

**Cell and Molecular Biology
Graduate Program**

Annual Report

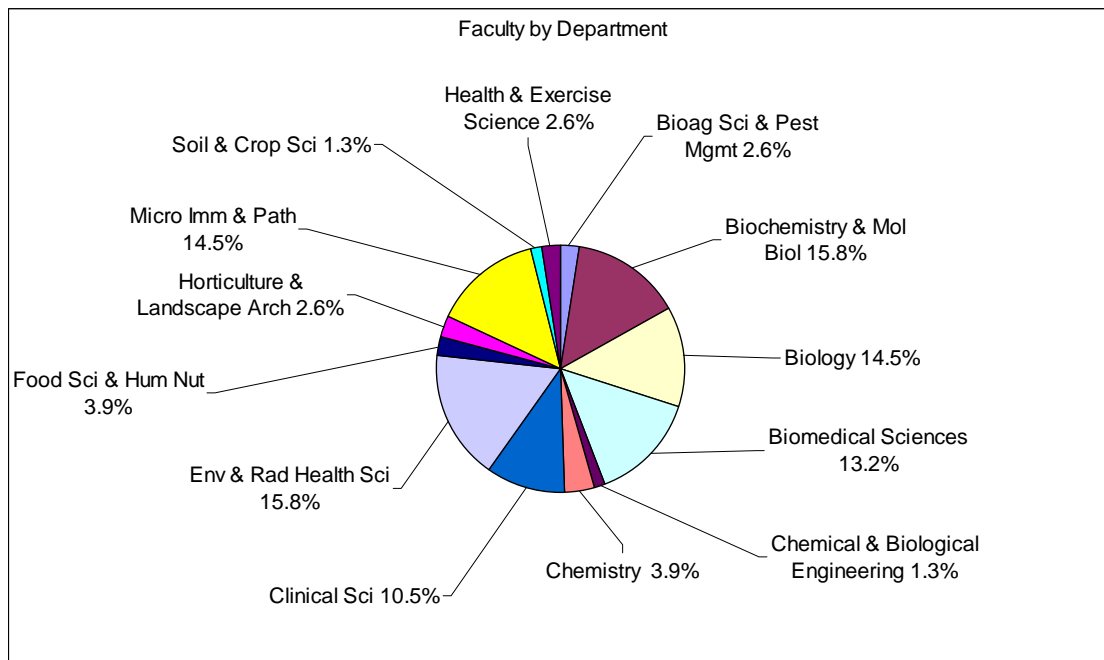
July 1, 2008 to June 30, 2009

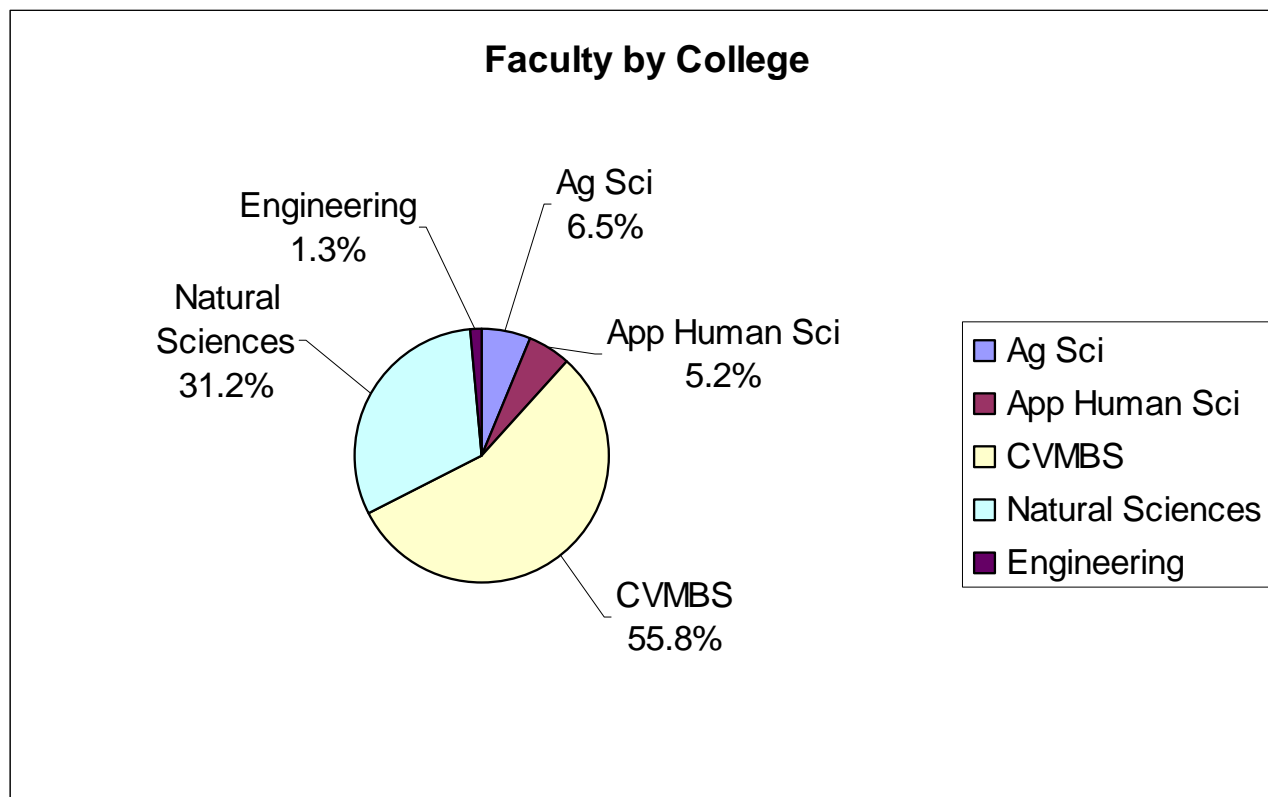
FACULTY

The faculty of the Cell and Molecular Biology Graduate Program continues to expand and broaden into new areas as new faculty join various departments at CSU and then become faculty members in CMB. Last year, seven new faculty members joined the CMB program to total 77 members. The faculty of the CMB program as of June 30, 2009, and their departmental affiliations are listed below:

<u>Name</u>	<u>Department</u>
Ramesh Akkina	Microbiology, Immunology & Pathology
Kenneth Allen	Food Science & Human Nutrition
Lorinda Anderson	Biology
Susan Bailey	Environmental & Radiological Health Sciences
James Bamburg	Biochemistry & Molecular Biology
B. George Barias	Chemistry
Joel Bedford	Environmental & Radiological Health Sciences
Patricia Bedinger	Biology
Barbara Biller	Clinical Sciences
Gerrit Bouma	Biomedical Sciences
Daniel Bush	Biology
Jonathan Carlson	Microbiology, Immunology & Pathology
Chaoping Chen	Biochemistry & Molecular Biology
Stephen Chisholm	Bioagricultural Sciences & Pest Management
Colin Clay	Biomedical Sciences
Debbie Crans	Chemistry
Norman Curthoys	Biochemistry & Molecular Biology
Jennifer DeLuca	Biochemistry & Molecular Biology
Steven Dow	Clinical Sciences
Dawn Duval	Clinical Sciences
Scott Earley	Biomedical Sciences
Nicole Ehrhart	Clinical Sciences
Gregory Florant	Biology
David Frisbie	Clinical Sciences
Deborah Garrity	Biology
Mercedes Gonzales-Juarrero	Microbiology, Immunology & Pathology
Daniel Gustafson	Clinical Sciences
Karyn Hamilton	Health & Exercise Sciences
William Hanneman	Environmental & Radiological Health Sciences
Jeffrey Hansen	Biochemistry & Molecular Biology
Charles Henry	Chemistry
Matthew Hickey	Health & Exercise Sciences
Douglas Ishii	Biomedical Sciences and Biochemistry & Molecular Biology
John Kisiday	Clinical Sciences
Susan Kraft	Environmental & Radiological Health Sciences
Nora Lapitan	Soil & Crop Sciences
Susan LaRue	Environmental & Radiological Health Sciences
Paul Laybourn	Biochemistry & Molecular Biology
Marie Legare	Environmental & Radiological Health Sciences
Howard Liber	Environmental & Radiological Health Sciences
Karolin Luger	Biochemistry & Molecular Biology
June Medford	Biology
Donald Mykles	Biology
Jac Nickoloff	Environmental & Radiological Health Sciences

<u>Name</u>	<u>Department</u>
Jennifer Nyborg	Biochemistry & Molecular Biology
Michael Pagliosotti	Food Science & Human Nutrition
Olve Peersen	Biochemistry & Molecular Biology
Marinus Pilon	Biology
Sandra Quackenbush	Microbiology, Immunology & Pathology
Rajinder Ranu	Bioagricultural Sciences & Pest Management
F. Andrew Ray	Environmental & Radiological Health Sciences
Kenneth Reardon	Chemical & Biological Engineering
Anireddy Reddy	Biology
Noreen Reist	Biomedical Sciences
Deborah Roess	Microbiology, Immunology & Pathology
Eric Ross	Biochemistry & Molecular Biology
Barbara Sanborn	Biomedical Sciences
Herbert Schweizer	Microbiology, Immunology & Pathology
George Seidel, Jr.	Biomedical Sciences
Richard Slayden	Microbiology, Immunology & Pathology
Stephen Stack	Biology
Laurie Stargell	Biochemistry & Molecular Biology
Erica Suchman	Microbiology, Immunology & Pathology
Michael Tamkun	Biomedical Sciences
Douglas Thamm	Clinical Sciences
Henry Thompson	Horticulture & Landscape Architecture
Ronald Tjalkens	Environmental & Radiological Health Sciences
Stuart Tobet	Biomedical Sciences
Jozsef Vigh	Biomedical Sciences
Jorge Vivanco	Horticulture & Landscape Architecture
John Volckens	Environmental & Radiological Health Sciences
Michael Weil	Environmental & Radiological Health Sciences
Carol Wilusz	Microbiology, Immunology & Pathology
Jeffrey Wilusz	Microbiology, Immunology & Pathology
Stephen Withrow	Clinical Sciences
Raymond Yang	Environmental & Radiological Health Sciences
Mark Zabel	Microbiology, Immunology & Pathology





New Faculty: Seven new faculty have joined CMB during the past year.

<u>Name</u>	<u>Department</u>
Karyn Hamilton	Health & Exercise Sciences
Mathew Hickey	Health & Exercise Sciences
Jac Nickoloff	Environmental & Radiological Health Sciences
Sandra Quackenbush	Microbiology, Immunology & Pathology
F. Andy Ray	Environmental & Radiological Health Sciences
Jozsef Vigh	Biomedical Sciences
John Volckens	Environmental & Radiological Health Sciences
Adam Chicco	Health and Exercise Science
Shane Kanatous	Biology
Elizabeth Ryan	Clinical Sciences
Susan Tsunoda	Biomedical Sciences

Affiliate Faculty: These are faculty who serve on graduate student committees and/or have research collaborations with faculty members in the CMB program.

<u>Name</u>	<u>Affiliation</u>
Michael Cornforth	University of Texas Medical Branch, Galveston, TX
Edwin Goodwin	Los Alamos National Laboratory, Los Alamos, NM
David Grainger	University of Utah, Salt Lake City, UT
Michelle Le Beau	University of Chicago Cancer Research Center
Pamela Munster	H. Lee Moffitt Cancer Center & Research Institute, Tampa, FL
Alice Sigurdson	Dept. of Health & Human Services, Bethesda, MD

STUDENTS

The CMB Graduate Program currently oversees 57 graduate students (7 MS students and 50 PhD students) conducting research in labs distributed throughout the five colleges represented by our faculty members (see **table 1** for numerical data on the CMB graduate students as of fall 2008). In 2007-2008 academic year, the program awarded five M.S. degrees and nine Ph.D. degrees in Cell and Molecular Biology. Last fall, the program matriculated 2 M.S. student and 6 Ph.D. students.

