BAKER INSTITUTE FOR ANIMAL HEALTH

Annual Report 2011–2012

To Improve Animal Health Through Basic & Applied Research
A Message from the Director

Bicknese Prize

Raising the Bar

Spreading the Word about Diversity

Improving the Quality of Life of Horses and People

Improving Health in Developing Nations

Building Bridges to Improving Lives

Communities for Conservation

Quelling the Tide of Overpopulation

Bow Wow Brunch

Honor Roll of Giving 2011

Honor Roll of Giving 2012

Faculty Grants

Advisory Council Supports the Baker Institute’s Tradition of Helping Animals
Dear Friends,

I am pleased to present the 2011-2012 Annual Report of the Baker Institute for Animal Health to you, our generous supporters. Many of you have been long-time friends of the Institute and I greatly appreciate your loyalty to this unique organization.

As we quickly approach the conclusion of my first two years as director, I am honored to follow in the footsteps of founder Dr. James Baker, who created a groundbreaking home for cutting-edge research in animal health. As you likely know, some of the most significant accomplishments of the Baker Institute include discoveries beneficial to animals and humans alike. Examples include the development of vaccines and genetic tests for dogs, cats, and horses, and the identification of differences in gene expression responsible for breast cancer. Another discovery could lead to technology that will improve targeted delivery of drugs directly to cancerous tumor sites. Our scientific investigations continue to advance animal as well as human health, which are becoming increasingly interrelated.

The Baker Institute also has a long tradition of training new generations of leading scientists – from researchers to physicians, veterinarians to academicians – who are working on issues of far-reaching, even global, impact. Here we profile four former trainees who are outstanding examples of the relationship between animal and human health investigations, and who represent the caliber of our training program. Through the highlights featured in this report, I hope you will not only be reassured of the continuing tradition of excellence but also discover new and exciting reasons to be proud of your affiliation with the Baker Institute.

As always, thank you so much for your support.

Best regards,

Colin R. Foster, M.D.
BICKNESE PRIZE RECIPIENTS

About the Prize

The Bicknese Family Prize was established in 2005 by Dr. Joanne Bicknese, CALS ’76, DVM ’78, MS, ELS, as an annual award for research activities of a woman scientist-in-training. The award aims to provide support at a critical point in the trainee’s academic development and to help launch her into a successful career. Dr. Bicknese, one of the Institute’s most devoted supporters, is a current member of the Institute’s Advisory Council and served six years as chair. The fund honors her parents, Helen and Louis Bicknese, and her aunt and uncle, Grace and Carl Bicknese.

Dr. Chinatsu Mukai, PhD (2011-12)

Chinatsu works as a research associate in the laboratory of Dr. Alexander Travis conducting research on two major themes. One project uses mammalian sperm as a biological model for nanotechnology to design self-powered microscopic machines with medical applications. Chinatsu also researches how cells in the testes differentiate and grow into mature sperm in dogs and mice, as a means of investigating important questions of cell biology, specific issues affecting fertility, and also for developing new ways to optimize the use of reproductive cells from threatened species to help wildlife conservation efforts.

“I hope my research will add knowledge in stem cell and reproductive biology to contribute to development of medical nanotechnology, lead to a cure for infertility by transforming stem cells into viable sperm, and improving ways to preserve wildlife,” said Chinatsu. “My training at the Baker Institute has helped me grow as a scientist, and one day I hope to have my own laboratory and to continue contributing to these fields.”
As a post-DVM PhD student in the field of immunology, Leela worked in the lab of Dr. Douglas Antczak investigating the equine immune system during pregnancy and making important contributions to further the understanding of how natural killer cells, which play important roles in mammalian immune systems, operate in horses. Leela’s primary long-term career goal is to advance both human and animal health by helping to bridge the gap between basic science and the clinical application of novel research discoveries.

“The Baker Institute provided me with a rigorous intellectual environment for my graduate training,” said Leela. “The faculty members taught me daily by example how to develop a successful research program that uses veterinary research to advance biomedical science. The staff taught me invaluable professional and interpersonal skills that will serve me well in my career and in life. Most importantly, everyone at the Institute provided me with unconditional support whenever I needed it. I will always be grateful to everyone at Baker for helping me earn my PhD.”
It takes a veterinarian’s animal expertise to lead the profession and a researcher’s new knowledge to drive it forward. That’s why Cornell’s Leadership Program for Veterinary Scholars seeks to prepare a select group of students from around the world to bridge both roles and become leaders raising the bar of the profession through veterinary research.

One of the program’s activities to this end poses a thought-provoking challenge: How would you make a new drug designed to ease animals’ suffering? This year a scholar helped her team meet this challenge in a way that raised the Program’s bar higher than ever before.

A current veterinary student, Dr. Andrea Nies came to the Leadership Program from Germany with a PhD in chemistry and a desire to apply that specialized knowledge to veterinary research. In the Program’s Drug Design and Development Module, teams of students planned the development of hypothetical drugs from concept and synthesis to marketing and distribution. Andrea led her team in drawing out a detailed roadmap demonstrating how to synthesize a hypothetical new drug for treating canine arthritis.

“This is the most chemically-feasible proposal for a drug’s synthesis that this exercise has yet produced,” said Dr. Doug McGregor, former director of the Leadership Program and of the Baker Institute. “Andrea has achieved something quite remarkable.”

“I’m interested in a possible career in drug development and the Leadership Program has been very helpful in exposing me to the processes and issues in this field,” said Andrea. “We’ve gotten a lot of career guidance and met professionals to talk to about options and directions in veterinary research. I’ve really valued this time, not only for the new ideas and experiences, but also for the strong new network of mentors and friends who may become future scientific peers.”

A competitive rower, Andrea also exercised the Leadership Program’s signature values beyond the classroom by...
organizing nearly all of this year’s 27 scholars into a dragonboat racing team that won a cup in the 2012 Finger Lakes Dragonboat Race.

