BIOGRAPHICAL

Frank P Vendetti, PhD
fpv3@pitt.edu
(412) 720-7399

University of Pittsburgh
Department of Radiation Oncology
Assembly 5070A, 5051 Centre Avenue
Pittsburgh, PA 15213

EDUCATION and TRAINING

UNDERGRADUATE

Aug 2000 – Dec 2004	University of Pittsburgh, Pittsburgh, PA	Bachelor of Science (BS), Dec 2004	Biological Sciences

GRADUATE

Aug 2005 – Oct 2013	Johns Hopkins University School of Medicine, Baltimore, MD	Doctor of Philosophy (PhD), May 2014. Advisor: Charles Rudin, MD, PhD	Pharmacology and Molecular Sciences
Aug 2021 – Apr 2023	University of Pittsburgh, Katz Graduate School of Business, Pittsburgh, PA	Micro-credential certificate, Apr 2023	Innovation and Entrepreneurship
Aug 2021 – Apr 2023	University of Pittsburgh, Katz Graduate School of Business, Pittsburgh, PA	Micro-credential certificate, Apr 2023	Leading People in Organizations

POSTGRADUATE TRAINING

Sept 2013 – Oct 2013	University of Pittsburgh, Pittsburgh, PA	Health Sciences Research Fellow; Advisor: Chris Bakkenist, PhD	Radiation Oncology

Oct 2013 – Sept 2018	University of Pittsburgh, Pittsburgh, PA	Postdoctoral Associate, Advisor: Chris Bakkenist, PhD	Radiation Oncology
Oct 2018 – Sept 2020	University of Pittsburgh, Pittsburgh, PA	Senior Postdoctoral Associate, Advisor: Chris Bakkenist, PhD	Radiation Oncology

APPOINTMENTS and POSITIONS

Oct 2020 – Present	University of Pittsburgh, Pittsburgh, PA	Research Assistant Professor, Radiation Oncology

MEMBERSHIP in PROFESSIONAL and SCIENTIFIC SOCIETIES

National Society of Collegiate Scholars	Oct 2001

HONORS

University of Pittsburgh Academic Scholarship	Aug 2000 – Apr 2004
Outstanding Freshman in Biological Sciences Award, University of Pittsburgh	Sept 2001
Wilma Binder Zeder Memorial Scholarship, University of Pittsburgh	Aug 2003
Howard Hughes Medical Institute (HHMI) Research Fellowship	Aug 2003 – Apr 2004

PUBLICATIONS

ORIGINAL PEER REVIEWED ARTICLES

1. Dietz ML, Bernaciak TM, **Vendetti F**, Kielec JM, Hildebrand JD. Differential Actin-dependent Localization Modulates the Evolutionarily Conserved Activity of Shroom Family Proteins. J Biol Chem. 2006 Jul 21;281(29):20542-54. PubMed PMID: 16684770.

2. Juergens RA, Wrangle J, **Vendetti FP**, Murphy SC, Zhao M, Coleman B, Sebree R, Rodgers K, Hooker CM, Franco N, Lee B, Tsai S, Delgado IE, Rudek MA, Belinsky SA, Herman JG, Baylin SB, Brock MV, Rudin CM. Combination epigenetic therapy has efficacy in patients with refractory advanced non-small cell lung cancer. Cancer Discov. 2011 Dec;1(7):598-607. PMID: 22586682; PMCID: PMC3353724.

3. Wrangle J, Wang W, Koch A, Easwaran H, Mohammad HP, **Vendetti F**, Vancriekinge W, Demeyer T, Du Z, Parsana P, Rodgers K, Yen RW, Zahnow CA, Taube JM, Brahmer JR, Tykodi SS, Easton K, Carvajal RD, Jones PA, Laird PW, Weisenberger DJ, Tsai S, Juergens RA, Topalian SL, Rudin CM, Brock MV, Pardoll D, Baylin SB. Alterations of immune response of Non-Small Cell Lung Cancer with Azacytidine. Oncotarget. 2013 Nov;4(11):2067-79. PMID: 24162015; PMCID: PMC3875770.

