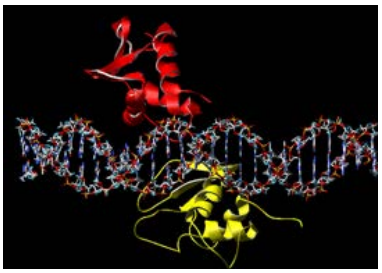
# Penn Veterinary Medicine — VMD-PhD Combined Degree Studies

Fall 2021

*In This Issue*





Dear VMD-PhD Alumni and Students,

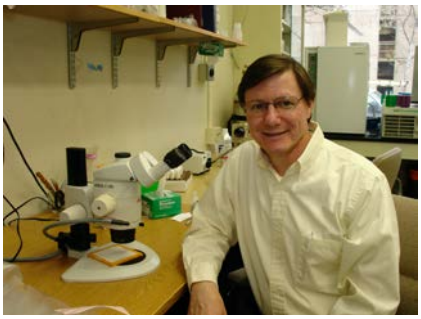
Greetings from the Penn VMD-PhD program! It has been a busy year since I last communicated via this newsletter in Fall 2020. You all were awesome in answering the survey for the competitive renewal of our NIH MSTP grant. Your response rate was amazing! 91%!!! You all Rock! We learned much from that survey and are so grateful for your efforts. Many, many thanks!

The past year at PennVet was action-packed working through Covid-19 safety measures, developing a completely new curriculum to be roll out in Fall 2022, and managing research, teaching, and program activities. For me it was also a busy year of grant writing and I was fortunate to pick up a couple of new R01s. This year will also be full of grant writing, but this time it will be T-grants (MSTP T32, VMD-PhD T32, and T35 for vet student research). Three T-grants in one year will be intense!

In terms of the past year, the annual Combined Degree Retreat was a virtual event in August, as was the National Veterinary Combined Degree Symposium. For the second year the annual student research BBQ was cancelled, and for the second time in 27 years the annual Christmas Dinner Party at my home was not held. However, the Penn Vet Student Research Day will fortunately return on March 18, 2022. We are now entering a new admissions cycle and admissions interviews will be held in January 2022, once again by a virtual mechanism. Being a perpetual optimist, I see reasons for hope. Penn is 97-98% vaccinated, and Covid-19 cases at PennVet have been very low. Vaccines and better medicines are available so hope is on the horizon despite new variants and continuing risk. I pray that we will turn the corner on a difficult two years.

In this newsletter you will learn about incoming students, PhD defenses, graduations, recent student publications, recent student awards, and many updates from alumni.

We wish you all the best as 2021 comes to a close, and we look forward to a healthy and prosperous 2022!



Sincerely,

Michael Atchison, Ph.D.
Director, VMD-PhD Program

http://www.vet.upenn.edu/education/academics-and-training/vmd-phd-program

Alumni are Online!
Check out:
http://www.vet.upenn.edu/education/academics-and-training/vmd-phd-program/vmd-phd-alumni-profiles
Find your profile, and send us feedback!

# Incoming VMD-PHD Students

**Raegan Petch (Year 1)**
**Colorado State University**
**CAMB Microbiology, Virology, and Parasitology**

Raegan graduated from Colorado State University in May 2021 with a BS in Microbiology. She completed multiple research projects with Dr. Susan VandeWoude and Dr. Erick Gagne. These projects included the study viral isolates from Pumas in California, the spillover of Feline Leukemia Virus from domestic cats into wild pumas in North America, and the prevelance of Hapadnaviruses in North America domestic cats.

**Josetta Adams (Year 2)**
**City University of New York and Tufts University**
**Immunology Graduate Group**

Josetta graduated from CUNY in May 2016 earning a BS degree in Biology. She subsequently earned a Masters Degree in Infectious Disease and Global Health from Tufts University. Josetta gained extensive research experience at MIT working with Dr. Darrell Irvine as a research technician. Projects included production of replicon nanoparticles and *in vivo* imaging, analysis of soluble chimeric antigen receptor (CAR) variants by FLPC, production and evaluation of CARs, preparation of vaccines, and studying humoral immunity against HIV.

# Recent PhD Defenses

We've had 3 PhD defenses since the last newsletter in Fall 2020.

