

Mark P. Mattson, PhD

**Adjunct Professor of Neuroscience, Johns Hopkins School of Medicine
Former Chief of the Laboratory of Neurosciences, National Institute on Aging**

Email: mmattso2@jhmi.edu

Phone (410) 937-9709. .

Website: <http://neuroscience.jhu.edu/research/faculty/57>

Wikipedia link: http://en.wikipedia.org/wiki/Mark_Mattson

Personal Information: Born and raised in Rochester Minnesota.
Wife, Joanne; son, Elliot; daughter, Emma.
Hobbies: trail running and biking; writing; animal husbandry; gardening.

EDUCATION

Iowa State University, 1975-79 (B.S., Zoology).
North Texas State University, 1980-82 (M.S., Biology).
University of Iowa, 1982-86 (Ph.D., Biology).
Colorado State University, 1986-89 (Postdoctoral training).

PROFESSIONAL EXPERIENCE

Research Assistant, Department of Biology, University of Iowa, 1984-86.
Research Scientist, Program in Neurobiology, Colorado State University, 1986-1987.
French Foundation for Alzheimer's Disease; Research Fellow 1988-1990.
Assistant Professor of Anatomy & Neurobiology, University of Kentucky, 1989-1993.
Associate of the Sanders-Brown Research Center on Aging, University of Kentucky, 1989- .
Director, Confocal Laser Scanning Microscope Facility, University of Kentucky, 1992-1999.
Associate Professor of Anatomy & Neurobiology, University of Kentucky, 1993-1997.
Assistant Director of Basic Neuroscience Research, University of Kentucky, 1995-1999.
Associate of the Center of Membrane Sciences, University of Kentucky, 1996-1999.
Professor of Anatomy & Neurobiology, University of Kentucky, 1997-2000.
Chief, Laboratory of Neurosciences, National Institute on Aging, 2000-2019.
Adjunct Professor, Department of Neuroscience, Johns Hopkins School of Medicine, 2003-.

Citation Impact (as of May, 2019): Total citations = >154,000. 'h index' = 206 (206 published articles that have each been cited at least 206 times).

Examples of Honors and Awards

NIH Predoctoral Training Grant (2T32MH-15172-07) University of Iowa, 1983-1985.
NIH, NRSA (NINCDS) Research Fellowship Award (NS08054) 1986-1988.
French Foundation for Alzheimer's Research, Fellowship, 1988-1990.
Alzheimer's Association, Faculty Scholar Award (FSA-89-016) 1989-1992.
Physicians Service Plan Award, University of Kentucky Research Foundation, 1989-1991.
International Life Sciences Institute Young Investigator Award. 1990-1993.

NIH Senior Travel Fellowship Award, 1990.
>Metropolitan Life Foundation Medical Research Award, 1992.
>Charles Judson Herrick Award, American Association of Anatomists, 1993.
College of Medicine Faculty Research Award, University of Kentucky, 1993.
NIH Research Career Development Award (K04NS01640) 1993-1998.
Grass Lectureship, Indiana University, 1994.
>Zenith Award, Alzheimer's Association, 1994-1996.
Grass Lectureship, SUNY Albany, 1996.
>Jordi Folch-Pi Memorial Award, American Society for Neurochemistry, 1996.
Research Professorship Award, University of Kentucky, 1997.
Grass Lectureship, University of Texas Medical Branch, 1999.
>Santiago Grisolia Chair Prize, Valencia, Spain, 2002.
Grass Lectureship, Southern Illinois University, 2002.
>ISI InCites most highly cited researcher in Neuroscience & Behavior for the 10 year periods
1993-2003; 1994-2004; 1995-2005; 1996-2006, 1997-2007, 1998-2008, 1999-2009
(averaging more than 1,100 citations per year). [http://www.in-cites.com/top/2006/fifth06-
neu.html](http://www.in-cites.com/top/2006/fifth06-neu.html)
Grass Lectureship, University of Illinois at Urbana-Champaign, 2005.
Peter Eriksson Memorial Lecture, Gothenburg, Sweden, 2009.
Elected as a Founding Member of the International Committee of the European Research
Institute for Integrated Cellular Pathology, 2009.
Keynote Speaker, American College of Nutrition, New York Academy of Medicine,
2010.
>Elected as a Fellow of the American Association for the Advancement of Science, 2011.
>Comet-Walerstein Science Award (2012), Bar-Ilan University, Ramat Gan, Israel,
November 23, 2011.
Glenn Award for Research in Biological Mechanisms of Aging, Glenn Foundation for
Medical Research, 2011.
University of Iowa, Liberal Arts and Sciences Alumni Fellow Award, 2012.
Outstanding Career Achievement Award, International Dose-Response Society, 2014.
Clinical Science Award, Society for Free Radical Research Europe, 2016.
NIH Award of Merit for contributions to the implementation and development of the
Diversity in Aging Research Pipeline Program. 2018.
Maria Buchinger Foundation Prize, 2019.

Examples of Public Outreach

Science Watch Interview: [http://archive.sciencewatch.com/sept-oct2003/sw_sept-
oct2003_page3.htm](http://archive.sciencewatch.com/sept-oct2003/sw_sept-oct2003_page3.htm)

Science Watch Interview: <http://www.sciencewatch.com/ana/st/alz2/11julSTAlz2Matt/>

BBC Horizons documentary: <http://www.bbc.co.uk/programmes/b011xyzc>

Slate article:

http://www.slate.com/articles/health_and_science/the_mouse_trap/2011/11/the_mouse_trap.html

New Scientist article: <http://www.grc.nia.nih.gov/branches/lms/BestinSmallDoses.pdf>

AAAS article: <http://membercentral.aaas.org/blogs/member-spotlight/neuroscientist-mark-mattson-alzheimers-personal>

Scientific American article: <http://www.scientificamerican.com/article.cfm?id=how-intermittent-fasting-might-help-you-live-longer-healthier-life>

Guest on the Diane Rehm Show on NPR: <http://thedianerehmshow.org/shows/2014-01-09/latest-research-intermittent-fasting-0>.

TEDx Talk: <http://tedxtalks.ted.com/video/Why-Fasting-Bolsters-Brain-Power>

Guest on the Diane Rehm Show on NPR: <http://thedianerehmshow.org/audio/#/shows/2015-06-29/anti-aging-research/110537/@00:00>

New York Times article: http://well.blogs.nytimes.com/2016/03/07/intermittent-fasting-diets-are-gaining-acceptance/?_r=0

TIME magazine article: <http://time.com/4275710/fasting-diet-5-2-weightloss/?xid=homepage>

Featured on the NBC Today Show: <https://www.today.com/health/could-intermittent-fasting-help-prevent-alzheimer-s-t118217>

Interview by the ‘Science Comedian’:

https://www.facebook.com/sciencecomedian/videos/10156035660773933/?hc_ref=ARQMmJgVYFKF0wUoOxwjzQNuZygsnRQFP6eS952NvC1C85jgJV0f2EUIClnxW5SzvBE

New York Magazine:

<https://www.thecut.com/article/intermittent-fasting.html>

ATTN:

<https://www.facebook.com/WellRoundedLifebyattn/videos/237772116832200/>

Examples of public lectures:

<https://youtu.be/ZpcVku45hFY>

<https://www.youtube.com/watch?v=ZpcVku45hFY>

BrainFacts: <http://www.brainfacts.org/Thinking-Sensing-and-Behaving/Diet-and-Lifestyle/2018/How-Does-Fasting-Affect-the-Brain-071318>

CNN Health: <https://www.cnn.com/2018/10/01/health/fasting-longevity-food-drayer/index.html>

Singularity Hub: <https://singularityhub.com/2019/04/15/senolytics-show-promise-against-alzheimers-in-mice/#sm.0000lvil83ygmet5yai1eyk84ttla>

Examples of podcasts:

<http://www.abc.net.au/radionational/programs/healthreport/caloric-restrictions-and-occasional-fasting/3995760>

<http://www.ihmc.us/stemtalk/episode007/>

<http://smartdrugsmarts.com/episode-120-intermittent-fasting/>

<http://smartdrugsmarts.com/episode-150-plant-toxins/>

Examples of Teaching Experience

Human Anatomy Lab, Biology 236, North Texas State University, 1981.

Animal Physiology Lab, Biology 381, North Texas State University, 1982.

Cell, Tissue, and Organ Biology, 37:112, University of Iowa, 1982, 83, 85.

Endocrinology Lab, 37:152, University of Iowa, 1985.

Techniques in Neuroscience, 696, Colorado State University, 1987.

Techniques of Anatomical Research, ANA 629, Univ. of Kentucky, 1989-1991.

Neuroanatomy, ANA 516, Univ. of Kentucky, 1990-1992.

Neuroanatomy, ANA 802, Univ. of Kentucky, 1990-1992.

Contemporary Neurosciences, NEU605, Univ. of Kentucky, 1991.

Seminar in Anatomy, ANA600, Univ. of Kentucky, 1991.

Fundamentals of Neurobiology, ANA605, (Co-Director), Univ. of Kentucky, 1993-1999.

Neurotoxicology, Pharmacy 645, Univ. of Kentucky, 1996-1998.

Woods Hole RUNN Course, Woods Hole, MA, November, 1997.

Principles of Gerontology, National Institute on Aging, 2000.

Trends in the Neurobiology of Aging, ME440 (Director), Johns Hopkins University School of Medicine, 2001, 2003, 2005, 2007, 2009, 2011, 2013, 2015.

Brain and Behavior in Mental Disorders, 330.623.01 (Guest Lecturer), Johns Hopkins University School of Medicine. 2013.

TIME Metabolism for 3rd and 4th year medical students (Guest Lecturer), Johns Hopkins University School of Medicine. 2015.

Examples of Administrative Activities

Member, Curriculum Task Force on Cellular Structure and Function, Univ. of Kentucky, 1992.

Director, Confocal Laser Scanning Microscope Facility, University of Kentucky, 1992-2000.

Advisory Committee, Macromolecular Structure Analysis Facility, University of Kentucky, 1993-1999.

Core Faculty Member, Graduate Program in Gerontology, University of Kentucky, 1993-2000.

Faculty Recruitment Committee, Dept. of Anatomy & Neurobiology, Univ. of Kentucky, 1993-2000.

Core Faculty Member, Neurobiology of Aging Training Grant, University of Kentucky, 1993-2000.

Chairman, Research Task Force, Dept. of Anatomy & Neurobiology, Univ. of Kentucky, 1995-1997.

Member, Graduate Council Committee on Fellowships and Traineeships, Univ. of Kentucky, 1995-1998.

Member, Graduate Studies Committee, Department of Anatomy & Neurobiology, 1996-2000.

Organizer, "*Messengers of Life and Death*" Symposium, July 24-26, 1997. Lexington, KY.

Chairman, Faculty Search Committee, Department of Anatomy & Neurobiology, University of Kentucky, 1998-1999.
Member, National Institute on Aging (NIA) Animal Care and Use Committee, 2003-2009.
Member, National Institute on Aging Promotion and Tenure Review Committee, 2003-2010, 2012- .
Chairman, Laboratory of Neurogenetics Tenure Track Search Committee, 2002, 2003.
Chairman, Laboratory of Cellular and Molecular Biology Tenure Track Search Committee, 2003.
Acting Chair, National Institute on Aging, Promotion and Tenure Review Committee, 2003.
Chairman, Postbaccalaureate Advisory Committee, NIA Intramural Research Program, 2007- .
Member, National Institute on Aging Property Board of Survey. 2011.
Chairman, Animal Program Director Search Committee, NIA, 2011.
NIH Central Promotions and Tenure Committee, Ad Hoc member, 2012.
NIH White Paper Committee: 'Understanding the Cellular and Molecular Mechanisms of Physical Activity-Induced Health Benefits'. 2014.
Member, NIA Diversity in Aging Research Pipeline Program (DARPP) Committee. 2015- .

Scientific Societies: Society for Neuroscience; American Society for Cell Biology; American Society for Neurochemistry; International Society for Neurochemistry; IBRO; Molecular Medicine Society; AAAS; New York Academy of Sciences.

Advisory Boards

Consultant for *Athena Neurosciences Inc.*, S. San Francisco CA, 1990-1995.
Medical & Scientific Advisory Board, *Alzheimer's Association*, 1993-2000.
International Scientific Advisory Board, *International Symposia on Cerebral Blood Flow and Metabolism*, 1992-2004.
National Scientific Advisory Council, *American Federation for Aging Research*, 1995- .
Advisory Board, *International Symposium Pharmacology of Cerebral Ischemia*, 1995-2004.
Huntington's Disease Society of America National Science Council, 1996-1999.
Huntington's Disease Society of America Medical/Scientific Advisory Committee, 1996-2000.
International Advisory Board, BRAIN '97.
Nominating Committee, American Society for Neurochemistry, 1996-1998.
Graduate Faculty for Gerontology PhD Program, University of Kentucky, 1997-2000.
Current Drugs panel of evaluators, 1997-1999.
Consultant for *Apoptogen, Inc.*, Ottawa, Ontario Canada, 1997- 1999.
USC Alzheimer's Disease Research Center Advisory Committee, 1998.
Graduate Faculty, PhD Program in Nutritional Sciences, University of Kentucky, 1998-2000.
Chairman, Faculty Search Committee, Anatomy & Neurobiology Dept., Univ. of Kentucky, 1998.
International Advisory Board, Neurosciences Center, University of Heidelberg, 2002.
Member, Alzheimer's Research Forum, 2003- .
Baltimore Chapter of the Society for Neuroscience Advisory Committee, 2003.
Committee of the European Network on Molecular Mechanisms of Neurodegenerative Diseases 2003.
Program Committee, ISN/ESN 2005 Meeting, Innsbruck, Austria.
External Scientific Advisory Board for the Harvard Brain Tissue Resource Center, 2004-.

Scientific Advisory Board, Alzheimer: 100 Years and Beyond Centenary Meeting, Tübingen, Germany, 2006.
External Advisory Board, Udall Center for Parkinson's disease research at Emory University. 2010- .
American Society for Neurochemistry, Local Organizing Committee for the ASN Annual Meeting, Baltimore, 2012.
International Advisory Board, Frankfurt University Neurodegeneration Center, German National Center for Neurodegenerative Diseases. 2011-2013.
Member of the Prevent Alzheimer's Disease 2020 (PAD2020) Workgroup. 2011.
Advisory Board, Harvard Center for Cerebrovascular Resilience. 2018- .

Grant and Institutional Review

NIA: Member of Neuroscience, Behavior and Sociology of Aging, Subcommittee A, 1994-1997.
Alzheimer's Association, Member, Medical & Scientific Advisory Board, 1993-1998.
NIH Board of Scientific Counselors, Ad Hoc Reviewer, 1995.
NIH: Ad Hoc reviewer for NINDS, NIA and NHLBI including RFAs and PPGs.
National Science Foundation, Ad Hoc reviewer.
American Federation for Aging Research, Regular Reviewer, 1994- .
American Federation for Aging Research, Member of Research Committee, 1995- .
Neurological Foundation of New Zealand; Review Panel Member, 1994-1996.
ALS Association, 1996- .
Hereditary Disease Foundation, 1997- .
NINDS: Member of MDCN2 Study Section, 1998-1999.
Veteran's Administration, Ad Hoc reviewer.
French Foundation for Alzheimer's Research, Ad Hoc reviewer.
Wellcome Trust, Ad Hoc reviewer.
Spinal Cord Research Foundation, Ad Hoc reviewer.
National Health Research and Development Program of Canada, Ad Hoc reviewer.
Advisory Board, Heidelberg University Interdisciplinary Neuroscience Center, 2002-2005.
MRC Neurosciences and Mental Health Board. Ad Hoc reviewer, 2006.
MRC Genomic, Metabolic and Cardiovascular Sciences Section, Clinical Sciences Centre, London, Ad Hoc reviewer, 2009.
Academy of Finland, Ad Hoc reviewer, 2012.
Committee Member for the Review of the NIA Division of Aging Biology, NIH. 2014.