4. **Vendetti FP**, Topper M, Huang P, Dobromilskaya I, Easwaran H, Wrangle J, Baylin SB, Poirier JT, Rudin CM. Evaluation of azacitidine and entinostat as sensitization agents to cytotoxic chemotherapy in preclinical models of non-small cell lung cancer. Oncotarget. 2015 Jan 1;6(1):56-70. PMID: 25474141; PMCID: PMC4381578.

5. **Vendetti FP**, Lau A, Schamus S, Conrads TP, O'Connor MJ, Bakkenist CJ. The orally active and bioavailable ATR kinase inhibitor AZD6738 potentiates the anti-tumor effects of cisplatin to resolve ATM-deficient non-small cell lung cancer *in vivo*. Oncotarget. 2015 Dec 29;6(42):44289-305. PMID: 26517239; PMCID: PMC4792557.

6. **Vendetti FP**, Leibowitz BJ, Barnes J, Schamus S, Kiesel BF, Abberbock S, Conrads T, Clump DA, Cadogan E, O'Connor MJ, Yu J, Beumer JH, Bakkenist CJ. Pharmacologic ATM but not ATR kinase inhibition abrogates p21-dependent G1 arrest and promotes gastrointestinal syndrome after total body irradiation. Sci Rep. 2017 Feb 1;7:41892. PMID: 28145510; PMCID: PMC5286430.

7. Kiesel BF, Shogan JC, Rachid M, Parise RA, **Vendetti FP**, Bakkenist CJ, Beumer JH. LC-MS/MS assay for the simultaneous quantitation of the ATM inhibitor AZ31 and the ATR inhibitor AZD6738 in mouse plasma. J Pharm Biomed Anal. 2017 May 10;138:158-165. PMID: 28213176; PMCID: PMC5357441.

8. **Vendetti FP**, Karukonda P, Clump DA, Teo T, Lalonde R, Nugent K, Ballew M, Kiesel BF, Beumer JH, Sarkar SN, Conrads TP, O'Connor MJ, Ferris RL, Tran PT, Delgoffe GM, Bakkenist CJ. ATR kinase inhibitor AZD6738 potentiates $CD8^+$ T cell–dependent antitumor activity following radiation. J Clin Invest. 2018 Aug 31;128(9):3926-3940. PMID: 29952768; PMCID: PMC6118586.

9. Shao L, Hou W, Scharping NE, **Vendetti FP**, Srivastava R, Roy CN, Menk AV, Wang Y, Chauvin JM, Karukonda P, Thorne SH, Hornung V, Zarour HM, Bakkenist CJ, Delgoffe GM, Sarkar SN. IRF1 Inhibits Antitumor Immunity through the Upregulation of PD-L1 in the Tumor Cell. Cancer Immunol Res. 2019 Aug;7(8):1258-1266. PMID: 31239318; PMCID: PMC6677597.

10. Stabile LP, Kumar V, Gaither-Davis A, Huang EH, **Vendetti FP**, Devadassan P, Dacic S, Bao R, Steinman RA, Burns TF, Bakkenist CJ. Syngeneic tobacco carcinogen-induced mouse lung adenocarcinoma model exhibits PD-L1 expression and high tumor mutational burden. JCI Insight. 2021 Feb 8;6(3):e145307. PMID: 33351788; PMCID: PMC7934870.

11. Sugitani N, **Vendetti FP**, Cipriano AJ, Pandya P, Deppas JJ, Moiseeva TN, Schamus-Haynes S, Wang Y, Palmer D, Osmanbeyoglu HU, Bostwick A, Snyder NW, Gong Y, Aird KM, Delgoffe GM, Beumer JH, Bakkenist CJ. Thymidine rescues ATR kinase inhibition induced deoxyuridine contamination in genomic DNA, cell death, and Type 1 interferon-α/β expression. Cell Reports. 2022 Sep 20;40(12):111371.

