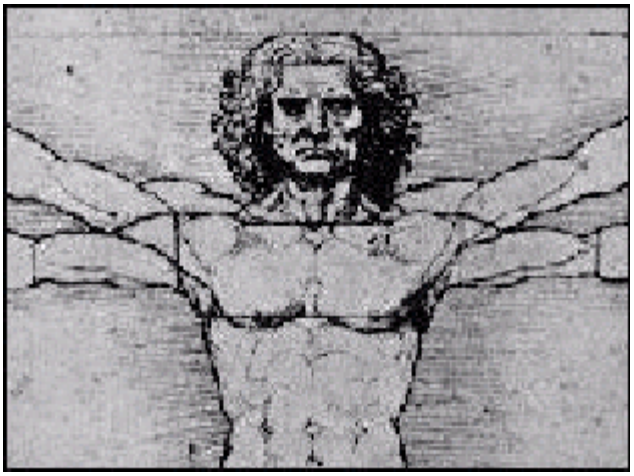
DEPARTMENT OF BIOMEDICAL SCIENCES
COLORADO STATE UNIVERSITY

ANNUAL REPORT 2009



July 9, 2010

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DEPARTMENT OF BIOMEDICAL SCIENCES ANNUAL REPORT 2009

I. Summary

The Department of Biomedical Sciences makes major contributions to the academic and scientific environment in the College of Veterinary Medicine and Biomedical Sciences and Colorado State University. It maintains a reputation for skilled and innovative teaching at the professional veterinary, graduate and undergraduate levels. The Department trained 25 PhD, 17 MS-A and 113 MS-B students and graduated 4 PhD, 4 MS-A and 44 MS-B students in 2009. The Department currently sponsors 1 DVM/PhD student. Departmental faculty members have visible, active research programs. Research expenditures (extramural and intramural) exceeded $5,755,737 in calendar year 2009. New or renewed extramural research grants awarded in 2009 with BMS faculty as PI or Co-PI exceeded $9,913,274. A number of faculty members received national and local awards for their activities in teaching and research during the year. Biomedical Sciences faculty also contributed significantly to service activities at the College, University, national and international levels.

II. Mission

The mission of the Department is to foster an environment conducive to the achievement of excellence in teaching and advising, research and scholarly activity, and service and outreach by its faculty, staff and students. This will be accomplished by discovery, dissemination and application of knowledge in the biomedical sciences, and by educating and training undergraduate, graduate, professional veterinary medical, and post-graduate students.

III. Departmental Organization

Department Head: Barbara Sanborn
Neuroscience Division Director: Ray Whalen (to 6/30/09); Michael Tamkun (after 7/1/09)
Physiology Division Director: Thomas (Tod) Hansen
Assistant to the Head for Educational Activities: C.W. Miller
Department Administrator: Melissa Hein (to 3/31/09); David Mornes (after 4/1/09)
BMS Advisory Committee: Division Directors and 2 elected representatives from each Division

Facilities housing faculty and laboratories: Anatomy/Zoology Building (West) and Physiology Building on the Main Campus; Animal Reproduction and Biotechnology Laboratory, Equine Reproduction Laboratory and the B.W. Pickett Equine Teaching & Research Center buildings on the Foothills Campus.

IV. Education

BMS Faculty Teaching Contribution Summary AY 2008/2009

	Student Credit Hours	**Contact Hours**
PVM	3,132	907
Graduate	2,097	2,071
Undergraduate	13,087	2,562
TOTAL	18,316	5,540

Graduate Education:
Graduate Coordinator: Erin Bisenius
Ph.D. program: 25 enrolled, 4 graduated
MSA program: 17 enrolled, 4 graduated
MSB program: 113 enrolled, 44 graduated

Undergraduate Education:
Undergraduate Professional Advisor: Kelly Swetich
Students enrolled in BMS Major (Fall 2009): 345
BS degrees conferred: 60
Students enrolled in BMS Minor: 280
Minors conferred: 94

General statistics of the 345 BMS Fall 2009 undergraduate students:

- 14% self-reported ethnically diverse background
- 28% non-residents
- 72% female
- 43% in the Honors Program; 39 in the Hughes Undergraduate Research Scholars (HURS) Program
- 3.40 – average CSU cumulative GPA
- 25 BMS majors in BMS faculty laboratories
- 29 undergraduates (who are not BMS majors) in BMS faculty laboratories

Postgraduate Education:
9 Postdoctoral fellows
4 Research Scientists
12 Visiting faculty/clinicians

V. Departmental Activities
Biomedical Sciences Research Retreat
Frontiers in Biomedical Sciences Seminar Series (co-sponsor)
Brain Awareness Week (sponsored by MCIN, participation of faculty, graduates students, undergraduate students (Biomedical Sciences Association)
Participation in Front Range Neuroscience Group and Rocky Mountain Reproductive Sciences Symposium regional meetings, both hosted by Biomedical Sciences faculty

VI. Goals for 2010

- Dr. Colin Clay will assume the position of Head of the Department on May 15, 2010.
- The Department will continue to evaluate its educational activities and course offerings, their effectiveness and their role in the educational mission.
- The Department will continue to sponsor activities that will enhance the research and academic programs of faculty and students and seek additional sources of support for scholarships and endowed lectureships.
- The Department will continue service and commercial activities and will encourage technology transfer.

Table 1: BIOMEDICAL SCIENCES FACULTY — 2009

Regular Faculty

Gregory C. Amberg, PhD, PharmD — Assistant Professor
Specialty: Membrane biophysiology

Russell V. Anthony, PhD — Hill Professor of Biotechnology (part-time)
Specialty: Molecular endocrinology

Gerrit J. Bouma, PhD — Assistant Professor
Specialty: Molecular and genetic regulation of fetal gonadal cell differentiation

Richard A. Bowen, DVM, PhD — Professor
Specialty: Infectious disease and reproductive physiology

Elaine M. Carnevale, DVM, PhD — Associate Professor
Specialty: Equine assisted reproduction

Colin M. Clay, PhD — Professor
Specialty: Molecular endocrinology

Scott Earley, PhD — Assistant Professor
Specialty: Cardiovascular physiology

Melinda Frye, DVM, PhD — Assistant Professor
Specialty: Cardiovascular physiology

James K. Graham, PhD — Professor
Specialty: Male reproductive physiology

Thomas R. Hansen, PhD — Traubert Professor and Director, ARBL
Specialty: Establishment and maintenance of pregnancy; Effects of maternal undernutrition

Shane T. Hentges, PhD — Assistant Professor
Specialty: Pharmacology

Douglas N. Ishii, PhD — Professor
Specialty: Molecular neurobiology

James E. Madl, DVM, PhD — Associate Professor
Specialty: Neurotransmitter release in central nervous system disease

Charles W. Miller, PhD — Professor
Specialty: Cardiovascular physiology

Terry M. Nett, PhD — Professor
Specialty: Reproductive endocrinology

Kathryn M. Partin, PhD — Associate Professor
Specialty: Structural and functional analysis of glutamate receptors

John E. Rash, PhD — Professor
Specialty: Identifying and mapping connexins, aquaporins, and neurotransmitter receptors

Noreen E. Reist, PhD — Associate Professor
Specialty: Molecular dissection of neurotransmitter release

Deborah A. Roess, PhD — Professor
Specialty: Cellular endocrinology

Barbara M. Sanborn, PhD — Professor and Head
Specialty: Hormonal signal transduction

Michael M. Tamkun, PhD — Professor
Specialty: Molecular physiology; ion channels

Stuart Tobet, PhD — Professor
Specialty: Developmental neurobiology

Susan Tsunoda, PhD — Associate Professor
Specialty: Signal transduction; protein targeting; phototransduction; K^+ channel regulation

D.N. Rao Veeramachaneni, BVSc, MscVet, PhD — Professor
Specialty: Andrology and reproductive toxicology

Jozsef Vigh, PhD — Assistant Professor
Specialty: Neurobiology

John P. Walrond, PhD — Associate Professor
Specialty: Structure and function of central and peripheral nicotinic cholinergic synapses

L. Ray Whalen, DVM, PhD — University Distinguished Teaching Scholar
Specialty: Design, development, and evaluation of interactive multimedia educational programs

Quinton A. Winger, PhD — Assistant Professor
Specialty: Genetic regulation of mammalian reproduction

Gordon L. Woods, DVM, PhD — Professor
Specialty: Equine reproduction

Transitional Faculty

Gordon D. Niswender, PhD — University Distinguished Professor
Specialty: Reproductive endocrinology

George E. Seidel, Jr., PhD — University Distinguished Professor
Specialty: Reproductive physiology

Special Faculty

Anna D. Fails, DVM, PhD — Assistant Professor
Specialty: Teaching

Mark B. Frasier, MS — Associate Professor
Specialty: Teaching

Sandra Pitcaithley, MA, DVM — Assistant Professor
Specialty: Teaching

Cynthia Smeraski, PhD — Assistant Professor
Specialty: Neurobiology, neuroimmunology and infectious diseases

Natalia Smirnova, PhD — Assistant Professor
Specialty: Immunology and infectious diseases

Connie Vader-Lindholm, PhD — Assistant Professor
Specialty: Teaching

Joint Faculty

Jason Bruemmer, PhD — Associate Professor, Animal Sciences
Specialty: Equine reproduction

Matthew Hickey, PhD — Professor, Health and Exercise Science
Specialization: Cardiovascular, nutrition and exercise physiology

Patrick McCue, DVM, PhD — Professor, Clinical Sciences
Specialization: Equine reproduction and assisted reproductive technologies

Christopher Orton, DVM, PhD — Professor, Clinical Sciences
Specialization: Cardiopulmonary physiology / surgery

Narda Robinson, DO, DVM, MS, DABMA, FAAMA — Assistant Professor, Clinical Sciences
Specialization: Complementary medicine

Bernard Rollin, PhD — University Distinguished Professor, Philosophy
Specialization: Animal ethics

Affiliate Faculty

Dan Baker, PhD
Colorado Division of Wildlife
James Barry, MD
The Children's Hospital, Denver, CO
Kurt Beam, PhD
University of Colorado Health Sciences Center, Denver, CO
F. Edward Dudek, PhD
Department of Physiology, University of Utah, Salt Lake City, UT
Rayna Gonzales, PhD
University of Arizona, Phoenix, AZ
Robert J. Handa, PhD
University of Arizona, Tucson, AZ
William Horne, DVM, PhD
Cornell University, Ithaca, NY
Naomi Kamasawa, PhD
Dept of Cerebral Research, Division of Cerebral Structure
National Institute for Physiological Sciences
Myodaiji, Okazaki, Japan
Nancy Lorenzon, PhD
University of Denver, Denver, CO
Lowell Miller, PhD
National Wildlife Research Center, Fort Collins, CO
Gary Pickard, PhD
University of Nebraska, Lincoln, NE
Patty Sollars, PhD
University of Nebraska, Lincoln, NE
Edward L. Squires, PhD
Gluck Equine Research Center, University of Kentucky, Lexington, KY
Martha Tissot Van Patot, PhD
Department of Anesthesiology, University of Colorado Health Sciences Center, Denver, CO

Emeritus Faculty

Rupert P. Amann, tenure 1983–1995
Specialization: Male reproductive physiology
Sue C. Kinnamon, tenure 1986-2009
Specialty: Molecular mechanisms of taste transduction
Howard O. Nornes, tenure 1972–2002
Specialization: Development and regeneration of the central nervous system
Robert Phillips, tenure 1964–1997
Specialization: General physiology
Bill W. Pickett, tenure 1967-2000
Specialization: Equine reproductive physiology; assisted reproductive technology
W. Lee Wilke, tenure 1978-2006
Specialty: Cardiovascular and renal physiology

