

## CURRICULUM VITAE

Paul E. Gold

Distinguished Professor  
Department of Biology  
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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:*

Predocctoral 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-  
Inaugural Luttge Lectureship, Evelyn F. & William L. McKnight Brain Research Institute, University of Florida, 2013  
James K. Duah-Agyeman Faculty Award, Center for Graduate Preparation and Achievement, Syracuse University, 2014

**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-

Member, Aging Studies Institute, 2013-

Posse Foundation mentor for LA Posse 2 scholars, 2013-

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-in-Chief, *Psychobiology* (1990-7)  
 Editorial Boards: *Behavioral Neuroscience*; *Neurobiology of Learning and Memory*;  
*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*; *International Journal  
 of Brain Science*  
 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, 2003-2012  
 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, NIH National Institute on Aging Review Panel, 2009  
 Member, NIH Neurotoxicology and Alcohol Study Section, 2010.

Chair, NIH National Institute on Aging Review Panel, 2010  
 Member, NSF Review Panel, Modulation of Neural Systems, 2011  
 Member, NIH Review Panel, Learning and Memory Study Section, 2014  
 Member, Reviewer, Marko Spark Innovation Research Fund in Memory, Cognition, and Neurodegeneration, Tulane Brain Institute, 2016  
 Member, Texas A & M University Academic Program Review Team, Institute for Neuroscience, 2017  
 Outside evaluator, Department of Psychology, Binghamton University  
 Member, Review Board for Alzheimer's Association, 2003-  
 Member, International Rett Syndrome Foundation Scientific Review Board, 2009-

***University of Illinois:***

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 Assistant Director; Search Committee for Administrative Assistant; 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  
 Chair, Admissions Committee  
 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:***

Member, Dean's Committee for Endowed Professorship, 2012

SU Advance Partner, 2013-

Member, College of Arts and Science Promotion and Tenure Committee, 2013-2016

Member, Department of Biology Graduate Committee, 2013-2015

Mentor, POSSE Program, Los Angeles 2, 2013-

Member, Department of Biology Chair's Advisory Cabinet, 2014-

**Research Foci:** Neurobiology of neural plasticity, memory, aging

**Current projects include:**

- Pharmacological enhancement of memory and neural plasticity in models of aging and cognitive dysfunctions
  - Systems and cellular mechanisms of drug enhancement of memory
  - Integrative physiological bases of age-related changes in learning and memory – from hormones to liver to brain
  - Cognitive ‘priming’ of learning and memory in young and aged rats
- Regulation of memory processing by astrocytic glycogenolysis and lactate production
  - Long-term effects of experience on brain glycogen and lactate
- *In vivo* microdialysis / HPLC and biosensor assessments of neurotransmitter release and extracellular brain glucose and lactate levels in rats and mice during behavioral testing
- Brain glucose regulation of brain functions in mouse models of Alzheimer’s Disease and Down Syndrome
- Acute and long-term effects of drugs of abuse on brain metabolism
- Role of protein synthesis and signal transduction molecules in memory formation
- Effects of stress on neural plasticity and memory
  - Neurotransmitter and hormonal regulation of induction and maintenance of long-term potentiation

**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
- 2009-2012 Alzheimer's Association: Glucose, K-ATP channels and memory in mouse models of AD and DS
- 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)
- 2013-2015 The Center for Aging and Policy Studies (CAPS), Syracuse University: Energizing the aged brain for optimal learning and memory
- 2013-2015 The Center for Aging and Policy Studies (CAPS), Syracuse University: Use it and boost it: Enhancing cognition in elderly rats with prior mental activity. (co-PI; PI: D. Korol)

*Current:*

- 1994- Private donor: Glucose effects on cognitive functions
- 2010-2016 NIA: NRSA, predoctoral, on behalf of Mr. Kenneth Morris
- 2011-2017 NSF: Contributions of astrocytes to metabolic modulation of memory.
- 2015-2020 NIH: Mechanisms of cognitive deficits in dystroglycanopathies (co-I; PI: Huaiyu Hu [Upstate Medical University]).
- 2015-2017 NIDA: Durable changes in cognition and astrocytic bioenergetics after drug experience

*Submitted:*

- 2016-2021 NIH: Astrocytic target mechanisms in obesity (co-I; PI: Yunlei Yang [Upstate Medical University])
- 2017-2019 NIA: Age-related changes in learning and memory mediated through noradrenergic regulation of astrocytes. (co-PI; PI: Donna Korol, Syracuse University)

*Planned:*

- 2018-2023 NIA: Age-related changes in brain glucose regulation of learning and memory
- 2018-2023 NIA: Priming the aged brain with cognitive and physical exercise (co-I; PI: Donna Korol)
- 2018-2023 NINDS: Plasticity within astrocytes – long-lasting changes in brain glycogen after experience
- 2018-2023 NIH: Diabetes, brain energy substrates, and cognition (co-I; PI: Donna Korol)
- 2018-2023 NIA: Astrocyte role in accelerated forgetting rates during aging

***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).  
 2003-2013 NICHD: Developmental Psychobiology and Neurobiology (Preceptor).