**Student: Gregory Sousa**
**Date:** November 23, 2020
**Title:** Dissecting the melanization immune response in the malaria vector *Anopheles gambiae.*
**Mentor:** Michael Povelones
**Graduate Group:** Cell and Molecular Biology - MVP

**Student: Ian Penkala**
**Date:** February 16, 2021
**Title:** Interrogating alveolar epithelial type 1 cell plasticity across their lifespan
**Mentor:** Edward Morrisey
**Graduate Group**: Cell and Molecular Biology - CBP

**Student: Sherrie Xie**
**Date:** April 22, 2021
**Title:** Enhancing electronic health record data for population health studies.
**Mentor:** Blanca Himes
**Graduate Group**: Epidemiology/Biostats

# Graduations

**Four students graduated in Spring 2021!**

**Student: Bailey Bauman VMD (2021) PhD (2019)**
**Date:** July 17, 2019
**Title:** Pathways to pathologic retinal iron accumulation: blood, guts, and the immune system.
**Mentor:** Joshua Duniaef
**Graduate Group:** Neurosciences

**Student: Robyn Allen VMD (2020) PhD (2019)**
**Date:** November 21, 2019
**Title:** FOP-ACVR1 Signals by Multiple Modalities in the Developing Zebrafish.
**Mentor:** Eileen Shore and Mary Mullins
**Graduate Group:** Cell and Molecular Biology - DSRB

**Student: Rebecca Rosenthal VMD (2021) PhD (2020)**
**Date:** June 3, 2020
**Title:** T-bet Expressing B Cells with Distinct Residency and Functional Characteristics Give Rise to Plasma Cells.
**Mentor:** Michael Cancro
**Graduate Group:** Immunology

**Student: Sondra Calhoun (Lavigne) VMD (2021) PhD (2020)**
**Date:** July 19, 2020
**Title:** Antimicrobial use and resistance: intersections of companion animal and public health.
**Mentor:** Theoklis Zaoutis
**Graduate Group:** Epidemiology and Biostatistics

http://www.vet.upenn.edu/education/academics-and-training/vmd-phd-program

# Student Honors, Awards, Publications

## Research Day Oral Presentation Awards

### Student: Jaclyn Carlson

**Title:** Collagen V Haploinsufficiency Results in Delayed Healing and Altered Wound Matrix Post-Injury in Murine Tendons
**Mentor:** Dr. Louis Soslowsky
**Graduate Group:** Bioengineering

### Student: Megan Clark

**Title:** Remodeling the Electron Transport Chain in Macrophages by a Peptide-miRNA Axis.
**Mentor:** Dr. Jorge Henao-Mejia
**Graduate Group:** Immunology

### Student: Martha Stone

**Title:** Chemogenetic Activation of Orexin Neurons Accelerates Emergence from Isoflurane Anesthesia
**Mentor:** Dr. Max Kelz
**Graduate Group:** Neuroscience

### Student: Brinkley Raynor

**Title:** The impact of the COVID-19 pandemic on rabies reemergence in Latin America.
**Mentor:** Dr. Ricardo Castillo-Neyra
**Graduate Group:** Epidemiology/Biostatistics

### Student: Ariel Shepley-McTaggart

**Title:** Identification of a SARS-CoV-2 E/Host ZO-1 Interaction: Implications for Tight Junction Damage in Human Lung Epithelial Cells
**Mentor:** Dr. Ronald Harty
**Graduate Group:** Cell and Molecular Biology -MVP

## Current NIH F-grant awardees

### Student: Monica Jimenez

**Graduate Group:** Cell and Molecular Biology – GE
**Mentor:** Dr. Jorge Henao-Mejia
F31 DK122677
The microbiota regulates the progression of obesity through a highly conserved family of micro RNAs.

### Student: Suna Li

**Graduate Group:** Neuroscience
**Mentor**: Wenqin Luo
F31 DE029361
The role of the lateral habenula in central pain and itch processing.

### Student: Nate Sotuyo

**Graduate Group:** Neuroscience
**Mentor**: Stewart Anderson and Ethan Goldberg
F31 NS108622
Treatment of epilepsy and associated comorbidities using stem cell-derived interneurons to correct circuit dysfunction in an animal model of Dravet Syndrome.

### Student: Elise Peauroi

**Graduate Group:** Cell and Molecular Biology - MVP
**Mentor**: Laurence Eisenlohr
F30 AI149864
The novel innate immune-antagonistic effects of ectromelia virus C15 protein.

