

Curriculum Vitae

Karen D. Parfitt, Ph.D.

Department of Biology
Pomona College
175 W. Sixth St.
Claremont, CA 91711
TEL: (909) 621-8604
FAX: (909) 621-8878
email: kparfitt@pomona.edu

Education

- 1984-1989 University of Colorado Health Sciences Center, Denver, Colorado
Ph.D., Dept. of Pharmacology, August 1989
Dr. Robert Freedman, Thesis Advisor
- 1979-1983 Cornell University, Ithaca, NY; B.S., Biological Sciences

Employment

- 8/00-present Associate Professor, Dept. of Biology, Pomona College, Claremont CA
- 8/94-7/00 Assistant Professor, Dept. of Biology, Pomona College, Claremont CA
- 9/92-8/94 Postdoctoral fellow, laboratory of Thomas L. Schwarz, Dept. of Molecular and Cellular Physiology, Stanford University, Stanford CA. Investigation of the role of synaptotagmin and syntaxin in neurotransmitter release at the *Drosophila* neuromuscular junction. Experience in cloning, sequencing, PCR and other molecular biology techniques, immunohistochemistry, *Drosophila* genetics, whole cell voltage clamp recording in *Drosophila* embryonic muscle, and intracellular recording in larval muscle.
- 9/89-8/92 Postdoctoral fellow, laboratory of Daniel V. Madison, Dept. of Molecular and Cellular Physiology, Stanford University, Stanford CA. Studied synaptic plasticity in rat hippocampus, particularly the role of presynaptic calcium channels in certain forms of synaptic plasticity, using whole cell voltage clamp recording, field extracellular recording, and single channel recording in hippocampal slices *in vitro*.

- 8/84-8/89 Graduate student, Dept. of Pharmacology, University of Colorado Health Sciences Center, Denver CO. Thesis project identified age-related change in the function of adrenergic and dopaminergic receptor subtypes that are positively coupled to adenylate cyclase. Experience in electrophysiological recordings *in vivo* in rat cerebellum and prefrontal cortex, small animal surgery and rat brain dissection, receptor binding assays and quantitative autoradiography, phosphorylation assays, and HPLC.
- 9/87-7/89 Abstract writer, Paul de Haen Publishing Company, Littleton CO. Wrote abstracts of pharmaceutical chemistry papers.
- 5/83-5/84 House manager, H.O.M.E.S. Inc., Ithaca, NY. Managed two halfway houses for young adults with psychiatric disabilities.
- 5/82-8/82 Student researcher, Dept. of Physiology and Biophysics, University of Texas Medical Branch, Galveston, TX. Learned single-channel patch clamp recording in PC12 cells.

Awards and Grants

- 5/06 Mellon Partnership Grant (with Cornell University faculty); \$2000
- 7/06 Wig Curriculum Development Grant
- 5/03 Hirsch Initiation Grant (\$10,000), Pomona College
- 8/98 Academic Research Enhancement Award, National Institute of Aging (\$75,000)
- 1/98 Faculty Research Grant, Pomona College
- 7/95 American Federation for Aging Research (AFAR) Research Grant (\$40,000)
- 7/95 NSF Instrumentation and Laboratory Improvement (ILI) Grant (\$112,000)
- 7/92 Tuition/room/board for Cold Spring Harbor "Cloning of Neural Genes" course
- 9/91 National Research Service Award, National Institute of Mental Health
- 10/90 Women in Neuroscience Travel Award
- 10/88 Walter Nicolai Award for Research in Aging; American Aging Association

Teaching

- 8/94-present Assistant/Associate Professor, Pomona College, Claremont CA. Courses taught include Introductory Neuroscience, Cellular Neurobiology (w/ lab), Introductory Cell and Molecular Biology (w/ lab), Neuroscience Senior Seminar, Biology Research Methods, and Neuropharmacology.
- 10/86-5/89 Tutor, Univ. of Colorado Schools of Medicine and Dentistry, Denver CO. Tutored medical and dental students in Physiology, Pharmacology, and Immunology.
- 10/87-3/89 Lecturer, Univ. of Colorado Schools of Medicine and Dentistry, Denver CO. Gave lectures on drug addiction and drug abuse to medical and dental students.

