

CURRICULUM VITAE

Paul E. Gold

Distinguished Professor
Department of Biology
Syracuse University
Life Sciences Complex
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Education:

B.A., University of Michigan, Zoology, 1966.
M.S., University of North Carolina at Chapel Hill, Department of Zoology,
Neurobiology Program, 1968.
Ph.D., University of North Carolina at Chapel Hill, Department of Psychology,
Neurobiology Program, 1971.
Postdoctoral Training, University of California, Department of Psychobiology,
1970 -1973.

Honors and Awards:

Predoctoral Fellowship, National Institutes of Health, 1967.
Postdoctoral Fellowship, National Institute of Mental Health, 1972.
James McKeen Cattell Award, 1983.
University of Virginia Sesquicentennial Associate Award, 1983, 1990, 1997.
Fellow, American Psychological Association, 1987-
Fellow, American Psychological Society, 1989-
Endowed Chair: Commonwealth Professor of Psychology, University of Virginia,
1997-1999
Fellow, American Association for the Advancement of Science, 1997-
Distinguished Alumnus Award, University of North Carolina, Department of
Psychology, 2000
APA Master Lecturer, American Psychological Association, 2000
Saint Louis University, Jim Flood Memorial Distinguished Lectureship, 2002
Recognized on the Students' List of Excellent Teachers, University of Illinois: 2008,
2011
Professor Emeritus, University of Illinois, 2012-
Distinguished Professor, Department of Biology, Syracuse University, 2012-

Research Foci: Neurobiology of neural plasticity, memory, aging

Current projects include:

- Neurotransmitter and hormonal regulation of induction and maintenance of long-term potentiation
- Regulation of memory processing by astrocytic glycogenolysis
- *In vivo* microdialysis / HPLC and biosensor assessments of neurotransmitter release and extracellular brain glucose and lactate levels in rats and mice
- Brain glucose regulation of brain functions in mouse models of Alzheimer's Disease and Down Syndrome
- Proteomic analyses of extracellular cell-cell communication proteins during learning, memory and drug abuse
- Systems and cellular mechanisms of drug enhancement of memory
- Pharmacological enhancement of memory and neural plasticity in models of aging and cognitive dysfunctions
- Role of protein synthesis and signal transduction molecules in memory formation
- Acute and chronic stress effects on neural plasticity and memory systems

Positions Held:

University of North Carolina at Chapel Hill:

Lecturer, Department of Psychology, 1970

University of California, Irvine:

NIMH Postdoctoral Fellow, Staff Research Psychobiologist, Lecturer, 1971-1976

Fellow, Center for the Neurobiology of Learning and Memory, 1983-1984

University of Virginia, Charlottesville:

Assistant Professor, Department of Psychology, 1976-1978; Associate Professor, 1978-1981; Professor, 1981-1996

Endowed Chair: Commonwealth Professor, 1997-1999

Neuroscience Faculty, 1976-1999

Member, Diabetes Center, 1985-1999

Head, Psychobiology Area and Graduate Program, 1988-1992, 1998-1999

Associate Director, Neuroscience Graduate Program, 1989-1991

Director, Neuroscience Graduate Program, 1991-1995

Member, Center on Aging and Health; Chair, Neuroscience of Aging, Memory and Behavior, 1991-1999

Member, Interdepartmental Program in Cognitive Science, 1992-1999

Commonwealth of Virginia, Member of Governor's Commission on Alzheimer's Disease and Related Disorders, 1998-1999

SUNY - Binghamton

Professor, Department of Psychology, 1999-2000

Head, Behavioral Neuroscience Area and Graduate Program, 1999-2000

Associate Director, Center for Developmental Psychobiology, 1999-2000

University of Illinois at Urbana-Champaign

Director, Medical Scholars MD-PhD Program, College of Medicine, 2000-2002

Professor, Department of Psychology, 2000-2012

Professor, Neuroscience Program, 2000-2012

Professor, Department of Psychiatry, 2002-2012

Professor, Division of Nutritional Sciences, 2002-2012

Professor, Institute for Genomic Biology, 2004-2012

Member, UIUC NIDA Center for Neuroproteomics, 2004-2012

Interim Director, Neuroscience Program, 2004-2005

Professor, Department of Bioengineering, 2008-2012

Professor, Department of Molecular and Integrative Physiology, 2009-2012

Associate Dean, College of Medicine, 2009-2011

Professor Emeritus, Department of Psychology, 2012-

Syracuse University

Distinguished Professor of Biology, 2012-

Upstate Medical University

Professor, Neuroscience Graduate Program, 2012-

Memberships:

Society for Neuroscience
American Psychological Association
American Psychological Society
American Association for the Advancement of Science
International Society for Psychoendocrinology
International Brain Research Organization
Association for Women in Science

Professional Services Include:

Editor-in-Chief, *Neurobiology of Learning and Memory* (1998-2011)
Editor, *Psychobiology* (1990-7)
Editorial Boards: *Behavioral Neuroscience*; *Reviews in the Neurosciences*,
Psychonomic Bulletin & Review; *Psychobiology*; *Open Longevity Science*
(formerly *Open Aging Journal*); *Neural Plasticity*; *Frontiers in Neuroscience*;
American Journal of Neurodegenerative Disease
Member, National Institute on Aging Study Section (Models of Alzheimer's Disease
and Neurodegenerative Disorders) (1990-1991)
Member, National Institute on Mental Health Study Section: Cognitive Functional
Neuroscience (1991-1992)
Member, National Science Foundation Advisory Panel for Behavioral and
Computational Neuroscience (1993-1996)
Member, National Science Foundation Panel on Learning and Intelligent Systems
(1996)
Member, Society for Neuroscience Committee on Animals in Research (1993-1998)
Member, American Psychological Association Committee on Animals in Research
and Ethics (1996-1999)
Member, National Institute on Aging Study Section, Alzheimer's Disease Research
Centers, 1994, 1999
Member, Scientific Advisory Board, Alzheimer's Drug Discovery Foundation, 2000-
Member, American Psychological Association Selection Committee for Early Career
Award in Animal Learning and Behavior, Comparative Area, 2001
Member, National Institute on Aging Site Visit Committee, 2003
Member, National Institute on Aging Site Visit Committee, 2004
Member, National Institute for Mental Health. Special Emphasis Panel, 2004, 2005
Program Chair, Winter Conference on the Neurobiology of Learning and Memory,
1993-4, 1999-2000, 2003-4, 2005-2006
Member, Executive Committee, Winter Conference on the Neurobiology of Learning
and Memory, 2003-
Member, Review Board for Alzheimer's Association, 2003-
Member, Society for Neuroscience Committee on Women in Neuroscience, 2004-
2008; steering committee, 2005-2008
Member-at-large (elected), Steering Group, Section on Psychology, American
Association for the Advancement of Science, 2005-2009.
Member, Neuroscience Program Review Committee, Texas A & M, 2008-9
Member, NIMH Review Panel, R25 Research Education Grants, 2008

