## BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

| NAME | POSITION TITLE |
|---|---|
| Michael Nathan VanSaun | Research Assistant Professor |
| eRA COMMONS USER NAME (credential, e.g., agency login)<br>vansaumn | |

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

| INSTITUTION AND LOCATION | DEGREE *(if applicable)* | MM/YY | FIELD OF STUDY |
|---|---|---|---|
| University of Denver, Denver, CO | B.S. | 1998 | Biology with minors in Chemistry and Medical Physics |
| University of Kansas Medical Center, Kansas City, KS | Ph.D. | 2003 | Anatomy and Cell Biology |

### A. Personal Statement

The overall goal of my research efforts is to determine the effect of obesity on the development and progression of cancer. Specifically, I am interested in the effects of adipokines toward the growth and metastasis of gastrointestinal cancers. Although my graduate work was focused on developmental neurobiology, I spent my postdoctoral work studying colorectal cancer and the influence of MMP7 on development of intestinal adenomas. During this work, I initiated a collaborative effort with hepatobiliary surgeon Dr. Lee Gorden, to determine the effects of hepatic steatosis on liver metastases. I have since joined the department of Surgery and Liver Transplantation to further this collaborative effort. This relationship has seeded the necessary connection to the clinic and provided the resources to include human samples in my research efforts. This collaboration has really taught me how a PhD-MD co-investigation can significantly impact the direction and importance of the study. My current research efforts expand on the expertise I have gained to include pancreatic cancer. The biological influences that cause pancreatic cancer to rapidly grow and become so aggressive are still poorly understood. My work aims to uncover some of the mechanisms that cause the aggressive growth properties of pancreatic cancer. I have established collaborative efforts with leading researchers who provide additional support and feedback. I have multiple active professional memberships (AGA, APA, and AACR) and regularly attend respective meetings to increase my awareness of the current trends and advancements in the field. In summary, I have established a basis of research in gastrointestinal cancers through multiple productive papers and collaborations, culminating in the establishment of my current independent career path in pancreatic cancer research.

### B. Positions and Honors

**Positions and Employment**

2003 - 2004 Research Fellow, Dept Cell and Anatomy, Kansas University Medical Center, Kansas City, KS
2004 - 2009 Research Fellow, Dept Cancer Biology, Vanderbilt University Medical Center, Nashville, TN
2009 – Pres Research Asst Professor, Dept of Surgery, Vanderbilt University Medical Center, Nashville, TN

**Other Experience and Professional Memberships**

1999-2003 Student Member, Society for Neuroscience.
2004 – Pres Associate Member, American Association for Cancer Research (AACR).
2010 – Pres Member, American Gastroenterological Association (AGA)
2010 – Pres Member, American Pancreatic Association (APA)

**Honors**

1998 - Graduated with Departmental Honors in Biology, University of Denver
2001 - Attended Cold Spring Harbor, Summer Course in Developmental Neurobiology, June 6-19
2002 - Co-Chair of Student Research Forum
2002 - Student Research Forum First Place in Neuroscience II ($100)
2005 - AACR-Busch Scholar-in-Training Award for 96th Annual Meeting in Anaheim, CA ($1000)
2009 – First Place Poster, Department Cancer Biology Retreat
2010 – Second Place Poster, Vanderbilt-Ingram Cancer Center Retreat

**C. Selected Peer-reviewed Publications(in chronological order)**


1. **VanSaun M**. and Werle M.J. (2000) Matrix Metalloproteinase-3 Removes Agrin from Synaptic Basal Lamina. J. Neurobiol May;43(2):140-9. PMID: 10942889.

2. Werle M.J. and **VanSaun M**. (2003) Activity Dependent Removal Of Agrin From Synaptic Basal Lamina By Matrix Metalloproteinase 3. J. Neurocyt. Jun; 32(5-8):905-13. PMID: 15034275.

3. **VanSaun M**., Herrera A.A, Werle M.J. (2003). Structural Alterations at the Neuromuscular Junctions of Matrix Metalloproteinase-3 Null Mutant Mice. J. Neurocytol. Nov;32(9):1129-42. PMID: 15044844.

4. Rodova M., Kelly K.F., **VanSaun M**., Daniel J.M., and Werle M.J. (2004). Regulation of the Rapsyn Promoter by Kaiso and d-Catenin. Molecular and Cellular Biol. Aug; 24 (16): 7188-7196. PMID: 15282317.