Research Mentoring:**Senior thesis students (experimental theses)**

Zachary Edmonds (Neuroscience major) -- thesis: "Pathological investigation of vascular beta amyloid, elastin, and endothelium in the middle temporal gyrus of histologically confirmed Alzheimer's patients with varying levels of total serum homocysteine"; August '96-May '97. Also advised for Goldwater fellowship, Fall 1994, on "Upregulation of Tyrosine Hydroxylase for Treatment of Parkinson's Disease"; recipient of Pomona College's 1997 Stauffer Prize, and 1997 senior prize in Neuroscience; M.D./M.B.A., UCLA School of Medicine and Anderson School of Management; currently a resident in Internal Medicine

Michael Lee (Neuroscience major) -- "Age-related changes in synaptic transmission in hippocampal area CA1 of young vs. aged Fischer 344 rats in response to forskolin and 8-cyclopentyl-1,3-dimethylxanthine"; June '96 - May '97; M.D., Univ. of Washington School of Medicine; currently a resident in Orthopedics

Gerald Reis (Molecular Biology major) -- recipient of a Faculty for Undergraduate Neuroscience Travel Award, Fall 1997, for his thesis work, "Age-related changes in α -adrenergic receptor activation and modulation of low frequency stimulation-induced LTP in hippocampal area CA1 of Fisher 344 rats"; June '96 - May '97; currently in UC San Diego MD/PhD program.

Alex Huang (Neuroscience and Molecular Biology double major)-- winner of senior prizes in both Neuroscience and Molecular Biology; thesis: "The Role of Semaphorins in Adult Synaptic Transmission and Plasticity"; January '97- May '99; currently in MD/PhD program at Johns Hopkins.

Gabriel Murphy (Neuroscience major) --"Ethanol Modulates Synaptic Transmission Presynaptically in Area CA1 of the Hippocampus"; August '98-May '99; Ph.D.in Neuroscience, UC San Diego; currently a postdoc at Univ of Washington.

Daniel Darcy (Neuroscience major) -- "Development of the fast transient potassium current IA is preceded by astroglial proliferation in intact hippocampus"; June '99-May '00; research associate in Neuroscience at City of Hope; currently in graduate program in Neuroscience, UCSD.

Paige Nilson (Neuroscience major)-- "Changes in Isoproterenol- and forskolin-induced cAMP production with aging"; June '99-August '00; research associate in Neuroscience, UCLA; '07, DVM, Cornell University; currently a veterinary neurologist in San Diego.

Rachel Hopper (Molecular Biology major) "Significant differences in oxygen consumption of fetal and adult ovine brain cortex suggest nitric oxide-induced hypoxic hypometabolism as a regulatory mechanism in fetal brain tissue" (in collaboration with Dr. Gordon Power, Loma Linda School of Medicine); Sept. '00-May '01; medical student, Univ. of Michigan School of Medicine.

Chang (Chris) Park (Neuroscience major)-- "Differences in calcium-mediated long-term potentiation in hippocampal area CA1 of adult rats"; June '00- May '01; currently in graduate program in Neuroscience, UC Irvine.

Shennan Weiss (Molecular Biology major)-- "An investigation of the functional neuroprotective properties of the caspase inhibitor z-VAD-fmk in response to hypoxia and ischemia in fresh hippocampal slices"; September '99-May '01; MD/PhD student, Albert Einstein School of Medicine.

- Christopher Jordan (Neuroscience major)-- September '02-May '03; Late-phase long term potentiation in the rat hippocampus; currently in medical school, Dartmouth Medical College
- Jeffrey Raskin (Neuroscience major)-- May '01-August '01, September '02-May-'03; Changes with aging in cyclic AMP-mediated forms of long-term potentiation; M.S., USC Program in Neuroscience, currently in medical school, Univ of Nevada Reno.
- Alison Ellsworth (Neuroscience major) May 2003-May 2004)-- Effects of the insecticide chlorpyrifos on hippocampal synaptic transmission and spatial memory; currently in graduate school in education; winner of the Neuroscience senior prize.
- Daniel Jones (Neuroscience major) August 2003-May 2004)—Role of cyclic AMP in long term potentiation in neonatal hippocampus; Danny is currently a graduate student in the Neuroscience program at UCSF.
- Sidney Kuo (Molecular Biology major) January 2003-May 2003; January 2004-May 2004— Role of the cAMP pathway in age-related deficits in hippocampal long term potentiation; Sid is currently in the graduate program in Neuroscience at Univ. of Oregon Health Sciences Center; winner of the Bertsch prize in Molecular Biology; winner of a Faculty for Undergraduate Neuroscience Travel Award to attend the 2004 Society for Neuroscience meeting.
- Blaine Bisel (Molecular Biology major) May 2004-May 2005; A cyclic AMP-mediated pathway of learning and memory in the rat hippocampus may be affected by the drug Rolipram and an Alzheimer's amyloid-beta peptide; lab technician, UT Southwestern
- Kristen Henkins (Neuroscience major) August 2005-May 2006. Forskolin-chem LTP is blocked by the Alzheimer's amyloid-beta peptide, A-beta₂₅₋₃₅, currently in the Neuroscience program at UCLA.

