

CURRICULUM VITAE

NAME: Ann Richmond, Ph.D.

ADDRESS: Department of Cancer Biology
432 PRB
Vanderbilt University School of Medicine
23rd Ave S @ Pierce
Nashville, TN 37232

TELEPHONE: 615-343-7777 (work)
615-377-7760 (home)

EDUCATION: University of Louisiana Monroe
Monroe, Louisiana
B.S., 1963 - 1966

Louisiana State University
Baton Rouge, Louisiana
M.N.S. (Zoology), 1970 - 1972

Emory University
Atlanta, Georgia
Ph.D. (Developmental Biology), 1976 - 1979

RESEARCH

Inflammation and cancer; the role of chemokines in normal physiology and cancer; signal transduction mechanisms for chemokines; novel therapeutics for treatment of melanoma and breast cancer

PROFESSIONAL EXPERIENCE:

Professor and Vice Chair of Cancer Biology, Vanderbilt University, 2000-present
Ingram Professor of Cancer Biology, VUMC, 2005-present
Assistant Dean of Biomedical Research, Education and Training, VUMC, 2005 - 2010
Professor of Cell Biology, Vanderbilt University, 1995-2005
Professor of Medicine, Vanderbilt University, 1997-present
Associate Professor of Cell Biology and Medicine, Vanderbilt University, 1989 - 1995
Senior Research Career Scientist, Department of Veterans Affairs, 1999-2013
Associate Career Scientist, Department of Veterans Affairs 1989 - 1999
Associate Professor of Medicine, Emory University, 1988 - 1989
Assistant Professor of Medicine, Emory University, 1982 - 1987
Assistant Professor of Anatomy, Emory University, 1985 - 1989
Instructor in Medicine, Emory University, 1980 - 1982
Postdoctoral trainee in the Department of Medicine, Emory University School of Medicine, Emory University, 1979 - 1982
Teaching Assistant, Emory University, 1978 - 1979(Comparative Vertebrate Embryology, Metabolic Biology)
Classroom Teacher, 1966 - 1972, 1974. (Chemistry, Physics, and Biology)

CHAIRPERSON / DIRECTOR:

Director of the Tumor Biology Section, Winship Cancer Center, Emory University, 1985-1989
Chair, Interdepartmental Endocrine Group, Emory University, 1986-1987
Chair, VAMC-R&D Budget Committee, 1988-1989
Sigma XI, President, 1988-1989; Vice President, 1987-1988
Director of Graduate Studies, Department of Cell Biology, Vanderbilt University, 1993-1995
Organizer/Chair of the 1st Gordon Research Conference on Chemotactic Cytokines, 1994
Chair, Cell Biology Curriculum Review Committee, 1993-94
Chair, Cell Biology Secondary Appointments Review Committee, 1999
Organizer, International Cytokine Society Meeting, Hilton Head, S.C., 1999
Organizer for the Keystone Signal Transduction Symposia, 2001
Chair, Vice Chancellor's Committee for the Faculty Incentive/Reward Program, 1999-present
Vice Chair, Department of Cancer Biology, 2000-present
Organizer for the Keystone Chemokines and Chemokine Receptors Symposia, 2003
Director of Graduate Studies for the Master Laboratory Science Program, VUMC, 2004-2006
Associate Director of Education, Vanderbilt Ingram Cancer Center, 2004-present
Assistant Dean of Biomedical Research, Education and Training, 2005-2010
Co-PI, U54 Partnership between VICC, Meharry and TSU 2012-present
University of Kentucky Cancer Nanotechnology Training Center, EAB Chair 2014-2019
Markey Cancer Center External Advisory Board, University of Kentucky 2014-2017

**REFEREE
ASSIGNMENTS:**

National Merit Review Board for Oncology, Veterans Administration, 1986-1988
CBY-2 Study Section, NIH 1989, Ad Hoc Reviewer
ACS Biochemical Endocrinology Study Section, July, 1990 and February, 1995
Department of Veterans Affairs, 1994-1995, Ad Hoc Reviewer
NIH Study Section, CBY-2, Full Member, 1991-1994
NIH Program Project Site Visit Reviewer-1994, 1995
NCI Intramural Program Review: Laboratory Molecular Immunoregulation, 2000-04; 2010
NIH Reviewers Reserve-1995-present
Merit Review Board for Oncology, Department of Veterans Affairs, 2000-2004, 2006, 2012
Editorial Board for the *Journal of Leukocyte Biology* 1995-present
Editorial Board, *Journal of Biological Chemistry*, 1997-2001
Editorial Board, *Pigment Cell and Melanoma Research*, 2010-present.
Editorial Board, *American J Cancer Research*, 2010-present
NIH Reviewer for Special Thematic Review, December, 2004
NCI SPORE Review Panel, March, 2007, Oct 2007, Sept 2009; Spring 2011; 2012
NIH Reviewer for CAMP, February 2007 and 2008, Fall 2009; Spring 2011, Spring 2012
VA Advisory Board for Research Career Scientist positions, VA Central Office, 2008 –13
Lloyd Foundation for Melanoma Research, Scientific Advisory Board, 2012-present
Chair of the 2013-2014 Landon Foundation AACR INNOVATOR Award for TME
NIH Study Section, CAMP Full Member, 2015-2019
NIH Ad Hoc Study Section Member, February 2014, February 2015.
Gertrude B. Elion Cancer Research AACR Scientific Review Committee
NCI PO1 Project Review--2018

**JOURNAL
REVIEWER FOR:**

Cancer Research; Journal of Immunology, Journal of Clinical Investigations; Nature; Nature Reports, J Cell Biol; American Journal of Pathology; J. Leukocyte Biology; Journal of Biological Chemistry, Biochemistry; FASEB; Blood; J Cell Science; Exp Cell Res; Clin Cancer Res; Exp Cell Research; PNAS; Plos One; Science Signal Transduction; Breast Cancer Research; Oncogene, Cancer Discovery

HONORS

AND AWARDS:

Legacy Award, Society for Leukocyte Biology, 2019
AAAS Fellow, 2018
William S. Middleton Award, Excellence in Biomedical Laboratory Research, 2016
Ingram Endowed Professorship, 2005-present
Charles Park Award for Research Revealing Insights into Physiology and Pathology, 2014
President, Society of Leukocyte Biology, 2014-2016
Vanderbilt Ingram Cancer Center Impact Award in Basic Research, 2010, 2016
Nominee for Outstanding Postdoc Mentor Award, 2009
Delegate to the ELAM program for Executive Leadership in Academic Medicine, 2002
Delegate to the AAMC Leadership Conference for Senior Women, 1999
Sigma XI, 1978 to present; President, 1988
Associate Career Scientist, DVA 1988 - 1999
Senior Career Scientist Award, DVA 1999-2021
Veterans Affairs Merit Award, 1983 - 2017
N.C.I. New Investigator Award, 1983 - 1986
NIH Individual NRSA, 1981 - 1983
Cokesbury Award, 1977, 1978
NSF Fellow, 1970 – 1972

ORGANIZATIONS

AND SOCIETIES:

American Society for Cell Biology 1984 - present
American Association for Cancer Research 1984-present, Program Committee, 1992
Women in Cancer Research, 2008-present; Membership Development Committee, 2012-
Society for Melanoma Research, 2003-present
Society for Leukocyte Biology--Nominations Committee, 1998, Council Member, 99-02,
SLB President Elect, 2012-2014; President 2014-2016
International Cytokine Society-- Treasurer, 1995-97, Secretary 2001-2004, Nominations
Committee, 1998
American Academy for the Advancement of Science -member

PRESENT RESEARCH

PROJECTS:

CURRENT FUNDING:

5 U54CA163072 (Moses, PI, Richmond, co-PI) 09/23/2011-08/31/2021

NIH/NCI \$781,836/year direct \$5,917,115 T/project total

MMC, VICC & TSU Partners in Eliminating Cancer Disparities

Over the past few years, due to strong senior faculty leadership at both institutions, a structure for a partnership between Meharry Medical College and the Vanderbilt-Ingram Cancer Center is proposed. This application will provide a firm foundation for a formal Meharry/VICC/TSU partnership.

5P30 CA068485-16 (Pietenpol) (Richmond, Co-Inv) 09/15-08/20 NIH/NCI

~\$3,781,250/year direct ~\$10,889,601/project direct

"Vanderbilt-Ingram Cancer Center Core Support Grant"

The major goals of this project are: 1) Coordinate and integrate the cancer and cancer-related activities of Vanderbilt. 2.) Conduct, support and enhance cancer research and integrate cancer-related research throughout the University. 3.) Integrate, develop and conduct cancer education programs. 4.) Coordinate and integrate the care of cancer patients at Vanderbilt University Medical Center and the Veterans Administration Medical Center.

NIH/NCI5R01 CA116021-11-15 (Richmond, PI) 2014 – 2019

"Improved therapy for p53wt melanoma by functionally restoring the CDKN2A pathway"

Project period direct funds: \$1,125,000. Project period indirect funds: \$641,250.