There were 44 students in the CMB program as of June 30, 2009. Nine students were accepted into CMB for the fall 2009 semester. Of those nine, three DVM/Ph.D. students were admitted to the Cancer Biology program. The CMB Graduate Program has been expanding each year for the last several years. Approximately 55 domestic and 35 international students applied to the CMB program.

The major limitation to accepting students has been the lack of GTA funding for the first year. In the coming year, the program will continue to implement improved procedures to monitor student progress and to ensure timely completion of qualifying examinations. It will also continue to expand program participation in the annual CMB/MCIN Graduate Student Poster Symposium. A major goal of the CMB program is to seek greater institutional and external support for training graduate students by applying for PRSE status and training grants from NSF (IGERT) and DOE (GAANN). Finally, the CMB graduate program will continue to recruit outstanding students who will become valued participants and contributors to an interdisciplinary effort to promote research in Cell and Molecular Biology on campus.

Table 1. Numerical Data on CMB Graduate Students

Student Category	Number	Percent
Program		
MS	7	12
PhD	50	88
Total	57	100
Gender		
Male	29	51
Female	28	49
Ethnicity		
Asian American	6	11
African American	1	2
Native American	3	5
Hispanic	2	4
Caucasian	30	53
International	15	26
College of Advisor		
CVMB	29	51
CNS	13	23
Engineering	3	5
Appl. Human Sciences	2	4
Ag Sciences	2	4
Undeclared (rotating)	8	14

Current Students:

<u>Name</u>	<u>Degree</u>	<u>Advisor</u>	<u>Date Admitted</u>
Nadia Ashwish	Ph.D.	Deborah Roess	Spring 2009
Zobaida Ben Musa	Ph.D.	Nicole Ehrhart	Spring 2009
Casey Boczon	Ph.D.	June Medford	Fall 2001
Shawna Campbell	Ph.D.	June Medford	Fall 2008
Erica Chao	Ph.D.	Don Mykles	Fall 2006
Kathy Cosenza	Ph.D.	Don Mykles	Fall 2008
Alpana Damle	Ph.D.	Deborah Roess	Fall 2004
Ryan Dregalla	Ph.D.	Susan Bailey	Fall 2007
Abdunaser Eadaim	M.S.	Susan Bailey	Spring 2009
Vanessa Enriquez	Ph.D.	Gerritt Bouma	Fall 2008
Jared Fowles	Ph.D.	Dan Gustafson	Fall 2007
Jessica Goldstrohm	Ph.D.	Robert Ullrich	Fall 2006
Lakshmi Gummadi	Ph.D.	Norman Curthoys	Fall 2006
Scott Hafeman	Ph.D.	Steve Dow	Fall 2007
Xin Huang	Ph.D.	Deborah Roess	Fall 2005
Hui Hung	Ph.D.	James Bamburg	Fall 2001
Nasir Jalal	Ph.D.	Howard Liber	Fall 2007
Lisa Kellihan	M.S.	Steven Dow	Fall 2005
Stephen Keysar	Ph.D.	Michael Fox	Fall 2003
Paul Kim	Ph.D.	Ken Allen	Fall 2002
Luke Kingry	Ph.D.	Richard Slayden	Fall 2006
Rebekah Klingler	Ph.D.	Robert Ullrich	Fall 2003
Tobi Krause	Ph.D.	Karin Hamilton	Fall 2007
Jes Kuruvilla	Ph.D.	Ramesh Akkina	Summer 2006
Catherine Le	Ph.D.	Matt Hickey	Fall 2008
Phuong Le	Ph.D.	Susan Bailey	Fall 2005
Jerome Lee	Ph.D.	Jeff Wilusz	Fall 2006
Contessa Majors	M.S.	Karyn Hamilton	Fall 2008
Ashley Neff	Ph.D.	Carol Wilusz	Fall 2008
Preston Neff	Ph.D.	Ramesh Akkina	Fall 2007
Jingyi Nie	Ph.D.	Jac Nickoloff	Fall 2008
Chi Pak	Ph.D.	James Bamburg	Summer 2004
Liz Perrault	Ph.D.	Ken Reardon	Fall 2007
Chelsea Roan	M.S.	Deborah Roess	Fall 2008
Fumi Sagawa	Ph.D.	Carol Wilusz	Fall 2007
Tara Schumacher	Ph.D.	Ken Reardon	Fall 2006
Hoda Shnaishah	M.S.	Deborah Roess	Spring 2009
Jenette Shoeneman	M.S.	Doug Thamm	Fall 2008
Joe Sottnik	Ph.D.	Doug Thamm	Fall 2005
Matt Stratton	Ph.D.	Stu Tobet	Summer 2008
Al Trujillo	Ph.D.	Debbie Crans	Fall 2008
Aida Ulloa	Ph.D.	Barbara Sanborn	Fall 2003
Dezaray Varland	Ph.D.	Jozsef Vigh	Fall 2008
Scott Walmsley	Ph.D.	Norman Curthoys	Fall 2006
Peter Winter	Ph.D.	George Barisas	Fall 2006
Luke Wittenburg	Ph.D.	Doug Thamm	Fall 2005
Hiroto Yoshikawa	Ph.D.	Sue LaRue	Fall 2008