Other laboratory research students

- Timetra Wellington (Chaffey College; Chemistry major; June '95-August '96)
- Enriqueta Ramirez (Chaffey College, transfer to Pomona; Biology major; June '95- May '99)
- Thomas Tsai (Pomona Psychology major; Fall '95)
- Stephen Maley (Pomona Molecular Biology major; Fall '95)
- Steven Beier (Pomona Neuroscience major; Fall '95-Spring '96)
- Jennifer Heaton (Pomona Neuroscience major; Sept. '96- December '96)
- Esther Hui (Pomona Molecular Biology major; Sept. '96-Dec.'96)
- Richard Russell (Pomona Neuroscience major; Sept. '96- December '96)
- Rishi Garg (Pomona Neuroscience major; January '97- May '97)
- Jason Johnson (Chaffey College; May '97-August '97)
- Scott Lehto (Pomona College Molecular Biology major; May '97-August '97)
- Sharon McDaniel (Pomona Neuroscience major; January '99- May 99)
- Timothy Stocker (Pomona Neuroscience major; January '99- May 99)
- Kelly Alvarez (Pitzer College; Psychobiology major; May '99-August '99)
- Frances Chiu (Pomona Molecular Biology major; May '99- December '99)
- David Peters (Pomona Neuroscience major; May '99- August '99)
- Louis Scrattish (Pomona Neuroscience major; May '00- August '00)
- James Nachtwey (Pomona Biology major; May '01-August '01)

Paulami Naik (Pomona Neuroscience major; May '04-August '04)
 Shirley Shih (Pomona Neuroscience major; August '05-December '05)
 Anja Scholze (Pomona Neuroscience major; August '05-December '05)

Advising of research proposal senior theses:

Stephanie Knabe '95 (Neuroscience)	James Stier '05 (Neuroscience)
Aisha Violette '95 (Biology)	SharonMcDaniel '99 (Neuroscience)
Judy Van Atta '95 (Biology)	James Song '99 (Neuroscience)
Seung I. Hong '95 (Neuroscience)	Timothy Stocker '99 (Neuroscience)
John Dorsey '95 (Neuroscience)	Minna Yoo '99 (Neuroscience)
Steven Beier '96 (Neuroscience)	Roosbeh Houshyar '00 (Biology)
Debra Doherty '96 (Biology)	Crystal Luetters '00 (Biology)
Gahram Kang '96 (Biology/PPA)	Shawn Collins '01 (Biology)
Paul Kim '96 (Neuroscience)	Ina Kim '01 (Neuroscience)
Samir Koirala '96 (Biology)	MargueriteMiddaugh '01 (NS)
Anna Nidecker '96 (Neuroscience)	Evan Moreno-Davis (Neuroscience)
Viet Mai '96 (Biology)	David Peters (Neuroscience)
Phan Phung '96 (Biology)	Sahar Rooholamini (Neuroscience)
ChristianaRajasingham '96 (NS)	Kjell Jorgenson '02 (Neuroscience)
Jennifer Schreck '96 (Biology)	Teresa Barcellos '02 (Neuroscience)
Jennifer Wirsig '96 (Biology)	Francisca Halliday (Biology '03)
Eric Abdul '97 (Biology)	Marc Duyungan (Biology '04)
Erin Chuck '97 (Biology)	Laurel Ecke (Neuroscience '04)
Jasper Ip '97 (Neuroscience)	Sarah Myers (Neuroscience '04)
Morton Hsiao '97 (Mol. Biology)	Paula Jossan (Biology '05)
Reham Hassan '99 (Neuroscience)	Kathleen Davis (Neuroscience '05)
Ta Chen Chang '01 (Neuroscience)	AlizaNorwood(Neuroscience'05)
Zuleika Ladha '99 (Neuroscience)	Ambereen Kurwa (Neuroscience'05)
Christopher Graham '05 (Neuroscience)	Naveen Sangji (Molecular Biology '05)
Ashley Berhel '06	

Society Memberships:

American Association for the Advancement of Science, Regular Member
 American Association for University Women, Regular Member
 Council on Undergraduate Research, Regular Member
 Faculty for Undergraduate Neuroscience; President '00-'01; Past President, '02-'04
 Sigma Xi, Regular Member
 Society for Neuroscience, Regular Member