The goals of this grant are: 1) To compare the senescence associated secretory program (SASP) in melanocytes

of oncogene induced senescence (OIS) to that of therapy induced senescence pathways in vitro and in vivo and evaluate the effectiveness of MDM2 (MDM2i) and CDK4/6 inhibitors (CDK4/6i) on melanoma tumor growth, senescence, SASP, and apoptosis, and on recruitment of immune cells into the tumor microenvironment (TME) in immune competent mice with focus on BRAFWT/NRASWT or NRASmut melanoma; 2) To characterize the benefit of combining an HDM2 antagonist with CDK4/6 inhibitors for treatment of metastatic melanoma using patient derived xenografts (PDX) from BRAFWT/NRASWT and NRASmut tumors that are RBWT/TP53WT and to characterize gene mutation/expression signatures that will predict response to this therapy; 3) To characterize the effectiveness of CDK4/6 inhibitor combined with HDM2 inhibitor in the treatment of RBWT/TP53WT melanoma tumors that progressed on therapy. PDX models will be utilized and coordinated with biopsy from patient tumor at the time of progression from 3 ongoing clinical trials at Vanderbilt involving patients with tumors that are BRAFWT/NRASmut or BRAFWT/NRASWT.

NCI P30 CA068485 Vanderbilt Ingram Cancer Center PDX Supplement: (Richmond Project leader)
10/1/2016-9/30/2018
NIH/NCI \$750,000 total costs
“PDX Models for Melanoma”

CA06845 CURE Supplement: (Richmond, Project leader) 10/1/2016-9/30/2021
NIH/NCI \$79,000 direct/yr “The Vanderbilt-Ingram Cancer Center: Discover Cancer Research Program for High School and Undergraduate Students.

VA Senior Career Scientist Award (Richmond) 1994-2020
VA This Award is for salary and fringe for Ann Richmond

VA Merit Award 101BX002301(Richmond, PI), 2017-2021
Department of Veterans Affairs
“Modeling New Therapeutic Approaches for Malignant Melanoma”
Project period direct funds: \$650,000 .

The goals of this grant are 1) To examine the ability of rigosertib alone or combined with CDK4/6 inhibitors to halt the growth of melanoma in immune competent mouse models, including nRAS mutant, BRAF mutant and B16 melanoma. 2) To characterize the effectiveness of rigosertib alone or combined with CDK4/6 inhibitor in combination with antibodies to check-point inhibitors in immune competent mouse models of melanoma. 3) To evaluate the effectiveness of combining rigosertib and CDK4/6i with anti-PD1 or anti-CD137 for the treatment of melanoma patient derived xenografts using humanized mouse models. .

R01 CA34590-31-35 (Richmond, PI) 07/01/13 to 06/30/19 VU
1.2 calendar months
NIH/NCI \$186,500/yr direct plus Supplement of ~\$45,000
“Chemokine Signals in the Pre-metastatic Niche Inhibit Metastasis”. There are three specific aims for this study: 1) To determine whether manipulation of CCL2, CCL5, CXCL1 and CXCL12 levels will differentially effect the recruitment of anti- or pro-tumor leukocytes into the primary tumor and the premetastatic niche and to determine whether blocking the receptors for each of these chemokines will facilitate or disrupt the metastatic capacity of poorly metastatic mammary carcinoma cells; 2) To determine whether current therapeutics for breast cancer that inhibit PI3K or SRC are able to block or facilitate chemokine-mediated ‘entrainment’ of myeloid cells in tumor bearing mice; 3) To evaluate changes in the myeloid ‘entrainment’ status of cancer patients before and after surgery or chemotherapy

VUMC sub- U24 (Manning/Richmond) 03/01/2018-02/23/2023
.20 calendar months
NIH
Vanderbilt University PET Imaging Resource to \$39,033/yr
Enhance Delivery of Individualized Cancer Therapeutics (VU-PREDICT)
We are proposing to characterize 10 colon cancer patient derived xenografts (PDXs) and with regard to their response to treatment with the glutaminase inhibitor CB839 and the EGFR inhibitor, panitumab in humanized mouse models.

1U01TR002383-01 (Wiksw) 02/01/2018-01/31/2023

.60 calendar months

NIH \$1,345,430 total direct

Harnessing human brain and liver microphysiological systems for testing therapeutics for metastatic melanoma
This project will study how the tissue microenvironment affects the growth of metastatic melanoma cells and their response to drugs by using the Vanderbilt neurovascular unit tissue chip, the Pittsburgh liver-on-chip, and the Wisconsin engineered organoids for brain and liver, each of which includes multiple cell types.

PAST FUNDING: Brief Summary

NIH Individual NSRA, 1981-1983

NCI, CA34590, Melanoma Growth Stimulatory Activity Studies, 1983-1998. NCI, CA56704, Transcriptional Regulation of MGSA Genes, 1992-1997

VA Merit Award, Studies on MGSA, 1983-2013

Associate Career Scientist Award, DVA, 1988-1999

American Cancer Society Grant, 1991-1992

American Cancer Society Grant Awarded, but turned down, 1988-1990

NCI, Pilot Studies on the Cancers Associated with Aids, Supplement to the Vanderbilt Cancer Center Award, 1997-1999

Keloids in African Americans: an Altered Wound Healing Model, 1996-1999, Department of Veterans Affairs (CoPI;s Ann Richmond and Shirley Russell);5% effort.

The Role of Chemokines in Wound Healing and Sepsis, 1998-2001,. Department of Veterans Affairs and Department of Defense; (P.I., Ann Richmond); 12% effort.

Transcriptional Regulation of the MGSA genes, National Institutes of Health, 1997-2003. (P.I., Ann Richmond); 25% effort.

Utilization of Inhibitors of NF- κ B and Proteasome Inhibitors to block Melanoma Tumor Growth. \$30,000 direct costs, Vanderbilt Ingram Cancer Center Pilot Project, August 2001 to July 1, 2002.

Pilot Project on the GRECC Award: \$50,000/yr for two years for studies on Chemokine Receptors on Endothelial Cells.

The utilization of PS-341 and PS-1145 to inhibit the growth of melanoma tumors. Millennium Pharmaceuticals, 2002-2003.

Skin Disease Research Center, National Institutes of Health, Director of the Molecular Genetics Core

Molecular mechanisms of chemokine receptor sequestration. Department of Veterans Affairs, HBCU 2002-2005.

Development of an in vivo breast cancer model that permits interrogation of CXCR4 signaling pathways. Lilly Clinical Partners. 2003-2004.

The Role of CXC Chemokines in Angiogenesis and Tumorigenesis Department of Veterans Affairs Merit Award, 2000-2005 (P.I., Ann Richmond); 25% effort.

PS-341 in Hepatocellular Carcinoma: A Phase II Trial. (Co-investigator, J Berlin-PI) CA

099269-01A1. 2003-2006.

Inhibition of NF- κ B Signaling in Melanoma Therapy. Jeff Sosman, PI, Ann Richmond (Co- PI). FDA Clinical studies of safety and effectiveness of Orphan Products. 2003-2006.

“SNRP Project at Meharry Medical College” NIH SNRP U54NS41071 9/1/06 to 8/31/11 (H K Rucker, PI, Ann Richmond, Co-Investigator)

“Molecularly Based Targeted Therapy for Melanoma” V Foundation Translational Grant: (Ann Richmond and Jeff Sosman, Co PIs) 11/01/06 to 10/31/10.

The role of NIK in Melanoma Tumorigenesis: National Cancer Institute: 2005-2011, PI (Richmond), 22% effort

Chemokine Receptor Studies National Cancer Institute: CA34590-25-30, 2008-2013
PI (Ann Richmond), 20% effort. NIH/CA34590—ARRA Supplement: 2009-2011.

VA Merit Award-29 (Richmond, PI) 2009-2013 VA 3.12 calendar mo
Dept. of Veterans Affairs: “Targeting IKK beta and aurora kinases in melanoma” The goal of this study is to characterize the gene expression profiles of patients predicted to respond or not respond to inhibitors of Aurora kinase A or IKK β .