5. **VanSaun MN**. and Matrisian L.M. (2006). Matrix metalloproteinases and cellular motility in development and disease. Birth Defects Res C Embryo Today. Mar; 78 (1): 69-79. Review. PMID: 16622849.

6. **VanSaun M**, Humburg BC, Arnett MG, Pence M, Werle MJ. (2007). Activation of Matrix Metalloproteinase-3 is altered at the frog neuromuscular junction following changes in synaptic activity. Dev Neurobiol. Sep 15;67(11):1488-97. PMID: 17525979.

7. Scherer RL, **VanSaun MN**, McIntyre JO, Matrisian LM. (2008). Optical Imaging of Matrix Metalloproteinase-7 Activity In Vivo Using a Proteolytic Nanobeacon. Molecular Imaging. May-June; 7(3): 118-131. PMID: 19123982.

8. Welch DR, Cooper CR, Hurst DR, Lynch CC, Martin MD, Vaidya KS, **VanSaun MN**, Mastro AM. (2008). Metastasis research society-american association for cancer research joint conference on metastasis. Cancer Res. 2008 Dec 1;68(23):9578-82. PMID: 19047132.

9. **VanSaun M.N.,** I.K. Lee, Kay Washington, L.M. Matrisian, and L. Gorden. (2009). High Fat Diet Induced Hepatic Steatosis Establishes a Permissive Microenvironment for Colorectal Metastases and Promotes Primary Dysplasia in a Murine Model. Am J Pathol. Jul; 175(1):355-64. PMID: 19541928.

10. D.L. Gorden, P. T. Ivanova, D.S. Myers, J.O. McIntyre, **M.N. VanSaun**, J.K. Wright, L.M. Matrisian, H.A. Brown (2011). Increased Diacylglycerols Characterize Hepatic Lipid Changes in Progression of Human Nonalcoholic Fatty Liver Disease; Comparison to a Murine Model. PLoS ONE. 6(8): e22775.

11. Christina Garcia , Christian Shaffer , Maria Alfaro , Andrew Smith , Jingchun Sun , Zhongming Zhao , Pampee Young , **Michael VanSaun**, Josiane Eid. (2011). Reprogramming of mesenchymal stem cells by the synovial sarcoma-associated oncogene SYT-SSX2. Oncogene. Accepted/Minor Revisions as of Aug 15, 2011.

**D. Research Support**

**Ongoing Research Support**

U01- Gorden, David Lee (PI) 09/01/09-8/31/2014
**National Cancer Institute**
Molecular Determinants of Tumor Progression In A Steatotic Liver Microenvironment
The goal of this study is to determine the effects of a steatotic microenvironment on metastatic tumor progression.
My Role: Co-Investigator

Awarded 2010– VanSaun, Michael Nathan (PI) 07/01/10-6/30/2012
**Pancreatic Cancer Action Network-AACR Career Development Award**
Influence of Adipokines on Pancreatic Cancer Progression
The goal of this project is to determine the role of adipokines on the growth and metastasis of pancreatic cancer.
My Role: PI

**Completed Research Support**

Postdoctoral Fellowship (#PF-05-167-01-CSM) VanSaun, Michael Nathan (PI) 02/01/06-01/31/2009
**American Cancer Society**
Identification of MMP-7 Substrates Relevant to Intestinal Tumorigenesis
Purpose: This project focused on the use of 2D-DIGE technology in collaboration with the Vanderbilt Proteomics facility to identify potential substrates of MMP-7 in intestinal adenomas by comparing tumors from wildtype MinAPC mice to MMP-7 deficient MinAPC mice.
My Role: PI

Training Grant-Lynn Matrisian (PI) 11/01/05-11/15/05
**NCI-Sponsored Tumor Microenvironment Training Program**: Techniques in the Establishment and Manipulation of Organotypic Model Systems
Purpose: This purpose of this project was to be trained on the establishment of a skin organotypic co-culture model through Dr. Meehard Herlyn's Lab, Wistar Institute.
My Role - Attendant

**KUMC Training Program in Biomedical Research Grant** 2001
Training Grant awarded to Michael VanSaun (Trainee)
Organization : University of Kansas Medical Center
Purpose: Training Grant
My Role: Trainee