Peer Review Activities:

Manuscript reviews for *Brain Research*, *J. of Neuroscience*, *J. of Neurobiology*, *Journal of Undergraduate Neuroscience Education*, *European Journal of Neuroscience*

Grant reviews for: Canadian INSERM
 National Science Foundation
 U.S. Department of Veterans Affairs Medical Research Service

Textbook reviews for Harvard University Press

(Text title: *Molecular Neurobiology*, Gordon Fain; reviewed in 1995 and 1997)

Sinauer Press (Text title: *Drugs, the Brain, and Behavior*; reviewed 2003); Garland Science
Panelist, NSF reviews of Course, Curriculum and Laboratory Improvement Program (CCLI)
proposals, August 1999.

Panelist leader, NSF reviews of Course, Curriculum and Laboratory Improvement Program
(CCLI) proposals, January 2003

Tenure reviews for Marquette University, Carleton College, Beaver College, Macalester College,
Lafayette University, Davidson College, Trinity College

Invited Talks:

Molecular mechanisms of synaptic transmission in Drosophila and Rat Hippocampus; National
Institute for Medical Research, Mill Hill, England; November 1994.

*Molecular mechanisms of synaptic transmission: Presynaptic proteins and long term
potentiation*; Beckman Research Institute, City of Hope, Duarte CA; January 1995.

Molecular mechanisms of memory: presynaptic proteins and long term potentiation; Harvey
Mudd College, Claremont CA; February 1995.

What is Neuroscience?; guest lecture for Cognitive Psychology course at Harvey Mudd College,
February 1996.

Molecular Mechanisms of Memory: Long Term Potentiation; Joint Sciences, April 1996

Teaching and research at a small liberal arts college; Gordon Conference on Catecholamines,
Proctor Academy, New Hampshire (Member of a panel discussion for post docs and
faculty on alternative careers in science); July 1997.

Teaching and research at a small liberal arts college; University of Colorado Health Sciences
Center Pharmacology Department Retreat, Breckenridge CO; October '97.

*Synaptic potentiation in rat hippocampus and Drosophila neuromuscular junction: molecular
mechanisms*; Program in Neuroscience, University of Colorado Health Sciences Center;
December 1997.

Teaching and research at a small liberal arts college; UCLA Neurobiology Department retreat,
Lake Arrowhead CA; April 2001

*Neuroscience as a Contact Sport: the Argument for Laboratory Training at the Undergraduate
Level*; Association of Neuroscience Departments and Programs annual meeting,
Washington DC.

Balancing career and family: research-intensive vs primarily undergraduate institutions. Women
in Science, Engineering and Technology (WEST), Caltech, March 2002.

*Changes with Aging in Adenylate Cyclase-Mediated Forms of Synaptic plasticity in Hippocampal
Area CA1*. University of Utah Dept of Pharmacology and Toxicology, April 2002.

Science careers at primarily undergraduate institutions. University of Utah Dept of
Pharmacology and Toxicology, April 2002

Jobs at small liberal arts colleges: Expectations, Applications, and Succeeding. Professional
organization for post-docs, California Institute of Technology, August 2002.

*Changes with Aging in Adenylate Cyclase-Mediated Forms of Synaptic plasticity in Hippocampal
Area CA1*. Harvey Mudd College, November 2002.

Molecular mechanisms of learning and memory: the roles of cyclic AMP and aging; Cal Poly
Pomona Dept of Biology, May 2003

Molecular mechanisms of learning and memory: the roles of cyclic AMP and aging; Cal State San Bernardino Dept of Biology, May 2004

Molecular Mechanisms of Learning and Memory: Changes in cAMP Signaling with Aging ; Claremont Colleges Summer Seminar Series in Biology, June 9, 2004

Molecular Mechanisms of Learning and Memory: Changes in cAMP Signaling with Aging ; University of Illinois, Consortium on Aging, March 2005.

Developing an Interdisciplinary Science Program; NSF-Project Kaleidoscope Leadership Initiative Seminar, United States Military Academy, West Point NY, March 2005.

Leadership: Shaping the Future of Undergraduate Education; NSF-Project Kaleidoscope conference on Undergraduate Neuroscience Education: Leadership, Laboratories, and a Curriculum for the 21st Century, Macalester College, St. Paul MN July 2005.

Molecular Mechanisms of Learning and Memory: Changes in Cyclic AMP Signaling with Aging; Cornell University Dept of Neurobiology and Behavior, February 2006.