Joint Faculty Appointments in Other Departments

Russell Anthony	Department of Pediatrics, UCHSC
Richard Bowen	Department of Microbiology, CSU
Douglas Ishii	Department of Biochemistry, CSU
Noreen Reist	Special Appointment Faculty, UCHSC
Michael Tamkun	Department of Biochemistry, CSU
Ray Whalen	Department of Clinical Sciences, CSU

Visiting Faculty / Scientists

Alfredo Antoniazzi, visiting PhD student
Host: T. Hansen

Carlos Avila, Mexico
Host: G. Seidel

Sergio Luiz da Silveira Camargo, Jr., Brazil
Host: E. Carnevale

Ross Johnson, University of Minnesota
Host: J. Rash

Naomi Kamasawa, National Institute of Physiological Sciences, Okazaki, Japan
Host: J. Rash

Ann Kenny, University of Queensland, Brisbane, Australia
Host: T. Nett

Kim Kraeger, University of Iowa
Host: J. Rash

Andrea Lorincz, Budapest, Hungary
Host: J. Rash

Lisa Maclellan, Australia
Host: E. Carnevale

Karima Mahmoud, Egypt
Host: G. Seidel

Daniele Mendes
Host: E. Carnevale

Susan Morarie, South Dakota State University
Host: T. Hansen

James I. Nagy, University of Manitoba, Canada
Host: J. Rash

Eduardo Rosa-Molinar, University of Puerto Rico
Host: J. Rash

Table 2: POSTDOCTORAL FELLOWS — 2009

	Advisor	Start Date	End Date
Ryan Ashley ‡	Hansen	12/01/06	
Ann Baker	Roess	04/01/06	
Jennifer Barfield ‡	Seidel	05/07/07	
Pankaj Kumar	Tobet	10/01/08	
Kristy McClellan	Tobet	11/15/08	8/1/09
Eva Rozsa	Vigh	10/01/08	
Brian Searcy	Tobet	09/22/08	
Dawn Sessions	Carnevale	11/16/09	
Qian Zhang	Tobet	11/01/08	

‡ NRSA, training grant or individual fellowship.

Table 3: BIOMEDICAL SCIENCES STAFF — 2009

Research Associates / Technicians

Employee	Supervisor	Location
Matthew Allen	Nett	ARBL
Jesus Arreguin-Arevalo	Nett	ARBL
Laurie Biela	Reist	Anatomy/Zoology
Barbara Birks	Tamkun	Anatomy/Zoology
Richard Brandes	Hansen	ARBL Annex
Zella Brink	Seidel	ARBL
Jeremy Cantlon	Anthony/Clay	ARBL
Herschel Chadwick	Gallegos	ARBL
Kimberly Davidson	Rash	Anatomy/Zoology
Samuel Estrada Murillo	Gallegos	Equine Reproduction Lab
Mike Gallegos	Hansen	ARBL
John Gieser	Partin	Anatomy/Zoology
Greg Harding	Skuggen	ERL
Ruth Hurst	Carnevale	Equine Reproduction Lab
Connie King	Hentges	Anatomy/Zoology
J. Gabe Knoll	Tobet	Physiology
Andrea Latimer	Nett	ARBL
Sarah Legare	Hansen	ARBL
Andrea Linton	Whalen	Anatomy/Zoology
Yizhen Liu	Frye	Physiology
Rob Loftus	Tamkun	Anatomy/Zoology
Hans Mayan	Hansen	ARBL
Nau Mendoza Ruiz	Gallegos	Equine Reproduction Lab
Judith Merriott	Carnevale	Equine Reproduction Lab
Mindy Meyers	Graham	Physiology
Carol Moeller	Veeramachaneni	ARBL
Paula Moffett	Bruemmer	Equine Reproduction Lab
Jennifer Palmer	Veeramachaneni	ARBL
Reagan Pennock	Hentges	Anatomy/Zoology
Juliano da Silveira	Bouma	ARBL
Anne Simpson	Smeraski	ARBL
Jennifer Skuggen	Gallegos	Equine Reproduction Lab
JoAnne Stokes	Carnevale	Equine Reproduction Lab
Alyssa Strieby	Hentges	Anatomy/Zoology
Airn Tolnay	Bowen	Equine Reproduction Lab
Jillian Wall	McCue	Equine Reproduction Lab
Girma Waro	Tsunoda	Anatomy/Zoology
Luis Yanez	Gallegos	Equine Reproduction Lab

Administrative Professional Coordinators

Employee	Supervisor	Location
Tod Clapp	Frasier	Anatomy/Zoology
Robert E. Lee	Whalen	Anatomy/Zoology

Senior Research Associates

Employee	Supervisor	Location
Kimberly Davidson	Rash	Anatomy/Zoology
Paul Gordy	Bowen	ARBL
Thomas Yasumura	Rash	Anatomy/Zoology

Research Scientists

Employee	Supervisor	Location
Michio Morita	Rash	Anatomy/Zoology
Dilyara Murtazina	Sanborn	ARBL
Nicole Nemeth	Bowen	ARBL
Leslie Stone-Roy	Partin	Anatomy/Zoology

Administrative Support

Employee	Title	Location
Louise Ansell	Administrative Assistant II	B.W. Pickett Equine Center
Erin Bisenius	Graduate Education Coordinator/Advisor	134 Physiology
Lisa Dell	Administrative Assistant II	Equine Reproduction Lab
Carol Dewbre	Administrative Assistant III	102 Physiology
Steven Foster	Accounting Technician III	W108C ARBL Building
Kay Gallatin	General Professional III	W108D ARBL Building
Sandra Hopper	Program Assistant I	B.W. Pickett Equine Center
Sarah Legare	Research Associate I	W108 ARBL Building
Jan Marshall	Program Assistant II	W103 Anatomy/Zoology
Brenda Martin	Administrative Assistant III	W108 ARBL
David Mornes	Department Administrator	102 Physiology
Terrie Murphy	Administrative Assistant II	Equine Reproduction Lab
Karen Solomon	Administrative Assistant III	W103 Anatomy/Zoology
Lora Sonday	Accounting Technician III	102 Physiology
Kelly Swetich	Undergraduate Major Advisor	110 Physiology
Kathy Thomas	Program Assistant I	W117 ARBL Building
Shazette Tucker	Administrative Assistant II	W103 Anatomy/Zoology
Sallie Varner	Program Assistant I	W108B ARBL Building

Table 4: GRADUATE STUDENTS — 2009

Ph.D. Students

	Prior Degrees	Advisor	Specialty	Start / Finish Dates
Al-Yahya, Khaleel	MS	Madl	Neuro	FA 02 / SP 09
Alqatati, Abeer	MS	Roess	Physio	SP 07
Ayers, Brian	BS	Woods	Physio	SM09
Baver, Scott	MS / MCIN	Sollars / Pickard / Tobet	Neuro	FA 07 / FA 09
Bott, Rebecca *	MS	Bruemmer / Niswender	Physio	FA 05 / SP 09
Campos-Chillon, Fernando	DVM / MS	Carnevale	Repro	FA 04 / FA 09
Gallagher, Shannon	MS	Vigh	Neuro	FA 09
Gates, Katherine *	MS	Anthony	DVM/ PhD	SM 04
Gonzales, Albert ‡	MS / MCIN	Earley	Neuro	FA 07
Guttormsen, Jillian *	BS	Winger	Repro	FA 08
Harms, Jonathan	MS / MCIN	Partin	Neuro	FA 09
Kemp, Jeffrey	BS	Graham	Repro	FA 07
Kohler, Dennis	BS	Bowen	Physio	SP 04
Koste, Jessica	BS	Whalen / Fails	DVM/ PhD	FA 08
Krunic, Marija	MS	Earley	Neuro	FA 09
Magee, Christianne *	DVM, MS	Clay	Repro	FA 07
Osterlund, Kristen	MCIN	Handa	Neuro	FA 08
Powers, Jenny	DVM	Nett	Repro	SP 05
Silveira, Juliano C.	BS	Carnevale / Bouma	Repro	FA 09
Spizziri, Beth	MS	Graham	Repro	SP 08
Striegel, Amelia	MS / MCIN	Reist	Neuro	FA 06
Urias, Christian	MS	Nett / Clay	Repro	SP 09
Walker, David Josh	MS	Seidel	Repro	FA 04
Webb, Brett	DVM	Hansen	Repro	SM 09
Wolf-Ringwall, Amber *	BS	Roess	Physio	SM 05

* Training grant trainee

‡ National Research Service Award or other individual fellowship recipient

M.S.-A Students

	Prior Degrees	Advisor	Specialty	Start / Finish Dates
Altermatt, Joy	DVM	Carnevale	Repro	SM 05 / FA 09
Anema, Jennifer ‡	BS	Seidel	Repro	FA 08
Burroughs, Chelsie ‡	BS	Seidel	Repro	FA 09
Coville, Alysssa ‡	BS	Carnevale	Repro	FA 09
Cullingford, Erika	BS	Seidel	Repro	SM 08
Daigneault, Brad	BS	Carnevale	Repro	SP 08
Frank, Bethany L.	BS	Carnevale	Repro	SP 09
Fromme, Brittany A.	BS	Winger / Bouma	Repro	FA 08
Hartshorn, Cheryl	BS	Tobet	Neuro	FA 07
Kruse, Shantille ‡	BS	Seidel	Repro	FA 09
Lund, Gretchen	BS	Carnevale	Repro	SM 07 / SU 09
Rasmussen, Sara	BS	Seidel	Repro	FA 07
Rodrigues, Bernardo ‡	BS	Carnevale / Clay	Repro	FA 08
Schoeberl, Samantha	BS	Roess	Physio	FA 07
Skinker, Julian ‡	BS	Carnevale	Repro	FA 09 / withdrew
Torley, Katie	BS	Bouma	Repro	FA 07 / SU 09
Yourey, Rebecca	BS	Carnevale	Repro	FA 07 / SU 09

* Training grant trainee

‡ National Research Service Award or other individual fellowship recipient

M.S.-B Students

	Prior Degrees	Advisor	Start / Finish Dates
Almeyda, Audra Luz K.	BS	Frasier	FA 09
Balzano, Felicia L.	BS	Frasier	FA 09
Bemski, Julienne	BS	Frasier	FA 09
Bishel, Alissa D.	BS	Frasier	FA 09
Bishop, Matthew	BS	Frasier	FA08
Bohlen, Elizabeth	BS	Frasier	SP 08 / SU 09
Bourland, Steven	BS	Frasier	FA 07 / SU 09
Brown, Cory J.	BS	Frasier	FA 09
Brutlag, Lisel K.	BS	Frasier	FA 09
Campion, Craig L.	BS	Frasier	FA 09
Carter, Kasey J.	BS	Frasier	FA 08 / SU 09
Cervelli, Caroline M.	BS	Frasier	FA 09
Cheyney, Rebecca	BS	Frasier	FA 08 / FA 09
Christy, Jason	BS	Frasier	FA 08
Cooney, Anne P.	BS	Frasier	FA 09
Cooper, Casey	BS	Frasier	FA 08
Corman, Jake U.	BS	Frasier	FA 09
Crystal, Sarah	BS	Frasier	FA 08 / FA 09
Cunz, Heidi	BS	Frasier	FA 07
Dameworth, Jonathan	BS	Frasier	FA 09
Del Vecchio, Jeanna M.	BS	Frasier	FA 09
Do, Phuong	BS	Frasier	FA 08 / SU 09
Dolan, James	BS	Frasier	FA 08 / SU 09
Dunne, Catherine	BS	Frasier	FA 08
Eaves-Egenes, Julialea	BS	Frasier	FA 08
Eide, Chris	BS	Frasier	FA 09
Emanuel, Catherine	BS	Frasier	FA 08 / SU 09
English, Kizzy	BS	Frasier	FA 08
Ewing, Benjamin D.	BS	Frasier	FA 09
Fairbank, David M.	BS	Frasier	FA 09
Fara, Tyler R.	BS	Frasier	FA 09
Fentiman, Katelyn	BS	Frasier	FA 08 / SU 09
Ferguson, Lindsay	BS	Frasier	FA 08 / SU 09
Ferrara, Michael J.	BS	Frasier	FA 09
Fleischmann, Caren E.	BS	Frasier	FA 09
Flory, Kale M.	BS	Frasier	FA 09

