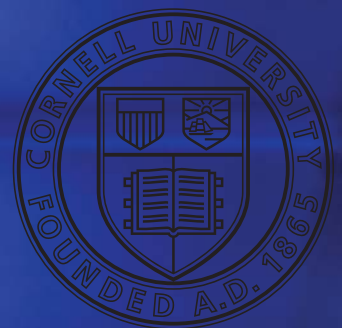


Leadership Program for Veterinary Students
2010 Annual Report





Contents

8.....	Agenda
9.....	Participants
10.....	Activities
18.....	Cornell's Partnership with the NIH
20.....	Walter Reed Army Institute for Research
22.....	Presentations and Prizes
23.....	Program Scholars and Their Research
36.....	Counselors and Facilitators
38.....	Housing
39.....	Time Out
40.....	Program Dinner
41.....	Program Alumni
42.....	Where Are They Now?
50.....	What Did They Say?
Inside back cover.....	In the Limelight

A Commitment to Excellence

The College of Veterinary Medicine at Cornell University hosted the 21st annual Leadership Program for Veterinary Students this year. The program's tradition of excellence has drawn thousands of applicants, but only 486 of the most promising students representing 59 veterinary colleges, have been selected to participate. Although the life experiences, culture, and academic background of program scholars are diverse, all have distinguished themselves in a variety of professional and personal pursuits. They are highly motivated individuals who have the potential to excel as research scientists and public health professionals.



Douglas D. McGregor, MD, DPhil
Program Director

Research is the centerpiece of the Leadership Program. Program scholars pursue individual projects under the guidance of Cornell faculty members, who are successful scientists and experienced mentors. Their investigations are conducted in state-of-the-art facilities within the unsurpassed intellectual environment of Cornell, an Ivy League university located in the scenic Finger Lakes region of New York State. Program scholars also participate in modules and workshops. Topics include emerging infectious diseases and biodefense, leadership and its attendant responsibilities, and modules which illustrate leadership and employment opportunities for veterinary graduates in the academy, government and industry. The aim is to empower participating students to make informed decisions about graduate education and their careers. Promoting creativity and critical thinking, and the development of teamwork and communication skills are additional goals of the program.

The Leadership Program has fulfilled its principal objective—to provide veterinary students with learning experiences that both clarify and reinforce their commitment to careers in science. At a strategic level, the desired outcomes are to strengthen the infrastructure of academic veterinary science; to promote discovery through research, and by doing so to contribute broadly to the veterinary profession and the biomedical sciences at large. A legacy of the program has been a growing network of alumni who have the motivation to assist one another and more junior colleagues.

Much has been accomplished in the two decades that the program has been offered to encourage talented and appropriately motivated veterinary students to pursue careers in science or public health. But more remains to be done. Molecular events underlying the cause and progression of many diseases, e.g. laminitis of horses, are still poorly defined. Understanding these diseases at a molecular level is critical to the development of rational strategies for disease control and prevention. Leadership Program alumni are well positioned to address these matters, but only if they have been trained to a high level of proficiency in the enabling disciplines of biochemistry, molecular biology and genetics. Of equal importance is the need for alumni to maintain their passion for discovery throughout their training and after they have joined the science workforce.

Later this year, one of the Leadership Program administrators (DDM) will retire. His position as Program Director will be assumed by Professor John S. L. Parker, an individual who brings to the program the perspective of a veterinary scientist and teacher. Dr. Parker is an ideal choice for Director, having served for many years as a mentor of Leadership Program scholars, as a module facilitator and a vocational counselor. Under his direction the program will continue to encourage participating students to seek new knowledge through research, and to consider how they can cooperate with one another and encourage the professional development of more junior colleagues who aspire to careers in science and veterinary public health.



David R. Fraser, BVSc, PhD
Co-Director

Acknowledgements

The Leadership Program for Veterinary Students is made possible by awards from federal agencies, corporations, foundations, and other private sector sponsors. For their generous support this year, the program organizers thank:

National Institutes of Health
Deutscher Akademischer Austauschdienst
The Albert C. Bostwick Foundation
Pfizer Inc
Boeringer-Ingelheim Co.
The Wellcome Trust

The program organizers also thank the facilitators, counselors, and mentors who took part in the 2010 program. Thanks too to Mr. Caleb Chan, the Program Coordinator, and to Ms. Kathleen Williams, Ms. Alice Bizri, Ms. Alexis Wenski-Roberts, Ms. Stephanie Specchio and Mr. David Frank for their assistance. Finally, the organizers congratulate the participating scholars. Their academic achievements, coupled with their dedication to discovery and service, mark these individuals as future leaders of the veterinary profession.

Publications

From time-to-time, the program organizers and their associates have described elements of the program, strategies for its implementation and outcomes. Recent publications include:

- Promoting Science-Based Careers Through Student-Directed Learning. McGregor, D.D. and Fraser, D.R. J. Vet. Med. Educ. 33:294-298, 2006.
- Counseling Veterinary Students Who Aspire to Careers in Science. McGregor, D.D. and Fraser, D.R. JAVMA 229:668-671, 2006.
- Acquainting Veterinary Students With Careers in the Pharmaceutical Industry. McGregor, D.D., Fraser, D.R., Haven, M.L. and Hickey, G.J. Vet. Med. Educ. 34:139-142, 2007.
- Career Paths of Alumni of the Cornell Leadership Program for Veterinary Students. Fraser, D.R., McGregor, D.D. and Gröhn, Y.T. Vet. Record 20:750-756, 2008.

Interested parties also are invited to visit the program website at www.vet.cornell.edu/oge/leadership





2010 Leadership Program Agenda

Wednesday, June 2	Opening Meeting
Thursday, June 3	Library Orientation Biological and Chemical Safety Training Laboratory Orientation
Saturday, June 5	Career Discussion Student Representative Meeting Leadership Discussion
Monday, June 7	Leadership Module Reception and Dinner
Thursday, June 10	National Institutes of Health
Friday, June 11	Walter Reed Army Institute of Research
Monday, June 28	Infectious Diseases Workshop
Tuesday, June 29	Research Project Previews
Monday, July 5	Drug Design Workshop
Wednesday, July 7	Reunion Dinner
Monday, July 12	Industry Workshop
Wednesday, July 7	Leadership in Action
Monday, July 19	Residency Training
Tuesday, July 20	Research Training
Wednesday, July 21	Translational Science
Thursday, July 22	Veterinary Research
Friday, July 23	Creativity in Science
Monday, August 9	Research Presentations
Tuesday, August 10	Research Presentations
Wednesday, August 11	Exit Meeting





2010 Leadership Program Scholars

Name	University	Mentor(s)	Department	Sponsor
Emily Ames	Univ. of Calgary	Scott Coonrod	Baker Institute	Pfizer
Jeffrey Beverly	Cornell University	Chris Schaffer	Biomedical Engineering	NIH & Bostwick Foundation
Mirjam Brackhan	TiHo Hannover	Holger Sonderman	Molecular Medicine	Boehringer -Ingelheim & DAAD
Heike Breuer	TiHo Hannover	Scott Coonrod	Baker Institute	Boehringer -Ingelheim & DAAD
Jennifer Cassano	Cornell University	Nate Sutter/ Dave Lin	Clinical Sciences	NIH & Bostwick Foundation
Zachary Chillag	Univ. of Georgia	Gary Whittaker	Microbiology/Immunology	NIH & Mellon Foundation
Greg Dickens	Cambridge (Selwyn College)	Moonsoo Jin	Biomedical Engineering	Wellcome Trust
Clinton Doering	Univ. of Calgary	Yrjö Gröhn	VM Administration	Pfizer
Line Greve	Univ. of Copenhagen	Lisa Fortier	Clinical Sciences	Pfizer
Samantha Hodgkins	Cornell University	John Parker	Baker Institute	NIH & Bostwick Foundation
Sarah Hooper	Univ. of Georgia	Craig Altier	Population Medicine/ Diagnostic Sciences	NIH & Mellon Foundation
Sanne Hugen	Universiteit Utrecht	Robert Weiss	Biomedical Sciences	Pfizer
Marie Killerby	Cambridge (Selwyn College)	Colin Parrish	Baker Institute	Wellcome Trust
Anne Kimmerlein	Univ. of Minnesota	Susana Mendez	Baker Institute	NIH & Pfizer
Brina Lopez	Colorado State	Claudia Fischbach	Biomedical Engineering	NIH & Bostwick Foundation
Kathleen O'Hara	Cornell University	Julia Flaminio	Clinical Sciences	NIH & Mellon Foundation
Ravee Padte	Cornell University	Gregory Acland/ Anna Kukekova	Baker Institute	NIH & Mellon Foundation
Gertje Peterson	Freie Universität Berlin	Alexander Travis	Baker Institute	Bostwick Foundation & DAAD
Eliza Smith	Univ. of Queensland	Tracy Stokol	Population Medicine/ Diagnostic Sciences	Bostwick Foundation
Luise Steltzer	Freie Universität Berlin	Kenneth Simpson	Clinical Sciences	Pfizer
Frances Taylor-Brown	Royal Veterinary College	Richard Cerione/ Marc Antonyak	Molecular Medicine	Wellcome Trust
Daniel Woodburn	VA Tech	Marjory Brooks/ James Catalfamo	Population Medicine/ Diagnostic Sciences	NIH
Sirima Yaemsiri	NC State	Alexander Travis	Baker Institute	NIH

Activities 2010

The Leadership Program combines faculty-guided research with student-directed learning through participation in modules, workshops, and group discussions. The activities encourage responsible leadership, critical thinking and the development of teamwork skills. The program also highlights graduate training opportunities calculated to promote the professional development of program alumni as independent scientists and public health professionals.

Research

Each Leadership Program scholar is assigned a project and a faculty mentor to guide his or her research. The projects enable students to gain practical experience by exploring problems of interest to them. Simultaneously, students hone their communication skills through engagement in group discussions and by presenting their research findings in a public forum at the conclusion of the program.



Leadership

Leadership and its attendant responsibilities are central considerations in the Leadership Program. Critical thinking and decision-making are featured in a scenario-based module that explores public health, economic, political, and social issues. Students and facilitators are assigned roles which oblige them to articulate, defend, or modify their views as the scenario unfolds. At the conclusion of the module, the facilitators comment on the exercise and discuss leadership principles they have adopted in their own careers. Professor David Fraser moderated the discussion with assistance from Professor Neil Gorman and Mr. Lawrence Grossman.





Leadership in Action

The film entitled, "A Few Good Men" illustrates strengths and deficiencies of individuals cast in the role of leaders. Characteristics illustrated by the film were discussed by the students. Professors John Parker, Drew Noden, David Fraser and Douglas McGregor served as discussion facilitators.



Emerging Diseases

Professors Colin Parrish, John Parker, Alfonso Torres and Dr. Philip Carter facilitated discussions of antibiotic resistance and diseases which are either emerging or re-emerging in nature or which pose a bioterrorist threat to people or the Nation's agricultural assets. Program scholars selected the diseases on which they focused. Having done so, they conducted library research on the topics, and employed Socratic methods to engage their peers and facilitators in lively and informative discussions. Later in the day, the facilitators commented on related issues and the need for veterinary scientists who contemplate careers in infectious disease research and veterinary public health.