12. **Vendetti FP**, Pandya P, Clump DA, Schamus-Haynes S, Tavakoli M, DiMayorca M, Islam N, Chang J, Delgoffe GM, Beumer JH, Bakkenist CJ. The schedule of ATR inhibitor AZD6738 can potentiate or abolish antitumor immune responses to radiotherapy. JCI Insight. 2023;8(4):e165615

OTHER PEER REVIEWED PUBLICATIONS

1. **Vendetti FP**, Rudin CM. Epigenetic therapy in non-small-cell lung cancer: targeting DNA methyltransferases and histone deacetylases. Expert Opin Biol Ther. 2013 Sep;13(9):1273-85. PubMed PMID: 23859704.

PUBLISHED ABSTRACTS (in Scientific Journals)

1. Juergens RA, **Vendetti F**, Coleman B, Sebree RS, Rudek MA, Belinksy SA, Brock MV, Herman JG, Baylin SB, Rudin CM. Phase I trial of 5-azacitidine (5AC) and SNDX-275 in advanced lung cancer (NSCLC). Presented at the American Society of Clinical Oncology (ASCO) Annual Meeting, Chicago, IL, May 30-Jun 3, 2008, Journal of Clinical Oncology 2008; 26(15 Suppl):19036-19036.

2. Juergens RA, **Vendetti F**, Coleman B, Sebree RS, Rudek MA, Belinksy SA, Brock MV, Herman JG, Baylin SB, Rudin CM. Interim analysis of a phase II trial of 5-azacitidine (5AC) and entinostat (SNDX-275) in relapsed advanced lung cancer (NSCLC). Presented at the American Society of Clinical Oncology (ASCO) Annual Meeting, Orlando, FL, May 29-Jun 2, 2009, Journal of Clinical Oncology 2009; 27(15 Suppl):8055-8055.

3. Du Z, Wrangle J, Pelosky K, Harris J, Shin J, **Vendetti F**, Lee B, Zahnow CA, Ahuja N, Herman JG, Stephen Baylin SB, Brock MV. DNMT1 as a marker of differential sensitivities to epigenetic therapy of a Kras mutant and Kras wild type human non-small cell lung cancer cell line. Poster Presentation at the American Association for Cancer Research (AACR) Annual Meeting, Orlando, FL, Apr 2-6, 2011, Cancer Res 2011;71(8 Suppl):Abstract nr 2618.

4. Juergens RA, **Vendetti F**, Wrangle J, Coleman B, Sebree R, Rudek-Renaut MA, Belinsky SA, Brock MV, Herman JG, Baylin SB, Rudin CM. A phase II study of combination epigenetic therapy in advanced non-small cell lung cancer. Poster Presentation at the American

Association for Cancer Research (AACR) Annual Meeting, Orlando, FL Apr 2-6, 2011, Cancer Res 2011;71(8 Suppl):Abstract nr LB-411.

5. Wrangle J, Wang W, Koch A, Easwaran H, Mohammad HP, Parsana P, **Vendetti F**, Rodgers K, Pan X, Harbom K, Zahnow CA, Taube JM, Brahmer JR, Jones PA, Topalian SL, Rudin CM, Brock MV, Pardoll D, Baylin SB. Epigenetic therapy and sensitization of lung cancer to immunotherapy. Oral Presentation at the American Association for Cancer Research (AACR) Annual Meeting, Washington, DC Apr 6-10, 2013, Cancer Res 2013;73(8 Suppl):Abstract nr 4619.