As with Andrea, Jane Park also found the Leadership Program invaluable both in research and in her future career plans. Jane entered veterinary school with the intention of balancing clinical work with research and teaching and, she says, the Leadership Program has given her the tools necessary to pursue her ambition. The experience has also expanded her knowledge of basic science and techniques that will help her with future research. Working in the epigenetics and reproductive biology laboratory of Dr. Scott Coonrod, Associate Professor at the Baker Institute, Jane examined patterns of expression of peptides in feline and human squamous cell carcinomas. This could lead to a better understanding of various stages of cancer development in humans and animals.

Jane and Andrea are just two examples of the many promising students in the long and highly accomplished history of the Leadership Program. Associate Professor of Virology at the Baker Institute and the Program’s current director, Dr. John Parker, said that “overall we have seen around 30% of our 540 participants go on to advanced training and undertake a PhD degree. Veterinarians are the people best equipped to tackle many different animal and human health problems, from developing new drugs specifically for animals to translating human medical research innovations to benefit animal health, and we are giving scholars like Andrea and Jane the tools to excel in research and become leaders in whatever fields they choose.”
For Dr. Danielle Buttke, the benefits of conserving and preserving our planet’s biodiversity is a (too) well-kept secret. They should be shouted from the top of every tree. Now, after nearly a decade of study and with three advanced degrees under her lab coat, she is in a position and fully prepared to help spread the word. Recently appointed as a veterinary epidemiologist with the National Parks Service, Dr. Buttke said her first priority is to help every one of the 275 million annual visitors to our nation’s parks understand the interdependence between human, animal, and environmental well-being.

“Our health is so dependent on the health of the environment and animals,” Dr. Buttke said, indicating that the connections between biodiversity and our own quality of life are just now beginning to be clearly articulated for the public.

“Having predators among us, for example, actually has very beneficial impacts. Although it’s not necessarily intuitive, reintroducing wolves in the national parks is a good idea, because it has the potential to improve our water quality.”

In the position since June of 2012, Dr. Buttke is also looking for opportunities to enlist members of the health community in her mission to advance the One Health movement to the next level.

“We need to take One Health another step farther,” said Dr. Buttke. “When members of the health community collaborate and embrace the idea that the health status of wildlife is directly related to the spread of vector-borne diseases in people, we’ll be able to fully realize the potential of the One Health movement on the connections between human and animal health.”

Although these views are second nature to Dr. Buttke, she credits her time at the Baker Institute for Animal Health with helping her realize her goals, as that was where she gained her initial training in Dr. Alex Travis’s lab and enjoyed the mentorship of Drs. Doug McGregor and Alfonso Torres.

“Alex has always understood the interconnectedness between all animals (including wildlife), people, and the environment,” said Dr. Buttke. “He introduced me to people working in wildlife conservation, kept me abreast of the latest thinking, and allowed me to pursue my Master’s in Public Health while I was completing my PhD. I was incredibly fortunate to work with him. He is a wonderful teacher.”

As Dr. Travis’s graduate student, Dr. Buttke studied cell signaling between the sperm and egg for her PhD studies, working at the molecular and biochemical levels. In this basic scientist role, she became proficient in designing experiments and gleaning information from previously published works, all transferable skills that she employs daily in her current position.

“Everything I did in my doctoral work is applicable to my position today,” said Dr. Buttke, who chose to study at Cornell because of its academic strengths in ecology and wildlife and because of the freedom Cornell offered to build her own path. “Reproduction and breeding are keys to successfully managing biodiversity. We need to manage populations carefully, recognizing the impact over- or under-population of one species has on the whole. This will let us preserve biodiversity and wildlife for future generations.”
“Our health is so dependent on the health of the environment and animals,” Dr. Buttke said, indicating that the connections between biodiversity and our own quality of life are just now beginning to be clearly articulated for the public.
IMPROVING THE QUALITY OF LIFE OF HORSES AND PEOPLE

DR. JULIA FELIPPE
As a new graduate student looking for a mentor, Dr. Julia Felippe had a first choice: Dr. Douglas Antczak at the Baker Institute for Animal Health. Known for his dedication and innovative, insightful, and results-oriented equine immunologic research, he was at the top of her short list.

“I knew I wanted to focus my research career in the area of equine immunology, and he was simply the best,” said Dr. Felippe. “He was an accomplished researcher and an extraordinary mentor. I could not have been any more fortunate.”

In Dr. Antczak's lab, Dr. Felippe did gestational research, looking at how placental cells manipulate a mare’s immune system to accept pregnancy, despite the fact that during this biological process, fetal foreign cells are introduced into a mother's body and are not rejected. This work, Dr. Felippe said, gave her the necessary training and experience to pursue further questions about the equine immune system. It also launched an investigation that led to a $1.5 million National Institutes of Health Director’s New Innovator Award for Dr. Felippe in 2010.

As a graduate student in Dr. Antczak’s laboratory in 2001, she was presented with a 12-year-old horse that contracted recurrent bacterial infections and meningitis. When the referring veterinarian checked the horse's antibodies, none were detected. With Dr. Felippe’s further investigation of the immune system status, the horse was found to be lacking a class of cells called B cells, which are necessary for antibody production.

“In 2001, this condition had not been characterized in the horse,” said Dr. Felippe. “We reviewed the literature for human diseases and found the link to Common Variable Immunodeficiency (CVID), a condition that has been studied in people for more than 50 years. Because the horse is an excellent natural model for the human condition, our findings will help us improve the diagnosis of the disease and the quality of life for horses and people.”

Since 2001, Dr. Felippe’s research team, including Research Associate Dr. Rebecca Tallmadge Ingram (who also studied in Dr. Antczak’s lab) and technician Mary Beth Matychak, has diagnosed 30 cases of equine CVID, testing from samples that have been submitted from equine referral practices across the country.