Chair, National Institute on Aging Review Panel, 2009
Member, International Rett Syndrome Foundation Scientific Review Board, 2009-2012
Member (ad hoc) NIH Neurotoxicology and Alcohol Study Section, 2010.
Chair, National Institute on Aging Review Panel, 2010
Member, NSF Review Panel, Modulation of Neural Systems, 2011

University of Illinois Administration:

Director, Medical Scholars (MD-PhD) Program, College of Medicine 2000-2002

Head of the following committees (partial list):

Search Committee for Student Coordinator; Search Committee for Associate Director; Search Committee for Administrative Assistant Admissions Committee; Search Committee for Coordinator of Research and Training Grants

Member, Executive Committee, College of Medicine 2000-2011

Member, Educational Policy Committee, College of Medicine 2000-2002

Member, Basic Sciences Subcommittee, College of Medicine 2000-2002

Member, Clinical Affairs Subcommittee, College of Medicine 2000-2002

Member, Faculty Search Committee, Medical Humanities and Social Sciences Program 2000-2002

Co-organizer, UIUC Cross-Cutting Initiative on Aging 2001-2006

Member, Executive Committee, UIUC Initiative on Aging 2001-2006

Member, Search Committee for Head, Department of Community Health, 2005

Member, College of Medicine, Search Committee for Head of Development Office 2001- 2002

Member, Executive Committee, Neuroscience Program, 2001-2004; 2006-2010

Member, Space Committee, Department of Psychology, 2002-2005

Member, Vice Chancellor for Research Committee on Laboratory Animal Care, 2003

Member, Faculty Appeals and Grievances Committee, College of Medicine, 2003-2011

Co-Organizer, Conference on Aging, Nutrition, Cognition and the Brain, 2003

Chair, Vice-Chancellor for Research Faculty Advisory Committee on Animal Care, 2003-2006

Member, Faculty Search Committee, Department of Psychology, 2003-2004

Member, Committee on Fundraising Priorities, College of Medicine, 2004-2011

Interim Director, Neuroscience Program, 2004-2005

Member, Faculty Search Committee, College of Applied Life Studies, 2004-2005

Member, Beckman Institute Review Committee, New Research Initiatives, 2005

Member, UIUC-Carle Translational Research Proposal Review Committee, 2006-2011

Member, Provost Committee on the Future of Biology Education; Chair, Subcommittee on Growth Points in Biology, 2006-8.

Member, Committee on Appointments, Reappointments, and Promotions, College of Medicine, 2003-; Chair 2007-2011

Chair, Faculty Appeals and Grievance Committee, 2007-2011

Chair, Department Head Administrative Review Committee, School of Integrative Biology, 2007-2008

Chair, Colloquium Committee, Neuroscience Program, 2009-2011

Member, Executive Committee, College of Medicine, 2008-2011

Member, IACUC, 2009-2011

Associate Dean, College of Medicine, 2009-2011

Chair, Search Committee for Associate Dean for Clinical Affairs, College of
Medicine, 2010

Member, College of Medicine Curriculum Transformation Task Force, 2010-2011

Syracuse University Administration:

Member, Dean's Committee for Endowed Professorship, 2012

Extramural Research Support:

Past:

- 1974-1975 NIMH: Hormonal influences on time-dependent memory processes
- 1976-1980 NSF: Hormonal modulation of memory storage
- 1978-1981 NIA: Aging and memory
- 1980-1985 NIMH: Neuroendocrine modulation of memory
- 1983-1985 NSF: Learning under anesthesia
- 1984-1986 ONR: Stress and memory
- 1986-1988 American Diabetes Association: Memory in diabetic rodents
- 1987-1990 NIMH: Neuroendocrine modulation of memory
- 1988-1994 ONR: Glucose effects on human memory and on neurobiological memory substrates
- 1990-1994 NSF: Neuroendocrine regulation of memory storage
- 1994-1998 NINDS: Glucose, Neural Systems and Memory
- 1995-1997 MacArthur Foundation: Animal models of cognitive and biological aging
- 1999-2003 Alzheimer's Association: Assessment of cognitive deficits in the Ts65Dn mouse (model of Down Syndrome): Pharmacological studies
- 2000-2003 USDA: Fluctuations in brain extracellular glucose levels: Consequences for cognitive functions
- 1999-2004 NINDS: Glucose, neural systems and memory
- 2004-2006 Predix Pharmaceuticals: HT-4 drug effects on ACh release in the rat brain
- 2003-2008 NIDA: Stress effects on the balance between memory systems
- 1990-2010 NIA: Memory and aging
- 2007-2010 NIDA: Protein synthesis inhibitors, neurotransmitters and memory

Current:

- 1994- Private donor: Glucose effects on cognitive functions
- 2009-2014 NIDA: Neuroproteomics Center on Cell-Cell Signaling (PI: J. Sweedler)
- 2009-2013 NSF: Neuroendocrine modulation of LTP durability. (co-PI; PI: D. Korol)
- 2009-2012 Alzheimer's Association: Glucose, K-ATP channels and memory in mouse models of AD and DS
- 2011-2016 NSF: Contributions of astrocytes to metabolic modulation of memory.

Under review:

- 2013-2018 NIH: Psychosocial stress effects on astrocytic metabolic reserves and cognition in rats.

Planned:

- 2013-2018 NIA: Role of brain glucose regulation in regulating memory in a rat model of Alzheimer's Disease
- 2013-2018 NINDS: Plasticity within astrocytes – long-lasting changes in glycogen after experience
- 2013-2018 NIH: Diabetes, brain energy substrates, and cognition

Extramural Training and Instructional Support:

Past:

- 1978-1981 NSF: Undergraduate Laboratories in Neuroscience (co-PI)
- 1980-1985 NIMH: Training Grant, Behavioral Neuroscience (PI)
- 1996-1998 NIA: Dissertation Grant, on behalf of Ms. Cheryl Talley.
- 1996-1998 NINDS: Postdoctoral supplement on behalf of Dr. Juan Salinas.
- 1995-1998 NIMH: NRSA, predoctoral, on behalf of Mr. Mark Stefani.
- 1997-1999 NIH: Training Grant, Training in Neuroscience (co-PI, 1992-1997; Preceptor 1997-2002)
- 1996-1999 NICHD: Training Grant, Neural and Behavioral Development (Preceptor).
- 1996-1999 NIMH: Training Grant, Developmental Psychology (Preceptor).
- 2003-2008 NICHD: Developmental Psychobiology and Neurobiology (Preceptor).

