

Mythreye Karthikeyan MSc. PhD

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ACADEMIC APPOINTMENTS

2019 June-	Associate Professor (tenure), University of South Carolina at Columbia. Assistant Professor, Biomedical Engineering, College of Engineering (Secondary/Adjunct), University of South Carolina
2017 Aug-2019	Assistant Professor (tenure track) Department of Chemistry and Biochemistry, College of Arts and Sciences (Primary) University of South Carolina at Columbia
2013-2019	Assistant Professor, Dept. of Drug Discovery and Biomedical Sciences, College of Pharmacy (Secondary/Adjunct), University of South Carolina
2019-Sept 2019	Tenured Associate Professor Department of Chemistry and Biochemistry, College of Arts and Sciences, University of South Carolina at Columbia
2019 Oct- current	Tenured Associate Professor, Molecular and Cellular Pathology Division, Department of Pathology, University of Alabama, Birmingham

RESEARCH TRAINING AND EDUCATION

2009-2013	Research Assistant Professor Dept. of Medicine, Duke University, Durham NC. Advisor: Gerard Blobe MD, PhD
2006-2009	Post Doctoral Fellow, Div. of Medical Oncology, Duke University, Durham NC Advisor: Gerard Blobe M.D Ph.D.
2005-2006	Post-Doctoral Fellow, Dept. of Medicine, Duke University, Durham NC Advisor: Pascal Goldschmidt M.D
2000-2005	Ph.D., Biology, University of North Carolina, Chapel Hill, NC Thesis Advisor: Kerry S Bloom Ph.D.
1998-1999	Research Trainee Indian Institute of Science, Bangalore
1996-1998	M. Sc (Biochemistry). Hamdard University, Delhi India
1993-1996	B.Sc. Honors (Biochemistry), University of Delhi, Delhi, India

HONORS AND AWARDS

2019	USC 'Breakthrough Rising Star' award.
2013-2017	Liz Tilberis Scholar 2013, Ovarian Cancer Research Fund.
2009-2012	Career Development Award for Ovarian Cancer Research (Dept. of Defense)
2008-2009	Post-Doctoral Fellow, Susan G Komen Foundation for Breast Cancer
2008	Best Poster Award. Pharmacology Retreat and Symposium, Duke University.
2006	Keystone Symposia Postdoctoral Award (Molecular Biology of the Vasculature).
1998	National fellowship for Research and Training from Govt. of India, CSIR

PUBLICATIONS (K. Mythreye, reverse chronology, * since appointment at Univ of SC)

2019*	Yeon Soo Kim, Piyushi Gupta-Vallur, Victoria Jones, Beth L. Worley, Sara Shimko, Dong-Hui Shin, LaTaijah Crawford, Chi-Wei Chen, Katherine M. Aird, Thomas Abraham, Trevor G. Shepherd, Joshua I. Warrick, Nam Y. Lee, Rebecca Phaeton, Karthikeyan Mythreye [§] and Nadine Hempel [§] . Context-dependent activation of SIRT3 is necessary for anchorage-independent survival and metastasis of ovarian cancer cells. <i><u>In revisions</u></i> (Note: [§] KM , NH Co-corresponding authors).
2018*	Beth L. Worley, Yeon Soo Kim, Jennifer Mardini, Rameez Zaman, Kelly Leon, Piyushi Gupta Vallur, Asvelt Nduwumwami, Joshua I. Warrick, Patrick F. Timmins, Joshua P.