*Consultant:*

- 1996-1999 Private donor: Nutritional influences on cognition in the elderly. (D. Korol, D. Willingham, Dept. Psychology, U. Virginia, 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. Fahrback, 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. Gloria Chapa, University of Illinois  
 2007-2010 Dr. Todd Coleman, University of Illinois



## BIBLIOGRAPHY

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- Gold, P.E. and King, R.A. (1972). Amnesia: Tests of the effect of delayed footshock-electroconvulsive shock pairings. *Physiology and Behavior*, 8, 797-800.
- 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.
- Gold, P.E. and King, R.A. (1972). Caudate stimulation and retrograde amnesia: Amnesia threshold and gradient. *Behavioral Biology*, 7, 709-715.
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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.
- Gold, P.E. and McGaugh, J.L. (1973). Relationship between amnesia and brain seizures in rats. *Physiology and Behavior*, 10, 41-46.
- Gold, P.E., Macri, J., and McGaugh, J.L. (1973). Retrograde amnesia gradients: Effects of direct cortical stimulation. *Science*, 197, 1343-1345.
- Gold, P.E., Bueno, O., and McGaugh, J.L. (1973). Task related differences in amnesia thresholds: Direct cortical stimulation. *Physiology and Behavior*, 11, 57-63.
- Gold, P.E., Macri, J., and McGaugh, J.L. (1973). Retrograde amnesia produced by subseizure amygdala stimulation. *Behavioral Biology*, 9, 671-680.
- Gold, P.E., Haycock, J., Macri, J., and McGaugh, J.L. (1973). Retrograde amnesia and the "reminder effect": An alternative interpretation. *Science*, 180, 1199-1201.
- Haycock, J., Gold, P.E., Macri, J., and McGaugh, J.L. (1973). Noncontingent footshock "attenuation" of retrograde amnesia: A generalization effect. *Physiology and Behavior*, 11, 99-102.
- McGaugh, J.L. and Gold, P.E. (1973). Impairment of memory storage processes by electrical stimulation of the brain. In: S. Bogoch (Ed.), Biological Diagnosis of Brain Disorders. New York: Spectrum Publications, Inc., pp. 153-164.
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- McGaugh, J.L. and Gold, P.E. (1974). Conceptual and neurobiological issues in studies of treatments affecting memory storage. In: G.H. Bower (Ed.), The Psychology of Learning and Motivation, Volume 8. New York: Academic Press, pp. 233-262.
- Gold, P.E., Macri, J., and McGaugh, J.L. (1973). Retrograde amnesia produced by