Department Level Breakdown of Primary Majors by Ethnicity and Gender

Student Level & Ethnicity/Race/Gender	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Fall 2007	Fall 2008
Native American Male	0	0	0	0	0	0	0
Native American Female	0	0	0	0	0	0	3
Black Male	0	0	0	0	0	0	0
Black Female	0	0	0	0	0	0	1
Asian American Male	1	1	2	2	3	3	3
Asian American Female	1	1	1	2	2	2	3
Hispanic Male	0	0	0	0	0	1	1
Hispanic Female	1	1	1	0	0	0	1
White Male	11	14	15	18	17	18	14
White Female	12	18	20	20	24	18	13
International Male	4	5	6	5	6	7	9
International Female	8	9	9	8	7	5	5
Other Male	0	0	0	0	0	0	0
Other Female	0	0	0	0	0	0	0

Persistence: Percent of Entering Doctoral Students Who Withdrew Before Completing Two Years of Study Averaged Over the Past Three Academic Years

	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
Percent of Students Who Withdrew Averaged Over the Past 3 Years	26	28	12	19	25	29	25	24
Total Entering Students Averaged Over the Past 3 Years	5	6	6	9	9	9	8	8

Funded research –estimate by # graduate students * estimated costs per graduate student (\$21,750 stipend, tuition, benefits + \$10,000 supplies, etc. = ~\$32,000. Note that means for tracking this needs to be developed.

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
MS	10	13	10	10	14	11	5	7
	320,000	416,000	320,000	320,000	448,000	352,000	160,000	224,000
PhD	20	28	39	41	41	46	40	50
	640,000	896,000	1,248,000	1,312,000	1,312,000	1,472,000	1,280,000	1,600,000
total	30	41	49	51	55	55	45	57
	960,000	1,312,000	1,568,000	1,632,000	1,760,000	1,760,000	1,444,000	1,824,000

Doctoral Student Time-To-Degree and Persistence

Entering Student Academic Year Cohort	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Number of entering doctoral students	0	02	02	03	06	07	07	07	14	09	0
Number students admitted to candidacy by the end of the 4th year of enrollment	0	01	02	03	03	06	06	04	09	05	0
Of those admitted to candidacy, number who complete within 4 years	0	01	02	03	03	05	06	04	05	02	0
Of those admitted to candidacy, number who complete within 6 years	0	0	0	0	0	01	0	01	0	0	0
Of those admitted to candidacy, number who complete within 8 years	0	0	0	0	0	0	0	0	0	0	0
Of those admitted to candidacy, how many are still enrolled after 8 years?	0	0	0	0	0	0	0	0	0	0	0

Scholarship activity – listing of publications with CMB graduate students as authors (2001 through 2008). Note that CMB faculty members need to list CMB program along with their department on publications.

CMB Graduate Student Publications with CMB Faculty, by year enrolled									
	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	
Number of student in class	11	10	12	16	10	12	9	10	
Number of publications per class	9	35	14	38	5	1	4	1	

Graduated Students

Fifteen students received their degrees during the past year, five M.S. and ten Ph.D. students. A complete list of students who have graduated from CMB is given below.

<u>Name</u>	<u>Degree</u>	<u>Advisor</u>	<u>Graduated</u>
Stephen Keysar	Ph.D.	Michael Fox	Summer 2009
Rebekah Klingler	Ph.D.	F. Andrew Ray	Summer 2009
Casey Boczon	M.S.	Paul Kugrens	Spring 2009
Lisa Chamberlain	Ph.D.	David Grainger	Spring 2009
Eric Lee	M.S.	Mercedes Gonzalez-Juarrero	Spring 2009
Julie Moreno	Ph.D.	Ron Tjalkens	Spring 2009
Jun Zhou	M.S.	Deborah Roess	Spring 2009
Kristin Askin	Ph.D.	Robert Ullrich	Fall 2008
Amy Boczon	M.S.	Rajinder Ranu	Fall 2008
Corey Broeckling	Ph.D.	Jorge Vivanco	Fall 2008
Ron Carsten	Ph.D.	Robert Ullrich	Fall 2008
Jennifer Chiniquy	M.S.	Jon Carlson	Fall 2008
Tracy Nichols	Ph.D.	Mark Zabel	Fall 2008
Sung-Bong Shin	Ph.D.	Anireddy Reddy	Fall 2008
Abby Williams	Ph.D.	Robert Ullrich	Fall 2008
Kevin Flynn	Ph.D.	James Bamburg	Summer 2008
Kristy McClellan	Ph.D.	Stuart Tobet	Summer 2008
Camilla Kristensen	M.S.	Mike Tamkun	Summer 2008
Amanda Ashley	Ph.D.	William Hanneman	Spring 2008
James Bogenberger	Ph.D.	Paul Laybourn	Spring 2008
Kitty Brown	M.S.	Karolin Luger	Spring 2008
Jennifer Devitt	Ph.D.	Sue LaRue	Spring 2008
R. Tanner Hagelstrom	Ph.D.	Robert Ullrich	Spring 2008
Susan Hudachek	Ph.D.	William Dernell	Spring 2008
Scott McCorvey	M.S.	Steven Dow	Spring 2008
Tiffany Weir	Ph.D.	Jorge Vivanco	Spring 2008
Guanxiong Xiao	Ph.D.	Michael Weil	Spring 2008
Angela Morrison	M.S.	Jeff Wilusz	Fall 2007
Alison White	M.S.	Karolin Luger	Fall 2007
Eli Williams	Ph.D.	Robert Ullrich	Fall 2007
Debra Davison	M.S.	Marie Legare	Summer 2007
Alfred Flint	Ph.D.	William Hanneman	Summer 2007
Jingjing Liu	Ph.D.	Deborah Roess	Summer 2007
Susan McGrath	M.S.	Herbert Schweizer	Summer 2007
Junqing Zhou	Ph.D.	Howard Liber	Summer 2007
Mike Abernathy	M.S.	Michael Fox	Spring 2007
Daniel Konet	Ph.D.	Jonathan Carlson	Spring 2007
Kyoung Hee Choi	Ph.D.	Herbert Schweizer	Fall 2006
Mark Clark	M.S.	Pat Bedinger	Summer 2006
Marisha Godek	Ph.D.	David Grainger	Summer 2006
Sung-Gu Lee	Ph.D.	Don Mykles	Summer 2006
Colleen McWilliams	M.S.	David Grainger	Summer 2006
Carley Ross	Ph.D.	Michael Fox	Summer 2006
Ginny Schmit	M.S.	Jennifer Nyborg	Summer 2006
Traci Nichols	M.S.	William Hanneman	Spring 2006
Aaron Thompson	Ph.D.	Olve Peersen	Spring 2006
Christine Lee	M.S.	Ramesh Akkina	Spring 2006
Brian Barth	M.S.	Michael Fox	Fall 2005

