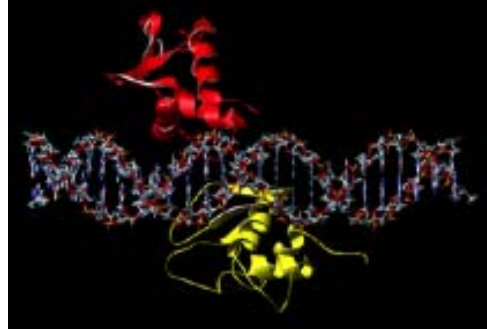


Spring 2015

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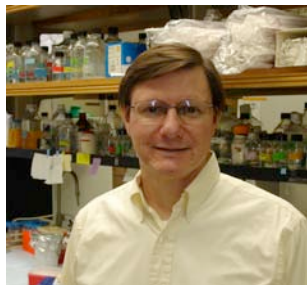
Dear VMD-PhD Alumni and Current Students,

This has been a great year for the VMD-PhD program at Penn. We had a fantastic number applicants to the program, we interviewed ten students, and offered admission to three. All three accepted our offer. You will receive more information about this outstanding crop of incoming students in the Fall newsletter. In March we celebrated the Vet Student Research Day with a keynote speaker, talks by VMD-PhD and VMD students, and numerous posters. Winners are listed inside this newsletter. The day culminated with Phi Zeta Honor Society inductions and a reception. We also have an impressive list of accomplishments by our alumni to report, and we present an update on current student publications and awards.

We are very proud of our alumni and current students, and hope that many of you will visit Penn during the coming year.

Wishing you the best in 2015,

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



Alumni are Online!

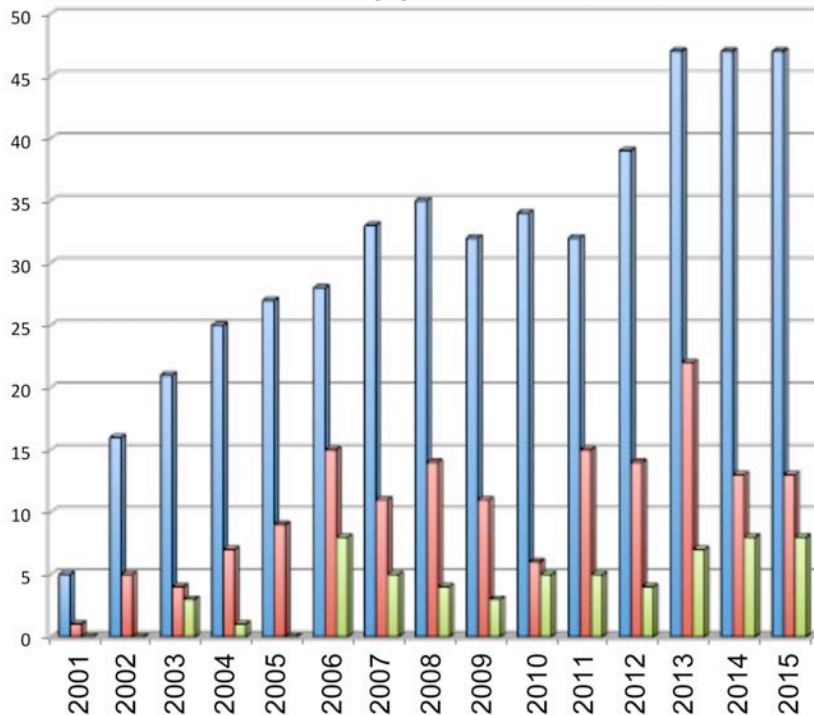
Check out:

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

Find your profile. and send us feedback!

We had a fantastic admissions season this year with 47 applications to the program, and 10 students invited for interviews. Choosing the best out of this impressive group was challenging, but we made three offers. All three students have accepted giving us a very strong incoming class. Below is a graph of our applicant pool over the past 15 years.

VMD-PhD Applicant Numbers



VMD-PhD application numbers over the past 15 years. Blue bars are total applicant numbers, red bars are infectious disease-related applicants, and yellow bars are underrepresented minority applicants (defined by NIH).