- Kesterson, Rébecca Phaëton, Nam Y. Lee, Vonn Walter, Lauren Endres, **Karthikeyan Mythreya**, Katherine M. Aird, Nadine Hempel. GPX3 supports ovarian cancer progression by manipulating the extracellular redox environment. *Redox Biol.* 2018 Nov 17. pii: S2213-2317(18)30891-7. doi: 10.1016/j.redox.2018.11.009
- 2018* Jiaxin Liang, Mengqian Chen, Daniel Hughes, Alexander A. Chumanevich, Vimala Kaza, Chang-Uk Lim, Hippokratis Kiaris, **Karthikeyan Mythreya**, M. Marjorette Pena, Eugenia V. Broude, Igor B. Roninson. CDK8 selectively promotes the growth of colon cancer metastases in the liver by regulating gene expression of TIMP3 and matrix metalloproteinases. *Cancer Res.* 2018 Sep 5. pii: canres.1583.2018. doi: 10.1158/0008-5472.CAN-18-1583
- 2018* Serrao A, Jenkins L.M, Chumanevich.A, Horst B, Liang J, Gatza M.L, Lee N.Y, Roninson I.B, Broude E.V, and **Mythreya K.** Mediator kinase CDK8/CDK19 drives YAP1 dependent BMP4 induced EMT in cancer. *Oncogene.* 2018 May 21. doi: 10.1038/s41388-018-0316-y. [Epub ahead of print]
- 2018* Shah N, Kumar S, Zaman N, Pan CC, Bloodworth JC, Lei W, Streicher JM, Hempel N, **Mythreya K**, Lee NY. TAK1 activation of alpha-TAT1 and microtubule hyperacetylation control AKT signaling and cell growth. *Nat Commun.* 2018 Apr 27;9(1):1696. doi: 10.1038/s41467-018-04121-y.
- 2018* Singh P, Jenkins LM, Horst B, Alers V, Pradhan S, Kaur P, Srivastava T, Hempel N, Györfy B, Broude EV, Lee NY, **Mythreya K.** Inhibin is a novel paracrine factor for tumor angiogenesis and metastasis. *Cancer Res.* 2018 Mar 13. pii: canres.2316.2017. doi: 10.1158/0008-5472.CAN-17-2316.
- 2017* Jenkins LM, Horst B, Lancaster CL, **Mythreya K.** Dually modified transmembrane proteoglycans in development and disease. *Cytokine Growth Factor Rev.* 2018 Feb; 39:124-136. doi: 10.1016/j.cytogfr.2017.12.003. Epub 2017 Dec 22. Review
Note: Cover Article
- 2017* Kim YS, Gupta Vallur P, Phaëton R, **Mythreya K**, Hempel N. Insights into the Dichotomous Regulation of Sod2 in Cancer. *Antioxidants (Basel).* 2017 Nov 3;6(4). pii: E86. doi: 10.3390/antiox6040086. Review
- 2017* Varadaraj A, Jenkins LM, Singh P, Chanda A, Snider J, Lee NY, Amsalem-Zafran AR, Ehrlich M, Henis YI, **Mythreya K.** TGF- β triggers rapid fibrillogenesis via a novel T β RII dependent fibronectin trafficking mechanism" *Mol Biol Cell.* 2017 Mar 15. pii: mbc.E16-08-0601. doi: 10.1091/mbc.E16-08-0601 **Note:** F1000 prime recommended.
- 2016* Jenkins LM, Singh P, Varadaraj A, Lee NY, Shah S, Flores HV, O'Connell K, **Mythreya K** Altering the proteoglycan state of T β RIII /Betaglycan modulates canonical Wnt/ β -catenin signaling. *J Biol Chem.* 2016 Dec 2;291(49):25716-25728. Epub 2016 Oct 26.
- 2016* Kumar S, Pan CC, Shah N, Wheeler SE, Hoyt KR, Hempel N, **Mythreya K**, Lee NY Activation of mitofusin2 by Smad2-RIN1 complex during mitochondrial fusion. *Mol Cell.* 2016 May 19;62(4):520-31. doi: 10.1016/j.molcel.2016.04.010. Epub 2016 May 12.
- 2016* Pan CC, Shah N, Kumar S, Wheeler SE, Cinti J, Hoyt DG, Beattie CE, An M, **Mythreya K**, Rakotondraibe LH, Lee NY. Angiostatic actions of capsicodendrin through selective inhibition of VEGFR2-mediated AKT signaling and dysregulated autophagy. *Oncotarget.* 2016 May 11. doi: 10.18632/oncotarget.9307.