- subseizure amygdala stimulation. *Behavioral Biology*, 9, 671-680.
- Gold, P.E., Haycock, J.W., and McGaugh, J.L. (1974). Retrograde amnesia and the "reminder effect." *Science*, 186, 1136.
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- Gold, P.E., Hankins, L., Edwards, R.M., Chester, J., and McGaugh, J.L. (1975). Memory interference and facilitation with posttrial amygdala stimulation: Effect on memory varies with footshock level. *Brain Research*, 86, 509-513.
- Gold, P.E., van Buskirk, R.B., and McGaugh, J.L. (1975). Age related changes in learning and memory. In: G. Maletta (Ed.), A Survey Report on the Aging Nervous System. Washington, D.C.: U.S. Government Printing Office, pp. 169-178.
- Gold, P.E. and McGaugh, J.L. (1975). A single trace, two process view of memory storage processes. In: D. Deutsch and J.A. Deutsch (Eds.), Short Term Memory. New York: Academic Press, pp. 355-390.
- Gold, P.E., Edwards, R.M., and McGaugh, J.L. (1975). Amnesia produced by unilateral, subseizure electrical stimulation of the amygdala in rats. *Behavioral Biology*, 15, 95-105.
- McGaugh, J.L., Gold, P.E., van Buskirk, R.B., and Haycock, J.W. (1975). Modulating influences of hormones and catecholamines on memory storage processes. In: W.H. Gispen, Tj.B. van Wimersma Greidanus, B. Bohus, and D. de Wied (Eds.), Hormones, Homeostasis, and the Brain (Progress in Brain Research, Volume 42). Amsterdam: Elsevier, pp. 151-162.
- Gold, P.E., van Buskirk, R.B., and McGaugh, J.L. (1975). Effects of hormones on time dependent memory storage processes. In: W.H. Gispen, Tj.B. van Wimersma Greidanus, B. Bohus, and D. de Wied (Eds.), Hormones, Homeostasis, and the Brain (Progress in Brain Research, Volume 42). Amsterdam: Elsevier, pp. 210-211.
- van Buskirk, R.B., Gold, P.E., and McGaugh, J.L. (1975). Mediation of epinephrine effects on memory processes by alpha and beta receptors. In: W.H. Gispen, Tj.B. van Wimersma Greidanus, B. Bohus, and D. de Wied (Eds.), Hormones, Homeostasis, and the Brain (Progress in Brain Research, Volume 42). Amsterdam: Elsevier, p. 210.
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- Gold, P.E. and van Buskirk, R.B. (1976). Effects of posttrial hormone injections on memory processes. *Hormones and Behavior*, 7, 509-517.
- Gold, P.E. and van Buskirk, R.B. (1976). Enhancement and impairment of memory processes with posttrial injections of adrenocorticotrophic hormone. *Behavioral Biology*, 16, 387-400.
- Gold, P.E. (1976). Electrical brain stimulation, amnesia and convulsions. *Convulsive Therapy Bulletin*, 1, 12.
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- localization of amnesic electrical stimulation sites within the amygdala in rats. *Behavioral Biology*, 20, 32-40.
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- Gold, P.E. and McGaugh, J.L. (1978). Endogenous modulators of memory storage processes. *Clinical Psychoneuroendocrinology in Reproduction*, 22, 25-46.
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- Gold, P.E. and van Buskirk, R.B. (1978). Effects of  $\alpha$ - and  $\beta$ -adrenergic receptor antagonists on post-trial epinephrine modulation of memory: Relationship to post-training brain norepinephrine concentrations. *Behavioral Biology*, 24, 168-184.
- Gold, P.E. and Sternberg, D.B. (1978). Retrograde amnesia produced by several treatments: Evidence for a common neurobiological mechanism. *Science*, 201, 367-369.
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- frontal cortex stimulation. *Physiology Biochemistry and Behavior*, 13, 257-263.
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- Gold, P.E. and Sternberg, D.B. (1980). Neurobiology of amnesia. *Science*, 209, 836-837.
- Gold, P.E. and McCarty, R. (1981). Plasma catecholamines: Changes after footshock and seizure producing frontal cortex stimulation. *Behavioral and Neural Biology*, 31, 247-260.
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- Chang, Q. and Gold, P.E. (2004). Inactivation of dorsolateral striatum impairs acquisition of response learning in cue-deficient but not cue-available conditions. *Behavioral Neuroscience*, 118, 383-388.
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- Gold, P.E. (2005). Glucose and age-related changes in memory. *Neurobiology of Aging*, 26S, S60-S64.
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- Gold, P.E. and Korol, D.L. (2012). Making memories matter. 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.
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- Abbott, S.M., Arnold, J.M., Chang, Q., Ota, N., Cecala, C., Gold, P.E., Sweedler, J.V., and Gillette, M.U. (2013). Signals from the brainstem arousal centers regulate behavioral timing via the circadian clock. *Plos One*, 8(8): e70481. doi:10.1371/journal.pone.0070481D.
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- Korol, D.L., Gold, P.E., and Scavuzzo, C.J. (2013). Use it and boost it with physical and mental activity. *Hippocampus*, 23, 1125-1135.
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- Maki, A.E., Morris, K.A., Catherman, K., Chen, X., Hatcher, N., Gold, P.E., and Sweedler, J.V. (2014). Fibrinogen- $\alpha$  chain-derived peptide is upregulated in hippocampus of rats exposed to acute morphine injection and spontaneous alternation testing. *Pharmacology Research & Perspectives*, 2 (3), e00037, doi:10.1002.
- Gold, P.E. and Korol, D.L. (2014). Forgetfulness during aging: An integrated biology. *Neurobiology of Learning and Memory*, 112, 130-138.
- Newman, L.A. and Gold, P.E. (2016). Attenuation in rats of impairments of memory by scopolamine, a muscarinic receptor antagonist, by mecamlamine, a nicotinic receptor antagonist. *Psychopharmacology*, 233, 925-932.

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- Gold, P.E. and Korol, D.L. (2016). Hormones and Memory. In: *Reference Module in Neuroscience and Biobehavioral Psychology*, 1–8.
- Gold, P.E. (2017). Protein synthesis and memory. Reference Module in Neuroscience and Biobehavioral Psychology (2nd edition). (J.H. Byrne, Editor-in-Chief; Susan Sara, Section Editor). pp. 1-18.
- Newman, L.A., Scavuzzo, C.J., Gold, P.E., and Korol, D.L. (2017). Training-induced elevations in extracellular lactate in hippocampus and striatum: Dissociations by cognitive strategy and type of reward. *Neurobiology of Learning and Memory*, 137, 142-153.
- Korol, D.L., Morris, K.A., Gold, P.E., Mitterling, K.L., Rocha-Cabrero, F. (2017). Bilateral injection of 6-OHDA into the dorsolateral striatum improves spatial working memory in rats: implications for Parkinson's disease. *Under revision*.
- Scavuzzo, C.J., Newman, L.A., Gold, P.E., and Korol, D.L. (2017). Task- and brain area-specific changes in brain glycogen and lactate in rats long after different cognitive experiences. *Under revision*.