Landing a Job at a Primarily Undergraduate Institution; Cornell University, March 2006

What Can Rats and Flies Teach Us About Learning, Memory, and Aging?; Pomona College Blue Room talk, October 2006; Pomona College Alumni Association of San Diego, November 2006; Claremont Senior Forum, July 2007.

Attendance at professional meetings (* includes poster presentation and/or talk):

Beckman Research Symposium, City of Hope, Duarte CA; Molecular Approaches to Studying the Mind, October 1994 .

Annual Society for Neuroscience Meeting; Miami, FL, November 1994.

* Annual Society for Neuroscience meeting, San Diego, CA, November 1995.

*Gordon Conference on Neural Plasticity, Wolfeboro NH; July, 1995.

*Annual Society for Neuroscience meeting, San Diego, CA; November 1995.

*Southern California Conference on Undergraduate Research, Occidental College, November 1996.

*Eighth International Catecholamine Symposium, Asilomar, CA, November 1996.

Annual Society for Neuroscience meeting, Washington, D.C.; November 1996.

*American Federation for Aging Research, Airlie Conference Center, Warrenton VA, June 1997.

*Gordon Conference on Neural Plasticity, Brewster Academy, Wolfeboro New Hampshire, July 1997.

*Gordon Conference on Catecholamines, Proctor Academy, New Hampshire

*University of Colorado Health Sciences Center Pharmacology Department Retreat, Breckenridge CO, October 1997

*Annual Society for Neuroscience meeting, New Orleans LA; November 1997

*Faculty for Undergraduate Neuroscience Poster meeting, New Orleans LA; November 1997; co-author Gerald Reis ('97) was the recipient of a Faculty for Undergraduate Neuroscience Travel Award for this work and poster presentations.

Keystone Symposium on Molecular and Cellular Biology: Synapse Formation and Hippocampal Synaptic Transmission; Park City UT, March 1998.

Annual Meeting of the Society for Neuroscience, Los Angeles CA; November 1998
Gordon Conference on Neural Plasticity, Salve Regina University, Newport RI; July 1999
Annual Meeting of the Society for Neuroscience, Miami FL; November 1999
Annual Meeting of the Society for Neuroscience, New Orleans LA; November 2000
*Gordon Conference on Neural Plasticity, Salve Regina University, Newport RI; July 2001
Annual Meeting of the Society for Neuroscience, San Diego, CA; November 2001
*Annual Meeting of the Society for Neuroscience, Orlando FL; November 2002
*Annual Meeting of the Society for Neuroscience, San Diego CA; October 2004
*Faculty for Undergraduate Neuroscience Poster meeting, San Diego CA; October 2004; co-author Sidney Kuo ('04) was the recipient of a Faculty for Undergraduate Neuroscience Travel Award for this work and poster presentations.
UCLA Symposium on Learning and Memory, June 2005
*Annual Meeting of the Society for Neuroscience, Washington DC, November 2005
Faculty for Undergraduate Neuroscience Poster session; Washington DC, November 2005; two Posters
*Imaging and the Aging Brain; meeting sponsored by the NY Academy of Sciences and American Federation for Aging Research (AFAR); May 2006, NY NY
*Annual Meeting of the Society for Neuroscience, Atlanta GA, October 2006

Participation in teaching workshops

NSF-sponsored Project Kaleidoscope conference for revitalizing introductory biology curricula; Eugene, OR; May 1995.
NSF-sponsored workshop on "Use of Invertebrate Preparations for Neurobiology Laboratory Instruction", Section of Neurobiology and Behavior, Cornell University, Ithaca NY; June 9-15, 1997.
"Speaking Intensive Courses" workshop, Pomona College; Oct. 25-26, 1996.
Pomona College Academic Computing Technology Symposium; February 1998
Managing Lecture-Free Learning (workshop sponsored by the Mellon group); March '98
Use of Computer Technology in Teaching Biology; Howard Hughes-sponsored Program in Molecular Biology; Pomona College, March 1998
Workshop for Pomona ID1 Instructors: "Leading Worthwhile Discussions", "Effective Teaching Techniques", "Collaborative Learning"; May 1998.
NSF-sponsored Project Kaleidoscope meeting entitled "Interdisciplinary Connections: Blueprints for Reform in Undergraduate Neuroscience"; Oberlin College, June 1998.
Web Authoring Workshop (sponsored by the Mellon group); July 1998
Mini-seminar organized by the Pomona teaching committee entitled "Thirty-Something: Discussions in Classes of 30 or More"; March 1999
Teaching and Technology workshop organized by Suzanne Thompson, June 1999
NSF-sponsored Project Kaleidoscope meeting entitled "Interdisciplinary Connections: Blueprints for Reform in Undergraduate Neuroscience"; Trinity College, June 2001.
NSF-sponsored Project Kaleidoscope Leadership Initiative Seminar, United States Military Academy, West Point NY, March 2005. Talk: "Developing an interdisciplinary program."
NSF-sponsored Project Kaleidoscope meeting entitled "Undergraduate Neuroscience Education: Leadership, Laboratories, and a Curriculum for the 21st Century, Macalester College, St. Paul MN July 2005. Conducted plenary session on leadership; co-leaders: Jan Serie and Lin Aanonsen, Macalester College.