W81XWH-11-1-0413 (Raman, Co-I, Richmond) 07/11 – 04/14 0.18 calendar mo
Department of Defense. A co-activator role for chemokine-dependent nuclear translocated LASP-1 in breast cancer

PUBLICATIONS:

Papers: (* indicates graduate student or postdoctoral fellow in Ann Richmond’s lab)

1. **Richmond, A.**, and Elmer, W.A. 1979. Purification of a mouse embryo extract component which enhances chondrogenesis in vitro. *Developmental Biology* 76:366-383. PMID6893034
2. Chawla, R.K., Lawson, D.H., **Richmond, A.**, Rudman, D. 1980. Effect of plasma interalpha trypsin inhibitor and cancer-related glycoprotein EDC1 on phytohemagglutinin induced thymidine uptake in lymphocytes. *Cancer Research* 40:4187-4191. PMID6162547
3. Chawla, R.K., Slaer, S.M., Lawson, D.H., Murray, T.G., Schmidt, R., Shoji, M., Nixon, D.W., **Richmond, A.**, Rudman, D. 1980. Elevated plasma and urinary guanosine 3':5' monophosphate and increased production rate in patients with neoplastic diseases. *Cancer Research* 40:3915-3920. PMID6258769
4. **Richmond, A.**, Lawson, D.H., Nixon, D.W., Stevens, J.S., Chawla, R.K. 1982. In vitro growth promotion in human-malignant melanoma cells by fibroblast growth factor. *Cancer Research* 42:3175-3180. PMID6212117
5. **Richmond A.**, Lawson, D.H., Nixon, D.W., Chawla, R.K. 1983. Extraction of a melanoma growth-stimulatory activity from culture medium conditioned by the Hs0294 human melanoma cell line. *Cancer Research* 43:2106-2112. PMID6600964
6. Lawson, D.H., Black, M.L., Nixon, D.W., Tindall, G., Barnes, D., **Richmond, A.**, Faraj, B., Camp, V., Ali, F., Rudman, D. 1983. Evaluation Evaluation of transsphenoidal hypophysectomy in the management of patients with advanced malignant melanoma. *Cancer* 51:1541-1545. PMID6186359

7. **Richmond, A.**, Lawson, D.H., Nixon, D.W., Chawla, R.K. 1985. Characterization of autostimulatory and transforming growth factors from human melanoma cells. *Cancer Research* 45:6390-6394. PMID3864531
8. **Richmond, A.**, Fine, R., Murray, D., Lawson, D.H., and Priest, J. 1986. Growth factor and cytogenetic abnormalities in nevus and malignant melanoma cells. *Journal of Investigative Dermatology* 86:295-302. PMID3745955
9. **Richmond, A.** and Thomas, H.G*. 1986. Purification of melanoma growth stimulatory activity. *Journal of Cellular Physiology* 129:375-384. PMID3465735
10. Lawson, D.H., Thomas, H.G.*, Roy, R.G.B., Gordon, D., Nixon, D.W., Chawla, R.K., and **Richmond, A.** 1987. Preparation of a monoclonal antibody to a melanoma growth stimulatory activity released into serum free culture medium by Hs0294 malignant melanoma cells. *Journal of Cellular Biochemistry* 24:168-185. PMID3611199
11. **Richmond A.**, Thomas HG*. 1988. Purification of Melanoma Growth Stimulatory Activity. (eds. R.C. Hickey, G.F.Saunders, D.S. Rivera). *1988 Yearbook of Cancer*. 34:585-587.
12. **Richmond, A.** and Thomas, H.G.* 1988. Melanoma growth stimulatory activity, a novel growth factor with a tissue distribution not restricted to melanoma tissue. *Journal of Cellular Biochemistry* 36:185-198. PMID3356754
13. Thomas, H.G*. and **Richmond, A.** 1988. Immunoaffinity purification of melanoma growth stimulatory activity. *Archives of Biochemistry and Biophysics* 260(2):719-724. PMID3341763
14. Thomas, H.G.* and **Richmond, A.** 1988. High-yield purification of melanoma growth stimulatory activity. *Molecular and Cellular Endocrinology*. 57:69-76. PMID3396757
15. **Richmond, A.**, Balentien, E.*, Thomas, H.G.*, Flaggs, G., Barton, D.E., Spiess, J., Bordoni, R*., Francke, U., Derynck, R. 1988. Molecular characterization of melanoma growth stimulatory activity, a growth factor structurally related to B-Thromboglobulin. *EMBO Journal* 7:2025-2033. PMID2970963; NIHMS288441; PMC454478
16. Priest, J., Phillips, C., Wang, Y., **Richmond, A.** 1988. Chromosome and growth factor abnormalities in melanoma. *Cancer Genetics and Cytogenetics* 35:253-262. PMID3141038; NIHMS&PMCn/a
17. Bordoni, R.*, Thomas, H.G.*, **Richmond, A.** 1989. Interaction of melanoma growth stimulatory activity with other growth factors and regulation of messenger RNA expression in melanoma cells. *Journal of Cellular Biochemistry*. 39:421-428. PMID2722970
18. Balentien, E.*, Han, J.H.*, Thomas, H.G*, Wen, D., Samantha, A.K., Zachariae, C.O., Griffin, P.R., Brachmann, R., Wong, W.L., Matsushima, K., **Richmond, A.**, Derynck, R. 1990. Recombinant expression, biochemical characterization, and biological activities of the human MGSA/gro protein. *Biochemistry* 29:10225-10233. PMID2271650
19. Bordoni, R.*, Fine, R., Murray, D., **Richmond, A.** 1990. Characterization of the autocrine role of MGSA in normal melanocytes and malignant melanoma. *Journal of Cellular Biochemistry* 44:207-219. PMID2095366
20. Baker, N.E., Kucero, G., **Richmond, A.** 1990. Nucleotide sequence of the human melanoma growth stimulatory activity (MGSA) gene. *Nucleic Acids Research* 18(21):6453. PMID2129556; PMC332569
21. Balentien, E.*, Mufson, B.E., Derynck, R., **Richmond, A.** 1991. Effects of MGSA/GRO alpha on melanocyte transformation. *Oncogene* 6:1115-1124. PMID1861861

22. Cheng, Q.C., Han, J.H.*, Thomas, H.G.*, Balentien, E*, **Richmond, A.** 1992.. The melanoma growth stimulatory activity receptor consists of two proteins. Ligand binding results in enhanced tyrosine phosphorylation. *Journal of Immunology* 148:451-456. PMID1729365
23. Tettelbach, W., Nanney, L., Ellis, D., King, L., and **Richmond A.** 1993. Localization of MGSA/GRO protein in cutaneous lesions. *Journal of Cutaneous Pathology* 20:259-266 PMID8366215
24. Jaffe, G.J., **Richmond, A.**, VanLe, L., Cheng, Q.C., Shattuck, R.L.*, Wong, F., and Roberts, W. 1993. Expression of three forms of melanoma growth stimulating activity (MGSA)/Gro in human retinal pigment epithelial cells. *Investigative Ophthalmology & Visual Science* 34:2776-2785. PMID8344798
25. Shattuck, R.L.*, Wood, L.D.*, Jaffe, G.J., and **Richmond, A.** 1994. MGSA/GRO transcription is differentially regulated in normal pigmented epithelial cells and melanoma cells. *Molecular and Cellular Biology* 14:791-802. PMID8264646; PMC358427
26. Mueller, S.G.*, Schraw, W., and **Richmond, A.** 1994. Melanoma growth stimulatory activity enhances the phosphorylation of the class II interleukin-8 receptor in non-hematopoietic cells. *Journal of Biological Chemistry* 269: 1973-1980. PMID8294449
27. Mueller, S.G.*, Schraw, W. and **Richmond, A.** 1995.. Activation of protein kinase C enhances the phosphorylation of the type B interleukin-8 receptor and stimulates its degradation in non-hematopoietic cells. *Journal of Biological Chemistry* 270:10439-10448. PMID7737978
28. Wood, L.D* and **Richmond, A.** 1995. Constitutive and cytokine-induced expression of the melanoma growth stimulatory activity/GRO gene requires both NF-kB and Novel Constitutive Factors. *Journal of Biological Chemistry* 270:30619-30626, 1995. PMID8530498
29. Schraw, W.P., **Richmond A.** 1995. Melanoma growth stimulatory activity signaling through the class II Interleukin-8 receptor enhances the tyrosine phosphorylation of Crk-associated substrate, p130, and a 70-kilodalton protein. *Biochemistry* 34:13760-13767, 1995. PMID7577968
30. Wood, L.D*. and **Richmond A.** 1995. HMGI(Y) and Sp1 in addition to NF-kB regulate transcription of the MGSA/GRO gene. *Nucleic Acids Research* 23:4210-4219, 1995. PMID7479086; PMC307364
31. Nanney, L., Mueller, S.G.*, Bueno, R, Peiper SC, **Richmond, A.** 1995. Distributions of melanoma growth stimulatory activity of growth-regulated gene and the interleukin-8 receptor B in human wound repair. *American Journal of Pathology* 147:1248-1260, 1995. PMID7485389; PMC1869526
32. Owens, J.D.*, Strieter, R., Burdick, M., Haghnegahdar, H., Nanney, L., Shattuck-Brandt, R*, and **Richmond A.** 1997. Enhanced Tumor Forming Capacity for Immortalized Melanocytes Expressing Melanoma Growth Stimulatory Activity/Growth Related Cytokine α and β proteins. *International Journal of Cancer* 73 94-103. PMID9334815
33. Shattuck, R.S.*, and **Richmond A.** 1997. Enhanced Degradation of I-kB α Contributes to Endogenous Activation of NF-kB in Hs294T Melanoma Cells. *Cancer Research* 57:3032-3039. PMID923219
34. Mueller, S.G.*, Schraw, W.P. White, J. Lam, V.,and **Richmond, A.** 1997. Ligand induced desensitization of the human CXC chemokine receptor-2 is modulated by multiple serine residues in the carboxyl terminal domain of the receptor. *Journal of Biological Chemistry* 272:8207-8214. PMID9079638
35. Shattuck, R.L*, Wood, L.D.*, **Richmond, A.** 1997. Identification and characterization of an MGSA/GRO Pseudogene. *DNA Sequence* 7 (6): 379-386. PMID9524820

