

VIDYA CHANDRASEKARAN

Phone: (925) 631-4251
vc5@stmarys-ca.edu

Dept. of Biology
Saint Mary's College of CA
Moraga, CA 94575

EDUCATION

Ph.D. in Pharmacology and Toxicology,
State University of New York at Buffalo. September 1999

Thesis Title: Regulation of dendritic growth in sympathetic neurons by bone morphogenetic proteins and retinoids. Advisor: Dr. Dennis Higgins.

Bachelor of Pharmaceutical Sciences, University of Bombay, India August 1994

APPOINTMENTS

Chair, Dept. of Biology, Saint Mary's College of California July 2018 – June 2019

Associate Professor, Dept. of Biology,
Saint Mary's College of California July 2011 – present

Research Associate, Dept. of Molecular Biosciences,
Univ. of California at Davis Jun 2016 - present

Chair, Dept. of Biology, Saint Mary's College of California Jan 2013 – Jun 2016

Research Associate, Dept. of Molecular Biosciences,
Univ. of California at Davis May 2011 – Jun 2014

Assistant Professor, Dept. of Biology,
Saint Mary's College of California Aug 2008 – Jun 2011

Adjunct Professor, Dept. of Biology,
Saint Mary's College of California Aug 2007 – Jun 2008

Senior Technical Support Consultant, Bio-Rad Laboratories,
Hercules, CA May 2005 – Jul 2007

Associate Specialist, Dept. of Molecular and Cell Biology,
Univ. of California at Berkeley. PI: Dr. Steven K. Beckendorf Jul 2004 – April 2005

Postdoctoral Researcher, Dept. of Molecular and Cell Biology,
Univ. of California at Berkeley. PI: Dr. Steven K. Beckendorf Sept 1999 – Jun 2004

TEACHING EXPERIENCE

Saint Mary's College of CA, Moraga CA

Aug 2007 to present

Associate Professor, Department of Biology

- Developed and taught lower division and upper division lecture and labs including introductory cell biology, molecular biology and biochemistry (Bio 1/1L), human physiology (Bio 25/26), Experiential learning in Biology (Bio 17), Genetics (Bio 105/105L), Biochemistry (Bio 135/135L), Cell Biology (Bio 132/132L), Developmental Biology (Bio 102/102L), Microbiology (Bio 130/130L) and Systemic Physiology (Bio 127/127L)
- Mentored 46 independent study research projects during Fall, Jan term and Spring semesters since 2007.
- Developed and taught a non-STEM majors course on Microbes and Society during January term.
- Taught in the Collegiate Seminar program

UC Berkeley Extension, San Francisco, CA

Feb 2005 – Jun 2005

Lecturer

- Taught upper division lecture course in Cell Biology

Saint Mary's College of CA, Moraga, CA

Jan 2005 – May 2005

Lecturer

- Taught lab section for Human Physiology lab (Bio 26)

Mills College, CA

Spring 2005

Guest Lecturer in a Developmental Biology course

UC Berkeley, Berkeley, CA

Spring 2002

Lecturer

- Taught a seminar style course on Biology of Aging (MCB 190) with curriculum developed from primary literature on aging in model organisms and in humans, discussing the cell biology, physiology and biochemistry underlying the process of aging.

Canisius College, Buffalo, NY

Spring 1998

Guest instructor for Neurobiology Lab course

RESEARCH FOCUS

- Understanding the mechanisms controlling the growth and retraction of dendrites in the embryonic and adult peripheral nervous system
- Characterizing the cellular effects of food additives and nutritional supplements.
- Exploring new pedagogical approaches to teaching genomics, genetics, biochemistry and physiology and assessing their teaching effectiveness.

PUBLICATIONS

Peer-reviewed Journal Publications

Pravoverov K, Whiting K, Thapa S, Bushong T, Trang K, Lein PJ, **Chandrasekaran V**, MicroRNAs are Necessary for BMP-7-induced Dendritic Growth in Cultured Rat Sympathetic Neurons. *Cell Mol Neurobiol*. 2019 May 18. doi: 10.1007/s10571-019-00688-2.