Planned:

- 2013-2018 NIH: Training grant in Neuroscience

Consultant:

- 1996-1999 Private donor: Nutritional influences on cognition in the elderly. (D. Korol, D. Willingham, Dept. Psychology, UVa, PIs)
- 1998-2001 VA: Noradrenergic contributions to acquisition of memory in PTSD. (S. Southwick, Dept. Psychiatry, Yale U., PI)
- 2005-2010 NIMH: Experience-dependent changes in the brain. (D. Clayton, PI)
- 2006-2011 NINDS: Cholinergic Regulation of the Circadian Clock. (M. Gillette, PI)
- 2006-2011 NINDS: The role of acetylcholine in diencephalic amnesia. (L. Savage, PI)
- 2006-2011 NINDS: Muscarinic regulation of plasticity in the brain. (S. Fahrbach, G. Robinson, co-PIs)

Mentor for individuals with minority fellowships and grants; mentee's institution at time of award:

- 1994-1998 Dr. Cheryl Talley, University of Virginia
- 2001-2003 Dr. Lisa Savage, Binghamton University
- 2000-2006 Dr. Clint Canal, University of Illinois
- 2003- 2005 Ms. Cynthia Colon-Rivera, University of Illinois
- 2003- 2006 Mr. William Ramos, University of Texas at San Antonio
- 2004- 2006 Ms. Glora Chapa, University of Illinois
- 2007-2010 Dr. Todd Coleman, University of Illinois

BIBLIOGRAPHY

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- Gold, P.E. and McGaugh, J.L. (1972). Effect of recent footshock on brain seizures and behavioral convulsions induced by electrical stimulation of the brain. *Behavioral Biology*, 7, 421-426.
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- Gold, P.E. (1972). A New Textbook for the Life Sciences. *Contemporary Psychology*, 17, 560-561. Review of V.L. Parsegian, P.R. Schilling, F.V. Monaghan, and A.S. Luchins, Introduction to Natural Science, Part Two: The Life Sciences, New York: Academic Press, 1973.
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- Therapy Bulletin*, 1, 12.
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- propranolol injections. *Behavioral and Neural Biology*, 38, 261-268.
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- Gold, P.E. (1984). Memory modulation: Neurobiological contexts. In: G. Lynch, J.L. McGaugh, and N.M. Weinberger (Eds.), Neurobiology of Learning and Memory. New York: The Guilford Press, pp. 374-382.
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- Canal, C., Stutz, S.J. and Gold, P.E. (2005). Glucose injections into the hippocampus or striatum of rats prior to T-maze training: modulation of learning rates and strategy selection. *Learning and Memory*, 12, 367-374.
- Abbott, S.M., Chang, Q., Miao, H., Gold, P.E., Sweedler, J.V., Gillette, M.U. (2005). Regulation of circadian rhythms by sleep-wake centers in the brainstem and basal forebrain. *Sleep*, 28, A58-A58.
- Pych, J.C. Chang, Q., Colon-Rivera, C. and Gold, P.E. (2005). Acetylcholine release in hippocampus and striatum during training on a rewarded spontaneous alternation task. *Neurobiology of Learning and Memory*, 84, 93-101.
- Pych, J.C., Chang, Q., Colon-Rivera, C., Haag, R., and Gold, P.E. (2005). Acetylcholine release in the hippocampus and striatum during place and response training. *Learning and Memory*, 12, 564-572.
- Gold, P.E. (2005). Glucose and age-related changes in memory. *Neurobiology of Aging*, 26S, S60-S64.
- Pych, J.C., Kim, M., and Gold, P.E. (2006). Effects of injections of glucose into the dorsal striatum on learning of place and response mazes. *Behavioural Brain Research*, 167, 373-378.
- McNay, E.C., Canal, C.E., Sherwin, R.S., and Gold, P.E. (2006). Modulation of memory with septal injections of morphine and glucose: Effects on extracellular glucose levels in the hippocampus. *Physiology and Behavior*, 87, 298-303.

- Chang, Q., Savage, L.M., and Gold, P.E. (2006). Microdialysis measures of functional increases in ACh release in the hippocampus with and without inclusion of acetylcholinesterase inhibitors in the perfusate. *Journal of Neurochemistry*, 97, 697-706.
- Gold, P.E. (2006). The many faces of amnesia. *Learning and Memory*, 13, 506-514.
- Korol, D.L. and Gold, P.E. (2007). Modulation of learning and memory by adrenal and ovarian hormones. In: Neurobiology of Learning and Memory (R.P. Kesner and J.L. Martinez, Eds.) Elsevier Science, NY, 243-268.
- Countryman, R.A. and Gold, P.E. (2007). Rapid forgetting of social transmission of food preferences in aged rats: relationship to hippocampal CREB activation. *Learning and Memory*, 14, 350-358.
- Canal, C.E. and Gold, P.E. (2007). Different temporal profiles of amnesia after intra-hippocampus and intra-amygdala infusions of anisomycin. *Behavioral Neuroscience*, 121, 732-741.
- Canal, C.E., Chang, Q. and Gold, P.E. (2007) Amnesia produced by release of neurotransmitters after intra-amygdala injections of a protein synthesis inhibitor. *Proceedings of the National Academy of Sciences USA*, 104, 12500–12505.
- Mohler, E.G., Shacham, S., Noiman, S., Lezoualc'h, F., Robert, S., Gastineau, M., Rutkowski, J., Marantz, Y., Dumuis, A., Bockaert, J., Gold, P.E., and Ragozzino, M.E. (2007). VRX-03140, a novel 5-HT₄ agonist, enhances memory and hippocampal acetylcholine efflux. *Neuropharmacology*, 53, 563-573.
- Korol, D.L. and Gold, P.E. (2008). Epinephrine converts LTP from transient to durable form in awake rats. *Hippocampus*, 18, 81-91.
- Chang, Q. and Gold, P.E. (2008). Age-related changes in memory and in acetylcholine functions in the hippocampus in the Ts65Dn mouse, a model of Down syndrome. *Neurobiology of Learning and Memory*, 89, 167-177.
- Gold, P.E. (2008). Protein synthesis and memory. *Neurobiology of Learning and Memory*, 89, 199-200.
- Gold, P.E. (2008). Protein synthesis inhibition: Memory formation vs amnesia. *Neurobiology of Learning and Memory*, 89, 201-211. (Noted as top-cited NLM article 2008-2101.)
- Gold, P.E. (2008). Regulation of memory by glucose: Role in age-related memory impairments. *Journal of Neurochemistry*, 104, 145.
- Gold, P.E. (2008). Memory enhancing drugs. In: Memory Systems (H. Eichenbaum, Ed.), vol. 3 of Learning and Memory: A Comprehensive Reference (J. Byrne, Ed.) Elsevier Science, Oxford, 555-576.
- Canal, C.E., Chang, Q., and Gold, P.E. (2008). Intra-amygdala injections of CREB antisense impair inhibitory avoidance memory: Role of norepinephrine and acetylcholine. *Learning and Memory*, 15, 677-686.
- Gold, P.E. (2009). Memory enhancing drugs. In: Concise Learning and Memory: the Editor's Selection (J. Byrne, Ed.) Elsevier Science, Oxford. pp. 605-626.
- Qi, Z., and Gold, P.E. (2009). Intrahippocampal infusions of anisomycin produce amnesia: contributions of increased release of norepinephrine, dopamine and acetylcholine. *Learning and Memory*, 16, 308-314.
- Sadowski, R.N., Chapa, G.R., Wiczorek, L., and Gold, P.E. (2009). Effects of stress and corticosterone administration on learning in place and response tasks. *Behavioural Brain Research*, 205, 19-25.