36. Yang, W.* and **Richmond, A.** 1997. Interruption of G protein-coupling in CXCR2 does not alter ligand binding, but eliminates ligand activation of GTP-³⁵S binding, calcium mobilization, and chemotaxis. *Biochemistry* 36:15193-15200. PMID9398246
37. Tang, T.*, Owen, J.D.*, Du, J, Walker, C.L. and **Richmond, A.** 1998. Molecular cloning and characterization of a mouse gene with homolog to the Duffy-antigen receptor for chemokines. *DNA Sequence* 9: 129-143. PMID1052743
38. Nanney, L.B., Skeel, A, Luan, J.*, Polis, S., **Richmond, A.**, Wang, M-H., Leonard, E.J. 1998. Proteolytic Cleavage and Activation of pro-Macrophage-Stimulating Protein and Upregulation of its Receptor in Tissue Injury. *J. Investigative Dermatology* 111:573-581, 1998. PMID9764835
39. Yang, W.*, Wang D.*, and **Richmond A.** 1999. Role of clathrin-mediated endocytosis in CXCR2 sequestration, resensitization and signal transduction. *J. Biol. Chem.* 274:11328-11333. PID10196223
40. Devalaraja, M.*, Wang DZ*, Ballard D.W., and **Richmond, A.** 1999. Elevated constitutive IKK activity and IκBα phosphorylation in Hs294T melanoma cells lead to increased basal MGSA/GRO transcription. *Cancer Res.* 59:1372-1377. PMID10096573
41. Haghnegahdar, H., Du, J., Wang, DZ*, Strieter, R., Burdick, M., Nanney, L.B., Cardwell, N., Shattuck-Brandt, R.*, Price, J. and **Richmond, A.** 2000. The tumorigenic and angiogenic effects of MGSA/GRO proteins in melanoma. *J Leuko. Biol.* 67:53-62. PMID10647998; NIHMS49434; PMC2669312
42. Devalaraja, R.*, Nanney, L.B., Daniel, T. and **Richmond, A.** 2000. Delayed wound healing in CXCR2 knock-out mice. *J. Invest. Derm.* 115:234-244. Erratum in: *J Invest Dermatol* 2000. Nov;115(5);931. PMID10951241; NIHMS49435; PMC2664868
43. Nirodi, C.S*., Devalaraja, R*, Nanney L.B., Arrendal, S. Russell, S, Trupin, J, **Richmond, A.** 2000. Chemokine/Chemokine receptor expression in keloid and normal fibroblasts. *Wound Repair and Regeneration* 8: 371-382. PMID11115149; NIHMS290749; PMC3140346
44. Wang, D.*, Devalaraja MN*, Yang W*, Liang P., Matusmoto K., Endo T., and **Richmond, A.** 2000. MGSA/GRO-mediated melanocyte transformation involves induction of Ras expression. *Oncogene* 19:4647-4659. PMID11030154; NIHMS49436; PMC2667445
45. Addison CL, Daniel TO, Ehlert JE, Liu H, Burdick MD, Xue YY, Morris S, Buechi L, Walz A, **Richmond A**, Strieter RM. 2000. The CXC chemokine receptor 2, CXCR2, is the putative receptor for ELR+ CXC chemokine induced angiogenic activity. *J. Immunology.* 165:5269-5277. PMID11046061
46. Fan, GH*, Yang, W*, **Richmond, A.** 2001. Identification of a motif in the carboxyl terminus of CXCR2 that is involved in adaptin 2 binding and receptor internalization. *Biochem* 40:791-800. PMID11170396; NIHMS49439; PMC2664867
47. Luan, J*, Furata, Y., Du, J, Yu Y, and **Richmond, A.** 2001. Developmental expression of two CXC chemokines, MIP-2 and KC, and their receptors. *Cytokine* 14:253-263. PMID11444905; NIHMS290761
48. Yang, JM*, Luan, J*, Yu, Y, Li, C*, DePinho, R.,Chin, L and **Richmond, A.** 2001. Induction of melanoma in murine macrophage inflammatory protein 2 transgenic mice heterozygous for inhibitor of kinase 4a/alternate reading frame. *Cancer Res.* 61:8150-8157. PMID11719444
49. Fan GH*, Yang W*, **Richmond A.** 2001. Phosphorylation-independent association of CXCR2 with the PP2A core enzyme. *J. Biol. Chem.* 276: 16960-16968 PMID11278485; NIHMS49440; PMC2666306
50. Nirodi C S*, NagDas S, Moon N, Gygi S, Hart J, Olson G, Nepveu A, Aebersold R, **Richmond, A.** 2001. The role of CDP in the negative regulation of CXCL1 gene expression. *J. Biol. Chem.* 276(28):26122-31 PMID11371564; NIHMS49441; PMC2665279 (

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CHAPTERS/Reviews:

* indicates graduate student or postdoctoral fellow in Ann Richmond's lab

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147. **Richmond A.** 1991. Growth and differentiation in melanocytes. In *Molecular and Cellular Approaches to the Control of Proliferation and Differentiation* (eds. G.S. Stein and J.B. Lian), 269-295.
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152. **Richmond, A**, Mueller, S.*, White, J.R., Schraw, W.P.. 1997. C-X-C chemokine receptor desensitization is mediated through ligand enhanced receptor phosphorylation on serine residues. In *Chemokines and Chemokine Receptors* (ed. R. Horuk) *Methods in Enzymology*, 288: 3-15. PMID9356983
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164. Neel NF*, Schutyser E*, Sai J*, Fan GH*, **Richmond A**. 2005. Chemokine receptor internalization and intracellular trafficking. *Growth Factor and Cytokine Reviews:* 368: 637-658. PMID15998596; NIHMS49418; PMC2668263
165. Ueda Y* and Richmond A. 2006. NF- κ B activation in melanoma. *Pigment Cell Res.* 19: 112-124. PMID16524427; NIHMS49421; PMC2668252
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169. Yang J* and **Richmond A**. 2009. Monitoring NF- κ B mediated chemokine transcription in tumorigenesis. *Methods in Enzymology*, 460: 347-355. PMID19446734; NIHMS291823; PMC3140415
170. Raman, D, Neel NF*, **Richmond, A**. 2009 Characterization of chemokine receptor CXCR2 interacting proteins using a proteomics approach to define the CXCR2 "chemosynapse". Invited article for *Methods in Enzymology*, 15: 315-330. PMID19446732; NIHMS291825; PMC3140414
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173. Lazenec, G, and **Richmond, A**. 2010. Chemokines and chemokine receptors: New insights into cancer-related inflammation. *Trends in Mol Medicine.*16: 133-44. PMID20163989; NIHMS180246; PMC2840699
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180. Vilgelm AE*, **Richmond A.** Combinatorial approach to cancer immunotherapy: strength in numbers. 2016. *J. Leuk Biol,100: 275-90. PMID: 27256670. PMC:*

181. Nichols EE, **Richmond A**, Daniels AB. *Tumor characteristics, genetics, management, and the risk of metastasis in uveal melanoma. 2016. Seminars in Ophthal. Epub, April 29, DOI: 10.3109/08820538.2016.1154175. PMID: 27128983 PMCID: [PMC5526754](https://pubmed.ncbi.nlm.nih.gov/PMC5526754/)*

182. Nichols EE, **Richmond A**, Daniels AB. *Disparities in uveal melanoma: patient characteristic. 2016. Seminars Ophthal.31: 296-303. PMID: 27128153I PMC5441550.*

183. Vilgelm AE, **Richmond, A.** *Chemokine modulation of response to immune checkpoint inhibitors. 2018. Frontiers in Immunology. In submission.*

ACADEMIC ACTIVITIES:

Vanderbilt University and Department of Veterans Affairs (Nashville) Committees

Search Committee, Gross Anatomy Position, 1989-90, Department of Cell Biology
Biomedical Sciences Internal Accreditation Review, 1991 and 1998
Biohazards Committee, VA Medical Center, 1991-present
VA Committee on Scientific Misconduct, 1993-1995
Standing Policy Committee for Biomedical Sciences, Vanderbilt University, 1992-1995
School of Medicine Advisory Council, Vanderbilt University, 1993 - 1996
Graduate Faculty Council, Vanderbilt University School of Medicine, 1993 - 1996; 2003-2005.
Secretary of the Vanderbilt Graduate Faculty Council, 1995-96.
Sigma Xi, Nominations Committee, Vanderbilt, 1993-95; Membership Committee 1996-97.
Graduate Advisory Council for Cell Biology, 1993-1995.
VUMS Library Collection Advisory Forum, 1996-1997.
University Faculty Senate, 1996-1999; PEAF Sub-Committee 1996-1999.
Department of Cancer Biology, Review Committee for Secondary Faculty, 2000-present
Consultative Committee for the Faculty Senate, 1999
Faculty Representative for the Cell Biology Advisory Committee to the Chair, 1998-2000
VUMC Discovery Grant Review Committee, 1999
University Appellate Review Board, 1999-2000
Dean's Committee for Conflict Resolution: 2000-2001
Committee on Mentoring Students and Postdoctoral Fellows not Native-Born English Speakers, 2000-2005
Department of Veterans Affairs Research and Development Committee, 2000-present
VUMC Tenure and Promotions Committee, 2000-2009. Co-Chair 2005-2007, Chair, 2007 -2009