Editorial Boards

Brain Research, 1994-2003.
Developmental Brain Research, 1994-2003.
Journal of Neurochemistry (Handling Editor, 1995-1998) (**Deputy Chief Editor**, 1999-2009).
Journal of Neuroscience (**Associate Editor**), 1996-2003.
Journal of Neuroscience (**Reviewing Editor**), 2015 - .
Journal of Neuroscience Research (Handling Editor), 1996-2003. Editorial board, 1996-2015.
Neurochemistry International, 1996-2009.
International Journal of Developmental Neuroscience, 1996-2015.
Trends in Neurosciences, 1997- .

Amyloid, 1997-2007.
Experimental Neurology, 1997-2002.
 Science inSight, 1998-2005.
 Synapse, 1999-2017.
 Journal of Molecular Neuroscience (Co- Editor-in-Chief), 1999-2001.
 Journal of Alzheimer's Disease, 2000-2002.
Ageing Research Reviews (Editor-in-Chief), 2001-2018.
Pharmacological Reviews (Associate Editor), 2001-2015.
Neuromolecular Medicine (Editor-in-Chief), 2002-2017.
Neurobiology of Aging (Section Editor) 2002- .
FASEB Journal, 2002-2010.
 Mechanisms of Aging and Development, 2002-2005. 2013-2015.
 Neurotoxicity Research, 2003-2013.
 Journal of Nutrition, Health and Aging. 2004- .
 Biology Imaging Library 2006-2008.
 Restorative Neurology and Neuroscience. 2006-2011.
 Therapy. 2008-2011.
 Toxins, 2009-2013.
Nature Communications (Founding Editorial Advisory Panel Member), 2010-2016.
PLoS ONE (Associate Editor), 2010-2014.
 Clinical Practice, 2012 - .
 Journal of Huntington's Disease, 2012 - .
 Dose – Response, 2012 - .
 Peer J, 2012 - 2015.
 Journal of Parkinson's Disease, 2012 - .
 BBA Clinical, 2013- .
 Nutrition & Aging, 2015- .
 Cell Stress (Founding editor), 2017 - .

Ad Hoc Reviewer for: Nature; Science; Cell; Nature Medicine; Nature Genetics; The Lancet; Neuron; Nature Neuroscience; Nature Cell Biology; Proceedings of the National Academy of Sciences USA; Journal of Cell Biology; Molecular Cell; Science Signaling; Nature Chemical Biology; Nature Structural Biology; Cell Metabolism; Cell Stem Cell; NEJM; Cell Chemical Biology; Journal of Biological Chemistry; Journal of Experimental Medicine; Annals of Neurology; Journal of Clinical Investigation; EMBO Journal; Development; Journal of Cerebral Blood Flow & Metabolism; Journal of Neurophysiology; Journal of Neurobiology; Bioessays; Neurobiology of Disease; Journal of Pharmacology and Experimental Therapeutics; Journal of Physiology; Journal of Postgraduate Medicine; GENE; Neuroscience; NeuroReport; Cell Motility and the Cytoskeleton; Neurology; Progress in Neurobiology; American Journal of Physiology; Human Molecular Genetics; Neuropharmacology; Neurobiology of Learning and Memory; Psychological Medicine; European Journal of Neuroscience; BRAIN; Journal of Neuroendocrinology; Neurodegeneration; Neuroimmunomodulation; Journal of Neurological Sciences; Biochimica Biophysica Acta; Biophysical Journal; Pain Medicine; International Journal of Biochemistry & Cell Biology; Biological Psychiatry; Brain, Behavior and Immunity; Journal of Neuroimmunology; Epilepsia; Developmental Dynamics; American Journal of Medicine; Biotechniques; Cellular Immunology; Depression and Anxiety; Toxicology; Cell

Biology International; Progress in Neuro-Psychopharmacology & Journal of Psychiatric Research; Research in Veterinary Science; Leukemia; LIPIDS; Cancer Research; Oncogene; Nutrition; Journal of the American College of Nutrition; Journal of Inflammation; Atherosclerosis; Clinical Biochemistry; European Journal of Human Genetics; British Journal of Clinical Pharmacology; Cellular and Molecular Medicine; Clinical Interventions in Aging; Psychiatry Research; Sports Medicine; Circulation; Physiology & Behavior; Arthritis and Rheumatism; Protein & Peptide Letters; Schizophrenia Research; Journal of Nuclear Medicine; EMBO Molecular Medicine; Nutrition Research; Pediatric Research; Comparative Medicine; American Journal of Cardiology; Nutrition and Metabolism; Current Proteomics; Biomedical Materials; Microcirculation; Physiological Genomics; Diabetic Medicine; Tohoku Journal of Experimental Medicine; Acta Neuropathologica; Journal of Neurology, Neurosurgery and Psychiatry.

Meetings and Symposia Organized

Society for Neuroscience Symposium *"Recapitulation of Developmental Mechanisms in Neurodegenerative Disorders"* St. Louis, MO, October, 1990.

6th International Symposium on Pharmacology of Cerebral Ischemia, *"Neuroprotective Signal Transduction"* Marburg, Germany, July, 1996.

Kentucky Summer Symposia Organizer *"Messengers of Life and Death"* Lexington, KY, July, 1997.

Society for Neuroscience Symposium *"NF- κ B Signaling in Neuroprotection and Apoptosis"* New Orleans, LA, October, 1997.

Program Committee Chairman, 1999 American Society for Neurochemistry Annual Meeting, New Orleans, LA.

Joint Meeting of the International and European Societies for Neurochemistry Symposium *"Triggers of Neuronal Death"* Berlin, Germany, August 13, 1999.

American Society for Neurochemistry Symposium, *"Neuronal Polarity"* American Society for Neurochemistry Annual Meeting, Chicago, IL, March 26, 2000.

American Aging Association Annual Meeting, Symposium *"Stem Cells and Aging"* Madison, WI, June 3, 2001.

American Society for Neurochemistry Symposium *"Control of Lifespan by Insulin/BDNF Signaling in the Nervous System"*, Palm Beach, Florida, June 23, 2002.

American Society for Neurochemistry Symposium *"Lipid Rafts in Neural Plasticity and Disease"* New York City, August 15, 2004.

Experimental Biology 2012, Symposium *"Toll-Like Receptors in Neuroplasticity and Disease"*. San Diego, CA. April 24, 2012.

Organizer and moderator: Internatinal Workshop on Eating Patterns and Disease, February 18, 2014. <http://videocast.nih.gov/summary.asp?Live=13746&bhcp=1>

Organizer and Chair, Society for Neuroscience Symposium *"Exercise, Energy Intake and the Brain"*, Washington DC, November 15-19, 2014.

Organizer of Symposium on *"Extracellular Vesicles in Aging and Diseases Thereof"*, National Institute on Aging, Baltimore. April 27, 2015.

Co-Organizer, Workshop on The Origins and Future of Pattern Processing and Intelligence: From Brains to Machines, Tempe, Arizona. March 11-12, 2016.

Co-Organizer, New York Academy of Sciences Conference on Neuroplasticity, Neuroregeneration and Brain Repair. New York, NY. June 13-14, 2017.

REFERENCES

- Solomon H. Snyder, Department of Neuroscience, Johns Hopkins University School of Medicine, 725 N. Wolfe Street, Baltimore, MD 21205. (410) 955-3024. ssnyder@bs.jhmi.edu
- Luigi Ferrucci, Scientific Director, National Institute on Aging Intramural Research Program, Baltimore, MD 21224. (410) 558-8046. ferruccilu@grc.nia.nih.gov
- Carl Cotman, Director, Institute for Brain Aging, University of California Irvine, Bio. Sci. II, Room 1305, Irvine, CA 92697-4540. (949) 824-5847. cwcotman@uci.edu
- Bruce McEwen, Rockefeller University, 1230 York Avenue, New York, NY 10021. Bruce.McEwen@rockefeller.edu
- M. Flint Beal, Head, Department of Neurology, Cornell University Medical College, 1300 York Avenue, New York, NY 10021. (212) 746-6575. Email: fbeal@mail.med.cornell.edu

MENTORING

Senior Scientists

- Mahendra Rao.
Nigel Greig.
Catherine Wolkow.
Henriette van Praag.
Dimitrios Kapogiannis.

Staff Scientists and Research Scientists

- Simonetta Camandola, PhD (2005-) Staff Scientist.
Pamela Yao, PhD (2005-) Biologist.
Ruiqian Wan, PhD (2000-) Biologist.
Dong Liu, PhD (2000-) Biologist.
Roy G. Cutler, MS (2000-) Biologist.
Peisu Zhang, MS (2000-) Biologist.

Postdoctoral Fellows

- Bin Cheng, MD, PhD (1990-1995) Pharmacology, Chinese Acad. of Medical Sciences, Beijing. Postdoctoral Fellow.
- Virginia L. Smith-Swintosky, PhD (1991-1995) Psychology, University of Delaware. Postdoctoral Fellow. Currently Senior Scientist, R. W. Johnson Pharmaceutical Research Inst., Springhouse, PA.
- Joan O'Keefe, PhD (1992-1993) Cell Biology, Neurobiology & Anatomy, Loyola Univ. Postdoctoral Fellow.
- Steven W. Barger, PhD (1992-1995) Cell Biology and Anatomy, Vanderbilt University, Postdoctoral Fellow. Currently, Professor, Department of Medicine, Arkansas Medical School, Little Rock.
- Katsutoshi Furukawa, MD, PhD (1994-1997) Neurophysiology, Tohoku University School of Medicine, Japan. Postdoctoral Fellow. Currently, Professor, Department of Neurology, Tohoku University School of Medicine.

Annadora J. Bruce-Keller, PhD (1995-1999) Neuroscience Program, Univ. of Southern California. Postdoctoral Fellow. Currently Associate Professor, Pennington Research Institute, Louisiana State University, Baton Rouge.

Emmanuelle M. Blanc, PhD (1995-1997) Biochemistry and Molecular Biology, University of Montpellier, France. Postdoctoral Fellow. Currently Senior Research Scientist, University of Montpellier, France.

Qing Guo, MD, PhD (1995-1999) Neurology, Postgraduate Medical School, Beijing. Postdoctoral Fellow. Currently Associate Professor, Department of Physiology, University of Oklahoma Medical Center, Oklahoma City, OK.

Inna Kruman, PhD (1996-2003) Moscow State University, Russia. Postdoctoral Fellow and Senior Research Fellow. Currently an Associate Professor at The Garrison Institute on Aging, Texas Tech University Health Science Center.

Ying Li, PhD (1996-1997), Indiana University. Postdoctoral Fellow. Currently, Neurology Resident, University of Minnesota Medical Center, Minneapolis.

Ward A. Pedersen, PhD (1996-2002), Boston University. Postdoctoral Fellow.

Akihiro Ishida, MD, PhD (1995-1996) Postdoctoral Fellow. Currently Associate Professor, Dept. of Neurology, Jichi Medical School, Japan.

Gordon Glazner, PhD (1997-1999), Colorado State University. Currently Associate Professor, Department of Pharmacology and Therapeutics, University of Manitoba.

Benedict Albeni, PhD (1997-1999), University of Utah. Postdoctoral Fellow. Currently Associate Professor, Department of Physiology, University of Manitoba.

ZaiFang Yu, MD, PhD (1997-2000), National Key Laboratory, Shanghai, 1996. Postdoctoral Fellow. Currently Investigator, Joseph Stokes Research Institute, Children's Hospital of Philadelphia, Philadelphia, PA.

Wenzhen Duan, MD, PhD (1998-2004), Chinese Academy of Medical Sciences, Beijing, 1998. Postdoctoral Fellow. Currently, Associate Professor, Department of Psychiatry, Johns Hopkins University School of Medicine.

Zhihong Guo, MD (1998-2007). Chinese Academy of Medical Sciences, Beijing, 1996. Senior Research Fellow. Currently a Research Scientist in the Department of Neuropathology at Johns Hopkins University School of Medicine.

Sic (Stephen) L. Chan, PhD (1998-2005), McGill University, Montreal. Postdoctoral Fellow. Currently Assistant Professor, University of Central Florida.

Simonetta Camandola, PhD (1998-), University of Genoa, Italy. Postdoctoral Fellow. Currently a Staff Scientist, Laboratory of Neurosciences, National Institute on Aging IRP.

Stefano Thellung, PhD (1998-1999), University of Genoa, Italy. Currently a Research Scientist, Department of Oncology, Biology and Genetics, University of Genova, Genova, Italy.

Carsten Culmsee, PhD (1999-2000), University of Marburg, Germany. Postdoctoral Fellow. Currently, Professor, Philipps University Marburg, Germany.

Chengbiao Lu, MD, (1999-2004), Tongji Medical University. Postdoctoral Fellow. Currently, Professor, Xinxiang University, China.

Norman Haughey, PhD (1999-2002), University of Manitoba. Postdoctoral Fellow. Currently Assistant Professor, Department of Neurology, Johns Hopkins University School of Medicine, Baltimore, MD.

Wolfram Klapper, MD, PhD (2000-2001), University of Kiel, Germany. Currently, Professor, Department of Pathology, Christian-Albrechts University, Kiel, Germany.

Aiwu Cheng, PhD (2000-) University of Maryland. Currently a Research Scientist in the Laboratory of Neurosciences at the National Institute on Aging IRP.

Ollivier Milhavel, PhD (2001-2004) University of Montpellier, France. Postdoctoral Fellow. Currently, Assistant Professor (equivalent), Biology of Transmissible Spongiform Encephalopathies Unit, Human Genetic Institute of Montpellier, Montpellier, France.

Navin Maswood, PhD (2001-2005) Texas Women's University. Senior Research Fellow. Currently, Senior Investigator, Wyeth Pharmaceuticals.

Takumi Miura, PhD (2001- 2005) Kyushu University, Japan. Postdoctoral Fellow. Currently, Senior Investigator, Division of Cell-Based Therapeutic Products, National Institute of Health Sciences, Tokyo, Japan.

Yue Wang, MD, PhD (2001-) Trinity College, Dublin, Ireland. Postdoctoral Fellow. Currently, Head Electrophysiology Facility, National Institute on Aging Intramural Research Program.

Tobi Limke, PhD (2002-2003) Michigan State University. Currently, Field Marketing Manager in Bioprocessing Technologies for Millipore.

Xiangru Xu, PhD (2003-2007) Shanghai University. Currently Assistant Research Professor. Yale University School of Medicine.

Hae-Ryong Park, PhD (2003-2004), Kyungnam University. Currently Professor, Department of Food Science and Biotechnology. Masan, Korea

Jinzhe Mao, PhD (2003-2004), Georgia State University, Postdoctoral Fellow. Currently a pharmacologist at the Food and Drug Administration.

Veerendra Kumar, PhD (2003-2006), India Institute of Medical Sciences, New Delhi, India. Currently, postdoctoral scientist, Georgetown University School of Medicine, Washington, DC.

