

**CURRICULUM VITAE**  
**TOMAR GHANSAH, PH.D.**

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*Birthplace: Memphis, Tennessee*

**RESEARCH:** My research focus is Tumor Immunology. The overall goal is to elucidate the molecular mechanism(s) by which Src Homology Inositol Phosphatases (SHIP) enhance tumor progression.

**PROFESSIONAL CAREER:**

11/09- Current      **Assistant Professor, University of South Florida, College of Medicine, Molecular Medicine Department** Research Focus: Investigate the molecular mechanisms by which Src Homology Inositol Phosphates (SHIP) contribute to pathogenesis of Pancreatic Cancer and Type II Diabetes.

11/06 - 1/09      **Research Scientist and Moffitt Cancer Center, James A. Haley Veteran Administration and Moffitt Cancer Center at the University of South Florida, Tampa Florida.** (Mentor Dr. P. K. Epling-Burnette). I successfully developed methods to evaluate Human Stem Cells (from cancer and non-cancer patients) transplanted, engrafted and differentiated into mature lineages using a humanized animal model known as “NOG” mice.

08/03 – 07/06      **Research Assistant Professor, Department of Immunology and Oncology Program at H. Lee Moffitt Cancer Center and Research Institute at the University of South Florida. Tampa, Florida.** I contributed to several scientific hypotheses that were developed into funded projects. Written grants that produced funding for my research lab and my salary support. In addition, advised and trained technicians, undergraduate, graduate students regarding scientific protocols and their future career choices.

02/00 – 08/03      **Post-Doctoral Fellow and Adjunct Faculty, Department of Immunology and Oncology at H. Lee Moffitt Cancer Center and Research Institute at the University of South Florida. Tampa, Florida.** (Advisor: Dr. William Kerr). Invited to write a chapter for a book entitled “*A role for the SH2 Containing Inositol Phosphatase in the Biology on Natural Killer Cells and Stem Cells*”. This book was published in 2001. In addition, advised and trained technicians, undergraduate, graduate students to become proficient in various laboratory protocols and experimentation, curriculum choices and their future career options.

**EDUCATION:**

09/94 – 08/99

**Ph.D., Microbiology, Meharry Medical College, Nashville, Tennessee.**  
**Mentor: Dr. Fatima Lima.** Dissertation entitled “Elucidation of Signal Transduction Pathways of the Putative Epidermal Growth Receptors on *T. cruzi* Amastigotes”. Worked on dissertation entitled “EGF-Induced Signal Transduction Pathways in *Trypanosoma cruzi* Amastigotes”. (Preceptor: Dr. Maria de Fatima. Lima). During my matriculation as a graduate student at MMC, I was awarded first place for Research Day multiple times. In addition, I awarded a pre-doctoral fellowship from Southern Regional Educational Broad (SREB). I also collaborated with other graduate students and trained technicians and undergraduate students that joined the lab.

09/90 – 05/94

**B.S., Biology/Zoology, Tennessee State University, Nashville, Tennessee,**  
**Mentor: Dr. Elbert Myles.** Research project entitled “*Identifying Stress Proteins in “Phaselous vulgaris (Crop Plant)”*”. I was the recipient of 1<sup>st</sup> place Scientific Award for research project.

**TRAINING:**

08/98-12/98

**Teaching Assistant, Biomedical Core Lab, Meharry Medical College.**  
Prepared all lab experiments and taught scientific protocols to graduate students.

08/97-12/97

**Teaching Assistant, Medical Microbiology, Department of Microbiology, Meharry Medical College.** Prepared all lab experiments and instructed graduate and medical students.

Summer, 1997

**Instructor, Biomedical Research Summer Program, Meharry Medical College.** Taught Cell Biology, Parasitology, Signal Transduction and laboratory techniques to undergraduate students from a variety Historical Black College and University (HBCU).

04/94 - 6/94

**Fisk University Biotechnology Summer Program, Nashville, Tennessee.** Participated in this research program that consisted of a group of other undergraduate students pursuing a career in sciences. We learned essential Molecular Biological Techniques that were taught by Dr. Gunasakeran and his graduate students.

08/93 - 01/94

**Research Assistant, Meharry Medical College, Pharmacology Department.** Conducted scientific experiments that viewed the Behavioral Effects of Drugs Abuse in Different Strains of Mice and Rats, results evaluated using the Elevated Plus Maze. I worked at night (timely behavioral studies with mice) for Dr. Onaivi at Meharry while finishing up my B.S. at Tennessee State University.