### Student: Ashley Vanderbeck

**Graduate Group:** Immunology
**Mentor:** Ivan Maillard
F30 AI161873
Role of Notch signaling during the early priming and activation of alloreactive T cells.

# Publications 2020-2021

## 2020

**Allen, R.S.**, Tajer, B., Shore, E.M., and Mullins, M.C., 2020, Firbrodysplasia ossificans progressive mutant ACVR1 signals by multiple modalities in the developing zebrafish. eLife 9:e53761. PMCID: PMC7478894

**Sousa, G.L.**, Bishnoi, R., Baxter, R.H.G., and Povelones, M., 2020, The CLIP-domain serine protease CLIPC9 regulates melanization downstream of SPCLIP1, CLIPA8, and CLIPA28 in the malaria vector*Anopheles gambiae*. PLoS Pathogens 16(10):e1008985. PMCID: PMC7580898

Wanting, S., **Baumann, B.H.,** Song, Y., Liu, Y., Wu, X., and Dunaief, J.L., 2020, Ferrous but not ferric iron sulfate kills photreceptors and induces photreceptor-dependent RPE autofluorescence. Redox. Biol. 34:101469. PMCID: PMC7327978

Ryan, S.K., Gonzalez, M.V., Garifallou, J.P., Bennett, F.C., Williams, K.S., **Sotuyo, N.P.**, Mironets, E., Cook, K., Hakonarson, H., Anderson, S.A., and Jordan-Sciutto, K,L., 2020, Neuroinflammation and IEF2 signaling persist despite antiretroviral treatment in an hiPSC tr4i-cultiure model of HIV infection. Stem Cell Reports 14(5): 703-716 PMCID: PMC7221088.

Fitzgerald, M., **Sotuyo, N.,** Tischfield, D.J., and Anderson, S.A., 2020, Generation of cerebral cortical GABAergic interneurons from pluripotent stem cells. Stem Cells 38(11):1375-1386.

Forsyth, K.S., Roy, N.H., **Peauroi, E.**, DeHaven, B.C., Wold, E.D., Hersperger, A.R., Burkhardt, J.K., and Eisenlohr, L.C, 2020, Ectromelia-encoded virulence factor C15 specifically inhibits antigen presentation to CD4+ T cells post peptide loading. PLoS Pathog. 16(8): e1008685. PMCID: PMC7425992

**Shepley-McTaggart, A.,** Fan, H., Sudo,l M., and Harty, R.N., 2020, Viruses go modular. J. Biol. Chem. 295(14): 4604–4616. PMCID: PMC7135987

Laczko, D., Hogan, M.J., Toulmin, S.A., **Hicks, P.**, Lederer, K., Gaudette, B.T., Castano, D., Amanat, F., Muramatsu, H., Oguin, T.M., Ojha, A., Zhang, L., Mu, Z., Parks, R., Manzoni, T.B., Roper, B., Strohmeier, S., Tombacz, I., Arwood, L., Nachbagauer, R., Kariko, K., Greenhouse, J., Pessaint, L., Porto, M., Putman-Taylor, T., Strasbaugh, A., Campbell, T.A., Lin, P.J.C., Tam, Y.K., Sempowski, G.D., Farzan, M., Choe, H., Saunders, K.O., Haynes, B.F., Anderson, H., Eisenlohr, L.C., Weissman, D., Krammer, F., Bates, P., Allman, D., Locci, M., Pardi, N., 2020, A Single Immunization with Nucleoside-Modified mRNA Vaccines Elicits Strong Cellular and Humoral Immune Responses Against SARS-CoV-2 in Mice. Immunity 53: 1-9. PMCID: PMC7392193

**Raynor, B.**, De la Puente-León, M., Johnsonm A., Díaz, E.W., Levy, M.Z., Recuenco, S.E., and Castillo-Neyra, R., 2020, Movement patterns of free-roaming dogs on heterogeneous urban landscapes: Implications for rabies control, Prev. Vet. Med. 178:104978. doi: 10.1016/j.prevetmed.2020.104978. PMCID: PMC7234908

Yadavalli, S.S., Goh, T., **Carey, J.N.**, Malengo, G., Vellappan, S., Nickels, B.E., Sourjik, V., Goulian, M., and Yuan, J., 2020, Functional determinants of a small protein controlling a broadly conserved bacterial sensor kinase. J. Bacteriol. 202(16): e00305-20. PMCID: PMC8404706