- 2015* Varadaraj A, Patel P, Serrao A, Bandyopadhyay T, Lee NY, Jazaeri AA, Huang Z, Murphy SK, **Mythreya K**. Epigenetic regulation of GDF2 suppresses anoikis in ovarian and breast epithelia Neoplasia. 2015 Nov; 17(11):826-38. doi: 10.1016/j.neo.2015.11.003
- 2015* Pan CC, Shah N, Kumar S, Wheeler SE, Cinti J, Hoyt DG, Beattie CE, An M, **Mythreya K**, Rakotondraibe LH, Lee NY. Endoglin regulation of Smad2 function mediates beclin1 expression and endothelial autophagy. J Biol Chem. 2015 Jun 12;290(24):14884-92. doi: 10.1074/jbc.M114.630178. Epub 2015 Apr 30.
- 2014* Osborne LD, Li GZ, How T, O'Brien ET, Blobe GC, Superfine R, **Mythreya K**. TGF- β regulates LARG and GEF-H1 during EMT to impact stiffening response to force and cell invasion. Mol. Biol. Cell 2014 25:22 3528-3540.
- 2014* Pan CC, Kumar S, Shah N, Hoyt DG, Hawinkels LJ, **Mythreya K**, Lee NY. Src-mediated post-translational regulation of endoglin stability and function is critical for angiogenesis. J Biol Chem. 2014 Sep 12; 289(37): 25486-96.
- 2013* Knelson EH, Gaviglio AL, Tewari AK, Armstrong MB, ***Mythreya K**, ***Blobe GC**. Type III TGF-beta receptor promotes FGF2-mediated neuronal differentiation in neuroblastoma. J Clin Invest. 2013 Nov 1; 123(11):4786-98 (***equal senior author**).
- 2013 Oh SY, Knelson EH, Blobe GC, **Mythreya K**. The type III TGF β receptor regulates filopodia formation via a Cdc42-mediated IRSp53-N-WASP interaction in epithelial cells. Biochem J. 2013 Aug 15; 454(1):79-89.
- 2013 **Mythreya K**, Knelson EH, Gatza CE, Gatza ML, Blobe GC. T β RIII/ β -arrestin2 regulates integrin $\alpha 5\beta 1$ trafficking, function, and localization in epithelial cells. Oncogene. 2013 Mar 14; 32(11):1416-27.
- 2012 Tian H, **Mythreya K**, Golzio C, Katsanis N, Blobe GC. Endoglin mediates fibronectin/ $\alpha 5\beta 1$ integrin and TGF- β pathway crosstalk in endothelial cells. EMBO J. 2012 Oct 3;31(19):3885-900.
- 2012 Christopher C. Pan, Jeffrey C. Bloodworth, Karthikeyan Mythreya and Nam Y. Lee Endoglin Inhibits ERK-induced c-Myc and Cyclin D1 Expression to Impede Endothelial Cell Proliferation. Biochem Biophys Res Commun. 2012 Aug 3;424(3):620-3
- 2011 Swaminathan V[#], **Mythreya K[#]**, O'Brien ET, Berchuck A, Blobe GC, Superfine R (**#equal first author**). Mechanical stiffness grades metastatic potential in patient tumor cells and in cancer cell lines. Cancer Research 2011 Aug 1;71 (15):5075-80.
- 2011 Lambert KE, Huang H, **Mythreya K**, Blobe GC. The type III transforming growth factor- β receptor inhibits proliferation, migration, and adhesion in human myeloma cells. Mol Biol Cell. 2011 May;22(9):1463-72
- 2009 **Mythreya K** and Blobe GC. The type III TGFbeta receptor regulates directional migration: new tricks for an old dog. Cell Cycle. 2009 Oct 1;8(19): 3069-70
- 2009 **Mythreya K** and Blobe GC. Proteoglycan signaling co-receptors: roles in cell adhesion, migration and invasion. Cell Signal. 2009 Nov; 21(11): 1548-58.
- 2009 **Mythreya K**, Blobe GC. The type III TGF-beta receptor regulates epithelial and cancer cell migration through beta-arrestin2-mediated activation of Cdc42. Proc Natl Acad Sci