Service to Department, Programs, College, and Community

College Committees:

Faculty Position Advisory Committee, 8/04-7/05

Animal Care Committee, 1996- 1999; chair, 7/1/99 – 1/02; 7/03-7/05

Freshman Orientation Committee, 9/02- 7/03; 9/05-12/05

Student Affairs Committee, 1995- 1997 (including various subcommittees, e.g. to interview students for Judicial Board, etc)

Study Abroad Committee, 1998-1999 (including subcommittee to evaluate petitions for Fall '99 Study Abroad)

Faculty Senate, 1997- 2002

Committee to select college senior award recipients, May 1997

Pomona Freshman Orientation and Placement: Orientation Adventure leader, August '95; discussion leader for Freshman Orientation book, 1999, 2001, 2002, 2005.

Biology, Neuroscience, and Molecular Biology Activities:

Senior thesis coordinator, Biology Department, 1996-2002 (excluding '97-'98 Steele leave)

Student Advising– 20-50 advisees per year

NSF-REU Biology Research Program Summer coordinator, May '96 - August '97

New Biology Complex Steering Committee, June '95-present

New Faculty Searches, December '95-present

Kenan Professorship Search Committee, September '02-May '04

Chair, Pomona Neuroscience Program, August 2006-December 2006

Talks/activities at Pomona:

Outdoor Adventure faculty leader, Backpacking trip down the East Fork of the San Gabriel River

Women's Union Thursday Noon Discussion leader: *Behavioral and Biochemical Perspectives on Endogenous Depression* (with Michelle Wierson, Psychology), January 1997

Women in Science group: *Career Options After the Post Doc Years*; for undergraduate science majors from Pomona, Spring 1995

Faculty advisor for Students of Color in Science (SOCS)

Community activities:

Institutional Review Board member, Pomona Valley Hospital Medical Center

Speaker at Career Day, Diamond Bar Middle School

Pomona College/Howard Hughes Medical Institute Outreach Symposium in Computational Modeling for local high school and community college teachers: organized workshops on interactive software for learning concepts in the biological sciences.

Advocate for Bernard Field Station, Claremont CA

Editor for community newspaper, The Baldy Breeze 2000-2005.

Publications

(* denotes a Pomona undergraduate)

Bisel, B.E*., Henkins, K.* and Parfitt, K.D. The Alzheimer amyloid β -peptide $A\beta_{25-35}$ blocks adenylate cyclase-mediated forms of hippocampal long term potentiation (LTP). (2007) *Annals of the NY Academy of Sciences*, 1097: 58-63.

Johnson, K.G., Tenney, A.P., Duckworth, A., Parfitt, K.D., Marcu, O., Heslip, T.R., Marsh, J.L., Flanagan, J.G., and van Vactor, D. (2006) The HSPGs Syndecan and Dallylike bind the receptor phosphatase LAR and exert distinct effects on synaptic development. *Neuron*, 49:517-531.

Gerald F. Reis*, Michael B. Lee*, Alex S. Huang* and Karen D. Parfitt. (2005) Adenylate cyclase-mediated forms of synaptic potentiation in hippocampal area CA1 are reduced with aging. *J. Neurophysiology*, 93: 3381-3389.

Parfitt, K.D. (2002) Media Review: Crawdad: A CD-ROM Lab Manual for Neurophysiology. *Journal of Undergraduate Neuroscience Education*, 1: R5-R6.

Parfitt, K.D., Reist, N., Li, J., Burgess, R., Deitcher, D., DiAntonio, A. and Schwarz, T.L. (1995) *Drosophila* genetics and the functions of synaptic proteins. *Cold Spring Harbor Symposia in Quantitative Biology*, 60: 371-377.