**Samuels, A.N.**, Roggiani, M., Smith, K.A., Zhu, J., Goulian, M., Kohli, R.M., 2020, Deciphering the role of colicins during colonizatiuon of the mammalian gut by commensal *E. coli*. Microorganisms 8(5):664. PMCID: PMC7284606

**Xie, S.**, Hubbard, R.A., and Himes, B.E., 2020, Neighborhood-level measures of socioeconomic status are more correlated with individual-level measures in urban areas compared with less urban areas. Ann. Epidemiol. 43:37-43.e4 PMCID: PMC7160852

**Xie, S.**, Hubbard, R.A., and Himes, B.E., 2020, Analysis of spatial trends in smoking status among patients with obstructive airway diseases highlight poteintial for targeted smoking cessation interventions. AMIA Annu. Synmp. Proc. 2019:1256-1265. PMCID: PMC7153095

**Willis, E.**, Pardi, N., Parkhouse, K., Muim B.L., Tam, Y.K., Weissman, D., and Hensley SE., 2020, Nucleoside-modified mRNA vaccination partially overcomes maternal antibody inhibition of de novo immune responses in mice. Sci. Transl. Med. 12(525):eaav5701. PMCID: PMC7339908

Johnson, J.L.*, **Rosenthal, R.L.***, Knox, J.J.*, Myles, A.*, Naradikian, M.S., Madej, J., Kostiv. M., Rosenfeld, A.M., Meng, W., Christensen, S.R., Hensley, S.E., Yewdell, J., Canaday, D.H., Zhu, J., McDermott, A.B., Dori, Y., Itkin, M., Wherry, E.J., Pardi, N., Weissman, D., Naji, A., Prak, E.T.L., Betts, M.R., Cancro, M.P., 2020, The transcription factor T-bet resolves memory B cell Ssubsets with distinct tissue distributions and antibody specificities in mice and humans, Immunity, 52(5):842-855. *Co-first authors PMCID: PMC7242168

Heo, S.J., Song, K.H., Thakur, S., Miller, L.M., Cao, X., Peredo, A.P., Seiber, B.N., **Qu, F.**, Driscoll, T.P., Shenoy, V.B., Lakadamyali, M., Burdick, J.A., Mauck, R.L., 2020, Nuclear softening expedites interstitial cell migration in fibrous networks and dense connective tissues. Sci. Adv. 6(25):eaax5083. PMCID: PMC7304973

**Xie S**, Himes BE (2020). Personal Environmental Monitoring. In: Precision in Pulmonary, Critical Care and Sleep Medicine. Springer p. 305-20.

## 2021

Anderson, E.M., Diorio, C., Goodwin, E.C., McNerney, K.O., Weirick, M.E., Gouma, S., Bolton, M.J. Arevalo, C.P., Chase, J., **Hicks, P.**, Manzoni, T.B., Baxter, A.E., Andrea, K.P., Burudpakdee, C., Lee, J.H., Vella, L.A., Henrickson, S.E., Harris, R.M., Wherry, E.J., Bates, P., Bassiri, H., Behrens, E.M., Teachey, D.T., Hensley, S.E., 2021. SARS-CoV-2 Antibody Responses in Children with MIS-C and Mild and Severe COVID-19. J. Pediatric Infect. Dis. Soc. Piaa161. PMCID: PMC7799010

Anderson, E.M., Goodwin, E.C., Verma, A., Arevalo, C.P., Bolton, M.J., Weirick, M.E., Gouma, S., McAllister, C.M., Christensen, S.R., Weaver, J., **Hicks, P.**, Manzoni, T.B., Oniyide, O., Ramage, H., Mathew, D., Baxter, A.E., Oldridge, D.A., Greenplate, A.R., Wu, J.E., Alanio, C., D'andrea, K., Kuthuru, O., Dougherty, J., Pattekar, A., Kim, J., Han, N., Apostolidis, S.A., Huang, A.C., Vella, L.A., The UPenn COVID Processing Unit, Wherry, E.J., Meyer, N.J., Cherry, S., Bates, P., Rader, D.J., Hensley, S.E., 2021, Seasonal human coronavirus antibodies are boosted upon SARS-CoV-2 infection but not associated with protection. *Cell.* 184(7): 1858-1864. PMCID:PMC7871851