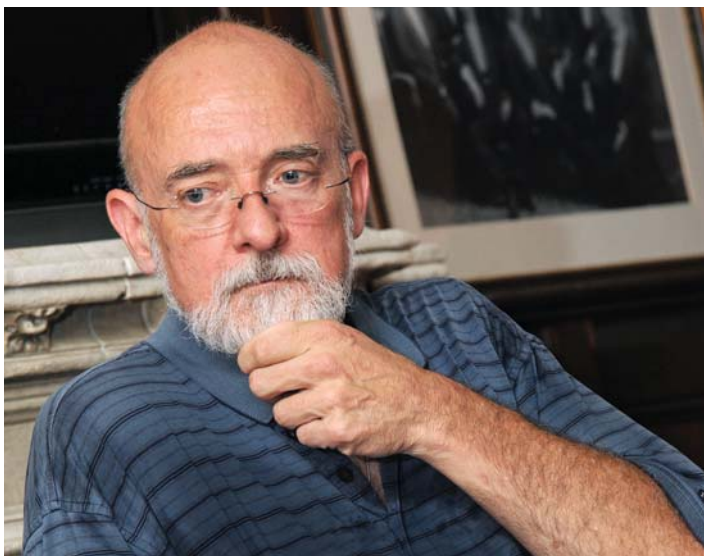
Drug Design

Dr. Michelle Haven, a senior executive of Pfizer, Inc., designed and moderated a competition between mock companies formed by the students. The competition encouraged creativity and the development of teamwork skills through activities connected with the discovery, development and marketing of veterinary pharmaceuticals. Dr. Ann Wilkinson assisted Dr. Haven. Later the same evening, the two facilitators commented on employment opportunities for veterinarians at Pfizer and the advanced training required to be competitive for such positions.



Industry Workshop

Drs. Gerard Hickey, Peggy McCann and Charlie Hsu conducted mock interviews for three positions in the pharmaceutical industry and at Merck Co. in particular. The students prepared for the interviews by comparing the resumes of prospective applicants and by submitting application letters for the three positions. On the day of the meeting, the facilitators commented on the letters and held mock interviews which explored personal interests of the students and their qualifications for employment.



Creativity in Science

The capacity to see relationships between seemingly unrelated phenomena is a valuable skill in individuals who conduct research as a major component of their professional activities. In an informal meeting, Dr. Theodore Elsasser drew a parallel between creativity in science, music and the visual arts. His presentation encouraged students to think broadly about a research project before formulating an hypothesis and designing experiments calculated to provide definitive answers and move the project forward in an orderly manner.



Career Explorations

Career planning is a feature of the Leadership Program. Five meetings were convened to consider opportunities for program alumni to broadly influence the veterinary profession through careers in science or veterinary public health.

Professor David Fraser, and Drs. Hannah Bender and Danielle Buttke reviewed career options available to veterinary graduates who aspire to careers in science. The three counselors emphasized the importance of selecting a superior environment for graduate research training and a mentor who has a successful training record.

Professors Julia Flaminio and Sean McDonough commented on residency programs in the clinical sciences and pathology, respectively. The counselors identified factors one should consider in seeking a residency; the expectations of training organizers, and the satisfaction of pursuing a clinical or veterinary service career.



A companion meeting addressed issues related to graduate research training. Professors Natasza Kurpios, Klaus Beyenbach, and Douglas McGregor focused on aspects of training one should weigh in selecting an institution for graduate study; the subject of one's thesis research, and the individual to guide one's graduate studies.

In a separate meeting, a case study was used to illustrate "translational science." The discussion, led by Professor William Horne, revealed how an individual trained to a high level of proficiency as both a clinical specialist and research scientist can elucidate disease

mechanisms and extend the frontiers of knowledge through research conducted at a cell or molecular level.

Still another meeting was convened to review conclusions drawn from the foregoing discussions and to identify opportunities for well trained veterinary graduates to conduct research on a wide range of important diseases. Such diseases often have been the subject of descriptive studies; however, meaningful progress toward rational strategies for their treatment and prevention requires detailed knowledge of their underlying mechanisms. These matters were discussed by Professors Parker, Fraser and McGregor.



Cornell's Partnership with the National Institutes of Health



The National Institutes of Health and Cornell University have forged a partnership which offers program scholars an opportunity to learn about research conducted at the Nation's premier biomedical research institution. This year's participants gathered on the main campus of the NIH for a full day of scientific presentations and discussions. Speakers included distinguished scientists and administrators drawn from the agency's intramural research program.





Agenda

Welcome

Dr. Richard G. Wyatt
Executive Director, Office of Intramural Research

Research and Training Opportunities at NIH

Dr. Philip Wang
Director of Student Services
NIH Graduate Partnership Program

The Cornell/NIH Partnership

Dr. Douglas McGregor
Director, Cornell Leadership Program

“Medical Imaging: Bioinformatic Applications”

Michael Ackerman, PhD
Assistant Director for High Performance Computing
and Communications
National Library of Medicine, NIH

“Extracting Common Features From Genomically Aligned Chromatin and Epigenetic Data”

David Landsmen, PhD
Chief, Laboratory of Cellular and Developmental
Neurobiology, National Institute of Neurological
Disorders and Stroke, NIH

“Neuronal Migration and Maturation of GnRH-1 Neurons”

Susan Wray, PhD
Chief, Laboratory of Cellular and Developmental
Neurobiology, National Institute of Neurological
Disorders and Stroke, NIH

“Searching for a Tumor Suppressor Gene on Chromosome 9”

Jonathan Wiest, PhD
Investigator, Laboratory of Cancer Biology and
Genetics, National Cancer Institute
NIH Director, Center for Cancer Training, National
Cancer Institute.

“The Monkey Inside of Us – Nonhuman Primate Models of Social Behaviour”

Dr. Annika Paukner, PhD
Postdoctoral Fellow, Laboratory of Comparative
Ethology, Eunice Kennedy Shriver National Institute
of Child Health and Human Development, NIH Animal
Center

Closing Remarks

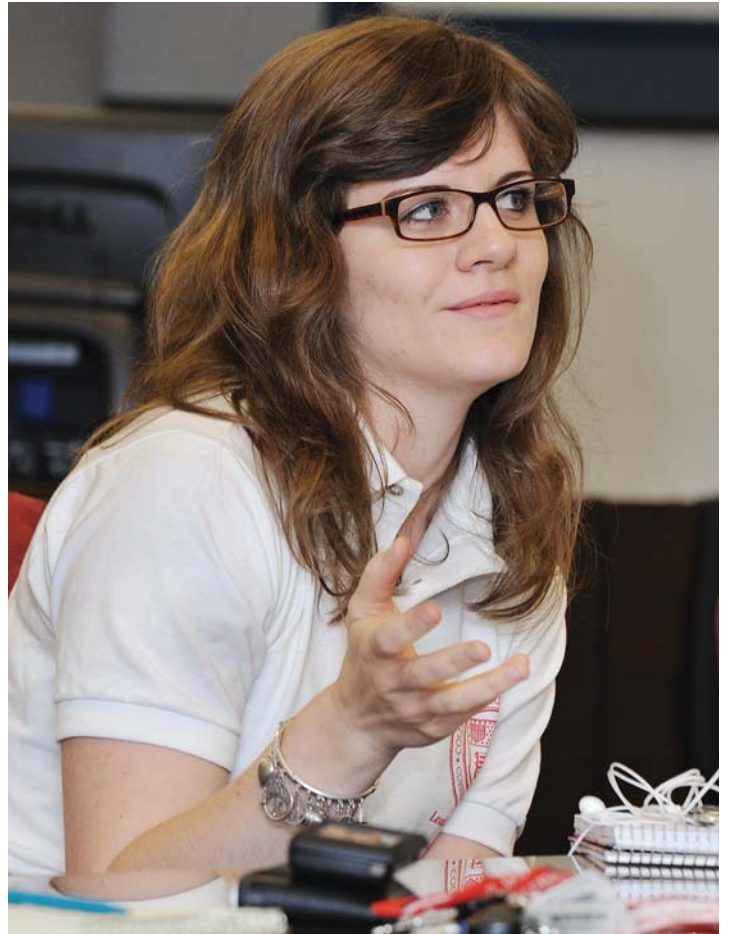
Dr. Douglas McGregor



Walter Reed Army Institute

Armed Services & Infectious Disease

Leadership Program scholars had the privilege this year of visiting the Walter Reed Army Institute of Research (WRAIR). Senior members of the Institute's staff described the remarkable progress being made at WRAIR in addressing still unresolved problems of infectious diseases, which are of special concern to the uniformed services.



of Research

Agenda

Welcome

Captain Stephen Walz
Director Field Laboratory Operations,
Naval Medical Research Center

The Cornell Leadership Program

Dr. Douglas McGregor
Director, Cornell Leadership Program

“Development of a Malaria Vaccine; Challenges and Opportunities”

Captain Thomas Richie, Director
US Military Malaria Vaccine Program
Naval Medical Research Center

“Military Infectious Disease Research”

Colonel Julia Lynch
Chief, Infectious Diseases
Walter Reed Army Institute of Research

“Advances in Development of Vaccines Against Bacterial Diarrhea and Dysentery”

Dr. Patricia Guerry, Senior Scientist, Enteric
Diseases, Naval Medical Research Center

“Development of Anti-Malaria Drugs”

Colonel Alan Magill, Science Director
Major Sandi Parriott, Research Scientist, IBS Program

Closing Remarks

Dr. Douglas McGregor



Presentations & Prizes

Leadership Program scholars discussed their research in a series of presentations at the conclusion of the program. A book prize was awarded to Samantha Hodgkins for the best overall research achievement as judged by her underlying hypothesis, investigative protocol, results, and presentation. Additional prizes were awarded to Clinton Doering, Frances Taylor-Brown and Emily Ames for superior achievements in integrative biology, cell biology, and molecular biology, respectively. The Selection Committee for the 2010 Leadership Program salutes these individuals and congratulates the entire group for their commitment to research and the excellence of their presentations.

Program Prize



Samantha Hodgkins
The Role of the D2 Domain of Feline Junctional Adhesion Molecule A (fJAM-A) in Regulating Host Cell Specificity of Feline Calicivirus (FCV)

Cell Biology Prize



Frances Taylor-Brown
The Role and Regulation of Cancer Cell-Derived Microvesicles

Integrative Biology Prize



Clinton Doering
Modeling Effects of Antimicrobials on Emergence and Dissemination of Antimicrobial Resistance in Enteric Commensal Bacteria Populations

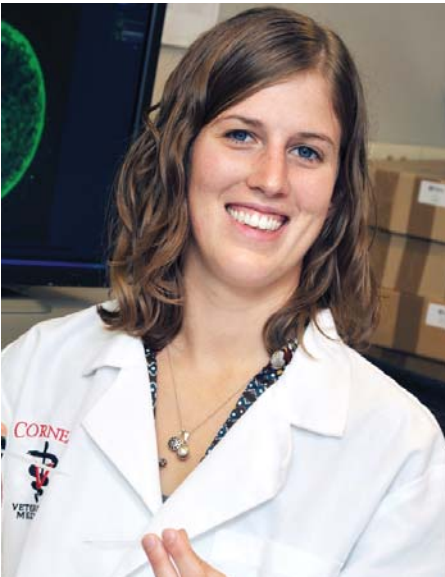
Molecular Biology Prize



Emily Ames
Characterization of MATER Expression in Female Oocytes

Program Scholars

& their Research



Emily Ames, University of Calgary, Reproductive Biology

Characterization of MATER Expression in Feline Oocytes

I applied to the Leadership Program while in my second year at UCVN in order to broaden my understanding of non-traditional careers available to veterinarians. I have been involved in veterinary clinical practice from a young age and still greatly enjoy it. However, I have increasingly become fascinated by the how's and why's of the process, diagnosis and treatment of animal diseases and production challenges. My experiences this summer have truly opened my eyes to the numerous ways I can expand on these interests throughout my career while contributing directly or indirectly to clinical practice. I am considering the numerous options available to me after graduation with enthusiasm and will likely pursue an internship as a first step toward my career goal.