Henley R, **Chandrasekaran V**, Giulivi C, Computing neurite outgrowth and arborization in superior cervical ganglion neurons. *Brain Res Bull*.144:194-199, 2019

Miller GW, **Chandrasekaran V**, Yaghoobi B, Lein PJ, Opportunities and challenges for using the zebrafish to study neuronal connectivity as an endpoint of developmental neurotoxicity. *Neurotoxicology*. 67:102-111, 2018

Chandrasekaran V, Lea C, Sosa C, Higgins D and Lein PJ, Reactive Oxygen Species are Involved in BMP-Induced Dendritic Growth in Cultured Rat Sympathetic Neurons. *Mol Cell Neurosci*. 67:116-25, 2015.

Leung, W, **Chandrasekaran V**, ..., Elgin, SCR, The Drosophila Muller F elements maintain a distinct set of genomic properties over 40 million years of evolution. *G3*. 5(5):719-40, 2015.

Lopatto D, Hauser C, Jones CJ, Paetkau D, **Chandrasekaran V**, Dunbar D, MacKinnon C et. al., A Central Support System Can Facilitate Implementation and Sustainability of a Classroom-Based Undergraduate Research Experience (CURE) in Genomics. *CBE Life Sci Educ*. 13(4):711-23, 2014.

Shaffer CD, Alvarez CJ, Bednarski AE, Dunbar D, Goodman AL, Reinke C, Rosenwald AG, Wolyniak MJ, Bailey C, Barnard D, Bazinet C, Beach DL, Bedard JE, Bhalla S, Braverman J, Burg M, **Chandrasekaran V**, Chung HM, Clase K et.al., A course-based research experience: how benefits change with increased investment in instructional time. *CBE Life Sci Educ*.13(1):111-30. 2014.

Doyle W, Shide E, Thapa S and **Chandrasekaran V**.: The effects of energy beverages on cultured cells. *Food and Chemical Toxicology*, 50: 3759-3768, 2012.

Wolyniak M.J, Alvarez C J, **Chandrasekaran V**, Grana T A, Holgado A, Jones C.J, Morris R.W, Pereira A L, Stamm J, Washington T.M, and Yang Y.: Building better scientists through cross-disciplinary collaboration in synthetic biology: a meeting report from the genome consortium for active teaching (GCAT) workshop 2010. *CBE—Life Sciences Education*, 9(4): 399–404, 2010

Shaffer C.D, Alvarez C, Bailey C, Barnard D, Bhalla S, Chandrasekaran C, **Chandrasekaran V**, Chung H, Dorer D.R, Du C, Eckdahl T.D, Poet J, Frohlich D, Goodman A.L, Gosser Y, Hauser C, Hoopes L.M., Johnson D, Jones C.J, Kaehler K, Kokan N, Kopp O.R, Kuleck G, McNeil G, Moss R, Myka J, Nagengast A, Morris R, Overvoorde P.J, Shoop E, Parrish S, Reed K, Regisford G, Revie D, Rosenwald A.E, Saville K, Schroeder S, Shaw M, Skuse G, Smith C, Smith C, Spana E.P, Spratt M, Stamm J, Thompson J.S, Wawersik M, Wilson B.A, Youngblom J, Leung W, Buhler J, Mardis E.R, Lopatto D, and Elgin S.C.R.: The Genomics Education Partnership: Successful Integration of Research into Laboratory Classes at a Diverse Group of Undergraduate Institutions. *CBE—Life Sciences Education*, 9(1) 55-69, 2010.

Chandrasekaran V. and Beckendorf S. K.: *Tec29* controls actin remodeling and endoreplication during the invagination of the *Drosophila* embryonic salivary glands. *Development*, 132: 3515-24, 2005.

Chandrasekaran V. and Beckendorf S. K.: *senseless* is necessary for the survival of embryonic salivary gland precursors in *Drosophila*. *Development*, 130: 4719-28, 2003.

Lein P.J., Beck H., **Chandrasekaran V.**, Gallagher P.J., Chen H, Lin Y, Guo X., Kaplan P.L., Tiedge H. and Higgins D.: Glia induce dendritic growth in cultures sympathetic neurons by modulating the balance between bone morphogenetic proteins (BMPs) and BMP antagonists. *J. Neurosci.*, 22: 10377-10387, 2002.

Horbinski C., Stachowiak, E.K., **Chandrasekaran V.**, Miuzukoshi E., Higgins D. and Stachowiak M.K.: Bone morphogenetic protein-7 stimulates initial dendritic growth in sympathetic neurons through an intracellular fibroblast growth factor signaling pathway. *J. Neurochem.*, 80: 54-63, 2002.