Goel., R.R., Apostolidis, S.A., Painter, M.M., Mathew, D., Pattekar, A., Kuthuru, O., Gouma, S., **Hicks, P.,** Meng, W., Rosenfeld, A.M., Dysinger, S., Lundgreen, K.A., Kuri-Cervantes, L., Adamski, S., Hicks, A., Korte, S., Oldridge, D.A., Baxter, A.E., Giles, J.R., Weirick, M.E., McAllister, C.M., Dougherty, J., Long, S., D'Andrea, K., Hamilton, J.T., Betts, M.R., Luning Prak E.T., Bates, P., Hensley, S.E., Greenplate, A.R., Wherry, E.J., 2021, Distinct Antibody and Memory B Cell Responses in SARS-CoV-2 Naive and Recovered Individuals Following mRNA Vaccination. Sci. Immunol. 15;6(58)eabi6950. PMCID: PMC8158969

Liberti, D.C., Kremp, M.M., Liberti, W.A., **Penkala, I.J.**, Li, S., Zhou, S., and Morrisey, E.E. 2021, Alveolar epithelial cell fate is maintained in a spatially restricted manner to promote lung regeneration after acute injury. Cell Reports. 35(6):109092. Featured Cover Image. PMCID: PMC8220578

**Penkala, I.J.***, Liberti, D.C.*, Pankin, J., Sivakumar, A., Kremp, M.M., Jayachandran, S., Katzen, J., Leach, J.P., Windmueller, R., Stolz, K., Morley, M.P., Babu, A., Zhou, S., Frank, D.B., and Morrisey, E.E., 2021, Age-dependent alveolar epithelial plasticity orchestrates lung homeostasis and regeneration, Cell Stem Cell. 28(10):1775-1789. PMC8500919

**Jimenez, M.T.**, Michieletto, M., and Henao-Mejia, J., 2021, A new perspective on mesenchymal-immune interactions in adipose tissue, Trends in Immunology, 42: 375-388. PMCID: PMC8202037

**Raynor, B.**, Díaz, E.W., Shinnick, J., Zegarra, E., Monroy, Y., Mena, C., De la Puente-León, M., Levy, M.Z., Castillo-Neyra, R., 2021, The impact of the COVID-19 pandemic on rabies reemergence in Latin America: The case of Arequipa, Peru, PLoS Negl Trop Dis, 15(5):e0009414. doi: 10.1371/journal.pntd.0009414. PMCID: PMC8174740

**Vanderbeck, A.** and Maillard, I., 2021, Notch signaling at the crossroads of innate and adaptive immunity. J. Leukocyte Biol. 109 (3): 535-548.

**Shepley-McTaggart. A.,** Sagum, C.A., Oliva, I., Rybakovsky, E., DiGuilio, K., Liang, J., Bedford, M.T., Cassel, J., Sudol, M., Mullin, J.M., Harty, RN., 2021, SARS-CoV2 Envelope (E) protein interacts with PDZ-domain-2 of host tight junction protein ZO1. PLoS One, 16(6):e0251955. PMCID: PMC8189464

**Shepley-McTaggart, A.**, Schwoerer, M.P., Sagum, C.A., Bedford, M.T., Jaladanki, C.K., Fan, H., Cassel, J., Harty, R.N., 2021, Ubiquitin ligase SMURF2 interacts with Filovirus VP40 and promotes egress of VP40 VLP. Viruses 13(2):288. PMCID: PMC7918931

Han. Z., Ye, H., Liang, J., **Shepley-McTaggart, A.**, Wrobel, J.E., Reitz, A.B., Whigham, A., Kavelish, K.N., Saporito, M.S., Freedman, B.D., Shtanko, O., and Harty, R.N., 2021, Compound FC-10696 inhibits egress of Marburg Virus. Antimicrob. Agents Chemother. 65(7):e0008621. PMCID: PMC8218653

Leszinsky, L., **Xie, S.**, Diwadkar, A., Greenblatt, R.E., Hubbard, R.A., and Himes, B.E., 2021 Impact of individual versus geographic-area measures of socioeconomic status on health associations observed in the behavioral risk factor surveillance system. AMIA Annu. Symp. Proc. 2020:707-716. PMCID: PMC8075432

**Cranfill**, S.L and Luo, W. 2021, The development of somatosensory neurons: insights into pain and itch. Current Topics in Developmental Biology 142:443-475. PMCID: PMC8099032