My summer research project was focused on the study of MATER in feline oocytes. MATER or Maternal Antigen That Embryos Require is a maternal effect gene with an expression that is thought to be restricted to oocytes

and early embryos. It was first identified as an antigen associated with a mouse model of autoimmune oophoritis resulting in permanent sterility. The Coonrod lab is studying MATER as a potential immunogen in order to produce a permanent vaccine immunosterilant for female cats. My project involved characterizing the location of MATER DNA transcription and proteins in feline reproductive tissues and oocytes.

I would like to extend a heartfelt thanks to Dr. Scott Coonrod and all the fantastic people working in his laboratory, especially Boram Kim. I would also like to thank Drs. McGregor and Fraser for making this program possible and facilitating an unforgettable summer.



Jeff Beverly, Cornell University, Biomedical Engineering

Role of leukocytes in capillary blood flow stalls in mouse models of Alzheimer's disease

The Leadership Program is as much a didactic experience as it is a practical exercise in research. I was attracted to the program for exactly this: the opportunity to learn about career opportunities and training while concurrently experiencing different scientific opportunities of medicine. It is because of this interplay that I have taken so much from this summer; it has reinvigorated my interests in research, and I hope to find a career that gives me the same satisfaction by overlapping the worlds of clinical medicine and research, perhaps in academia or industry.

We hypothesize that there is a cyclic relationship between the accumulation of amyloid plaques, the hallmark of Alzheimer's disease (AD), and blockages in the cerebral microvasculature. Elucidation of the mechanics of either arm of this paradigm could yield therapeutic interventions in the management and possible treatment of AD. In order to better understand blood flow dynamics in AD, we use an in vivo mouse model of AD and two-photon excited fluorescence microscopy to

quantify the fraction of brain capillaries exhibiting stalled blood flow. We also investigate the characteristics of these stalls, and determine the spatial relationship between stalled capillaries and amyloid plaques.

I need to thank Schaffer Lab members, namely Dr. Chris Schaffer who continues to provide not only experimental guidance, but thoughtful insights on my strengths, potential, and the means to reach ends that I desire; and, Dr. Nozomi Nishimura whom without her daily guidance and insight, and willingness to incorporate me into her project, my summer would have lacked much, if not all, of its fulfillment.



Mirjam Brackhan, Tierärztliche Hochschule Hannover, Bacteriology

Mechanistic studies on Listeria sensing

Throughout the course of my veterinary training, I have become especially intrigued with research. The Leadership Program has provided me the unique opportunity to elaborate on my own project and has moreover focused my career goals. I plan to pursue a PhD and a career in either academia or industry.

Listeria monocytogenes is a facultative intracellular bacterium that secretes the protein c-di-AMP into the host cell's cytoplasm through multidrug efflux pumps. This second messenger triggers a cytosolic pathway of innate immunity which induces IFN- β production. The formation of c-di-AMP is catalyzed by the enzyme diadenylate cyclase (DAC). In *L. monocytogenes*, the gene Lmo2120 encodes a transmembrane protein containing a DAC domain, and is present in an operon with the downstream gene lmo2119 which encodes another transmembrane protein of unknown function. For my project, I cloned these two genes using diverse primer sets for both full-length protein and isolated domains, and two different vectors, and subsequently test expressed and purified the proteins at small scale. Those proteins expressing well, I purified at large scale with the

objective of obtaining sufficient amounts to perform enzymatic assays and crystallization trials in order to learn more about the function and take a first approach to identifying their structure. By studying the structures and mode of regulation of bacterial proteins involved in c-di-AMP signaling, we hope to elucidate novel avenues to modulate pathogen sensing in the host.

Thanks are due to the Sondermann laboratory for providing guidance and support, Drs. McGregor and Fraser for creating such an inspiring program, and my sponsors Boehringer Ingelheim and DAAD for generously funding my work.



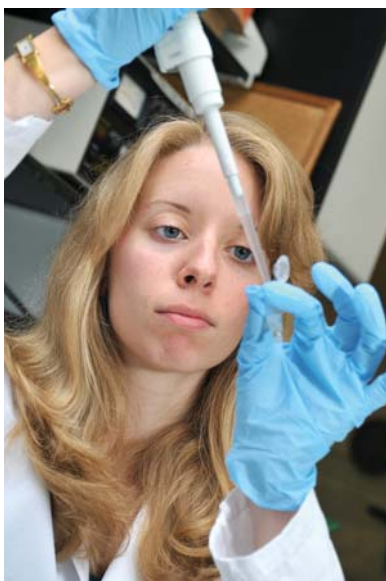
Heike Breuer, Tierärztliche Hochschule Hannover, Cancer Biology
Regulation of PADI2 expression in DCIS tumors

Currently, I'm in my third year of vet school. I applied to the program to learn more about current fields of innovative scientific research and to receive scientific training.

My research in Professor Scott Coonrod's laboratory focused on investigating the regulation of Peptidylarginine Deiminases (PADI) in HER2+ breast cancer and the efficacy of PADI-inhibitors in blocking the growth of early stage breast cancer. The PADIs are a family of posttranslational modification enzymes that catalyze the conversion of protein-bound arginine to citrulline. Using both molecular and cellular techniques, I examined the relationship between PADI2 and HER2 in vitro and in vivo. Initial results support evidence from the literature that PADI2 is upregulated in HER2+ cells. Furthermore, I was involved in the initial stages of the evaluation of a specific PADI-inhibitor, Cl-amidine, in the treatment of xenografted mice. The reversal of aberrant epigenetic changes has emerged as a potential strategy for the treatment of cancer; therefore, the development of Cl-amidine into a novel epigenetic therapy for breast cancer would signify a major breakthrough in breast cancer research.

Working in this great lab gave me the opportunity to explore my career options. I hope to pursue a PhD and incorporate my research into future clinical studies.

I would like to express special thanks to Professor Coonrod and all the lab members, especially John McElwee, for being an enthusiastic supervisor who always succeeded in motivating me throughout my project. Thanks for an amazing summer! I would also like to thank Drs. McGregor and Fraser for creating this unique program and Boehringer-Ingelheim and DAAD for sponsoring my scholarship.



Jennifer Cassano, Cornell University, Genetics and Molecular Biology
Horse Size Genetics and Neurodegeneration in Mice

As a dual degree (DVM, PhD) student, I wanted to take part in the Cornell Leadership Program to get more exposure to different fields and meet people who I could learn from. The program was such a unique experience to be surrounded by people with such interesting perspectives and I feel I have gained an amazing network of aspiring scholars.

My research project under the mentorship of Dr. Nate Sutter focused on horse size genetics. The Sutter lab had identified regions associated with size from a genome wide screen using single nucleotide polymorphisms (SNPs). In these areas, I analyzed the literature for genes associated with size in other species. Upon finding a notable candidate gene, I would sequence the loci to identify new SNPs. After genotyping my samples, I could narrow the region of interest and get closer to understanding which genes were associated with size.

My research in Dr. Dave Lin's lab focused on understanding the pathways involved in oxidative stress that can contribute to neurodegeneration and the development of Alzheimer's disease. The genes involved in oxidative stress and their regulation of each other is not well understood. By characterizing the response to oxidative stress in the absence and presence of gene function, I was able to better define the role of certain genes in the pathway.

I would like to thank both Nate Sutter and Dave Lin for their outstanding guidance, and all my lab members for their support. Also, I would like to thank both Dr. McGregor and Dr. Fraser for crafting an amazing experience.



Zach Chillag, University of Georgia, Virology

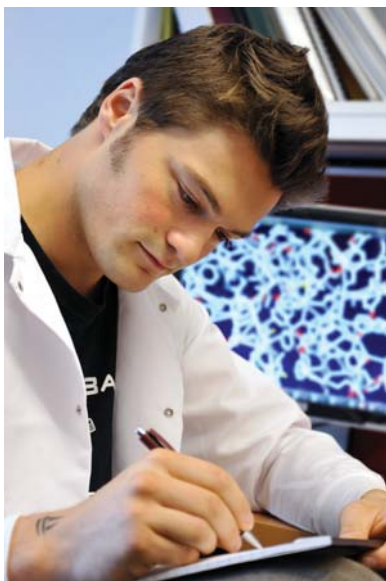
Mechanisms of Viral Entry into Host Cells: Use of Aminopeptidase N as a Receptor for Canine Coronavirus.

Halfway through the first year of my veterinary training, I was faced with the decision of how to make the best use of my summer. I am an experiential learner, so finding a program that provides an experience was important to me. This motivator, along with my curiosity about research careers, led me to choose the Leadership Program. I am very satisfied with my choice, as it has afforded me exactly what I had hoped to gain: hands-on training with an actual research project. In addition, the program has provided me with many personal perspectives on where a research career could take me, and the necessary steps to get there.

During my summer at Cornell, I worked in the Whittaker lab investigating the canine cell surface receptor aminopeptidase N for its functionality in infecting dog cells with coronavirus. A homologous aminopeptidase N is known to be used for feline coronavirus infection, but the canine receptor had not been formally characterized. The project involved a lot of thinking, planning, and of course,

pipetting. It sparked my curiosity and challenged my intellect, inspiring me to give serious consideration to pursuing a research career.

The experience would not be possible without the help of Gary Whittaker and the members of the Whittaker lab, who were always willing to spend time teaching and thoroughly explaining the methods, and who tirelessly put up with my questions!



Gregory Dickens, Cambridge University (Selwyn College), Biomedical Engineering

Rational Re-Design and Directed Evolution of the β 1-Integrin I-Like Domain for Inflammation-Targeted Therapeutics

Despite being told by various people throughout my six years at Cambridge University Vet School to apply for The Leadership Program, I'd always thought my paucity of previous research training left me ineligible. However, one of last year's scholars convinced me to try. I'm glad I did: This summer has exceeded expectations on both fronts.

Moonsoo Jin's Lab gave me the freedom to choose my own project. I elected to cooperate with Sungkwon "Goose" Kang in testing the hypothesis that mutation can activate the binding tip of an integrin (in this case, the "I-Like" Domain). This would allow the I-Like domain to bind to its physiological ligand (VCAM-1) without the rest of the protein attached. This proved, I used transformed yeast cells to run a directed evolution series selecting for the highest binding affinity for VCAM-1 on human endothelial cells. I then sequenced the highest affinity mutant and transformed *E. coli* to both produce the I-Like Domain into solution for binding interference studies and to produce it linked to fluorescence protein for quantitative studies.