The quality of our applicant pool is outstanding. Applicant averages for last year are GPA of 3.66 and GRE scores of 161 (V) and 159 (Q) with our matriculating students averaging GPA of 3.71 and GRE scores of 166 (V) and 164 (Q). Only 6% of applicants received offers.

Incoming Students for Fall 2015

We are very pleased with our incoming crew of students. Their names, graduate groups, and undergraduate institutions are below. We will provide more information about each in our Fall newsletter.

Name	Graduate Group	Undergraduate Institution
Monica Jimenez	Cell and Molecular Biology	UC Berkeley
Suna Li	Neuroscience	Cal Tech
Elise Peauroi	Cell and Molecular Biology	UC Berkeley

CURRENT STUDENT AWARDS

The 2015 Phi Zeta Student Research Day, March 26, 2015

The Phi Zeta Student Research day as usual included a keynote speaker, talks by VMD-PhD students, talks by VMD students, and student posters. Speakers were chosen from a large pool of abstracts and winners amongst our current VMD-PhD students are listed below.

VMD-PhD student presentation winners were:



First Place: Jonathan Madara

Advisor: Bruce Freedman, VMD/PhD, Associate Professor, Department of Pathobiology, School of Veterinary Medicine, University of Pennsylvania.

Title: *Mechanistic insight into calcium regulation of filovirus and arenavirus egress.*

Second Place: Bailey Baumann

Advisor: Tracy Bale, Ph.D., Department of Biomedical Sciences, School of Veterinary Medicine, University of Pennsylvania.

Title: *Placental interleukin-6 signaling mediates (sex-specific) effects of prenatal stress.*



Third Place: Ian Penkala

Advisor: Montserrat Anguera, PhD, Department of Biomedical Sciences, School of Veterinary Medicine, University of Pennsylvania.

Title: *LncRHOXF2B: a novel long noncoding RNA expressed from the X-linked RHOX gene regulation during early human development.*

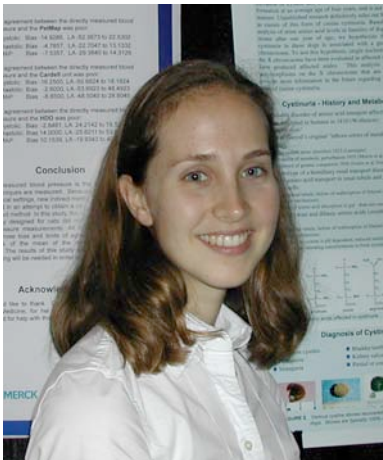


Poster Winners

First Place: Sherrie Xie

Advisor: Michael Levy, PhD, Assistant Professor, Department of Biostatistics and Epidemiology, Perelman School of Medicine, University of Pennsylvania.

Title: *Can bed bugs mediate Chagas epidemic in an urban neighborhood?*



Second Place: Abigail Shearin

Advisor: Morris Birnbaum, MD/PhD, Willard and Rhoda Ware Professor of Diabetes and Metabolic Diseases, Perelman School of Medicine, University of Pennsylvania.

Title: *Impaired insulin signaling in fat leads to disrupted glucose homeostasis.*

Graduating VMD-PHD Students



Brittany Gregory
CAMB Genetics and Gene Regulation
Mentor: Dr. Vivian Cheung

Brittany's thesis is entitled "Natural variation in the histone demethylase, KDM4C, influences cell proliferation through the regulation of specific genes." Brittany will be moving to Colorado for a SA rotating internship at Wheat Ridge Animal Hospital. She hopes to then pursue a residency in Pathology.

Steve Artim
Biochemistry and Molecular Biophysics
Mentor: Dr. Mark Lemmon

Steve's thesis is titled "Regulation and Kinase Activity Of the TRK Family of Receptor Tyrosine Kinases." After graduation, Steve will be moving to Boston to join a LAM residency at MIT.



Student: Catherine Brinkley
City and Regional Planning (School of Design)
Mentor: Tom Daniels

Katie's thesis is entitled "Fringe Benefits: quantitative and qualitative study of urban form on farmland functions". She plans to pursue either a postdoctoral or faculty position after graduation.