## IN PREPARATION

- Scavuzzo, C.J., Gold, P.E., and Korol, D.L. Measurement of BDNF release in vivo during learning: Dissociations by task, brain structure, and physical fitness.
- Scavuzzo, C.J., Gold, P.E., and Korol, D.L. Priming with a spatial working memory task enhances place and response learning: a role for BDNF-TRKB signaling.
- Newman, L.A., Korol, D.L., 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., Hamling, B., Newman, L.A., and Korol, D.L. Lactate enhancement of memory in young adult and aged rats.
- Gardner, R.S., Newman, L.A., Mohler, E.G., Gold, P.E., and Korol, D.L. Age-related shifts in learning strategies lead to maintenance and enhancement of learning on striatal-sensitive tasks and impairments on hippocampal-sensitive tasks in rats: role of glucose.
- Pfander, J.E. and Gold, P.E. Flogging the child: Memory and law.
- Gold, P.E. Use and misuse of memory consolidation: Time to move on?
- Newman, L.A., Korol, D.L., and Gold, P.E. Memory deficits in Alzheimer's disease model mice coincide with appearance of amyloid plaques and are preceded by insensitivity to glucose enhancement of memory.
- Newman, L.A., and Gold, P.E. Inhibition of lactate transport impaired spatial working memory more in juvenile than in adult rats.
- 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.



## 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). Session title: "Multiple Memory Systems." Presentation title: "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." Presentation title: "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.* Presentation title: "The many faces of amnesia." Águas de Lindóia, São Paulo, Brazil, 2007.
- Carle Hospital, Community Medical School, Panel on "Sleep Disorders." Presentation title: "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. Symposium on "Learning and Memory." Presentation title: "Integrative physiology of age-related changes in memory." Querétaro, Querétaro, Mexico, 2009.
- 34<sup>th</sup> 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 25<sup>th</sup> 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. Symposium on: "Investigating Social Determinants of Health." Presentation title: "Cellular and Molecular Aspects of Stress." Champaign IL, 2010.
- University of Texas at San Antonio, Neuroscience Institute Distinguished Lecture, "Integrative physiology underlying age-related memory deficits." San Antonio, 2010.
- 35<sup>th</sup> Winter Conference on the Neurobiology of Learning and Memory, Session on "What do glia have to do with neural plasticity and memory?" Chair. Presentation title: "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 on "Independence and interaction of multiple memory systems." Presentation title: "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.
- University of Utah, "A Festschrift in Honor of Raymond P. Kesner." Presentation title: "A Role for Astrocytes in Modulating Memory across Distinct Memory Systems." Salt Lake City, UT, 2013.
- Boston University, "Making Memories Metabolic – and Making Metabolic Memories." Boston MA 2013.
- University of Florida, McKnight Brain Institute, Inaugural Luttge Lecture. Keynote speaker for Brain Awareness Week. "Making Memories Metabolic – and Making Metabolic Memories." Gainesville, FL, 2013.
- Upstate Medical University, Department of Neurosurgery Neuro Research Day. "Astrocytic regulation of brain energy and memory." Syracuse, NY, 2013.
- 11th International Conference on Brain Energy Metabolism, "Regulation of New Memories by Energy Metabolism and Regulation of Energy Metabolism by Old Memories." Helsingør, Denmark, 2014.
- Upstate Medical University, Biomedical Sciences Retreat, "Making Memories Metabolic – and Making Metabolic Memories." Skaneateles, NY, 2014.
- University of Connecticut, "Energetic Memories." Storrs, CT, 2014.
- Hamilton College, "Modulation of Neural Plasticity." Clinton, NY, 2015.
- University of Massachusetts, "An Integrative Physiology of Age-Related Changes in Memory." Amherst, MA, 2016.
- Manlius Senior Center, "Food for Thought: Chemicals that Change Your Mind." Manlius, NY, 2016.

## 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.
- Welsh, K.A., Stokes, K.A., and Gold, P.E. Spontaneous interictal spiking in the aged kindled rat. Society for Neuroscience, Fourteenth Annual Meeting, Anaheim, 1984.
- Gold, P.E. Amino acid and glucose enhancement of memory storage: Possible mediators of epinephrine effects on memory. Conference on the Neurobiology of Learning and Memory, Irvine, 1984.
- Hall, J.L. and Gold, P.E. Glycogenolysis as a modulator of memory storage. Society for Neuroscience, Fifteenth Annual Meeting, Dallas, 1985.
- Hall, J.L., Gonder Frederick, L., Vogt, J., and Gold, P.E. Glucose enhancement of memory in aged humans. Society for Neuroscience, Sixteenth Annual Meeting, Washington, D.C., 1986.
- Croul, C., Stone, W.S., and Gold, P.E. Scopolamine induced amnesia: Attenuation with amphetamine and glucose injections. Society for Neuroscience, Sixteenth Annual Meeting, Washington, D.C., 1986.
- Stone, W.S., Croul, C., Salustri, N., and Gold, P.E. Amygdala kindling effects on sleep and memory, and brain cholinergic systems: A new model of aging? Society for Neuroscience, Sixteenth Annual Meeting, Washington, D.C., 1986.
- Stone, W.S., Cottrill, K.L., and Gold, P.E. Glucose regulation of memory storage: Novel CNS actions of mild hyperglycemia. Conference on Neurobiology of Learning and Memory, Irvine, 1987.
- Hall, J.L., Cottrill, K.L., and Gold, P.E. Effects of phlorizin on inhibitory avoidance behavior in rats and mice. Society for Neuroscience, Seventeenth Annual Meeting, New Orleans, 1987.
- Gold, P.E., Stone, W.S., Martin, S.M., Rudd, R.J. and Salustri, N.C. Glucose relationships with memory and sleep in old rats. Society for Neuroscience, Seventeenth Annual