The professional enrichment activities connected with the Leadership Program, from which I hadn't expected much, turned out to be invaluable. They changed the way I view my future position in professional life and my career possibilities. My direction remains Zoological Veterinary Medicine, but I'd now feel more comfortable leading teams and dealing with unpredictable circumstances.

My thanks go to Guen Bradbury for encouraging me to apply and to the Wellcome Trust for my funding.



Clinton Doering, University of Calgary, Population Medicine and Diagnostic Services

Modelling Effects of Antimicrobials on Emergence and Dissemination of Antimicrobial Resistance in Enteric Commensal Bacteria Populations

The leadership program was an amazing experience and surpassed all my expectations. Workshop and networking opportunities will be considerable assets to my future career decisions, while discussions exposed me to career opportunities I was not aware of prior to this program.

The aim of my research was to help develop a mathematical model describing effects of antimicrobials on enteric commensal bacterial populations. Our model encompasses logistic growth behaviour of ceftiofur-sensitive and ceftiofur-resistant populations within the gastro intestinal tract, and coupled with pharmacokinetic and pharmacodynamic influences, describes the outcome on these two populations following drug exposure. Surprisingly, the model predicts that the resistant population will not increase in any appreciable manner even though the sensitive population is reduced, and these findings are in agreement with published experimental studies. Importantly, the model predicts that pharmacodynamic factors such as gastrointestinal tract concentration and clearance rate are

most important for determining outcomes. These results will help direct future studies for ways to best prevent emergence and dissemination of resistant bacteria populations with increased antimicrobial use in production animal systems.

I would like to thank all of this year's participants, and particularly Drs. McGregor and Fraser for their hard work and efforts involved in running this successful program. I would also like to thank my research mentor, Dr. Yrjö Gröhn, and all lab members, for inspiring and challenging me with a research topic that was far removed from my comfort zone, as well as Pfizer, Inc. for financial support.



Line Greve, University of Copenhagen, Stem Cell Biology

Effects of DNA CpG Methylation on the Differentiation of in vitro Cultured Equine Bone Marrow Derived Mesenchymal Progenitor Cells

I entered the Leadership Program not knowing my ultimate career goal. Now, I know that I want to pursue a PhD degree after graduation this fall. During my research, I have acquired knowledge about stem cell biology with a particular focus on epigenetic factors. I want to pursue a PhD degree somewhere that offers excellent mentorship and training and allows me to work in an intellectually stimulating environment.

The broad objectives of my research at Cornell University were to determine if putative equine mesenchymal progenitor cell (MPC) population is in a true, undifferentiated stem cell state. The method I used allowed me to investigate the regulation mechanism of the transcription of sox2 and nanog. My results show that the DNA CpG methylation is correlated with the transcription of sox2 and nanog and that the biological potency and epigenetic state of invitro cultured MPC are distinguishable from juvenile tissue. However, the exact effect of monolayer culturing ex vivo needs further investigation.

I would like to thank Professor Lisa Fortier for her outstanding mentorship and thank the entire lab group for creating an excellent intellectually stimulating environment. Every day in the lab has been an unforgettable experience. Thanks also to Drs. Fraser and McGregor who have created such a unique program.



Samantha Hodgkins, Cornell University, Virology

The role of the D2 domain of feline Junctional Adhesion Molecule A (fJAM-A) in regulating host cell specificity of Feline Calicivirus (FCV) infection

I applied to the Leadership Program in order to gain experience in research and explore alternative career paths including industry and public health. The program provided unique and informative interactions with veterinarians working in many different areas. I greatly enjoyed meeting these individuals as well as interacting with my colleagues from around the world.

My research focused on understanding how Feline Calicivirus (FCV) binds to its receptor, feline Junctional Adhesion Molecule A (fJAM-A). Feline Calicivirus is a small, non-enveloped positive strand RNA virus in the same family as Norovirus, an important cause of viral gastroenteritis in humans. fJAM-A is a transmembrane protein found at tight junctions between epithelial and endothelial cells. Its ectodomain is comprised of two segments, D1 and D2. Previous work in the lab demonstrated that pre-incubation of FCV with the soluble fJAM-A ectodomain or D1 alone inhibits infection, indicating that the D1 domain is important in binding FCV. However, the entire ectodomain is required for infectivity, suggesting that

the D2 domain also plays a role in viral entry. In order to determine important residues for viral binding and entry, mutations were made in both the D1 and D2 domains. My work focused on expressing these mutant receptors in a non-permissive cell line and comparing viral binding and infectivity using flow cytometric and plaque assays.

I would like to thank Dr. John Parker for his mentorship as well as the entire Parker Lab for welcoming and teaching me this summer.



Sarah Hooper, University of Georgia, Bacteriology

Antisense mechanisms of gene regulation in Salmonella

As I was earning my undergraduate degree, I had the privilege to work with a poultry nutritionist who introduced me to field research. I also had a wonderful professor who was an excellent teacher and advisor. Both of these individuals inspired me to consider a career in academia. When I entered veterinary school this past fall, the aspiration continued so I applied to the Leadership program in order to gain experience in basic bench research and to learn about aspects of veterinary medicine that are not taught in traditional veterinary curriculums.

Under Dr. Craig Altier's guidance, we based my research project on interesting results found previously in the lab. When a host is infected with Salmonella, the internal environment induces numerous genes to be expressed, and it was found that fragments of mRNA were created in the opposite orientation from known genes. These antisense mRNA fragments suggest that regulation occurs at a post-transcription level.

Over the summer I created three Salmonella mutants that had lacZ inserted into the genome. This allowed us to test the hypothesis that there are promoters in the opposite orientation of the known genes that created antisense mRNA so it could bind to the mRNA created from known genes thereby preventing translation.

I would like to thank Dr. Altier who has been a fantastic mentor and has been incredibly generous with his time and talent. Additionally, I would like to thank Dr. Perkins for allowing me to participate in her *S. equi* project and who helped me confirm that I would like to enter academia after graduate training.



Sanne Hugen, Universiteit Utrecht, Molecular Biology

Investigating DNA damage response activation in testicular germ cell tumors of the mouse.

The Leadership Program enabled me to think about, consider and weigh different career opportunities one has as a veterinarian. It also enabled me to meet great people and to become personally involved with exciting research. This combination of experiences and the insights they provided was exactly what I hoped to get out of the program.

My project in the Weiss lab, under the guidance of Dr. Amy Lyndaker was to investigate the DNA damage in a mouse model of testicular germ cell tumors. In contrast to most tumors, testicular germ cell tumors (TGCT) occur at a very young age in men and respond well to treatment. The latter likely is related to the lack of constitutive activated DDR and absence of mutated DNA damage response genes in such tumors. The aim of my project was to examine if the DDR is still functional and can be activated by DNA damaging agents. We performed western blot analysis of DDR proteins on cell cultures treated with the DNA damaging agents 4NQO or cisplatin and found that the DDR is intact in the tumor cells. Because there is still

a great need for better animal models on TGCTs, a second part of my project focused on the generation of a new mouse model.

My time in the lab provided me fantastic opportunity to learn new techniques and to gain a valuable perspective on research. I would like to thank all the great people in the lab for their help and the great atmosphere they created.



Marie Killerby, Cambridge University (Selwyn College), Virology

Host specific receptors for canine and equine influenza viruses

Studying veterinary medicine has given me an appreciation of multiple fields of comparative biological investigation. My studies sparked an interest in scientific research. I applied to the Cornell Leadership Program hoping to gain my first hands on experience of laboratory research. I was assigned a project working with canine influenza virus, which I considered a fantastic opportunity given the importance of influenza viruses to both animal and human health.

My research project involved looking at host cell receptors for influenza viruses, sialic acids, devising staining protocols to mark sialic acids and attempting to adjust the type of sialic acid present on canine cells. It is hoped that these tools can then be used to see differences in the binding of canine and equine influenza viruses to cells with different levels of sialic acid expression. This would enable one to demonstrate whether mutations in the haemagglutinin gene from equine influenza to canine influenza virus cause a change in the binding of influenza virus to host cell receptors.

I have thoroughly enjoyed the leadership program this summer. I found the modules invaluable in broadening my knowledge of careers available to veterinarians. My research project also was a fantastic experience, enabling me to learn a huge amount not only about the specifics of canine and equine influenza viruses but also how to approach projects and work through the challenges and problems one comes across. I would like to thank Dr. Parrish and everyone in the Parrish Lab, particularly Oz and Jess, for allowing me to work with them this summer.



Anne Kimmerlein, University of Minnesota, Immunology

The in vitro effects of live Leishmania major vaccine containing Toll-like receptors agonists on neutrophils

I have always known that I would be a veterinarian because I love working with animals and am fascinated by science. Yet, even before I entered veterinary school, I suspected that a clinical career is not for me. While treating individual animals is important and gratifying, I believe that my love of biology and learning should be used to help advance the well-being of broader groups of animals and people. I applied to the Leadership Program in order to better understand the potential roles for veterinarians in research. In presenting a wonderful variety of research opportunities, the program has both expanded and focused my career aspirations. It is currently my goal to pursue a PhD upon graduating from veterinary school.

My project examined the effects of CpG and Pam3 Toll-like receptors (TLR) agonists combined with live *Leishmania major* vaccination on an in vitro neutrophil response. Using both a human polymorphonuclear leukocyte cell line and neutrophils harvested from mice, I tested neutrophil ability to become activated and produce neutrophil extracellular traps (NETs). Preliminary results suggest

that neutrophils respond better to infection in the presence of CpG and Pam3, supporting the possible use of TLR agonists in *L. major* vaccines and expanding the need for a better understanding of how neutrophils respond to *L. major* infection.

I would like to express my thanks to the Mendez Lab, especially, Lu Huang whose enduring patience made my project possible and a special thanks to Dr. Fraser and Dr. McGregor for their continued confidence in my success!



Brina Lopez, Colorado State University

Engineering 3D Tumor Microenvironments to Study Tumor Stem Cell Behavior

The application of the scientific method to advance knowledge of disease mechanisms and the development of therapies, is what drives my interest in research. A career in academic veterinary medicine would provide me with the opportunity to influence my profession in a number of ways, through teaching, research and discovery, as well as the translation of research findings into clinical practice.

Glioblastoma is a primary brain tumor which is resistant to therapy, perhaps because of being localized to discrete brain microenvironments. We have recreated a microenvironment using tissue engineering and patient-derived tumor stem cells, and investigated the role of hypoxia on pro-angiogenic signaling. The aim was to define the interactions between tumor stem cells and endothelial cells that promote tumor survival and growth by stimulating angiogenesis. To examine this interaction, we conducted experiments exploring the effect of hypoxia on both gene and protein expression of relevant chemokines and their receptors. In addition, we studied the effect of soluble factors secreted by these cells under hypoxic conditions,

on the induction of proteins by the other cell type. Results from this research may elucidate the pathogenesis of glioblastoma, and provide novel therapeutic targets for the treatment of this disease.

I would like to thank Drs. Douglas McGregor and David Fraser for the opportunity to participate in such a unique and challenging program. I would also like to express my appreciation to Dr. Claudia Fischbach and my mentor, Dr. David Infanger for providing me with an unforgettable experience that has equipped me with the skills and knowledge that will be invaluable to my research career.