Cancer Biology Search Committee, 2001-2003,
Faculty Reward Plan Advisory Committee, 1999-present, Committee Chair
Chair of Committee to Organize a Masters Degree in Laboratory Science, 2002-2004
Graduate Faculty Advisory Committee, 2003-present
Associate Director of Education for the Vanderbilt Ingram Cancer Center, 2004-present
Director of Graduate Studies for the MLS program, 2004-2005
Assistant Dean for Biomedical Research, Education and Training, 2005-2010
Research Integrity Officer, VA Medical Center, 2008-present
Strategic Planning Committee for Research at the VA, 2008-2009
Advisory Committee for Review of VA Research Career Scientist Awards, 2008-2012
Internal Advisory Committee for MMC-VICC-TSU Cancer Partnership, 2005-present
Executive Committee for the Vanderbilt Ingram Cancer Center, 2004-present
Medical Center Tenure Review Committee, 2010-2013
Chair of Staff and Faculty Research Awards Committee, School of Medicine, 2009-2011
Search Committee for Chair of Cell and Developmental Biology, 2011-2012
Search Committee for Chair of Dermatology, 2015-2016
Search Committee for Director of the Bone Center, Department of Medicine, 2015-2016
Co-Chair of the Space Committee, VA Medical Center, 2015-2016
Search Committee Chair for Cancer Pharmacology faculty, 2018

Ph.D. Dissertation Committee for: Joe Oozer, Ed Yang, Kurt Lang, Lin Manchung, Radhika Donald, Scott Eblen, Bob Carver, Lufen Chang, Mike Engel, Jo Lopez. Amelia Entingh, David Strayhorn, Brett Everhart, Permila Harrell, Mark Gustavson, Nikki Cheng, Sheng-Ru Shiou, Xiang Qi, Debbie Mariner, Nancy Dumont, Mike Davis, Mai Wang, Nicole Durcharme, Mai Wang, Amber Bowden, Li Yang, Nicole Fowler, Meridith Vaughn, Wei Fang, Laura DeBuske, YeeMon Thu, Laura Gordy, Alisha Russell, Kurt Watson, Dhananjay Sakrikar, Andrea Frump, Jennifer Reiner, Wendy He, Ganglei Zhang, Dawit Jowhar, Peter Vollbrecht, Xingyuan Lu, Jamie Osborn, Allyson McLoed, Keisha Hardeman, Katie Hutchinson, Whitney Rabacal, Spencer Crowder, David Austin, Deon Dixit, Ali Greenplate, Megan Capozzi, Carla Gibbs (Meharry Medical College), Portia Thomas (Meharry Medical College), Mark Crowder, Zach Sandusky; Katie Hebron, Laura Kim, Shawna McLetchie,

Cell Biology Phase I Committee: Gail Ganzer, Jean Witty, Nancy Wall, Tom Polte, Kathy Heppner, Xione Zhang, Nathan Hedstrom, Ute Prilinger, Allen Adams, Alex Feltus, Dana Brantley, Debbie Mariner, Nancy Dumont, Mike Davis, Mai Wang, Nicole Durcharme,

Cancer Biology Phase I Committee: Yelena Janumyan; Roger S Jackson, Yersenia Rivera, Andres Rojas, Kimberly Boelte, Eddie Nam, Carrie Whiting, Andreia Bates, Sora Lee, Jamie Osborn; Keisha Hardeman; Holli Loomans, Carla Gibbs (Meharry), Portia Thomas (Meharry); Eileen Shiuian; Mark Crowder; Deon Dixit; Ally Greenplate;

Undergraduate Mentoring: Kate Hockemeyer 2011-2013; Peter DelNero 2010-2011; Deepa Joshi 2008-2010; Zar Min, 2011; Shuai Yuan, 2010-2011; Tyasha Martin, 2012-2013; Jessica Smith, 2012; Carla Gibbs, 2013; Sesay Abraham, 2013. Matthew Rogers, 2013-2017, Kennady Bulloch, 2017-2018.

Additional Faculty Mentoring: K01 co-mentor for Magaly Martinez-Ferrer 2010-2014; Susan Opalenik, R21 2008-2010; Barbara Fingleton, Rebecca Ihrie, Amos Swake, Swarup Tirividee, Doek Son, Fiona Yull, Josie Eid, Ela Knapnik, Chrsty Osgood, Julie Sterling, Rebecca Cook, Phil Owens (VA CDA mentee), Shannon Arnold (VA CDA mentee), Anthony Daniels, M.D. (ocular oncology surgeon), John Wilson, Ph.D.(MRA Award), Dolly A. Padovani-Claudio, M.D., Brent Ferrell (K23 Award); Rachel Bonami (Junior faculty, Rheumatology); Doug Johnson, MD; Rachelle Johnson; Erin Caprioli; Swarup Tiriveedhi (TSU); Amos Sakwe (Meharry); Deok-Soo Sun (Meharry);

MAJOR ACCOMPLISHMENTS AND HONORS:

Career Scientist Award, DVA 1988-2013
Director of Graduate Studies for the Department of Cell Biology, 1993-1995

Organizer of the First International Gordon Research Conference for Chemotactic Cytokines, 1994
 Organizer and Director of the Master of Laboratory Science Program, 2004-2005
 Editorial Board, *Journal of Biological Chemistry*, *Journal of Leukocyte Biology*, *Journal of Pigment and Melanoma Research*, *American Journal of Cancer Research*
 ELAM Fellow, 2002-2003
 Assistant Dean for Biomedical Research, Education and Training, 2004-2010
 Vice Chair of Department of Cancer Biology, 2000-2017
 Ingram Professor of Cancer Biology, 2005-present
 President Elect, Society for Leukocyte Biology, 2012-2014; President, 2014-2016.
 Associate Director of Education, Vanderbilt Ingram Cancer Center, 2004-present
 Director, Program in Cancer Biology, 2017-present
 William S. Middleton Award Winner, 2016
 Legacy Award Winner, 2018

TEACHING:

Vanderbilt University School of Medicine

- I. Cell Biology and Histology, 1990-1999. Lectures and Labs in the Urinary System. 3 hr lecture to 100 students
- II. Cell Biology 310 Core Course, 1990-1995. Lectures on G protein-coupled receptors, signal transduction and chemotactic cytokines. ~30 students, 5 hours lecture

III. Graduate Students Directed Study: 3 month rotations

Lauren Wood	1990	Transcriptional Regulation of MGSA.
Jiunn-Lin Wang.	1992	MGSA Receptor Expression in E.coli.
James Owen	1993	Characterization of the role of MGSA in transformation
Renee Combs	1995	Does the DARC receptor transduce a signal
Eric Dawson	1995	Site-directed mutagenesis of MGSA isoforms
Melanie Light	1995	Cloning of melanoma chemokine receptors
Anwell Chang	1995	PCR cloning of melanoma chemokine receptors
Jing Luan	1995	Regulation of expression of MGSA genes in human cancers
Lynn Sanderson	1995	Sp1/Sp3 involvement in MGSA/GRO transcription
Nikki Joiner	1997	Development of ELR mutants of MGSA/GRO
D-W Jo	1997	The role of Ras in the MGSA/GRO signal transduction pathway
Nicki Fox	1998	The role of NIK in the constitutive activation of NF-kB
Jesse Hart	1999	The characterization of the IUR-F in melanoma
Tammy Wingo	2000	The role of CXCR3 in antagonism of CXCR2
Alex Eshighian	2000	Transcriptional regulation of CXCL1
Roger Liu	2000	The role of AIK in CXCR2 signal transduction
Kathy Amiri	2001	The role of AKT in the regulation of transcription of CXCL1
Josh Rosenberg	2001	Model for angiogenesis and tumorigenesis
Amber Bowen	2002	Animal models for chemokine receptor studies
Nicole Fowler	2002	Chemokine receptor mediated cell polarization
Robin Marjorum	2004	Chemokine receptor expression in endothelium
Kurt Watson	2005	Chemokine receptor association with cyclophilin
Tiffany Johnson	2005	Chemokine receptor association with clathrin
Yuxiang Zheng	2005	Chemokine mediated alterations in gene expression
Mandy Mullins	2005	Chemokine regulated cell motility
Kelly Richardson	2005	Chemokine mediated signal transduction
Maria Alfaro	2006	CXCR2 interaction with AIK
Yee Mon Thu	2006	CXCR4 expression in intestinal epithelial cells
Sarah Short	2008	CXCR4 in breast cancer metastasis
Katie Hutchinson	2014	Chromosomal translocations that activate BRAF in melanoma
Hillary Layden	2018	Wee1 and MDM2 antagonists with BRAF and MEK inhibitors in melanoma