- Gold, P.E. and Korol, D.L. (2010). Hormones and Memory. In: Encyclopedia of Behavioral Neuroscience, volume 2. (G. Koob, M. Le Moal, and Thompson, R.F., Eds.) Academic Press, Oxford, 57-64.
- Morris, K.A., Chang, Q., Mohler, E.G., and Gold, P.E. (2010). Age-related memory impairments due to reduced blood glucose responses to epinephrine. *Neurobiology of Aging*, 31, 2136-2145.
- Sadowski, R.N., Canal, C.E., and Gold, P.E. (2011). Lidocaine attenuates anisomycin-induced amnesia and release of norepinephrine in the amygdala. *Neurobiology of Learning and Memory*, 96, 136-142.
- Gold, P.E., Countryman, R.A., Chang, Q. and Dukala, D. (2011). Acetylcholine release in the hippocampus and prefrontal cortex during acquisition of a socially transmitted food preference. *Neurobiology of Learning and Memory*, 96, 498-503.
- Newman, L.A., Korol, D.L., and Gold, P.E. (2011). Lactate produced by glycogenolysis in astrocytes regulates memory. *PLoS One*, 6, e28427.
- Morris, K.A. and Gold, P.E. (2012). Age-related impairments in memory and in CREB and pCREB expression in hippocampus and amygdala following inhibitory avoidance training. *Mechanisms of Ageing and Development*, 133, 291-299.
- Abbott, S.M., Chang, Q., Miao, H., Morris, K.A., Gold, P.E., Sweedler, J., and Gillette, M.U. (2012). Signals from the brain sleep-wake system regulate behavioural timing via the circadian clock. Submitted.
- Gold, P.E. and Wrenn, S.M. (2012). Cycloheximide impairs and enhances memory depending on dose and footshock intensity. *Behavioural Brain Research*, 233, 293-297
- Morris, K.A, Li, S., Bui, D.D., and Gold, P.E. (2012). Glucose attenuates impairments in memory and CREB activation produced by an $\alpha 4\beta 2$ but not an $\alpha 7$ nicotinic receptor antagonist. *Neuropharmacology*, 67, 233-242.
- Gold, P.E. and Korol, D.L. (2012). Neurobiology of emotions and memory. Special Issue: The Impact of Emotion on Cognition – Dissociating between Enhancing and Impairing Effects. F. Dolcos, L. Wang, and M. Mather, hosts. *Frontiers in Integrative Neuroscience*, 6:116. doi: 10.3389/fnint.2012.00116. Epub.
- Morris, K.A. and Gold, P.E. (2012). Epinephrine and glucose modulate training-related CREB phosphorylation in old rats: Relationships to age-related memory impairments. *Experimental Gerontology*, 115-127.
- Scavuzzo, C.J., Newman, L.A., Korol, D.L., and Gold, P.E. (2012). Plasticity of brain glycogen reserves: Task-dependent changes in hippocampal and striatal glycogen levels. Submitted.
- Morris, K.A., Mitterling, K.L., Rocha-Cabrero, F., Gold, P.E., and Korol, D.L. (2012). Bilateral injection of 6-OHDA into the dorsolateral striatum improves spatial working memory in rats: implications for Parkinson's disease. Submitted.
- Maki, A.E., Morris, K.A., Catherman, K., Chen, X., Hatcher, N., Gold, P.E., and Sweedler, J.V. (2012). A fibrinogen- α chain-derived peptide is upregulated in hippocampus of rats exposed to acute morphine injection and spontaneous alternation testing. Submitted.

IN PREPARATION

- Gold, P.E., Countryman, R.A., Kowalczyk, C., and Florek, A. Activation of c-Fos, c-Jun, and Zif-268 in the hippocampus of young and old rats after training on a social transmission of food preference task.
- Gold, P.E. and Chang, Q. Effects of intra-hippocampal morphine injections on place and response learning.
- McNay, E.C. and Gold, P.E. Modulation of spatial memory: differential effects of manipulation of septum and amygdala.
- Korol, D.L., Lexcen, F.J., Parent, M.B., Ragozzino, M.E., Manning, C.A., and Gold, P.E. Glucose enhancement of cognitive performance in college students.
- Canal, C.E. and Gold, P.E. Infusions of CREB antisense into the hippocampus and amygdala: Effects on memory of an appetitive spatial maze and inhibitory avoidance task.
- Gold, P.E. Contributions of changes in glucose metabolism to memory changes during aging. *Neurochemistry International*. [Invited.]
- Scavuzzo, C.J., Korol, D.L. and Gold, P.E. Long-lasting changes in astrocytic glycogen in the hippocampus and striatum after place and response training.
- Pfander, J.E. and Gold, P.E. Flogging the child: Memory and law.
- Newman, L.A., and Gold, P.E. Large efflux of acetylcholine induced by scopolamine creates memory impairments that can be attenuated by blocking nicotinic receptors with low doses of mecamylamine.
- Newman, L.A. and Gold, P.E. Age-related declines in efficacy of drug enhancement of memory in mouse models of Alzheimer's Disease and Down syndrome.
- Gold, P.E. Modulation of memory formation by glucose. *Neurobiology of Learning and Memory*. [Invited.]
- Newman, L.A., Scavuzzo, C.J., Korol, D.L., and Gold, P.E. Differential activation of astrocytic glycogenolysis in hippocampus and striatum during place and response learning.

INVITED PRESENTATIONS

- Workshop on "Behavioral and Physiological Definitions of Learning," Social Science Research Council, New York, 1973.
- Conference on "Current Research Approaches to the Neural Mechanisms of Learning and Memory," Pacific Grove, California, 1974.
- Society for Neuroscience, "The Role of Catecholamines in Learning and Memory," Physiological Psychology Special Interest Dinner, New York, 1975.
- Neuroscience Research Program, Conference on "The Hippocampus," Woods Hole, 1976.
- Gordon Research Conference on Medicinal Chemistry, "Drugs and Memory," Colby, New Hampshire, 1976.
- H.R. Robins Lecture Series, "Drug Facilitation of Memory Processes," Richmond, Virginia, 1976.
- Gordon Research Conference on Macromolecules and Behavior, "Drug Effects on Learning and Recall," Wolfeboro, New Hampshire, 1977.
- First Winter Conference on Neurobiology of Learning and Memory, "Norepinephrine and Memory," Salt Lake City, Utah, 1977.
- Gordon Research Conference, "Catecholamine Modulation of Memory Processing," Tilton, New Hampshire, 1977.
- Fourth International Catecholamine Symposium, "Hormonally Mediated Noradrenergic Modulation of Memory," Asilomar, California, 1978.
- Third Winter Conference on Neurobiology of Learning and Memory, "What is the role of arousal in mnemonic function?" Park City, Utah, 1979.
- Gordon Research Conference on Macromolecules and Behavior, "Hormonal Modulation of Memory Processes," Wolfeboro, New Hampshire, 1979.
- NRC Conference on Aging, Discussant on "Neurobiology and Aging," Woods Hole, Massachusetts, 1979.
- Fourth Winter Conference on Neurobiology of Learning and Memory, "Peripheral Hormones and Memory," Park City, Utah, 1980.
- Sixth International Neurobiology Symposium on Learning and Memory, "Catecholamine Modulation of Memory Formation," Magdeburg, G.D.R., 1980.
- Conference on the Neurobiology of Learning and Memory, "Modulation of Brain Plasticity," Irvine, California, 1982.
- American Psychological Association Annual Meeting, Symposium on Research Strategies in Pharmacology of Memory, "Epinephrine Regulation of Neuronal Plasticity," Toronto, Ontario, 1984.
- Harvard Symposium on Quantitative Analyses of Behavior: Biological Determinants of Behavior, "Role of Epinephrine in Mediating Reinforcement Effects of Memory Storage," Cambridge, Massachusetts, 1984.
- Association of University Anesthetists, "Learning Under Anesthesia," Santa Monica, California, 1985.
- Seventh International Biological Symposium, "Memory Enhancement with Post training Glucose Injections," Magdeburg, G.D.R., 1985.
- University of Virginia Diabetes Center, "Sweet Memories," Charlottesville, Virginia, 1986.
- American Society for Pharmacology and Experimental Therapeutics, "Adrenergic Mechanisms in Neuronal Plasticity," Baltimore, Maryland, 1986.
- International Union of Physiological Sciences, "Cellular Mechanisms of Conditioning and