Kathleen O'Hara, Cornell University, Immunology

Identifying a Genetic Marker for Equine Common Variable Immunodeficiency

Cornell's Leadership Program brought together the best and brightest from around the world. Having just completed my first year of veterinary school, I was fortunate to share the insights of more senior students who had experienced entirely different cultures and learning experiences, yet were similarly motivated to pursue nontraditional career routes. Together we explored the range of career options available to us, and I believe we gained confidence in our own abilities to impact the future of veterinary science. The program confirmed my desire to pursue a PhD, and interested me in exploring a clinical residency that would enable me to grow professionally. My goal is to be an academic clinical researcher.

Under the direction of Julia Flaminio, I explored a high throughput transcriptome database to identify candidate genetic markers for equine common variable immunodeficiency (CVID). Applying our knowledge of equine CVID, I used bioinformatics tools to identify B-cell factor 1 (EBF1) as a potential target. Using cloning and sequencing techniques, I was able to establish a differential isoform utilization pattern of the EBF1 gene between CVID and healthy horses. In the

future we hope to characterize the functional impact of this difference by focusing on the impacted protein domains and protein-protein interactions.

I would like to thank the members of the Flaminio lab, especially Rebecca Tallmadge who guided my work this summer, for their interest and support during my summer experience. Additionally, I would like to wish all of my peers the best in their future pursuits.



Ravee Padte, Cornell University, Genetics

What Can Transcriptome Sequencing Tell Us About Tame and Aggressive Foxes?

When I began my DVM training in 2008, I was largely undecided as to my long-term career aspirations within veterinary medicine. I participated in the Leadership Program to broaden my understanding of the unconventional avenues that veterinarians may take to improve animal and human health. I was also captivated by the once-in-a-lifetime opportunity to work closely and build lasting relationships with the best veterinary students from around the world.

The Acland lab studies molecular mechanisms contributing to behavioral differences between strains of "tame" and "aggressive" silver foxes (*Vulpes vulpes*) developed by the Institute of Cytology and Genetics in Novosibirsk, Russia. Recently, the scientists utilized the Roche 454 FLX Titanium platform to sequence the frontal cortex transcriptome of one tame and one aggressive fox, and discovered over 25,000 high-confidence polymorphisms. In my project, I validated over 30 single-nucleotide polymorphisms (SNPs) by designing primers that targeted their loci, amplifying these regions with PCR, and sequencing the DNA via the traditional Sanger method. For one SNP that changes an amino acid in a specific gene

(PDGFRB), I conducted a population study to identify and confirm differences in allele frequency between tame and aggressive foxes.

I would like to extend my heartfelt thanks to Dr. Gregory Acland and his lab members, especially principal investigator Dr. Anna Kukekova and Jennifer Johnson, for their enthusiasm in shaping my research experience. I wish my fellow scholars and Caleb Chan all the best in their pursuits. Lastly, I want to express my gratitude to Drs. McGregor and Fraser for their wholehearted investment in the future of tomorrow's veterinarians.

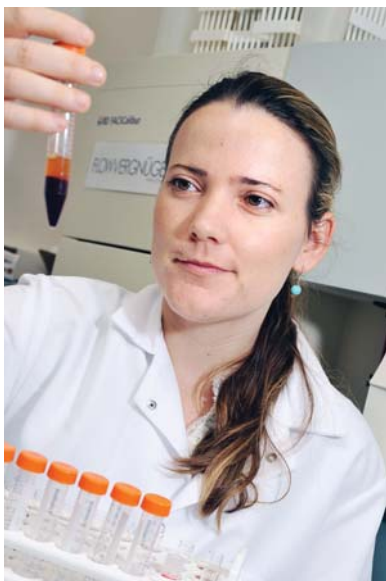


Gertje Petersen, Freie Universität Berlin, Biomedical Engineering
Enzymes on a Chip: Immobilizing proteins to anorganic surfaces

Born daughter to two veterinarians, my decision to go into vet school seemed a logical one, even though my interests did not solely lie within the field of clinical practice. Having been greatly fascinated by the way things work from the moment I was able to open a book, I was intrigued by the idea of spending a summer investigating a problem in the wide field of veterinary research. Little did I know that the Leadership Program would provide me with opportunities to do much more than that.

Working in the lab of Alexander Travis, I was able to play a part in a project that will hopefully lead to a way to power in vivo devices on a nanomolecular level. Using enzymes derived from sperm, the project's ultimate goal is to tether all glycolysis enzymes to a chip, thus enabling it to generate ATP from Glucose. My project employed firefly Luciferase as a model enzyme while working with a hexa-his-tag and a Silicon binding protein. I was also able to construct a Silicon binding GFP and study its binding to a glass surface.

My thanks go to Alex Travis, my mentor Roy Cohen and all the members of the Travis lab, who let me work on a fascinating project, which enabled me to learn from my mistakes, while cherishing my own little victories. I would also like to thank my fellow classmates for an unforgettable summer and Drs. McGregor and Fraser for the opportunity to participate in the valuable experience promoted by the program.



Eliza Smith, University of Queensland, Blood Coagulation

The 2010 Leadership Program has been an invaluable experience. I applied for the program after hearing from an Australian program alumnus about the training and career guidance it offers to veterinary students interested in research and public health. Every aspect of the program has challenged me to think about how best to approach my career as a veterinary scientist – perfect timing as I enter the final months of my veterinary degree.

I worked on a project with Dr. Tracy Stokol investigating markers for platelet activation in horses and for the first time in this species, evaluating the role of platelet microparticles in thrombin generation. We used flow cytometry to identify and quantify platelet microparticles, and thrombin generation assays to evaluate their activity in a sample of normal healthy horses. It was a great experience to be part of preliminary research that will hopefully lead to improved diagnostics and management of common thrombotic disorders in this species.

I would like to express my warmest gratitude to Dr. Stokol and her research team, in particular Janelle Daddona and Wee Ming Yeo, for their encouragement and for the inclusive and entertaining manner in which they welcomed me into the lab. I would also like to thank Dr. Jim Catalfamo and Dr. Marjorie Brooks for their feedback and guidance throughout my project.

After graduating with my veterinary degree, I hope to work in the field of pathology and public health in an animal production and human development setting. I have met the most intelligent and creative fellow veterinary students here. I wish my new friends success in fulfilling and impacting careers, wherever that may be.



Luise Steltzer, Freie Universität, Berlin, Translational Science

What's Bugging you? A culture independent approach to identifying antimicrobial resistance in clinical samples

I started studying veterinary medicine with the intention to become a researcher. During vet school I discovered my particular interest in autoimmune diseases. I definitely want to pursue a PhD after my graduation in 2011, but the Leadership Program aroused my interest in translational science. Now I am thinking about doing an internship first. The program was a great opportunity to meet brilliant people and to learn from them!

Antibiotic resistance is an increasing problem in human and veterinary medicine. My research project in Kenneth Simpson's lab focused on Clarithromycin resistance (ClaR) of gastric *Helicobacter* species in dogs. Using FISH analysis I identified 4 out of 14 dogs in which the Clarithromycin therapy was unsuccessful. ClaR in *H. pylori* infected people is encoded by polymorphisms in 23S rRNA. My aim is to determine if 23S rRNA polymorphisms linked to ClaR in *H. pylori* correlate with outcome in dogs. I cloned and sequenced the peptidyl transferase region of the 23S rRNA gene of a variety of different *Helicobacter* spp to enable comparative

analysis with *H. pylori* and 23S rRNA sequences amplified from the stomach of dogs that did and did not respond to Clarithromycin. Using *Helicobacter* species specific PCR I also hope to determine if there are differences between *Helicobacter* spp. regarding ClaR.

I would like to thank my mentor Kenny Simpson and the members of his lab for their support. I also want to thank Drs. McGregor and Fraser for giving me the opportunity to participate in the program and Pfizer for funding my scholarship.



Frances Taylor-Brown, The Royal Veterinary College, Molecular Biology

The Role and Regulation of Cancer Cell-Derived Microvesicles

I have thoroughly enjoyed the Cornell Leadership Program, especially working in the lab and developing my critical thinking and scientific skills. Moreover the various workshops have given me the opportunity to explore different career options available as a veterinary graduate. At this stage I aim to pursue a career in academia where I could combine research and clinical work.

Cancer cells demonstrate unique characteristics including chemoresistance, enhanced growth and the ability to be locally invasive and metastasise. Microvesicles (MV's) are membrane bound structures produced by cancer cells that play an important role in tumour progression. In this project I studied the regulation and functions of MV's using a range of techniques and have shown that MV's derived from the human breast cancer cell line MDAMB231 are capable of conferring transformed characteristics to normal human mammary cells MCF10A. I established that there is a link between the altered metabolism of cancer cells and MV production; inhibition of glutaminase diminished MV production in both MDAMB231 and human glioblastoma U87 cells. Doxorubicin, a commonly used

chemotherapeutic had no effect on MV production suggesting that the action of doxorubicin is independent of the pathway involved in MV production.

I would like to express my sincere thanks to the Cerione laboratory especially to Dr. Marc Antonyak and Professor Richard Cerione for providing excellent support, guidance and encouragement throughout this project. In addition I would like to thank Drs. McGregor and Fraser for organising such a well structured and inspiring program, and express thanks to the Wellcome Trust who sponsored my time at Cornell.

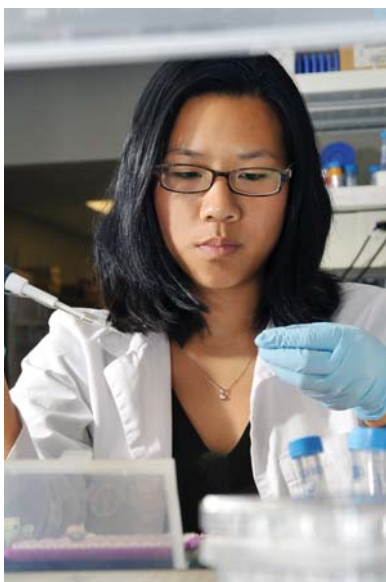


Daniel Woodburn, Virginia-Maryland College of Veterinary Medicine
Characterization of Microparticle-Derived Thrombin Generation in Hypocoagulable Dogs

I first learned of the Leadership Program when Dr. Philip Carter, a program facilitator, visited Virginia Tech and gave a brief recruitment presentation. I submitted my application on somewhat of a whim. Thankfully I was accepted and could not have been more impressed with the experience I've had at Cornell. My research focused largely on the generation of thrombin in canine plasma. Thrombin is produced by the cleavage of prothrombin in the penultimate reaction of the coagulation cascade; its primary function is the activation of fibrinogen, leading to the formation of a fibrin clot. Reactions leading to the formation of thrombin occur largely on negatively charged phospholipid surfaces, including platelet-derived microparticles. During the course of the summer, I prepared platelet-free plasma as well as plasma free of both platelets and microparticles in order to study the effects of microparticles on thrombin generation in a variety of dogs with hypocoagulability disorders. Surprisingly, I observed that microparticles from Factor IX deficient (Hemophilia B) plasma possessed greater thrombin generating

potential than those from normal plasma. I found the research fascinating because it has significant implications for understanding the pathophysiology of coagulation disorders and possibly developing future treatments.

