BIOGRAPHICAL SKETCH

NAME: van Berkel, Victor

eRA COMMONS USER NAME: vhvanb01

POSITION TITLE: Division Chief, Thoracic Surgery, Department of Thoracic and Cardiovascular Surgery

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Massachusetts Institute of Technology, Cambridge, MA	B.S., B.S.	1992-1996	Chemistry, Biology
Washington University School of Medicine, St.Louis, MO	M.D., Ph.D.	1996-2003	Medical Scientist Training Program
Massachusetts General Hospital, Boston, MA	Resident	2003-2008	General Surgery
Barnes-Jewish Hospital, St. Louis, MO	Fellow	2008-2010	Cardiothoracic Surgery

A. Personal Statement

I have the expertise, training, and motivation to act as a clinical collaborator for the proposed project. As a busy thoracic surgeon, I both have access to the patient population that we will be studying, as well as an understanding of the impact our technology can have within the at risk group. With my training, I am capable of designing the clinical aspects of our study, as well as critically assessing our data for the presence a significant impact.

B. Positions and Honors

Positions and Employment

2010 – Present Thoracic Surgeon
University Cardiothoracic Surgical Associates
Louisville, KY
2010 – 2016 Assistant Professor
2016 – 2022 Associate Professor
2022 – Present Professor with tenure
2011 – 2021 Surgical Director of Lung Transplant
University of Louisville School of Medicine, Louisville, KY
2016 – Present Founder, Board Member of Breath Diagnostics, Inc
2016 – Present Division Chief of Thoracic Surgery
Department of Thoracic and Cardiovascular Surgery
University of Louisville School of Medicine, Louisville, KY

Honors

1995 Outstanding Undergraduate Teaching Award (Chemistry Laboratory), MIT, Boston, MA
2000 David F. Silbert Outstanding Teaching Assistant Award (Gross Anatomy), Washington University School of Medicine, St. Louis, MO
2006 Harvard Medical School Excellence in Teaching Award, Boston, MA
2008 Tufts University School of Medicine Citation for Excellence in Teaching, Boston, MA
2014 Resident Teacher of the Year, University of Louisville, Louisville, KY
2018 Robert Fullerton Award for Outstanding Surgical Mentorship, University of Louisville, Louisville, KY

Other Experience and Professional Memberships

2012 – Present The Society of Thoracic Surgeons (STS)
2014 – Present The International Society for Heart and Lung Transplant (ISHLT)
2017 – Present FDA Panel on Gastroenterology and Urologic Devices
2018 – Present FDA Panel on Anesthesiology and Respiratory Therapy Devices
2019 – Present American Association of Thoracic Surgery

C. Contribution to Science

1. My graduate career was focused on identifying mechanisms of immune evasion by members of the herpesvirus family. This provided me with a broad exposure to molecular biology techniques, as well as small animal work. I identified a novel protein excreted by a murine gammaherpes virus, and determined that this protein was responsible for binding a certain class of chemokines, altering the immune response away from an anti-viral response towards a less effective antibacterial response. I was then able, through establishment of a genetic knockout of this viral protein, to demonstrate the clinical impact of this protein in a small animal model. While there is little overlap between my current clinical practice and these projects, they did serve to provide me with the tools and framework to understand the laboratory techniques of molecular biology.

a. "Identification and initial characterization of the murine Gammaherpesvirus 68 gene M3, encoding an abundantly secreted protein." **van Berkel V**., Preiter K., Virgin H.W., Speck S.H J.Virol., 73 (5) 4524-4529 (May 1999)

b. "Identification of a Gammaherpesvirus selective chemokine binding protein that inhibits chemokine action." **van Berkel V**., Barrett J., Tiffany H.L., Fremont D.H., Murphy P.M., McFadden G., Speck S.H., Virgin H.W., J. Virol., 74(15):6741-6747 (Aug 2000)

c. "Structural Basis of Chemokine Sequestration by a Herpesvirus Decoy Receptor. " Alexander J.M., Nelson C.A., **van Berkel V**., Lau E.K., Studts J.M., Brett T.J., Speck S.H., Handel T.M., Virgin H.W., Fremont D.H. Cell; 111:343-356 (Nov 2002)

d. "Critical role for a high affinity chemokine binding protein in Gammaherpesvirus induced lethal meningitis." **van Berkel V**., Levine B., Kapadia S.B., Goldman J., Speck S.H., and Virgin H.W. J Clin Invest., 109:905-914 (Mar 2002)