Behavioral Plasticity," Seattle, Washington, 1986.

Winter Conference on Brain Research, Workshop Chair, "Catecholamine Regulation of Neuronal Plasticity and Memory," Vail, 1987.

Searle Lecture Series, "Neuroendocrine Regulation of Memory Storage," Skokie, Illinois, 1987.

Gordon Research Conference on Neural Plasticity, "Hormones and Memory," Wolfeboro, New Hampshire, 1987.

National Institute on Aging, Workshop on Memory and Aging, "Neuroendocrine factors in age-related memory dysfunctions: Studies in animals and humans," Baltimore, 1987.

Smithsonian Lecture, "Sweet Memories," Washington, D.C., 1988.

American Psychological Association Fellows Address, "Neuroendocrine regulation of memory storage processing," Atlanta, 1988.

International Conference on Aging and Longevity: The potential for nutritional modulation of the aging process. The involvement of glucose and glucose regulation on memory in rodents and humans. New York, 1988.

Sixth International Symposium on Neural Control of Bodily Function: Basic and Clinical Aspects. Peripheral Signaling of the Brain: Role of Neural-Immune Interactions and Learning and Memory, "An integrated memory regulation system: From blood to brain," Irvine, 1989.

Fourteenth Winter Conference on the Neurobiology of Learning and Memory, Session on "Comparisons between animal models of memory disorder and human amnesia." Park City, 1990.

Conference on Affect and Flashbulb Memories, Emory University, Atlanta, 1990.

American Psychological Society, Invited Address, "Glucose regulation of memory in animals and humans: Implications for aging." Dallas, 1990.

The Federation of Behavioral, Psychological and Cognitive Sciences, Science and Public Policy Seminar, Rayburn House Office Building, Washington, 1990.

Kendon Smith Lectures: Molecular Mechanisms Underlying Learning and Memory, "Regulation of memory storage processing by glucose levels in rodents and humans." University of North Carolina at Greensboro, 1990.

American College of Neuropsychopharmacology, Panel on: Animal Models of Disorders in Aging: A Neurochemical Perspective: "Common biological markers of aging in rodents and humans." San Juan, P.R., 1990.

NIH Coordinating Committee on Alzheimer's Disease, "Glucose attenuation of age related deficits in sleep and memory." Bethesda, 1991.

Fifth Conference on the Neurobiology of Learning and Memory, "Modulation of emotional and non-emotional memories: Same pharmacological systems, different neuroanatomical systems." Irvine, CA, 1992.

Commonwealth Center for Literary and Cultural Change, "Emotions and Memory." Charlottesville, VA, 1992.

NIH, "Glucose regulation of memory," Bethesda, 1993.

International Life Sciences Institute, "Glucose and memory," Washington, 1993.

Princeton University, 50th Class Reunion, "Aging and memory," Princeton, 1993.

University of Toronto, Rotman Institute, "Glucose regulation of brain function in healthy elderly and in Alzheimer's patients," Toronto, 1993.

American Psychological Society, Fifth Annual Convention, Invited Address, "Cognitive enhancers in animals and humans: From hormones to brains," Chicago, 1993.

American Society for Clinical Nutrition, New Dimensions in Carbohydrates, "The role of glucose in regulating brain and cognition," Washington, 1993.

Kellogg Nutrition Symposium, "Implications of increased carbohydrate consumption in a healthy diet," Toronto, 1994.

XIXth Collegium Internationale Neuro-Psychopharmacologicum Congress, Co-chair of Symposium: "Drug Enhancement of Cognitive Processes: Animal Models and Research Strategies." Presentation: "Pharmacological enhancement of memory formation in rodents and humans. Washington, DC, 1994.

McGill University, D.O. Hebb Lecture, "Glucose regulation of memory formation in rodents and humans," Montreal, 1994.

Eastern Psychological Association, "Cognitive enhancers and aging: Pharmacology of memory in rodents and humans," Boston, 1995.

Kellogg Company, Symposium on School Breakfast and Learning, Napa, CA, 1995.

American Dietetic Association, "The role of nutrition in brain function." Chicago, 1995.

Memory Disorders Society, "Cognitive enhancers and Alzheimer's Disease." Cambridge, Massachusetts, 1996.

Asian Breakfast and Nutrition Symposium, "The role of glucose in regulating the brain and cognition," Bangkok, Thailand, 1997.

American Psychological Society, Distinguished Fellows Discussion, "The present as the future's past: From physiological psychology to behavioral neuroscience to where?" Washington, 1997.

Nippon Kashi Better Business Association, "Sugar and memory." Tokyo, 1998.

Morinaga and Co., Ltd. "Nutritional influences on cognition." Tokyo, 1998.

International Behavioral Neuroscience Society, "Neurochemical mechanisms for glucose effects on cognition," Richmond, VA, 1998.

American Psychological Association Invited Address, "Linking research on humans and other animals: Cognitive enhancers in rats, mice and humans." San Francisco, 1998.

International Life Sciences International, Invited Address, "Glucose effects on brain and cognition," Washington, D.C. 1998.

Forty Years of Memories: A Festschrift for James L. McGaugh, "From memory consolidation to modulation and beyond." Irvine, California, 1998.

In-service program, Kettle Moraine School District, "Breakfasts and cognition in school children." Kettle-Moraine, Wisconsin, 2000.

Achieving Cognitive Vitality with Aging, "Interventions to prevent cognitive decline in animal models." Tucson, Arizona, 2000.

University of Southern Illinois, "Regulation of memory formation," Carbondale, 2001.

Initiative on Aging, "Aging and Memory," Urbana, 2002.