- Meeting, New Orleans, 1987.
- Stone, W.S., Cottrill, K.L. and Gold, P.E. Glucose and epinephrine attenuation of scopolamine-induced locomotor activity in mice. Society for Neuroscience, Seventeenth Annual Meeting, New Orleans, 1987.
- Michaelis, R.C., and Gold, P.E. Effects of scopolamine and glucose on long-term potentiation in dentate gyrus. Society for Neuroscience, Eighteenth Annual Meeting, Toronto, 1988.
- Stone, W.C., and Gold, P.E. Regional brain [3H]2-deoxyglucose uptake in mice: Effects of amnestic and memory-enhancing drugs. Society for Neuroscience, Eighteenth Annual Meeting, Toronto, 1988.
- Walker, D.L., Stone, W.S., Rudd, R.J. and Gold, P.E. Glucose attenuates drug-induced hyperactivity in mice: Effects on central cholinergic function. Society for Neuroscience, Eighteenth Annual Meeting, Toronto, 1988.
- Manning, C.A., Jones, C.L., Hall, J.L., and Gold, P.E. Memory facilitation by glucose in aged humans. Society for Neuroscience, Eighteenth Annual Meeting, Toronto, 1988.
- Hall, J.L., and Gold, P.E. Mediation of adrenalectomy memory effects by circulating glucose. Society for Neuroscience, Eighteenth Annual Meeting, Toronto, 1988.
- Manning, C.A., Jones, C.L., Bigler, E., and Gold, P.E. Glucose effects on neuropsychological measures in elderly humans. International Neuropsychological Society, Vancouver, 1989.
- Walker, D.L., and Gold, P.E. Effects of a novel NMDA antagonist on long-term potentiation and memory. Society for Neuroscience, Nineteenth Annual Meeting, Phoenix, 1989.
- Stone, W.S., Rudd, R.J., Smith, M., and Gold, P.E. Sleep and memory deficits in amygdala-kindled rats: Effects of glucose. Society for Neuroscience, Nineteenth Annual Meeting, Phoenix, 1989.
- Hall, J.L., and Gold, P.E. Plasma glucose levels predict the attenuation of epinephrine-induced memory enhancement by adrenergic blockade. Society for Neuroscience, Nineteenth Annual Meeting, Phoenix, 1989.
- Stone, W.S. and Gold, P.E. Memory scores in middle-aged rats predict later deficits in memory, paradoxical sleep and blood glucose regulation in old age. Society for Neuroscience, Twentieth Annual Meeting, St. Louis, 1990.
- Ragozzino, M.E., Parker, M.E., and Gold, P.E. Memory impairments with medial septal morphine injections: Attenuation with peripheral glucose injections. Society for Neuroscience, Twentieth Annual Meeting, St. Louis, 1990.
- Walker, D.L., Stone, W.S., and Gold, P.E. Parallel effects of the NMDA antagonist NPC 12626 on sleep and memory: Reversal of the memory deficit with glucose injections. Society for Neuroscience, Twentieth Annual Meeting, St. Louis, 1990.
- Manning, C.A., Parsons, M.W., and Gold, P.E. Glucose enhancement of memory in elderly humans. Society for Neuroscience, Twentieth Annual Meeting, St. Louis, 1990.
- Grey, C.M., Lam, W.K.K., and Gold, P.E. Effects of peripheral and central injections of GABA agonists on spontaneous alternation performance. Society for Neuroscience, Twenty-first Annual Meeting, New Orleans, 1991.
- Ragozzino, M.E., Manning, C.A., Lam, W.K.K., and Gold, P.E. Glucose enhancement of memory in Alzheimer's patients. Society for Neuroscience, Twenty-first Annual Meeting, New Orleans, 1991.
- Arankowsky, G., Stone, W.S., and Gold, P.E. Auditory stimulation enhances REM sleep in young and old Fischer 344 rats. Society for Neuroscience, Twenty-first Annual Meeting, New Orleans, 1991.
- Walker, D.L., and Gold, P.E. Time-dependent impairment and enhancement of inhibitory avoidance learning by intra-amygdala 2-amino-5-phosphonopentanoic acid (AP5) infusion. Society for Neuroscience, Twenty-first Annual Meeting, New Orleans, 1991.