	Prior Degrees	Advisor	Start / Finish Dates
Foster, Elizabeth K.	BS	Frasier	FA 09
Fox, Laura	BS	Frasier	FA 08 / SU 09
Frank, Matthew R.	BS	Frasier	FA 09
Gaebler, Teresa	BS	Frasier	FA 08 / SU 09
Galen, Ashley	BS	Frasier	FA 08 / SU 09
Gallagher, Shannon	BS	Frasier	FA 07 / SU 09
Garber, Sarah K.	BS	Frasier	FA 09
Garbino, Nina C.	BS	Frasier	FA 08
Goldstein, Russell D.	BS	Frasier	FA 09
Gottlieb, Chelsea	BS	Frasier	FA 08 / SU 09
Green, Jeffrey	BS	Frasier	FA 08 / SU 09
Gronsten, Cody	BS	Frasier	FA 08
Harmon, Kristin E.	BS	Frasier	FA 09
Hau, Heather	BS	Frasier	FA 08 / SU 09
Hay, Connor J.	BS	Frasier	FA 09
Hickey, Erin	BS	Frasier	FA 07
Hiller, Kimberly L.	BS	Frasier	FA 09
Holder, Adiena	BS	Frasier	FA 08 / SU 09
Howell, Jeffrey	BS	Frasier	FA08
Hughes, Jordan W.	BS	Frasier	FA 09
Innes, Jenna	BS	Frasier	FA 08
Isch, Cassidy	BS	Frasier	FA 08 / SU 09
Joseph, Ryan J.	BS	Frasier	FA 09
Jostes, Eric	BS	Frasier	FA 08 / FA 09
Kanda, Megan	BS	Frasier	FA 08 / SU 09
Kent Krouse, Stephanie	BS	Frasier	FA 08 / SU 09
Keyser, Andrew	BS	Frasier	FA 08
Kloer, Timothy B.	BS	Frasier	FA 09
Klostermann, Isaac	BS	Frasier	FA 08 / SU 09
Knoblock, Ryan	BS	Frasier	FA 99 / FA 09
Krawzoff, Madeline H.	BS	Frasier	FA 09
Krunic, Marija	BS	Frasier	FA 08 / SU 09
Lehman, May	BS	Frasier	FA 08 / SU 09
Licursi, Ashley M.	BS	Frasier	FA 09
Linney, Travis M.	BS	Frasier	FA 09
Lipfert, Tracey	BS	Frasier	FA 08 / SU 09
Loftus, Robert	BS	Frasier	FA 07 / SP 09

	Prior Degrees	Advisor	Start / Finish Dates
Lossing, Rebecca	BS	Frasier	FA 08 / SU 09
Luu, Amy Q.	BS	Frasier	FA 09
Martinuzzi, Aaron	BS	Frasier	FA 08 / SU 09
Matoian, Brett J.	BS	Frasier	FA 09
McCracken, Kathryn	BS	Frasier	FA 08 / SU 09
Mensch, Kenneth	BS	Frasier	FA 08 / SU 09
Moerlein, Janelle	BS	Frasier	FA 08 / SU 09
Monaghan, Kaylie E.	BS	Frasier	FA 09
Murphy, Brittany	BS	Frasier	FA 08 / SU 09
Nagle, Bebhinn	BS	Frasier	FA 08 / SU 09
Nelson, Shana	BS	Frasier	FA 08 / SU 09
Neudorf, Daniel S.	BS	Frasier	FA 09
Nguyen, Tan	BS	Frasier	FA 07 / SP 09
O'Driscoll, Cari	BS	Frasier	FA 07 / SP 09
Page, Marshall	BS	Frasier	FA 08 / SU 09
Pauels, Sarah A.	BS	Frasier	FA 09
Rattray, Kyle W.	BS	Frasier	FA 09
Reichert, William B.	BS	Frasier	FA 09
Reid, Katherine	BS	Frasier	FA 07 / FA 09
Reider, Bryan R.	BS	Frasier	FA 09
Ryan, Sarah M.	BS	Frasier	FA 09
Schlogel, Sara A.	BS	Frasier	FA 09
Shaddeau, Angela K.	BS	Frasier	FA 09
Slaght, Kiersten	BS	Frasier	SP 08 / FA 09
Spiegelman, Sarah E.	BS	Frasier	FA 09
Strom, Luanne M.	BS	Frasier	FA 09
Sullivan, Jessica L.	BS	Frasier	FA 09
Supon, Ryan J.	BS	Frasier	FA 09
Tai, Pei-Yi	BS	Frasier	FA 09
Thomas, Emma K.	BS	Frasier	FA 09
Tunney-Wasson, Ethan T.	BS	Frasier	FA 09
Viboolsittiseri, Sawannee	BS	Frasier	FA 08
Villanueva, Gabriela A.	BS	Frasier	FA 09
Vonloh, Matthew A.	BS	Frasier	FA 09
Walton, James	BS	Frasier	FA 08 / SU 09

	Prior Degrees	Advisor	Start / Finish Dates
Werth, Kristen R.	BS	Frasier	FA 09
Williams, Benjamin	BS	Frasier	FA 08
Wood, Elizabeth L.	BS	Frasier	FA 09
Yoshida, Aya	BS	Frasier	FA 08 / SU 09
Zubricky, Katherine	BS	Frasier	FA 08 / SU 09

Graduate Students in Other Departments Advised by Biomedical Sciences Faculty

Name	Department	Advisor	Program	Status
Achenbach, Jenna	MIP	Bowen	PhD	Active
Ashwish, Nadya	CMB	Roess	PhD	Active
Benson, Jeret	MIP	Bowen	MS	Active
Bosco-Lauth, Angela	MIP	Bowen	PhD	Active
Delano, Theresa	Ed Human Res	Frye (co-advisor)	PhD	Active
Enriquez, Vanessa ‡	CMB	Bouma/Winger	PhD	Active
Field, Meghan	Animal Sciences	Anthony (co-advisor)	PhD	Active
Fox, Philip	CMB	Tamkun	PhD	Active
Frahm, Krystle‡	CMB	Tobet	PhD	Active
Funk, Janel	Biochemistry	Reist (co-advisor)	PhD	Graduated
Huang, Xin	CMB	Roess	MS	Active
Muth, Jack	MIP	Bowen	PhD	Active
Ndaluka, Christina	MIP	Bowen	PhD	Active
Partyka, Katie	Animal Sciences	Anthony	MS	Graduated SU09
Roan, Chelsea	CMB	Roess	MS	Active
Serbedzija, Predrag	Biochemistry	Ishii	PhD	Graduated FA09
Shnaishah, Hoda	CMB	Roess	MS	Active
Soffler, Carl ‡	MIP	Bowen	PhD	Active
Stratton, Matthew‡	CMB	Tobet	PhD	Graduated
Ulloa, Aida	CMB	Sanborn	PhD	Active
Varland, Dezaray	CMB	Vigh	MS	Active
Weiner, Christina	MIP	Hansen (co-advisor)	MS	Active

* Training grant trainee

‡ National Research Service Award or other individual fellowship recipient

Table 5: DEGREES AWARDED — 2009

Ph.D. Degree

Student	Advisor	Thesis/Dissertation Title
Khaleel Al-Yahya	Madl	Mechanism of Neuronal Cell Death in Canine Glaucoma
Scott Baver	Sollars/Pickard/ Tobet	Two Types Of Melanopsin Retinal Ganglion Cell in the Mouse Retina: Regulation of Melanopsin Expression
Rebecca Bott	Bruemmer/ Niswender	The Role of Interferon-T (IFN) in Luteal Gene Expression, Steroidogenesis, and Luteal Lifespan
Fernando Campos-Chillon	Carnevale	Effect of Aging on Gene Expression and Mitochondrial DNA in the Equine Oocyte and Follicle

M.S.-A Degree

Student	Advisor	Thesis/Dissertation Title
Joy Altermatt	Carnevale	Mare Age and eFSH Effects on Collection and Viability of Equine Oocytes Assessed by Ovarian and Follicular Vascularity, Oocyte Morphology and Developmental Competency after Intracytoplasmic Sperm Injection
Gretchen Lund	Carnevale	Comparison of Timing of Oocyte Collection and Methods for Vitrification of ICSI-produced Embryos in the Mare
Katie Torley	Bouma	MicroRNAs in Fetal Sheep Gonad Development and Differentiation
Rebecca Yourey	Carnevale	Effect of Maternal Age on the Equine Zona Pellucida and Follicular Cell Communication

Degrees Awarded in Other Departments to Students Advised by BMS Faculty

Student	Advisor	Degree	Department
Partyka, Katie	Anthony	MS	Animal Sciences
Serbedzija, Predrag	Ishii	PhD	Biochemistry

Table 6: FELLOWSHIP AND SCHOLARSHIP RECIPIENTS — 2009

Abney Foundation Scholarship
Ellane Cleys
Catie DeLuca
Ryan Ferris
Gretchen Lund

Biomedical Sciences Undergraduate Award
Kimberly Barasch
Abigail Bullock
Charles Mueller

E.J. Carroll Memorial Scholarship
Jennifer Anema

Lisa Marie Craft Scholarship
Shannon Gallagher

James N. Dupree Scholarship
None

Ed H. Honnen Award
Gretchen Lund

Dr. Dean Pavillard Scholarship
Catie DeLuca
Ryan Ferris

Delano F. Scott Scholarship
Andrew Stahly

France Stone Scholarship
Catie DeLuca
Ryan Ferris

CVMBS Students First Scholarship
Stacie Grannum

Carlton Sundberg Memorial Scholarship
Christianne Magee

O.E. Thornburg Undergraduate Research Excellence Award
Il-Gyu Cho

O.E. Thornburg Graduate Research Excellence Award
Albert Gonzales

Dr. Alan Tucker Memorial Scholarship

Lauren Leete

National Research Service Award or Individual Fellowship Recipients

Jennifer Anema (PRSE Fellowship) *
Ryan Ashley (USDA Fellowship) *
Chelsie Burroughs (PRSE Fellowship) *
Alyssa Coville (PRSE Fellowship) *
Albert Gonzales (NIH-NRSA Fellowship)
Jillian Guttormsen (PRSE Fellowship) *
Shantille Kruse (PRSE Fellowship) *
Bernardo Rodrigues (PRSE Fellowship) *
Juliano Silveira (PRSE Fellowship) *
Julian Skinker (PRSE Fellowship) *

NIH Training Grant Fellowship Recipients

Jennifer Barfield
Rebecca Bott
Katherine Gates
Jillian Guttormsen
Christianne Magee
Amber Wolf-Ringwall