Bickford, P., Lin, A.M.-Y., Parfitt, K.D., and Palmer, M.R. (1995) The effects of aging on the interaction of ethanol with chemical neurotransmission in the brain. In *Alcohol and Aging*, T. Beresford and E.S.L Gomberg, eds., Oxford University Press, Oxford, pp. 150-165.

Parfitt, K.D. and Madison, D.V. (1993) Phorbol esters enhance synaptic transmission in the hippocampus by a presynaptic, calcium-dependent mechanism. *Journal of Physiology*, 471:245-268.

DiAntonio, A., Parfitt, K.D. and Schwarz, T.L. (1993) Synaptic transmission persists in *synaptotagmin* mutants in *Drosophila*. *Cell*, 73:1281-1290.

Parfitt, K.D., Doze, V.A., Madison, D.V., and Browning, M.D. (1992) Isoproterenol increases the phosphorylation of the synapsins and increases synaptic transmission in dentate gyrus, but not in area CA1, of the hippocampus. *Hippocampus*, 2(1):59-64.

Meffert, M.K., Parfitt, K.D., Cohen, G.A., Doze, V.A. and Madison, D.V. (1991) Protein kinases and LTP. *Ann. NY Acad. Sci.*, 627:2-9.

Parfitt, K.D., Hoffer, B.J. and Browning, M.D. (1991) Direct evidence that norepinephrine increases the phosphorylation of synapsin I and synapsin II in dentate slices of young but not aged Fischer 344 rats. *Proc. Natl. Acad. Sci.*, 88:2361-2365.

Parfitt, K.D., Bickford-Wimer, P.C. and Hoffer, B.J. (1990) Potentiation of GABA_A receptor-mediated inhibitions by isoproterenol in the cerebellar cortex. *Neuropharmacology*, 29:909-916.

Parfitt, K.D. and Freedman, R. (1990) Age-related subsensitivity of cerebellar Purkinje neurons to locally applied beta₁-selective agonist. *Neurobiol. Aging*, 11:591-596.

Parfitt, K.D., Gratton, A. and Bickford-Wimer, P.C. (1990) Electrophysiological effects of D₁ and D₂ dopamine receptor agonists in the medial prefrontal cortex of young and aged Fischer 344 rats. *J. Pharm. Exper. Ther.*, 254:539-545.

Parfitt, K.D. (1988) Age-related electrophysiological changes in cerebellar noradrenergic receptors. *Age* 11:120-127.

Parfitt, K.D., Freedman, R. and Bickford-Wimer, P.C. (1988) Electrophysiological effects of locally-applied noradrenergic agents at cerebellar Purkinje neurons: Receptor specificity. *Brain Res.* 462:242-251.

Hoffer, B.J., Rose, G., Parfitt, K.D., Freedman, R. and Bickford-Wimer, P.C. (1988) Age-related changes in cerebellar noradrenergic function. *Ann. NY Acad. Sci.* 515:269-286.

Bickford-Wimer, P.C., Parfitt, K.D., Hoffer, B.J. and Freedman R. (1987) Desipramine and noradrenergic neurotransmission in aging: failure to respond in aged laboratory animals. *Neuropharmacology* 6:597-605.

Abstracts

(* denotes a Pomona undergraduate)

Krans, J. L., Parfitt, K. D., Rivlin, P. K., Deitcher, D. L. and Hoy, R. R. The resting membrane potential of *Drosophila melanogaster* larval muscle depends strongly on the calcium gradient. Society for Neuroscience annual meeting; Atlanta GA, October 2006.

Bisel, B.E*., Henkins, K.* and Parfitt, K.D. The Alzheimer amyloid β -peptide A β_{25-35} blocks adenylyl cyclase-mediated forms of hippocampal long term potentiation (LTP). Meeting of the NY Academy of Sciences, "Imaging and the Aging Brain", May 2006, NY NY

Bisel, B.E.* and Parfitt, K.D. The Alzheimer Amyloid β -Peptide A β_{25-35} blocks a form of chemically-induced LTP. Program No. 496.10. 2005 *Abstract Viewer/Itinerary Planner*. Washington, DC: Society for Neuroscience, 2005. Online

Kuo, S.P* and Parfitt, K.D. CHANGES WITH AGING IN FORSKOLIN-STIMULATED AND BASAL CYCLIC AMP IN THE HIPPOCAMPUS Program No. 905.5. 2004 *Abstract Viewer/Itinerary Planner*. Washington, DC: Society for Neuroscience, 2004. Online . WINNER, Faculty for Undergraduate Neuroscience Travel Award.