Dong-Gyu Jo, PhD (2003-2007), Kwangju Institute of Science and Technology, Kwangju, Korea. Visiting Postdoctoral Fellow. Currently, Assistant Professor, Sugkyunkwan University, Seoul, South Korea.

Bronwen Martin, PhD (2004-2009) University of Edinburgh, Scotland. Postdoctoral Fellow. Currently, Tenure-Track Investigator, Laboratory of Clinical Investigation, National Institute on Aging Intramural Research Program, Baltimore.

Stuart Maudsley, PhD (2004-2006) University of Leeds, England. Senior Investigator. Currently, Head of the Receptor Pharmacology Unit (tenure-track investigator), Laboratory of Neurosciences, National Institute on Aging Intramural Research Program, Baltimore.

Marc Gleichmann, PhD (2004-2010) Tübingen University, Germany, Postdoctoral Fellow. Currently Senior Clinical Research Scientist at MerckSerono, Geneva, Switzerland.

Dong-Hoon Hyun, PhD (2004-2007) Kings College, London, England. Postdoctoral Fellow, Currently, Assistant Professor, Ewha Womans University, Korea.

Thiruma Arumugam, PhD (2004-2007) Louisiana State University. Currently, Associate Professor, Department of Physiology, National University of Singapore.

Eric Norman, PhD (2004-2009) University of Pittsburgh. Postdoctoral Fellow.

Sung-Chun Tang (2005-2007), Taiwan National University. Postdoctoral Fellow. Currently, Attending Neurologist, Taiwan National University Hospital, Taipei, Taiwan.

Seema Gulyani, PhD (2005-) Jawaharlal Nehru University, Visiting Scientist. Currently, Staff Nurse Practitioner at Johns Hopkins University School of Medicine.

Jessica Carmen, PhD (2005-2006), Johns Hopkins University. Postdoctoral Fellow. Currently, postdoctoral scientist, Johns Hopkins University School of Medicine.

Tim Magnus, MD, PhD (2005-2007) Julius-Maximilians University, Wurtzburg, Postdoctoral Fellow. Currently, Associate Professor of Neurology and Investigator in the Laboratory of Neuro-Vascular and Neuro-Inflammatory Disorders, University of Hamburg Medical University, Hamburg, Germany.

Tae Gen Son, PhD (2006-2010), Pusan National University, South Korea, Postdoctoral Fellow. Currently, Senior Scientist at the Korea Institute of Radiological and Medical Science, Pusan, South Korea.

Srinivasulu Chigurupati (2007-2008), Currently a Research Scientist at the FDA.

Jenq-Lin Yang, PhD (2006-2011). University of Texas at San Antonio. Postdoctoral Fellow. Currently an Assistant Professor at the Center for Translational Research In Biomedical Sciences, Chang Gung Memorial Hospital, Kaohsiung, Taiwan.

Jun-Ho Lee, PhD (2007-2012). Konkuk University, South Korea. Postdoctoral Fellow.

Richard Flannery, PhD (2007-2010). University of Cincinnati. Postdoctoral Fellow.

Eitan Okun, PhD (2007-2010). Bar Ilan University, Israel. Postdoctoral Fellow. Currently an Associate Professor at The Mina and Everard Goodman Faculty of Life Sciences, Bar Ilan University, Ramat Gan, Israel.

Kathleen Griffioen, PhD (2008-2012). George Washington University. Postdoctoral Fellow. Currently an Instructor at Liberty University.

Elisa Kawamoto, PhD (2009-2014). Sao Paulo University, Brazil. Postdoctoral Fellow. Currently an Assistant Professor at Sao Paulo University.

Sarah Rothman, PhD (2009-2013). University of Pennsylvania. Postdoctoral Fellow. Currently a Senior Research Scientist in Neuroscience at Merck Research Labs, Kenilworth, NJ.

Yan Hou, PhD (2009-2013). University of Maryland School of Medicine. Postdoctoral Fellow. Currently a Neurology Resident at the University of Connecticut School of Medicine.

Jeong Seon Yoon (2009-2014). College of Pharmacy, Seoul National University, Korea. Postdoctoral Fellow.

Xinzhi Chen, PhD (2009-2012). University of Wisconsin School of Medicine. Currently a postdoctoral fellow at Johns Hopkins University School of Medicine.

Sandro Arguelles, PhD (2010-2012). University of Sevilla, Spain. Currently a Professor at the University of Seville, Spain.

Maytal Shabat Simon, PhD (2011-2012). Currently a postdoctoral fellow at the Weizmann Institute of Science, Israel.

Magdalena Misiak, PhD (2011-2016). RWTH Aachen University, Germany. Postdoctoral Fellow. Currently an Assistant Professor at Howard University.

Auriel Willette, PhD (2012-2014). University of Wisconsin. Currently an Assistant Professor at Iowa State University.

Yong Liu, PhD (2012-2017). Zhongshan School of Medicine, Sun Yat-sen University, China. Currently a postdoctoral fellow at the Mayo Clinic Medical School.

Chinmoyee Maharana, PhD (2012- 2015). National Brain Research Centre, Manesar, India. Postdoctoral Fellow. Currently at postdoctoral fellow at Tel Aviv University.

Erez Eitan, PhD (2013-2016). Faculty of Health Sciences, Ben-Gurion University. Postdoctoral Fellow. Currently CEO.

Shi Zhang, PhD (2013-2018). Shanghai Jiao Tong University, Shanghai, China. Currently a Research Scientist at Harvard University School of Medicine.

Krisztina Marosi (2013-2017). Semmelweis University, Hungary. Currently a Senior Scientist at Human Longevity Inc.

Ryan Wu (2014-2016). University of Maryland.

Yuki Kishimoto (2014-).

Tyler Demarest. University of Maryland School of Medicine (2016-).

Graduate Students

Robert Mark (1992-1996) PhD, University of Kentucky, 1996. Currently Senior Scientist, Merck Research Laboratories, West Point, PA.

Jeffrey Keller (1992-1996) PhD, University of Kentucky, 1996. Currently Professor and Edward G. Schleider Chair, Director of the Institute for Dementia Research & Prevention, and Associate Executive Director for Basic Research, Pennington Biomedical Research Center, Baton Rouge, LA.

Dorothee Horster (1993-1994) PhD, Marburg University, Marburg Germany, 1995.

Andre Boland (1998-1999) PhD, University of Liege, Belgium, 2000.

Zecong Gu (1996-2000) PhD, University of Texas Medical Branch at Galveston, 2000.

Currently Research Scientist, Center for Neurodegenerative Research, Burnham Institute, La Jolla, CA.

Devin Gary (1997-2002) PhD, University of Kentucky, 2002. Currently Senior Research Scientist, Kennedy-Kreiger Institute, Johns Hopkins University School of Medicine.

Jaewon Lee (1997-2002) PhD, University of Kentucky, 2002. Currently, Assistant Professor College of Pharmacy, Pusan National University, Pusan, Korea

Rhonda Nelson (2003-2009) PhD, Meharry Medical College.

Vivian Chow, Chinese University of Hong Kong (2005) PhD. Currently a Postdoctoral Fellow in the Department of Pathology at the Johns Hopkins University School of Medicine.

Eitan Okun, Bar Ilan University, Ramat-Gan, Israel (2005-2007) PhD. Currently an Associate Professor, The Mina and Everard Goodman Faculty of Life Sciences, Bar Ilan University, Ramat Gan, Israel.

Elisa Kawamoto, University of Sao Paulo, Brazil (2005-2007) PhD. Currently a Visiting Fellow in the Laboratory of Neurosciences, NIA.

Alexis Stranahan, Princeton University (2005-2008) PhD. Currently an Assistant Professor in the Department of Physiology at the Medical College of Georgia.

Justin Lathia, Cambridge University (2005-2008) PhD. Currently an Assistant Professor in the Department of Cellular and Molecular Medicine at the Cleveland Clinic.

Catherine Schwartz, Karolinska University, Stockholm, Sweden. (2005-2009). PhD. Currently an Instructor at Metropolitan Community College, Kansas City.

Emmette Hutchison, Brown University (2007-2012). Currently a bioinformatics analyst at Booz Allen Hamilton, Rockville, MD.

Sarah Texel, Johns Hopkins University Neuroscience Program (2008-2012). Currently an Instructor at Towson University.

Florence Chi Chin Tan, University of Copenhagen (2013-2015). Currently an M.D. student at the University of Copenhagen.

Saket Milind Nigam, Karolinska University (2012-2017). Currently a postdoctoral fellow at the Karolinska Institute.

Postbac Fellows

Devin Gary, Howard Hughes Medical Institute Fellow, 1995. Currently, Senior Scientist and Laboratory Manager, Johns Hopkins University School of Medicine.

Nic Robinson, University of Kentucky Fellowship, 1996.

Charles Gilman (B.S., Univ. Pennsylvania) Postbac. IRTA Fellow, NIA, 2001-2002. Currently an Assistant Professor in the Department of Biology at Nazarbayev University.

Ankur Nagaraja, (B.S., Stanford Univ.) Postbac. IRTA Fellow, NIA, 2001-2002. Obtained his M.D. and is currently an Instructor in Medicine at the Dana-Farber Cancer Institute in Boston.

Kirk Pak, (B.S., Univ. California Irvine), UGSP Scholar. 2001-2002. Fulbright Scholar, Oxford University, 2002-2003. Received an M. D. and Ph.D. in Pharmacology from the Univ. California Irvine, and is currently a practicing physician.

Titilola Iyun (B.S.; University of Maryland Baltimore County) Postbac. IRTA Fellow, NIA. 2003-2005. Completed Nursing School and is currently a practicing nurse.

Randall Brenneman (B.S.; Franklin and Marshall College), Postbac. IRTA Fellow, NIA, 2004-2005. Completed an MD/PhD at the University of Miami Medical School, and is currently a resident at Washington University School of Medicine in St. Louis.

Martin Brown (B.S.; Eckerd College) Postbac. IRTA Fellow, NIA. 2004-2006. Currently employed by the National Park Service, CA.

Rina Khatri (B.S.; Johns Hopkins University) Postbac. IRTA Fellow, NIA. 2004-2005. Received an M.D. from Case-Western Reserve University Medical School, and is currently a practicing physician in Baltimore.

Michele Pearson (B.S.; Salisbury College) Postbac. IRTA Fellow, NIA. 2004-2006. Currently employed as a sales representative in the biotechnology industry.

Khadija Mustafa (B.S.; Frostburg State University) Postbac. IRTA Fellow, NIA. 2004-2006. Received a Medical Technologist degree from Upstate Medical University, NY.

Thomas Walent (B.S.; King's College, PA) Postbac IRTA Fellow, NIA. 2004-2006. He is currently an optometrist.

Matthew Nassar (B.S.; Colgate College) Postbac IRTA Fellow, NIA. 2005-2006. He received a Ph.D. from the University of Pennsylvania Medical School, and is currently a postdoctoral fellow at Brown University.

Ittai Bushlin (B.S.) Postbac IRTA Fellow, NIA. 2005-2006. Received MD/PhD from Mount Sinai School of Medicine, and is currently a resident at Oregon Health Sciences University.

Khaleel Sayeed (B.S.; Carleton College) Postbac IRTA Fellow, NIA. 2005-2007. Received an M.D. degree from the University of Kansas Medical Center and is currently a practicing physician.

Dominic Siler (B.S.) Postbac IRTA Fellow, NIA. 2006-2007. Received M.D. and Ph.D degrees from Oregon Health Sciences University and is currently a Neurology Resident at the Oregon Health Sciences University.

Michael Pitta (B. S.) Postbac IRTA Fellow, NIA. 2006-2007. Received an M.D. degree from St. Louis University School of Medicine and is currently a practicing surgeon.

Fangbai Wu (B. S.) Postbac IRTA Fellow, NIA. 2006-2007. Received and M.D. degree from East Tennessee State University, and is currently a diagnostic radiologist at Columbia University Medical Center.

Jessica de Long (B. S.) Postbac IRTA Fellow, NIA. 2006-2007. Received an M.D. degree.

Tashalee Brown (B. S., Johns Hopkins University) Postbac IRTA Fellow, NIA. 2007-2009. Received M.D. and Ph.D. degrees from the Weill Cornell Medical College.

Daniel Bruestle (B.S.,) Postbac IRTA Fellow, NIA. 2007-2009. Currently a teacher at Kojen English Language Schools, Tapei, Taiwan.

Puyao Li (B. S., Yale University) Postbac IRTA Fellow, NIA. 2007-2008. Received an M.D. degree from Harvard Medical School, and is currently a radiation Oncologist in Boston.

Christopher Kloss (B. S.) Postbac IRTA Fellow, NIA. 2007 - 2008. Received a Ph.D. from Memorial Sloan Kettering Cancer Center, and is currently a postdoctoral fellow at the University of Pennsylvania.

Kim Lee (B. S., Princeton University) Postbac IRTA Fellow, NIA. 2007-2008. Received an M.D. degree from Cornell Medical College.

Neil Feldman (B. S., St. Mary's College) Postbac IRTA Fellow, NIA. 2009-2011. DDS, University of Maryland School of Dentistry, 2016.

Anuja Kanaskar (B. S., University of Connecticut). 2011-2012. Currently completing a Pharm D. degree at Thomas Jefferson University.

James Haran (B.S., Colorado College). 2012-2014. Received a Doctor of Osteopathic Medicine degree from the Philadelphia COM, and is currently in residency at William Beaumont Army Medical Center.

Joshua Halpern (B.S., SUNY Geneseo). 2015-2016. Currently in graduate school at Columbia University.

Sophia Raefsky (B.S., University of Puget Sound). 2014-2017. Currently in Medical School at the University of California Irvine.

Ryan Spangler (B.S., Shippensburg University). 2015-2017. Currently, a research assistant at the Massachusetts Institute of Technology.

Keelin Moehl (B.S., Amherst College). 2016-2018. Currently in Medical School at the University of Pittsburgh.

Nate Ghena (B.S., Central Michigan University). 2016-2018. Currently at PhD candidate at the University of Utah School of Medicine.

Julie Williamson (B.S., Emory University). 2016-2017. Currently in Medical School at RWJ Rutgers School of Medicine.

Natalie Plick (B.S., Kenyon College). 2016-2018. Currently in Medical School at Mount Sinai School of Medicine.

Maggie Schmaedick (B.S., University of Oregon). 2017-2018. Currently in Medical School at Columbia University.

Visiting Scientists (sabbatical)

Jonathan D. Geiger, PhD (1998-1999) Professor, Department of Pharmacology, University of Manitoba, Canada.

Kazuo Shin-ya, PhD (2002) Assistant Professor, Institute of Molecular and Cellular Biosciences, The University of Tokyo, Japan.

Frank Haberman, PhD (2002-2004) Senior Research Investigator, Department of Medicinal Chemistry, Israel Institute for Biological Research, Ness Ziona, Israel.

Karoly Gulya, PhD (2002-2003) Professor and Chairman, Department of Zoology and Cell Biology, University of Szeged, Szeged, Hungary.

Cathy Levenson, PhD (2003), Professor, Department of Nutrition, Florida State University, Tallahassee, FL.

Ephraim Yavin, PhD (2003-2004), Professor and Chairman, Department of Neurobiology, Weizmann Institute, Rehovot, Israel.

Judith Medoff, PhD (2005) Brandeis University. Senior Investigator. Currently a Professor Emeritus at St. Louis University.