I would like to thank the following individuals: Dr. McGregor, Dr. Fraser, and all of the facilitators for providing such a wonderful learning experience; Dr. Catalfamo, Dr. Brooks, and their team at the Coagulation lab for putting up with me; the other students in the program for the fun times; and lastly Henry, Quanta, and Ned, without whom none of this would be possible.



Sirima Yaemsiri, North Carolina State University, Reproductive Biology
Organization and Possible Functional Role of GM1-Enriched Membrane Domains in Murine Epididymis

After an in-field research project with World Wildlife Fund on the migration patterns of forest elephants in Cameroon, I realized the potential impact of research on wildlife conservation efforts, human populations, and ecosystem dynamics. I hope to apply information gained from basic science research to clinically relevant issues facing threatened and endangered species in order to help improve both veterinary care and conservation management strategies. The Leadership Program has helped me broaden my laboratory skill set and introduced me to leaders in the research field of my interest.

The Travis Lab studies male germ cell biology in the hopes of improving human reproductive health as well as preserving genetic diversity in wildlife. My project attempts to understand the mechanism through which mammalian sperm become translationally active and competent during epididymal transit. Membrane rafts are functional membrane domains, highly enriched in sterols and sphingolipids such as ganglioside GM1 and are currently hypothesized to play a role in the maturational

process of sperm. Immunohistological experiments with murine epididymis showed localization of GM1 in epithelial cells of the initial segment and distal caput segment. Using several markers, we found that in the initial segment, GM1 was specifically localized in narrow cells, which are known to contribute to the modulation of the intraluminal microenvironment. This evidence suggests that GM1-enriched membrane domains might be involved in epididymal sperm maturation.

I would like to thank Drs. Alex Travis and Atsushi Asano for their guidance and mentorship throughout the project, as well as the entire Travis Lab for their continued support and good humor.



Caleb Chan, Leadership Program Coordinator

Being the Program Coordinator for the Leadership Program was an amazing experience. The job offered a unique perspective into the areas of industry and research, while allowing me to interact with the participants on a daily basis. I was impressed with the level of dedication and passion with which the students pursued their research and am confident that they will be successful in whatever career path they ultimately choose.

I have applied to medical school and hope to matriculate next fall with the goal of doing global health work or research in developing countries. I've learned so much from working with Dr. McGregor and Dr. Fraser this summer. The experience was as enriching for me as it was for the participants. I would like to thank each of them for their friendship and encouragement.



Facilitators & Counselors



Dr. Scott Aoki, Facilitator
PhD Graduate Student
Harvard University



Dr. Hannah Bender, Facilitator
Resident, Anatomical Pathology
Cornell University



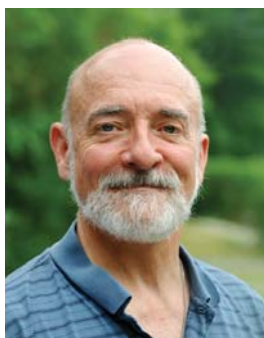
Dr. Klaus Beyenbach, Counselor
Professor Physiology
Cornell University



Dr. Danielle Buttke, Facilitator
EIS Officer, CDC



Dr. Philip Carter, Facilitator
Professor Emeritus, Microbiology
North Carolina State University



Dr. Theodore Elsasser, Facilitator
Research Scientist,
Growth Biology Laboratory
USDA, Beltsville, MD



Dr. Julia Flaminio, Counselor
Assistant Professor,
Clinical Sciences
Cornell University



Dr. David Fraser, Facilitator/
Counselor
Professor Emeritus,
Animal Science
University of Sydney



Dr. Neil Gorman, Facilitator
Vice-Chancellor
Nottingham-Trent University



Lawrence Grossman, Facilitator
Former President
NBC News, US Public
Broadcasting System



Dr. Michelle Haven, Facilitator
Vice President, Business
Development, Licensing
and Strategic Planning
Pfizer Animal Health



Gerard Hickey, Facilitator
Director, Worldwide
Regulatory Affairs, Merck Co.



Dr. William Horne, Facilitator
Professor of Anesthesiology and
Director
Cornell Hospital for Animals
Cornell University



Dr. Charlie Hsu, Facilitator
Research Veterinarian,
Laboratory Animal Resources
Merck Co.



Dr. Natazka Kurpios, Counselor
Assistant Professor, Molecular
Medicine
Cornell University



Dr. Peggy McCann, Facilitator
Director, Regulatory Affairs
Merck Co.



Dr. Sean McDonough, Counselor
Associate Professor, Pathology
Department of
Biomedical Sciences
Cornell University



Dr. Douglas McGregor, Counselor
Director, Leadership and Training
Initiatives
Cornell University



Dr. Drew Noden, Facilitator
Professor, Biomedical Sciences
Cornell University



Dr. John Parker, Facilitator
Associate Professor, Virology
Cornell University



Dr. Colin Parrish, Facilitator
John M. Olin Professor, Virology
Cornell University



Dr. Alfonso Torres, Facilitator
Associate Dean for Public Policy,
Cornell University



Dr. Ann Wilkinson, Facilitator
Associate Director,
Global Alliances,
Pfizer Animal Health

Housing

Participants in the Leadership Program were housed in the Zeta Psi fraternity house on the Cornell campus. They had exclusive use of the building for the eleven-week period that the program was in session. Several events were scheduled there, typically in the evening in conjunction with a catered meal. The living arrangements enabled the scholars to socialize and relax in a convenient and pleasant campus environment.



Time Out

Apart from their intensive schedule, program scholars found time for many personal pleasures. They capitalized on local Ithaca amenities and visited Niagara Falls, New York City and Washington, DC.



Program Dinner

The Leadership Program scholars hosted a dinner for their mentors, module facilitators, counselors, and other guests at Willard Straight Hall on the Cornell University campus.





Program Alumni

Contact with Leadership Program graduates is maintained in order to strengthen the professional network forged at Cornell and to uphold the program's tradition of excellence for the benefit of future scholars. Alumni are encouraged to make informed decisions about the advanced training needed to realize their professional goals. The accompanying table lists degrees awarded to program graduates and degrees they are expected to receive after completing the academic programs in which they are presently registered. Not included in the list are degrees alumni received before they began their veterinary studies.

Academic Qualifications of DVM graduates of the Leadership Program Graduates (1990-2008)

DEGREE	No.	% NORTH AMERICAN ALUMNI	No.	% OTHER ALUMNI	TOTAL No.	% TOTAL ALUMNI
PhD	45	19.7%	90	42.5%	135	30.7%
Dr. Med. Vet.	NA	NA	18*	46%	NA	NA
MPH	10	4.4%	3	1.4%	13	3%
MS	8	3.5%	10	4.7%	18	4.1%

North America
(N=228)

Other Countries
(N=212)

Total
(N=440)

* German Alumni only

NA = Not applicable

The following table indicates that a substantial number of program alumni obtained residency training in the course of their graduate studies. Eighty-eight residents were graduates of veterinary schools in North America while 45 were alumni of schools located elsewhere in the world. It is tempting to speculate that the difference between the two groups reflects greater opportunities for residency training in North America although other, less obvious reasons may contribute to the observed difference.

Residency Training of DVM Alumni of the Leadership Program (1990-2008)

RESIDENCY	No.	% NORTH AMERICAN ALUMNI	No.	% OTHER ALUMNI	TOTAL No.	% TOTAL ALUMNI
Clinical	46	20.2%	29	13.7%	75	17.0%
Pathology	27	11.8%	8	3.8%	35	8%
Laboratory Animals	8	3.5%	1	0.5%	9	2%
Other*	7	3.1%	7	3.3%	14	3.2%
Total	88	38.6%	45	21.2%	133	30.2%

North American
(N=228)

Other Countries
(N=212)

Total
(N=440)

* Oncology, radiology, anesthesia, exotic animals.

Where Are They Now?

Listed below are the positions currently occupied by program alumni who have completed their veterinary education and are pursuing careers in science or public health.

1990

John Angelos, Associate Professor, Comparative Pathology, University of California at Davis, CA

William Carr, Instructor, MGH Partners for AIDS Research Center, Harvard University, Cambridge, MA

Laura Gumprecht, Associate Director, Safety Assessment, Merck Research Laboratory, West Point, PA

Elizabeth Lyon-Hannah, Research Faculty, Boise State University, Boise, ID

Richard Haworth, Senior Pathologist, GlaxoSmithKline, Middlesex, UK

Melissa Mazan, Associate Professor and Director, Sports Medicine, Tufts University, North Grafton, MA

Rebecca Papendick, Diagnostic Pathologist/Senior Scientist, Zoological Society of San Diego, San Diego, CA

Susan Schaefer, Clinical Associate Professor, Surgery, University of Wisconsin, Madison, WI

A. W. (Dan) Tucker, Senior Lecturer, Veterinary Public Health, University of Cambridge, UK

Thomas Vahlenkamp, Head, Institute of Virology, School of Veterinary Medicine, Leipzig, Germany

1991

Prema Arasu, President, International Programs, Washington State University, Pullman, WA

David Bainbridge, Clinical Veterinary Anatomist, University of Cambridge, UK

Linda Berent, Clinical Assistant Professor, University of Missouri, Columbia, MO

Ian Davis, Research Assistant Professor, Genomics and Pathobiology, The Ohio State University, Columbus, OH

Dianne Hellwig, Associate Professor, Agriculture and Natural Resources, Berea College, KY

Judy Hickman-Davis, Director, Laboratory Animal Training Program/ Assistant Professor, Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, OH

Alison Moore, Equine Medical Consultant, IDEXX, Cambridge, Ontario, Canada

Alan Radford, Senior Lecturer, Small Animal Studies, University of Liverpool, UK

1992

Tomasz Betkowski, Medical Representative, Eli Lilly Co., Indianapolis, IN

Stephen Davies, Assistant Professor, Parasitology, Uniformed Services University, Bethesda, MD

Mathew Gerard, Clinical Associate Professor, Large Animal Surgery, North Carolina State University, Raleigh, NC

Christine Hawke, Lecturer in Professional Practice, University of Sydney, AU

Julio Montero, Brigade Veterinarian, US Army, Yongsan, South Korea

Jacqueline Phillips, Professor, Molecular Neuroscience, Macquarie University, Sydney, AU

Cristina Rodriguez-Sanchez, Senior Research Associate, Universidad Nacional Autónoma de México, Mexico

Louise Southwood, Assistant Professor, Large Animal Emergency and Critical Care, University of Pennsylvania, New Bolton Center, Philadelphia, PA

Reinhard Straubinger, Professor and Section Head, Bacteriology and Mycology, Ludwig Maximilian University, Munich, Germany

1993

Virginia Fajt, Associate Professor, Pharmacology, Texas A&M University, College Station, TX

Christopher Laing, Director, Science and Technology University City Science Center, Philadelphia, PA

Emma Massey O'Neill, Lecturer, Small Animal Medicine, University College, Dublin, Ireland

Joanne Rainger, Registrar, Anesthesia, University of Sydney, AU

Ashley Reynolds, Staff Scientist, NCI, NIH, Bethesda, MD

Susanna Ryan, Scientific Team Leader, Chameleon Communications International, London, UK