“We've developed a national network of veterinarians and horse owners who are tremendously supportive and enthusiastic about our work,” said Dr. Felippe, who has been on the faculty at the College of Veterinary Medicine for a decade and is an Associate Professor of large animal medicine. “Our access to these samples, our preliminary data, and our hypothesis that challenges conventional thinking were all critical to our successful application for the Innovator Award.”

Dr. Felippe’s lab is also involved in research supported by the USDA that explores how foals respond to immunizations as neonates. Although some studies suggest that foals are incapable of producing antibodies at birth due to maternal antibody interference, Dr. Felippe and her team question whether antibodies in foals might be consistently found if the detection method used was more sensitive. Toward that end, Dr. Tallmadge developed a novel application of a molecular technique that measures antibody diversity in neonates, with follow-up testing done after vaccination.

In addition to her research and teaching responsibilities at the College, Dr. Felippe recently was tapped to serve as the College's Veterinary Curriculum Director, a position that will allow her to ensure that future veterinarians are as prepared to make a difference as she is.
Equipped with the knowledge and tools to make a difference, scholars trained at Baker Institute go on to become leaders in improving animal and human health around the world. Fresh from Baker’s graduation line, Nebiat Gebreselassie PhD ’12 has already dived straight into impactful work in Africa, where she is using her training to help improve health and quality of life in developing communities.

At the Baker Institute, Nebi trained in the laboratory of Dr. Judith Appleton, studying the immunology of infectious disease. Her thesis explored how the parasite Trichinella spiralis uses host immune cells called eosinophils to sustain long-term infection in muscle. Trichinella is a roundworm that infects rats, bears, pigs, and humans, and infection with this parasite causes intestinal and muscular disease. This can be a big public health problem, particularly in endemic areas where people frequently eat undercooked meat. Nebi described how eosinophils promote chronic Trichinella infection by suppressing an arm of the immune system that is important for clearing parasites and by helping the infected cells get the nutrients they need. The same responses are likely to be involved in the responses of animal hosts to many other parasitic infections.

“The Baker Institute is a supportive and nurturing environment which helped me grow into a confident and mature scientist,” said Nebi. “Everyone truly cares for your growth at Baker. My advisor was truly a role model to me in both hard work and integrity.”

Soon after graduating, Nebi travelled to Ethiopia to serve as a diagnostic laboratory manager and malaria officer at the Center for National Health Development in Ethiopia (CNHDE). A project of the Earth Institute at Columbia University, CNHDE supports efforts for achieving the Millennium Development Goals in Ethiopia, a set of initiatives to reduce poverty. Nebi managed their diagnostic laboratory and helped implement best-practices for preventing malaria in villages across Ethiopia.

Nebi recently started a post-doctoral fellowship in the laboratory of Dr. Susanna Brighenti. Though her new advisor’s lab is at the Karolinska Institutet in Stockholm, Sweden, Nebi continues working in the field, spending 90% of her time in Addis Ababa, Ethiopia. Here she is conducting a clinical trial to determine whether vitamin D and the drug phenylbutyrate can be used to improve immune reconstitution and quality of life in people infected with tuberculosis or HIV. Over the next few years she hopes to develop methods of manipulating the immune system to increase vaccine and drug effectiveness.

“I plan to focus my career on helping improve health and well-being in developing nations,” said Nebi. “I enjoy dedicating my expertise in immunology to better understand and resolve health problems plaguing developing countries. Ultimately over my career I hope to train and lead teams of scientists dedicated to health research, community health care, and empowerment of local communities.”
Dr. Nebiat Gebreselassie has already dived straight into work in Africa, where she is using her training to help improve health and quality of life in developing communities.
Integration between veterinary practice and research discovery can forge knowledge that improves health in ways that couldn’t be achieved through one perspective alone.
Cornell's DVM/PhD Dual Degree Program trains tomorrow's leaders in science and medicine

Integration between veterinary practice and research discovery can forge knowledge that improves health in ways that couldn't be achieved through one perspective alone. Designed to train outstanding clinician-scientists by integrating Cornell's veterinary and graduate curricula, the College of Veterinary Medicine's DVM/PhD Dual Degree Program prepares students to bridge these worlds and become leaders in science, medicine, and society.

Dr. Carole Harbison, DVM '10, PhD '11 is one of the eighteen students admitted into the Cornell DVM/PhD program since its inception in 2001. After completing her undergraduate program, Carole initially wanted to work in biotechnology. However, volunteering at a local animal shelter sparked her interest in veterinary medicine and she applied to Cornell. But while many of her peers set their sights on clinical practice, Carole's goals had a different dimension.

"I wanted to see the holes in medical understanding, ask informed research questions, and apply the answers to improving standards of human and animal medical care," said Carole. "I saw a need for people who can bridge the gaps between basic science and clinical medicine and between veterinary and human medicine. The dual degree program was perfect training to position myself in that gap."

Carole also participated in Cornell's Veterinary Investigator Program (VIP), a 10-week summer program providing first- and second-year veterinary students with research skills and an understanding of biomedical research's role in medicine. While pursuing her DVM, Carole embarked on independent research in Dr. Colin Parrish's laboratory at the Baker Institute, leading to her PhD thesis on how canine and feline parvoviruses evolve and spread.

"Baker was a wonderful place to work -- a vibrant community of warm and welcoming people," said Carole. "Faculty doors were open, and it helped to have such diverse resources for guidance. The DVM/PhD program is tough, no doubt. It's a huge commitment, and the learning styles are very different: book-learning for veterinary exams vs. critical reading of research articles and independent thinking where there is no right answer in the research area. I learned how to balance these modes and am still using those skills today."

Now a Comparative Pathology Research Fellow at Harvard Medical School, Carole balances clinical duties in anatomic pathology at the New England Primate Research Center with post-doctoral research on how viruses cause brain inflammation and also a variety of cancers in humans and animals, with the goal of working towards effective therapies and vaccines.