Uri Ashery, PhD (2008-2009) Life Sciences Institute, Tel Aviv University, Tel Aviv, Israel.

Heping (Peace) Cheng, PhD (2008-) Institute of Molecular Medicine and National Laboratory of Biomembrane and Membrane Biotechnology, Peking University, Beijing, China.
Jong-Hwan Lee (2009-) Department of Veterinary Anatomy, College of Veterinary Medicine, Konkuk University, South Korea.
Yun Bai, MD, PhD (2010-) Stem Cell Research Center, School of Basic Medical Sciences, Peking University Health Science Center, Beijing, China.

PATENTS

Mattson, M. P. Cytochalasins Useful in Providing Protection Against Nerve Cell Injury Associated with Neurodegenerative Disorders. United States Patent (#5,839,910). Issued 1998.
Greig, N.H., **M. P. Mattson**, X. Zhu and Q. S. Yu. Tetrahydrobenzothiazole Analogues as Neuroprotective Agents. United States and International Patent Application No. 60/216,388, PCT/US01/21504, filed July 6, 2001.
Haddon, R. C., A. M. Rao and **M. P. Mattson**. Molecular Functionalization of Carbon Nanotubes and use as Substrates for Neuronal Growth. United States Patent (#6670179) issued December 30, 2003.
Basta, M., X. Chen and M. P. Mattson. Combination therapy using immunoglobulin and C1-inhibitor. United States Patent (61/538832) issued June, 23, 2016.

EXAMPLES OF FUNDING

NIH (RO1NS29001) "Integration of Cellular Signals and Neuroarchitecture" (**P.I.**) 1991-1999; Total direct costs: \$930,000.
NIH (RO1AG14554) " β -Amyloid and Neuronal Calcium Misregulation", (**P.I.**) 1992-2000. Total direct costs: \$920,000.
NIH (RO1NS35253) "Secreted APP Signal Transduction and Neural Plasticity", (**P.I.**) 1997-2002; Total direct costs: \$662,000.
NIH (ADRCAG05144-07) "Cellular Signaling and Alzheimer-Like Neurodegeneration", (**Project Leader** in ADRC grant; W. R. Markesbery, P.I.) 1990-2000. ADRC Award, \$7,500,000. Total direct costs for project: \$998,000.
NIH (PO1AG10836) "Calcium in Brain Aging and Alzheimer's Disease" (**Project Leader** in PPG; P. Landfield, P.I.) 1992-2003. PPG Award, \$3,700,000. Total direct costs for project: \$385,000.
NIH (PO1AG05119) "Brain Oxidation in the Pathogenesis of Alzheimer's Disease" (**Project Leader** in PPG; W. R. Markesbery, P.I.) 1996-2001. PPG Award, \$2,150,000. Total direct costs for project: \$560,000.
ALS Association "Oxidative Disruption of Motor Neuron Ion Homeostasis" (**P.I.**) 1997-2000. Total direct costs \$122,000.
Kentucky Spinal Cord and Head Injury Research Trust "Mechanisms of Neuronal Degeneration" (**P.I.**) 1999-2002, Total direct costs \$300,000.
Alzheimer's Association, IIRG "Relationship Between Amyloid Deposition, Impaired Glucose Metabolism, and Neuronal Degeneration in Alzheimer's Disease" (**P.I.**) 2000-2003. Total direct costs \$180,000.

PUBLICATIONS

Edited Books

- Neuroprotective Signal Transduction* (M. P. Mattson, ed) Humana Press, Totowa, NJ, 1997. 347 pp.
- The Aging Brain* (M. P. Mattson and J. W. Geddes, eds) *Adv. Cell Aging Gerontology*, JAI Press, Greenwich, CT, 1997. 354 pp.
- Genetic Aberrancies and Neurodegenerative Disorders* (M. P. Mattson, ed) *Adv. Cell Aging Gerontol.* JAI Press, Greenwich, CT, 1999, 428 pp.
- Programmed Cell Death Volume 1: Cellular and Molecular Mechanisms* (M. P. Mattson, S. Estus and V. Rangnekar, eds). *Adv. Cell Aging Gerontol.* Elsevier, Amsterdam, 2001, 351 pp.
- Programmed Cell Death Volume 2: Roles in Disease Pathogenesis and Prevention* (M. P. Mattson, S. Estus and V. Rangnekar, eds). *Adv. Cell Aging Gerontol.* Elsevier, Amsterdam, 2001, 317 pp.
- Interorganellar Signaling in Age-Related Disease* (M. P. Mattson, ed). *Adv. Cell Aging Gerontol.* Elsevier, Amsterdam, 2001. 272 pp.
- The Pathogenesis of Neurodegenerative Disorders* (M. P. Mattson, ed) Humana Press, Totowa, NJ, 2001, 294 pp.
- Telomerase, Aging and Disease.* (M. P. Mattson, ed) *Adv. Cell Aging Gerontol.* Elsevier, Amsterdam, 2001. 231 pp..
- Stem Cells A Cellular Fountain of Youth?* (M. P. Mattson and G. Van Zant, eds) *Adv. Cell Aging Gerontol.* Elsevier, Amsterdam, 2002, 225 pp.
- Diet-Brain Connections: Impact on Memory, Mood, Aging and Disease* (M. P. Mattson, ed), Kluwer., Boston, MA, 2002. 270 pp.
- Calcium Homeostasis and Signaling in Aging* (M. P. Mattson, ed) *Adv. Cell Aging Gerontol.* Elsevier, Amsterdam, 2002, 199 pp.
- Mechanisms of Cardiovascular Aging* (T. Hagan and M. P. Mattson, eds) *Adv. Cell Aging Gerontol.* Elsevier, Amsterdam, 2002, 403 pp
- Neurobiology of Aggression: Understanding and Preventing Violence.* (M. P. Mattson, ed) Humana Press, Inc. 2003, 324 pp.
- Membrane Lipid Signaling in Aging and Age-Related Disease.* (M. P. Mattson, ed) *Adv. Cell Aging Gerontol.* Elsevier, Amsterdam, 2003, 225 pp.
- Energy Metabolism and Lifespan Determination.* (M. P. Mattson, ed) *Adv. Cell Aging Gerontol.* Elsevier, Amsterdam, 2003, 216 pp.
- Protein Phosphorylation in Aging and Age-Related Disease* (M. P. Mattson, ed) *Adv. Cell Aging Gerontol.* Elsevier, Amsterdam, 2003, 175 pp.
- Membrane Microdomain Signaling: Lipid Rafts in Biology and Medicine,* (M. P. Mattson, ed) Humana Press, Totowa, NJ. 2004; 214 pp.
- Sleep and Aging,* (M. P. Mattson, ed) *Adv. Cell Aging Gerontol.* Elsevier, Amsterdam, 2005; 194 pp.
- Hormesis: A Revolution in Biology, Toxicology and Medicine* (M. P. Mattson and E. J. Calabrese, Eds) Springer., New York. 2010; 213 pp.

Edited Journal Special Issues

- Synaptic Signaling in Neuronal Plasticity and Apoptosis, M. P. Mattson, A. J. Bruce-Keller and D. L. Alkon, editors. *J. Neurosci. Res.* vol. 58 (1), 1999.

- Synaptic and Axonal Dysfunction in Neurological Disorders, **M. P. Mattson**, editor. *Neuromolecular Med.* Vol. 2 (2), 2002.
- Adaptive and Failed CNS Neuroplasticity: A Tribute to Carl Cotman. **M. P. Mattson**, editor. *Neurochem. Res.* Vol. 28 (11), 2003.
- Protein Aggregation in Single, Double and Triple Neurodegenerative Brain Amyloidoses. J. Q. Trojanowski and M. P. Mattson, editors. *Neuromolecular Medicine*, Vol. 4 (2), 2003.
- Ripe Old Age: Understanding Normal Aging. A. Verkhratsky, **M. P. Mattson** and E. C. Toescu, editors. *Trends Neurosci.* 27 (10) 2004.
- Synaptic Function and Behavior During Normal Aging. A. Verkhratsky, E. C. Toescu and **M. P. Mattson**, editors. *Ageing Res. Rev.* 3 (4) 2004.
- Hormesis and Ageing. **M. P. Mattson**, editor. *Ageing Res. Rev.* 7 (1) 2008.
- Pulsatility and Ageing. J. D. Veldhuis and **M. P. Mattson**, editors. *Ageing Res. Rev.* 7 (3) 2008.
- Impact of Dietary Factors on Neuronal Plasticity and Disease. A. M. Stranahan and M. P. Mattson, editors. *Neuromolecular Med.* 10 (4) 2008.

Original Articles in Peer Reviewed Journals

1. **Mattson, M.P.** and J. Mrotek (1985) Exogenous steroids alter steroidogenesis in cultured Y-1 adrenal tumor cells by actions preceding cyclic AMP. *Steroids* 46:619-637.
2. **Mattson, M.P.** and E. Spaziani (1985) Stress reduces hemolymph ecdysteroid levels in the crab: Mediation by the eyestalks. *J. Exp. Zool.* 234:319-323.
3. **Mattson, M.P.** and E. Spaziani (1985) 5-hydroxytryptamine mediates release of molt-inhibiting hormone activity from isolated crab eyestalk ganglia. *Biol. Bull.* 169:246-255.
4. **Mattson, M.P.** and E. Spaziani (1985) Cyclic AMP mediates the negative regulation of Y-organ ecdysteroid production. *Mol. Cell. Endocrinol.* 42:185-189.
5. **Mattson, M.P.** and E. Spaziani (1985) Characterization of molt-inhibiting hormone (MIH) action on crustacean Y-organ segments and dispersed cells in culture, and a bioassay for MIH activity. *J. Exp. Zool.* 236:93-101.
6. **Mattson, M.P.** and E. Spaziani (1985) Functional relations of crab molt-inhibiting hormone and neurohypophysial peptides. *Peptides* 6:635-640.
7. **Mattson, M.P.** and E. Spaziani (1986) Regulation of the stress-responsive X-organ-Y-organ axis by 5-hydroxytryptamine in the crab, *Cancer antennarius*. *Gen. Comp. Endocrinol.* 62:419-427.
8. **Mattson, M.P.** and E. Spaziani (1986) Evidence for ecdysteroid feedback on release of molt-inhibiting hormone from crab eyestalk ganglia. *Biol. Bull.* 171:264-273.
9. **Mattson, M.P.** and E. Spaziani (1986) Calcium antagonizes cAMP-mediated suppression of crab Y-organ steroidogenesis in vitro: Evidence for activation of cAMP-phosphodiesterase by calcium-calmodulin. *Mol. Cell. Endocrinol.* 48:135-151.
10. **Mattson, M.P.** and E. Spaziani (1986) Regulation of Y-organ ecdysteroidogenesis by molt-inhibiting hormone in crabs: dependency upon cAMP-mediated protein synthesis. *Gen. Comp. Endocrinol.* 63:414-423.
11. **Mattson, M.P.** and E. Spaziani (1987) Demonstration of protein kinase C activity in crab Y-organs and partial definition of its role in ecdysteroidogenesis. *Mol. Cell. Endocrinol.* 49:159-171.
12. **Mattson, M.P.** and S.B. Kater (1987) Calcium regulation of neurite elongation and growth cone motility. *J. Neurosci.* 7:4034-4043.

13. **Mattson, M. P.** and S. B. Kater (1987) Fibronectin-like immunoreactivity in Helisoma buccal ganglia: Evidence that an endogenous fibronectin-like molecule promotes neurite outgrowth. *J. Neurobiol.* 19:233-250.
14. **Mattson, M.P.**, A. Taylor-Hunter and S.B. Kater (1988) Neurite outgrowth in individual neurons of a neuronal population is differentially regulated by calcium and cyclic AMP. *J. Neurosci.* 8:1704-1711.
15. **Mattson, M.P.**, P. Dou and S. B. Kater (1988) Outgrowth-regulating actions of glutamate in isolated hippocampal pyramidal neurons. *J. Neurosci.* 8:2087-2100.
16. **Mattson, M.P.**, P. B. Guthrie, and S.B. Kater (1988) Components of neurite outgrowth which determine neuroarchitecture: Regulation by calcium and the growth substrate. *J. Neurosci. Res.* 20:331-345.
17. **Mattson, M. P.** and S. B. Kater (1988) Isolated hippocampal neurons in cryopreserved long-term cultures: Development of neuroarchitecture and sensitivity to NMDA. *Int. J. Dev. Neurosci.* 6:439-452.
18. **Mattson, M. P.** and S. B. Kater (1988) Intracellular messengers in the generation and degeneration of hippocampal neuroarchitecture. *J. Neurosci. Res.* 21:447-464.
19. **Mattson, M. P.**, R.E. Lee, M. E. Adams, P. B. Guthrie and S. B. Kater (1988) Interactions between entorhinal axons and target hippocampal neurons: A role for glutamate in the development of hippocampal circuitry. *Neuron* 1:865-876.
20. **Mattson, M. P.**, and S. B. Kater (1989) Excitatory and inhibitory neurotransmitters in the generation and degeneration of hippocampal neuroarchitecture. *Brain Res.* 478:337-348.
21. **Mattson, M. P.**, P. B. Guthrie, B. C. Hayes and S. B. Kater (1989) Roles for mitotic history in the generation and degeneration of neuroarchitecture. *J. Neurosci.* 9:1223-1230.
22. Spaziani, E., R. D. Watson, **M. P. Mattson** and S.-F. Chen (1989) Ecdysteroid biosynthesis in the crustacean Y-organ and control by an eyestalk neuropeptide. *J. Exp. Zool.* 252:271-282.
23. **Mattson, M. P.** and S. B. Kater (1989) Development and selective neurodegeneration in cell cultures from different hippocampal regions. *Brain Res.* 490:110-125.
24. Wiltbank, M. C., P. Guthrie, S. B. Kater, **M. P. Mattson** and G. D. Niswender (1989) Hormonal regulation of free intracellular calcium concentrations in small and large ovine luteal cells. *Biol. Reprod.* 41:771-778.
25. **Mattson, M. P.**, M. Murrain, P. B. Guthrie and S. B. Kater (1989) Fibroblast growth factor and glutamate: Opposing actions in the generation and degeneration of hippocampal neuroarchitecture. *J. Neurosci.* 9:3728-3740.
26. **Mattson, M. P.**, P. B. Guthrie and S. B. Kater (1989) A role for Na⁺-dependent Ca²⁺ extrusion in protection against neuronal excitotoxicity. *FASEB J.* 3:2519-2526.
27. **Mattson, M. P.** (1989) Acetylcholine potentiates glutamate-induced neurodegeneration in cultured hippocampal neurons. *Brain Res.* 497:402-406.
28. **Mattson, M. P.** (1990) Antigenic changes similar to those seen in neurofibrillary tangles are elicited by glutamate and calcium influx in cultured hippocampal neurons. *Neuron* 4:105-117.
29. **Mattson, M. P.**, M. Murrain and P. B. Guthrie (1990) Localized calcium influx orients axon formation in embryonic hippocampal pyramidal neurons. *Dev. Brain Res.* 52:201-209.
30. **Mattson, M. P.** and B. Rychlik (1990) Glia protect hippocampal neurons against excitatory amino acid-induced degeneration: Involvement of fibroblast growth factor. *Int. J. Dev. Neurosci.* 8:399-415.