Student: Laurel Redding
Epidemiology and Biostatistics

Mentor: Sean Hennessy

Laurel's thesis is entitled "Understanding the Use of Antibiotics on Small Dairy Farms in the Developing World." She is looking into clinical and postdoctoral positions after graduation.



Student: Irene Bukh
CAMB Microbiology, Virology and Parasitology

Mentor: Michael Betts

Irene's thesis is entitled "Blood and Guts: Consequences of Adenovirus Vector Vaccination on T Cell Activation and SIV Susceptibility in Rhesus Macaques." She is looking at postdoctoral positions after graduation.

Student: Nikkita Patel
Epidemiology and Biostatistics

Mentor: Gary Smith

Nikki's thesis is entitled, "Characterization of Illegal Wildlife Trade Networks." She is looking at positions in research foundations and academia after graduation.



December Graduation:

Richard Jimenez: More in the Fall Newsletter

Student Publications, Honors, Awards

Awards

Gregory Sousa was one of the two students selected to represent Penn at the 2015 Veterinary Leadership Experience. It takes place during the first week of June. The VLE is a week-long intensive leadership training program that encourages participants to “think outside the box” for personal and professional growth.



Sondra Calhoun, Brittany Gregory, and Elinor Willis were elected to Phi Zeta, the veterinary honor society.



Stephen Artim was awarded this year’s ASLAP Veterinary Student Award.

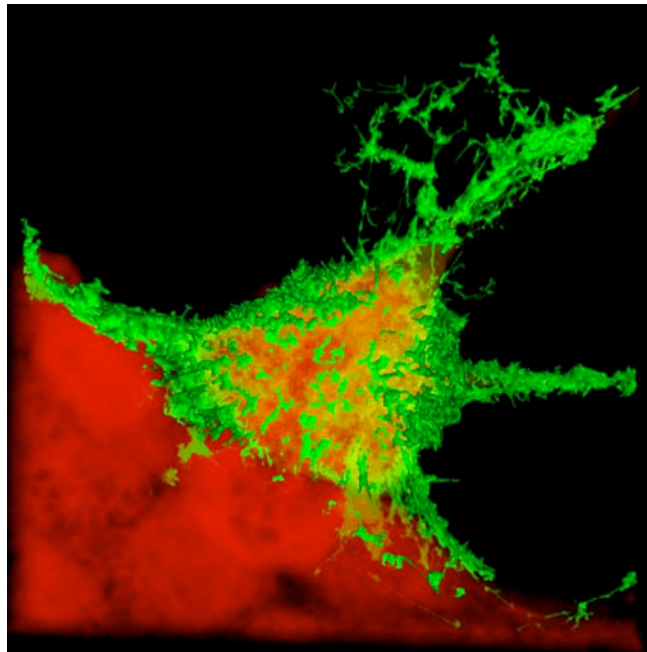


Noelle Knight was awarded the Phi Zeta Award.

Inspiration Award Winner

Jonathan Madara — “One Health Media Fellowship Program”

Jonathan Madara won the Perelman School of Medicine 2015 “Art in Science” competition. He won in the graduate student level for his image of “Ebola Virus-like Particle Budding”.



Student Publications (2014-2015)

Koren S, DiPilato LM, Emmett MJ, **Shearin AL**, Chu Q, Monks B, Birnbaum MJ. The role of mouse Akt2 in insulin-dependent suppression of adipocyte lipolysis in vivo. *Diabetologia* 58(5):1063-1070 (2015). PMID: PMC4393789

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 Ly6Clow F4/80+ Extra-tumor Macrophages. *Gastroenterology*. 2015 Apr 14. pii: S0016-5085(15)00510-7. doi: 10.1053/j.gastro.2015.04.010. [Epub ahead of print]

Winograd R, Byrne KT, **Evans RA**, Odorizzi PM, Meyer AR, Bajor DL, Clendenin C, Stanger BZ, Furth EE, Wherry EJ, Vonderheide RH. Induction of T-cell Immunity Overcomes Complete Resistance to PD-1 and CTLA-4 Blockade and Improves Survival in Pancreatic Carcinoma. *Cancer Immunol Res*. 3(4):399-411 (2015) PMID: PMC4390506