- Stone, W.S., and Gold, P.E. Paradoxical sleep is selectively sensitive to glucose in amnesic rats. Society for Neuroscience, Twenty-first Annual Meeting, New Orleans, 1991.
- Wenk, G.L., Harrington, C.A., and Gold, P.E. Control of the basal forebrain cholinergic system: A microdialysis study. Society for Neuroscience, Twenty-first Annual Meeting, New Orleans, 1991.
- Manning, C.A., Turkheimer, E.N., and Gold, P.E. Glucose effects on memory in moderate to severely demented Alzheimer's patients. International Neuropsychological Society, Twentieth Annual Meeting, San Diego, 1992.
- Lennartz, R.C. and Gold, P.E. Glucose exacerbates spontaneous alternation deficits produced by the noncompetitive NMDA antagonist, MK-801. Fifth Conference on the Neurobiology of Learning and Memory, Irvine, 1992.
- Talley, C.E.P. and Gold, P.E. Retrograde amnesia for morphine tolerance: Effects of glucose and naloxone. Fifth Conference on the Neurobiology of Learning and Memory, Irvine, 1992.
- Stone, W.S., Altman, H.J., Parech, P., and Gold, P.E. Parallel sleep and memory deficits in adult rats after prenatal exposure to alcohol. Society for Neuroscience, Twenty-second Annual Meeting, Anaheim, 1992.
- Ragozzino, M.E., and Gold, P.E. Intra-amygdala injections of morphine impair avoidance learning: Attenuation with concurrent amygdala injections of glucose. Society for Neuroscience, Twenty-second Annual Meeting, Anaheim, 1992.
- Mabry, T.R., Tong, H., McCarty, R., and Gold, P.E. Aged rats: Plasma catecholamine responses to acute cold stress. Society for Neuroscience, Twenty-second Annual Meeting, Anaheim, 1992.
- Arankowsky-Sandoval, G., and Gold, P.E. El insomnio inducido por morfina se revierte con la administración de glucosa en la rata. IV Latinoamerican Sleep Congress, Mexico City, 1992.
- Manning, C.A., Honn, V.S., and Gold, P.E. Glucose effects on cognition in adults with Downs Syndrome. International Neuropsychological Society, Twenty-first Annual Meeting, Galveston, 1993.
- Ragozzino, M.E., Wenk, G.L., and Gold, P.E. Glucose attenuates morphine-induced decreases in hippocampal acetylcholine output. Society for Neuroscience, Twenty-third Annual Meeting, Washington, D.C., 1993.
- Talley, C.E.P., and Gold, P.E. Hippocampus and amygdala temperature changes in rats exposed to a novel environment and to footshock. Society for Neuroscience, 23rd Annual Meeting, Washington, D.C., 1993.
- Mabry, T.R., Gold, P.E., and McCarty, R. Habituation and sensitization of plasma catecholamine responses in aged rats. Society for Neuroscience, 23rd Annual Meeting, Washington, D.C., 1993.
- Lennartz, R.C., Mook, E.R., Hellems, K.L. and Gold, P.E. Inhibitory avoidance deficits resulting from intra-amygdala propranolol are not reversed by glucose. Society for Neuroscience, 23rd Annual Meeting, Washington, D.C., 1993.
- Stone, W.S., Arankowsky-Sandoval, G., Altman, H.J., and Gold, P.E. Paradoxical sleep predicts memory deficits a year later which are reversed by glucose in rats prenatally exposed to alcohol. Society for Neuroscience, 23rd Annual Meeting, Washington, D.C., 1993.
- Manning, C.A., Honn, V.J., Jane, J.S., and Gold, P.E. Effects of glucose on memory in adults with Down's syndrome. Society for Neuroscience, 23rd Annual Meeting, Washington, D.C., 1993.
- Walker, D.L. and Gold, P.E. Effects of intra-hippocampal NMDA blockade and kinase

- inhibition on spontaneous alternation and perforant path - dentate gyrus evoked potentials. Society for Neuroscience, 23rd Annual Meeting, Washington, D.C., 1993.
- Lennartz, R.C., Hellems, K.L., and Gold, P.E. Intraseptal injections of the beta-adrenergic antagonist propranolol impair spontaneous alternation performance but not inhibitory avoidance retention. Society for Neuroscience, 24th Annual Meeting, Miami, 1994.
- Ragozzino, M.E. and Gold, P.E. Glucose infusions into the septum block the effects of intraseptal morphine injections on hippocampal acetylcholine output and memory. Society for Neuroscience, 24th Annual Meeting, Miami, 1994.
- Stefani, M.R., Ragozzino, M.E., Thompson, P.K., Hellems, K., Lennartz, R.C., and Gold, P.E. Regulation of spontaneous alternation in the rat by glucose: A role for glycolysis. Society for Neuroscience, 24th Annual Meeting, Miami, 1994.
- Mabry, T.R., Gold, P.E., and McCarty, R. Stress, aging and memory: Role of peripheral catecholamines. First World Congress on Stress, Bethesda, 1994.
- Parent, M.B. and Gold, P.E. Intra-septal infusions of muscimol impair spontaneous alternation performance: Failure to reverse the deficit with glucose. Society for Neuroscience, 24th Annual Meeting, Miami, 1994.
- Mabry, T., Titus, O., Cousins, J., McCarty, R.C., Gold, P.E., and Foster, T.C. Contributions of plasma catecholamine levels to age-related memory deficits in the swim task. Society for Neuroscience, 24th Annual Meeting, Miami, 1994.
- Korol, D.L., Unick, K., Goosens, K., Crane, C., Gold, P.E., and Foster, T.C. Estrogen effects on spatial performance and hippocampal physiology in female rats. Society for Neuroscience, 24th Annual Meeting, Miami, 1994.
- McCarty, R., Mabry, T.R., Foster, T.C., and Gold, P.E. Stress, aging and memory: Involvement of peripheral catecholamines. Sixth Symposium on Catecholamines and Other Neurotransmitters in Stress, Smolenice Castle, Slovakia, 1995.
- Parent, M.B., Lexcen, F.J., Stefani, M.J., Louis, V.A., Laurey, P.T. and Gold, P.E. Intra-septal infusions of a mu opioid receptor agonist impair spontaneous alternation performance: Concurrent glucose infusions attenuate the effect. Society for Neuroscience, 25th Annual Meeting, San Diego, 1995.
- McIntyre, C., Ragozzino, M., Williams, L., and Gold, P.E. Intra-amygdala infusions of scopolamine impair performance on conditioned place preference but not win-shift task. Society for Neuroscience, 25th Annual Meeting, San Diego, 1995.
- 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. Society for Neuroscience, 25th Annual Meeting, San Diego, 1995.
- Ragozzino, M.E., Unick, K.E., and Gold, P.E. Hippocampal acetylcholine release during spontaneous alternation testing: Augmentation by glucose. Society for Neuroscience, 25th Annual Meeting, San Diego, 1995.
- Korol, D.L., Couper, J.M., McIntyre, C.K., and Gold, P.E. Strategies for learning across the estrous cycle in female rats. Society for Neuroscience, 26th Annual Meeting, Washington, D.C., 1996.
- Williams, C.L., Gold, P.E., and Men, D. Changes in amygdala norepinephrine release following footshock or systemic administration of epinephrine. Society for Neuroscience, 26th Annual Meeting, Washington, D.C., 1996.
- Stefani, M.R., Nicholson, G.M., and Gold, P.E. Enhancement of spontaneous alternation scores in the rat by intra-septal injection of the K-ATP channel blocker glibenclamide. Society for Neuroscience, 26th Annual Meeting, Washington, D.C., 1996.
- Pal, S.N., Ragozzino, M.E., Unick, K.E., Durham, A.C., Stefani, M.R., and Gold, P.E. Intra-hippocampal perfusions of glucose enhance spontaneous alternation scores and