USA. 2009 May 19; 106(20): 8221-6

- 2008 **Mythreya K**, Satterwhite LL, W. Sean Davidson and Goldschmidt-Clermont PJ
ApoA-I induced CD31 in bone marrow-derived vascular progenitor cells increases adhesion: implications for vascular repair. *Biochim Biophys Acta*. 2008 Nov-Dec; 1781(11-12):703-9
- 2008 Gardner MK, Haase J, **Mythreya K**, Molk JN, Anderson M, Joglekar AP, O'Toole ET, Winey M, Salmon ED, Odde DJ, Bloom K. The microtubule-based motor Kar3 and plus end-binding protein Bim1 provide structural support for the anaphase spindle. *J Cell Biol*. 2008 Jan 14;180(1):91-100
- 2007 **Mythreya K** and Blobe G.C TGF- β Type I receptor Receptor. *AFCs Nature Molecule Pages*. 25, April 2007. Doi 10 1038/mp.a002272.01
- 2006 Moldovan L, **Mythreya K**, Goldschmidt-Clermont PJ, Satterwhite LL Reactive oxygen species in vascular endothelial cell motility. Roles of NAD (P) H oxidase and Rac1. *Cardiovascular Res*.2006. Jul15; 71(2): 236-46.
- 2003 **Mythreya K** and Bloom KS Differential kinetochore protein requirements for establishment versus propagation of centromere activity in *Saccharomyces cerevisiae*.. *J Cell Biol*. 2003 Mar 17; 160(6):833-43

BOOK CHAPTERS

Emerging roles of TGF- β co-receptors in human disease. A.E. Meyer, **K. Mythreya** and G. C. Blobe.
Springer Book Chapter in 'TGF- β in human disease'.

PATENTS

1. MECHANICAL STIFFNESS PROFILING OF CANCER CELLS; Patent Application (U.S. Patent and Trademark Office) No.: 61/543,633 Filing Date: October 5, 2011.
2. Targeting Inhibin in cancers and other vascular malignancies; (U.S. Patent and Trademark Office) No.: 62/372,902 Filing Date: August 10, 2016

SELECT SEMINARS (* since first independent appointment, 2013, at Univ of SC)

- 2019* Rutgers cancer Institute of New Jersey, Grand Round seminar Lecture Series.
- 2019* George Washington University DC, Dept of Biochemistry and Molecular Medicine.
- 2019* Mayo Clinic, Rochester MN, Dept of Biochemistry and Molecular Biology.
- 2019* School of Medicine, Case Comprehensive Cancer Center
- 2019* UTMB, Dept of Biochemistry and Molecular Biology, Feb 2019
- 2019* UAB School of Medicine Jan 2019
- 2018* Purdue School of Pharmacy. Dec 2018.
- 2018* Arizona School of Life Sciences, ASU, Tempe Campus, AZ April 20th. "*Tumor cells mitochondrial guide to cell survival*"
- 2018* BioDesign Institute, Tempe AZ, April 19^h
- 2018* Northern Arizona University, Flagstaff AZ, April 18th. "*Two sides of the mitochondrial coin in cancer*"
- 2018* Duke University School of medicine, Med Onc Grand Rounds. March 14th '*Rethinking Inhibin as a diagnostic and therapeutic target in cancer*'
- 2017* Winthrop University, Sept 28th 2017. "*Supply and Demand, the cell signaling view*".
- 2017* FASEB summer research Conference July 2017, TGF- β superfamily: Signaling in Development and Disease, Lisbon, Portugal "*Tumor derived Inhibin as a new paracrine factor for angiogenesis in cancer*
- 2017* Coastal Carolina University, Feb 24th "*Receptor control of growth factor availability*"
- 2016* Gordon Research Conference, July 2016. Proteoglycans "*Beyond TGF- β Coreception: Proteoglycan State Dependent Regulation of Signaling by Betaglycan*".