31. **Mattson, M. P.** and B. Rychlik (1990) Cell culture of cryopreserved human fetal cerebral cortical and hippocampal neurons: Neuronal development and responses to trophic factors. *Brain Res.* 522:204-214.
32. **Mattson, M. P.**, B. Rychlik, C. Chu and S. Christakos (1991) Evidence for calcium-reducing and excitoprotective roles for the calcium binding protein (calbindin-D28k) in cultured hippocampal neurons. *Neuron* 6:41-51.
33. **Mattson, M. P.**, B. Rychlik, J.-S. You and J. E. Siskin (1991) Sensitivity of cultured human embryonic cerebral cortical neurons to excitatory amino acid-induced calcium influx and neurotoxicity. *Brain Res.* 542:97-106.
34. **Mattson, M. P.** (1991) Evidence for the involvement of protein kinase C in neurodegenerative changes in cultured human cortical neurons. *Exp. Neurol.* 112, 95-103.
35. **Mattson, M. P.** and B. Rychlik (1991) Comparison of neuronal development and survival in cultured embryonic human and rat cerebral cortical neurons. *Mech. Aging Dev.* 60, 171-187.
36. **Mattson, M. P.**, M. G. Engle and B. Rychlik (1991) Effects of elevated intracellular calcium levels on the cytoskeleton and tau in cultured human cerebral cortical neurons. *Mol. Chem. Neuropathol.* 15: 117-142.
37. Cheng, B. and **M. P. Mattson** (1991) NGF and bFGF protect rat and human central neurons against hypoglycemic damage by stabilizing calcium homeostasis. *Neuron* 7:1031-1041.
38. **Mattson, M. P.**, H. Wang and E. K. Michaelis (1991) Developmental expression, compartmentalization, and possible role in excitotoxicity of a putative NMDA receptor protein in cultured hippocampal neurons. *Brain Res.* 565: 94-108.
39. **Mattson, M.P.** and Hauser, K. F. (1991) Spatial and temporal integration of neurotransmitter signals in the development of neural circuitry. *Neurochem. Int.* 19:17-24.
40. **Mattson, M. P.**, B. Cheng, D. Davis, K. Bryant, I. Lieberburg and R. E. Rydel (1992) β -amyloid peptides destabilize calcium homeostasis and render human cortical neurons vulnerable to excitotoxicity. *J. Neurosci.* 12:376-389.
41. **Mattson, M. P.** and B. Rychlik (1992) Degenerative and axon outgrowth-altering effects of phencyclidine in human fetal cerebral cortical cells. *Neuropharmacology* 31: 279-291.
42. Cheng, B. and **M. P. Mattson** (1992) IGF-I and IGF-II protect cultured hippocampal and septal neurons against calcium-mediated hypoglycemic damage. *J. Neurosci.* 12:1558-1566.
43. Cheng, B. and **M. P. Mattson** (1992) Glucose deprivation elicits neurofibrillary tangle-like antigenic changes in hippocampal neurons: Prevention by NGF and bFGF. *Exp. Neurol.* 117:114-123.
44. **Mattson, M. P.** (1992) Effects of microtubule stabilization and destabilization on tau immunoreactivity in cultured hippocampal neurons. *Brain Res.* 582:107-118.
45. **Mattson, M. P.**, M. Lovell, W. D. Ehmann and W. R. Markesbery (1993) Comparison of the effects of elevated intracellular aluminum and calcium levels on neuronal survival and tau immunoreactivity. *Brain Res.* 602: 21-31.
46. Cheng, B., D. McMahon and **M. P. Mattson** (1993) Modulation of calcium current, intracellular calcium levels and cell survival by hypoglycemia, NGF and bFGF in cultured hippocampal neurons. *Brain Res.* 607:275-285.
47. **Mattson, M. P.**, B. Cheng, A. Culwell, F. Esch, I. Lieberburg and R. E. Rydel (1993) Evidence for excitoprotective and intraneuronal calcium-regulating roles for secreted forms of β -amyloid precursor protein. *Neuron* 10:243-254.

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Invited Reviews and Commentaries

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280. Arumugam, T. V., S. H. Baik, P. Balaganapathy, C. G. Sobey, **M. P. Mattson** and D. G. Jo (2018) Notch signaling and neuronal death in stroke. *Prog. Neurobiol.* 165 167:103-116. PMC6100747.
281. Petralia, R. S., Y. X. Wang, **M. P. Mattson** and P. J. Yao (2018) Invaginating Structures in Mammalian Synapses. *Front Synaptic Neurosci.* 2018 Apr 5;10:4. PMC5895750.
282. **Mattson, M. P.** and T. V. Arumugam (2018) Hallmarks of brain aging: adaptive and pathological modification by metabolic states. *Cell Metab.* 27: 1176-1199. PMC6039826.
283. Leak, R. K., E. J. Calabrese, W. J. Kozumbo, J. M. Gidday, T. E. Johnson, J. R. Mitchell, C. K. Ozaki, R. Wetzkers, A. Bast, R. G. Belz, H. E. Botker, S. Koch, **M. P. Mattson**, R. P. Simon, R. L. Jirtle and M. E. Andersen (2018) Enhancing and extending biological performance and resilience. *Dose Response* 18: 1-24. PMC pending.

284. Demarest, T. G., M. Babbar, M. N. Okur, X. Dan, D. L. Croteau, N. B. Fakouri, **M. P. Mattson** and V. A. Bohr (2019) NAD⁺ metabolism in aging and cancer. *Annu. Rev. Cancer* in press. PMC pending.
285. **Mattson, M. P.** (2019) Back to the future: intermittent fasting bolsters physical and mental performance. In (A. Berg, F. Berg and B. Dubois, editors) *The Science and Practice of Running*. Mons Publishing, Cognac, France. PMC pending.
286. **Mattson, M. P.** (2019) An evolutionary perspective on why food overconsumption impairs cognition. *Trends Cogn. Sci.* 23: 200-212.
287. **Mattson, M. P.** (2019) Excitotoxicity. In (G. Fink, ed) *Stress Physiology, Biochemistry and Pathology*. Academic Press, New York. Pp 126-134.
288. de Cabo, R. and **M. P. Mattson** (2019) Impact of intermittent fasting on health, aging and disease. *New Engl. J. Med.* In press.

Examples of Invited Lectures

- "Growth factors, excitatory amino acids, and the generation and degeneration of hippocampal neuroarchitecture", **First International Meeting on Excitatory Amino Acids and Neuronal Plasticity**. Fillerval France, August, 29, 1989
- "Calcium influx in the differentiation and outgrowth regulation of axons and dendrites", **Annual Meeting of the Society for Cell Biology, Symposium on Intracellular Calcium**., Houston Texas, November, 1989.
- "Calcium and the neuronal cytoskeleton: Adaptive regulation in development and loss of control in neurodegenerative disorders" **2nd International Conference on Alzheimer's Disease and Related Disorders, Toronto, Canada**, July, 1990.
- "Cellular Signaling and the Construction of Neural Circuits" **Rockefeller University Neurosciences Institute Summer Atelier**, New York, NY, July, 1990.
- "Possible involvement of calcium and inositol phospholipid signaling pathways in neurofibrillary degeneration" **New York Academy of Sciences Symposium: "Molecular Pathology of Alzheimer's Disease"**, New York, NY September, 1990.
- "Recapitulation of developmental mechanisms in neurodegenerative disorders" *Symposium organizer and speaker*. **Annual meeting of the Society for Neuroscience**, St. Louis, MO, October, 1990.
- "Growth Factors, Glutamate, and Calcium as Sculptors and Destroyers of Neuroarchitecture" Committee on Neurobiology Seminar Series, **University of Chicago**, February, 1991.
- "Calcium Misregulation and Neurofibrillary Degeneration: Roles for Amyloid, Glutamate, and Growth Factors" **Biological Council Symposium on "Alzheimer's Disease and Related Dementias"** **Royal Institution, London**, England April 14-15, 1992.
- "Calcium in Neuronal Plasticity and Death" Department of Anatomy, **University of Cambridge**, Cambridge, England, April 17, 1992.
- "Neuronal Calcium Homeostasis: Stabilization by Growth Factors and Destabilization by β -Amyloid" **NIH Conference on "Markers of Neuronal Injury and Degeneration"** Bethesda, MD, April 22, 1992.
- "Growth Factors Protect Neurons Against Excitotoxic/Hypoglycemic Damage by Stabilizing Calcium Homeostasis" **Eighteenth Princeton Conference** Rochester, MI, May 31, 1992.
- "Roles for Amyloid Precursor Proteins and β -Amyloid in the Regulation and Misregulation of Neuronal Calcium Homeostasis" **Third International Conference on Alzheimer's Disease, Padova Italy**, July 12-17, 1992.
- "Astrocyte-Derived Growth Factors Affect Neuronal Calcium Homeostasis: Roles in Neuron Survival and Plasticity" **European Society for Neurochemistry, Dublin, Ireland**, August 18, 1992.
- "Neuroprotective Mechanism of Growth Factors Involves Stabilization of Calcium Homeostasis" **Amyotrophic Lateral Sclerosis Conference**, Houston, TX, October 16, 1992.
- "Roles of Glutamate, Growth Factors, and Amyloid Precursor Proteins in Structural Plasticity and Pathology in the Entorhinal/Hippocampal System", **International Research Symposium on Entorhinal-Hippocampal Interaction, Frankfurt, Germany**, December 13-17, 1992.
- "Effects of Secreted Forms of β -Amyloid Precursor Protein and β -Amyloid Peptide on Neuronal Calcium Homeostasis" **2nd Annual Golgi Winter Conferences on Neuroscience, Ponte di Legno, Italy**, January 28, 1993.

- "Amyloid Precursor Proteins: Roles in the Regulation and Misregulation of Neuronal Calcium Homeostasis" **Zurich VII Meeting: Pharmacology of Memory Disorders Associated with Aging, Zurich, Switzerland, February 14, 1993.**
- "Neuronal Calcium Regulation by Glutamate, Growth Factors, and β -Amyloid Precursor Protein Metabolites: Implications for Alzheimer's Disease and Stroke" **Tropon Institute of Neurobiology, Cologne, Germany, February 15, 1993.**
- "Calcium as Sculptor and Destroyer of Neuroarchitecture" **American Association of Anatomists, San Diego, CA, March 29, 1993.**
- "Excitotoxins and Alzheimer's disease" **Symposium on Anti-excitotoxic Neuroprotection in Chronic Brain Disease", Frankfurt, Germany, July 1, 1993.**
- "Excitatory amino acid - growth factor interactions and neurodegeneration" **Institut fur Pathochemie and Allgemeine Neurochemie Heidelberg, Germany, July 5, 1993.**
- "Secreted β -amyloid precursor proteins: neuroprotective molecules that stabilize intracellular free calcium levels" **Symposium on the Role of Neurotrophic Factors in Glutamate Neurotoxicity, Castle Ringberg, Germany, July 7-10, 1993.**
- "Neurotrophic Factor Protection Against Excitotoxin- and Free Radical-Mediated Injury" **11th Annual Neurotrauma Society Symposium, Washington, DC, November 6, 1993.**
- "Mechanisms of Cell Death" **Adler Foundation Symposium: Alzheimer's Disease and Neuronal Cell Biology, University of California, San Francisco, CA, January 26, 1994.**
- "Good and Bad Signaling Cascades in the Aged and Diseased Brain" **Fundacion Juan March Symposium on Deterioration, Stability and Regeneration of the Brain During Normal Aging, Madrid, Spain, Feb. 28 - March 2, 1994.**
- "Mechanisms of Neuroprotection Factor Action and Ischemic Brain Injury" **Nineteenth Princeton Conference, Boston, MA, March 18-20, 1994.**
- "Role of β -Amyloid Precursor Protein Metabolites in the Complex Cell Biology of Neurofibrillary Degeneration" **Schmitt Symposium: The Cytoskeleton and Alzheimer's Disease, Rochester, NY, May 23, 1994.**
- "Glutamate and Neurodegeneration in Vitro" **Fernstrom Symposium on Cellular and Molecular Mechanisms of Ischemic Brain Damage, Lund, Sweden, June 13, 1994.**
- "Calcium Dysregulation in Alzheimer's Disease" **FASEB Symposium on Calcium Saxton's River, VT, July 2-7, 1994.**
- "Neurodegenerative and Neuroprotective Signaling in Acute and Chronic Neurodegenerative Disorders" Department of Psychiatry and Behavioral Sciences, **University of Washington, Seattle, WA, July 11, 1994.**
- "Excitotoxicity, Growth Factors & Ischemic Cell Death" **Philippe Laudat Conferences, Le Bischenberg, France, Oct. 2-6, 1994.**
- "Excitoprotective Signal Transduction: Roles in Plasticity and Neurodegenerative Disorders" **Vollum Institute, Oregon Health Sciences University, Portland, OR, January 24, 1995.**
- "Amyloid β -Peptide Radical-Induced Disruption of Neuronal Calcium Homeostasis and Protection Therefrom" **XVth Washington International Spring Symposium: Neurodegenerative Diseases '95. Washington, DC, May 15-17, 1995.**
- "Nerve Cell Responses to Thrombin" **FASEB Conference on Vascular Functions of Thrombin, Copper Mountain, CO, August 13-18, 1995.**
- "Neuroprotective Signal Transduction: Mechanisms and Implications for Therapy" **Allegheny Symposium on Oxidative Stress, Apoptosis and Brain Damage. Pittsburgh, PA, September 22-25, 1995.**
- "Aging Brain" Symposium Organizer, Chairman, and Speaker, **Gerontological Society of America, Annual Meeting. Los Angeles, CA, November 17, 1995.**
- "Cytoprotective Signal Transduction and Brain Injury" **Colloquium on Glia-Mediated Neurotoxicity, American Society for Neurochemistry, Philadelphia, PA March 4, 1996.**
- " β -Amyloid-Induced Membrane Oxidation, and Neuronal Dysfunction and Death in Alzheimer's Disease" **Colloquium on Oxidative Deficit in Alzheimer's Disease, American Society for Neurochemistry, Philadelphia, PA March 5, 1996.**
- "Neurotrophic Factors and Neural Protection in Vitro" **Twentieth Princeton Conference, Memphis, TN, March 22-24, 1996.**
- "Novel Excitoprotective Signal Transduction Mechanisms that Suppress Calcium Influx", **Swammerdam Lecture, University of Amsterdam, Netherlands, June 11, 1996.**
- "Neuroprotective Signal Transduction Pathways of Secreted APP and TNF Reveal Novel Therapeutic Targets" **European Society for Neurochemistry Annual Meeting, Groningen, Netherlands, June 17, 1996.**