6. Karukonda P, **Vendetti FP**, Tran PT, Clump DA, Ferris RL, Bakkenist CJ. ATR Kinase Inhibition Leads to Durable Radiosensitization of the Murine $Kras^{G12D}$/Twist1 Lung Adenocarcinoma Model via a $CD8^+$ T Cell-Dependent Mechanism. Oral Presentation at the American Society for Radiation Oncology (ASTRO) Annual Meeting, San Diego, CA, Sep 24-27, 2017, International Journal of Radiation Oncology* Biology* Physics, 2017 Oct;99(2 Suppl):S30-S31.

7. Pandya P, **Vendetti FP**, Ghoubaira JA, Pathek S, Deppas JJ, Jones RE, Zhang Y, Ivanov D, Buj R, Aird KM, Beumer JH, Sobol RW, Bakkenist CJ. Uracil DNA glycosylase activity limits deoxyuridine contamination in genomic DNA and is essential for the type-1 interferon response in cells treated with ATR kinase inhibitors. Oral Presentation at the AACR Special Conference: DNA Damage Repair: From Basic Science to Future Clinical Application, Washington, DC Jan 9-11, 2023. Cancer Res (2024) 84 (1 Suppl): IA022.

ABSTRACTS (not published in Scientific Journals)

1. **Vendetti FP**, Karukonda P, Clump DA, O'Connor MJ, Ferris RL, Tran PT, Bakkenist CJ. Immunomodulatory effects of ATR kinase inhibition by AZD6738 govern the $CD8^+$ T cell-dependent radiosensitization of murine *$Kras^{G12D}$/Twist1* lung adenocarcinoma. Poster Presentation at Cancer, Inflammation, and Immunity, San Diego, CA, June 11-13, 2017.

PROFESSIONAL ACTIVITIES

OVERSIGHT OF INSTITUIONAL EQUIPMENT

Jun 2022 – Present
Responsible for the maintenance and oversight of operation of the University of Pittsburgh's Precision SmART+ image-guided, small animal irradiator. Perform routine machine warmup and calibration, coordinate preventative maintenance and machine service with Precision, train users on machine operation, treatment planning, imaging, and treatment delivery. Standardized total body irradiation for bone marrow ablation in C57BL6 mice and standardized targeted radiation treatment schedules for several syngeneic tumor models.

MENTORING/PERSONNEL MANAGEMENT

Jan 2013 – April 2013, Michael Topper
As a graduate student in the lab of Charles Rudin, MD, PhD, at Johns Hopkins University, I mentored Michael Topper during his graduate student rotation. This resulted in second authorship for the mentee on my first author publication.

Mar 2016 – Jun 2016, Lisa Beppu
As a postdoctoral associate in the lab of Chris Bakkenist, PhD, at the University of Pittsburgh, I mentored Lisa Beppu during her graduate student rotation. Her work contributed to ongoing research.

Jun 2018 – Jul 2018, Jackson English
As a postdoctoral associate in the lab of Chris Bakkenist, PhD, at the University of Pittsburgh, I mentored Jackson English, a UPMC Hillman Cancer Center Academy high school student. The mentee presented his research in both oral and poster formats to his peers at the Hillman Cancer Center.

Dec 2018 – Mar 2019, Michelle Lynskey
As a senior postdoctoral associate in the lab of Chris Bakkenist, PhD, at the University of Pittsburgh, I mentored Michelle Lynskey during her graduate student rotation. Her work contributed to ongoing research.

Aug 2022 – May 2024, Anthony Columbus
As a Research Assistant Professor in the lab of Chris Bakkenist, PhD, at the University of Pittsburgh, I managed Anthony Columbus, a technician in the lab hired Aug 2022. I trained Anthony in tissue culture techniques, cell growth assays, experimental design, mouse handling, and mouse colony maintenance. I oversaw his day-to-day work in the lab and his overall lab project contributions.

TEACHING

Mar 2024 – Apr 2024
Delivered two course lectures (Cancer Biology, Tumor Model Systems) to the Radiation Oncology residents as part of the Radiobiology course.