2016 *	Ohio State University, College of Pharmacy. Nov 18 th . " <i>Mediating transcriptional control of cellular plasticity and Metastasis</i> "
2016*	Hershey Medical Center, Penn State University. March 17 th . " <i>Mediating transcriptional control of EMT and Metastasis</i> "
2015*	FASEB summer research Conference July 2015, TGF- β superfamily: Signaling in Development and Disease, Keystone Colorado. " <i>CDK8 and CDK19 mediated BMP induced EMT and growth responses through distinct and overlapping functions</i> "
2014*	University of South Carolina School of Medicine." <i>TGF-β signaling and Biology in cancer</i> "
2013*	University of South Carolina, College of Pharmacy Seminar Series " <i>Mechanotransduction mediated regulation of TGF-β induced EMT</i> "
2013	University of South Carolina, Department of Chemistry and Biochemistry.
2013	University of Virginia, Charlottesville, Cancer Center Seminar Series " <i>Beyond Coreception: Type III TGF-β receptors in Cancer</i> "
2012	Duke Cancer Institute, Breast Cancer Research Forum.
2011	Duke University Grand Rounds: Division of Medical Oncology, Dept. of Medicine,

Other conference presentations including posters since at USC only (presenter if trainee underlined)

1. Zainab Shonibare, Kathleen O'Connell, Pratik Patel, Lauren Vaughn and **Karthikeyan Mythreya**. Molecular mechanism and impact of Bone morphogenetic protein (BMP)-mediated Sox2 down regulation in Ovarian Cancer. FASEB summer research Conference July 2019, TGF- β superfamily: Signaling in Development and Disease, West Palm Beach Florida. **Note:** One of 100 posters selected for 'flash talk'
2. B. Horst, S. Pradhan, S. Choi, N.K. Roy, M. Southard, H. Young, and **K. Mythreya**. Regulation of Tumor Produced Inhibins by Hypoxia and Its Effects on Endothelial Cell Function. FASEB summer research Conference July 2019, TGF- β superfamily: Signaling in Development and Disease, West Palm Beach Florida. **Note:** One of 100 posters selected for 'flash talk'
3. A. Gasparian, M. Aksenova, D. Oliver, E. Levina, R. Doran, M. Lucius, S. Lee, G. Piroli, **K. Mythreya**, N. Frigell, M. Wyatt, E. Broude, M. Shtutman. Depletion of COPI complex in tumor cells results ROS-dependent accumulation of lipid droplets and relocalization of LC3 to the droplets surface without formation of autophagosomes. ; Gordon Research Conference, Autophagy in Stress, Development and Disease, March 2018
4. A. Gasparian, M. Aksenova, D. Oliver, E. Levina, S. Lee, **K. Mythreya**, M. Wyatt, E. Broude, M. Shtutman. Mechanisms of selective death of tumor cells after COP1 complex depletion, ASCB/EMBO annual meeting, Dec 2017. Philadelphia
5. Rashad Amani, Laura Jenkins and K. Mythreya. "TGF β RIII Distribution & Expression in Colon Cancer and its Impact on WNT Signaling" 2017 Annual Biomedical Research Conference for Minority Students (ABRCMS) November 1-4, in Phoenix, AZ
6. Karthikeyan Mythreya, Priyanka Singh, Laura Jenkins, Kathleen O'Connell, YingMiao Liu, Andy Nixon. "Defining novel paracrine functions for Inhibin in ovarian cancer" 11th Biennial Ovarian Cancer Research Symposium, August 2016 Seattle. WA
7. Laura M. Jenkins, Archana Varadaraj, Priyanka Singh, Haley Flores and Karthikeyan Mythreya. Altering the proteoglycan state of TBR1/Betaglycan modulates canonical Wnt/B-catenin signaling. Gordon Research Conference, Proteoglycans July 2016
Note: Student received Best poster Award