University of Illinois Retirees, "Sweet Memories," Urbana, 2002.

Experimental Biology 2002, Translating Biomarkers of Physiologic Function to Practical Clinical Application, "Biomarkers of energy stimulation and cognitive function." New Orleans, 2002.

St. Louis University, James Flood Memorial Lecture, "A Neuroendocrine Perspective on Aging and Memory." St. Louis, 2002.

American Psychological Society, "Gingko and Memory: A Report," New Orleans, 2002.

University of Illinois, Nutritional Science Program, "Glucose regulation of brain functions." Urbana, 2002.

University of Illinois College of Medicine, "Neuroendocrine contributions to age-related changes in cognition." Peoria, 2003.

Winter Conference on Neurobiology of Learning and Memory, (Chair). Symposium on "Acetylcholine: Roles in memory," "ACh as a marker of the relative participation of neural systems in learning and memory." Park City, 2003.

University of Tennessee, School of Medicine, "Neuroendocrine orchestration of a memory system symphony." Memphis, 2003.

Northwestern University Medical School, "Role of glucose in age-related changes in memory in rodents and humans." Chicago, 2003.

Midwestern Psychological Association, Symposium on "Neural system interactions within the context of learning and memory," "Competition and cooperation across memory systems: Regulation by acetylcholine release." Chicago, 2003.

University of Illinois Neuroscience Program, "Personal history and lessons of the past." Homer Lake, IL, 2003.

University of Illinois, Department of Psychology Brain and Cognition Area, "Neurochemical regulation of multiple memory systems in the rat," Urbana, 2003.

University of Illinois, Neuroscience Program, "How sweet it is--or was: the role of glucose in age-related changes in memory," Urbana, 2003.

University of Illinois, Illinois Program on Research in the Humanities, "Rethinking the emeritus," Urbana 2003.

Society for Neuroscience Satellite Symposium on "Independence and interaction among multiple memory systems," "Cholinergic regulation of interactions and balances between memory systems." New Orleans, 2003.

Winter Conference on Neurobiology of Learning and Memory, (Chair). "Multiple Memory Systems," "Regulation of Interactions and Balances Between Memory Systems," Park City, Utah, 2004.

McGill University, "How sweet it is--or was: The role of glucose in age-related changes in memory," Montreal, 2004.

MIT, Symposium on "Our Brains and Us: Neuroethics, Responsibility and the Self, Session title: "Neuroscience and Therapeutic and Non-therapeutic Interventions;" Presentation title: "Drug Enhancement of Memory Formation, Strategy Selection and Decision Making," Cambridge MA, 2005.

University of Illinois, Brain and Cognition Group, "A rat's perspective/ Bad fur day?/ Make good choices/ anyway," Urbana 2005.

University of Illinois, Institute for Genomic Biology Fellows Symposium on "The Future of Biology," "Genomics of neural plasticity and memory: Is the answer in the timing?" Urbana, 2007.

XXII Annual Congress of the Brazilian Federation of the Societies for Experimental Biology. Neurobiology of Learning and Memory: *A Symposium in Honour of Iván Antonio Izquierdo*, "The many faces of amnesia." Águas de Lindóia, São Paulo, Brazil, 2007.

Carle Hospital, Community Medical School, Panel on "Sleep Disorders," presentation on "Sleep deprivation and memory," Urbana, 2007.

American Society for Neurochemistry, Colloquium title: "Novel roles of energy metabolites and nutrient-sensing systems in energy balance, memory, and diseases: A new perspective of functional metabolism." Presentation title: "Regulation of learning and memory by glucose: Fueling new ideas about roles of sugar in molecular and cellular biology." San Antonio, Texas, 2008.

University of Illinois, Advances in Sensory and Developmental Neuroscience, "How sweet it is ... or was: Glucose, memory and aging." Urbana, 2008.

Winter Memory Conference, "Protein synthesis inhibitors and memory: And now, the other side of the story," Park City, UT, 2008.

University of Illinois, Osher Lifelong Learning Institute, Your Brain and You: Aging and Memory. Champaign, 2008.

Southern Illinois University, "Integrative physiology of age-related changes in memory," Carbondale, IL, 2008.

University of Illinois – Chicago College of Medicine, Department of Hepatology. Regulation of memory formation by circulating glucose levels. Chicago, 2008.

Miami University Department of Psychology, "Old Memories," Colloquium in honor of the retirement of Professor Phillip J. Best, Miami, OH, 2008.

University of Wisconsin Department of Physiology, Epinephrine and glucose regulation of memory and neural plasticity: applications to aging. Madison, WI, 2008.

University of Illinois Department of Molecular and Integrative Physiology. Integrative physiology of age-related changes in memory. Urbana, IL, 2009.

Carle Hospital, Department of Internal Medicine, Ginkgo biloba for prevention of dementia: Social and ethics costs. Urbana, IL, 2009.

University of California, Irvine, Department of Neurobiology and Behavior. Age-related memory impairments: A problem of insufficient memory modulation. Irvine, CA 2009.

University of Illinois, Osher Lifelong Learning Institute, Food for Thought. Champaign, 2009.

Instituto de Neurobiología, Universidad Nacional Autónoma de México. Integrative physiology of age-related changes in memory. In: Symposium on Learning and Memory, Querétaro, Querétaro, 2009.

34th Winter Conference on the Neurobiology of Learning and Memory, Session on "Does Synaptic Protein Translation Underlie Memory Consolidation?" Moderator. Park City, 2010.

Center for the Neurobiology of Learning and Memory 25th Annual Spring Meeting. Keynote speaker: Molar to Molecular Memory Systems. University of California, Irvine, 2010.

2010 BIO International Convention, Can we reverse memory loss during aging? Chair and panelist. Chicago, 2010.

University of Illinois Center on Health, Aging and Disability – Health and Wellness Research Initiative: Investigating Social Determinants of Health. Cellular and Molecular Aspects of Stress. Champaign IL, 2010.

University of Texas at San Antonio, Department of Biology, Neurobiology Seminar Series. Integrative physiology underlying age-related memory deficits. San Antonio, 2010.

35th Winter Conference on the Neurobiology of Learning and Memory, Session on "What do glia have to do with neural plasticity and memory?" Chair. Presentation: "Making Memories Metabolic." Park City, 2010.

University of Illinois, Brain and Cognition Group, Liver, Glia and Memory, Champaign, 2011.

University of Wisconsin, Department of Psychiatry, Astrocytes and Memory, Madison, 2011.

University of Colorado, Center on Neuroscience, Making Memories Metabolic:

Integrative Physiology of Memory, Boulder, 2011.

University of Illinois, Project Neuron, Food for thought - chemicals that change your mind ... and your brain. Orpheum Museum, Champaign, 2011.

Syracuse University, Department of Biology, Integrative multi-organ physiology of age-related changes in memory and brain plasticity, Syracuse, 2011.

University of Illinois, Chicago, Neuroscience Program, Making Memories Metabolic: Integrative Physiology of Memory, Chicago, 2011.