* Colorado State Graduate Fellowship

Table 7: COURSES TAUGHT — 2009

Spring

Course #	Title	Instructors
	PVM Courses	
VM 619	Veterinary Neurobiology	Fails, Pitcaithley, Whalen
VM 621	Exotic Animal Anatomy and Husbandry	Madl, Pitcaithley
VM 640	Biology of Disease I	Bowen
VM 744	Theriogenology	Bowen, Graham
VM 786A	Junior Practicum	Carnevale
VM 786B	Senior Practicum	Carnevale
	Graduate Courses	
BMS 501	Mammalian Physiology II	Anthony, Bowen, Seidel, Vader
BMS 531	Domestic Animal Dissection	Frasier, Madl
BMS 545	Neuroanatomy	Clapp, Fails, Walrond
BMS 633	Domestic Animal Anatomy – Case Discussions	Fails, Frasier
BMS 684	Supervised College Teaching	Clay, Frasier
BMS 695C	Independent Study – Neuroanatomy	Frasier
BMS 695F	Independent Study – Gross Anatomy	Frasier
BMS 784	Supervised College Teaching	Fails, Frasier, Nett, Walrond
BMS 792A	Seminar – Biomedical Sciences	Partin
BMS 792C	Seminar – Reproductive Physiology	Bouma
BMS 795A	Independent Study – Endocrinology	Roess
BMS 795B	Independent Study – Neurophysiology	Earley, Frasier
BMS 795D	Independent Study – Cardiopulmonary Physiology	Earley, Frye
BMS 795E	Independent Study – Reproductive Physiology	Bouma, Carnevale, Clay, Graham, Nett, Seidel, Winger
BMS 796F	Group Study – Problem-Based Learning	Madl
CM 595	Independent Study	Roess
CM 795	Independent Study	Bouma, Roess
ERHS 602	Toxicological Mechanisms	Bouma
MIP 628	Immunity to Infection	Bowen
MIP 636	Mechanisms of Viral & Infectious Disease	Bowen
MIP 699	Thesis	Hansen
NB 503	Developmental Neurobiology	Ishii, Tobet, Stone-Roy
NB 505	Neuronal Circuits – Systems, Behavior	Clapp, Hentges, Vigh, Stone-Roy
NB 586	Practicum – Techniques in Neuroscience II	Stone-Roy, Hentges, Partin, Tamkun
NB 795	Independent Study	Tamkun, Tobet
NB 796A	Group Study -- Ion Channels	Reist, Tamkun

Course #	Title	Instructors
NB 796C	Group Study – Topics in Neuroscience	Reist
NB 796E	Group Study – Neuroendocrine Mechanisms	Tobet
	Undergraduate Courses	
BMS 124	Sexuality and Health	Nett
BMS 200	Concepts in Human Anatomy and Physiology	Walrond
BMS 260	Biomedical Sciences	Clay
BMS 300	Principles of Human Physiology	Clay, Roess, Walrond
BMS 302	Laboratory in Principles of Physiology	Vader
BMS 305	Domestic Animal Gross Anatomy	Frasier, Madl
BMS 330	Microscopic Anatomy	Madl
BMS 345	Functional Neuroanatomy	Clapp, Reist
BMS 360	Fundamentals of Physiology	Bouma, Earley, Ishii, Miller, Veeramachaneni
BMS 365	Nerve and Muscle – Toxins, Trauma and Disease	Hentges, Rash, Tamkun, Whalen
BMS 384	Supervised College Teaching	Frasier, Reist, Walrond
BMS 450	Pharmacology	Amberg, Ishii
BMS 460	Essentials of Pathophysiology	Madl, Miller, Roess, Veeramachaneni
BMS 492	Seminar – Pathophysiology of Disease	Earley, Hentges, Miller, Veeramachaneni
BMS 495	Independent Study	Bouma, Clay, Frasier, Walrond
BMS 496	Group Study	Frasier, Lee
BMS 498	Research	Bouma

Summer

PVM Courses

VM 786B	Senior Practicum	Carnevale
	Graduate Courses	
BMS 684	Supervised College Teaching	Frasier
BMS 695C	Independent Study – Neuroanatomy	Frye
BMS 795E	Independent Study – Reproductive Physiology	Nett
MIP 699	Thesis	Hansen
	Undergraduate Courses	
BMS 300	Principles of Human Physiology	Clay, Roess, Walrond
BMS 301	Human Gross Anatomy	Clapp, Frasier
BMS 384	Supervised College Teaching	Clapp, Frasier
BMS 495	Independent Study	

Fall

PVM Courses

VM 616	Functional Anatomy	Fails, Madl, Pitcaithley, Whalen
VM 618	Organ Systems – Anatomy and Physiology	Bowen, Fails, Frye, Pitcaithley, Walrond
VM 722	Veterinary Pharmacology	Amberg, Madl
VM 749	Clinical Sciences III	Carnevale, Fails
VM 786A	Junior Practicum	Carnevale
VS 333	Domestic Animal Anatomy	Madl

Graduate Courses

AN 510	Bovine Reproductive Management	Seidel
BIOM 535	Biomolecular Tools for Engineers	Vigh
BMS 500	Mammalian Physiology I	Earley, Tamkun
BMS 575	Human Anatomy Dissection	Clapp, Frasier
BMS 610A	Managing a Career in Science – Survival Skills for Coursework	Fails, Frasier, Partin
BMS 610B	Managing a Career in Research – Survival Skills for Research	Partin, Sanborn, Tamkun, Vigh
BMS 619	Advanced Human Gross Anatomy	Clapp, Frasier
BMS 631	Mechanisms of Hormone Action	Clay
BMS 632	Metabolic Endocrinology	Anthony
BMS 684	Supervised College Teaching	Clapp, Frasier, Vader, Walrond
BMS 695F	Independent Study – Gross Anatomy	Frasier, Whalen
BMS 696	Group Study – Neurosciences	Frasier
BMS 784	Supervised College Teaching	Frasier, Walrond
BMS 792A	Seminar – Biomedical Sciences	Partin, Vigh
BMS 792C	Seminar – Reproductive Physiology	Winger
BMS 795B	Independent Study – Neurophysiology	Earley, Partin
BMS 795E	Independent Study – Reproductive Physiology	Anthony, Bouma, Bowen, Carnevale, Graham, Nett, Roess, Seidel, Winger
BMS 796B	Group Study – Cardiopulmonary Physiology	Earley
CM 795	Independent Study	Bouma, Roess
ERHS 502	Fundamentals of Toxicology	Bouma
MIP 699	Thesis	Hansen
NB 500	Readings in Cellular Neurobiology	Tamkun
NB 501	Cellular and Molecular Neurophysiology	Tamkun
NB 771	Writing, Submitting, and Reviewing Grants	Reist, Tobet
NB 795	Independent Study	Vigh
NB 795B	Independent Study – Neurophysiology	Vigh
NB 796A	Group Study – Ion Channels	Tamkun
NB 796C	Topics in Neuroscience	Reist

NB 796E	Group study – Neuroendocrine Mechanisms	Tobet

Undergraduate Courses

BMS 124	Sexuality and Health	Nett
BMS 192	First Year Seminar in Biomedical Sciences	Vader
BMS 200	Concepts in Human Anatomy & Physiology	Walrond
BMS 300	Principles of Human Physiology	Bouma, Walrond
BMS 301	Human Gross Anatomy	Clapp, Frasier
BMS 302	Laboratory in Principles of Physiology	Vader
BMS 325	Cellular Neurobiology	Hentges, Tobet, Walrond, Whalen, Stone-Roy
BMS 384	Supervised College Teaching	Clapp, Frasier, Walrond
BMS 420	Cardiopulmonary Physiology	Miller
BMS 430	Endocrinology	Graham
BMS 487	Internship	Miller
BMS 495	Independent Study	Clapp, Frasier
BMS 496	Group Study	Clapp, Frasier
BMS 498	Research	Bouma, Clay
LIFE 102	Attributes of Living Systems	Roess
MGT 450	Biomedical Entrepreneurship I	Tobet
NB 325	Cellular Biology	Tobet
NB 495	Independent Study	Tobet

Table 8: TRAINING GRANTS — 2009

	Sponsor	Grant Title	Dates
Florant, G. PI	NIH	Short-term Training Program for Minority Students in Biomedical Sciences	2004-2009
Nett, T. PI	NIH	Training in Mammalian Reproductive Biology	2005-2010
Tobet, S. Co-PI	NSF	GK12 Training grant: 'A Multi-Disciplinary Research and Teaching Program in Biomedical Engineering for Discovery and Understanding of Cell Communication	2009-2014
Hansen, T., Anthony, R., Co-PI	USDA-CSREES	National Needs Graduate Fellowships Program	2010-2013

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Table 9: AWARDS — 2009

FACULTY AWARDS

Tod Clapp
CVMBS Outstanding Graduate Education Advising Award

Anna Fails
CVMBS Innovative PVM Instructional Methodology Award

Mark Frasier
Outstanding Science Mentor Award, Students as Leaders in Science

Terry Nett
Carl G. Hartman Award, Society for the Study of Reproduction

Deborah Roess
Distinguished Alumni of Williamsville North High School, Williamsville Education Foundation, Inc.

Cynthia Smeraski
Society for Neuroscience, First Generation Award

Connie Vader
CVMBS Innovative Undergraduate Instructional Methodology Award

Ray Whalen
CVMBS Innovative Graduate Instructional Methodology Award

STUDENT AWARDS

O.E. Thornburg Graduate Research Excellence Award
Albert Gonzales (Earley lab)

O.E. Thornburg Undergraduate Research Excellence Award
Il-Gyu Cho

Outstanding Junior, College of Veterinary Medicine and Biomedical Sciences
Kyle Carter

Pi Kappa Phi Award, College of Veterinary Medicine and Biomedical Sciences
Kyle Carter

CSU Celebrate Undergraduate Research and Creativity Awards
Highest Honors -- Adam Phillips (Colin Clay, Mentor)
College Honors – Melanie Schow (Stuart Tobet, Mentor)
College Honors – Kyle Carter
College Honors – Leslie Marchand

NSF National Consortium for Measurement and Signature Intelligence Research (NCMR) Scholars Program Scholarship
Adam Vaudreuil

Table 10: PUBLICATIONS — 2009

Russell Anthony

Refereed Journal Articles

Jeckel KM, Limesand SW, Anthony RV. 2009. Specificity protein-1 and -3 trans-activate the ovine placental lactogen gene promoter. Mol Cell Endocrinol 207:118-124.

Jozwik M, Pietrzycki B, Jozwik M, Anthony RV. 2009. Expression of enzymes regulating placental ammonia homeostasis in human fetal growth restricted pregnancies. Placenta 30:607-612.

Purcell SH, Cantlon JD, Wright CD, Henkes LE, Seidel GE Jr, Anthony RV. 2009. The involvement of proline-rich 15 in early conceptus development in sheep. Biol Reprod 81:1112-1121.

Richard Bowen

Refereed Journal Articles

England K, am Ende C, Lu H, Sullivan TJ, Marlenee NL, Bowen RA, Knudson SE, Knudson DL, Tonge PJ, Slayden RA. Substituted diphenyl ethers as a broad-spectrum platform for the development of chemotherapeutics for the treatment of tularaemia. J Antimicrob Chemother 64:1052-1061.

Jia Q, Lee BY, Clemens DL, Bowen RA, Horwitz MA. 2009. Recombinant attenuated Listeria monocytogenes vaccine expression Francisella tularensis IG1C induces protection in mice against aerosolized Type A F. tularensis. Vaccine 18:1216-1229.

Lu H, England K, am Ende C, Truglio JJ, Luckner S, Reddy BG, Marlenee NL, Knudson SE, Knudson DL, Bowen RA, Kisker C, Slayden RA, Tonge PJ. 2009. Slow-onset inhibition of the Fabl enoyl reductase from francisella tularensis: Residence time and in vivo activity. ACS Chem Biol 20:221-231.