In the future Carole looks forward to applying her pathology and research training to questions of both basic science and applied medicine.
When working toward a complex goal, nothing beats the power of communities coming together for a common cause. Dr. Alex Travis, Associate Professor at the Baker Institute, has put this idea in action to further the efforts of wildlife conservation and also to benefit human health and well-being worldwide.

In Zambia’s Luangwa Valley, Alex works to preserve wildlife populations by harnessing the power of human communities surrounding the area’s many national parks. Alex organizes teams of Cornell graduate and veterinary students to perform field research and educational outreach with a nonprofit organization called Community Markets for Conservation (COMACO). Overseen by the Wildlife Conservation Society, COMACO offers Zambian villagers struggling for food the business infrastructure, market access, and training to abandon poaching of wildlife and take up sustainable farming and animal husbandry practices. By sustainably increasing crop yields and poultry production, COMACO enables villagers sharing space with wildlife to feed their families and grow their local economies while simultaneously reducing poaching, deforestation, and helping preserve threatened wildlife.

Alex himself is part of a greater community across Cornell engaged in a spectrum of efforts to help wildlife. In 2010 Alex helped form, and now directs, the Cornell
Center for Wildlife Conservation (CCWC), a virtual informational hub connecting the university’s many conservation-related efforts. The CCWC educates the outside world about Cornell’s diverse wildlife-related initiatives and it promotes interdisciplinary collaborations among groups on campus.

“Wildlife conservation faces complex challenges, and we need the input of experts from disciplines that focus on the animals themselves, such as genetics, reproduction, and ecology to those that focus on people, such as sociology, food sciences, and economic development,” said Alex. “Cornell is rich with wildlife-related resources and efforts, but they’re spread out across so many departments that it’s hard to get a full picture of all the wildlife-related activities that are here.”

From individual animals to species to ecosystems, the CCWC strives to conserve fish and wildlife through education, service, and multi-disciplinary research across the globe. Participation is open to the entire Cornell community, and current members represent a number of different colleges and departments from across the campus, bringing together students, faculty, and programs focused on various biophysical and social aspects of wildlife.

Learn more about CCWC members and their projects at http://ccwc.cornell.edu/.
The wave of tragedy continues to rise: every day another 70,000 puppies and kittens are born in the US, overflowing the nation's shelters and streets. The dream of a long-term solution to pet overpopulation has remained unrealized, but an all-star faculty team from Cornell's College of Veterinary Medicine faculty is working to change that.

"We're interested in developing something to really help control feral pet populations," said Dr. Vicki Meyers-Wallen, a reproductive specialist at Baker Institute for Animal Health. "Dogs are so reproductively efficient that it's hard to make an impact with spaying alone. A safe sterilizing vaccine for both males and females could rapidly reduce feral dog populations and significantly improve their welfare worldwide."

Dr. Meyers-Wallen has assembled an interdisciplinary team of faculty from the College of Veterinary Medicine and Biomedical Engineering at Cornell, including Drs. Scott Coonrod, Col-in Parrish, David Putnam, Donald Schlafer, Janet Scarlett, Alexander Travis, and Judith Appleton. Pooling their combined expertise in ovary and testis function, population health, gene expression, vaccine construction, bioengineering, and vaccine efficacy analysis, these coinvestigators are working towards a sterilizing vaccine that would enlist a dog's own immune system to help humanely curb overpopulation.

Normally, immune systems ignore reproductive hormones and proteins since they're part of oneself. But when one of these proteins is attached to a virus-like particle in a vaccine it may be labeled as "enemy" by association, encouraging the immune system to silence it. There are already sterilizing vaccines that work this way in other species.

This team is developing six candidate vaccines by attaching reproductive peptides or proteins to canine parvovirus capsid virus-like particles, which alarm the immune system. The team is presently testing two: gonadotropin-releasing hormone (GnRH), a peptide that both males and females need to reproduce, and maternal-antigen-that-embryos-require protein (MATER), a female-specific protein. Vaccine testing has begun, with researchers looking for a safe and effective formulation that can be tested in dogs and cats in future.

"Our findings might also apply to vaccine formulation for other species, such as deer, in which population control is desirable," said Dr. Meyers-Wallen. "It would also help curb disease transmission from animals to people. A successful sterilizing vaccine could be a major contribution to dog health as well as public health worldwide."
In mid-February of 2012, Cornell alumnus Andrew Tisch ’71 hosted the first College of Veterinary Medicine Bow Wow Brunch as a kick-off to the Westminster Kennel Club Dog Show week at the Regency Hotel, to the delight of nearly 80 guests and 18 canine friends. Baker Institute Advisory Council member Judy Wilpon, accompanied by faithful Golden Retriever friends Lefty and Tug, shared a heart-warming story about Lefty’s journey.

Lefty was treated for stomach cancer at the Cornell University Companion Animal Hospital in 2011, which extended his time with his family and friends. Although he recently passed away, Lefty will be forever remembered for his beautiful disposition and invaluable work as a therapy dog. He earned the Canine Good Citizen and Therapy Dog certifications, awards for being a Disaster Relief Dog, and he logged more than 200 hours of therapy work at various facilities. His calming ways helped countless people, including members of the military, firemen, policemen, and families of victims at Ground Zero at the Family Assistance Center at Pier 54 in New York City. He helped children undergoing chemotherapy, chronically and critically ill children at the Schneider’s Children’s Hospital in New Hyde Park, New York, and the Silver Lining Ranch in Aspen, Colorado. Lefty will be missed greatly by all who had the good fortune to meet him.

