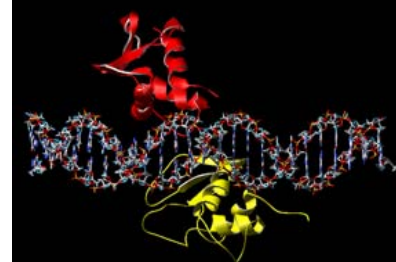


Fall 2015

<http://www.vet.upenn.edu/education/academics-and-training/vmd-phd-program>In This Issue

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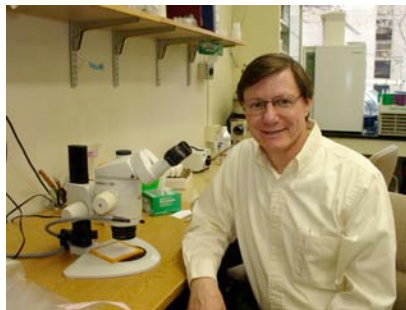


Dear VMD-PhD Alumni and Students,

Greetings from the Penn VMD-PhD program! As usual, the Fall has been very busy. The annual Combined Degree Retreat was held in August at Villanova University and included a keynote address by Dr. Chris Vakoc from Cold Spring Harbor, as well as student posters and student talks. In September we held the annual Penn Vet Student Research BBQ at the Biopond and a good time was had by all. This Fall I collected information from all the veterinary combined degree programs in the nation and that information is reported here. The plan is to initiate a National Veterinary Combined Degree Association that will likely use the Annual Merit-NIH Veterinary Scholars Symposium as a home base. We are now entering a new admissions cycle and admissions interviews will be held on January 21, 2016. In August we welcomed three new VMD-PhD students into the program and their information is included here.

We have also included alumni and current student updates, promotions, publications, and life events in this letter. We are proud of our alumni and current students. Finally, the annual Dinner Party at my home for current students and local alumni will be on Saturday, December 11 at 6:30PM. We wish you the best as 2015 comes to a close.

Sincerely,
Michael Atchison, Ph.D.
Director, 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

Monica Jimenez (Year 1)

UC Berkeley

Cell and Molecular Biology GGR

Monica graduated from the University of California at Berkeley in August 2013. Her most recent research experience was in Dr. Lisa Miller's lab at the University of California at Davis. There, Monica studied innate immune responses to challenge with viral TLR ligands in juvenile rhesus macaques. In addition, with Dr. Jay Solnik she studied the *H. pylori* status and lung microbiome in airway disease and asthma. She previously worked in Dr. Craig Miller's lab at Berkeley studying the genetics of evolved tooth gain in stickleback fish using TALEN knock-out approaches. Monica has held positions as a peer advisor and biology tutor during her undergraduate years and has won a number of awards including an NSF scholarship, NIH Funding Award, and UC LEADS award. She also was a member of the Invisible Children Club raising awareness about human rights issues and was actively involved in playing soccer during high school.



Suna Li (Year 1)

Cal Tech

Neurosciences



Suna graduated from California Institute of Technology in December 2013. While in high school she worked with several research labs including a Glaxo Summer Research Program at North Carolina School of Science and Mathematics, with Dr. Worku at North Carolina A&T University, and with Dr. Mooney at the Duke University Medical Center. Her most recent research experience was at the National Institute of Health, National Institute on Deafness and Other Communication Disorders (NIH/NIDCD) with Dr. Katie Kindt. There she studied vesicle release at ribbon synapses in zebrafish hair cells. Suna also worked in the laboratories of Drs. Eric Mosser and David Prober at Caltech performing high-throughput drug screens to identify circadian rhythm modulators in zebrafish. Her interests include creative writing, travel blogging and playing musical instruments.

Elise Peauroi (Year 1)

UC Berkeley

Cell and Molecular Biology MVP

Elise graduated from the University of California, Berkeley in May 2014. Her most recent research experience was at Dr. Britt Glaunsinger's laboratory at UC Berkeley studying the molecular modulation of host gene expression by Kaposi's Sarcoma-Associated Herpesvirus. She also worked on her honors thesis characterizing several gammaherpesviral proteins with effect on cellular gene expression. Elise is an avid swimmer and has worked as a swim coach and life-guard. She also plays the French horn and has been in a wind ensemble while an undergraduate student at Berkeley.



Upcoming Graduation: December VMD, January PhD

Richard Jimenez



Richard is completing his clinical rotations in December and plans to defend his thesis in January 2016.

Thesis Title: Role of Maternal SIN3A in the reprogramming of gene expression during mouse preimplantation development.