<u>Name</u>	<u>Degree</u>	<u>Advisor</u>	<u>Graduated</u>
Adam Holmes	M.S.	Charles Waldren	Fall 2005
Ying Lei	Ph.D.	Deborah Roess	Fall 2005
Junqing Zhou	M.S.	Howard Liber	Fall 2005
James Bogenberger	M.S.	Paul Laybourn	Summer 2005
Jingjing Liu	Ph.D.	Deb Roess	Summer 2005
Sung-Bong Shin	M.S.	Anireddy Reddy	Spring 2005
Kristin Askin	M.S.	Robert Ullrich	Fall 2004
Purabi Dhakras	M.S.	Norm Curthoys	Fall 2004
Jennifer Malone	Ph.D.	Robert Ullrich	Fall 2004
Dhanashree Joshi	M.S.	Michael Fox	Summer 2004
Chang-Uk Lim	Ph.D.	Michael Fox	Spring 2004
Jill Livengood	Ph.D.	Jennifer Nyborg	Spring 2004
Hyun-Woo Kim	Ph.D.	Don Mykles	Spring 2004
Joseph Gogain	Ph.D.	Marv Paule	Fall 2003
Susan Hudachek	M.S.	Greg Florant	Fall 2003
Sean Lupien	Ph.D.	Douglas Ishii	Fall 2003
Venu Muni	M.S.	Steve Stack	Fall 2003
Qing Zhao	M.S.	Douglas Ishii	Summer 2003
Carrie Tyszko	M.S.	Russell Anthony	Spring 2003
Buffy Ellsworth	Ph.D.	Colin Clay	Fall 2002
Richard Griffeth	M.S.	Gordon Niswender	Fall 2002
Rachelle Lynn	M.S.	William Hanneman	Fall 2002
Bridget Robinson	M.S.	Joseph Smith	Spring 2002
Xiaoli Yu	Ph.D.	Don Mykles	Spring 2002
Sandra Gunselman	Ph.D.	Charles Waldren	Fall 2001
Amy Farris	M.S.	Colin Clay	Summer 2001
Anna Maria Al-Khouri	Ph.D.	Marv Paule	Spring 2001
Diane Hohorst	M.S.	Pat Bedinger	Summer 2000
Regina Horvat	Ph.D.	Deborah Roess	Spring 2000
Ryan Orbus	M.S.	Russell Anthony	Summer 1999
Meredith Holtzen	M.S.	Debbie Crans	Spring 1999
Fei Pan	M.S.	Herbert Schweizer	Spring 1999
Jonathan Bowser	M.S.	Anireddy S.N. Reddy	Spring 1998
Qing Li	M.S.	Kathy Partin	Spring 1998
Tara Nolan	M.S.	Colin Clay	Spring 1998
Suzanne Stratford	M.S.	Patricia Bedinger	Spring 1998

Department Total of Masters and Doctoral Degrees Conferred at by Gender and Academic Year

	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
MS Total Male	2	0	1	3	1	1
MS Total Female	2	3	1	3	2	4
MS Total % Minority	0	0	0	17%	0	0
PhD Total Male	0	4	1	3	2	5
PhD Total Female	0	2	2	4	4	5
PhD Total % Minority	0	0	33%	0	17%	0

Department Total of Masters and Doctoral Degrees Conferred by Gender, Race/Ethnicity and Academic Year

Unit Level & Gender	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
Master's Level								
Native American Male	0	0	0	0	0	0	0	0
Native American Female	0	0	0	0	0	0	0	0
Black Male	0	0	0	0	0	0	0	0
Black Female	0	0	0	0	0	0	0	0
Asian American Male	0	0	0	0	0	0	0	0
Asian American Female	0	0	0	0	0	0	0	0
Hispanic Male	0	0	0	0	0	1	0	0
Hispanic Female	0	0	0	0	0	0	0	0
Non-Minority Male	0	0	2	0	1	2	1	0
Non-Minority Female	0	0	2	3	1	3	2	0
Doctoral Level								
Native American Male	0	0	0	0	0	0	0	0
Native American Female	0	0	0	0	0	0	0	0
Black Male	0	0	0	0	0	0	0	0
Black Female	0	0	0	0	0	0	0	0
Asian American Male	0	0	0	0	0	0	0	0
Asian American Female	0	0	0	0	0	0	1	0
Hispanic Male	0	0	0	0	0	0	0	0
Hispanic Female	0	0	0	0	1	0	0	0
Non-Minority Male	0	0	0	4	1	3	2	0
Non-Minority Female	0	3	0	2	1	4	3	0

ADMINISTRATION & COMMITTEE MEMBERS

The CMB program is jointly administered by the Deans of the College of Veterinary Medicine, Agricultural Sciences, Applied Human Sciences and Natural Sciences. The Director is Dr. Norman Curthoys. The Steering Committee is the major policy-making committee. There are four standing committees with responsibilities for different areas of the program. Terms for the Academic Committee and Research Committee are for two years, with two members being elected each spring. The members of the standing committees are listed below.