- "Neuroprotective Cytokine Signaling: Keeping Calcium and Radicals in Check" **FASEB Conference on Neural-Immune Interactions in Injury and Disease**, Copper Mountain, CO, July 14-19, 1996.
- "Transgenic and Gene Therapy Approaches to Ischemic Brain Injury" Symposium Organizer and Speaker, **6th International Symposium on Pharmacology of Cerebral Ischemia, Marburg, Germany**, July 24, 1996.
- "What Happens When Neurons Encounter A β and Secreted APPs?" **Fifth International Conference on Alzheimer's Disease, Osaka, Japan**, July 25, 1996.
- "Central Role of Oxidative Disruption of Neuronal Ion Homeostasis in the Pathogenesis of Neurodegenerative Disorders" **Grass Lecture, SUNY Albany**, October 25, 1996.
- "Mechanisms of A β Toxicity and Neuroprotection by Secreted APP" **Keystone Symposium on Molecular Mechanisms in Alzheimer's Disease**. Keystone, CO, February 3, 1997.
- "Lipid Peroxidation-Mediated Disruption of Ion Homeostasis: Roles in Excitotoxicity and Apoptosis" **International Society for Neurochemistry Symposium**, Boston, MA, July 22, 1997.
- "NF- κ B Signaling in Neuroprotection and Apoptosis" **Society for Neuroscience Symposium**, Organizer and Speaker, New Orleans, October 26, 1997.
- "Programmed Cell Life" **Woods Hole Runn Course '97'**, Woods Hole, MA, November 12, 1997.
- "Neuroprotective Signal Transduction Mechanisms of Growth Factors and Cytokines" **William Harvey Research Conference on Novel Mechanisms of Neurodegeneration, London, England**, January 30, 1998.
- "Oxidative Injury in AD" **Adler Foundation Symposium on Alzheimer's Disease**, Jacksonville, FL, February 4, 1998.
- "Modulation of Neuronal Calcium Homeostasis and Oxyradical Metabolism by NF- κ B". **American Society for Neurochemistry 29th Annual Meeting**, Denver, CO, March 9, 1998.
- "A Role for Synaptic Apoptosis in Stroke?" **21st Princeton Conference**, St. Louis, MO, May 8, 1998.
- "Roles of TNF and NF- κ B in Stroke and Traumatic Brain Injury" **FASEB Summer Research Conference on the Neurobiology of Central Nervous System Injury**, Wilsonville, OR, June 22, 1998.
- "Roles of Calcium in the Normal and Aberrant Actions of APP and Presenilins" **6th International Conference on Alzheimer's Disease and Related Disorders, Amsterdam, Netherlands**, July 20, 1998.
- "Synaptic Apoptosis: Roles in Neuronal Plasticity and Neurodegenerative Disorders" *Section on Neurobiology, Yale University School of Medicine*, August 26, 1998.
- "Synaptic Degenerative Mechanisms Involving APP, Presenilins and Par-4" **Keystone Symposium on Molecular Mechanisms in Alzheimer's Disease**. Taos, NM, March 6, 1999.
- "Do Apoptotic Cascades Function in Adaptive Synaptic Plasticity?" **Satellite Symposium: Signaling in Neurodegenerative Diseases and Neuronal Injury**. New Orleans, LA, March 13, 1999.
- "Lipid Peroxidation, Ion Homeostasis, and the Neuronal Plasticity/Death Continuum" **American Society for Neurochemistry Annual Meeting**, New Orleans, LA, March 14, 1999.
- "Cellular and Molecular Mechanisms Underlying Perturbed Energy Metabolism in Alzheimer's Disease" **New York Academy of Sciences Conference on Oxidative/Energy Metabolism in Neurodegenerative Disorders**. New York, NY March 21, 1999.
- "NF- κ B in TNF α Signaling in the Nervous System" **Experimental Biology 99 Symposium**, Washington, DC April 18, 1999.
- "Oxidative Disruption of Nerve Cell Ion Homeostasis" **28th Annual Meeting of the American Aging Association**, Seattle, WA. June 6, 1999.
- "Roles of Par-4 in Neuronal Apoptosis and Neurodegenerative Disorders" **Symposium on Neuronal Apoptosis, Tubingen Germany**, August 6, 1999.
- "Synaptic Apoptosis and Neurodegenerative Disorders" **Joint meeting of the International and European Societies for Neurochemistry, Berlin Germany**, August 13, 1999.
- "NF- κ B and Neurodegenerative Disease" **Keystone Symposium: NF- κ B Regulation and Function**, Tahoe City, CA, February 26, 2000.
- "Establishment and Plasticity of Neuronal Polarity" **American Society for Neurochemistry Symposium**, Symposium Chairman. Chicago, IL, March 26, 2000.
- "Calcium and Oxyradical Signaling in Adaptive Plasticity and Neurodegenerative Disorders" **British Society for Cell Biology Symposium on Cell Biology in Disease, Warwick, England**, March 31, 2000.
- "Neuroprotective Mechanisms of DR in Experimental Models of Neurodegenerative Disorders" **University of Wisconsin, Madison, WI**, May 25, 2000.
- "Modulation of death-related mitochondrial alterations by telomerase and p53" **Fernstrom Symposium Lund, Sweden**, June 5, 2000.

- “Mechanisms of Synaptic Apoptosis in Sporadic and Familial Alzheimer's Disease” **World Alzheimer’s Congress 2000**, Washington, DC, July 13, 2000.
- “Free Radicals in Amyloid Disorders” **Society for Free Radical Research Annual Meeting, Kyoto, Japan**, October 15, 2000.
- “Cytokine Cascades and Survival of CNS neurons: Focus on NF-kB and Ceramide”. **Society for Neuroscience Satellite Symposium**, New Orleans, LA, November 2, 2000.
- “Neuroprotective Signaling and the Aging Brain – Take Away My Food and Let Me Run” *Towards 2010 A Brain Odyssey (3rd Brain Research Interactive Conference)* New Orleans, LA, November 3, 2000.
- “Brain Aging and Neurodegenerative Disorders: Synaptic Triggers and Safety Locks” **Michigan State University Brain Awareness Week Lecture**. Michigan State University, March 15, 2001.
- “Oxidative Stress and the Pathogenesis of Alzheimer’s Disease” **Gordon Conference on Oxidative Stress in Disease**, Ventura, CA, March 19, 2001.
- “Dietary Contributions to Neurodegenerative Disorders: Cellular and Molecular Mechanisms” **Buck Center for Research in Aging**, Novato, CA, March 23, 2001.
- “Beneficial Effects of Calorie Restriction Mimetic Dietary Supplements: A Cell Stress-Based Mechanism” **American Aging Association Annual Meeting**, Madison, WI, June 4, 2001.
- “Protecting and Repairing the Nerve Cell Genome” **A-T Children’s Project Conference on The Role of DNA Damage Response Defects in Neurodegenerative Diseases**, Tarrytown, New York, August 1, 2001.
- “Late-Breaking Findings in Brain Aging and Neurodegenerative Disorders” **New Jersey Medical School, Neuroscience Program Seminar Series**, Newark, NJ, September 5, 2001.
- “Mitochondria and Synaptic Apoptosis” **2001 NIH Research Festival Symposium on Mitochondria and Apoptosis**, Bethesda, MD, October 4, 2001.
- “Dietary Factors That May Protect Against Neurodegenerative Disorders: Molecular Mechanisms” **Brain Aging Symposium: Identifying Accelerators and Brakes**, San Diego, CA, November 9, 2001.
- “Intracellular Signaling Pathways” **Society for Neuroscience Session Chair**, San Diego, CA. November 14, 2001.
- “Apoptosis in Neurodegenerative Disorders” **Santiago Grisolia Chair Prize Lecture 1, Valencia Spain**. May 6, 2002.
- “Neuroprotective Signal Transduction” **Santiago Grisolia Chair Prize Lecture 2, Valencia Spain**. May 7, 2002.
- “Dietary Modification of Neuronal Death” **Santiago Grisolia Chair Prize Lecture 3, Valencia Spain**. May 8, 2002.
- “Oxidative Stress and Brain Aging: Modification by Genes and Diet” **Nathan Shock Symposium, University of Michigan**, Ann Arbor, MI, May 13, 2002.
- in the Nervous System” *Colloquium Chairman, American Society for Neurochemistry Annual Meeting*, Palm Beach, FL. June 23, 2002.
- “Caloric Restriction, BDNF Signaling and Brain Aging” **American Society for Neurochemistry Annual Meeting**, Palm Beach, Florida, June 23, 2002.
- “Oxidation and Apoptosis” **8th International Conference on Alzheimer’s Disease and Related Disorders, Stockholm, Sweden**. July 23, 2002.
- “Genes – Diet Interactions in Brain Aging and Neurodegenerative Disorders” **Regenstrief Conferences, University of Indiana**, October, 1, 2002.
- “Genes and Diet in Neurodegenerative Disorders” **Grass Lecture, University of Illinois and Southern Illinois University**, Springfield, IL, November 19, 2002.
- “Synaptic Apoptosis” **American College of Neuropsychopharmacology Annual Meeting, San Juan, Puerto Rico**, December 10, 2002.
- “Apoptotic cascades and calcium signaling in synaptic plasticity and neurodegenerative disorders” **The Scripps Research Institute Seminar Series Lecture**, La Jolla, CA, December 18, 2002.
- “Energy Metabolism and Calcium Signaling in Neuronal Plasticity and Survival” Program in Neurosciences Distinguished Lecture Series, **University of Toronto**, Toronto, Canada. February 3, 2003.
- “Lipid Rafts in Neuronal Plasticity and Neurodegenerative Disorders” **American Society for Neurochemistry Symposium**, Newport Beach, CA. May 4, 2003.
- “Creating New Models for Alzheimer's Disease” **Alzheimer's Research Consortium**, New York, NY. June 3, 2003.
- “Modification of Synaptic and Stem Cell Plasticity by Genes and Diet” **International Brain Research Organization Annual Meeting, Prague Czechoslovakia** July 14, 2003.

- "Roles of BDNF Signaling in Dietary and Genetic Modification of Neuronal Survival and Neurogenesis in Neurodegenerative Disorders" **International Behavioral and Neural Genetics Society Annual Meeting**, New Orleans, LA, November 6, 2003.
- "How Do Cells Counteract Death Receptor Cascades?" **Society for Neuroscience Symposium on Death Receptors**, New Orleans, LA, November 10, 2003.
- "Stimulating Cellular Stress Response Pathways to Fend Off Neurological Diseases" *Department of Neuroscience, Georgetown University Medical Center*, Washington, DC. November 20, 2003.
- "Mechanisms by Which Dietary Restriction Increases the Resistance of Neurons to Neurodegenerative Diseases" **Winter Conference on Brain Research**, Copper Mountain, CO. January 27, 2004.
- "Neurohormesis: Implications for Aging and Neurodegenerative Disorders" Neuroscience Program, **University of Colorado, Boulder**, CO. January 28, 2004.
- "How Neurotrophic Factor Signaling Works" **Association for Research in Otolaryngology Annual Meeting**, Plenary Lecture. Daytona Beach, FL. February 22-26, 2004.
- "Hormesis is a mechanism underlying beneficial effects of dietary restriction in rodents" Third International Conference on Non-Linear Dose-Response Relationships in Biology, Toxicology and Medicine. **University of Massachusetts**, Amherst, MA. June 8, 2004.
- "Neurohormesis: Mechanisms and Implications for Cognitive Impairment in Aging" Symposium on Aging-Associated Dysfunction: Coping with Perturbations to Homeostasis. **American Society for Neurochemistry Annual Meeting**, New York City, August 15, 2004.
- "Tapping into the Brain's Potential to Age Gracefully: Cellular and Molecular Mechanisms" **University of Arkansas Medical School**, Little Rock, Arkansas, September 7, 2004.
- "Dietary Modification of Neuronal Plasticity and Aging" Special Lecture, **National Defense Medical Center, Taipei, Taiwan**, September 16, 2004.
- "The Brain and Aging: Signaling Pathways Towards and Away From Disease" Keynote Lecture, **Taipei Medical University Neuroscience Symposium**, September 17, 2004.
- "Oxidative Stress, Lipid Metabolism and Neurodegenerative Disorders" **National Taiwan University Medical Center, Taipei, Taiwan**, September 17, 2004.
- "Signaling Pathways that may Protect Against Neurodegenerative Disorders" **Wake Forest University Medical School** Neuroscience Seminar Series. Winston-Salem, NC. October 8, 2004.
- "Cellular and Molecular Mechanisms by Which Dietary Factors Modify Neuronal Vulnerability to Disease" Neuroscience Seminar Series, Brain Research Center, **University of British Columbia**, Vancouver BC. December 2, 2004.
- "Mechanisms by Which Diet Affects Neuronal Plasticity and Disease Susceptibility" Department of Molecular Physiology and Biophysics, **Baylor College of Medicine**, Houston, TX. March 8, 2005.
- "DNA Damage and Repair in the Nervous System" **Keystone Symposium on Genome Instability and Repair**, Taos, New Mexico, March 18, 2005.
- "Cellular and Molecular Mechanisms of Synaptic Dysfunction in Alzheimer's Disease" Department of Biochemistry, **Boston University School of Medicine**, Boston, MA. April 5, 2005.
- "Molecular and Cellular Pathways Away from Neurodegenerative Disorders" Center for Molecular and Behavioral Neuroscience, **Meharry Medical College**, Nashville, TN. April 20, 2005.
- "Towards Cellular and Molecular Harmony in the Aging Brain" **Grass Lecture**, The Neuroscience Program, **University of Illinois at Urbana-Champaign**, April 27, 2005.
- "Neurotrophic Signaling and Energy Metabolism in Neuronal Plasticity and Disease" Pharmacology Seminar Series, **Vanderbilt University**, Nashville, TN. May 17, 2005.
- "Dietary Factors in Neuronal Plasticity and Neurodegenerative Disorders" **USUHS Symposium on Preventative Strategies to Protect the Central Nervous System**. Bethesda, MD. May 19, 2005.
- "Food for Thought: Dietary Modification of Brain Aging and Neurodegenerative Disorders" **Visiting Scholar, Institute on Aging, University of Pennsylvania**, Philadelphia, PA. September 7, 2005.
- "Upstream and Downstream of Amyloid in Alzheimer's Disease" **Centers of Neurological Medicine and Molecular Physiology of the Brain, University of Gottingen, Gottingen, Germany**. September 21, 2005.
- "Neuroprotection by Caloric Restriction" **78th Congress of the Germany Society for Neurology, Wiesbaden, Germany**. September 22, 2005.
- "Oxidative Stress and Perturbed Membrane Lipid Metabolism and Signal Transduction in Alzheimer's Disease" **Signaling Defects in Aging Conference**. Potomac, MD. October 25, 2005.
- "Caloric Intake and Metabolism in Alzheimer's Disease" **Barrow Neurological Institute Symposium**, Phoenix, AZ. November 3, 2005.