8. Jenkins, L., Varadaraj, A., Flores, H. and Mythreye, K. Transforming growth factor β type III (T β RIII/Betaglycan) suppresses canonical Wnt signaling in ovarian cancer. AACR Special Conference: Developmental Biology and Cancer; Nov 30-Dec 3, **2015**; Boston, MA. Philadelphia (PA): AACR; Mol Cancer Res 2016;14(4_Suppl).
9. Priyanka Singh, Ashley Wilson and K. Mythreye. Defining mechanisms of Inhibin action in cancer. 2015 Southeast Regional IDeA meeting, November 11-13, Biloxi Mississippi
10. Laura M. Jenkins, Archana Varadaraj, Haley Flores and Karthikeyan Mythreye. "Transforming Growth Factor β Type III (T β RIII/Betaglycan) suppresses canonical Wnt signaling in ovarian cancer". American Association of Cancer Research, Developmental Biology and Cancer Conference, Nov 30th –Dec 3rd 2015
Note: Student received AACR minority scholar award.
11. Archana Varadaraj, P. Patel, J. Snider, A. Chanda and K. Mythreye TGF- β triggers rapid Fibrillogenesis via a novel TGFBR2 dependent fibronectin recycling mechanism. Triangle Cytoskeleton Meeting ASCB sponsored second annual Triangle Cytoskeleton Meeting. Chapel Hill NC
12. Anne Serrao, N. Lenze, J. Snider, I. Roninson, and K. Mythreye. CDK8 and CDK19 switch BMP2/4 from a growth suppressor to an EMT inducer via distinct and overlapping functions. FASEB summer research Conference July 2015, TGF- β superfamily: Signaling in Development and Disease
Note: One of 100 posters featured in the journal *Science Signaling*.
13. Archana Varadaraj, P. Patel, J. Snider, A. Chanda and K. Mythreye TGF- β triggers rapid Fibrillogenesis via a novel TGFBR2 dependent fibronectin recycling mechanism. FASEB summer research Conference July 2015, TGF- β superfamily: Signaling in Development and Disease.
14. Varadaraj A, Patel P, Serrao A, Bandyopadhyay T, Lee N.Y, Jazaeri A, Murphy S.K and Mythreye K. GDF2 promotes anoikis susceptibility in ovarian and breast epithelia. American Association of Cancer Research (AACR) Annual Meeting 2015. Philadelphia, PA.
15. Anne Serrao, J. Snider and K. Mythreye. Defining Mechanisms of BMP4 Induced Epithelial to Mesenchymal Transition. CCCR retreat, Jan 2015 Columbia SC.
16. L. Jenkins and K. Mythreye. Elucidating the Role of the TypeIII TGF- β receptor in Wnt Signaling. CCCR retreat, Jan 2015 Columbia SC
17. Caleb Snider, A. Varadaraj, and Karthikeyan Mythreye. Cellular response to TGF- β and the mechanical environment via tunable Hydrogel substrates. Discovery Day 2015
Note: Best Poster award for Caleb Snider (undergraduate researcher)
18. D.J Oliver, H.Ji, S.Lee, K. Mythreye, H.Valafar, M. Shtutman. miRNA-148/152 family members concordantly target genes important for tumor progression and chemoresistance, American Society for Cell Biology (ASCB) Annual Meeting, Dec6-10, Philadelphia PA
19. K. Mythreye, Luke Osborne, George Li, E.T.O Brian, G.C Blobe, R. Superfine and. TGF- β regulates RhoGEF's during EMT to coordinately impact cellular stiffness, mechanical response to force and cellular migration and invasion. FASEB Summer conference, Aug 2013. TGF- β signaling in disease.

RESEARCH SUPPORT (Mythreye Karthikeyan)

Active

- **R01CA219495 NIH/NCI:** "Inhibin function in tumor angiogenesis". Role: PI. 07/1/2018-06/30/2023,
- **R01 CA230628 NIH/NCI:** "Role of Sox2 in stress adaptations to ovarian cancer anchorage independence". Role: MPI.

April 1 2019- March 30th 2024,

COMPLETED RESEARCH SUPPORT AT Univ of SC

- ACS IRG#13-043-01 **American Cancer Society** (Pilot award). 04/1/2018-03/30/2019, \$30,000. Role: PI
- P20 GM109091 NIH/NIGMS: COBRE Center for Targeted therapeutics. 05/1/2014-04/30/2018, Role: Target PI, \$807200
- NSF Track-1 award, *The South Carolina Project for Organ Biofabrication* 10/2015-06/30/2016, \$100,000, Role: New faculty Pilot Award
- Ovarian Cancer Research Fund, Liz Tilberis Scholars award, *"Investigating the TGF β Superfamily as Therapeutic Targets in Ovarian Cancer"* 08/2013-02/2017, \$411,211. Role: PI
- Rivkin Center for Ovarian Cancer *"Specific targeting of Inhibin in ovarian cancers lacking the Type-III TGF- β receptor"* 04/2014-03/2015, \$75,000. Role: PI
- USC Advanced Support Programs for Innovative Research Excellence-II (ASPIRE-II) "Cancer Initiating Cell Mechanotransduction in a Model Hydrogel Culture System. 2014-2015, \$25,000. Role: PI