Veiko Saluste, Chief Executive Officer, Interchemie Worken, Adelaar AS, Estonia

Melinda Stewart-Gabor, Pathologist, EMAI Diagnostic Services, Menangle, AU

Lynn Wachtman, Clinical Veterinarian and Instructor, New England Primate Center, Harvard Medical School, Southborough, MA

1994

Melissa Beall, Research Scientist, Medical Affairs, IDEXX Inc., Portland, ME

Larissa Bowman, Director, Mountain Veterinary Pathology, Ashville, NC

Leslie Gabor, Manager, Pre-Clinical Safety, Novartis Animal Health, Sydney, AU

Maria Lara-Tejero, Senior Research Associate, Department of Microbiology, Yale University, New Haven, CT

Christopher Mariani, Associate Professor, Neurology, North Carolina State U., Raleigh, NC

Sonia Mumford, Veterinary Medical Officer, Fish Health Center, Olympia, WA

Jeffrey Phillips, Assistant Professor, Oncology and Medical Genetics, University of Tennessee, Knoxville, TN

Julie Pomerantz, Associate Research Scientist, Wildlife Trust, Palisades, NY

Stacy Pritt, Director and General Manager, Biological Test Center, B. Braun Medical, Irvine, CA

Mary Thompson, PhD candidate, University of Queensland, AU

Oliver Turner, Senior Pathologist, Novartis Institute for Biomedical Research, East Hanover, NJ

1995

Gertraud Altreuther, Project Manager, Parasitology, Bayer Animal Health, Leverkusen, Germany

Philippa Beard, Lecturer, Virology, University of Edinburgh, UK

Kate Creevy, Assistant Professor, Small Animal Medicine, University of Georgia, Athens, GA

Rachael Gray, Senior Lecturer, Veterinary Anatomy, University of Sydney, AU

Wendy Harrison, Research Scientist, GlaxoSmithKline, Medicines Research Center, Stevenage, UK

Kelly Lorsch, Technical Service Specialist, Pfizer, AU

Andrew Moorhead, Assistant Research Scientist, Veterinary Parasitology, U. of Georgia, Athens, GA

Tony Mutsaers, Professor, Clinical Studies, Ontario Veterinary College, Guelph, Ontario

1996

Mark Doherty, Technical Service Manager, Ancare, Kirrawee, NSW, AU

Michelle Dries-Kellaway, Strategic Project Manager, University of Wollongong, NSW, AU

Patricia Gearhart, Adjunct Assistant Professor, Ophthalmology, Michigan State University, East Lansing, MI

Tamara Gull, Assistant Professor, Pathobiology, Oklahoma State, Stillwater, OK

Antonia Jameson-Jordan, Lecturer, Department of Biomedical Sciences, Cornell University, Ithaca, NY

Ralph Senfton Head, Information Technology, Provet AG, Berne, Switzerland

Allison Stewart, Associate Professor, Equine Internal Medicine, Auburn U., AL

Edwin van Duijnhoven, Research Scientist, NOTOX, the Netherlands

Constantin Von der Heyden, Director, Pegasys Strategy and Development RSA, South Africa

1997

Peter Bracken, Technical Service Manager, Fort Dodge Pharmaceuticals, AU

Jonathan Happold, Senior Veterinary Officer, Epidemiology, AGDAFF, AU

Esther Kornalijnslijper, Postdoctoral Associate, Department of Farm Animal Health, University of Utrecht, the Netherlands

Tanya LeRoith, Assistant Professor, Pathology, Virginia Tech, Blacksburg, VA

Lucy Neave, Lecturer, Creative Writing, Australian National University, Canberra, AU

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Deborah Prattley, Lecturer, Veterinary Public Health, Massey University, New Zealand

Jonathan Werner, Principal Pathologist, Amgen, Inc., Thousand Oaks, CA

Rebecca Wilcox, MS candidate, Environmental Studies, University of Melbourne, AU

Esther Wissink-Antonis, Research Manager/Faculty, Virology, University of Utrecht, the Netherlands

1998

Max Bastian, Postdoctoral Fellow, Institut für Klinische Mikrobiologie, Immunologie und Hygiene, University of Ulm, Germany

Steven Fleischer, Biologist, Center for Veterinary Medicine, FDA, Bethesda, MD

Karsten Hüffer, Assistant Professor, Microbiology, University of Alaska, Fairbanks, AK



Mary Klinck, PhD candidate, Pharmacology, University of Montreal, Montreal, Canada

Zoe Lenard, Senior Lecturer, Diagnostic Imaging, Murdoch University, AU

Karen Liljebjelke, Assistant Professor, Microbiology, University of Calgary, Canada

Larissa Minicucci, Director, D.V.M./M.P.H. Program, University of Minnesota, Minneapolis, MN

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Erin Phipps-Crotty, Public Health Specialist, New Mexico Dept. of Health, Albuquerque, NM

Anne-Marije Sparnaay, Senior Policy Advisor, Ministry of Agriculture, the Netherlands

1999

Erica Behling-Kelly, Resident, Clinical Pathology, University of Wisconsin, Madison, WI

Nadine Bowden, PhD candidate, Molecular Virology, The Ohio State University, Columbus, OH

Christine Broster, Veterinary Clinical Training Advisor, The Brook, UK

Robert Dickens, Training Specialist, U.S. Department of Agriculture, Raleigh, NC

Peter Florian, Translational Research Expert, Sanofi-Aventis, Frankfurt, Germany

Francette Geraghty-Dusan, WHO Representative, Vientiane, Laos

Carl Holmgren, Research Scientist, Université de la Méditerranée, Marseille, France

Emily Meseck, Senior Pathologist, Wyeth Research Laboratories, Chazy, NY

Rachel Mo-Peters, Instructor, Pathology, Cornell University, Ithaca, NY

Mary Nabity, Clinical Assistant Professor, Texas A&M University, College Station, TX

Kimberly Newkirk, Assistant Professor, Anatomical Pathology, University of Tennessee, Knoxville, TN

Christopher Premanandan, Assistant Professor, Veterinary Biosciences, The Ohio State University, Columbus, OH

Rachel Tarlinton, Lecturer, Veterinary Cellular Biology, University of Nottingham, UK

Holger Volk, Lecturer, Neurology and Neurosurgery, Royal Veterinary College, UK

2000

Beatrice Bohme, Assistant Professor, Surgery, School of Veterinary Medicine, University of Liège, Belgium

Steven Daley, Postdoctoral Fellow, Immunology, Australian National University, Canberra, AU

Katharine Evans, Deputy Veterinary Surgeon, Babraham Institute, University of Cambridge, UK

Toby Floyd, Epidemiologist, Veterinary Laboratories Agency, Addlestone, UK

Rachel Geisel-Allavena, Pathologist/Senior Principal Scientist, Pfizer Global Research and Development, Sandwich, UK

Samuel Hamilton, Senior Veterinary Officer, Biosecurity Services, DAFF, Canberra, AU

Birgit Hingerl-Viertlboeck, Postdoctoral Fellow, Immunology, University of Munich, Germany

Natali Krekeler, PhD candidate, Pathology, University of Melbourne, AU

Jamie Lovaglio, Clinical Veterinarian, Pacific Northwest National Laboratory, Richland, WA

Richard Luce, Epidemiologist, US Centers for Disease Control and Prevention, Atlanta, GA

Fiona Norris-Sansom, Postdoctoral Fellow, Microbiology, University of Melbourne, AU

Knut Stieger, Postdoctoral Fellow, Ophthalmology, University of Giessen, Germany

Joost Uilenreef, Lecturer, Anesthesia, University of Utrecht, the Netherlands

Kevin Woolard, Postdoctoral Scientist, Cell Biology, NCI, NIH, Bethesda, MD

2001

Julie Chevette, Head, Animal Environment, Montreal Heart Institute, Montreal, Canada

Karin Hoelzer, Risk Assessment Officer, US Food and Drug Administration, College Park, MD

Katherine Hughes, PhD candidate, University of Cambridge, UK

Stephanie Janeczko, Medical Director, New York City Animal Care and Control, New York, NY

Charles Johnson, PhD candidate, Pathology, Iowa State University, Ames, IA

Robert Klopffleisch, Assistant Professor, Pathology, Freie Universität Berlin, Germany

David Loch, Postdoctoral Fellow, Institute of Genetics, Johns Hopkins University, Baltimore, MD

Maeva May, Resident, Large Animal Medicine, University of Pennsylvania, New Bolton Center, PA

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Judith Phillips, Postdoctoral Fellow, Virology, University of Pennsylvania, Philadelphia, PA

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Jason Stayt, Resident Internal Medicine, Murdoch, University of Perth, AU

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Robin Yates, Assistant Professor, Comparative Biology, University of Calgary, Calgary, Alberta, Canada

Bevin Zimmerman, Staff Pathologist, Wil Research Laboratories, Ashland, OH



2002

Christine Bayley Trezises, Veterinary Pathologist, Gribbles Pathology, Melbourne, AU

Karin Darpel, Postdoctoral Scientist, Virology, Pirbright, UK

Karyn Havas, PhD candidate, Epidemiology, Colorado State University, Ft. Collins, CO

Patrick Kenny, Lecturer, Neurology and Neurosurgery, Royal Veterinary College, London, UK

Steven Laing, Resident, Pathology, University of California, Davis, CA

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Anne Lo, Strategic Management Consultant, Bain & Co., London, UK

Michael Mienaltowski, Postdoctoral Fellow, Molecular Biology, University of South Florida, Tampa, FL

Andrew Miller, Head Diagnostic Services, New England Primate Research Center, Harvard Medical School, Southborough, MA

Simon Priestnall, Resident, Pathology, Royal Veterinary College, London, UK

Kelly Still, U.S. Army Veterinarian, MPH candidate, Ames, IA

Ryan Taggart, Resident, Small Animal Surgery, Purdue University, West Lafayette, IN

Barbara Taennler, Wehrli, Marketing Manager, Veterinaria AT, Zurich, Switzerland

2003

Rosie Allister, PhD candidate, Parasitology, University of Edinburgh, UK

Mieke Baan, Clinical Instructor, Medicine, University of Wisconsin, Madison, WI

John Baker, Associate Consultant, Bain & Co., London, UK

Sandra Barnard, Assistant Professor, Oncology, The Ohio State University, Columbus, OH

Belinda Black, Resident, Large Animal Medicine, Ontario Veterinary College, Guelph, Ontario

Patrick Carney, Resident Small Animal Med. & Surgery, Oregon State University, Corvallis, OR

Amy Cordner, Resident, Small Animal Med. & Surgery, University of Minnesota, MN

David Gardner, Pathologist, IDEXX Laboratories, Sacramento, CA

Erica Gruber, Resident, Clinical Pathology, Cornell University, Ithaca, NY

Carol Haak, Resident Critical Care, University of Missouri/Animal Emergency Center, Milwaukee, WI

Lindsay Hamilton, Industrial Research Scientist, Novartis, Sydney, AU

Jutta Klewitz, Resident, Thereogenology, Tierärztliche Hochschule, Hannover, Germany

Michael Krahn, Postdoctoral Fellow, Stem Cell Biology, Georg-August-Universität Göttingen, Germany

Heather Martin, Laboratory Animal Veterinarian, Hoffman-LaRoche, Nutley, NJ

Siobhan Mor, Research Assistant Professor, Epidemiology, School of Medicine, Tufts University, Boston, MA