- “Dietary Restriction and the Brain: A Beneficial Type of Cellular Stress” Symposium on Diet and Lifestyle in Brain Plasticity and Disease. **Society for Neuroscience Annual Meeting**, Washington, DC. November 16, 2005.
- “Membrane-Associated Oxidative Stress in Brain Aging and Neurodegenerative Disorders” **Gerontological Society of America Symposium** on Free Radical Metabolism and Oxidative Stress in Biological Membranes, Orlando, FL. November 19, 2005.
- “Novel Therapeutic Targets for Neuroprotection in Stroke” Grand Rounds, Department of Neurology, **Johns Hopkins University School of Medicine**, Baltimore, MD. January 5, 2006.
- “Oxidative Stress, Membrane Lipids, and γ -secretase Activity in Neurodegenerative Disorders” **Gladstone Institute of Neurological Disease/University of California San Francisco**, CA. January 19, 2006.
- “Impact of Energy Restriction and Intermittent Fasting on CNS Plasticity and Vulnerability to Disease” Institute for Cell Engineering, **Johns Hopkins Medicine**, February 6, 2006.
- “Interplay of Energy Metabolism and Neurotrophic Factors in Neuronal Injury and Repair” **McKnight Brain Institute, University of Florida**, Gainesville, FL. February 7, 2006.
- “Food Addiction: Why its Bad for Your Brain” Biological Science Training Program Lecturer, Department of Molecular Psychiatry and Yale Center for Genes and Behavior, **Yale University School of Medicine**, New Haven, CT. February 27, 2006.
- “Dietary Neurohormesis and Brain Aging” **Krasnow Institute for Advanced Study, George Mason University**, Fairfax, VA. March 6, 2006.
- “DNA Damage and Repair in Neuronal Death and Plasticity” **2nd Annual Baltimore Area Repair Symposium**, Baltimore, MD. March 22, 2006.
- “Neurotrophic Factor Signaling in the 21st Century” **Pusan National University**, Pusan, South Korea. September 28, 2006.
- “Dietary Factors in Brain Aging and Neurodegenerative Disorders” **World Health Organization International Symposium on Complementary and Alternative Medicine**. Sendai, Japan. October 1, 2006.
- “Dysregulation of Neuronal Calcium Homeostasis in Neurodegenerative Disorders” **National Heart, Lung and Blood Institute**, NIH, Bethesda, MD. November 3, 2006.
- “Novel Targets for Therapeutic Intervention in Stroke” Department of Pharmacology, **Emory University School of Medicine**. Atlanta, GA. February 6, 2007.
- “Phytochemical Neurohormesis” **Plenary Lecture, International Hormesis Conference**, University of Massachusetts, Amherst, MA. May 2, 2007.
- “The Fine Line Between Neuronal Plasticity and Disease” **Opening Lecture, 17th Meeting of the European Society for Neurochemistry, Salamanca Spain**. May 19, 2007.
- “Neurohormesis: Adaptive Neuronal Stress Responses and Protection Against AD” **International Conference on Prevention of Dementia**. Washington, DC. June 9, 2007.
- “Hormesis in Neural Plasticity and Neurological Disorders” **Cambridge University Centre for Brain Repair, Cambridge, England**. July 2, 2007.
- “Phytochemical Neurohormesis and Brain Health” **Nutrisciences and Health Conference**, Charlottetown, **Prince Edward Island, Canada**. July 11, 2007.
- “Healthy Stress: How Neurons Respond Adaptively to Life's Challenges” **Cognitive Aging Summit**, Washington, DC. October 11, 2007.
- “Dietary Energy Intake, Hormesis and the Aging Nervous System” **Aging 2007: Nature Medicine Frontiers of Clinical Investigation Conference**, La Jolla, CA. October 19, 2007.
- “Innate Immune Responses and the Battle for Neuronal Survival” **Neuroimmunology Seminar Series, Johns Hopkins University School of Medicine**, Baltimore, MD. November 27, 2007.
- “Preserving and Enhancing Neural Plasticity to Fend Off Age-Related Disease” **National Advisory Council on Aging**, Bethesda, MD. January 30, 2008.
- “Stabilization of Neuronal Calcium Homeostasis by Neurotrophic Factors and GLP-1” **Hereditary Disease Foundation Symposium on Calcium in Neurodegeneration**, Las Vegas, Nevada. February 5, 2008.
- “Glutamate and Neurotrophic Factors in Neuronal Plasticity and Disease” **Keynote Speaker, International Conference on Neural Signaling**. Asilomar Conference, Pacific Grove, CA. February 16, 2008.
- “BDNF as a Regulator of Systemic and Brain Energy Metabolism” **NIDDK Lecture Series**, Bethesda, MD. February 20, 2008.
- “Sphingomyelin and Ceramide Metabolism in Neuronal Plasticity and Aging” **American Society for Neurochemistry Symposium**. San Antonio, Texas. March 3, 2008.

- “Hormesis: Implications for the Prevention and Treatment of Neurological Disorders” **Neurology Grand Rounds, Georgetown University VA Medical Center**, Washington DC. April 23, 2008.
- “Dietary Modification of Brain Plasticity and Disease Vulnerability” **Multidisciplinary Workshop on Nutrition, Brain Development and Aging. University of North Carolina Nutrition Research Institute**, Kannapolis, NC. May 13, 2008.
- “Protecting the Brain Against Oxidative Stress Through Hormesis” **Fred Samson Memorial Lecture, University of Kansas School of Medicine**, Kansas City, Kansas. May 22, 2008.
- “Dietary Modification of Neuroplasticity and Neuronal Vulnerability” **Cincinnati Neurofest**, Cincinnati, OH. May 23, 2008.
- “ER Stress and Age-Related Neuronal Dysfunction” **SLEEP 2008 Conference**, Baltimore, MD. June 11, 2008.
- “Adaptive Cellular Stress Responses” **Workshop on Stress, Aging, the Brain and the Body**. Bethesda, MD, September 8, 2008.
- “Adaptive Stress Response Pathways in Neurons” **4th International Mitochondria Minisymposium**. Bethesda, MD. November 19, 2008.
- “Adaptive Stress Responses in Neural Plasticity and Disease” **Universidad Central del Caribe in Puerto Rico**. December 11, 2008.
- “Regulation of Neuronal Differentiation: From Chromatin to Growth Cones” **Cell Biology and Neuroscience Program, Rutgers University**, Piscataway, NJ. January 15, 2009.
- “Extending a Hand (or a Boot) to Endangered Neurons” **Burke Rehabilitation, Cornell University Medical Institute**, White Plains, New York. March 10, 2009.
- “Mechanisms of Impaired Hippocampal Plasticity in Diabetes” **International Conference on Diabetes, Insulin and Alzheimer’s Disease**, Paris, France. April 6, 2009.
- “Hormesis-Based Translational Research in Neuroscience” Speaker and Session Chair, **International Dose Response Society Annual Meeting, University of Massachusetts Amherst**, April 28, 2009.
- “Dietary Energy Intake and Neuronal Vulnerability in Aging” **The Aging Brain Symposium, Center for Aging and the Life Sciences, Purdue University**, West Lafayette, IN. September 11, 2009.
- “Helping Neurons Help Themselves: Hormesis Pathways” **Peter Eriksson Memorial Lecture, Symposium on Improving Brain Plasticity Through Multisensory Stimulation, Gothenburg University**, Sarohus, Sweden. September 25, 2009.
- “Cellular Energy Metabolism and Adaptive Stress Responses in Neural Plasticity and Disease” **Neuro Fortis Guest Lecturer, Lund University**, Lund, Sweden. September 28, 2009.
- “Impact of Energy Intake and Diabetes on Hippocampal Neurogenesis” **Society for Neuroscience Symposium (Co-Chair)**, Chicago, IL. October 18, 2009.
- “Mechanisms by Which Feeding Patterns Affect Health” **Workshop: Advances in Understanding the Impact of Feeding Patterns on Health**. Washington, DC. October 23, 2009.
- “Mechanisms by Which a Couch Potato Lifestyle Predisposes to Alzheimer’s Disease” **New York Academy of Sciences Symposium – Is Alzheimer’s disease type 3 diabetes?** New York, NY. October 27, 2009.
- “Mitochondria in Neuroplasticity, Neurologic Disease and Aging” **American Society of Hematology Annual Meeting**. New Orleans, LA. December 5 and encore presentation on December 6, 2009.
- “Molecular and Structural Malleability of the Aging Brain” **Systems Biology of Human Aging Symposium**. Baltimore, MD. December 8, 2009.
- “Roles for BDNF in Regulation of the Autonomic Nervous System in Health and Neurodegenerative Disorders” **University of Pennsylvania Center for Sleep and Respiratory Biology**, January 29, 2010.
- “Dietary Energy Intake and Brain Health: a Challenging Situation” Visiting Scientist Seminar, **Pennington Biomedical Research Center, Louisiana State University**, Baton Rouge, LA. February 19, 2010.
- “Protecting the Brain Against Injury and Disease by Activating Adaptive Cellular Stress Responses” **U. S. Army Public Health Command: Center for Health Promotion and Preventive Medicine**. Aberdeen Proving Ground, MD. February 24, 2010.
- “Impact of Dietary Energy Intake on Neuronal Plasticity and Vulnerability to Aging and Disease” **Clinical Nutrition Research Center, University of Alabama Birmingham**, Birmingham, AL, March 2, 2010.
- “Translational Research on Energy Intake, Diabetes and Neurodegenerative Disorders” Clinical Neuroscience Seminar, **Department of Neurology, Johns Hopkins School of Medicine**, Baltimore, MD. March 15, 2010.

- “Signaling Pathways that Help Neurons Help Themselves” Conference on Integrated Cellular Pathology: Death, Danger and Degeneration. **First Meeting of the European Research Institute of Integrated Cellular Pathology**. Paris, France, April 22, 2010.
- “Helping the Brain Help Itself in the Age of Understanding” **Symposium on Culture and Health, House of Sweden**, Washington, DC. May 11, 2010.
- “Calcium in Neuronal Plasticity and Alzheimer’s Disease” **11th Meeting of the European Calcium Society**. Warsaw, Poland. September 8, 2010.
- “Mechanisms by Which Amyloidogenic Peptides Perturb Neuronal Ion and Energy Homeostasis” **NIH Research Festival**, Bethesda, MD. October 6, 2010.
- “Dietary Energy Intake and Brain Health” **Plenary Speaker, Annual Meeting of the American College of Nutrition, New York Academy of Medicine**, October 8, 2010.
- “Impact of Energy Intake and Expenditure on Brain Health” **Johns Hopkins Endocrine Section Seminar Series**, Baltimore. November 18, 2010.
- “How to Strengthen Your Brain Cells” **Science Café’, National Science Foundation**, Arlington, VA. December 7, 2010.
- “Signaling Pathways that Help Neurons Help Themselves” **The Children's Hospital of Philadelphia/University of Pennsylvania Intellectual and Developmental Disabilities Research Center**. Philadelphia, PA, December 14, 2010.
- “Adaptive Stress Response Pathways in Brain Health and Disease” **Conference on Integrated Cellular Pathology: Systems Biology of Human Disease**, Luxembourg, January 27, 2011. (presented by postdoc Marc Gleichmann).
- “Helping the Brain Help Itself Age Gracefully” **Neuroplasticity of Aging Seminar Series, University of California San Diego**. March 28, 2011.
- “Hormesis-Based Development of Botanical Insect Antifeedants as Therapeutic Agents” **10th Annual Dose-Response Conference, University of Massachusetts Amherst**, April 27, 2011.
- “Pathways Toward and Away From Alzheimer’s Disease” **Demystifying Medicine Lecture**, National Institutes of Health, Bethesda, MD. May 10, 2011.
- “Synaptic Dysfunction in Aging and Disease” **New York Academy of Sciences** meeting on Targeting Synaptic Dysfunction in Alzheimer’s Disease. New York, NY. May 18, 2011.
- “Nerve Cell Resilience may Forestall Alzheimer’s Disease” **National Center for Research Resources**, Bethesda, MD. June 28, 2011.
- “Dysfunction of Autonomic Neurons in Mouse Models of Huntington’s and Parkinson’s Diseases” **Emory University School of Medicine**. Atlanta, Georgia. July 18, 2011.
- “Nontelomeric Functions of TRF2 in Neural Stem Cells, Neurons and Tumor Cells” **NIH Research Festival Symposium**, Bethesda, MD. October 25, 2011.
- “Mitochondrial Superoxide and PGC-1 α in Neural Plasticity” **Maryland/Hopkins Mitochondrial Research Symposium**, Baltimore, MD, October 29, 2011.
- “Tapping into Adaptive Cellular Stress Responses to Improve Cognitive Performance” **Airforce Office of Scientific Research Workshop on Photoelectric and Magnetic Biostimulation**, San Antonio TX, November 1, 2011.
- “Pathways Toward and Away From Neurodegenerative Diseases” **Comet-Walerstein Science Award Lecture**, Bar-Ilan University, Ramat Gan, Israel, November 23, 2011.
- “Impaired Adaptive Cellular Responses and Neurodegenerative Disorders” **NIH Clinical Center Grand Rounds**, NIH Lipsett Auditorium, Bethesda, MD. February 7, 2012.
- “Caloric Restriction and the Aging Brain and Body” **Aging: Cells to Society Symposium, AAAS Annual Meeting**, Vancouver, Canada. February 18, 2012.
- “Influence of Energy Intake and Expenditure on Neuronal Plasticity and Vulnerability to Disease” Department of Neuroscience, **Temple University**, Philadelphia, PA. February 29, 2012.
- “Dietary Energy Intake Modifies Early Brainstem Autonomic Dysfunction in Parkinson’s Disease” **American Society for Neurochemistry Annual Meeting**, Baltimore, MD. March 6, 2012.
- “Adaptive Neuronal Stress Responses: Pathways to Brain Health” **Tulane University School of Medicine**, March 8, 2012.
- “Intermittent Energy Restriction Enhances Stress Resistance of the Brain and Body” **Airforce / NASA Meeting on Enhancing Human Performance**, Jackson Hole, WY. March 26, 2012.
- “Preparing Neurons for Trauma They May Encounter in Injury, Aging and Disease” **University of Maryland Medicine Shock, Trauma and Anesthesiology Research Center**. Baltimore, MD. April 10, 2012.