COMPLETED RESEARCH SUPPORT PRIOR TO Univ of SC

Department of Defense, Career Development Award *"Role of the tumor suppressor T β RIII/Betaglycan in regulating directional migration and polarity in ovarian cancer and ovarian surface epithelial cells"*

Univ of SC TRAINEE RESEARCH SUPPORT:

- NIH Ruth L. Kirschstein NRSA Predoctoral Fellowship (F31GM122379), Laura M Jenkins, \$87,152 *"elucidating roles of heparan sulphate and chondroitin sulphate glycosaminoglycan chains of betaglycan in Wnt signaling"* 12/2016-05/2018.
- Copenhagen fellowship (Summer 2017), Seok Choi
- Lipscomb Graduate Student Achievement award, Laura Jenkins 2018
- AAUW Dissertation Fellowship Award, Laura Jenkins, \$20,000, 2017. American Association of University Women, Washington, D.C.
- Donna and Andrew Sorensen Fellowship for Graduate Achievement 2017. \$5,000.
- Outstanding Poster Presentation Award, Gordon Research Seminar 2016
- SPARC Graduate student award, Laura M Jenkins \$4,947 "Type III TGF β Receptor Regulation of Wnt/ β catenin Signaling in Ovarian Cancer" 05/2016.
- ASPIRE I, Track 2 B proposal, Postdoctoral fellowship, Priyanka Singh, \$5,000 *"Defining Inhibin dependent paracrine mechanisms of tumor angiogenesis"* 2016
- AACR Minority Scholar in Cancer Research Award, Laura Jenkins, \$2,000, 2015. American Association for Cancer Research, Philadelphia, PA
- Copenhagen fellowship (Summer 2015), Daniel Gordon
- USC, Center for Colon Cancer Minority Graduate Research Fellowship Laura Jenkins. \$5000. Spring 2014
- Graduate Student Travel Award, Department of Chemistry and Biochemistry. Anne Serrao 2015

- USC Research Foundation Magellan Scholar Program, Carly Lancaster \$3,000 “Defining Roles of Chondroitin Sulfate Chains on T β RIII/Betaglycan in Wnt signaling and Ovarian Cancer” 01/2018-02/2018.
- USC, Science Undergraduate Research Fellowships, Teebro Rahman. \$3,000, 01/15/2017-06/30/2018.
- USC Science Undergraduate Research Fellowship Juliet Joseph (\$3,000) 06/01/2015-07/30/2016.
- USC Science Undergraduate Research Fellowship Kristen Young (\$3,000) 07/01/2014-06/30/2015.
- USC Research Foundation Magellan Scholar Program, Nick Lenze, \$2500 Defining the intersecting roles of TGF- β ; signaling and the Hippo pathway in cancer progression 05/1/2014-04/30/2015.
- USC Science Undergraduate Research Fellowship, John Snider, \$1500, 07/01/2014-08/30/2014.
- USC Science Undergraduate Research Fellowship, Nick Lenze (\$1750) 7/1/2014-12/30/2014.
- USC Science Undergraduate Research Fellowship Emily Schumann (\$3,000) 10/01/2014-06/30/2015.