The Wilpon family established the Judy Wilpon Professorship of Cancer Biology at the Baker Institute for Animal Health and has issued a one-to-one fundraising challenge to endow two residencies in oncology. Presently, cancer research being conducted at the Baker Institute by Dr. Scott Coonrod could lead to the development of drugs that will help fight the spread of cancer in companion animals, like Lefty, as well as in the humans who love them.
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Animal Hospital of Kent
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Aspetuck Animal Hospital
Baldwin Animal Hospital & Bird Clinic, Dr. Neal Saslow
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Blair Veterinary Associates
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Brattleboro Veterinary Clinic
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Companion Animal Hospital
Corfu Darien Veterinary Clinic, Dr. Barbara D. Scheffler
Creekside Veterinary Clinic, Dr. Jan S. Crowe
Crossroads Veterinary Clinic, Dr. Elizabeth R. Wood
Croton Animal Hospital
Croton Animal Hospital, Dr. Bruce N. Hoskins
Cummings Veterinary Hospital
Davis Companion Animal Hospital
Deer Park Animal Hospital (Scott, Henry & Rosen)
Delmar Veterinary Associates
Eagle Rock Veterinary Hospital
East Meadow Animal Hospital
Easthampton Animal Hospital
Easton Veterinary Clinic
Easton Veterinary Hospital, Dr. Mitchell H. Greenberg
Eastview Veterinary Clinic
Englewood Veterinary Clinic
Estates Animal Hospital, Dr. Barry Eisenkraft
Fairfield Veterinary Hospital
Farmingville Animal Hospital
Flower Valley Vet Clinic, Dr. James J. Burns
Ford Veterinary Associates
Franklin Lakes Animal Hospital, Dr. Alan J. Pomerantz
Gearhart Veterinary Hospital
Georgetown Veterinary Hospital
German Flatts Veterinary Clinic
Godspeed Mobile Veterinary
Godspeed Animal Care
Goodmans Animal Hospital, Dr. L. William Goodman
Goosepond Animal Hospital
Goshen Animal Clinic
Great Neck Animal Hospital, Dr. Brian I. Rind
Dr. Mitchell H. Greenberg
Greenpoint Veterinary Hospital
Dr. Martin A. Gruber
Dr. George E. Hahn
Hamilton Animal Hospital
Harlingen Veterinary Clinic
Hartsdale Veterinary Hospital
Dr. William Henry Herbold, III
Highland Animal Hospital
Hilton Veterinary Hospital
Home Veterinary Services, Dr. Jeanne Baines
Huntington Animal Hospital
Jacobson Veterinary Clinic, Dr. Linda E. Jacobson
Jeffersonville Animal Hospital
Katonah-Bedford Veterinary Center
Dr. Mary L. Keating
Larchmont Animal Hospital, Dr. Mark P. Helfat
Layhill Animal Hospital
Dr. Amy and Mr. Stephen Leibeck
Dr. Pepi F. Leids
Lexington Animal Hospital
Linwood Animal Hospital
Locust Valley Veterinary Clinic
Lyndon Veterinary Clinic
Manchester Veterinary Clinic
Manetto Hill Animal Clinic
Manhasset Animal Hospital, P.C., Dr. Robert L. Henrickson
Manhasset Animal Hospital
Manhattan Vet Group
Manheim Pike Vet Hospital
Manlius Veterinary Hospital
Manorville Pet Care
Marsh Hospital for Animals, Dr. Mark Milwicki
Matawan Animal Hospital
Mattapoisett Animal Hospital
Matunis Vets Inc., Eagle Animal Hospital
Meadowridge Veterinary Hospital
Medway Animal Hospital
Meker Veterinary Clinic
Middle River Vet Hospital
Middletown Veterinary Hospital
Milford Animal Hospital
Millwood Animal Hospital
Mobile Vet Services of Northern Virginia, Dr. Steven J. Cohen
Montague Veterinary Hospital
Montrose Animal Health Center
The Moriches Hospital for Animals, Dr. Kevin G. Lynch
Mt. Lakes Vet House Call, Drs. Kim and Joel Slade
Mt. Holly Animal Hospital
Mt. Lakes Veterinary House Call
Nanuet Animal Hospital

* All Clinic & Hospital Gifts during the fiscal year are included.
Naponoch Animal Hospital, Dr. James F. Cone, Jr.
National Veterinary Associates
North Country Vet Services
North Windham Animal Hospital
North Shore Veterinary Hospital, Dr. Richard W. Fredericks
North Shore Animal Hospital
Northern Tier Vet Clinic
Norwell Veterinary Hospital
Oakton-Vienna Veterinary Hospital
Old Brookville Vet Practice
Olde Towne Animal Hospital
Oradell Animal Hospital, Dr. Gary W. Johnson
Otterkill Animal Hospital, Dr. James C. Zgoda
Oyster Bay Animal Hospital
Park Ridge Animal Hospital, P.A.
Patchogue Animal Hospital
Pet House Calls Vet Clinic, Dr. Raymond S. Pray
Pet House Calls
Pleasant Valley Animal Hospital
Pleasant Valley Animal Hospital, Dr. Martha S. Gearhart
Pleasantville Animal Hospital, Dr. Alan B. Schreier
RIB, Inc., New Milford Animal Hospital
Ridge Animal Hospital
Ridgewood Veterinary Hospital
Rockledge Veterinary Clinic
Rondout Valley Veterinarian
Rotterdam Veterinary Hospital
Rupert Veterinary Clinic
Ruxton Animal Hospital
Rye Harrison Veterinary
Rye Harrison Veterinary Hospital, Dr. Gary A. Yarnell
Rye Neck Veterinary Group
Sakonnet Veterinary Hospital
Salmon Brook Veterinary Hospital
Saugerties Animal Hospital
Schulhof Animal Hospital
Sleepy Hollow Animal Hospital
Somerset Animal Hospital
South Wilton Veterinary Group
South Towne Veterinary Hospital, Dr. Edward J. Gschrey, Jr.
South Bellmore Veterinary
South Towne Veterinary Hospital, Dr. Jeffrey S. Karpf
South Windsor Vet Clinic
Springville Animal Hospital
St. Francis Animal Clinic
Stack Hospital for Pets
Stafford Veterinary Hospital
Star Meadow Animal Clinic
Suffield Veterinary Hospital
Sunrise Animal Hospital, Drs. JoAnne M. Leja and William D. Seader
Dr. Alan M. Tausz
The Visiting Vet, Dr. Darryl S. Praul
Thoreau Veterinary Hospital
Thorn Avenue Animal Hospital, Dr. John S. Clauss
Thornwood Veterinary Hospital
Three Village Veterinary Hospital, Dr. John C. DeVerna, Jr.
Titusville Veterinary Clinic
Toll Gate Animal Clinic
Town & Country Hospital for Pets
University Animal Hospital
V.P.C. Associates
Valley Cottage Animal Hospital, Dr. Patricia J. Collins
Valley Vet Partners
Valley Cottage Animal Hospital
VCA Antech, Inc.
VCA Delmarva Animal Hospital
Vet. Specialty Hospital of San Diego
Veterinary Oncology and Referral Clinic
Veterinary Center of East Northport
Veterinary Housecalls of Long Island, Dr. Caryl Handelman Abrams
Veterinary Internal Medicine
Veterinary House Call Service
Veterinary Practice Associates
Veterinary House Calls, Dr. Raymond S. Hayes
Vienna Animal Hospital
Viking Community Animal Hospital
Village Animal Clinic
Wantagh Animal Hospital
West Chelsea Veterinary
West Park Veterinary Services
Windsor Veterinary Clinic
Winsted Hospital for Animals
Wolfe Animal Hospital
Woodbury Animal Hospital
Wrights Corners Animal Care Center, Dr. Monti
Dr. Harold M. Zweighaft