Nemeth NM, Bosco-Lauth AM, Bowen RA. 2009. Cross-protection between West Nile and Japanese encephalitis viruses in red-winged blackbirds (Agelaius phoeniceus). Avian Dis 53:421-425.

Nemeth NM, Kratz GE, Bates R, Scherpelz JA, Bowen RA, Komar N. 2009. Clinical evaluation and outcomes of naturally acquired West Nile virus infection in raptors. J Zoo Wildl Med 40:51-63.

Nemeth N, Kratz G, Scherpelz J, Bowen R, Komar N. 2009. Naturally-induced West Nile virus immunity in raptors. EcoHealth 5:298-304.

Nemeth NM, Oesterle PT, Bowen RA. 2009. Humoral immunity to West Nile virus is long-lasting and protective in the house sparrow (Passer domesticus). Am J Trop Med Hyg 80:864-869.

Yamanaka H, Hoyt T, Bowen R, Yang X, Crist K, Golden S, Massimo M, Pascual DW. 2009. An IL-12 DNA vaccine co-expressing Yersinia pestis antigens protects against pneumonic plague. Vaccine 27:80-87.

Elaine Carnevale

Refereed Journal Articles

Altermatt JL, Suh TK, Stokes JE, Carnevale EM. 2009. Effects of age and equine follicle-stimulating hormone (eFSH) on collection and viability of equine oocytes assessed by morphology and developmental competency after intracytoplasmic sperm injection (ICSI). Reprod Fertil Dev 21:615-623.

Campos-Chillon LF, Suh TK, Barcelo-Fimbres M, Seidel GE Jr, Carnevale EM. 2009. Vitrification of early-stage bovine and equine embryos. Theriogenology 71:349-354.

Cox TJ, Squires EL, Carnevale EM. 2009. Effect of follicle size and follicle-stimulating hormone on ovulation induction and embryo recovery in the mare. J Equine Vet Sci 29:213-218.

Chapters and Textbooks

Carnevale EM. 2009. Cooling and cryopreservation of equine embryos. In: Equine Breeding Management and Artificial Insemination, 2nd ed., Samper J (ed). Saunders Elsevier, St. Louis, MO, pp. 201-207.

Colin Clay

Refereed Journal Articles

Ellinwood NM, Clay CM. 2009. Large animal models of genetic disease: Pertinent IACUC issues. ILAR J 50:225-228.

Foradori CD, Hinds LR, Hanneman WH, Legare ME, Clay CM, Handa RJ. 2009. Atrazine inhibits pulsatile luteinizing hormone release without altering pituitary sensitivity to a gonadotropin-releasing hormone receptor agonist in female Wistar rats. Biol Reprod 81:40-45.

Lents CA, Farmerie TA, Cherrington BD, Clay CM. 2009. Multiple core homeodomain binding motifs differentially contribute to transcriptional activity of the murine gonadotropin-releasing hormone receptor gene promoter. Endocrine 35:356-364.

Magee C, Foradori CD, Bruemmer JE, Arreguin-Arevalo JA, McCue PM, Handa RJ, Squires EL, Clay CM. 2009. Biological and anatomical evidence for kisspeptin regulation of the hypothalamic-pituitary-gonadal axis of estrous horse mares. Endocrinology 150:2813-2821.

Ulloa A, Gonzales AL, Zhong M, Kim Y-S, Cantlon J, Clay C, Ku C-Y, Earley S, Sanborn BM. 2009. Reduction in TRPC4 expression specifically attenuates G-protein coupled receptor-stimulated increases in intracellular calcium in human myometrial cells. Cell Calcium 46:73-84.

Scott Earley

Refereed Journal Articles

Earley S, Gonzales AL, Crnich R. 2009. Endothelium-dependent cerebral artery dilation mediated by TRPA1 and Ca2+-activated K+ channels. Circ Res 24:987-994.

Earley S, Pauyo T, Drapp R, Tavares M, Liedtke W, Brayden JE. 2009. TRPV4-dependent dilation of peripheral resistance arteries influences arterial pressure. Am J Physiol 297:H1096-H1102.

Ulloa A, Gonzales AL, Zhong M, Kim Y-S, Cantlon J, Clay C, Ku C-Y, Earley S, Sanborn BM. 2009. Reduction in TRPC4 expression specifically attenuates G-protein coupled receptor-stimulated increases in intracellular calcium in human myometrial cells. Cell Calcium 46:73-84.

Melinda Frye

Refereed Journal Articles

Frye M, McMurtry I, Orton EC, Fagan K. 2009. Use of fat-fed rats to study the metabolic and vascular sequelae of obesity and beta-adrenergic antagonism. Comp Med 59(3):242-248.

James Graham

Refereed Journal Articles

Amorim EA, Graham JK, Spizziri B, Meyers M, Torres CA. 2009. Effect of cholesterol or cholesteryl conjugates on the cryosurvival of bull sperm. Cryobiology 58:210-214.

Amorim EAM, Torres CAA, Graham JK, Amorim LS, Santos LVL. 2009. The hypoosmotic swelling test in fresh rabbit spermatozoa. Anim Reprod Sci 111:338-343.

Glazar AI, Mullen SF, Liu J, Benson JD, Critser JK, Squires EL, Graham JK. 2009. Osmotic tolerance limits and membrane permeability characteristics of stallion spermatozoa treated with cholesterol. Cryobiology 59:201-206.

Shane Hentges

Refereed Journal Articles

Hentges ST, Otero-Corchon V, Pennock RL, King CM, Low MJ. 2009. Proopiomelanocortin expression in both GABA and glutamate neurons. J Neurosci 28/29(43):13684-13690.

Thomas Hansen

Refereed Journal Articles

Shoemaker ML, Smirnova NP, Bielefeldt-Ohmann H, Austin KJ, van Olphen A, Clapper JA, Hansen TR. 2009. Differential expression of the type I interferon pathway during persistent and transient bovine viral diarrhea virus infection. J Interferon Cytokine Res 29:23-36.

Smirnova NP, Ptitsyn AA, Austin KJ, Bielefeldt-Ohmann H, Van Campen H, Han H, van Olphen AL, Hansen TR. 2009. Persistent fetal infection with bovine viral diarrhea virus differentially affects maternal blood cell signal transduction pathways. Physiol Genom 36:129-139.

Douglas Ishii

Refereed Journal Articles

Serbedžija P, Madl JE, Ishii DN. 2009. Insulin and IGF-I prevent brain atrophy and DNA loss in diabetes. Brain Res 1303:179-194.

James Madl

Refereed Journal Articles

Gionfriddo JR, Freeman KS, Groth A, Scofield VL, Alyahya K, Madl JE. 2009. alpha-Luminol prevents decreases in glutamate, glutathione, and glutamine synthetase in the retinas of glaucomatous DBA/2J mice. Vet Ophthalmol 12:325-332.

Serbedžija P, Madl JE, Ishii DN. 2009. Insulin and IGF-I prevent brain atrophy and DNA loss in diabetes. Brain Res 1303:179-194.

Terry Nett

Refereed Journal Articles

Ashley RL, Arreguin-Arevalo JA, Nett TM. 2009. Binding characteristics of the ovine membrane progesterone receptor alpha and expression of the receptor during the estrous cycle. Reprod Biol Endocrinol 7:42.

John Rash

Chapters and Textbooks

Abrams CK, Rash JE. 2009. Connexins in the nervous system. In: Connexin Biology: The Role of Gap Junctions in Disease, Harris WA, Locke D (eds). Humana Press, Totowa, NJ, pp. 323-357.

Noreen Reist

Refereed Journal Articles

Mace KE, Biela LM, Sares AG, Reist NE. 2009. Synaptotagmin I stabilizes synaptic vesicles via its C(2)A polylysine motif. Genesis 47:337-345.

Barbara Sanborn

Refereed Journal Articles

Ulloa A, Gonzales AL, Zhong M, Kim Y-S, Cantlon J, Clay C, Ku C-Y, Earley S, Sanborn BM. 2009. Reduction in TRPC4 expression specifically attenuates G-protein coupled receptor-stimulated increases in intracellular calcium in human myometrial cells. Cell Calcium 46:73-84.

George Seidel

Refereed Journal Articles

Ahola JK, Seidel GE Jr, Whittier JC. 2009. Use of gonadotropin-releasing hormone at fixed-time artificial insemination at eighty or ninety-seven hours post prostaglandin $F_2\alpha$ in beef cows administered the long-term melengestrol acetate Select Synch. Prof Anim Sci 25:256-261.

Barcelo-Fimbres M, Brink Z, Seidel GE Jr. 2009. Effects of phenazine ethosulphate during culture of bovine embryos on pregnancy rate, prenatal and postnatal development after embryo transfer. Theriogenology 71:355-368.

Barfield JP, McCue PM, Squires EL, Seidel GE Jr. 2009. Effect of dehydration prior to cryopreservation of large equine embryos. Cryobiology 59:36-41.

Campos-Chillon LF, Suh TK, Barcelo-Fimbres M, Seidel GE Jr, Carnevale EM. 2009. Vitrification of early-stage bovine and equine embryos. Theriogenology 71:349-354.

Hyland A, Seidel GE Jr, Enns RM, Peel RK, Whittier JC. 2009. Intervals of five or seven days between controlled internal drug-release insertion, gonadotropin-releasing hormone, and prostaglandin $F_2\alpha$ injections: Effects on pregnancy rate and follicular size. Prof Anim Sci 25:150-154.

Purcell SH, Cantlon JD, Wright CD, Henkes LE, Seidel GE Jr, Anthony RV. 2009. The involvement of proline-rich 15 in early conceptus development in sheep. Biol Reprod 81:1112-1121.

Roberts RM, Smith GW, Bazer FW, Cibelli J, Seidel GE Jr, Bauman DE, Reynolds LP, Ireland JJ. 2009. Research priorities. Farm animal research in crisis. Science 324:468-469.

Schenk JL, Cran DG, Everett RW, Seidel GE Jr. 2009. Pregnancy rates in heifers and cows with cryopreserved sexed sperm: Effects of sperm numbers per inseminate, sorting pressure and sperm storage before sorting. Theriogenology 71:717-728.

Seidel GE Jr. 2009. ASAS Centennial Paper: Future research in physiology and endocrinology. J Anim Sci 87:384-389.

Seidel GE Jr. 2009. Sperm sexing technology – The transition to commercial application: An introduction to the symposium "Update on Sexing Mammalian Sperm." Theriogenology 71:1-3.

Natalia Smirnova

Refereed Journal Articles

Shoemaker ML, Smirnova NP, Bielefeldt-Ohmann H, Austin KJ, van Olphen A, Clapper JA, Hansen TR. 2009. Differential expression of the type I interferon pathway during persistent and transient bovine viral diarrhea virus infection. J Interferon Cytokine Res 29:23-36.

Smirnova NP, Ptitsyn AA, Austin KJ, Bielefeldt-Ohmann H, Van Campen H, Han H, van Olphen AL, Hansen TR. 2009. Persistent fetal infection with bovine viral diarrhea virus differentially affects maternal blood cell signal transduction pathways. Physiol Genom 36:129-139.

Stuart Tobet

Refereed Journal Articles

Bao Y, Hudson QJ, Perera EM, Akan L, Tobet SA, Smith CA, Sinclair AH, Berkovitz GD. 2009. Expression and evolutionary conservation of the tescalcin gene during development. Gene Expr Patterns 9:273-281.

