviewer for a research proposal submitted to the executive government agency of National Science Center (Narodowe Centrum Nauki, Poland), Mar 2018.

Research Mentor for Brazil Scientific Mobility Program

Research mentor for the visiting undergraduate students supported by Brazil Scientific Mobility Program (Science without borders), 2014-15.

International Examiner for Ph.D. Theses

Evaluated 19 Ph.D. Theses submitted at the University of Madras, Vellore Institute of Technology (VIT) University, Periyar University, Thiruvalluvar University, Mother Teresa Women's University, Vinayaka Mission University (India); 2013 – Present

Abstract Reviewer

Great Wall International Congress of Cardiology (GW-ICC), Asia Pacific Heart Congress, Beijing, China - meeting abstracts, 2012-13.

Service at Previous Institutions

Member, MS Board of Examiners (Biochemistry), Tiruvalluvar University, India, 2003-2007

Member, BS Board of Examiners (Biochemistry), University of Madras, India, 1997-2005

Member, MS Board of Examiners (Biochemistry), Periyar University, India, 2006

Member, Career guidance counseling center, Islamiah College, Vaniyambadi, 2005-2007

Public Service/ Media

VPCAT success story featured in the University of Utah *News Room* (Cultivating Scientific Success), August 2019.

Research on berries featured in the Department Newsletter (Dept. of Nutrition and Integrative Physiology, University of Utah), 2019.

Comment on health benefits of green tea featured in University of Utah Health Care Blog (*HealthFeed – Expert Health News & Information*): Brew for Your Heart: Tea Help Lower Blood Pressure, Nov 3, 2014.

Comment on Transfat featured in University of Utah Health Care Blog (*HealthFeed – Expert Health News & Information*): You're Probably Still Eating Trans-fat, Sep 8, 2014.

Interview for *Shape Magazine*: 'Why Drinking Green Tea Can Really Do for you' by Jessica Cassity, Interview featured in *Shape Magazine* website, Apr 14, 2014.

Conrad Foundation 2014, Spirit of Innovation Awards Judge. As a semi-final judge reviewed 4 projects (Health and Nutrition category), Feb 7, 2014.

American Heart Association – Heart Walk Team Kick Off: Presentation on the 'green tea in the prevention of cardiovascular disease'. New River Valley Heart Walk Team Kick-Off, 26 Jul 2011.

American Heart Association – Heart Walk: Presentation on the 'role of dietary flavonoids in the prevention of vascular disease'. Roanoke Heart Walk CEO Lunch, at the Roanoke Shenandoah Club, 15 Mar 2011.

Interview for *Life Extension Magazine*: New Research on the Health Benefits of Green tea, featured in the issue - Apr 2008.