2011 EXPENSES

47% RESEARCH, EXTERNAL SPONSORS
17% ADMINISTRATION
16% RESEARCH SUPPORTED BY THE INSTITUTE
12% INFRASTRUCTURE
8% FACULTY SUPPORT

2011 REVENUE

46% RESEARCH
27% ENDOWMENT INCOME
9% GIFTS
9% INDIRECT COST RETURN
6% COLLEGE SUPPORT
3% OTHER SOURCES
$100,000 and above
Mr. Robert G. and Mrs. Mary Jane Engman
Estate of Mr. Bert Tryon

$50,000 to $99,999
Albert C. Bostwick Foundation
Burroughs Wellcome Fund
Estate of Ms. Lois Hilgeman

$10,000 to $49,999
Mr. David A. Behnke and Mr. Paul F. Doherty, Jr.
Dr. Maria Daversa and Mr. David Gulley
Robert G. and Jane V. Engel Foundation
Dorothy Russell Havemeyer Foundation
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Burroughs Wellcome Fund
Estate of Ms. Lois Hilgeman

Additional donors are listed in subsequent sections of the document.
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Ms. Lorili H. Toth
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Dr. Dai-Wei Zhang

CLINIC & HOSPITAL MEMORIAL GIFT PROGRAM*

Adirondack Animal Hospital
Albanhaus Kennels
Alpha Animal Health
American Animal Hospital
Animal General
Animal Hospitable Veterinary
Animal General of East Norwich
Animal Medical Center of Cumming, Dr. Mike McLaughlin
Animal Medical of New City
Animal Hospital of Kent
Animal Medicine and Surgery of Little Neck
Animal General, LLC.
Aqueduct Animal Hospital
Ardda Animal Hospital
Arlington South Veterinary Hospital
Aspetuck Animal Hospital
Dr. Harvey S. Atlas
Baldwin Animal Hospital & Bird Clinic
Dr. Andrea Bergman
Berkeley Dog and Cat Hospital
Blandford Animal Hospital Clinic
Bloomsburg Veterinary Hospital
Bolton Veterinary Hospital
Briarcliff Manor Animal Hospital
Brockton Animal Hospital
Brook Farm Veterinary Center
Bryan Animal Hospital
Dr. Michael P. Bukowski
Burlington Veterinary Center
Burrrstone Animal Hospital
Cape Ann Veterinary Hospital
Carnegie Hill Veterinarians
Central Virginia Veterinary Associates, Dr. Samuel Baum
Central Veterinary Hospital, Dr. Michael Waltz
Central Animal Hospital
Centreville Animal Hospital
Clark Animal Care Center
Clarkson Veterinary Hospital
Clover Hill Animal Hospital
Cobleskill Veterinary Clinic
Dr. James F. Cone, Jr.
Creekside Veterinary Clinic, Dr. Jan S. Crowe
Crossroads Veterinary Clinic
Cummings Veterinary Hospital
Davis Companion Animal Hospital
Deer Park Animal Hospital, (Scott, Henry and Rosen)
Delmar Veterinary Associates
Down Maine Veterinary Clinic
Dr. Amy R. Leibbeck and Mr. Stephen Leibbeck
Eagle Rock Veterinary Hospital
East Meadow Animal Hospital
East Hampton Animal Hospital
Easton Veterinary, Dr. Mitchell H. Greenberg
Eastview Veterinary Clinic
Equine Pen Services, Inc.
Estates Animal Hospital, P.C., Barry Eisenkraft, DVM
Fairfield Veterinary Hospital
Farmingville Animal Hospital
Flower Valley Veterinary Clinic, Dr. James J. Burns
Ford Veterinary Associates
Dr. Marc A. Franz
Gearhart Veterinary Hospital, Dr. Martha S. Gearhart
Georgetown Veterinary Hospital
German Flatts Veterinary Clinic
Dr. Raphael Z. Gilbert
Glen Animal Hospital
Godspeed Mobile Veterinary
Godspeed Animal Care
Dr. L. William Goodman
Goosepond Animal Hospital
Goshen Animal Clinic
Gracelane Kennels
Dr. Martin A. Gruber
Hamilton Animal Hospital
Harlingen Veterinary Clinic, Dr. Christine Newman
Dr. Raymond S. Hayes
Dr. Mark P. Helfat
Dr. William H. Herbold, III
Highland Animal Hospital
Hilton Veterinary Hospital
Home Veterinary Services, Dr. Jeanne Baines
Dr. Bruce N. Hoskins
Dr. Denise R. Hugaboom
Huntington Animal Hospital
Jacobson Veterinary Clinic, Dr. Linda E. Jacobson
Jeffersonville Animal Hospital
Dr. Jeffrey S. Karpf
Katonah-Bedford Veterinary Center
Dr. Nancy D. Kay
Kinnelon Veterinary Hospital
Dr. Malcolm A. Kram