- IV. Oncogenes. 1991-93. Lectures on Cytokines and the Role of the Microenvironment in Tumor Progression. 3 hr lecture to ~20 students
- V. Cancer Biology. 1992-present. Lectures on tumor specific antigen and hopes for immunotherapy, chemokines and tumor angiogenesis. 3 hour lecture to ~20 students
- VI. Core Curriculum IGP. 1993-96; 1999-2004. Defense lecture series on cytokines, cytokine receptors and the immune response and/or flex time series on immunology. 2 hour lecture to ~50 students and/or Signal transduction flex time series 3 hr contact time
- VII. Advanced Immunology. 1993-2000. Lectures on cytokine or chemokine receptors and signal transduction 4 h our lecture to ~10 students
- VIII. Organizer: Cancer Biology Research Hour, 2001- 2004.
- IX. Vascular Biology, 2001-2013. Role of chemokine receptors in angiogenesis.
- X. Cancer Biology, 2001-2005. Role of chemokines in tumorigenesis.
- XI. Organizer: Laboratory Management, 2005-. This course was designed to teach MLI students how to effectively manage a laboratory at VUMC.
- XII. Lecture to Undergraduate Research Program and BRIDGES students. Chemokine receptors mediate metastasis. 2007
- XIII. Melanoma Research Conference for Oncology Fellows: Fall, 2007
- XIV. Department of Cancer Biology Research Conference, Spring, 2011
- XV. Breast Cancer SPORE Research Seminar Series, Spring 2011
- XVI. Cancer Biology Mechanisms of Motility, Fall 2012, 2013
- XVII. Department of Medicine, Tortoise and Hare Seminar, 2013
- XVIII. Epidemiology Postdoctoral Program: Questions in Cancer Biology, 2013
- XIX. Systems Biology: Cancer Signal Transduction Networks, 2014
- XX. Chemokine Modulation of the Tumor Microenvironment: Effects on Angiogenesis, 2014
- XXI. Vascular Biology: How anticancer therapies target tumor angiogenesis, 2015
- XXII. Vascular Diseases Lecture series: Methodologies for investigating angiogenesis, 2015

**STUDENTS/FELLOWS
ADVISED:**

Medical Students:

Jim Mixon, M.D. Effects of pH on 3H-thymidine incorporation in the Hs294T human melanoma cell line. Spring, 1983. Current status: Private Practice

Robert Siegel, M.D. Transforming growth factors in fetal calf serum. Fall, 1982

Rodolpho Bordoni, M.D. Cytokine regulation of MGSA expression in melanoma. 1986-1989, Emory University

Anwell Chang, M.D. Variant CXC chemokine receptors in melanoma. Spring & Summer 1995: Current status: Dermatology residency Case Western

Ashley Long, M.D. Clinical traits of melanoma patients responding to AIK, NF- κ B or BRAF inhibitors. Dermatology Faculty, UCSD and VA Medical Center Department of Dermatology

Jessica Smith. AURKA and MDM2 inhibitors for treatment of melanoma tumors, Meharry Medical College

Sesay Williams. Role of IL-4 in the Pro-tumor response to IKK β inhibitor therapy in melanoma. Meharry Medical College

Mallory Holmes. The regulation of the senescence activated secretory program in oncogene and therapy induced senescence. Meharry Medical College

Kiran Malikayil. Effects of AURKA inhibitors combined with MDM2 inhibition on DNA damage. 2015 Meharry Medical College

Kevin Black. PI3Kinase inhibitors combined with Immune therapy for treatment of TNBC. Meharry Medical College

Lauren Slesur: Treatment of malignant melanoma with CDK4/6 and Mdm2 antagonist, VUMC

Kelsie Remenschneider: Treatment of malignant melanoma with AURKA inhibitors and MDM2 antagonist, Residency, MD Anderson

Post Doctoral Fellows:

H. Greg Thomas, Ph.D. Purification of melanoma growth stimulatory activity by immunoaffinity chromatography and reverse-phase HPLC. 1984-1989. Current role: Vice President for Research, Kiel Laboratories, Gainesville, GA

Jin Hee Han, Ph.D. Characterization of Alternate Forms of MGSA and Characterization of the MGSA Receptor. 1987-1989. Current Position, Professor at Seoul National University, Korea.

Sharon Horton, Ph.D. Characterization of MGSA signal transduction pathways. 1989-90. Head of Forensic Science, State of Tennessee

Rebecca L. Shattuck, Ph.D. Regulation of expression of four genes for MGSA/GRO. 1990-1993. Current position Staff Scientist, Vanderbilt University

Susan Mueller, Ph.D. Expression of cloning of the MGSA receptor, 1991-1995. Current position: Senior Scientist, Hemosol, Inc. Canada

Andrew Farmer, Ph.D. Characterization of novel transcription factor associated with MGSA/GRO gene regulation, 1994-1995. Current position, BD Biosciences, Clontech

Wei Yang, Ph.D., M.D. Domain specificity of chemokine receptors. 1995-1999. M.D. Medical Pathologist, Allen Memorial Hospital, Waterloo, Iowa

C.S. Nirodi, Ph.D. Transcriptional regulation of MGSA genes through phosphorylation of enhancer binding proteins. 1995-2000. Current position: Assistant Professor, tenure track, Southwestern University School of Medicine, Dallas, TX

Tong Tang, Ph.D. Cloning/expression of the mouse DARC receptor, 1995-1996. Current Position, Scientist, VA Research Service, San Diego, CA

Glendora Carter-Spencer. Chemokine activation of tyrosine kinase signal transduction pathways. 1996-August 1998. Current Position, Professor at Jarvis Christian College, TX

Matt Devalaraja, Ph.D. NF- κ B/I- κ B regulation of chemokine gene transcription. 1997-1999. Current position: Co-Founder and Executive VP of Corvidia Therapeutics and Director of Emerging Innovations at AstraZeneca.

Ding-Zhi Wang, Ph.D. Regulation of gene expression by MGSA/GRO genes. 1997-2000. Current position, Research Professor, Department of Medicine, Medical University of South Carolina, Charleston.

Xue-Jie Wang, Ph.D. Transgenic models for testing the role of CXCR2 in wound healing. 1998-1999. Current position, CEO at Zenomics., RTP, NC

Cunxi Li, MD, PhD. Development of mutant RAS/CDK4/6 null melanocyte cell lines. 1998-2000. Current position. Director, Professor of Jiaen Genetics Laboratories, Jiaen Hospital, Beijing China.

Radika Devalaraja, Ph.D. The role of CXCR2 in wound healing, 1998-1999. Life Sciences Consultant, and Study Director, Toxikon Corporation, Bedford, MA

Guo-Huang Fan, Ph.D. Mechanisms for CXCR2 internalization and desensitization, 1999-2001. Research Instructor, 2001-2002, Research Assistant Professor, 2002-2004. Current position, Associate Dean, Nanchang University and Shanghai Jiao Tong University School of Medicine, Shanghai, China

Punita Dhawan, Ph.D. Upstream activators of IKK in melanoma cells, 1999-2003. Current position, Associate Professor in Biochemistry, University of Nebraska School of Medicine

Yang, Jinming, Ph.D. Is there a general deregulation of IKK in melanoma tumors? 1999 2001; 2002-2004. Current position, Staff Scientist, Department of Pharmacology, VU

Jiqing Sai, Ph.D. The role of rho, rac, cdc42 in chemotaxis mediated through CXCR2. 2000-2005. Research Assistant Professor in Cancer Biology 2006-2016. Current Position: Senior Staff Scientist, Department of Biochemistry, VU

Yukiko Ueda, Ph.D. Characterization of the role of PARP and CDP in transcriptional regulation of CXCL1. (2002-2006). Current position: retired

Ying-jun Su, M.D., Ph.D. The role of NIK and NF- κ B in melanoma tumorigenesis 2003-2007. Current position Assistant Professor of Surgery—4th Medical Military University, Shaanxi, PRC.

Evemie Schutyser, Ph.D. Mechanisms of CXCR3 signal transduction in angiogenesis, 2003-2005. Current position, Therapeutic Area Head, Nephrology, Cardiology AMGEN, Belgium

Paige Baugher, Ph.D. 2005-2008. Chemokine receptor signaling as related to receptor trafficking Current Position: Assoc Prof of Biology with Tenure at Pacifica University, Portland, OR

Tammy Sobolik-Delmaire, Ph.D. 2007-present. Inflammation and Cancer: the role of chemokines. Current Position: Medical Science Liaison with TerSera Therapeutics

Ryan Splittgerber, Ph.D. 2008 to 2010. AIK intersection with IKK in melanoma. Associate Professor, Department of Biology, University of Nebraska School of Medicine

Sean Carmody, Ph.D., 2010-2012 The role of VASP in Leukocyte Infiltration and Cell Metastasis. Data Scientist, St Thomas Hospital.