Hultgren S, Goldstein JM, Delancey JO, Bandstra ES, Brady KT, Brown JS, Deng HW, Dunaif A, Ehrmann DA, Mayer EA, Sinha R, Tobet S, Levine JE. 2009. The vital role of ORWH. Science 20:1009-1010.

Tobet S, Knoll JG, Hartshorn C, Aurand E, Stratton M, Kumar P, Search B, McClellan K. 2009. Brain sex differences and hormone influences: A moving experience? J Neuroendocrinol 21:387-392.

Quinton Winger

Refereed Journal Articles

Aston KI, Li GP, Hicks BA, Session BR, Davis AP, Winger QA, Rickords LF, Stevens JR, White KL. 2009. Global gene expression analysis of bovine somatic cell nuclear transfer blastocysts and cotyledons. Mol Reprod Dev 76:471-482.

Aston KI, Li GP, Hicks BA, Winger QA, White KL. 2009. Genetic reprogramming of transcription factor ap-2gamma in bovine somatic cell nuclear transfer preimplantation embryos and placentomes. Cloning Stem Cells 11:177-186.

TABLE 11: RESEARCH GRANT EXPENDITURES (EXTRAMURAL and INTRAMURAL) CALENDAR YEAR 2009

Principal Investigator	Sponsor	Account Title	Direct	Indirect	Total
Amberg, Greg	American Heart Association	Calcium Sparklets During Hypertension	77,231	7,723	84,954
Amberg, Greg	College Research Council	Regulation of Calcium Sparklets	18,644	-	18,644
Amberg, Greg Total			95,875	7,723	103,598
Anthony, Russ	College Research Council	Placental Fetal Hormonal	18,013	-	18,013
Anthony, Russ	College Research Council	Subprojects Anthony W112 Aes	7,181	-	7,181
Anthony, Russ	College Research Council	Subprojects Anthony W112 Aes	4,463	-	4,463
Anthony, Russ Co-PI (Han)	USDA-NRI (Animal Sciences)	Maternal Undernutrition On Fetal	-	-	-
Anthony, Russ	USDA	Function and Regulation of PRR15 in Sheep	16,733	4,718	21,451
Anthony, Russ Total			46,390	4,718	51,108
Ashley, Ryan	USDA	Pregnancy-Induced Chemokine Receptor	18,884	-	18,884
Ashley, Ryan Total			18,884	-	18,884
Bouma, Gerrit	College Research Council	Cre-Experiment Station W112 Dr. Clay	1,950	-	1,950
Bouma, Gerrit	Preservation Equine Genetics	Role for microRNA in oocyte	30,910	-	30,910
Bouma, Gerrit Total			32,860	-	32,860
Bowen, Richard	HHS-CDC	Zoonotic Avian Influenza: The Human-Animal	840,834	122,584	963,418
Bowen, Richard	HHS-NIH	RCE:Animal Models	50,601	10,840	61,441
Bowen, Richard	Intervet	Duration of Immunity Testing in Horses	52,264	13,589	65,853
Bowen, Richard	Merial	Evaluation of Efficacy of a Multivalent	424	110	534
Bowen, Richard	U of Texas	US Based Collaboration	12,511	5,630	18,141
Bowen, Richard	USDA	Indonesian HPIA Testing	20,504	2,051	22,555
Bowen, Richard	USDA	Research on Arthropod-Borne Diseases	2,036	-	2,036
Bowen, Richard	USDA	Research on Arthropod-borne Diseases	555,283	71,738	627,021
Bowen, Richard Total			1,534,457	226,542	1,760,999
Bruemmer, Jason	AQHA	The Role of Prostaglandin Transporter	1,780	-	1,780
Bruemmer, Jason Total			1,780	-	1,780
Carnevale, Elaine	College Research Council	Effect of aging and oocyte maturity on mRNA content	1,840	-	1,840
Carnevale, Elaine	Hylton Foundation	Development of Assisted Reproductive	80,912	-	80,912
Carnevale, Elaine	Preservation Equine Genetics	Role for microRNA in oocyte	12,758	-	12,758
Carnevale, Elaine Total			93,670	-	93,670
Clay, Colin	Preservation Equine Genetics	Mapping the nueroendocrine control	11,471	-	11,471
Clay, Colin Total			11,471	-	11,471
Earley, Scott	American Heart Association	Fuctional Significan of TRP channels	14,509	1,451	15,960
Earley, Scott	GlaxoSmithKline	Effects of Novel TRPV4 Channel Blockers	9,082	908	9,990
Earley, Scott	NIH	TRP Channel-Dependent Regulation	115,112	53,390	168,502
Earley, Scott	NIH - ARRA	TRP Channel-Dependent Regulation	31,944	12,789	44,733
Earley, Scott Total			170,647	68,538	239,185
Frye, Melinda	AEP	Metabolomics Pilot Grant	24,019	-	24,019
Frye, Melinda	College Research Council	Comparison of Rat Coronary Microvascular	9,410	-	9,410
Frye, Melinda	College Research Council	The Visceral Adipose as a Link	2,917	-	2,917
Frye, Melinda Total			36,346	-	36,346
Gonzales, Albert (Earley)	NIH-NHLBI	Institutional Allowance for Albert Gonzales	3,386	-	3,386
Gonzales, Albert (Earley)	NIH-NHLBI	Role of TRP Channels and Calcium Signaling	25,792	-	25,792
Gonzales, Albert (Earley) Total			29,178	-	29,178
Graham, James	College Research Council	Changing Sperm Membranes	437	-	437
Graham, James	College Research Council	Changing Sperm Membranes	1,337	-	1,337
Graham, James	College Research Council	Regulating Gonatropin Releasing Hormone	17,344	-	17,344
Graham, James	Hylton Foundation	Development of Assisted Reproductive Tech	7,749	-	7,749
Graham, James	Preservation Equine Genetics	Preservation Equine Genetics Fund	5,218	-	5,218
Graham, James	USDA-APHIS	Development of Oral Contraceptives	28,194	2,820	31,014
Graham, James Total			60,279	2,820	63,099
Hansen, Thomas	College Research Council	Crc-Es W108e	14,045	-	14,045
Hansen, Thomas	College Research Council	Crc-Es W108e	7,075	-	7,075
Hansen, Thomas	IDSC	Dev Maternal Blood - Diag. Fetal Pers. Infection	30,848	-	30,848
Hansen, Thomas	Preservation Equine Genetics	Equine in silico library generation	3,577	-	3,577
Hansen, Thomas	Preservation Equine Genetics	Preservation For Equine Genetics-Carnevale	26,588	-	26,588
Hansen, Thomas	Preservation Equine Genetics	Preservation For Equine Genetics-Walton	308	-	308
Hansen, Thomas	Preservation Equine Genetics	Role for microRNA in oocyte	25,343	-	25,343
Hansen, Thomas	USDA	Gene Expression in the Blood and the Ute	67,873	18,428	86,301
Hansen, Thomas Total			175,657	18,428	194,085
Hentges, Shane	NIH-DDK	Hypothalamic Circuits Regulating Energy	157,503	73,819	231,322
Hentges, Shane Total			157,503	73,819	231,322
Ishii, Doug	Aurogen, Inc.	Development of a Treatment for Dementia	165	76	241

TABLE 11: RESEARCH GRANT EXPENDITURES (EXTRAMURAL and INTRAMURAL) CALENDAR YEAR 2009

Principal Investigator	Sponsor	Account Title	Direct	Indirect	Total
Ishii, Doug	College Research Council	Prevention of Brain Degeneration in T2D	5,332	-	5,332
Ishii, Doug	Foundation Fund	Diabetic Neuropathy Research Development	15,873	-	15,873
Ishii, Doug Total			21,370	76	21,446
Magee, Christianne	AQHA	Kisspeptin Mediated Regulation of the Equine	2,372	-	2,372
Magee, Christianne	Grayson	Evaluation of Kisspeptin in the Equine	5,759	-	5,759
Magee, Christianne Total			8,131	-	8,131
McCue, Patrick	ARS	Analysis of oviductal and uterine fluid	8,041	-	8,041
McCue, Patrick	ARS	Equine Reproduction Laboratory (ERL)	14,733	-	14,733
McCue, Patrick Total			22,774	-	22,774
Nett, Torrance	Barrier	Analysis of FSH, LH, Progesterone, Estragen	27,920	12,844	40,764
Nett, Torrance	College Research Council	Reproductive Performance In Cattle+Sheep	32,820	-	32,820
Nett, Torrance	College Research Council	Reproductive Performance In Cattle+Sheep	1,352	-	1,352
Nett, Torrance	College Research Council	Subprojects Nett W112 Aes	10,041	-	10,041
Nett, Torrance	HHS-NIH	Training in Mammalian Reproductive	39,736	2,745	42,481
Nett, Torrance	HHS-NIH	Training in Mammalian Reproductive	99,139	6,748	105,887
Nett, Torrance	Morris	Development of New, More Efficacious	41,506	3,321	44,827
Nett, Torrance	Morris	Effects of Maternal GnRH Anitbody Transfer	19,306	1,544	20,850
Nett, Torrance	Natl Parks	Technical Support to Evaluate Fertility	15,762	2,758	18,520
Nett, Torrance	NPS	Technical Support to Evaluate Fertility	6,210	1,086	7,296
Nett, Torrance	Pennatek	Evaluation of Serum Concentrations of LH	2,477	1,164	3,641
Nett, Torrance	PGX Health	Validation of Assays for and Measurement	12,275	5,769	18,044
Nett, Torrance	Thorn	Validation of Hormone Assays in Pig Serum	13,313	3,140	16,453
Nett, Torrance	USDA	Use of Toxin Genes for Chemical Castration	9,894	2,790	12,684
Nett, Torrance Total			331,751	43,909	375,660
Niswender, Gordon	USDA	Fellowships in Integrated Resource	54,867	-	54,867
Niswender, Gordon Total			54,867	-	54,867
Partin, Kathy	NIH-NIMH	Glutamate Receptor Desensitization	142,394	65,406	207,800
Partin, Kathy Total			142,394	65,406	207,800
Rash, John	Einstein College of Medicine	Plasticity of Electrical Synapses	9,534	4,481	14,015
Rash, John	NIH-CSR	Connexins in Neuronal and Glial Gap Junction	282,130	114,089	396,219
Rash, John Total			291,664	118,570	410,234
Reist, Noreen	NIH-NDS	Mutational Anlaysis of Synaptotagmin	48,803	21,961	70,764
Reist, Noreen Total			48,803	21,961	70,764
Roess, Deborah	American Heart Association	Biophysical Evaluation of Compounds	8,990	899	9,889
Roess, Deborah	College Research Council	High-Amplitude LH Pulses Desensitize LH	12,607	-	12,607
Roess, Deborah	College Research Council	Redistributing Insulin Receptors on Membranes	7,148	-	7,148
Roess, Deborah	NIH-Natl Inst. On Aging	Imaging Cell Signaling Events	5,368	2,522	7,890
Roess, Deborah Total			34,113	3,421	37,534
Sanborn, Barbara	NIH-NICHD	The Role of Trp Proteins in Myometrial Calcium	65,091	29,157	94,248
Sanborn, Barbara	NIH-NICHD	Uterine Relaxing Factors: Molecular Aspects	42,466	19,109	61,575
Sanborn, Barbara	NIH-NICHD-ARRA	Uterine Relaxing Factors: Molecular Aspects	4,074	1,915	5,989
Sanborn, Barbara Total			111,631	50,181	161,812
Seidel, George	College Research Council	Crc Experiment Station W112 Dr. Seidel	10,811	-	10,811
Seidel, George	College Research Council	Crc Experiment Station W112 Dr. Seidel	17,361	-	17,361
Seidel, George	College Research Council	Integrating In-Vitro Embryo Technologies	29,051	2,327	31,378
Seidel, George	Foundation Fund	Bovine Research & Development	29,886	-	29,886
Seidel, George	Preservation Equine Genetics	Development of Assisted Reproductive	11,830	-	11,830
Seidel, George	Preservation Equine Genetics	Role for microRNA in oocyte	17,562	-	17,562
Seidel, George Total			116,501	2,327	118,828
Smeraski, Cynthia	HHS-NIH	Neurological Sequelae in Survivors	145,244	68,267	213,511
Smeraski, Cynthia Total			145,244	68,267	213,511
Squires, Ed	Preservation Equine Genetics	Development of Assisted Reproductive	4,754	-	4,754
Squires, Ed Total			4,754	-	4,754
Stone-Roy, Leslie	U of Colorado-Denver	Transmission of Taste Signals in Taste	10,639	5,000	15,639
Stone-Roy, Leslie Total			10,639	5,000	15,639
Tamkun, Michael	NIH-NIGM	ARRA: Kv2.1 Membrane Corrals: Regulators of K+	41,005	19,272	60,277
Tamkun, Michael	NIH-NIGM	Kv2.1 Membrane Corrals: Regulators of K+	148,335	62,635	210,970
Tamkun, Michael Total			189,340	81,907	271,247
Tobet, Stu	Brigham & Women's Hospital	Animal Models of Sex-Specific HPA Axis	143,507	70,600	214,107
Tobet, Stu	NIH-NIMH	Cellular Differentiation in the Development	265,304	107,473	372,777
Tobet, Stu	U of Mass.	Migration of Early Olfactory Neuronal	54,353	25,546	79,899
Tobet, Stu Total			463,164	203,619	666,783