Yun-Feng Zhang, Luigim Vargas Cifuentes*, Janardhan P. Bhattarai*, Julia Mohrhardt*, David Fleck*, Emma Janke, **Suna L. Cranfill**, Andrew H. Moberly, Yiqun Yu, Benjamin R. Arenkiel, Wenqin Luo, Johannes Stegmaier, Daniel W. Wesson, Marc Spehr, Marc V. Fuccillo, Minghong Ma. The Islands of Calleja, a ventral striatal circuit for grooming control. *Nature Neuroscience*, accepted. *equal contribution

Lian Cui, **Suna L. Cranfill***, Jeff Guo*, Mayank Gautam, Janardhan Bhattarai, William Olson, Katherine Beattie, Rosemary C. Challis, Qinxue Wu, Xue Song, Tobias Raabe, Viviana Gradinaru, Minghong Ma, Qin Liu, Wenqin Luo. Glutamate in primary afferents is required for itch transmission. *Neuron*, accepted in principle. *equal contribution

**Xie S**, Meeker JR, Perez L, Eriksen W, Localio A, Park H, Jen A, Goldstein M, Temeng AF, Morales SM, Christie C, Greenblatt RG, Barg FK, Apter AJ Himes BE (2021). Feasibility and acceptability of monitoring personal air pollution exposure with sensors for asthma self-management. Asthma Research and Practice. 2021 Dec;7(1):1-1. PMCID: PMC8420032

Simeonov, K.P., Byrns, C.N, **Clark, M.L.,** Norgard, R.J., Martin, B., Stanger, B.Z., Shendure, J., McKenna, A., and Lengner, C.J., 2021, Single-cell lineage tracing of metastatic cancer reveals selection of hybrid EMT states. Cancer Cell 39:1150-1162.

Painter, M.M., Mathew, D., Goel, R.R., Apostolidis, S.A., Pattekar, A., Kuthuru, O., Baxter, A.E., Herati, R.S., Oldridge, D.A., Gouma, S., **Hicks, P.,** Dysinger, S., Lundgreen, K.A., Kuri-Cervantes, L., Adamski, S., Hicks, A., Korte, S., Giles, J.R., Weirick, M.E., McAllister, C.M., Dougherty, J., Long, S., D'Andrea, K., Hamilton, J.T., Betts, M.R., Bates, P., Hensley, S.E., Grifoni, A., Weiskopf, D., Sette, A., Greenplate, A.R., Wherry, E.J., 2021, Rapid induction of antigen-specifc CD4+ T cells is associated with coordinated humoral and cellular immunity in SARS-CoV-2 mRNA vaccination, Immunity 54(9): 2133-2142.e3. DOI: 10.1016/j.immuni.2021.08.001 PMCID: PMC8361141

Goel RR, Painter MM, Apostolidis SA, Mathew D, Meng W, Rosenfeld AM, Lundgreen KA, Reynaldi A, Khoury DS, Pattekar A, Gouma S, Kuri-Cervantes L, **Hicks P**, Dysinger S, Hicks A, Sharma H, Herring S, Kort S, Baxter AE, Oldridge DA, Giles JR, Weiric ME, McAllister CM, Awofolaju M, Tanenbaum N, Drapeau EM, Dougherty J, Long S, D'Andrea K, Hamilton JT, McLaughlin M, Williams JC, Adamski S, Kurhuru O, UPenn COVIDF Processing Unit, Frank I, Bette MR, Vella LA, Grifoni A, Weiskopf D, Sette A, Hensleyu SE, Davenport MP, Bates P, Luning-Prak E, Greenplate AR, Wherry EJ, Adamski S, Alam Z, Addison MM, Byrne KT, Chandra A, Descamps HC, Han N, Kaminskiy Y, Kammerman SC, Kim J, Greenplate AR, Hamilton JT, Markosyan N, Han Noll, J, Omran DK, Pattekar A, Perkey E, Prager EM, Pueschl D, Rennels A, Shah JB, Shilan JS, Wilhausen N, and **Vanderbeck AN**. 2021, mRNA vaccines induce durable immune memory to SARS-COV-2 and variants of concern. Science Oct 14;eabm0829. doi: 10.1126/science.abm0829.