04/93 - 6/93           **Summer Research Student, Meharry Medical College, Research Center for Excellence Summer Research Program.** Participated in Recombinant DNA Technology, Parasitology and Oncology Research program taught by Dr. Gautam Chadhuri and his graduate students.

08/91 - 05/94           **Laboratory Technician, Tennessee State University, Biology Department, Nashville, TN.** Tissue Culture, Cell-Line Maintenance and Molecular Biology Techniques. (Dr. E. L. Myles (Geneticist). I learned essential basic laboratory skills, such as sterile techniques, cell culturing and making solutions.

**TEACHING EXPERIENCE:**

Neuroimmunology, GMS 6708, Master Students “Adaptive and Innate Immunity”, 2012 – current.

Genetics, USF, Master Students “Genes in Pedigrees and Populations”, 2010-2011.

Methods in Molecular Biology, USF, Master Students “*In Vitro* Cell Culture” 2010 and 2011- current .

Cellular and Immunology, GMS 6101, SPAIID, USF, Ph.D. Graduate Students “Tumor Immunotherapy”, 2011 - current.

Foundations in Biomedical Science, GMS 6001, USF, Ph.D. Graduate Students “Stem Cells”, 2011 – current .

Supervised and Trained Undergraduate and Graduate Students at the University South Florida and Moffitt Cancer Research Institute 2000-current.

Teaching Assistant, Biomedical Core Lab, at Meharry Medical College, Fall 1998.

Instructor, Biomedical Research Summer Program, Meharry Medical College. 1997.

Teaching Assistant, Medical Microbiology Department of Microbiology, at Meharry Medical College, Fall 1997.

**SUMMARY OF RESEARCH SKILLS**

I have acquired the following research skills: Flow Cytometry Analysis (4-Color FACs Scan, Calibur, Aria), Fluorescence Activated Cell Sorting (FACS), Isolation of leukocytes and stem cells from blood and tissues (mice and human), Tissue Culture, AutoMac enrichment, qReal-Time PCR, Microarray, Western Blots, Immunoprecipitation, RNAi Experiments, Proliferation Assay (<sup>3</sup>H), Carboxyfluorescein diacetate, succinimidyl ester (CFSE) labeling of cells, Retro-orbital Injections (mice) Intraperitoneal (I.P.) Injections

(mice), Submandibular blebs, Bone Marrow Transplants (Murine) , *in vivo* and *in vitro* functional assays, and Comet Assays.

**COMPUTER EXPERTISE:**

Biological Applications: FACS (Calibur), FACS (Scan) FlowJo and Cell Quest (analysis software)

Word processors: Microsoft Word

Graphical: MS Power Point, Canvas and Cricket Graph

Statistical: MS Excel and Prism (Graph Pad)

Communications: Microsoft Outlook

Command Interpreters/OS: Apple OS/10, Windows

**CAREER INTERESTS:**

Tumor Immunology, Pancreatic Cancer, Type II Diabetes and Signal Transduction

**INVITED SPEAKER:**

USF, Career Speaker for Guest Students from Miami Dade College Spring, 2013

SREB, Moderator for Institutional and Mentoring Symposium, Fall 2012

Tuskegee University 13<sup>th</sup> Annual Biomedical Symposium, Fall 2012

Career Day Speaker, Ferrell Girls Preparatory Academy, Spring 2012

Selected Speaker Experimental Biology, Research, ASBMB, Washington, DC. April, 2011

Panelist NSF/FGLSAMP Bridge Doctorate Programs, Tampa, FL. 2010

Selected Speaker, Research, FASEB, Orlando, FL. 2001.

**MENTORSHIP:**

Steve Highfill	Undergraduate, USF. 2001 - 2004
Nadege Touzin	Undergraduate, McNair Scholar. 2002 - 2004
Acquanetta Henry	Undergraduate, McNair Scholar. 2005 - 2007
Davina Mulchan	Honor, Thesis, USF. 2005 - 2006
Adrian Alexis Ruiz	STEP-UP, USF. 2009
Massanu Sirleaf	Undergraduate, McNair Scholar. 2009 - 2010
Maya Gerald, DVM	Research Fellow, Molecular Medicine, USF. 2009 - 2011
Nadine Nelson	Graduate Student, USF. 2009 – current
Megan Parker	Graduate Student, USF. 2010
Jemson Pierre	Honor, Thesis, USF. 2010 - current
Celeste Smalls	Undergraduate, USF. 2011 – current
Maya Cohen	Staff 2011-current
Teresa Satchal,MS	Staff 2011-current
Joseph Zundell	Volunteer St. Leo University
Kimberly Williams, MSPH	Volunteer 2013
Galina Zygmunt	Volunteer Undergraduate, USF. 2013- current
Sophie Cene	Moffitt Summer INSPIRE Program 2013
Oluyemi Odeyemi	Volunteer Graduate Student, USF. 2013