Kate Patterson, Senior Science Writer, Garvan Institute, University of New South Wales, AU

Mayank Seth, Resident, Medicine, University of Pennsylvania, Philadelphia, PA

Karla Stucker, Awarded PhD degree, August 2010

Lyn Wancket, PhD candidate, Molecular Virology, The Ohio State University, Columbus, OH

Christiane Wrann, Postdoctoral fellow, Endocrinology, BIDMC/Harvard Medical School, Cambridge, MA

2004

Anton Asare, USDA Public Health Veterinarian, University of South Carolina, SC

Carolyn Block, Medical Trainee, Roche Pharma AG, Basel, Switzerland

Mathew Breed, PhD candidate Immunology, Tulane University, Covington, LA

Andrew Broadbent, Postdoctoral Fellow, Virology, NIAID, NIH, Bethesda, MD

Karla Dreckmann, Research Scientist, Vaccine Development, Boehringer Ingelheim, Germany

Annika Krengel, Dr. Med. Vet. candidate, Institute for Zoo and Wildlife Research, Berlin, Germany

Robert Ossiboff, Resident, Pathology, Cornell University, Ithaca, NY

Allison Rogala, Resident, Laboratory Animal Medicine, University of North Carolina, Chapel Hill, NC

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Baukje Schouten-Schotanus, PhD candidate, Cell Biology, University of Utrecht, the Netherlands

Katherine Scollan, Associate Professor, Cardiology, Oregon State University, Oregon

Ivana Sekis Calice, Scientist, Baxter Innovations GmbH, Vienna, Austria

Katy Townsend, Resident Surgery, The Ohio State University, Columbus, Ohio

Claire Underwood, Fellow in Cardiology, University of Pennsylvania, New Bolton Center, PA

Collin Wolff, Resident, Surgery, Texas A&M University, College Station, TX

2005

Krystal Allen, PhD candidate, Cornell University, Ithaca, NY

Melanie Ammersbach, PhD candidate, Ontario Veterinary College, Guelph, Ontario

Hannah Bender, Resident, Anatomical Pathology, Cornell University, Ithaca, NY

Derek Cavatorta, PhD candidate, Immunology, Cornell University, Ithaca, NY

Hille Fieten, PhD candidate, Genetics, University of Utrecht, the Netherlands

Amanda Kreuder, PhD candidate, Iowa State University, Ames, IA

Rebecca Mitchell, PhD candidate, Cornell University, Ithaca, NY

Marieke Opsteegh, PhD candidate, Parasitology, University of Utrecht, the Netherlands

Emily Orchard Mills, PhD Candidate, Psychology, University of Sydney, AU

Tricia Ora, Resident, Diagnostic Imaging, North Carolina State University, Raleigh, NC

Johanna Rigas, Resident, Clinical Pathology, Oregon State University, Corvallis, OR

Klara Saville, MS Candidate, Center for Tropical Medicine, University of Edinburgh, UK

Catherine Trickett, PhD candidate, Animal Behavior, Bristol University, UK

Nina Weshaupt, PhD candidate, Neuroscience, University of Alberta, Edmonton, Canada

2006

Onno Burfeind, Dr. Med. Vet. candidate, Animal Reproduction, Freie Universität, Berlin, Germany

Bronwyn Clayton, PhD candidate, Virology, CSIRO, Geelong, AU

Janny DeGrauw, Postdoctoral Fellow, Faculty of Medicine, University of Utrecht, the Netherlands

Amanda DeMaster, Resident, Laboratory Animal Medicine, University of North Carolina, Chapel Hill, NC.

Louise Fitzgerald, Resident, Pathology, Murdoch University, Perth, AU

Anne Gordon-Schneider, PhD candidate, Cornell University, Ithaca, NY

Annika Haagsman, Intern, Small Animal Surgery, University of Utrecht, the Netherlands

Eva Marie Laabs, PhD candidate, Parasitology, Tierärztliche Hochschule, Germany

Gelja Maiwald, Head, Companion Animal Products, IDT Biologika, Dessau Germany

Richard Meeson, Resident, Small Animal Surgery, Royal Veterinary College, UK

Ashley Neary Hartley, PhD candidate, University of Georgia, Athens, GA

Joseph Neary, PhD candidate, Epidemiology, Colorado State University, Fort Collins, CO

John Parker, Senior Clinical Training Scholar, Neurology, University of Cambridge, UK

Tiffany Reed, Resident, Pathology, Purdue University, West Lafayette, IN

Swaantje Roth, PhD candidate, Virology, Freie Universität Berlin, Germany

Will Sander, MPH Candidate, Yale University, New Haven, CT

2007

Patrick Ayscue, PhD candidate, Epidemiology, Cornell University, Ithaca, NY

Sonja Broer, PhD candidate, Pharmacology, Tierärztliche Hochschule, Germany

Rosemary Brungs, Medical Student, University of Sydney, AU

Elva Cha, PhD candidate, Epidemiology, Cornell University, Ithaca, NY

Boran Choi, MS candidate, Immunology, Seoul National University, Seoul, South Korea

Amy Fulton, Resident, Dentistry and Oral Surgery, University of California, Davis, CA

Ludwig Groebler, PhD candidate, Biomedicine, University of Sydney, AU

Laura Grogan, PhD candidate, Conservation Biology, James Cook University, AU

Kate Johnson, PhD candidate, Clinical Science, Royal Veterinary College, London, UK

Kristin Lewis, Resident, Pathology, The Ohio State University, Columbus, OH

Ryan Traslavena, Resident, Pathology, University of California, Davis, CA

Maria Volkman, Dr. Med. Vet. candidate, Humboldt University, Berlin, Germany

Annemarie Voorbij, Resident, Medicine, University of Utrecht, the Netherlands

Shen Yang, PhD candidate, Biomedicine, University of Maryland, Baltimore, MD



2008

Jennell Bigrigg, Resident, Comparative Pathology, Johns Hopkins University, Baltimore, MD

Anna Byron, Resident, Small Animal Medicine, North Shore Veterinary Specialist Centre, Sydney, AU

Lucie Chavallier, PhD candidate, Genetics, Pasteur Institute, Paris, France

Katharina Dinger, Dr. Med. Vet. candidate, Center for Experimental Medicine, Cologne, Germany

Johanna Dups, PhD candidate, Virology, CSIRO, Geelong, AU

Anna Heymer, Dr. Med. Vet. candidate, Nutrition, Tierärztliche Hochschule, Germany

Lisa Holz, PhD candidate, Tierärztliche Hochschule, Hannover, Germany

Prabhpreet Kaur, Government Veterinarian, AVA Singapore

Anna Moore, MS candidate, Animal Behavior, University of Glasgow, UK

Annalies Nijdam, Intern, Veterinary Anesthesia, University of Utrecht, the Netherlands

2009

Floryne Buishand, PhD candidate, Cell Biology, University of Utrecht, the Netherlands

Stuart Davenport, PhD candidate, Virology, University of Cambridge, Cambridge, UK

Shuhei Ito, Postdoctoral Fellow, Cellular Biochemistry, University of Tokyo, Japan

Elizabeth Slack, PhD Candidate, Immunology, Royal Veterinary College, London, UK

Bing Yun Zhu, Intern, Clinical Science, University of Sydney, Camden, AU



What Did They Say?



"The program propelled me along the career path I am now pursuing."

Steven Daley, 2000



"The program was one of the best experiences of my life."

Jutta Klewitz, 2003



"Little did I suspect that the Leadership Program would have such a profound impact on my career"

Richard Luce, 2000



"The most door/eye opening experience of my career."

Louise LeFluffy, 2005



"I am passionate about the Leadership Program as it gave me valuable insight into research."

Kate Hughes, 2001



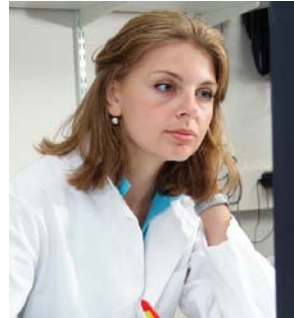
"I still love to look back to that great summer and the valuable experiences I gained."

Eva-Maria Laabs, 2006



"It was an amazing opportunity for a young vet student."

Maeva May, 2001



"I often think of the great time I had in Ithaca, and I'm still in touch with many of my Cornell fellows."

Annemarie Voorbij, 2007



"I remember that wonderful summer of the Leadership Program."

Mieke Baan, 2003



"The program was one of the most important experiences in my life."

Joanna Mleczko, 2008

In the Limelight:

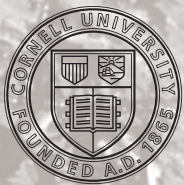
I retain very fond and vivid memories of the 10 weeks I spent participating in the Cornell Leadership Program. It gives me great pleasure to reflect on the summer I spent in Ithaca and the significant influence it has had on my career choices. Like many of my colleagues, I had entered my veterinary degree at the University of Sydney with the purpose of graduating and working as a veterinarian in practice, with the view of specializing in equine medicine and reproduction. I spent my summer at Cornell working in equine genomics with Dr. Doug Antczak at the dawn of the initiation of whole genome sequencing. Following these 10 weeks, I realized that in addition to my clinical interests that research provided exciting and challenging opportunities.



After graduation, I worked in equine specialist practices primarily in neonatology and reproduction in Australia and England. This clinical experience was important in consolidating my skills, and I was fascinated (and at times frustrated) by the many questions that arose that remained unanswered in the research arena. It was at this point in particular, I felt incredibly lucky to be able to draw on my experience as a veterinary student at Cornell. The Leadership program provided me with a foresight and understanding of the career paths that existed outside veterinary practice. Not surprisingly, I soon transitioned from clinical practice to a PhD (biomedical sciences) in immunology/molecular biology at The John Curtin School of Medical Research at Australian National University (ANU). At ANU I worked in human and mouse systems under the guidance of Mark Hulett and Chris Parish. I was given the opportunity to work with a set of powerful and rapidly expanding tools in molecular biology and I was fascinated by the scope of questions we could address using these tools. Upon completing my PhD, I realized my real passion was to be able to combine my interests in fundamental mammalian biology with my veterinary training and experience. So again, my bags were packed and I returned to Cornell for a postdoc position in Dr. Antczak's laboratory where I worked on a NIH funded project in equine reproductive immunology and placentation.

Two and half years ago I took up my current position as a Lecturer at the Royal Veterinary College (RVC) in London, United Kingdom, and have established a research program in equine reproduction currently funded by The Wellcome Trust and The Royal Society. I feel incredibly fortunate that I have been able to combine my interests in both clinical practice and fundamental biological research. By working closely with my colleagues in equine clinical practice, together with human placental biologist, our research can benefit both equine and human reproductive health. The RVC and academia, also has provided me the opportunity to teach and work with the veterinarians of the future whilst constantly being surrounded by stimulating new ideas and concepts. It is now a decade since I had that 10 weeks at Cornell. While the time was brief the impact was profound. I am most thankful for the opportunities it has provided and look forward to seeing the impact on recent veterinary graduates of the program.

To prepare tomorrow's scientists and public health professionals



Cornell University
College of Veterinary Medicine

For more information about the Leadership Program, contact

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