Academic Committee

Chairman: *Dr. Stu Tobet*, Department of Biomedical Sciences
Dr. Marinus Pilon, Department of Clinical Sciences
Dr. Susan Bailey, Department of Environmental & Radiological Health Sciences
Dr. Erica Suchman, Department of Microbiology, Immunology & Pathology

Research Committee

Chairman: *Dr. Carol Wilusz*, Department of Microbiology, Immunology & Pathology
Dr. Jennifer DeLuca, Department of Biochemistry & Molecular Biology
Dr. Mark Zable, Department of Microbiology, Immunology & Pathology
Dr. Steve Dow, Department of Biomedical Sciences

Admissions Committee

Chairman: *Dr. Norm Curthoys*, Department of Biochemistry & Molecular Biology
Dr. Ron Tjalkens, Department of Environmental & Radiological Health Sciences
Dr. Dawn Duval, Department of Clinical Sciences
Dr. Deborah Garrity, Department of Biology

Seminar Committee

Chairman: *Dr. Howard Liber*, Department of Environmental & Radiological Health Sciences
Dr. Chaoping Chen, Department of Biochemistry & Molecular Biology
Dr. Lorrie Anderson, Department of Biology
Dr. George Seidel, Jr., Department of Biomedical Sciences

Steering Committee

Chairman: *Dr. Paul Laybourn*, Department of Biochemistry & Molecular Biology
Dr. Carol Wilusz, Department of Microbiology, Immunology & Pathology
Dr. Stu Tobet, Department of Biomedical Sciences
Dr. Howard Liber, Department of Environmental & Radiological Health Sciences
Dr. Norm Curthoys, Department of Biochemistry & Molecular Biology

Research Committee Activities

The research committee planned several activities designed to bring together the faculty and students to interact and learn about each other's research interests and expertise. The events included a series of seminars in which one faculty member from each focus area presented their current research, the annual Poster Competition, and co-sponsorship of the Frontiers of Science Seminar Series. Prospective new students were invited to visit campus at the same time as the Poster Competition so they could meet many faculty and students, which helped our recruitment activities.

Faculty Seminar Series

Fall 2008

Date	Speaker
Oct 16	Ken Reardon
Oct 30	Ramesh Akkina
Nov 13	Mark Zabel
Nov 20	Quinton Winger
Dec 4	Scott Earley

Spring 2009

Date	Speaker
Feb 12	Lorrie Anderson
Mar 12	Sandra Quackenbush
Apr 23	Jac Nickoloff

Poster Competition

The Annual Cell and Molecular Biology Poster Symposium was held on Friday, February 27, 2009 from 2:00 - 5:00 p.m. in the North Ballroom at the Lory Student Center. The event was co-sponsored by the Molecular, Cellular and Integrated Neuroscience Program, the Department of Biochemistry & Molecular Biology and the Department of Microbiology, Immunology & Pathology. Approximately 40 applicants to the CMB, MCIN, Biochemistry and Microbiology graduate programs attended the symposium. Sixty-one posters were presented. Of those posters 59 were judged. Three judges reviewed each poster. Three awards were presented for the highest honor and three awards were presented with honors. One postdoc award was given. The judges were Drs. Ken Allen, Susan Bailey, Jerry Bouma, Jon Carlson, Chaoping Chen, Norm Curthoys, Sheena D'Arcy, Jennifer DeLuca, Alexa Dickson, Steven Dow, Dawn Duval, Greg Florant, Brian Foy, Deborah Garrity, Chris Gentile, Mercedes Gonzalez-Juarrero, Amanda Guth, Ryan Hansen, Shing Ho, Young-mi Kim, Matt Kipper, Paul Laybourn, Anne Lenaerts, Jim Miller, Uma Muthurajan, Don Mykles, Sai Palusa, Olve Peersen, Luciana Pereyra, James Perry, Rajinder Ranu, Andy Ray, Mary Robinson, Deborah Roess, Eric Ross, Joel Rovnak, Barbara Sanborn, Alan Schenkel, Neelam Sharma, John Spencer, Laurie Stargell, Mike Tamkun, Ron Tjalkens, Stu Tobet, Mark van der Woerd, Mike Weil, O'Neil Wiggan, Carol Wilusz, Jeff Wilusz and Mark Zabel.

The Graduate Student Awards were:

Highest Honors

Kevin Sokoloski	Microbiology, Immunology & Pathology
Huangu Qiao	Biology
Chenghua Yang	Biochemistry & Molecular Biology

High Honors

Keeley Sudhoff	Biochemistry & Molecular Biology
Scott Walmsley	Cell & Molecular Biology
Scott Hafeman	Cell & Molecular Biology

The Post-doctoral Award was:

Wayne Lilyestrom Biochemistry & Molecular Biology

The Research Committee members, Drs. DeLuca, Dow, Wilusz and Zable, wish to thank all of the contributors, the judges, and those who visited the CMB Student Poster Competition for contributing to its success.

Academic Committee Activities

The Academic Committee advised new students on lab rotations and class registration issues.

CMB Classes Taught

FALL 2008:

CM 502	Techniques in Molecular & Cellular Biology	Jim Bamburg(coordinator)
CM 640	Creative Science Writing	Gerald Callahan
CM 666	Science and Ethics	Bernard Roland
CM 792	Cell & Molecular Biology Seminar	Howard Liber (coordinator)
CM 793	Seminar	Paul Laybourn (coordinator)

SPRING 2009:

CM 792	Cell & Molecular Biology Seminar	Howard Liber (coordinator)
CM 793	Seminar	Norm Curthoys (coordinator)

Admissions Committee Activities

The admissions committee reviews applications received by the CMB program and recommends whether to accept or deny the applicants and then prioritizes the top student.

In the 2009 applicant pool there are 43 domestic applicants (7 MS, 36 PhD) and 29 international applicants. Within the domestic applicant pool the average GPA is 3.43, and the average combined GRE score is 1130. Of this pool, 12 students were invited to attend our recruiting weekend and to participate in the fourth annual combined CMB/MCIN Graduate Student Poster Symposium on February 27, 2009. Ten of these applicants accepted the invitation (average GPA 3.61, average combined GRE 1153).