Anna Vilgelm, 2011-2016. The role of amplification of aurora kinases in melanoma growth and mechanisms of resistance to aurora kinase inhibitors. Research Assistant Professor of Pharmacology

Yan Liu, 2010-2013. Mechanisms of action of Aurora Kinase Inhibitors and IKK-beta inhibitors. Staff Scientist, UT Southwestern

Oriana E. Hawkins, 2010-13. Effects of chemotherapeutics on leukocytes in the tumor microenvironment. Director of Assay Development at ENT vantage DX

Jeff Pawlowski, 2014-2015. Oncogene events during early progression of melanoma. Medical Science Liaison, Jassen Pharmaceuticals

Nicole Lavender, 2014-2016. New approaches for therapeutic modulation of the tumor microenvironment in triple negative breast cancer. Current Position, Medical Science Liaison, Boehringer Ingelheim

Stacey Mont: 2017-present. Developing new therapies for TNBC using PI3K inhibitors and immune therapy

Chi Yan: 2018-present. Designing better therapeutic options for NRAS mutant melanoma

Graduate Students:

Eddy Balentien, Molecular Biology of Melanoma Growth Stimulatory Activity (MGSA): Molecular Cloning, Eukaryotic Expression, Characterization of Signal Transduction Mechanism, and Evaluation of Tumorigenic Potential, 1985-1990. Current position: Associate Director of the Immunology Clinical Labs, Curaceo, Netherlands Antilles.

*Lauren Wood, Transcriptional control of the MGSA genes, 1990-1995. Current position, Senior Principal Scientist, Pfizer-San Diego, CA

* *Recipient of a University Scholars Award for Topping up Tuition for Graduate School*

*James Owen, Transforming potential of MGSA isoforms, 1993-1996. Current position, Manager, Business Development AVEO Pharmaceuticals

* *Recipient of an individual NSRA for studies on chemokines in liver disease*

Jing Luan, M.S., M.D. Differential regulation of MGSA genes and receptors in human skin cancers, 1995-1999. Current position, Hospitalist, Burlington Medical Association, Boston, Mass.

Jessie Hart, The role of chemokines and their receptors in vascular biology during the aging process. 2000-2001. Current Position, US Armed Forces

Kathy Amiri, Ph.D. The role of CBP in the transcriptional regulation of chemokines. 2001-2005; Current position, Roche Liaison for Clinical Trials

Nicole Fowler Neel, Ph.D. Characterization of the CXCR2 and CXCR4 chemo-synapse. 2002-2008 Current Position: Science Writer for INC. Chapel Hill, NC.

Yee Mon Thu. The role of NIK in melanoma tumor growth and transformation. 2006-2011. Current position, Assistant Professor Allegheny College, Meadville, PA

Katie Hutchinson (co-mentor) 2014 Genetic changes in malignant melanoma affecting drug response. 2009-2014. Current position: Scientist, Genentech, South San Francisco, CA

Undergraduate Students:

Aimee Cunningham. The use of RMCE to follow transcriptional regulation of CXCL1. Masters of Public Health Program, Emory University followed by Medical School.

Beth Reed. The role of mutation of CXCR2 in cutaneous wound healing. Masters Program, Middle Tennessee State University

Kevin Vo. Chemokine receptor animal models for tumor angiogenesis, Pharm D research fellowship, Novartis

Deepa Joshi. Gene expression profile of CXCR4- Δ CTD MCF7 cells as compared to CXCR4 WT expressing cells. Early Admission to Vanderbilt Medical School.

Peter DelNero. Development of devices to monitor paracrine and autocrine interactions in tumors. Current Position: Graduate School, Cornell University.

Sara Short. Characterization of the role of CXCR4 in breast cancer metastasis. Current Position, Ph.D Candidate, Vanderbilt University School of Medicine.

Zar Min. The role of NIK in melanoma tumor growth. (MTSU student).

Kate Hockmeyer. Bioreactors for co-culture metastasis studies., Current position: NYU Medical School and interim research at the EPFL Laboratory of Lymphatic and Cancer Bioengineering, Lausanne, Switzerland

Tyesha Martin. IL-4 receptor antagonist for treatment of melanoma in combination with IKK β inhibitors (TSU student), Research Assistant, VUMC.

Carla Gibbs. TRAIL activation of DR5 enhances the therapeutic response to MLN8237 in melanoma. (TSU student summer research)

Karina Lopez. The role of phospholipase A2 in response to a chemokine gradient. TSU student

Maria Boyer. Effects of senescence on chemokine gene expression. Fisk University student.

Kathryn Hockmeyer: Development of microbioreactors to mimic the tumor microenvironment. Current position: MD/PhD program at NYU.

Matthew Rodgers. Construction and utilization of microbioreactors for study of the human tumor microenvironment.

Logan Northcutt. CCL2 mediation of neutrophil killing. Morehouse University. Now Vanderbilt graduate student, Fall, 2018

Kennady Bullock. Developing therapies for NRAS mutant melanoma. Vanderbilt undergraduate student, Fall, 2018

Oncology Fellow and Clinical Investigators:

Rodolfo Bordoni, M.D. Growth Factor/Cytokine activation of MGSA mRNA, 1987-1989. Current Position: Private Practice, Atlanta, GA.

Anthony Daniels, M.D. New Interventional Approaches for Retinoblastoma and Ocular Melanoma. 2014-present.

Assistant Professors:

Phil Owens, Ph.D. PI3K inhibitors enhance the response to immune therapy in TNBC

Shanna Arnold, Ph.D. ALCAM as a marker for tumor progression in bladder cancer

John Wilson, Ph.D. Sting agonists enhance response to immune therapy

Deepak Son, Ph.D. Chemokines as mediators of tumor progression in obesity

Amos Sakwe, Ph.D. Tyrosine kinases that combine with EGFR to modulate growth of breast cancer

Brent Ferrell, M.D. Improving therapeutics for hematopoietic cancers

PRIMARY RESEARCH

PRESENTATIONS Last 10 Years:

Local:

3/01 Cancer Biology Research Hour, VUMC

5/01 Vanderbilt Biomedical Research Graduate Student Association Meeting (slide)

6/01 Signal Transduction Subgroup of VICC

4/03 Rheumatology Conference, Vanderbilt University

5/03 Melanoma Conference, Vanderbilt University School of Medicine

4/05 Melanoma Conference, VUMC

3/06 Inflammation and Cancer, VUMC

5/06 Host-Tumor Interactions, VICC Mini Retreat

03/07 Department of Microbiology and Immunology

03/07 Meharry Medical College Department of Cancer Biology

10/07 Melanoma Seminar Series

08/07 Summer Science Enrichment Program—VUMC

10/08 VUMC/Meharry U54 Cancer Retreat—Panel Discussion Career Planning

02/09 Women on Track—Professional Development

01/09 VUMC/Meharry U54 Cancer Retreat—Panel Discussion Career Planning

05/09 VUMC Workshop, Preparing Research Team Leaders—Panel Discussion member and small group leader

07/10 Summer Science Workshop Keynote Speaker

04/11 Department of Cancer Biology Research Forum

05/11 Breast Cancer SPORE Research Program

01/14 Host Tumor Interactions Program

01/14 Melanoma Program

11/14 Vascular Biology Program

12/14 Department of Pathology, Microbiology and Immunology Seminar Program

06/15 Vascular Diseases Seminar Program

01/16 Vanderbilt Ingram Cancer Center Executive Committee

04/16 Tumor Immunology Group

03/17 VICC Update on NCI PDX Supplement

05/17 Tumor Immunology Working Group

09/18 VICC Tumor Microenvironment and Immunology Program

National:

04/01 Keystone Conference on Signal Transduction: “Chemokine Receptor Signal Transduction” also Program Organizer Committee

01/02 New York University, “Mechanisms of transcriptional deregulation of chemokines in tumorigenesis”.

04/02 University of Michigan, “Signals of biological importance mediated through CXCR2”

03/03 Invited participant in the State of Georgia Cancer Research Initiative, Georgia Tech, Atlanta, GA

04/03 MD Anderson, “Dis-regulation of NF-kB in melanoma tumor progression”

04/03 AACR meeting in Toronto, poster presentation by student Kathy Amiri

01/04 Visiting Scientist, Bristol Myer Squibb

04/04 Visiting Scientist, University of Tennessee Department of Microbiology. Seminar “The ins and outs of chemokine receptor trafficking”.

05/04 Visiting Scientist, University of Texas Medical Branch at Galveston.