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*. first published online March 18, 2015 doi:10.1093/infdis/jiu838

Qu F, Pintauro MP, Haughan JE, Henning EA, Esterhai JL, Schaer TP, Mauck RL, Fisher MB. Repair of dense connective tissues via biomaterial-mediated matrix reprogramming of the wound interface. *Biomaterials* 39:85-94. (2015) PMID: PMC4258004

Zhang Y, Yan W, Mathew E, Bednar F, Wan S, Collins MA, **Evans RA**, Welling TH, Vonderheide RH, di Magliano MP. CD4+ T lymphocyte ablation prevents pancreatic carcinogenesis in mice. *Cancer Immunol Res.* 2(5):423-435. (2014) PMID: PMC4160804

Gregory, B. and Cheung, V.G. Natural variation in the histone demethylase, KDM4C, influences expression levels of specific genes including those that affect cell growth. *Genome Res.* 24: 52-63 (2014). PMID: PMC3875861

Knight MN, Hankenson KD. R-spondins: novel matricellular regulators of the skeleton. *Matrix Biol.* 37:157-161. (2014)

Brinkley, C. and Vitiello, D. From Farm to Nuisance: Animal Agriculture and the Rise of Planning Regulation. *J Plan Hist.* 13(2):113-135 (2014).

Bukh I, Calcedo R, Roy S, Carnathan DG, Grant R, Qin Q, Boyd S, Ratcliffe SJ, Veeder CL, Bellamy SL, Betts MR, Wilson JM. Increased mucosal CD4+ T cell activation in rhesus macaques following vaccination with an adenoviral vector. *J Virol.* 88(15):8468-8478. (2014).

Redding LE, Cubas-Delgado F, Sammel MD, Smith G, Galligan DT, Levy MZ, Hennessy S. Antibiotic residues in milk from small dairy farms in rural Peru. *Food Addit Contam Part A Chem Anal Control Expo Risk Assess.* 31(6):1001-1008. (2014)

Redding LE, Cubas-Delgado F, Sammel MD, Smith G, Galligan DT, Levy MZ, Hennessy S. Comparison of two methods for collecting antibiotic use data on small dairy farms. *Prev Vet Med.* 114(3-4):213-222. (2014). PMID: PMC4197167

Redding LE, Cubas-Delgado F, Sammel MD, Smith G, Galligan DT, Levy MZ, Hennessy S. The use of antibiotics on small dairy farms in rural Peru. *Prev Vet Med.* 113(1):88-95. (2014). PMID: PMC4197910

Other News

Jonathan Madara and **Meghan Noelle Knight** wed on March 14, 2015!



Alumni Awards, Accomplishments, and Honors

Congratulations go out to all of our alumni listed below



Susan Bender, VMD, PhD, (2011) Lecturer, Department of Pathobiology, School of Veterinary Medicine, University of Pennsylvania.

Susan passed her anatomic pathology boards in September, then in January transitioned from PHL to NBC where she is currently a lecturer in pathobiology. Susan says, "It's been a bit of an adjustment switching from small to large animal pathology, but so far I'm really enjoying the change."

Stephanie J. Murphy, VMD, PhD, (1996) DACLAM, 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 has been invited to be the keynote speaker for 2015 Mouse Pathobiology & Phenotyping Course being held at Hopkins in July. The title of her talk will be " Sex as a Biological Variable in Rodent Models."

The meeting link is below.

<http://www.hopkinsmedicine.org/mcp/PHENOCORE/courseCURRENT.html>

From Rich Miselis (1973) and Pat McManus (1983)

The official news for us is that Pat McManus officially retired from IDEXX on March 25th of this year. She gets up every morning and says, "Hey, I don't have to go to work today". This is a great delight for the both of us.



John Wolfe, VMD, PhD, (1986) Professor, Department of Pathobiology, School of Veterinary Medicine, University of Pennsylvania.