* All Clinic & Hospital Gifts during the fiscal year are included.
July 1, 2010 – June 30, 2011

Dr. Gregory Acland, Professor of Medical Genetics
- Foundation Fighting Blindness Module I, Medical Therapy Service Facility, Principal Investigator
- Morris Animal Foundation Pooled Association Mapping for Canine Hereditary Disorders, Principal Investigator
- NIH Models for Therapy of Hereditary Retinal Degenerations, Principal Investigator

Dr. Douglas Antczak, Dorothy Havemeyer McConville Professor of Equine Medicine
- Harry M. Zweig Memorial Fund for Equine Research Expression Microarrays and Equine Placental Development, Principal Investigator
- NIH Characterization of T Lymphocyte Modulation in Pregnancy, Mentor
- NIH Split Immunological Tolerance to Trophoblast, Principal Investigator

Dr. Judith Appleton, Alfred H. Caspary Professor of Immunology
- Cornell Collaborative Research Program Modulation of Systemic and Mucosal Immunity in Cryptosporidium Parvum-Infected Calves by Immune Colostrum, Principal Investigator
- NIH Eosinophils Sustain Chronic Nematode Infection, Principal Investigator
- NIH Regulatory B Cells in the Liver, Principal Investigator

Dr. Scott Coonrod, Associate Professor of Epigenetics and Reproductive Biology
- DOD-BCRP-Era of Hope Epigenetic Analysis of Breast Cancer, Principal Investigator
- NIH Role of Maternal PADI6 in Embryonic Development, Principal Investigator

Dr. John Parker, Associate Professor of Virology
- BARD (US-Israel) Development of a Plasmid-based Reverse Genetics System for Bluetongue and Epizootic Hemorrhagic Disease Viruses to Allow a Comparative Characterization of the Function of the NS3 Viroporin in Viral Egress, Principal Investigator
- Burroughs Wellcome Fund Reovirus-Induced Apoptosis: The Role of the Viral Outer Capsid Protein Mu1, Principal Investigator
- Cornell Feline Health Center The Role of Feline Junctional Adhesion Molecule A in Feline Calicivirus Infection, Principal Investigator
- NIH Reovirus Factories: Structure, Function, and Dynamics, Principal Investigator

Dr. Colin Parrish, John M. Olin Professor of Virology
- NIH Antigenic Structure of Adeno-Associated Virus Capsids and Antibody Escape Mutants, Principal Investigator
- NIH Engineering Altered Receptors and Antibodies to Study Viral Functions, Mentor
- NIH Mechanisms of Parovirus Infection and Host Range, Principal Investigator
- NIH (with The Pennsylvania State University) The Evolutionary and Biological Bases of Host Switching in Viruses, Principal Investigator

Dr. Alexander Travis, Associate Professor of Reproductive Biology
- Morris Animal Foundation Analyzing the Function of Feline Sperm Produced by Testis Xenografting, Principal Investigator
- NIH Nanoscale Energy Production for Implantable Medical Devices, Principal Investigator
- NIH-Fred Hutchinson Cancer Research Center Towards a Canine Model of Fanconi Anemia, Principal Investigator
- USAID-Virginia Polytech Institute & State University Developing a Participatory Socio-Economic Model for Food Security, Improved Rural Livelihoods, Watershed Management, and Biodiversity Conservation in S. Africa, Principal Investigator

Dr. Vicki Meyers-Wallen, Associate Professor of Genetics and Reproduction
- American Kennel Club Canine Health Foundation Genotyping Small Breed Dogs with Portosystemic Vascular Anomalies and Microvascular Dysplasia, Co-Investigator
- Cornell Collaborative Research Program Candidate Gene Expression: Validation of Directly Sequenced Canine cDNA Library Database and in Silico Screening, Principal Investigator
- Cornell University ADVANCE Center Canine XX Sex Reversal: The Molecular Basis and Its Effect on Key Gene Expression During Sex Determinants, Principal Investigator
- Harry M. Zweig Memorial Fund for Equine Research Generation of a Molecular Resource to Identify Gene Mutations Causing Inherited Equine Sterility and Infertility, Principal Investigator
- New York State Department of Health-NYSTEM Genetic Background and Efficient Generation of Induced Pluripotent Stem (IPS) Cells, Co-Investigator
July 1, 2011 – June 30, 2012

Dr. Gregory Acland, Professor of Medical Genetics

- Foundation Fighting Blindness Module I, Medical Therapy Service Facility, Principal Investigator
- Morris Animal Foundation Pooled Association Mapping for Canine Hereditary Disorders, Principal Investigator
- NIH Models for Therapy of Hereditary Retinal Degenerations, Principal Investigator

Dr. Douglas Antczak, Dorothy Havemeyer McConville Professor of Equine Medicine

- Morris Animal Foundation Major Histocompatibility Complex (MHC) Class I Molecules as Receptors for Equine Herpes Virus, Principal Investigator
- Morris Animal Foundation-University of Minnesota Gene Expression Study, Co-Principal Investigator
- NIH Characterization of T Lymphocyte Modulation in Pregnancy, Mentor
- NIH Immune Tolerance to Serial Trophoblast Transplants, Mentor
- NIH Split Immunological Tolerance to Trophoblast, Principal Investigator