Mentor: Richard Schultz

Graduate Group: CAMB GGR

Publication:

Jimenez R, Melo EO, Davydenko O, Ma J, Mainigi M, Franke V, Schultz RM. Maternal SIN3A Regulates Reprogramming of Gene Expression During Mouse Preimplantation Development. *Biol Reprod.* 93(4):89, 1-12 (2015)

Current Student Awards, Accomplishments, and Honors

Samra Elser received an invitation to give an oral presentation and an Early Investigator Travel Award for the 33rd Annual Symposium on Nonhuman Primate Models of AIDS. Her abstract was entitled *Mutations in the Env Cytoplasmic Tail Partially Restore Pathogenicity of an SIVmac239 Variant lacking a Tyr-Dependent Trafficking Signal.*



Alumni Awards, Accomplishments, and Honors



Stephanie Murphy (VMD 1994, PhD 1996)

Director of the Division of Comparative Medicine, Office of Research Infrastructure Programs, Division of Program Coordination, Planning, and Strategic Initiatives, Office of the Director, National Institutes of Health.

Stephanie will be the keynote speaker for the 2016 Zoobiquity conference being held at the University of Pennsylvania on April 2, 2016. We are looking forward to her visit and plan to have her meet with current VMD-PhD students as well.



Bruce Smith (VMD 1988, PhD 1993)
Professor of Pathology
Auburn College of Veterinary Medicine

Bruce was recently appointed as the Faculty Lead in the Auburn University Cluster Hire in Omics and Informatics. Over the next 18 months, Auburn will be hiring 9 new faculty into positions spanning 5 colleges and schools. Bruce will have the responsibility coordinating the searches and hires, and to begin building an interdisciplinary program around omics and informatics. Auburn has committed significant resources to this effort and Bruce looks forward to recruiting the best possible scientists in this arena to Auburn, at all academic levels.

Kim Blackwell (VMD 1986, PhD 1988)
Professor of Molecular Neurosciences
George Mason University

Avrama received a new 3 year grant (as PI) from the National Science Foundation: "US-French Research Proposal: Collaborative Research: Spatial and Temporal Aspects of Molecular Signaling in Synaptic Plasticity"

She also has a recent publication:

Hawes SL, Evans RC, Unruh BA, Benkert EE, Gillani F, Dumas TC, **Blackwell KT**. Multimodal Plasticity in Dorsal Striatum While Learning a Lateralized Navigation Task. *J Neurosci*. 2015 Jul 22;35(29):10535-49. doi: 10.1523/JNEUROSCI.4415-14.2015.



Melissa Sanchez (VMD 2002, PhD 2006)
Lecturer, University of Pennsylvania

We are sad to say that Melissa will be leaving UPENN after many wonderful years. She will be moving with her family to Amherst, MA at the end of the year. There she will be working as a pathologist for Antech Diagnostics starting in January 2016.

Awards: Class of 2017 Award for Excellence in Teaching, Philadelphia Campus - School of Veterinary Medicine, University of Pennsylvania (2015)

Publication: Soltero-Rivera M, Engiles JB, Reiter AM, Reetz J, Lewis JR, **Sánchez MD**. Benign and malignant proliferative fibro-osseous and osseous lesions of the oral cavity of dogs. *Vet Path*. 52(5):894-902 (2015).

Natalie Miller (VMD, PhD 2013)
Veterinary Medical Officer
Food and Drug Administration

Natalie recently started a new job at the FDA as a veterinary medical officer. She will review preclinical trials (animal studies) to determine if they are safe to go into human medical trials. After the clinical trial the FDA will then determine market approval. Natalie and her husband also moved to Maryland outside Washington DC. She is currently pregnant and due in January- everything all at once!



Jessica Bertout, VMD, PhD (2010)
Senior Scientist, Presage Biosciences, Seattle, WA



Jessica has a new publication:
Gregory MT*, **Bertout JA***, Ericson NG, Taylor SD, Mukherjee R, Robins HS, Drescher CW, Bielas JH. Targeted single molecule mutation detection with massively parallel sequencing. *Nucleic Acids Res.* 2015 Sep 17. pii: gkv915.
*Co-first authors

Greg Rak, VMD, PhD (2012)
Research Investigator
Bristol Myers Squibb

Greg has three recent publications:

Rak GD, Osborne LC, Siracusa MC, Kim BS, Wang K, Bayat A, Artis D, Volk SW. IL-33-Dependent Group 2 Innate Lymphoid Cells Promote Cutaneous Wound Healing. *J Invest Dermatol.* 2015 Oct 13. doi: 10.1038/jid.2015.406. [Epub ahead of print] PMID: 26461809