- “How Energy Intake and Expenditure Determine Brain Health” **Keynote Lecture, Xth biennial International Conference on Brain Energy Metabolism**, Asilomar Conference Center, Monterey, CA. April 17, 2012.
- “Toll-Like Receptors in Neuroplasticity and Disease” (Symposium organizer and Chair) **Experimental Biology 2012**. San Diego, CA. April 24, 2012.
- “Mitochondrial Control of Stem Cell Fate” **NIH CRM/SCIG Stem Cell Research Symposium**. Bethesda, MD. May 11, 2012.
- “Finding and Following the Pathways Away From Neurodegenerative Disorders” **5th Annual Conference on Alzheimer’s Disease Risk and Protective Factors and Early Interventions**, Southern Illinois University, Springfield, IL. May 22, 2012.
- “Optimal Brain Health Throughout the Lifespan: How, Why, and Why Not” **University of Iowa Alumni Fellow Award Lecture**, University of Iowa. September 13-14, 2012.
- “The Challenge of Alzheimer’s Disease: Helping Brain Cells Help Themselves” Opening Lecture. **International Alzheimer Symposium**, Copenhagen, Denmark. September 20, 2012.
- “Activation of Adaptive Cellular Stress Responses: A Strategy for Development of Therapeutic Interventions” **Ultra Low Dose Think Tank**. Florence, Italy. September 21, 2012.
- “Energy Metabolism in Aging and Alzheimer’s Disease” **Emerging Concepts in Alzheimer’s Disease. SFN Satellite Symposium**. New Orleans, LA. October 10, 2012.
- “GLP-1 Signal Transduction Pathways in Neuroplasticity and Neuroprotection” **Society for Neuroscience Symposium**. New Orleans, LA. October 15, 2012.
- “Ageing, Energetic Challenges and Neuronal Vulnerability” **9th Nestle International Nutrition Symposium: ‘Nutrition and the Biology of Human Aging’**, Lausanne, Switzerland, October 19, 2012.
- “The Challenge of Squelching Brain-Wasting Obesogenic Forces: From Cells to Society” **East Carolina University School of Medicine**. November 8, 2012.
- “Challenging Society to Save the Aging Brain: Prescriptions for Optimal Brain Health” **2nd Frontiers in Neuroscience Symposium, Opening Lecture**. Buzios, Brazil. December 4, 2012.
- “Tweaking Energy Metabolism to Prevent and Treat Neurological Disorders” **NINDS Grand Rounds, NIH Clinical Center**. Lipsett Auditorium, Bethesda, MD. December 19, 2012.
- “Why do Intermittent Energetic Challenges Promote Brain Health?” **Welch Center for Prevention, Epidemiology and Clinical Research**, Johns Hopkins University School of Medicine, Baltimore, MD. February 6, 2013.
- “Why are Energetic Challenges Good for the Brain?” **National Institute on Alcohol Abuse and Alcoholism Seminar Series**, Rockville, MD. February 28, 2013.
- “Why Intermittent Energetic Challenges are Necessary for Optimal Brain Health” **The Salk Institute**, La Jolla, CA. March 14, 2013.
- “Can Tweaking Energy Metabolism Forestall Alzheimer’s Disease?” **New York Academy of Sciences Symposium: Targeting Insulin Resistance for the Treatment of Alzheimer’s Disease**. New York, NY. April 23, 2013.
- “The Brain, Energy Metabolism and Hormetic Pathways to Optimal Health” **Dose – Response Conference, University of Massachusetts**, Amherst MA. April 24, 2013.
- “Energetic Challenges Suppress Neuroinflammation: Translational Potential” **NeuroInfectious Disease Interest Group, NIH**. Bethesda, MD. August 21, 2013.
- “The Science of Intermittent Fasting and its Implications for Health Care” **NIH Nutrition Coordinating Committee**, Bethesda, MD. September 5, 2013.
- “Impact of energy metabolism on neuronal proteostasis” Symposium on the Role of Proteostasis in Health and Disease” **NIH Research Festival**. Bethesda, MD. November 7, 2013.
- “Why Fasting Bolsters Brainpower” **TEDx Talk**, Johns Hopkins University, Baltimore, MD. February 22, 2014.
- “Intermittent Energetic Challenges Promote Optimal Brain Health Throughout Life” **2013 Syracuse Seminar on Aging**, Syracuse University, Syracuse, New York. March 6, 2014.
- “Novel Mechanisms of Neuroplasticity” **University of Tokyo**, Tokyo, Japan. March 20, 2014.
- “The Aging Nervous System: From Neurochemicals to Society” **Center for Systems Medicine Symposium on Creating Global Standards to Promote Longer and Healthier Life**. Tokyo, Japan. March 22, 2014.
- “Intermittent Challenges Bolster Brainpower and Protect it Against Injury and Disease” **Keio University School of Medicine**. Tokyo, Japan. March 24, 2014.
- “Why Fasting Bolsters Brainpower” **RIKEN Brain Science Institute**, Wako, Japan. March 25, 2014.
- “Tweaking Mitochondria to Enhance Neuroplasticity” **WALS Symposium, NIH**, Bethesda, MD. April 2, 2014.
- “Intermittent Energetic Challenges, Adaptive Responses and Health: Lessons from the Brain” **Adaptive Responses in Biology and Medicine, University of Massachusetts**, Amherst, April 22, 2014.

- “Implementation of Intermittent Fasting Prescriptions: Breaking Through the Barriers” **Adaptive Responses in Biology and Medicine, University of Massachusetts**, Amherst, April 23, 2014.
- “Intermittent Bioenergetic Challenges, Adaptive Neuroplasticity, and Neuroprotection” **DZNE/Gladstone Workshop on Cell and Organ Interactions in the Pathogenesis of Neurodegenerative Diseases**. Bonn Germany, May 11, 2014.
- “The Challenge of Maintaining Brain Function Throughout the Lifespan” **Distinguished Lecturer, Leibniz Institute for Age Research and Centre for Molecular Biomedicine, Friedrich-Schiller-University**. Jena, Germany. May 12, 2014.
- “Mechanisms by which physical activity slows aging processes in the brain” **American College of Sports Medicine Annual Meeting**, Orlando, FL. May 29, 2014.
- “An Emerging Armamentarium to Forestall Neurodegenerative Disorders” **NAALT Annual Meeting**, Arlington, VA. September 12, 2014.
- “Why Obesogenic Lifestyles Weaken the Brain” **Symposium on Childhood Obesity and Cognition. American University**, Washington DC. October 13, 2014.
- “Mitochondrial Control of Neuronal Plasticity and Stress Resistance” **Institute of Biological Science, Sao Paulo University**, Sao Paulo, Brazil. October 20, 2014.
- “Why Intermittent Energetic Challenges are Good for the Brain” **Opening Lecture: Brazilian Society of Pharmacology and Experimental Therapeutics**, Fortaleza, Brazil. October 21, 2014.
- “Intermittent Energetic Challenges and Optimal Brain Health” **Society for Neuroscience Symposium**, Chair and Speaker. Washington DC, November 17, 2014.
- “The Challenge of Healthy Brain Aging” **Howard University**, March 4, 2015.
- “How Fasting and Exercise Protect the Brain Against Diabetes” **Diabetes Action Research and Education Foundation**. Montgomery College, MD. March 14, 2015.
- “Intermittent Bioenergetic Challenges Bolster Brain Health” **Keynote Lecture, Annual Neuroscience Symposium. Kent State University**, Kent, OH. April 9, 2015.
- “Sonic Hedgehog and Neuroplasticity” **Annual Neuroscience Symposium, Kent State University**, Kent, OH. April 10, 2015.
- “Signaling Pathways by Which Fasting and Exercise Bolster Brainpower” **NIH – Korea joint Symposium**, Bethesda MD. April 16, 2015.
- “Metabolic Challenge – Recovery Cycles, Hormesis and Brain Health” **Karolinska Institute**. Stockholm Sweden. June 25, 2015.
- “Energy intake and exercise as determinants of brain health and vulnerability to injury and disease.” **20th Annual Congress of the European College of Sport Science**. Malmo, Sweden. June 26, 2015.
- “Evolutionary Perspective on Why Plant ‘Toxins’ Bolster Brain Health” **Symposium on Nutraceuticals in Neurodegenerative Diseases and Aging**. Singapore, August 20, 2015.
- “Intermittent Bioenergetic Challenges Suppress Neuroinflammation” **Johns Hopkins University Neuroimmunology Seminar Series**. September 1, 2015.
- “Membrane-Associated Oxidative Stress in Alzheimer’s Disease” **Vanderbilt University**, Nashville, TN. September 25, 2015.
- “Forestalling Neurodegenerative Disorders: An Evolutionary Perspective” **Texas Tech University**, Lubbock Texas, October 2, 2015.
- “The Calcium Theory of Alzheimer’s disease” **Alzheimer’s Association Workshop**, Chicago. December 16, 2015.
- “What Doesn’t Kill You... Why Some Plant ‘Toxins’ May Bolster Brain Health” **Office of Nutritional Supplements**, NIH. Bethesda, MD. January 6, 2016.
- “The Challenge of Successful Brain Aging” **Beichman Foundation Lecture, University of Pittsburgh School of Medicine**, January 13, 2016.
- “Maintaining Optimal Brain Function Throughout Life Requires Effort” **Psychology Colloquium, University of British Columbia**, Vancouver, Canada. January 21, 2016.
- “Optimization of Cognitive Performance: An Evolutionary Perspective” **Institute for Human and Machine Cognition**, Ocala, Florida. February 9, 2016.
- “Pattern Processing is the Essence of the Evolved Human Brain” **Co-Organizer and Speaker, Workshop on The Origins and Future of Pattern Processing and Intelligence: From Brains to Machines**, Tempe, Arizona. March 12, 2016.
- “Diet, Exercise and Brain Health: An Evolutionary Perspective” **American Association for Geriatric Psychiatry Annual Meeting**, Washington, DC. March 17, 2016.

- “Intermittent Bioenergetic and Phytochemical Challenges Bolster Brain Health” **Center for Human Nutrition, Johns Hopkins Bloomberg School of Public Health**, Baltimore, MD. March 28, 2016.
- “Diet and Brain Health: An Evolutionary Perspective” **Maryland Academy of Nutrition and Dietetics Annual Meeting**, Linthicum MD. April 22, 2016.
- “Impact of Meal Frequency on Brain Health and Neurological Disorders” **1st International Conference on the Role of Circadian Rhythms in Gastrointestinal, Metabolic and Neurological Diseases**. Chicago IL. May 5 – 6, 2016.
- “Intermittent Bioenergetic and Oxidative Challenges Promote Optimal Brain Function Throughout Life” **Society for Free Radical Research-Europe Clinical Science Award Lecture**, Budapest Hungary, June 9, 2016.
- “Dietary Challenges that Bolster Health: an Evolutionary Perspective” **International Symposium on Phenotypic Flexibility**. Lisbon, Portugal. June 14, 2016.
- “Bioenergetic Challenges and Higher Cortical Functions” **Fifth Global Symposium on Ketogenic Therapies**. Banff, Alberta, Canada. September 23, 2016.
- “Intermittent Bioenergetic Challenges and Lifelong Brain Health” **University of Colorado Boulder**, Monday, September 26, 2016.
- “Adaptive Responses of Neuronal Mitochondria to Bioenergetic Challenges” **American Physiological Society Integrative Biology of Exercise VII (IBE) Conference**. Phoenix, AZ. November 4, 2016.
- “Protecting the Nuclear and Mitochondrial Genomes to Enable Healthy Brain Aging” **University of Pennsylvania Genome Integrity Group**, Philadelphia, PA. December 12, 2016.
- “Bioenergetic Challenges, Mitochondrial Plasticity, and Neuronal Resilience” **University of California Irvine**, March 2, 2017.
- “Bioenergetic Challenges Promote Brain Resilience During Aging” **Demystifying Medicine**, NIH, Bethesda, MD. April 11, 2017.
- “How Intermittent Bioenergetic Challenges Bolster Brain and Body Health” **Welch Center for Prevention, Epidemiology and Clinical Research**, Johns Hopkins University School of Medicine. Baltimore MD. April 12, 2017.
- “Enhancement of Brain Function and Resilience by Intermittent Bioenergetic Challenges” **Cell Biology and Neuroscience Seminar Series, Rutgers University**, Piscataway, NJ. April 14, 2017.
- “Intermittent Bioenergetic Challenges Bolster Brain Resilience” **New York Academy of Sciences Conference on Neuroplasticity, Neuroregeneration and Brain Repair**. New York, NY. June 13, 2017.
- “Imagine That: Food Scarcity and the Evolution of the Human Brain” **Science for Nonscientists Lecture, National Institute on Drug Abuse**, Baltimore, MD. July 17, 2017.
- “Importance of the ‘metabolic switch’ in the health benefits of energy restriction protocols” **NIA Workshop on Nutrition and Aging**. Bethesda, MD. September 5, 2017.
- “Intermittent Bioenergetic and Dietary Phytochemical Challenges Bolster Brain Health” **Johns Hopkins Bloomberg School of Public Health**. September 19, 2017.
- “Tapping Adaptive Mitochondrial Stress Response Pathways for Neuroprotection” **Grand Challenges in Parkinson’s Disease Symposium. Van Andel Institute**, Grand Rapids MI. September 27, 2017.
- “Bioenergetic Challenge-Based Pathways that Optimize Mental and Physical Performance” **Workshop on ‘Enhancing and Extending Biological Performance and Resilience’**. University of Massachusetts Amherst. October 26, 2017.
- “Intermittent Bioenergetic and Dietary Phytochemical Challenges Bolster Brain Health” **National Cancer Institute**, Bethesda MD. December 12, 2017.
- “Cardioprotection by Intermittent Fasting: Mechanisms and Clinical Implications” **Cardiology Grand Rounds, Johns Hopkins University School of Medicine**. December 20, 2017.
- “Adaptive Responses of the Brain and ANS to Intermittent Bioenergetic Challenges” **Pennsylvania State University**, Hershey, PA. January 11, 2018.
- “Intermittent Metabolic Switching, Neuroplasticity and Brain Health” **Aghape Health Science University**, Bologna Italy (via videoconference).
- “Bioenergetics and Brain Health: Insight from Evolutionary Adaptation to Food Scarcity” **Chemical-Biology Interface Program, Johns Hopkins University**. February 2, 2018.
- “Intermittent Bioenergetic and Dietary Phytochemical Challenges Bolster Brain Health” **Department of Biology, University of Alabama**, Tuscaloosa, AL. February 9, 2018.

- “How do Intermittent Bioenergetic Challenges Enhance Brain Performance and Resilience?” **Keynote Lecture: Symposium on Bioenergetics and Neurodegenerative Disorders**, Chateau Mont Royal, Paris, France. March 8, 2018.
- “Intermittent Bioenergetic Challenges and Brain Health” **Conference on Metabolic Dysfunction in Disease States**, Gothenburg, Sweden (via Skype). March 23, 2018.
- “Roles for EVs in the Trans-Neuronal Propagation of Neurodegenerative Pathologies” **International Society for Extracellular Vesicles Workshop**, Baltimore, MD. March 23, 2018.
- “How Intermittent Bioenergetic Challenges Enhance Brain Performance and Resilience” **Insight into Parkinson’s. First Global Online Summit for Parkinson’s Disease**. April 11, 2018. Australia via the WWW.
- “Intermittent Fasting for Brain Health” **Medical Yoga 2018, Thomas Jefferson University**, Philadelphia PA; April 29, 2018.
- “Lifelong Brain Health is a Lifelong Challenge” **Science Writers Boot Camp. National Press Club**, Washington, DC. May 7.
- “Intermittent Metabolic Challenges: Pathways to Global Brain Health“ **Presidential Lecture, International Behavioural and Genetics Society Annual Meeting**. Mayo Clinic Civic Center, Rochester MN. May 17-21, 2018.
- “Bioenergetic Challenges, Inflammation, and Neurodegenerative Disorders” **National Institute on Allergy and Infectious Diseases Seminar Series**, Bethesda, MD. October 2, 2018.
- “Working for Food: How the Brain Adapts to Intermittent Bioenergetic Challenges” **Keynote Lecture, University of Virginia Neuroscience Symposium**, Charlottesville VA. October 18, 2018.
- “Cellular Adaptations to Intermittent Fasting: Impact on Brain and Cardiometabolic Resilience” **First International Conference on Fasting, Dietary Restriction, Longevity and Disease**. Los Angeles, CA. November 9, 2018.
- “How do Intermittent Bioenergetic Challenges Enhance Brain Performance and Resilience?” Department of Anesthesiology, **University of Maryland School of Medicine**, Baltimore, April 4, 2019.
- “Intelligence and Creativity Evolved as Adaptations to Food Scarcity: Implications for Brain Health” **Joe L. Parkin Memorial Lecture, University of Iowa**, Iowa City IA. April 18, 2019.
- “Anxiolytic and Cognition-Enhancing Actions of Intermittent Fasting and Ketones” **University of Miami School of Medicine**, Miami FL. May 15, 2019.
- “Working for Food: How the Brain and Body Adapt to Intermittent Bioenergetic Challenges” **Buchinger Wilhelmi Center**, Lake Constance Germany, June 29, 2019.
- “Intermittent Fasting to Extend Healthspan” **20th Annual Harvard Nutrition and Obesity Symposium**. Harvard University, Boston, MA. July 10, 2019.

Upcoming Invited Lectures

- “Intermittent...” **Osher Center for Integrative Medicine**, 8th Annual Clinical Nutrition Conference, Fort Lauderdale, FL. September 29 and 30.
- “ GABA “ **University of Kentucky College of Medicine**, Lexington, KY. October 10, 2019.
- “Intermittent Fasting Enhances Brain Resilience” **National Academy of Neuropsychology Conference**, San Diego CA. November 16, 2019.