2. As a clinician, I have focused on utilizing national databases to examine clinical questions regarding optimal treatments for oncologic patients as well as transplant patients.

a. "Optimal Surgical Timing After Neoadjuvant Therapy for Stage IIIa Non-small Cell Lung Cancer" Rice JD, Heidel J, Trivedi JR, **van Berkel V**, Ann Thorac Surg; 109(3) (Mar 2020)

b. "Objective Donor Scoring System for Lung Transplantation" Whited WM, Trivedi JR, **van Berkel V**, Fox MP, Ann Thorac Surg 107(2) (Feb 2019)

c. "Use of Drug Intoxicated Donors for Lung Transplant: Impact on Survival Outcomes" Whited WM, Ising MS, Trivedi JR, Fox MP, **van Berkel V**, Clin Transplant; 32(5) (May 2018)

d. "Single versus Double Lung Retransplantation does not affect survival based on Previous Transplant Type" Schumer E, Rice JD, Kistler AM, Trivedi JR, Black MC, Bousamra M, **van Berkel V,** Ann Thorac Surg 103(1): 236-240 (Jan 2017)

e. "Double Lung Transplants have significantly improved survival compared to single lung transplants in high LAS patients" Black MC, Trivedi J, Schumer EM, Bousamra M 2nd, **van Berkel V**, Ann Thorac Surg, 98(5): 1737-41 (Nov 2014)

3. Recently, I have been working on a novel means of identifying early stage lung cancer via mass spectroscopic analysis of exhaled volatile compounds. This work has been done in conjunction with chemical engineers at the University of Louisville, and has provided valuable experience in maintaining good communication between collaborators in different departments. In addition, it has provided an opportunity to familiarize myself with the IRB process, statistical planning for clinical trials, and the details of running a successful trial with human subjects.

a. "Normalization of Exhaled Carbonyl Compounds After Lung Cancer Resection" Schumer E, Black M, Bousamra M, Trivedi J, Li M, Fu XA, **van Berkel V**; Ann Thoracic Surg; 102(4): 1095-100 (Oct 2016)

b. "High Sensitivity for lung cancer detection using analysis of exhaled carbonyl compounds" Schumer E, Trivedi J, **van Berkel V**, Black M, Li M, Fu XA, Bousamra M 2nd; J Thorac Cardiovasc Surg; 150(6): 1517-1524 (Dec 2015)

c. "Quantitative analysis of exhaled carbonyl compounds distinguishes benign from malignant pulmonary disease" Bousamra M 2nd, Schumer E, Li M, Knipp RJ, Nantz MH, **van Berkel V**, Fu XA; J Thorac Cardiovasc Surg; 148(3): 1074-1080 (Sep 2014)

4. Finally, I have been part of a group evaluating the mechanisms of chemotherapy resistance in late stage lung cancer. This has involved machine learning to examine patterns of metabolomic data from patients with malignancies.

a. “Lung Cancer Metabolomic Data from Tumor Core Biopsies Enables Risk-Score Calculation for Progression-Free and Overall Survival” Miller HA, Rai SN, Yin X, Zhang X, Chesney JA, **van Berkel V**, Frieboes HB, Metabolomics; 18(5) (May 2022)

b. “Evaluation of disease staging and chemotherapeutic response in non-small cell lung cancer from patient tumor-derived metabolomic data” Miller HA, Yin X, Smith SA, Hu X, Zhang X, Yan J, Miller DM, **van Berkel V**, Frieboes HB, Lung cancer;156 (Apr 2021)

c. “Pharmacokinetic/pharmacodynamic modeling of combination chemotherapy for lung cancer” Curtis LT, **van Berkel V**, Frieboes HB; J Theor Biol; 448 (Jul 2018)

d. “Prediction of lung cancer patient survival via supervised machine learning classification techniques” Lynch CM, Abdollahi B, Fuqua JD, de Carlo AR, Bartholomai JA, Balgemann RN, **van Berkel V,** Frieboes HB; Int J Med Inform; 108 (Dec 2017)

e. “Application of unsupervised analysis techniques to lung cancer patient data” Lynch CM, **van Berkel V**, Frieboes HB; PLoS One; 12(9) (Sep 2017)

Complete list of published work in MyBibliography:

https://www.ncbi.nlm.nih.gov/sites/myncbi/victor.van%20berkel.1/bibliography/53976862/public/?sort=date&direction=ascending