J. S. Raskin*, and K. D. Parfitt (2002) Changes with Aging in an Adenylyl Cyclase-Mediated

Form of Long Term Potentiation in Hippocampal Area CA1. Program Number 444.12, 2002 Abstract Viewer/Itinerary Planner. Washington DC: Society for Neuroscience, 2002. CD ROM.

Smith, W.B., Parfitt, K. and Schuman, E.M. (2002) The Effects of a Dopamine D1/D5 Agonist on Local Protein Synthesis in Cultured Hippocampal Neurons. Program Number 151.4, 2002 Abstract Viewer/Itinerary Planner. Washington DC: Society for Neuroscience, 2002. CD ROM.

Park, C.*, Raskin, J.*, Nachtwey, J. and Parfitt, K.D. (2001) Changes with aging in adenylyate cyclase-mediated forms of long term potentiation in hippocampal area CA1. Gordon Research Conference on Synaptic Plasticity, Newport RI.

Reis, G.*, Lee, M.B.*, and Parfitt, K.D. (1997) Adenylyate cyclase-mediated forms of synaptic potentiation in hippocampal area CA1 are attenuated in aged Fisher 344 rats. *Soc. for Neuroscience Abstr.* 23: 660.

Lee, M.B.*, Reis, G.* and Parfitt, K.D. (1996) Isoproterenol and forskolin enhance evoked population spikes in hippocampal area CA1 of young but not aged F344 rats. *International Conference on Catecholamines* (sponsored by the National Institute of Mental Health), Asilomar CA.

Burgess, R.W., Deitcher, D., Parfitt, K.D. and Schwarz, T.L. (1995) Syntaxin in Drosophila: cloning, characterization, and mutational analysis. *Soc. for Neurosci. Abstr.* 21: 326.

Parfitt, K.D., DiAntonio, A. and Schwarz, T.L. (1993) Synaptic transmission in mutants of Drosophila synaptotagmin (p65), a major synaptic vesicle membrane protein. *Soc. for Neurosci. Abstr.* 19:271.

Parfitt, K.D. and Madison, D.V. (1992) Effects of nifedipine on long term potentiation in area CA1. *Soc. for Neurosci. Abstr.* 18:1495.

Parfitt, K.D. and Madison, D.V. (1991) Phorbol esters increase the frequency of spontaneous excitatory postsynaptic currents in the hippocampus by presynaptic, calcium-dependent mechanism. *Soc. for Neurosci. Abstr.* 17:1487.

Browning, M.D., Parfitt, K.D., Doze, V.A and Madison, D.V. (1990) Beta-adrenergic receptor activation increases phosphorylation of synapsins I and II and increases synaptic transmission in dentate gyrus, but not in area CA1 of the hippocampus. *Soc. Neurosci. Abstr.* 16:653.

Doze, V.A., Cohen, G.A., Parfitt, K.D. and Madison, D.V. (1990) Alpha adrenocaptor activation inhibits the early but not the late IPSP in area CA1 of the rat hippocampus while increasing the spontaneous release of GABA from presynaptic inhibitory interneuron terminals. *Soc. Neurosci. Abstr.* 16:1014.

Parfitt, K.D. and Madison, D.V. (1990) Phorbol esters enhance synaptic transmission in whole-cell voltage clamp recordings: evidence for a presynaptic action. *Soc. Neurosci. Abstr.* 16:492.

Parfitt, K.D., B.J. Hoffer, and M.D. Browning (1989) Direct evidence that norepinephrine increases the phosphorylation of synapsin I and protein III in dentate slices of young but not aged F344 rats. *Soc. Neurosci. Abstr.* 15:85.

Gratton, A., P. Bickford-Wimer, and K.D. Parfitt (1988) Effects of selective D1 and D2 receptor agonists on the activity of prefrontal cortex cells in Fischer 344 rats. *Soc. Neurosci. Abstr.* 14:1077.

Parfitt, K.D., R. Freedman, and P.C. Bickford-Wimer (1988) Age-related electrophysiological changes in cerebellar noradrenergic receptors. *Soc. Neurosci. Abstr.* 14:1270.

Parfitt, K.D., R. Freedman, and P.C. Bickford-Wimer (1987) Electrophysiological effects of locally-applied adrenergic agonists at cerebellar Purkinje neurons: receptor specificity. *Soc. Neurosci. Abstr.* 13:895.

Bickford, P.C., K.D. Parfitt, B.J. Hoffer, and R. Freedman (1985) Age-related decrease in cerebellar Purkinje neuron response to desipramine in Fischer 344 rats. *Soc. Neurosci. Abstr.* 11:728.