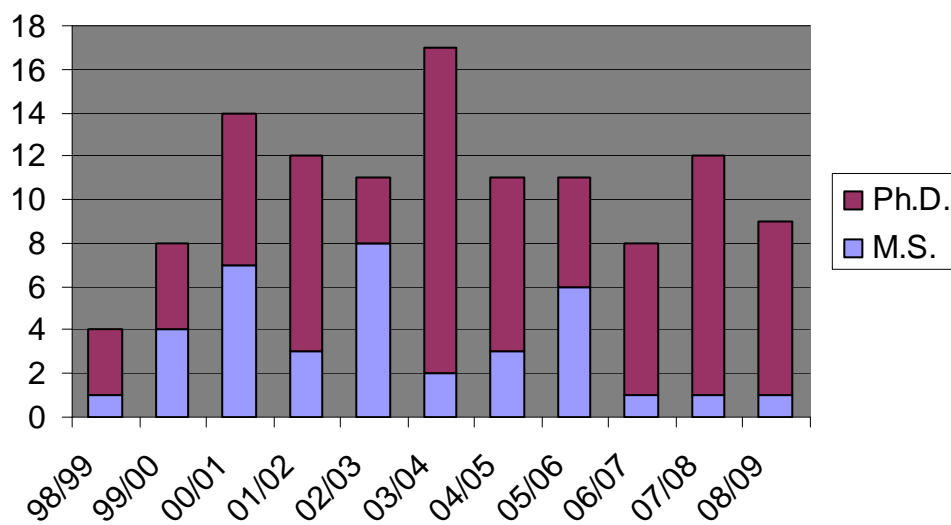
The tables and graphs below summarize the number of applications received, accepted, denied, and enrolled over the past six years for comparison.

Admits/Enroll. Status	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
Number Applications	75	103	87	81	58	50	31	110
Number Admits	24	31	27	17	25	26	17	16
Number Enrolled	11	10	12	16	10	12	9	10
Percent Accepted that Enrolled	46	32	44	94	40	46	53	63

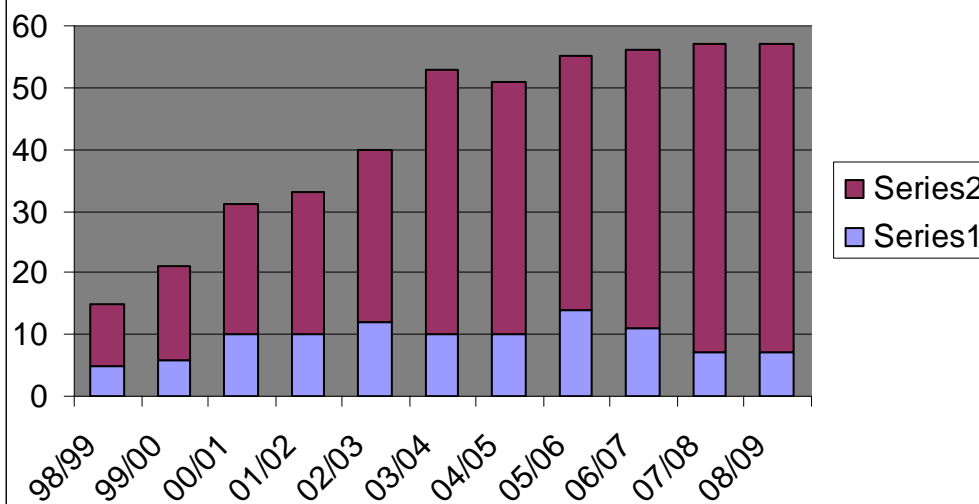
History of Average Verbal, Quantitative, and Analytical GRE Scores for Entering Graduate Students

Test Area and Unit Level	Fall 2000	Fall 2001	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Fall 2007	Fall 2008
Average Verbal Scores	505	532	509	493	509	529	516	484	444
Aver. Quantitative Scores	670	698	666	639	669	682	666	565	644
Aver. Analytical Scores	626	693	710	609	637	707	630	670	4
Aver. GPA	3.10	3.40	3.37	3.42	3.40	3.42	3.76	3.53	3.64

CMB Students Admitted



CMB Students Enrolled



Seminar Committee Activities:

The seminar committee solicits national and international speakers to present their latest research to the CMB students and faculty. Students who register for the seminar class also get experience writing reports that are graded by members of the seminar committee or their mentors. Thus, it serves a dual purpose of informing the students about different areas of research and practicing their writing skills. The seminars given during the past year are listed below.

FALL 2008 SEMINAR SPEAKERS

DATE	SPEAKER AND HOST	SPEAKER AFFILIATION	SEMINAR TITLE
Thurs Aug 23	NO SEMINAR		
Thurs Aug 28	NO SEMINAR		
Thurs Sep 4	Dr. Robert Margolis Host: Jake DeLuca	Sidney Kimmel Cancer Center	Getting out of Mitosi Gracefully
Thurs Sep 08	Dr. Susan Jean Marriott Host: Jenny Nyborg	Baylor College of Medicine	The HTLV-I Tax Oncoprotein Interferes with the DNA Damage Response: Possible Roles in Cellular Transformation
Thurs Sep 18	Dr. Alissa Weaver Host: Jim Bamburg	Vanderbilt University Medical Center	Invadapodia, Specialized Cell Structures for Cancer Invasion
Thurs Sep 25	CMB faculty meeting		
Thurs Oct 2	NO SEMINAR		
WED Oct 08	Frontiers in Biomedical Sciences	University of CA – Berkeley	Sensing Gases (NO vs. O ₂) Selectivity in Biology: Chemistry to the Rescue
Thurs Oct 16	Dr. Ken Reardon	Colorado State University	Proteomics as a Tool for Improving Microbial Biofuels Production
Thurs Oct 23	NO SEMINAR		
Thurs Oct 30	Dr. Ramesh Akkina	Colorado State University	Modeling AIDS Pathogenesis and Stem Cell Gene Therapy in Novel Humanized Mice
Friday Nov 7	Dr. Paul Bohjanen Host: Carol Wilusz	University of Minnesota	Regulation of Gene Networks through Coordinated mRNA Decay
Thurs Nov 13	Dr. Mark Zabel	Colorado State University	In vitro Strain Adaptation of Chronic Wasting Disease Prions by Protein Misfolding Cyclic Amplification
Thurs Nov 20	Dr. Quinton Winger	Colorado State University	Genetic Regulation of Pluriprotein Stem Cells and Germ Cells
Thurs Nov 27	THANKSGIVING		
Thurs Dec 4	Dr. Scott Earley	Colorado State University	What's Exciting about Smooth Muscle?