RESEARCH

RESEARCH EXPERIENCE

Sep 2013 – Present
University of Pittsburgh, Pittsburgh, PA
Advisor: Christopher J. Bakkenist, PhD
Title: Exploring the utility of ATM and ATR kinase inhibitors with radiation in immunocompetent mouse cancer models

- Designed and conducted efficacy, pharmacokinetic, and pharmacodynamic studies in mouse models, including genetically engineered, syngeneic, and cell line xenograft cancer models
- Performed subcutaneous, intraperitoneal, and oral (gavage) drug administration and targeted and total body irradiation in mice
- Designed and conducted multicolor flow cytometry experiments (as large as 13-color panels) for immune profiling of tumor-infiltrating and peripheral lymphocytes. This includes panel design/optimization, data acquisition using BD Diva software and a BD Fortessa cytometer, and data analyses using FlowJo software
- Designed and conducted flow cytometry-based assays (≤4 colors) to assess cell cycle, viability, and surface protein expression, using a BD Accuri C6 cytometer with CFlow software or 4-laser Beckman Cytoflex cytometer.
- Performed a variety of *in vitro* cell assays, including cell viability, senescence, and colony formation assays using human and murine cancer cell lines
- Performed DNA isolation, RNA isolation, and cDNA synthesis for various PCR techniques, including genotyping PCR and quantitative real-time PCR
- Performed protein isolation and western blot analysis
- Performed immunohistochemistry on mouse GI tissue and scored slides
- Generated stable shRNA knockdown cell lines
- Maintained transgenic mouse breeding colonies

Jun 2006 – Sep 2013
Johns Hopkins University, Baltimore, MD
Advisor: Charles M. Rudin, MD, PhD
Title: Assessing epigenetic therapy in preclinical models of non-small cell lung cancer

- Designed and conducted efficacy, pharmacokinetic, and pharmacodynamic studies using mouse tumor models, including genetically engineered, patient-derived xenograft, and cell line xenograft models
- Performed subcutaneous and intraperitoneal drug administration in mice
- Performed a variety of *in vitro* cell assays, including cell viability, senescence, colony formation, and clonogenicity assays, in human cancer cell lines
- Performed flow cytometry-based assays for analysis of cell cycle and viability using a BD FACSCalibur cytometer and Cell Quest software
- Performed DNA isolation, RNA isolation, and cDNA synthesis for various PCR techniques, including methylation-specific PCR, semi-quantitative PCR, and quantitative real-time PCR
- Performed protein isolation and western blot analysis
- Generated stable shRNA knockdown cell lines

May 2003 – Dec 2004
University of Pittsburgh, (Pittsburgh, PA)

Advisor: Jeffrey D. Hildebrand, PhD
Title: Analysis of Shroom function in epithelial cell architecture and analysis of Apxl-actin interactions

- Performed protein isolation, protein purification, and western blot analyses
- Performed immunofluorescence and confocal microscopy
- Generated Tet-inducible expression cell lines using MDCK cells

CURRENT RESEARCH INTERESTS

I am interested in use of clinically relevant, small-molecule DNA damage response inhibitors (DDRi's) and targeted radiation therapy to modulate anti-tumor immune responses. I utilize immunocompetent mouse tumor models as well as other preclinical model systems to assess the therapeutic potential of DDRi's, and to better understand mechanistically how these inhibitors potentiate radiation efficacy and trigger anti-tumor immune responses in mice. I am particularly interested in maintaining translational relevance in my research.

INVITED PRESENTATIONS

Apr 2004. Analysis of Shrm Function in Epithelial Cell Architecture. University of Pittsburgh Research Symposium, Pittsburgh, PA.

Jun 2017. ATR and ATM kinase inhibition for cancer therapy. UPMC Hillman Cancer Center Scientific Retreat, Satellite Conference. Pittsburgh, PA.

Jun 2017. ATR kinase inhibition suppresses immune checkpoint activation following radiation. UPMC Hillman Cancer Center Scientific Retreat. Pittsburgh, PA.