Society for Neuroscience Satellite Symposium, Independence and interaction of multiple memory systems. Making Memories Metabolic in Multiple Memory Modules. New Orleans, 2012.

Dartmouth University, Making Memories Metabolic- A Role for Astrocytes. Hanover NH, 2012.

Upstate Medical University, Regulating Memory Formation Is Not Where You Think: Integrating Adrenal Hormones, Liver and Astroglia. Syracuse, NY, 2012.

The Neurobiological Basis of Memory: A System, Attribute, and Process Analysis (A Festschrift in Honor of Raymond P. Kesner). A Role for Astrocytes in Modulating Memory across Distinct Memory Systems. Salt Lake City, 2013.

PAPERS PRESENTED AT PROFESSIONAL SOCIETIES

- Gold, P.E. Neurobiological correlates of retrograde amnesia: A problem of generality. Symposium on "Neural Systems Analyses of Memory." Annual Convention of the American Psychological Association, 1972.
- Gold, P.E. and McGaugh, J.L. Retrograde amnesia thresholds and gradients: Role of localized cortical stimulation and its electrophysiological consequences. Society for Neuroscience, Second Annual Meeting, Houston, 1972.
- Gold, P.E. The "reminder effect": A memory storage interpretation. Symposium on "Brain Stimulation and Amnesia: A Storage or Retrieval Failure?" Annual Convention of the American Psychological Association, Montreal, 1973.
- Gold, P.E. and McGaugh, J.L. Retrograde amnesia produced by unilateral and bilateral subseizure stimulation of the amygdala. Society for Neuroscience, Third Annual Meeting, San Diego, 1973.
- Gold, P.E., van Buskirk, R.B., and McGaugh, J.L. Effects of hormones on time dependent memory storage processes. International Society for Psychoneuroendocrinology, Fifth International Congress, Utrecht, The Netherlands, 1974.
- van Buskirk, R.B., Gold, P.E., and McGaugh, J.L. Mediation of epinephrine effects on memory processes by alpha and beta receptors. International Society for Psychoneuroendocrinology, Fifth International Congress, Utrecht, the Netherlands, 1974.
- McGaugh, J.L., Gold, P.E., van Buskirk, R.B., and Haycock, J.W. Modulating influences of hormones and catecholamines on memory storage processes. International Society for Psychoneuroendocrinology, Fifth International Congress, Utrecht, The Netherlands, 1974.
- Gold, P.E., Handwerker, M.J., Rose, R.P., Spanis, C., and McGaugh, J.L. Effects of posttrial amygdala stimulation on retention of avoidance training. Society for Neuroscience, Fourth Annual Meeting, St. Louis, 1974.
- van Buskirk, R.B. and Gold, P.E. Hormonal modulation of time dependent memory processes. Society for Neuroscience, Fourth Annual Meeting, St. Louis, 1974.
- Hankins, L., Rose, R.P., Gold, P.E., and McGaugh, J.L. Effects of ACTH on retention of avoidance training on hypophysectomized rats. Annual Convention of the Western Psychological Association, Sacramento, 1975.
- Rose, R.P., Hankins, L., Gold, P.E., and McGaugh, J.L. Effect of Posttrial Amygdala stimulation on retention of inhibitory avoidance training. Annual Convention of the Western Psychological Association, Sacramento, 1975.
- Gold, P.E. Catecholaminergic modulation of memory processes. Society for Neuroscience, Fifth Annual Meeting, New York, 1975.
- Gold, P.E. and McGaugh, J.L. Hormones and memory. Bicentennial Peptide Conference. Philadelphia, 1976.
- Gold, P.E. Phenoxybenzamine attenuation of retrograde amnesia. Society for Neuroscience, Seventh Annual Meeting, Anaheim, 1977.
- Sternberg, D.B. and Gold, P.E. Adrenergic antagonists: Attenuation of retrograde amnesia. Society for Neuroscience, Ninth Annual Meeting, Atlanta, 1979.
- Gold, P.E. and Murphy, J.M. Brain norepinephrine and retrograde amnesia. Society for Neuroscience, Ninth Annual Meeting, Atlanta, 1979.
- Murphy, J.M., Cooley, S.G., and Gold, P.E. Enhancement of 24 hour retention in

- preweanling rats by posttraining hormone administration. Society for Neuroscience, Ninth Annual Meeting, Atlanta, 1979.
- McCarty, R. and Gold, P.E. Plasma catecholamine responses to training and posttrial memory modulators. Society for Neuroscience, Ninth Annual Meeting, Atlanta, 1979.
- Gold, P.E. and Welsh, K.A. Retrograde amnesia produced by electrical stimulation of the amygdala: Relationship to effects on cortical norepinephrine concentration. Society for Neuroscience, Ninth Annual Meeting, Atlanta, 1979.
- Welsh, K.A. and Gold, P.E. Brain noradrenergic responses to single training footshock in the aging rat. Society for Neuroscience, Eleventh Annual Meeting, Los Angeles, 1981.
- Delanoy, R.L., Tucci, D.L., and Gold, P.E. Modulation of long term potentiation (LTP) by amphetamine. Society for Neuroscience, Eleventh Annual Meeting, Los Angeles, 1981.
- Sternberg, D.B., McGaugh, J.L., and Gold, P.E. Propranolol induced attenuation of both memory facilitation and amnesia produced by frontal cortex stimulation. Society for Neuroscience, Eleventh Annual Meeting, Los Angeles, 1981.
- Delanoy, R.L., Merrin, J.S., and Gold, P.E. Modulation of long term potentiation by adrenergic agonists. Society for Neuroscience, Twelfth Annual Meeting, Minneapolis, 1982.
- Welsh, K.A., Kingslow, L., and Gold, P.E. Effects of a single epinephrine injection on amygdala seizures and kindling. Society for Neuroscience, Twelfth Annual Meeting, Minneapolis, 1982.
- Sternberg, D.B., Gold, P.E., and McGaugh, J.L. Epinephrine facilitation of appetitive learning. Conference on Neurobiology of Learning and Memory, Irvine, California, 1982.
- Zornetzer, S.F., McGaugh, J.L., Gold, P.E., and Sternberg, D.B. Adrenergic influences in age related changes in memory. Gerontological Society of America, Annual Meeting, San Francisco, 1983.
- Welsh, K.A. and Gold, P.E. Age related changes in kindled seizure development. Society for Neuroscience, Thirteenth Annual Meeting, Boston, 1983.
- Sternberg, D.B., Gold, P.E., Martinez, J.L., and McGaugh, J.L. Epinephrine facilitation of memory performance in aged mice. Society for Neuroscience, Thirteenth Annual Meeting, Boston, 1983.
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- Rubinow, M.J. and Gold, P.E. Competition between memory systems: Posttraining intrahippocampal glucose injections enhance memory for place training, and impair memory for response training. Society for Neuroscience, 30th Annual Meeting, New Orleans, 2000.
- McNay, E., Canal, C.E. and Gold, P.E. Memory modulation and energy demands: septal manipulations reflected in hippocampal ecf glucose levels. Seventh Conference on the Neurobiology of Learning and Memory - Making Memories in the Brain: Orchestration of Cells and Systems. Irvine, CA, 2001.
- Kim M., Pych, J. and Gold, P.E. Competition between memory systems: Facilitation of striatal function by microinfusion of glucose impairs spatial learning in a y-maze. Seventh Conference on the Neurobiology of Learning and Memory - Making Memories in the Brain: Orchestration of Cells and Systems. Irvine, CA, 2001.
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- Canal, C.E., Stutz, S.J., and Gold P.E. Impairment of learning in a t-maze following intrastriatal but not intrahippocampal glucose injections. Society for Neuroscience, 31st Annual Meeting, San Diego, 2001.
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- Savage, L.M, Chang, Q. and Gold, P.E. Interactions between diencephalic damage and hippocampal functioning in rats. Society for Neuroscience, 32nd Annual Meeting, Orlando, 2002.
- Abbott, S.M., Chang, Q., Gold, P.E., and Gillette, M.U. Cholinergic regulation of mammalian circadian rhythms and the sleep-wake cycle. Society for Neuroscience, 33rd Annual Meeting, New Orleans, 2003.
- Canal, C.E., McNay, E.C., and Gold, P.E. Increases in glucose levels in hippocampal ECF and blood during ketamine or pentobarbital anesthesia. Society for Neuroscience, 33rd Annual Meeting, New Orleans, 2003.