Daniell H, Nair SK, Esmaeili N, Wakade G, Shahid N, Ganesan PK, Islam MR, **Shepley-McTaggart A**, Feng S, Gary EN, Ali AR, Nuth M, Cruz SN, Graham-Wooten J, Streatfield SJ, Montoya-Lopez R, Kaznica P, Mawson M, Green BJ, Ricciardi R, Milone M, Harty RN, Wang P, Weiner DB, Margulies KB, Collman RG. 2021, Debulking SARS-COV-2 in saliva using angiotensin converting enzyme 2 in the chewing gum to decrease oral virus transmission and infection. Mol Ther. 2021 Nov 10:S1525-0016(21)00579-7. doi: 10.1016/j.ymthe.2021.11.008. PMCID: PMC8580552

# ALUMNI UPDATES

## Todd Strochlic, VMD (2008) PhD (2008)

Todd was promoted to Associate Professor in the Department of Biochemistry and Molecular Biology on July 1, 2021! In December 2020, he was also awarded the Angelo Pinto Basic Science Educator Award at Drexel University College of Medicine. This award is presented to a faculty member who has demonstrated commitment and excellence to the education of graduate and/or medical students through innovative educational programs, serving as a teacher, a leader, mentor and role model to students and colleagues alike.

## Greg Rak VMD (2012) PhD (2011)

In May, Greg started a new position as Senior Director, Head of Safety Assessment, at Kallyope, a growing biotech company in NYC.
Last year, he had a new publication:
**Rak G.D.,** White M.R., Augustine-Rauch K., Newsome C., Graziano M.J., Schulze G.E. (2020) Intermittent dosing of the TGFβ receptor 1 inhibitor, BMS-986260, mitigates class-based cardiovascular toxicity in dogs but not rats. J Appl Toxicol. 40(7); 931-946.

## Robert Kieval VMD (1987) PhD (1991)

**Diligence Matters, LLC**

The start-up medical device company that Robert founded in 2001 (and left in 2017) went public this year. Their product gained FDA approval for the treatment of chronic heart failure in 2019. Since 2019 Robert has been doing business development work full time for a Paris-based, veterinarian-led company that provides preclinical evaluation services for medical device and biotechnology companies.

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Company page:
https://urldefense.com/v3/__http://www.diligencematters.com__;!!IBzWLUs!DDZgLTYaBazNEaW6GurGXFOYht4R89F1971SzMjfrVCDsvuKnm2YHfgRfuQeRc_N0zpp$

## Jessica Bertout VMD (2010), PhD (2008)

**Co-Founder**
**CASTR Alliance**

Jessica has been watching pandemic developments closely, as she is on her third attempted to reschedule of a trip to France to see her family for the first time in two years.
According to Jessica: "Things have been going well out here. Steve still enjoys his job as an anesthesiologist despite the pandemic. All three kids are very excited to be back full-time in school and sports. Isabelle (13) got her black belt in karate mid-pandemic, and the boys, Sam (11) and Charlie (8), are solidly immersed in baseball. Isabelle and I also ride about 4-5 times per week, anytime we can get out to the barn. During the pandemic, we adopted Rookie, a sweet, mellow Newfoundland, who is now 2 years old. As a family, we love to hike, ski, and travel, both locally, as we continue to discover new parts of the Pacific Northwest, and beyond, as we finally get to visit family again (fingers crossed)!"

"Business picked up after the lock down for CASTR Alliance. Starting a business as the pandemic shut everything down was quite an interesting experience! But now, we have a couple studies running and several in the planning stage, keeping my business partner Jim Perry and me busy and happy!"

A couple recent publications:
Veterinary Clinical Research:

**Bertout JA**, Baneux PJR and Robertson-Plouch CK, 2021, Recommendations for Ethical Review of Veterinary Clinical Trials. *Front. Vet. Sci.*8:715926. doi: 10.3389/fvets.2021.715926. PMCID: PMC8355561

Human Clinical Research (from my time at Presage):

Kenneth R. Gundle, Gary B. Deutsch, Howard J.Goodman, Seth M. Pollack, Matthew J. Thompson, Jessica L. Davis, Mee-Young Lee, Daniel C. Ramirez, William Kerwin, **Jessica A. Bertout**, Marc O. Grenley, Kimberly H.W. Sottero, Emily Beirne, Jason Frazier, Joyoti Dey, Micah Ellison, Richard A. Klinghoffer and Robert G. Maki, 2020, Multiplexed Evaluation of Microdosed Antineoplastic Agents In Situ in the Tumor Microenvironment of Patients with Soft Tissue Sarcoma, Clin. Cancer Res. 26 (15): 3958-3968; doi: 10.1158/1078-0432.CCR-20-0614

## Abigail Shearin VMD (2017) PhD (2016)

**Lead Veterinary Medical Officer**
**Food and Drug Administration**

Abby received a promotion to Team Lead in her pharm/tox branch at the FDA. "Starting January 1st, I am a Lead Veterinary Medical Officer in the Office of Tissues and Advanced Therapies, Center for Biologics Evaluation and Research, FDA. "
**AND:** She had a baby! Margaret Ruth "Maisie" Shearin-Bradley, born 8/2/21 at 3:18 am, 6 lbs 7 oz and 19.5" long.