SPRING 2009 SEMINAR SPEAKERS

DATE	SPEAKER AND HOST	SPEAKER AFFILIATION	SEMINAR TITLE
Thurs Jan 22	NO SEMINAR		
Thurs Jan 29	Dr. Kelvin Lee Host: Ken Reardon	University of Delaware	Enhancing Protein Secretion: the old, the new and the unexpected
Thurs Feb 5	NO SEMINAR		
Thurs Feb 12	Dr. Lorrie Anderson	Colorado State University	Meiotic Recombination and Sister Chromatic cohesion
FRIDAY Feb 20	Dr. Gerald Feuer Host: Erica Suchman	SUNY Upstate Medical University	Viral Oncogenesis in Humanized SCID Mice
FRIDAY Feb 27	Poster Session		
Monday Mar 2	NO SEMINAR		
Thurs Mar 12	Dr. Sandra Quackenbush	Colorado State University	Walley Dermal Sarcoma Virus: Mechanisms of Oncogenesis and Tumor Regression
Thurs Mar 26	Dr. Vadim Gladyshev Host: Marinus Pilon	University of Nebraska	Selenoproteins: Insights in to Genetic Code and Redox Regulation
FRIDAY Mar 27	NO SEMINAR		
Thurs April 2	NO SEMINAR		
WED April 08	Frontiers in Biomedical Sciences: Dr. Shoukhrat Mitalopov	Oregon National Primate Research Center	Promise for the Future: New Developments in Stem Cell Research
Thurs April 16	Dr. Ralf-Rainer Mendel Host: Marinus Pilon	University of Technology Braunschweig, Germany	Biochemistry and Cell Biology of Metals or The Answer to Life, the Universe and Everything Roles of Checkpoint (Mec1, Tel1, Rad9) and Chromatin Remodeling (Arp8) Proteins in Recombinational Repair of DNA Double-strand Breaks
Thurs April 23	Dr. Jac Nickoloff	Colorado State University	
FRIDAY April 30	NO SEMINAR		
Thurs May 07	Dr. Tim McKinsey Host: Matt Stratton	Gilead Colorado, Inc.	Regulation of Cardiac Remodeling by Histone Deacetylase Kinases

Major Accomplishments:

The CMB Webpage (<http://www.cmb.colostate.edu/>) attracts a large number of hits. More to the point, when one runs a Google search for “Cell and Molecular Biology graduate programs” the CSU CMB program comes up fifth from the top (not including gradschools.com).

In addition, recent questionnaires, administered to our graduate students and program applicants, indicated that most of them identified potential programs through the Internet. Therefore, the CMB Website has probably contributed to the increased number of outstanding applicants to the program.

In the spring 2009 applicant pool there are 43 domestic applicants (7 MS, 36 PhD) and 29 international applicants. Within the domestic applicant pool the average GPA is 3.43, and the average combined GRE score is 1130. Of this pool, 12 students were invited to attend our recruiting weekend and to participate in the fourth annual combined CMB/MCIN Graduate Student Poster Symposium on February 27, 2009. Ten of these applicants accepted the invitation (average GPA 3.61, average combined GRE 1153).

In 2008, the CMB Program developed a concentration in Cancer Biology. This program has attracted foundation and university AEP funding that supports fellowships for recruiting additional PhD and DVM/PhD students. Students in the Cancer Biology concentration complete additional courses (see **table 2 Additional Cancer Biology Courses** and <http://www.colostate.edu/Depts/CMB/Cancerbiology1.html>).

Table 2. Additional requirements for Cancer Cell Biology (min. 5 credits from this list)

Course	Title	Credits
ERHS 510	Cancer Biology	3
ERHS 611	Cancer Genetics	2
VS 780	Cancer Biology Clinical Practicum	2
ERHS 733	Environmental Carcinogenesis	3

CMB Budget 2008-2009

ALLOCATED TO CMB BUDGET

base budget	\$106,726
rollover/adjustments	\$12,972
GTA from CVMBS	<u>\$14,916</u>

TOTAL \$134,614

EXPENDITURES

	Budgeted	Expended
ADMINISTRATION		
Director (2 months)	\$23,900	\$23,810
Administrative Asst III (10 months)	\$24,720	\$24,720
SEMINAR PROGRAM	\$19,500	\$20,840
TEACHING		
NB502/Shaw	\$3,000	\$3,000
OFFICE OPERATIONS	\$7,550	\$2,907
copying, phone, postage, etc		
STUDENT STIPENDS/TUITION		
GTA (CVMBS)	\$41,365	\$42,072
GTA stipend increases/awards	\$ 1,314	\$ 1,519
STUDENT RECRUITMENT	\$5,000	\$6,570
EDUCATIONAL OUTREACH & INTERACTION	\$8,265	\$8,375
poster contest, research meetings, etc.		
TUITION	-	-
TOTAL	\$134,614	\$133,813

Roll Forward \$801

Annual CMB Budget for 2000 through 2008

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Personnel		75,758	77,538	84,479	72,353	92,985	92,985	79,206
Operating Expenses		45,500	44,850	40,500	54,586	41,629	41,629	49,976
Total		121,258	122,388	124,979	126,939	134,614	134,614	129,182