TABLE 11: RESEARCH GRANT EXPENDITURES (EXTRAMURAL and INTRAMURAL) CALENDAR YEAR 2009

Principal Investigator	Sponsor	Account Title	Direct	Indirect	Total
Veeramachaneni, D Rao	College Research Council	Miki Canine - Dr. Douglas Thamm	884	-	884
Veeramachaneni, D Rao	HHS-NIH	Mechanisms Causing Cryptorchidism	65,079	30,587	95,666
Veeramachaneni, D Rao Total			65,963	30,587	96,550
Vigh, Jozsef	College Research Council	Light-Induced Output Dynamics	14,319	-	14,319
Vigh, Jozsef	NIH-CSR	Functional Analysis of Retinal Inhibitor	75,109	21,726	96,835
Vigh, Jozsef Total			89,428	21,726	111,154
Winger, Quint	College Research Council	Repro Perform In Beef Cattle & Sheep	3,209	-	3,209
Winger, Quint	College Research Council	Repro Perform In Beef Cattle & Sheep	8,670	-	8,670
Winger, Quint	College Research Council	Subprojects Niswender W112 Aes	6,786	-	6,786
Winger, Quint Total			18,665	-	18,665
Grand Total			4,638,032	1,119,545	5,757,577

TABLE 12: NEW and RENEWED GRANT AWARDS (EXTRAMURAL)
CALENDAR YEAR 2009

PI Last Name	Investigators	Sponsor	Title	Contract #	Award Date	Amount
Amberg	Gregory Amberg (Primary PI)-1680	American Heart Association	Calcium Sparklets During Hypertension	0635118N	11/18/2009	$65,000
Amberg Total						$65,000
Anthony	Russell V Anthony (Primary PI)-1680	USDA-CSREES-Coop State Rsrch Edu & Ext	Function and Regulation of PRR15 in Sheep Conceptus Development	2009-65203-05670	8/20/2009	$340,000
Anthony Total						$340,000
Ashley	Ryan L Ashley (Primary PI)-1680	USDA-CSREES-Coop State Rsrch Edu & Ext	Pregnancy-Induced Chemokine Receptor 4(CXCR4) and Associated Immune Cells	2009-65203-05717	9/9/2009	$125,000
Ashley Total						$125,000
Bowen	Richard A Bowen (Primary PI)-1680	University of Wyoming	Brucellosis: New Vaccines and Diagnostics, Vaccination and Environmental Factors in Disease Incidence and ...	USDACSRE45232	4/8/2010	$13,496
Bowen	Richard A Bowen (Primary PI)-1680; Kenneth E Olson (Co-PI)-1682; Harry Joel Hutcheson (Co-PI)-1177; Jonathan O Carlson (Co-PI)-1682; Charles H Calisher (Co-PI)-1682; Carol D Blair (Co-PI)-1682; William C Black IV (Co-PI)-1682; Barry J Beaty (Co-PI)-1682	Univ. of Texas Medical Branch/Galveston.	United States Based Collaboration in Emerging Viral & Prion Diseases	03-030 MOD #14	10/22/2009	$21,750
Bowen	Richard A Bowen (Primary PI)-1680	Intervet, Inc.	Duration of Immunity Testing in Horses of West Nile Virus Fraction of ...	E-15-07 WNI DOI-Task Order #3	3/4/2009	$71,641
Bowen	Richard A Bowen (Primary PI)-1680	USDA-ARS-Agricultural Research Service	Research on Arthropod-Borne Diseases of Livestock	58-5410-9-305	2/11/2009	$37,982
Bowen	Richard A Bowen (Primary PI)-1680	USDA-ARS-Agricultural Research Service	Research on Arthropod-borne Diseases of Livestock and Wildlife	58-5410-8-334	2/11/2009	$8,000
Bowen	Richard A Bowen (Primary PI)-1680	USDA-ARS-Agricultural Research Service	Research on Arthropod-borne Diseases of Livestock and Wildlife	58-5410-8-334	7/16/2009	$23,000
Bowen	Richard A Bowen (Primary PI)-1680	USDA-APHIS-Animal Plant Health Insp Srvc	Wild Animals in the U. S. and Japanese Encephalitis and Chickungunya Viruses	09-7100-0306-CA	12/22/2009	$130,114
Bowen	Richard A Bowen (Primary PI)-1680	Canivet, LLC	In Vitro Efficacy of Bov-23 against Canine Parvovirus		1/15/2009	$5,424
Bowen	Richard A Bowen (Primary PI)-1680	Merial, Ltd.	West Nile Virus Lineage 2 (WNV2) in horses (Merial 09-181)	Protocol 09-181	12/16/2009	$20,873
Bowen	Richard A Bowen (Primary PI)-1680; Kenneth E Olson (Co-PI)-1682; Harry Joel Hutcheson (Co-PI)-1177; Jonathan O Carlson (Co-PI)-1682; Charles H Calisher (Co-PI)-1682; Carol D Blair (Co-PI)-1682; William C Black IV (Co-PI)-1682; Barry J Beaty (Co-PI)-1682	Univ. of Texas Medical Branch/Galveston.	United States Based Collaboration in Emerging Viral & Prion Diseases	03-030 MOD #14	4/8/2009	$50,000
Bowen	Richard A Bowen (Primary PI)-1680	Merial, Ltd.	West Nile Virus Lineage 2 (WNV2) in horses (Merial 09-181)	Protocol 09-181	3/24/2010	$1,928
Bowen	Richard A Bowen (Primary PI)-1680	USDA-APHIS-Animal Plant Health Insp Srvc	Indonesian HPIA Testing Cooperative Agreement	09-7100-0267-CA	3/9/2010	$40,480
Bowen	Richard A Bowen (Primary PI)-1680	HHS-NIH-NIAID-Allergy & Infect Diseases	CO-002 Core C: Animal Models Core	2U54AI065357-05 Revised	4/29/2009	$273,755

TABLE 12: NEW and RENEWED GRANT AWARDS (EXTRAMURAL)
CALENDAR YEAR 2009

PI Last Name	Investigators	Sponsor	Title	Contract #	Award Date	Amount
Bowen	Richard A Bowen (Primary PI)-1680; Kenneth E Olson (Co-PI)-1682; Harry Joel Hutcheson (Co-PI)-1177; Jonathan O Carlson (Co-PI)-1682; Charles H Calisher (Co-PI)-1682; Carol D Blair (Co-PI)-1682; William C Black IV (Co-PI)-1682; Barry J Beaty (Co-PI)-1682	Univ. of Texas Medical Branch/Galveston.	United States Based Collaboration in Emerging Viral & Prion Diseases	03-030 MOD #14	6/3/2009	$29,000
Bowen	Richard A Bowen (Primary PI)-1680	USDA-ARS-Agricultural Research Service	RVF Vaccine Evaluation using Small Animal Models	58-5430-0-307	2/24/2010	$108,000
Bowen	Richard A Bowen (Primary PI)-1680	Hennessy Research	West Nile Virus Vaccine in Horses: One Year Duration of Immunity		4/28/2009	$52,909
Bowen Total						$888,352
Bruemmer	Jason Bruemmer (Primary PI)-1171; Gerrit J Bouma (Co-PI)-1680	AQHA-American Quarter Horse Assoc.	The Role of Prostaglandin Transporter in Equine Maternal Recognition of Pregnancy		9/29/2009	$57,546
Bruemmer Total						$57,546
Carnevale	Elaine Carnevale (Primary PI)-1680	MTSU-Middle Tennessee State University	Direct Molecular Analysis of the Equine Cumulus-oocyte Complex using Imaging Mass Spectometry	C10-0542	2/17/2010	$10,370
Carnevale Total						$10,370
Chen	Thomas Wei Chen (Primary PI)-1373; Stuart A Tobet (Co-PI)-1680; Omnia Elhakim (Co-PI)-1876; Michael Anthony De Miranda (Co-PI)-1588	NSF - National Science Foundation	New, GK-12: A Multi-Disciplinary Research and Teaching Program in Biomedical Engineering for Discovery and ...	0841259 Amend #1	8/10/2009	$524,516
Chen	Thomas Wei Chen (Primary PI)-1373; Stuart A Tobet (Co-PI)-1680; Omnia Elhakim (Co-PI)-1876; Michael Anthony De Miranda (Co-PI)-1588	NSF - National Science Foundation	New, GK-12: A Multi-Disciplinary Research and Teaching Program in Biomedical Engineering for Discovery and ...	841259	4/6/2009	$529,563
Chen Total						$1,054,079
Earley	Scott Earley (Primary PI)-1680	GlaxoSmithKline Pharmaceuticals Ltd..	Effects of Novel TRPV4 Channel Blockers on Vascular Reactivity	PO# 55949205 OS	2/10/2009	$21,450
Earley	Scott Earley (Primary PI)-1680; Michael Tamkun (Collaborator)-1680	HHS-NIH-NHLBI-Natl Heart, Lung, & Blood	TRP Channel-Dependent Regulation of Arterial Tone	5 R01 HL091905-02	1/13/2010	$364,968
Earley	Scott Earley (Primary PI)-1680; Michael Tamkun (Collaborator)-1680	HHS-NIH-NHLBI-Natl Heart, Lung, & Blood	TRP Channel-Dependent Regulation of Arterial Tone	1 R01 HL091905-01A1	1/7/2009	$365,089
Earley	Scott Earley (Primary PI)-1680; Marija Krunic (Co-PI)-1680	HHS-NIH-NHLBI-Natl Heart, Lung, & Blood	ARRA: ATRP Channel-Dependent Regulation of Arterial Tone	3 R01 HL091905-01A1S1	8/14/2009	$152,830
Earley Total						$904,337
Frye	Melinda A Frye (Primary PI)-1680; E Christopher Orton (Collaborator)-1678; Michael J Pagliassotti (Collaborator)-1571	HHS-NIH-Nat. Ctr. for Research Resources	A Rodent Model to Study Links among Diet, Visceral Adipose and Cardiomyopathy	1K01RR028135-01	4/20/2010	$122,364
Frye Total						$122,364
Gonzales	Albert L Gonzales (Primary PI)-1680; Scott Earley (Co-PI)-1680	HHS-NIH-NHLBI-Natl Heart, Lung, & Blood	Role of TRP Channels and Caldium Signaling in Cerebral Arteries	5 F31 HL094145-02	8/25/2009	$29,009
Gonzales Total						$29,009
Han	Hyungchul Han (Primary PI)-1171; Joseph D Tatum (Co-PI)-1171; Richard Kraig Peel (Co-PI)-1171; Terry E Engle (Co-PI)-1171; Shawn Archibeque (Co-PI)-1171; Russell V Anthony (Co-PI)-1680	USDA-CSREES-Coop State Rsrch Edu & Ext	Maternal Undernutrition on Fetal and Postnatal GH/IGF System in Sheep	2009-35206-05273	1/23/2009	$349,360