Giacomin PR, Moy RH, Noti M, Osborne LC, Siracusa MC, Alenghat T, Liu B, McCorkell KA, Troy AE, **Rak GD**, Hu Y, May MJ, Ma HL, Fouser LA, Sonnenberg GF, Artis D. Epithelial-intrinsic IKK α expression regulates group 3 innate lymphoid cell responses and antibacterial immunity. *J Exp Med.* 2015 212(10):1513-1528. PMID: PMC4577836

Noti M, Kim BS, Siracusa MC, **Rak GD**, Kubo M, Moghaddam AE, Sattentau QA, Comeau MR, Spergel JM, Artis D. Exposure to food allergens through inflamed skin promotes intestinal food allergy through the thymic stromal lymphopoietin-basophil axis. *J Allergy Clin Immunol.* 2014 133(5):1390-1399.e1-6. PMID: PMC4007098



We want to know....

New position, promotion, patent, publication, etc.? Please share your news!
vmstp@vet.upenn.edu

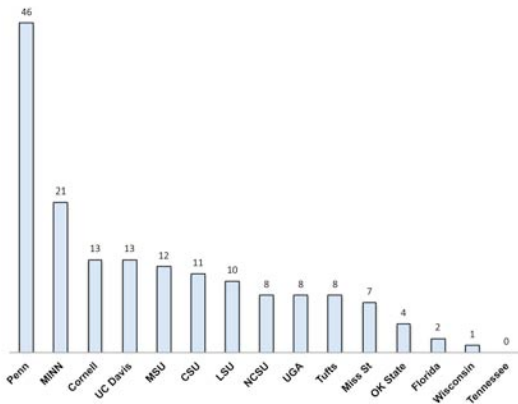
Initiation of a National Veterinary Combined Degree Association

At the most recent Meriel-NIH Veterinary Scholars Symposium, program directors at various veterinary schools began to consider forming a National Veterinary Combined Degree Association. This association would have a number of purposes including enabling interactions between program directors, giving networking opportunities for combined degree students, and providing an organization to plan strategies on future directions and funding opportunities. As a first step toward these goals, we collected admissions and outcomes data from each school with a program. Those data are presented below. I am very encouraged with the plan to develop this organization and believe it will be very valuable for national progress of combined degree programs. While the outcomes data for Penn is considerably better than the national average (88% of Penn alumni in research intensive careers vs 79% nationally), I anticipate these numbers will improve at other schools.

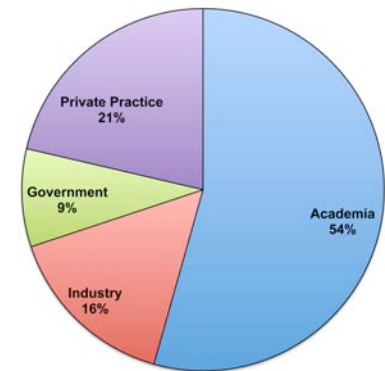
Overview of the numbers:

- 15 Vet Schools with Combined Degree Programs
- Time of program existence ranges from 0 to 46 years
- 123 students in programs nationally
- 247 applications nationally
- 247 applications nationally
- 160 unique applications nationally
- Average 1.58 students per school entering CD training per year
- 147 alumni of programs nationally
- 79% of alumni in research intensive careers after postgrad training (residency/postdoc)
 - Academia 54%
 - Industry 16%
 - Government 9%
 - Private Practice 21%

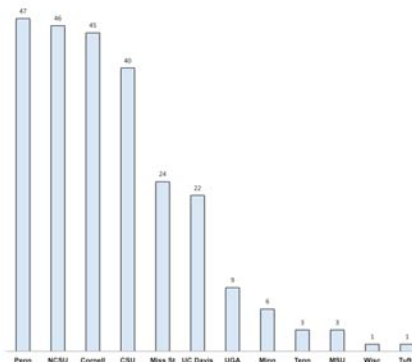
Years of Program Existence



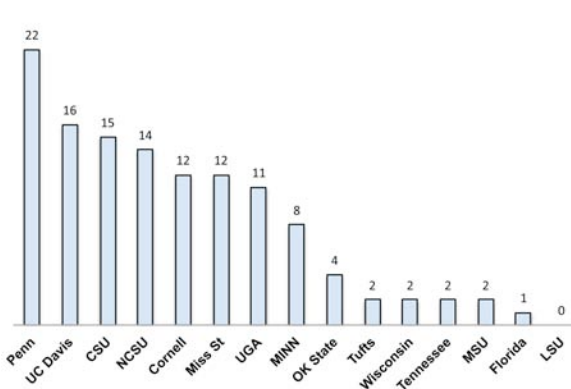
National Data: Careers after Postgraduate Training
79% in Research Intensive Careers