USC TRAINEE AWARDS (non monetary):

- Discovery day, Best Poster award, Caleb Snider, 2015
- Betty Fudenberg Award, Nicholas Lenz

PROFESSIONAL ACTIVITIES

Peer Review Activities

Scientific Journals *Journal of Clinical Investigation, Journal of Physiology, Journal of Cell Science, Oncotarget, Journal of Biological Chemistry, Breast Cancer Research, Stem cell Research, FASEB Journal, Oncogene, International Journal of Cancer, PLOS One, Molecular cancer, Journal of Molecular Signaling, Molecular Biology of the Cell, Breast cancer research Treatment, Journal of Hematology and Oncology, Cancer research, Molecular Cancer Research*

Editorial Board

Cell Stress. Shared Science Publishers OG

Grant Reviews/panel

Extramural

2019	Ad Hoc Scientific Reviewer, NIH, MONC Study Section
2018	Rivkin Center for Ovarian Cancer
2017	Scientific Reviewer, Breast Cancer Now Foundation
2016	Ad Hoc Scientific Reviewer, NIH, MONC Study Section
2016	Scientific Reviewer, MRC Clinical Science center, UK
2016	Scientific Reviewer, Susan Komen Foundation, PDF mechanism
2015	Scientific Reviewer, Susan Komen Foundation, PDF mechanism
2014	Scientific Reviewer, Susan Komen Foundation, CCR mechanism
2014	Ad Hoc Scientific Reviewer, NIH, MONC Study Section

Intramural

2018	ACS Pilot grant applications
2017	SC INBRE
2017	School of Medicine SC
2017	Limited Submission competition for the EPSCoR Research Fellows (RII Track-4)
2015	USC COBRE CTT pilot project review panel

2015, 2016-	Discovery Day Judge
2014	CCCR External Advisory Committee focus group
2014	USC Research Development Fund reviewer
2013	USC SPARC graduate student fellowship review panel

Professional Active Memberships

Member, American Association for Cancer Research
 Member, American Society of Cell Biology
 Member, American Society of Biochemistry and Molecular Biology

Active Departmental/University Committees

2018-current	Peer review committee
2017-current	Committee for ASBMB Accreditation of the BMB Major
2016-current	ASBMB student chapter faculty advisor
2013-current	Departmental Safety Committee
2015-current	Interdisciplinary Biomedical sciences admissions committee,
2013	USC Post-baccalaureate Research Education Program (PREP) Mentor
2015	Carolina and Mc Nairs Scholars Program Mentor
2014	Top Scholar Program Mentor
2015	Stamps Scholar Program Mentor

Dissertation Committees: Total- 11

TEACHING EXPERIENCE

Lecture Courses

Chem D650	Medical Biochemistry (USC School of Medicine), Fall 2014
Chem D651	Medical Biochemistry (USC School of Medicine), Spring 2015
CHEM556/BIOL546	Biochemistry II, Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2017, Fall 2018, Spring 2019

Research Courses

Chem 496,497,498,499	Undergraduate Research
Chem 898	Research in Chemistry II
Chem 899	Dissertation Preparation
Chem 790	Introduction to Research
Chem 791	Introduction to Research
Chem 798	Thesis Preparation

Seminar Courses

Chem 360	Undergraduate Seminar, Fall 2013, Dept. of Biochemistry
Chem 701	Graduate student/Biochemistry seminar Spring 2017

RESEARCH TRAINING RECORD

Total Post-Doctoral Scholars mentored: 4

Dr. Lauren Vaughn	02/1/2019- current
Dr. Priyanaka Singh	12/14- 3/31/2017 (Current position: Senior fellow, University of Michigan)
Dr. Archana Varadaraj	06/14-5/16 (Current position: <i>Tenure track Assistant Professor</i> , Northern Arizona University)

Total Graduate Students mentored: 8 (4 current)

Total Undergraduates Mentored: 25 (4 current)

Ph.D. Dissertations Supervised

2018: Laura M Jenkins. '*Dually modified transmembrane proteoglycan T $\square$ RIII/betaglycan in cell signaling and cancer*'

MS Thesis Supervised.

2014: Anusha Chaparala, Role of miR148/152 family in cancer progression (co-advisor with Michael Shtutman, DDBS)
 2015: Tirthankar Bandyopadhyay. Defining the role of GDF2 on TGF β signaling in tumorigenesis

2015: Anne Serrao. Cdk8 and Cdk19 as Novel Regulators of BMP4 Induced EMT in Cancer