- hippocampal acetylcholine release. Society for Neuroscience, 26th Annual Meeting, Washington, D.C., 1996.
- Parent, M.B. and Gold, P.E. Intra-septal infusions of glucose do not reverse but potentiate inhibitory avoidance deficits when co-infused with the GABA agonist muscimol. Society for Neuroscience, 26th Annual Meeting, Washington, D.C., 1996.
- McNay, E.C. and Gold, P.E. Deficits in spontaneous alternation performance following infusion of morphine into the medial septum are reversed by infusion of glucose into the amygdala. Society for Neuroscience, 26th Annual Meeting, Washington, D.C., 1996.
- McNay, E.C. and Gold, P.E. Infusion of glucose into the amygdala reverses deficits in spontaneous alternation, but NOT inhibitory avoidance, caused by infusion of morphine into the medial septum. American Psychological Society, 9th Annual Convention, Washington, D.C. 1997.
- Talley, C.P., Clayburn, H.A., Jewell, E., McCarty, R., and Gold, P.E. L-glucose, at high doses, enhances spontaneous alternation behavior but does not increase blood glucose levels. Society for Neuroscience, 27th Annual Meeting, New Orleans, 1997.
- Lichtenvoort, J.M., Korol, D.L., and Gold, P.E. Peripherally injected epinephrine retards LTP decay in freely moving rats. Society for Neuroscience, 27th Annual Meeting, New Orleans, 1997.
- McIntyre, C.K., Pal, S., Marriott, L., and Gold, P.E. Acetylcholine release in the hippocampus correlates negatively with good performance on an amygdala-dependent task. Society for Neuroscience, 27th Annual Meeting, New Orleans, 1997.
- McNay, E.C., and Gold, P.E. Measurement of brain extracellular glucose concentrations by microdialysis: Basal levels and changes during behavioral testing in awake, freely-moving rats. Society for Neuroscience, 27th Annual Meeting, New Orleans, 1997.
- Stefani, M.R., and Gold, P.E. Impairment of spontaneous alternation performance in the rat by intra-septal injection of the K-ATP channel openers galanin and lemakalim. Society for Neuroscience, 27th Annual Meeting, New Orleans, 1997.
- Pal, S.N., and Gold, P.E. Intra-hippocampal perfusions of propranolol enhance spontaneous alternation scores and decrease basal hippocampal ACh release. Society for Neuroscience, 27th Annual Meeting, New Orleans, 1997.
- Parent, M.B., Varnhagen, C., and Gold, P.E. A memory-enhancing emotional narrative elevates blood glucose levels in college students. Society for Neuroscience, 27th Annual Meeting, New Orleans, 1997.
- Men, D., Gelfman, J., McCarty, R. and Gold, P.E. Hippocampal norepinephrine release increases during spontaneous alternation performance: Glucose enhances performance but not norepinephrine release. Society for Neuroscience, 27th Annual Meeting, New Orleans, 1997.
- Talley, C.P., Antos, S., Clayburn, H.A., McCarty, R., and Gold, P.E. Facilitation of memory by L-glucose: Contribution of the vagus nerve. Society for Neuroscience, 28th Annual Meeting, Los Angeles, 1998.
- McIntyre, C.K., Marriott, L.K. and Gold, P.E. Acetylcholine release in the rat amygdala during performance of a hippocampus-dependent task. Society for Neuroscience, 28th Annual Meeting, Los Angeles, 1998.
- Men, D., McIntyre, C.K., Gelfman, J., and Gold, P.E. Age-related changes in acetylcholine and norepinephrine output in the hippocampus at baseline and in response to training conditions. Society for Neuroscience, 28th Annual Meeting, Los Angeles, 1998.
- Salinas, J.A. and Gold, P.E. Frustration and memory in young and aged rats: Role of glucose. Society for Neuroscience, 28th Annual Meeting, Los Angeles, 1998.
- Stefani, M.R. and Gold, P.E. Modulation of spontaneous alternation performance in the rat by