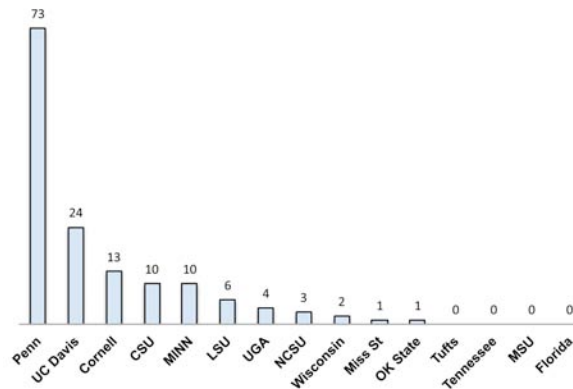
Application Numbers by School in 2015



Current Number of Students in Programs
Total 123 CD Students



Alumni Per Program
147 Total Alumni



Student Publications 2015

Patel NG, Rorres C, Joly DO, Brownstein JS, Boston R, Levy MZ, Smith G. Quantitative methods of identifying the key nodes in the illegal wildlife trade network. *Proc Natl Acad Sci U S A*. 112(26):7948-7953 (2015). PMID: PMC4491747.

Breed MW, **Elser SE**, Torben W, Jordan AP, Aye PP, Midkiff C, Schiro F, Sugimoto C, Alvarez-Hernandez X, Blair RV, Somasunderam A, Utay NS, Kuroda MJ, Pahar B, Wiseman RW, O'Connor DH, LaBranche CC, Montefiori DC, Marsh M, Li Y, Piatak M Jr, Lifson JD, Keele BF, Fultz PN, Lackner AA, Hoxie JA. Elite Control, Gut CD4 T Cell Sparing, and Enhanced Mucosal T Cell Responses in *Macaca nemestrina* Infected by a Simian Immunodeficiency Virus Lacking a gp41 Trafficking Motif *J Virol*. 89(20):10156-10175. PMID: PMC4580161

Jimenez R, Melo EO, Davydenko O, Ma J, Mainigi M, Franke V, Schultz RM. Maternal SIN3A Regulates Reprogramming of Gene Expression During Mouse Preimplantation Development. *Biol Reprod*. 93(4):89,1-12 (2015)

Madara JJ, Han Z, Ruthel G, Freedman BD, Harty RN. The multifunctional Ebola virus VP40 matrix protein is a promising therapeutic target. Review Article. *Future Virol*.10(5):537-546 (2015). PMID: PMC4480923

Han Z, **Madara JJ**, Liu Y, Liu W, Ruthel G, Freedman BD, Harty RN. ALIX Rescues Budding of a Double PTAP/PPEY L-Domain Deletion Mutant of Ebola VP40: A Role for ALIX in Ebola Virus Egress. *J Infect Dis*. 212: Suppl 2:S1380-145 (2015) PMID: PMC4564528

Winograd, R., Byrne, K.T., **Evans, R.A***, Odorizzi, P.M., Meyer, A.R.L., Bajor, D.L., Clendenin, C., Stanger, B.Z., Furth, E.E., Wherry, E.J., and Vonderheide, R.H. Induction of T cell immunity overcomes complete resistance to PD-1 and CTLA-4 blockade and improves survival in pancreatic carcinoma. *Cancer Immunol Res*. 2015 Apr; 3(4):399-411. PMID: PMC439050 [Available on 2016-04-01]

Beatty GL, Winograd R, **Evans RA***, Long KB, Luque SL, Lee JW, Clendenin C, Gladney WL, Knoblock DM, Guirnalda PD, Vonderheide RH . Exclusion of T Cells From Pancreatic Carcinomas in Mice Is Regulated by Ly6C(low) F4/80(+) Extratumoral Macrophages. *Gastroenterology*. 2015 Jul; 149(1):201-10 PMID: PMC4478138

***Note: joint second authorship on both**

Upcoming Events



VMD-PhD Christmas Party

Make sure to save the date for the annual VMD-PhD Christmas party to be held at Dr. Atchison's home on Friday, December 11th at 6:30pm. Please RSVP by emailing: atchison@vet.upenn.edu
All current students and alumni are invited.

Contact Us

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