TABLE 12: NEW and RENEWED GRANT AWARDS (EXTRAMURAL)
CALENDAR YEAR 2009

PI Last Name	Investigators	Sponsor	Title	Contract #	Award Date	Amount
Han Total						$349,360
Hansen	Thomas Hansen (Primary PI)-1680; Russell V Anthony (Co-PI)-1680	USDA-NIFA-National Institute of Food and	National Needs Graduate Fellowship Program	2010-38420-20397	12/17/2009	$234,000
Hansen Total						$234,000
Hentges	Shane Hentges (Primary PI)-1680	HHS-NIH-Diabetes, Digestive, & Kidney	Hypothalamic Circuits Regulating Energy Balance and Obesity: Synaptic Physiology	5R01 DK078749-02	6/11/2009	$291,703
Hentges	Shane Hentges (Primary PI)-1680	HHS-NIH-Diabetes, Digestive, & Kidney	ARRA: Hypothalamic Circuits Regulating Energy Balance and Obesity: Synaptic Physiology	3R01DK078749-02S1	12/30/2009	$99,600
Hentges	Shane Hentges (Primary PI)-1680	HHS-NIH-Diabetes, Digestive, & Kidney	Hypothalamic Circuits Regulating Energy Balance and Obesity: Synaptic Physiology	5R01 DK078749-03	6/1/2010	$288,786
Hentges Total						$680,089
Magee	Christianne Magee (Primary PI)-1680	AQHA-American Quarter Horse Assoc.	Kisspeptin Mediated Regulation of the Equine Hypothalamic Pituitary Gonadal Axis		9/29/2009	$50,499
Magee Total						$50,499
Nett	Torrance M Nett (Primary PI)-1680	USDA-CSREES-Coop State Rsrch Edu & Ext	Use of Toxin Genes for Chemical Castration of Animals	2009-65203-05927	9/24/2009	$349,082
Nett	Torrance M Nett (Primary PI)-1680	DOI-NPS-National Park Service	Evaluation of the Effects of Fertility Control on the Reproductive Behaviors and Activity Budgets of Feral Horses	H2370094000 TO#J2340090032	4/19/2010	$15,952
Nett	Torrance M Nett (Primary PI)-1680	PGX Health, LLC	Validation of Assays for and Measurement of TSH and Prolactin in Mice Treated with Vilazodone		7/9/2009	$42,630
Nett	Torrance M Nett (Primary PI)-1680	HHS-NIH-Child Health and Human Develop	Training in Mammalian Reproductive Biology	5 T32 HD007031-33	7/14/2009	$160,824
Nett	Torrance M Nett (Primary PI)-1680	PGX Health, LLC	Validation of Assays for and Measurement of TSH and Prolactin in Mice Treated with Vilazodone		2/4/2009	$58,544
Nett	Torrance M Nett (Primary PI)-1680	DOI-NPS-National Park Service	Evaluation of the Effects of Fertility Control on the Reproductive Behaviors and Activity Budgets of Feral Horses	H23700940000 TO#J2340090032	12/22/2009	$9,996
Nett	Torrance M Nett (Primary PI)-1680	PGX Health, LLC	Validation of Assays for and Measurement of TSH and Prolactin in Mice Treated with Vilazodone		12/16/2009	$87,788
Nett	Torrance M Nett (Primary PI)-1680	Pennatek LLC	Evaluation of Serum Concentrations of LH in Rats Treates with Triptorelin		4/28/2009	$31,605
Nett	Torrance M Nett (Primary PI)-1680	DOI-NPS-National Park Service	Technical Support to Evaluate Fertility Control and Herd Health in Feral Horses	H2380040001 TO J23400080045	3/11/2009	$30,000
Nett	Torrance M Nett (Primary PI)-1680	Pfizer Inc - Animal Health	Pfizer Inc Service Contract	Study # 13782	6/2/2010	$27,342
Nett Total						$813,763

TABLE 12: NEW and RENEWED GRANT AWARDS (EXTRAMURAL)
CALENDAR YEAR 2009

PI Last Name	Investigators	Sponsor	Title	Contract #	Award Date	Amount
Olson	Kenneth E Olson (Primary PI)-1682; Jonathan O Carlson (Co-PI)-1682; Charles H Calisher (Co-PI)-1682; Richard A Bowen (Co-PI)-1680; Carol D Blair (Co-PI)-1682; William C Black IV (Co-PI)-1682; Harry Joel Hutcheson (Collaborator)-1177	Univ. of Texas Medical Branch/Galveston.	United States Based Collaboration in Emerging Viral & Prion Diseases	03-030 MOD #14	4/8/2009	$50,000
Olson	Kenneth E Olson (Primary PI)-1682; Jonathan O Carlson (Co-PI)-1682; Charles H Calisher (Co-PI)-1682; Richard A Bowen (Co-PI)-1680; Carol D Blair (Co-PI)-1682; William C Black IV (Co-PI)-1682; Harry Joel Hutcheson (Collaborator)-1177	Univ. of Texas Medical Branch/Galveston.	United States Based Collaboration in Emerging Viral & Prion Diseases	03-030 MOD #14	6/3/2009	$151,140
Olson	Kenneth E Olson (Primary PI)-1682; Jonathan O Carlson (Co-PI)-1682; Charles H Calisher (Co-PI)-1682; Richard A Bowen (Co-PI)-1680; Carol D Blair (Co-PI)-1682; William C Black IV (Co-PI)-1682; Harry Joel Hutcheson (Collaborator)-1177	Univ. of Texas Medical Branch/Galveston.	United States Based Collaboration in Emerging Viral & Prion Diseases	03-030 MOD #15	10/22/2009	$228,250
Olson	Kenneth E Olson (Primary PI)-1682; Jonathan O Carlson (Co-PI)-1682; Charles H Calisher (Co-PI)-1682; Richard A Bowen (Co-PI)-1680; Carol D Blair (Co-PI)-1682; William C Black IV (Co-PI)-1682; Harry Joel Hutcheson (Collaborator)-1177	Univ. of Texas Medical Branch/Galveston.	United States Based Collaboration in Emerging Viral & Prion Diseases	03-030 MOD #12	1/27/2009	$81,075
Olson Total						$510,465
Rash	John E Rash (Primary PI)-1680	Albert Einstein College of Medicine	Plasticity of Electrical Synapses	9-526-3600	7/16/2009	$36,750
Rash	John E Rash (Primary PI)-1680	HHS-NIH-Nat. Ctr. for Research Resources	JEOL Model JEM-1400 Transmission Electron Microscope	1S10RR028936-01	9/9/2009	$804,260
Rash	John E Rash (Primary PI)-1680	HHS-NIH-Center for Scientific Review	Connexins in Neuronal and Glial Gap Junctions in the Central Nervous System	5 R01 NS044395-08	6/16/2009	$382,765
Rash Total						$1,223,775
Sanborn	Barbara M Sanborn (Primary PI)-1680	HHS-NIH-Child Health and Human Develop	ARRA: Uterine Relaxing Factors: Molecular Aspects of Action	3 R01HD009618-S1	7/16/2009	$7,163
Sanborn Total						$7,163
Smeraski	Cynthia A Smeraski (Primary PI)-1680; Richard A Bowen (Collaborator)-1680	HHS-NIH-Neurological Disorders & Stroke	Neurological Sequelae in Survivors of West Nile Virus Infection: A Hamster Model	1R21NS056280-02	4/14/2009	$160,781
Smeraski Total						$160,781
Stone-Roy	Leslie M Stone-Roy (Primary PI)-1680	University of Colorado at Denver	Transmission of Taste Signals in Taste Buds	FY10.009.001 AMD4 CSU Yr4	10/30/2009	$16,395
Stone-Roy Total						$16,395
Tamkun	Michael Tamkun (Primary PI)-1680; Scott Earley (Co-PI)-1680; James R Bamburg (Co-PI)-1870; Gregory Amberg (Co-PI)-1680	HHS-NIH-Nat Inst of General Medical Sci	Kv2.1 Membrane Corrals: Regulators of K+ Channel Function and Trafficking	5R01GM084136-02 Revised	3/12/2010	$27,122
Tamkun	Michael Tamkun (Primary PI)-1680	HHS-NIH-Nat Inst of General Medical Sci	ARRA: Kv2.1 Membrane Corrals: Regulators of K+ Channel Function and Trafficking	3R01GM084136-01A1S1	9/24/2009	$423,151

TABLE 12: NEW and RENEWED GRANT AWARDS (EXTRAMURAL)
CALENDAR YEAR 2009

PI Last Name	Investigators	Sponsor	Title	Contract #	Award Date	Amount
Tamkun	Michael Tamkun (Primary PI)-1680; Scott Earley (Co-PI)-1680; James R Bamburg (Co-PI)-1870; Gregory Amberg (Co-PI)-1680	HHS-NIH-Nat Inst of General Medical Sci	Kv2.1 Membrane Corrals: Regulators of K+ Channel Function and Trafficking	1R01GM084136-02	11/25/2009	$271,215
Tamkun Total						$721,488
Tobet	Stuart A Tobet (Primary PI)-1680	UMASS-University of Massachusetts	Migration of Early Olfactory Neuronal Progenitors	6081533/RFS8000019	6/23/2009	$77,219
Tobet	Stuart A Tobet (Primary PI)-1680	Brigham and Womens Hospital	Animal Models of Sex-Specific HPA Axis Development Project 2		12/4/2009	$245,150
Tobet	Stuart A Tobet (Primary PI)-1680	HHS-NIH-NIMH-Nat Inst of Mental Health	Cellular Differentiation in the Developing Preoptic Area	5R01MH061376-10	4/2/2010	$295,800
Tobet	Stuart A Tobet (Primary PI)-1680	HHS-NIH-NIMH-Nat Inst of Mental Health	Cellular Differentiation in the Developing Preoptic Area	5R01MH061376-076-09	4/14/2009	$295,800
Tobet Total						$913,969
Tsunoda	Susan Lei Tsunoda (Primary PI)-1680	HHS-NIH-Nat Inst of General Medical Sci	Localization and Regulation of Shal K+ Channels	5 R01 GM083335-05	6/2/2010	$268,503
Tsunoda	Susan Lei Tsunoda (Primary PI)-1680	HHS-NIH-Nat Inst of General Medical Sci	Localization and Regulation of Shal K+ Channels	7 R01 GM083335-04	12/1/2009	$44,326
Tsunoda Total						$312,829
Vigh	Jozsef Vigh (Primary PI)-1680	HHS-NIH-Center for Scientific Review	Functional Analysis of Retinal Inhibitory Processes	1R01EY019051-01A1	8/19/2009	$322,641
Vigh Total						$322,641
Grand Total						$9,913,274