Dattatreyamurty B., Roux E., Kaplan P.L., Roback L.A., Horbinski C., Lein P., Higgins D. and **Chandrasekaran V.**: Cerebrospinal fluid contains biologically active bone morphogenetic protein -7. *Exp. Neurol.*, 172: 273 – 281, 2001.

Chandrasekaran V., Zhai Y., Wagner M., Napoli J.L., Kaplan P.L. and Higgins D.: Retinoic acid regulates the morphological development of sympathetic neurons. *J. Neurobio.*, 42: 383 – 393, 2000.

Guo X., **Chandrasekaran V.**, Lein P.J., Kaplan P.L. and Higgins D.: Leukemia inhibitory factor and ciliary neurotrophic factor cause dendritic retraction in cultured sympathetic neurons. *J. Neurosci.*, 19: 2113 - 2121, 1999.

Conference Presentations (*Abstract-Reviewed, presented by first author*)

Henley, R., Karunungan, K., Lein P.J. and Chandrasekaran, V.: Gamma Secretase activity is necessary for BMP-7-induced dendritic growth in embryonic sympathetic neurons. Experimental Biology meeting, 2018 (poster).

Whiting, K., Lein P.J. and Chandrasekaran, V.: Role of microRNAs in regulating BMP-7-induced dendritic growth in embryonic sympathetic neurons. West Coast Biological Sciences Undergraduate Research Conference, 2018 (platform)

Henley, R., Karunungan, K., Lein P.J. and Chandrasekaran, V.: Gamma Secretase activity is necessary for BMP-7-induced dendritic growth in embryonic sympathetic neurons. West Coast Biological Sciences Undergraduate Research Conference, 2018 (platform)

Adams B., Iavarone A., Lein P.J. and Chandrasekaran, V.: Changes in *Rattus Norvegicus* proteome due to BMP-7 induced dendritogenesis. West Coast Biological Sciences Undergraduate Research Conference, 2018 (platform)

Karunungan, K., Lein P.J. and Chandrasekaran V.: Gamma Secretase Activity is Necessary for Bone Morphogenetic Protein-7 Induced Dendritic Growth in Embryonic Rat Sympathetic Neurons. American Society for Cell Biology, 2016. (Poster)

Pravoverov, K., Thapa, S., Lein P.J. and Chandrasekaran V.: Role of microRNAs in Bone Morphogenetic Protein Induced Dendritic Growth in Sympathetic Neurons. American Society for Cell Biology, 2016. (Poster)

Chandrasekaran V., Lea C. and Lein P.J.: Free radicals are important for dendritic growth in rat embryonic sympathetic neurons. FASEB J March 29, 2012 26:845.6

Lea C., Lein P.J. and Chandrasekaran V.: Reactive Oxygen Species are important for promoting BMP-induced dendritic growth in rat embryonic sympathetic neurons. West Coast Biological Science Undergraduate Research Conference, 2011. (Poster)

Shide E., Doyle W and Chandrasekaran V.: The effects of energy drinks on the structure and function of epithelial cells and fibroblasts. West Coast Biological Science Undergraduate Research Conference, 2011. (Poster)

Doyle W and Chandrasekaran V.: Embryonic and cellular effects after exposure to commonly consumed energy drinks FASEB J, 2011 25:749.3 (Poster)

Schibler J and Chandrasekaran V.: The role of CG11148 in embryogenesis and wing patterning in Drosophila: A.Dors.Res.Conf. 51, 2010 (Poster).

Elgin S.C.R, Chandrasekaran V, Chung H.M, Coyle-Thompson C, Johnson D, Jones C.J, Kokan N, McNeil G, Nagengast A, Saville K, Stamm J, Wawersik M and Lopatto D. : Genomics Education Partnership.: A. Dros. Res. Conf. 50, 2009. (Poster)

Solarewicz V, Beckendorf S.K and Chandrasekaran V.: The role of taiman in the formation of Drosophila embryonic salivary glands.: A. Dros. Res. Conf. 50, 2009 (Poster)

Chandrasekaran V and Beckendorf S.K.: The role of Btk29A in the morphogenesis of embryonic salivary glands.: A. Dros. Res. Conf. 45, 2004. (Poster)

Chandrasekaran V and Beckendorf S.K.: The role of Btk29A in the morphogenesis of embryonic salivary glands.: A. Dros. Res. Conf. 44, 2003. (Poster)

Chandrasekaran V and Beckendorf S.K.: senseless controls the survival of cells in the salivary glands by repressing reaper and hid: A. Dros. Res. Conf. 43, 2002. (Platform)