05/04 Keynote Speaker, Wound Healing Society, "Chemokine Receptors Modulate Wound Healing and Angiogenesis"

08/04 Visiting Scientist, University of Texas Medical Branch "Rationale for Inhibiting NF-kB in Melanoma"

02/05 Gordon Research Conference on Chemotaxis and Motility, Ventura California

04/05 Loyola University, Department of Immunology, Chicago "Targeting NF-kB in Melanoma"

05/05 Eli Lilly, Indianapolis, IN "Is NF-kB a Target for Cancer Therapy"

10/05 Visiting Scientist, University of Utah "Targeting the NF-kB Pathway in Melanoma"

12/05 Speaker, Vanderbilt Alumni Meeting Houston TX "Genius at Work"

05/06 Keynote speaker, Melanoma Symposium, Penn State Medical Center, Hershey PA "Targeting NF-kB in Melanoma."

8/06 Speaker, Grand Rounds in Pathology, Oklahoma Health Science Center, Oklahoma City, OK "Targeting NF-kB in Melanoma"

09/06 The role of NIK in melanoma transformation, Eli Lilly, Indianapolis, IN

04/07 Speaker, AACR. Chemokine receptors in inflammation, angiogenesis and wound repair. Los Angeles, CA.

05/07 Visiting Scientist, North Carolina Central University: Chemokine Receptor Trafficking

05/08 University of Louisville, Visiting Scientist, Brown Cancer Center

05/08 University of Nebraska, Visiting Scientist

08/08 Louisiana State University at New Orleans, Visiting Scientist

01/08 University of Kansas, Visiting Scientist

11/08 Brown University, Department of Biology, Visiting Scientist

04/09 AACR National Meeting Speaker. Mentoring Session, Denver, CO

05/09 UTMB, Galveston Cancer Center, Visiting Scientist

11/09 Cleveland Clinic, Visiting Scientist

04/10 Keynote Speaker at GREAT Meeting at the University of Oklahoma

05/10 Visiting Scientist, U of Kentucky, Lexington, Cancer Center

06/10 Visiting Scientist, Albert Einstein School of Medicine, New York, NY

01/11 Visiting Scientist, University of Iowa, Department of Pharmacology, Iowa City IO

05/11 Visiting Scientist, NCI Laboratory of Cancer Biology and Genetics, Bethesda, MD

07/11 University of Kentucky Cancer Center, Lexington, KY

- 09/11 Translational Research Conference, NIH
- 10/11 AACR Breast Cancer Symposium, San Francisco, CA
- 03/12 Cell signaling and cytoskeleton in directed cell migration: Imaging and quantitative approaches Conference, Vanderbilt University, Nashville, TN
- 12/13 Inflammation Drives Cancer and Therapeutic Response to Chemotherapy is modified by Tumor associated leukocytes. Montana State University, Bozeman, MT
- 11/14 Chemokines modulate tumor metastasis. University of Southern Alabama, Mobile, AL
- 03/15 Novel therapeutic approaches for melanoma and breast cancer therapy. Markey Cancer Center, Lexington KY.
- 01/16 Targeted therapies modulate anti-cancer immunity. Breast Cancer Program, University of Iowa, Iowa City, Iowa
- 03/16 Cancer therapeutics that induce senescence can enhance recruitment of effector T cells to tumors. Tumor Immunology Program, MD Anderson, Houston TX
- 09/16 Targeted therapies modulate anti-cancer immunity in melanoma and breast cancer. Department of Biochemistry and Molecular Biology, U of Nebraska, Omaha, Nebraska.
- 05/17 Cancer Immunotherapy: Advances and Challenges, Third National Veterans Health Affairs Research Conference. Keynote Speaker, Nashville, TN
- 09/17 New combinations of senescence inducing therapy combined with immune therapy for melanoma patients. Northwestern University School of Medicine
- 03/18 Combining targeted therapies with immune therapy to enhance survival. University of Chicago,

International:

- 11/0 International Cytokine Society. "Modulation of chemokine signaling involves multiple receptor-associated proteins. Maui, Hawaii: also Chair for Plenary session on Chemokines
- 05/02 Chemokine Meeting in Madrid, Spain–Invited Plenary Speaker
- 07/02 Gordon Research Conference on Chemotactic Cytokines–Invited Plenary speaker
- 10/02 International Cytokine Society. "Chemokine Receptor Trafficking", Torino, Italy
- 9/02 Novartis Foundation Symposium , London UK.–Invited Plenary Speaker
- 01/03 Keystone Symposium on Chemokines and Chemokine Receptors, Beaver Run, Co. Meeting Organizer and Invited Speaker
- 03/03 Invited Plenary Session Speaker, Chemokines in Immunity, 6th European Winter Conference in Immunity, St Sorlin workshop, France (declined)
- 05/03 Invited Plenary Session Speaker, Federation of Clinical Immunology Societies (FOCIS) Paris, France (declined)

09/03 Invited Plenary Session Speaker, International Cytokine Society, Dublin, Ireland

10/03 Invited Plenary Session Speaker, Society for Leukocyte Biology, Philadelphia, PA. Co-Chair for Chemokines Symposium.

06/04 Plenary Speaker, Carcinogenesis and Cancer Prevention- Implication of Pigment Cell Biology for Understanding Human Diseases, International Pigment Cell Congress, Newport Beach, CA

07/04 Invited Plenary Session Speaker, Canadian Immunology Society, Montreal, Canada

09/04 Invited Plenary Session Speaker, Gordon Research Conference on Chemotactic Cytokines, France

01/06 Session Chair/Discussion Leader, Keystone Conference on Chemotactic Cytokines, Snowbird, Utah

01/06 Invited Plenary Session Speaker, Keystone Conference on Advances in the Understanding and Treatment of Melanoma, Santa Fe, NM

05/06 Speaker, CNIO Cancer Conference, Inflammation and Cancer, Madrid Spain, "Targeting NF- κ B in Melanoma"

9/06 Speaker, ISOBM Symposium, Pasadena CA "Inhibition of IKK blocks melanoma tumor growth"

01/07 Speaker, Gordon Research Conference on Gradient Sensing, Ventura, California

01/08 Keystone Conference on Chemotactic Cytokines, Keystone CO—Workshop leader

04/08 Keystone Conference on Inflammation and Cancer, Snowbird, UT—plenary speaker and Session Discussion Leader

09/08 Gordon Research Conference on Chemotactic Cytokines—Aussois, France, plenary speaker and session Discussion leader

05/09 Gordon Research Conference on Gradient Sensing—Galveston, TX—plenary speaker

04/10 AACR Forum Speaker: Animal Models for preclinical Evaluation of Drugs for Metastatic Disease: Are GEMs the Jewel in the Crown or an Expensive Luxury? Plenary Speaker

05/10 NIH TEMEN meeting on Gradient and Flow of Soluble Factors in the Tumor Microenvironment Workshop, Bethesda, MD

05/10 Gordon Research Conference on Chemotactic Cytokines and their Receptors, Lucca, Italy, Plenary Speaker

09/11 Symposium Speaker, Academia Sinica, Institute of Biomedical Sciences, "International Symposium on Inflammation and Diseases", Taiwan—invited but unable to attend

11/11 International Melanoma Congress, Tampa Florida

11/11 TMEN AACR meeting, Orlando, FL

4/12 AACR Workshop for Postdocs and Graduate Student Associate Members

1/12 Women in Cancer Research Leadership Workshop, "Managing for results in today's challenging climate" AACR national meeting workshop, Chicago IL.

5/12 Gordon Research Conference on Chemotactic Cytokines, Barga Italy. Plenary Session speaker

- 10/12 Society of Leukocyte Biology Annual Meeting, Chemokine Entrainment of the Leukocytes in the Tumor Microenvironment and Premetastatic Niche, Maui, Hawai
- 10/13 Society of Leukocyte Biology Annual Meeting, Creating a Mentoring Network, Newport Beach, RI
- 07/14 Gordon Research Conference on Chemokines and Chemokine Receptors; Session Chair.
- 10/14 Society for Leukocyte Biology, Session Chair, Salt Lake City, Utah
- 11/15 AACR Conference on Advances in Malignant Melanoma, Philadelphia, PA
- 09/15 Society of Leukocyte Biology, Session Chair, Raleigh Durham, NC
- 04/16 American Association for Cancer Research, Round table discussion leader on grant writing
- 06/16 Gordon Research Conference for Chemotactic Cytokines and Chemokine Receptors, Spain
- 08/16 Society for Leukocyte Biology, Verona, Italy, Session Chair and poster presentation.
- 04/17 American Association for Cancer Research Annual Meeting. Round table discussion leader and Grant Review Panel Speaker
- 05/17 Cancer Immunotherapy: Advances and Challenges, 3rd National Veterans Health Research Conference, Nashville, TN
- 07/17 Chemokines as modulators of response to immune therapy. Dalhousie University, NS.
- 09/17 Northwestern University School of Medicine, Symposium on Immune Therapy and Melanoma
- 10/17 Society of Leukocyte Biology Annual Meeting. Vancouver, Canada. Session Chair.
- 03/18. University of Chicago, Visiting Scientist
- 10/18. Medical University of South Carolina, Visiting Scientist