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- Canal, C.E. and Gold, P.E. Amygdala CREB antisense impairs 48-hr memory of inhibitory avoidance *and* spatial t-maze training yet dorsal hippocampus CREB antisense impairs memory *only* of spatial t-maze training. Society for Neuroscience, 34th Annual Meeting, San Diego, 2004.
- Chang, Q., Falesch, L.A. and Gold, P.E. Age-related changes in spatial working memory and release of acetylcholine (ACh) in the hippocampus of Ts65Dn mice, a model of Down Syndrome. Society for Neuroscience, 34th Annual Meeting, San Diego, 2004.
- Canal, C.E. and Gold, P.E. Amygdala anisomycin impairs short- and long-term memory of inhibitory avoidance. Society for Neuroscience, 35th Annual Meeting, Washington, DC, 2005.
- Chapa, G.R., Wiczorek, L.A., and Gold, P.E. Effects of chronic and acute stress on response and place learning in rats. Society for Neuroscience, 35th Annual Meeting, Washington, DC, 2005.
- Pych, J.C., Chang, Q., Colon-Rivera, C., Haag, R.N., and Gold, P.E. Acetylcholine release in the rat hippocampus differentially modulates response learning according to the availability of visual extra-maze cues. Society for Neuroscience, 35th Annual Meeting, Washington, DC, 2005.
- Chang, Q., Canal, C.E., and Gold, P.E. Injections of creb antisense into the amygdala impair memory for inhibitory avoidance training and reduce the training-related release of norepinephrine. Society for Neuroscience, 35th Annual Meeting, Washington, DC, 2005.
- Countryman, R.A. and Gold, P.E. Region-specific decreases in CREB and pCREB in hippocampus of aged rats after learning a socially transmitted food preference. Society for Neuroscience, 35th Annual Meeting, Washington, DC, 2005.
- Haag, R.N. and Gold, P.E. Acute and chronic injections of corticosterone enhance spontaneous alternation behavior in male Sprague-Dawley rats. Society for Neuroscience, 35th Annual Meeting, Washington, DC, 2005.
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- Beshers, S., Kandalepas, P.C., Chiba, A., and Gold, P.E. The Carnegie Initiative on the Doctorate and the drive for excellence: Program innovations at the University of Illinois. Society for Neuroscience, 35th Annual Meeting, Washington, DC, 2005.
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- Haag, R.N., Chapa, G.R., Wiczorek, L.A., and Gold, P.E. Acute stress but not corticosterone administration enhances response learning. Society for Neuroscience, 36th Annual Meeting, Atlanta, 2006.
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- Morris, K.A., Chang, Q. and Gold, P.E. Age-dependent differences in acetylcholine release in the ventral hippocampus during epinephrine- and glucose-mediated enhancement of memory in Fischer-344 rats. Society for Neuroscience, 37th Annual Meeting, San Diego, 2007.
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- Qi, Z., and Gold, P.E. Intrahippocampus infusions of anisomycin increase local release of norepinephrine, dopamine, and acetylcholine while causing amnesia. Society for Neuroscience, 38th Annual Meeting, Washington, D.C., 2008.
- Sadowski, R.N. and Gold, P.E. Systemic administration of epinephrine impairs place and response learning in a dose dependent manner. Society for Neuroscience, 38th Annual Meeting, Washington, D.C., 2008.
- Morris, K.A. and Gold, P.E. Glucose reverses age-related memory impairments while attenuating deficits in creb activation in rats. Society for Neuroscience, 39th Annual Meeting, Chicago, 2009.
- Gold, P.E., Sadowski, R.N. and Canal, C.E. Lidocaine attenuates both anisomycin-induced impairments of memory and associated large increases in norepinephrine release in the amygdala. Society for Neuroscience, 39th Annual Meeting, Chicago, 2009.
- Wrenn, S., and Gold, P.E. Cycloheximide enhancement or impairment of memory as a function of footshock intensity. Society for Neuroscience, 39th Annual Meeting, Chicago, 2009.
- Sadowski, R.N., Scavuzzo, C.J., and Gold, P.E. Combined prior food deprivation and spontaneous alternation testing impair inhibitory avoidance memory. Society for Neuroscience, 39th Annual Meeting, Chicago, 2009.
- Gold, P.E., Scavuzzo, C.J., and Korol, D.L. Physical and cognitive activity induce changes in brain and liver glycogen levels in young adult male Sprague-Dawley rats. Society for Neuroscience, 39th Annual Meeting, San Diego, 2010.
- Morris, K.A., and Gold, P.E. Mechanisms of epinephrine- and glucose-mediated

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- Cudzilo, K., Morris, K.A., Gold, P.E., and Sweedler, J.V. Peptide release in the rat hippocampus measured with *in vivo* microdialysis sampling followed by mass spectrometry after morphine, maze training and diet changes. Society for Neuroscience, 39th Annual Meeting, San Diego, 2010.
- Newman, L.A., and Gold, P.E. The role of hippocampal astrocytic glycogen in working memory. Society for Neuroscience, 39th Annual Meeting, San Diego, 2010.
- Luszbek, A.E., Morris, K.A., Cudzilo, K., Chen, X., Gold, P.E., and Sweedler, J.V. Analysis of neuropeptide release in response to acute morphine injection and maze testing in rat hippocampus measured with *in vivo* microdialysis followed by mass spectrometry. Society for Neuroscience, 40th Annual Meeting, Washington DC, 2011.
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- Gold, P.E., Scavuzzo, C.J., Korol, D.L., and Newman, L.A. Hippocampal extracellular lactate increases during learning: a role for astrocytes in learning and memory. Society for Neuroscience, 40th Annual Meeting, Washington DC, 2011.
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