## Catherine Brinkley VMD (2015) PhD (2013)

**Associate Professor**
**College of Agriculture and Environmental Science**
**University of California, Davis**

Katie says: "I got TENURE!!!! in 2020... but I am just going to keep celebrating until the pandemic is over."

Her kids (11 and 7) report that public school is WAY better than homeschooling because their teachers are "qualified". Katie apparently is not sure how to take that- but is happy they are happy and healthy- and now vaccinated!!!

Katie now directs the Center for Regional Change- a research center at UCDavis in the College of Agriculture and Environmental Sciences which focuses on engaged research that centers social justice. She is looking forward to her first sabbatical in 2022-3.

## Laurel Redding VMD (2012) PhD (2015)

**Assistant Professor**
**Department of Clinical Studies New Bolton Center**
**University of Pennsylvania School of Veterinary Medicine**

Laurel recently earned a perfect score on her NIH K23 grant, which, barring any government shutdowns, should be funded in 2022. Her kids are also very happy to be back in school, and Laurel is thrilled that they are back too. She is braving travel with a trip to Chicago in December for the Conference for Research Workers in Animal Disease, for which she is on the organizing committee.

## Joan Hendricks VMD (1980) PhD (1980)

**Former Gilbert S. Kahn Dean of Veterinary Medicine**
**School of Veterinary Medicine**
**University of Pennsylvania**

Joan says she is having fun and that, "Granddaughters are interesting." She wrote a grant for their violin school which brought back fond memories! Joan says her own violin playing is still far far worse than the 10-year-old and now the 7-year-old is catching up.
She says her downward dog is getting pretty darn good in her yoga class!

## John Wolfe VMD (1982) PhD (1986)

**Professor of Pathology**
**Director Goodman Center for Comparative Medical Genetics**
**School of Veterinary Medicine, University of Pennsylvania**
**Stokes Investigator**
**Children's Hospital of Philadelphia**

John says he is still juggling pandemic issues. BUT, John says "I just got another 5 year renewal for one of my grants - so NIH won't let me retire yet."

## Warren Douglas Sheffield VMD (1975) PhD (1977)

**Chief Scientific Officer,**
**Cadence Neurosciences, Inc**

Doug is CSO of Cadence Neuroscience, a neuro-implant medical device startup developing a novel therapy for drug resistant epilepsy that was licensed from Mayo Clinic. Doug says, "We are making excellent progress developing our therapy system, solidifying our clinical/regulatory path, and are planning our investigational study for FDA approval. We will be starting our first clinical study on a key component of the system this December at Mayo Clinic."

## Erika Lin-Hendel VMD (2015) PhD (2016)

**Board Member: Not One More Vet**
**Board Member: Pride VMC**

Erika was recently nominated as a board member to Not One More Vet and accepted as a board member to the Multicultural Veterinary Medical Association, and she is a co-author/project co-lead on Pride VMC's Gender Identity Bill of Rights (https://pridevmc.org/gender-identity-bill-of-rights/). They recently got fully funded to write the Gender Identity Guide, a more expansive document regarding human rights in the work place and academic settings for Trans, Non-binary and Gender Nonconforming individuals in veterinary medicine. Look for NOMV and MCVMA doing public announcements.

**UPCOMING EVENTS**

**VMD-PhD Admissions Interviews**
**January, 19 and 20, 2022**

**Penn Vet Student Research Day**
**March 18, 2022**

**We want to know....**
New position, promotion, patent, publication, etc.? Please share your news!
vmstp@vet.upenn.edu

## Contact Us

Michael Atchison, Ph.D.
Director, VMD/PhD Program
215-898-6428
atchison@vet.upenn.edu

Anastasia Brown
Coordinator, VMD/PhD Program
215-898-3800
amb3@vet.upenn.edu