**AWARDS:**

Minority Scholar in Cancer Research, AACR, Lake Tahoe, NV 2012  
Selected Judge/Travel Award, ABRCMS, St. Louis, MO 2011  
Minority Travel Award AACR Orlando, Florida 2004  
Minority Investigator Research Supplement (MIRS) (NHLBI) 2003-2006  
Minority Travel Award AAI, FASEB, Denver, Colorado, 2003  
Minority Travel Award AAI, FASEB, New Orleans, Louisiana, 2002  
Grand Prize, Meharry Medical College Research Day, 1999.  
ASMT Young Investigator Research Travel Award, San Juan, Puerto Rico, 1998.  
FASEB Research Travel Award, San Francisco, CA, 1998.  
1<sup>st</sup> Place Recipient, Meharry Medical College Research Day, 1998.  
AMPHS Research Travel Award, Los Angeles, CA, 1997.  
Southern Regional Education Board Predoctoral Scholarship, 1995-1998.  
Woodshole Summer Research Travel Award, Woodshole, MA, 1995.  
1<sup>st</sup> Place Recipient, Tennessee Academy of Science Research May, 1993.  
1<sup>st</sup> Place Recipient, Tennessee State University Annual Research Day, 1992.

**COMMITTEES:**

Member, Institutional Animal Care and Use Committee (IACUC), USF 2011-1014  
New Faculty Search Committee, USF 2011- current  
Graduate School Admissions Committee, USF 2011-current  
Member of Women in Science, USF, 2007- current  
NIH/NCI CII Study Section, Washington DC 2012.

**SCIENTIFIC MEMBERSHIP:**

American Association of Immunologist (AAI) 2012- current  
American Association of Cancer Researchers (AACR) 2011- current  
NIH Women of Color Research Network (WoCRn) 2012- current

**HOBBIES:**

Beading and Dancing

**VOLUNTEER:**

Judge, Academy Prep Science Fair Science Fair, 2012 in Tampa, Florida  
Judge, Villages Charter School Science Fair, 2012 in Tampa, Florida  
Career Day Speaker, Ferrell Girls Preparatory Academy, 1<sup>st</sup> Annual Women's Symposium  
2012 in Tampa, Florida  
Connecting Researchers, Educators and Students (CREST) Program, St. Leo University  
2011- current.  
Youth Enrichment In Science (Yes) Team Mentor At The Museum Of Science And Industry  
(MOSI) In Tampa, Florida, 2006 -2007

## **INSTITUTIONAL RESEARCH BOARD (IRB):**

USF IRB # 108630 2012-current. "The Role of MDSC In Human Pancreatic Cancer Progression (**Ghansah**, *Principal Investigator*).

USF IRB # 108630 2010-current. "Identification and Characterization of Adipocytes and Immunosuppressive Cells in Fat Cells from Diabetic and Non-Diabetic Patients" (**Ghansah**, *Co- Investigator*).

## **GRANT SUPPORT:**

American Cancer Society (ACS)/Moffitt

PI: Tomar Ghansah, Ph.D.

Title: Myeloid Derived Suppressor Cells Suppress Anti-Tumor Responses in Murine Pancreatic Carcinoma Model

Awarded 1/01/09-1/01/10 (*No Cost Extension*) for 6/30/10

National Institute of Diabetes and Digestive and Kidney Diseases (NIH/NIDDK)

Minority Supplement for Assistant Professor

CO-PI Tomar Ghansah, Ph.D.

Title: Insulin Signaling Pathways Regulating PKC Beta Splicing

Awarded 6/1/09-2/1/11

American Cancer Society (ACS), INC

PI: Tomar Ghansah, Ph.D.

Research Scholar

Title: The Role of SHIP-1 in Murine Pancreatic Models

Pending: July 2012 – July 2016 (PENDING)

## **PATENT**

U.S. Patent (USF#-00B053PRCCP)

"Control of NK Cell Function and Survival by Modulation of SHIP Activity". (Kerr, **Ghansah**)

## **SELECTED PUBLICATIONS:**

**Ghansah T**, Vohra N, Kinney K, Weber A, Kodumudi K, Springett G, Sarnaik AA, Pilon-Thomas S. Dendritic cell immunotherapy combined with gemcitabine chemotherapy enhances survival in a murine model of pancreatic carcinoma. *Cancer Immunol Immunother.* 2013 Jun;62(6):1083-91.