Dr. Judith Appleton, Alfred H. Caspary Professor of Immunology

- NIH Regulatory B Cells in the Liver, Principal Investigator

Dr. Scott Coonrod, Associate Professor of Epigenetics and Reproductive Biology

- DOD-BCRP-Era of Hope Epigenetic Analysis of Breast Cancer, Principal Investigator
- NIH Role of Maternal PADI6 in Embryonic Development, Principal Investigator
- Susan G. Komen for the Cure Role for PAD4 as an Estrogen-regulated Transcription Cofactor During Mammary Development and Breast Cancer, Mentor

Dr. John Parker, Associate Professor of Virology

- BARD (US-Israel) Development of a Plasmid-based Reverse Genetics System for Bluetongue and Epizootic Hemorrhagic Disease Viruses to Allow a Comparative Characterization of the Function of the NS3 Viroporin in Viral Egress, Principal Investigator
- Burroughs Wellcome Fund Reovirus-Induced Apoptosis: The Role of the Viral Outer Capsid Protein M1, Principal Investigator
- Cornell Feline Health Center The Role of Receptor-Induced Conformational Changes in the Capsid of Feline Calicivirus during Virus Infectious Entry, Principal Investigator
- Morris Animal Foundation The Role of Feline Junctional Molecule A in Feline Calicivirus (FCV) Infection, Principal Investigator

Dr. Colin Parrish, John M. Olin Professor of Virology

- NIH Mechanisms of Parvovirus Infection and Host Range, Principal Investigator
- NIH Structural Controls of Functional Receptor and Antibody Binding to Viral Capsids, Principal Investigator
- NIH (with The Pennsylvania State University) The Evolutionary and Biological Bases of Host Switching in Viruses, Principal Investigator

Dr. Alexander Travis, Associate Professor of Reproductive Biology

- New York City Partnership Foundation Assays of Sperm Function to Diagnose Male Infertility, Principal Investigator
- NIH Nanoscale Energy Production for Implantable Medical Devices, Principal Investigator
- NIH-Fred Hutchinson Cancer Research Center Towards a Canine Model of Fanconi Anemia, Principal Investigator

Dr. Vicki Meyers-Wallen, Associate Professor of Genetics and Reproduction

- American Humane Association America’s Dogs and Cats: Providing Essential Genetic Health Data to Veterinarians and Researchers, Principal Investigator
- American Kennel Club Canine Health Foundation Genotyping Small Breed Dogs with Portosystemic Vascular Anomalies and Microvascular Dysplasia, Co-Investigator
- Cornell Collaborative Research Program Canine Model of Centronuclear Myopathy for Gene and Stem Cell Therapy, Co-Principal Investigator
- Cornell University ADVANCE Center Canine XX Sex Reversal: The Molecular Basis and its Effect on Key Gene Expression During Sex Determinants, Principal Investigator
- Cornell Feline Health Center Viral Particle-Based Display of Multiple Antigens for Feline Immunosterilization, Principal Investigator
- New York State Department of Health-NYS TEM Genetic Background and Efficient Generation of Induced Pluripotent Stem (IPS) Cells, Co-Investigator
Although Baker Institute Advisory Council chair, Dr. Richard Henry, and vice chair, David Behnke, come from very different backgrounds, they both recognize the importance of research in keeping our beloved animal companions healthy.

While he was a student of veterinary medicine at Cornell, Richard’s experience in feline virus research with Dr. James Gillespie introduced him to thought-provoking ideas and interesting opportunities that remain important to him nearly 50 years later, namely the value of basic research for providing benefits to animal health in the clinical setting. After contemplating a research career modeled after Dr. Gillespie’s successful career as a virologist, Dr. Henry determined his personality was more suited for clinical practice. As a practitioner, Dr. Henry grew Deer Park Animal Hospital, in Deer Park, NY, into one of the area’s most respected veterinary centers of excellence. This progress stems directly, he said, from applying rigorous clinical standards of animal care to the highest ethical standards of medicine and business.

“Although I decided not to actively conduct basic science, I understood from my interactions with Dr. Gillespie and others the value of discovery at this level and its relevance to clinical practice,” said Dr. Henry. “The discoveries that have come from research conducted at the Baker Institute for Animal Health, including the development of all the important vaccines – from distemper to hepatitis to parvovirus – have helped me provide essential care.”

Discoveries like these have been made possible because of the environment that exists at the Baker Institute.

“As a council member working with people like Drs. Leland Carmichael, Gus Aguirre, Doug McGregor, Doug Antczak, and Colin Parrish I have learned what it takes to fuel inspiration,” said Dr. Henry. “There is congeniality at the Baker Institute that is palpable. I appreciate and enjoy the camaraderie, the collegial nature that permeates the Institute, and the obvious commitment to bring in the best scientists and to do the best science possible.”

By contrast, David Behnke spent 22 years at JP Morgan and is currently the head of investments for Najeti Ventures, a private equity firm. He is also the co-owner of the Behnke Doherty Art Gallery in Washington, CT. But David and Richard share a passion for the organization that has accomplished so much to further the cause of animal health.

Having learned about the Baker Institute initially through a gift made by his veterinarian in memory of one of his dogs, David quickly recognized the value of the Institute’s scientific investigations and innovations leading to major breakthroughs in the fight against diseases that threaten the health of dogs and, in many cases, of people. As David says, there isn’t a dog lover whose existence hasn’t been enriched by the experience of sharing our lives with our faithful companions, whether they are purebred or rescued dogs, millions of whom have led longer, healthier lives because of the vaccines developed, genetic testing created, and therapeutic discoveries made at the Institute.

Both David and Richard enjoy sharing their enthusiasm and support for the Baker Institute with others in their roles as Advisory Council members and lifelong dog lovers.
OUR VISION
To serve the animals that so faithfully serve mankind

OUR MISSION
To improve animal health through basic and applied research

OUR GOAL
To be the leading institution in animal health research worldwide