John received two new grants:

U01-HD079066 12/24/14-11/30/17 \$1,564,325
Choroid Plexus-Directed Gene Therapy for Alpha-Mannosidosis

R01-NS088667 2/1/15-1/31/20 \$1,837,500
Disseminated Gene Delivery to the CNS by Human iPSC-derived Neural Stem Cells

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



Jessica Bertout, VMD, PhD, (2010) Postdoctoral Fellow, Fred Hutchinson Cancer Research Center

Jessica is now working full-time at Presage Biosciences in Seattle, where she is heading Presage's canine clinical trial program ("WOOF for the Cure"). Through WOOF for the Cure, they collaborate with a number of veterinary oncologists, radiologists, surgeons, and pathologists in the Puget Sound region, and she says, "my training in the VMSTP has proven invaluable". Her first publication at Presage is coming out this month in Science Translational Medicine (see below).

Publication:

R. A. Klinghoffer, S. B. Bahrami, B. A. Hatton, J. P. Frazier, A. Moreno-Gonzalez, A. D. Strand, W. S. Kerwin, J. R. Casalini, D. J. Thirstrup, S. You, S. M. Morris, K. L. Watts, M. Veiseh, M. O. Grenley, I. Tretyak, J. Dey, M. Carleton, E. Beirne, K. D. Pedro, S. H. Ditzler, E. J. Girard, T. L. Deckwerth, **J. A. Bertout**, K. A. Meleo, E. H. Filvaroff, R. Chopra, O. W. Press, J. M. Olson, A technology platform to assess multiple cancer agents simultaneously within a patient's tumor. *Sci. Transl. Med.* 7, 284ra58 (2015).

Jessica says, "The kids are all growing up so fast: Isabelle just turned 7, Sam is starting kindergarten next year, and Charlie will be 2 this summer. We are loving the Northwest and the gorgeous spring weather we've been having (along with the milder winters!)"

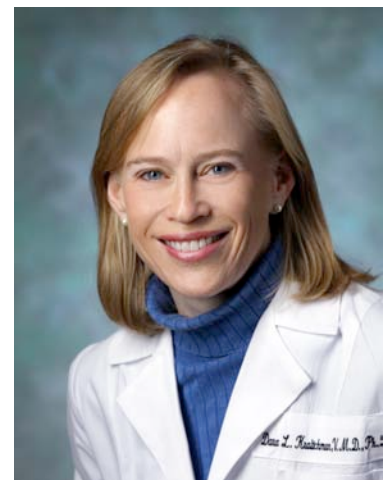


Joyce Knoll, VMD, PhD, DACVP (1987)

Joyce will be stepping into the position of interim department chair of the Department of Biomedical Sciences, at the Cummings School of Vet Medicine, Tufts University. This change is effective on May 1st of this year.

Dara L. Kraitchman, VMD, PhD, FACC (1996)

Dara has received considerable press about the Center for Image-Guided Animal Therapy (CIGAT) that she started 3 years ago for performing interventional radiology/cardiology in client-owned pets at Hopkins since the beginning of the year including a blog in Scientific American (<http://www.scientificamerican.com/article/the-dog-and-cat-wing-hospital-sets-up-a-scanner-center-for-pets/>) and the front page of the Baltimore Sun (<http://www.baltimoresun.com/health/bs-hs-hospital-animal-imaging-20150407-story.html#page=1>)





Greg Rak, VMD, PhD (2012)

Gregs current title is Research Investigator II at Bristol-Myers Squibb. The company will be moving Greg and his family from Indiana to NJ (New Brunswick area) this summer.

Catrina King, VMD, PhD (2012)

Catrina is doing fantastic and just accepted a position as the Senior Manager of Research Animal Facility and Veterinary Services at Regeneron. She loves her job at Columbia, but this new position is great for advancement.



James Kehler VMD-PhD (2004)

James started working for the CEO and CFO of a non-profit company, the New York Stem Cell Foundation in January, 2015 as their Director of Scientific Programs and Alliances

Upcoming Events

- NIH/Merial Program Trip to NIH: June 10-11
- Merial-NIH Veterinary Scholars Symposium: July 30-August 2
- Trip to Philadelphia Science Center: June 30
- June Student Research Presentations: TBD
- Combined Degree Retreat: August 6
- Welcome Night Out for Incoming Students: TBD

Contact Us

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

Yong No
Coordinator, VMD/PhD Program
215-898-3800
yongno@vet.upenn.edu

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