Toomey PG, Vohra NA, **Ghansah T**, Sarnaik AA, Pilon-Thomas SA. Immunotherapy for gastrointestinal malignancies. *Cancer Control.* 2013 Jan;20(1):32-42.

**Ghansah, T.** A novel strategy for modulation of MDSC to enhance cancer immunotherapy.

Oncolmunology. Volume 1, Issue 6 September 2012 Pages 984 – 985.

Nelson N, Szekeres K, Cooper D, **Ghansah T**. Preparation of myeloid derived suppressor cells (MDSC) from naive and pancreatic tumor-bearing mice using flow cytometry and automated magnetic activated cell sorting (AutoMACS). *J Vis Exp*. 2012 Jun 18;(64):e3875.

Pilon-Thomas S, Nelson N, Vohra N, Jerald M, Pendleton L, Szekeres K, **Ghansah T**. Murine Pancreatic Adenocarcinoma Dampens SHIP-1 Expression and Alters MDSC Homeostasis and Function. *PLoS One*. 2011;6(11):e27729.

Kleiman E, Carter G, **Ghansah T**, Patel NA, Cooper DR. Developmentally spliced PKCbetaII provides a possible link between mTORC2 and Akt kinase to regulate 3T3-L1 adipocyte insulin-stimulated glucose transport. *Biochem Biophys Res Commun*. 2009 Oct 23;388(3):554-9 2009 Aug 15.

Jiang K, Apostolatos AH, **Ghansah T**, Watson JE, Vickers T, Cooper DR, Epling-Burnette PK, Patel NA. Identification of a Novel Antiapoptotic Human Protein Kinase C delta Isoform, PKCdeltaVIII in NT2 Cells. *Biochemistry*. 2007 Dec 20.

Paraiso KH, **Ghansah T**, Costello A, Engelman RW, Kerr WG. Induced SHIP deficiency expands myeloid regulatory cells and abrogates graft-versus-host disease. *J Immunol*. 2007 Mar 1;178(5):2893-900.

**Ghansah T**, Paraiso K, Highfill S, Desponts C, May S, McIntosh J, Wang JW, Ninos JM, Brayer J, Cheng F, Sotomayor E and Kerr WG. Expansion of myeloid suppressor cells in SHIP deficient mice represses allogeneic T cell responses. *Journal of Immunology* 2004 Dec 15;173(12):7324-30.

Cheng F, Wang HW, Cuenca A, Huang M, **Ghansah T**, Brayer J, Kerr WG, Takeda K, Akira S, Schoenberger SP, Yu H, Jove R, Sotomayor EM. A critical role for Stat3 signaling in immune tolerance. *Immunity*. 2003 Sep;19(3):425-36.

**Ghansah TJ**, Ager EC, Freeman-Junior P, Villalta F, Lima MF. Epidermal growth factor binds to a receptor on Trypanosoma cruzi amastigotes inducing signal transduction events and cell proliferation. *J Eukaryot Microbiol*. 2002 Sep-Oct;49(5):383-90.

Wang JW, \* Howson JM\*, **Ghansah T\***, Desponts C, Ninos JM, May SL, Nguyen KH, Toyama-Sorimachi N, Kerr WG.; " Influence of SHIP on the NK repertoire and allogeneic bone marrow transplantation." *Science* 2002; 295(5562):2094-7. \*First co-author.

Tu Z, Ninos JM, Ma Z, Wang JW, Lemos MP, Desponts C, **Ghansah T**, Howson JM, Kerr WG. Embryonic and Hematopoietic Stem Cells Express a Novel SH2-containing Inositol 5'-phosphatase Isoform that Partner with the Grb2 Adapter Protein. 2001 *Blood*, 98(7):2028-2038.

**Ghansah, T.**, Ninos M. J. and Kerr W. A role for the SH2 Containing Inositol Phosphatase in the Biology on Natural Killer Cells and Stem Cells. M.D. Cooper, T. Takai, J.V. Ravetch (eds) *Activating and Inhibitory Immunoglobulin-like Receptors*, Springer-Verlag Tokyo 2001,129-139. *Book chapter*.

Wang JW, Howson J, **Ghansah T**, Ninos J, Kerr WG. Inhibition of apoptosis by the BEACH domain and WD repeats of gene lba that has key features of both protein kinase A anchor and chs1/beige genes. *Scientific World Journal*. 2001 Jan 1;1(1 Suppl 3):96.

## REFERENCES UPON REQUESTS