- intra-hippocampal dialysis of K-ATP channel modulators. Society for Neuroscience, 28th Annual Meeting, Los Angeles, 1998.
- Korol, D.L., Clark, L.L. and Gold, P.E. Presence of estradiol predicts learning strategy in female rats. Society for Neuroscience, 28th Annual Meeting, Los Angeles, 1998.
- McCarty, R.M., Men, D., Mabry, T.R. and Gold, P.E. Stress, neurotransmitters and age-related memory decline. Second World Conference on Stress, Melbourne, Australia, 1998.
- McIntyre, C.K., Marriott, L.K. and Gold, P.E. Pretraining ratio of acetylcholine output in hippocampus vs. striatum predicts selection of learning strategy by individual rats. Society for Neuroscience, 29th Annual Meeting, Miami, 1999.
- McNay, E.C. and Gold, P.E. Fluctuations in ECF glucose during a maze task are localized and sensitive to cognitive demand and not sensitive to locomotor activity or changes in blood glucose. Society for Neuroscience, 29th Annual Meeting, Miami, 1999.
- Chang, Q. and Gold, P.E. Effects of intra-hippocampal morphine injections on place and response learning. Society for Neuroscience, 29th Annual Meeting, Miami, 1999.
- Marriott, L.K., Gold, P.E. and Korol, D.L. Estradiol effects on acetylcholine output in the hippocampus during spatial learning in female rats. Society for Neuroscience, 29th Annual Meeting, Miami, 1999.
- Chang, Q. and Gold, P.E. Switching from hippocampal to striatal memory systems during learning: Changes in ACh release during training. Society for Neuroscience, 30th Annual Meeting, New Orleans, 2000.
- 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.
- Chang, Q. and Gold, P.E. Inactivation of dorsal striatum impairs response learning only in cue-deficient environments. Society for Neuroscience, 31st Annual Meeting, San Diego, 2001.
- 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.
- Abbott, S.M., Buchanan, G.F., Chang, Q., Gold, P.E., and Gillette, M.U. Deciphering the role of the cholinergic input to the mammalian circadian clock. Society for Research on Biological Rhythms, Jacksonville, FL, 2002.
- Pych, J., Kim, M. and Gold, P.E. Competition between memory systems: Facilitation of striatal function by microinfusion of glucose impairs spatial learning in a Y-maze. Society for Neuroscience, 32<sup>nd</sup> Annual Meeting, Orlando, 2002.
- Canal, C.E., McNay, E.C. and Gold, P.E. Effects of intraseptal morphine injections on hippocampal extracellular glucose levels and memory. Society for Neuroscience, 32<sup>nd</sup> Annual Meeting, Orlando, 2002.
- Zorn, T.M., Gold, P.E. and Korol, D.L. Peripheral epinephrine given pre- or post-tetanus enhances the persistence of LTP in young adult rats. Society for Neuroscience, 32<sup>nd</sup>

- Annual Meeting, Orlando, 2002.
- Chang, Q. and Gold, P.E. Residual hippocampal cholinergic functions after <sup>192</sup>IgG-saporin lesions of the medial septum/ventral diagonal band (MS/VDB). Society for Neuroscience, 32<sup>nd</sup> Annual Meeting, Orlando, 2002.
- Savage, L.M, Chang, Q. and Gold, P.E. Interactions between diencephalic damage and hippocampal functioning in rats. Society for Neuroscience, 32<sup>nd</sup> 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, 33<sup>rd</sup> 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, 33<sup>rd</sup> Annual Meeting, New Orleans, 2003.
- Chang, Q., Savage, L.M., and Gold, P.E. Use of acetylcholinesterase (AChE) inhibitors in the perfusate during brain microdialysis to measure acetylcholine (ACh) release during learning and memory. Society for Neuroscience, 33<sup>rd</sup> Annual Meeting, New Orleans, 2003.
- Mohler, E.G., and Gold, P.E. The effects of aging on strategy selection in a T-maze in rats. Society for Neuroscience, 33<sup>rd</sup> Annual Meeting, New Orleans, 2003.
- Pych, J.C. Chang, Q., Colon-Rivera, C. and Gold, P.E. Acetylcholine release in hippocampus and striatum during training on a rewarded alternation task. Society for Neuroscience, 34<sup>th</sup> Annual Meeting, San Diego, 2004.
- 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, 34<sup>th</sup> 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, 34<sup>th</sup> 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, 35<sup>th</sup> Annual Meeting, Washington, DC, 2005.
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