Chandrasekaran, V., Zhou, B. and Beckendorf, S.K.: senseless is necessary for the survival of embryonic salivary gland precursors: A. Dros. Res. Conf. 42, 2001. (Poster)

Dattatreya Murthy B., Roux E., Kaplan P.L., Lein P.J., Higgins D. and Chandrasekaran V.: Cerebrospinal fluid contains biologically active bone morphogenetic protein –7: Society for Neuroscience, 1999. (Poster)

Chandrasekaran V., Hedges A.M., Rueger D. and Lein P.J.: Glial induction of dendritic growth in rat sympathetic neurons involves osteogenic protein –1 (OP-1): American Society of Cell Biology, 1995. (Poster)

Chandrasekaran V and Higgins D.: Retinoic acid regulates dendritic growth in rat sympathetic neurons. Eastern Students Research Conference, 1998. (Platform)

Book chapter

Chandrasekaran V and Lein, P.J.: Regulation of dendritogenesis in sympathetic neurons. In Autonomic Nervous System, edited by Dr. Pavol Svorc, Published by Intech Open Limited.

HONORS AND AWARDS

Alumni Faculty Fellowship Grant, Saint Mary's College of CA, \$4500	2018
Provost Research Grant, Saint Mary's College of CA, \$9000	2017
Co-PI HSI-STEM (CALC) grant from DOE, \$2.7 Million	2016
Co-PI NSF – S-STEM program grant for	
Mentored Access to Programs in Science (MAPS), \$618,688.	2013
NSF sponsored SENCER SSI Implementation Grant, \$3000	2013
NSF funded GCAT mini instrumentation grant, \$12000.	2013
Alumni Faculty Fellowship Grant , Saint Mary's College of CA, \$4300	2013
Alumni Faculty Fellowship Grant, Saint Mary's College of CA, \$5000	2010
Robert J. McIssac Award for the Outstanding Thesis in the	
Department of Pharmacology and Toxicology, SUNY at Buffalo.	2000
Presidential Fellowship, awarded by SUNY at Buffalo.	1994 - 1997

INVITED LECTURES

Talk title: Research and Teaching at a Liberal Arts College,
Pharmacology and Toxicology Invited Seminar Series, UC Davis April 2015

PROFESSIONAL AFFILIATIONS

- Genomics Education Partnership (GEP)
- Genetics Consortium for Active Teaching for Synthetic Biology (GCAT - SynBio)
- The American Society for Pharmacology and Experimental Therapeutics (ASPET)
- American Society for Cell Biology (ASCB)
- International Genetically Engineered Machines consortium (iGEM)

SERVICE

Biology Department

Chair, Department of Biology	2013 – 2016, 2018
Chair Tenure-Track Search Committee	2015, 2016
Member of Tenure-Track Search Committee	2010, 2011, 2017

School of Science

Coordinator for Summer Research Program	2011 - 2016
Chair, Institutional Animal Care and Use Committee	2014 - Present
Interim Director, MAPS program	2016 –2017
Member, Biochemistry Steering Committee	2010 - present

College-wide service

Member, Strategic Plan Steering Committee	2019 - present
Vice-Chair, Undergraduate Educational Policies Committee	2019 - present
Chair, Rank and Tenure Committee	2017 – 2018
Member, Rank and Tenure Committee	2015 – 2018
Member, Faculty Development Fund Committee	2008 – 2019
	(except Spring 2015 – on sabbatical)
Member, Search Committee for Dean of the Core	2016 - 2017
Member, SEIU Advisory Committee	2016
Member, Intellectual Policy Task Force	2017
Member, First Year Advising Task Force	2012
Member, Search Committee for Dean of School of Science	2010 - 2011
Member, Core Curriculum Implementation Committee	2009 - 2012
Member of the Disciplinary Hearing Board	2009 - 2011

COMMUNITY SERVICE

AAUW, Expanding your Horizons Workshop Presenter	Spring 2018, 2019
External Reviewer for Biology program at Mills College	Spring 2019

PROFESSIONAL SERVICE

Chair and Lead organizer , 43 rd West Coast Biological Sciences Undergraduate Research Conference	April 2018
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Peer-Reviewer for:

- * Developmental Biology
- * Food and Chemical Toxicology
- * Environmental Science and Pollution Research
- * Neurotoxicology
- * Biomolecules