Professional Curriculum Vitae (Resume) of Dr Michael J Kuhar

This CV is an abbreviated version. A full and detailed version is available on request.

2/1/2024

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CURRICULUM VITAE

Michael Joseph Kuhar

Address: Emory National Primate Research Center of Emory University
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Web site: http://www.mikekuhar2024.com

Education: 1965, B.S., University of Scranton,
Scranton, Pennsylvania, Departments of
Physics and Philosophy, Magna cum Laude

1965-66, Harvard University,
Cambridge MA, Physics (no degree, transfer to Johns Hopkins)

1970, Ph.D., The Johns Hopkins University,
Baltimore, Maryland, Departments of Biophysics
and Pharmacology

1988, Graduate Certificate in Substance Abuse Counseling, Loyola University
Baltimore MD.

Last Position At Emory University:

November 1995 – September 1, 2023, Candler Professor (tenured), Emory University
Candler Professor Emeritus, September, 2023
Sept 1, 2023 - Dec 31, 2023, Adjunct Professor of Pharmacology and Chemical Biology
Professor, Department of Pharmacology and Chemical Biology
Professor, Dept of Psychiatry and Behavioral Sciences (Adjunct)
Charles Howard Candler Professor of Neuropharmacology
Georgia Research Alliance Eminent Scholar (Emeritus in 2022)
Center for Ethics, Senior Faculty Fellow (2009-2023)
Adjunct Professor, Division of Behavioral Neuroscience and Psychiatric Disorders
Chief of the Neuroscience Division, 1995-2010, at the
Yerkes (now Emory) National Primate Research Center

Previous Positions:

July 1985-November 1995
Chief, Neuroscience Branch,
Addiction Research Center
National Institute on Drug Abuse

Professor, Part-time (1985-95), The Johns Hopkins
University School of Medicine, Departments of
Neuroscience, Pharmacology and Psychiatry

July 1981-1985, Professor, The Johns Hopkins University
School of Medicine, Departments of Neuroscience,
Pharmacology and Psychiatry

July 1980, Associate Professor, The Johns Hopkins
University School of Medicine, Departments of
Neuroscience, Pharmacology and Psychiatry

July 1976, Associate Professor, The Johns Hopkins
University School of Medicine, Departments of
Pharmacology and Psychiatry

October 1972, Assistant Professor, The Johns Hopkins
University School of Medicine, Departments of
Pharmacology and Psychiatry

October 1970, Postdoctoral Fellow, Yale University
School of Medicine, Department of Psychiatry and Basic Biological Sciences

Professional Societies:

American Association for the Advancement of Science (1969-present; Honorary Fellow, 2018)
Society for Neuroscience (1973-present; Nominating Committee, 1984-1987; Presidential Symposium Speaker, 1990; Public Information Committee, 1996-1999; Social Issues Committee, 2003-2006; President, Atlanta Chapter, 2003-2004)
American Society for Neurochemistry (1973-1983; Program Committee, 1978; Organizer of Symposium on Neural Peptides, 1978)
American Society for Pharmacology and Experimental Therapeutics (1974-present; 2014 – 2023, Emeritus, Symposium Organizer at International Meeting, 1984; Selection Committee for Otto Krayer Award, 1993, 1997, 2002; and Neuropharmacology Division Executive Committee, 2002-2005, and Chair, 2003-2004; John Jacob Abel Award Committee, 2004-2007; Program Committee, 2006-2008; Neuropharmacology Division Nominating Committee, 2007)
Mid-Atlantic Acetylcholine Discussion Group (1973-1978; Co-Chairman, 1975)
American College of Neuropsychopharmacology (Scientific Associate, 1978; Member, 1980; Fellow, 1986-present; Member of Education and Training Committee, 1984-1987; Program Committee, 1988-1990; Ethics Committee, 1991-1993; Credentials Committee, 1993-1995; Animals in Research Committee, 2001-2004; Emeritus, 2013- present)
International Brain Research Organization (IBRO) (1979-present)
International Drug and Alcohol Research Society (IDARS) (Member 2004-present; President, 2004-2008, Board of Directors 2004-2023)
International Society of Addiction Journal Editors (ISAJE) (Member 2012 – 2016)
College on Problems of Drug Dependence, Inc. (Member, 1994; Board of Directors, 1994-1998; Fellow, 1998; Executive Committee, 1999-2001; President, 1999-2000; Charter Member, 2006; Nominating Committee, 1994-1995; Publications Committee, 1994-1995; Media Relations Committee, Chair, 1994-1997; Long-Range Planning Committee, 2001-2004; Media Committee, 2001-2007; ONDCP Task Force, 2001-2003; Program Committee, 2013-2016, Awards Committee, 2016 -19)
Neuroethics Society (2007 – 2018)

Professional Honors and Other Experience (Post BS Degree):

Summer Program in Space Physics, Columbia University, 1965.
Atomic Energy Commission Fellowship in Nuclear Physics, Harvard University, 1965-66.
Graduate Fellowship, The Johns Hopkins Univ., Depts. Of Biophysics and Pharmacology, 1966-70.
Phi Beta Kappa (1970), The Johns Hopkins University.
Postdoctoral fellowship, Yale University 1970-1972.
National Institute of Mental Health Research Career Development Award, Type II (3/1/75 - renewed 3/1/80 and 3/1/85)
National Institute of Mental Health Small Grants Committee (9/1/77-8/31/81)
Distinguished Young Scientist in Maryland Award (1977, The Maryland Academy of Sciences)
Visiting Scientist, National Institute for Medical Research, Mill Hill, London (Summer 1978; Molecular Pharmacology Unit, A.S.V. Burgen, Director)
Consultant, Pharmacology Department, Hoffman-La Roche, 1980-1985
Grass Traveling Scientist, spring 1981, to Halifax, Nova Scotia
Listed among "1,000 Contemporary Scientists Most Cited 1965-1978", Current Contents 24, 5, 1981
Daniel H. Efron Award (1984, from the American College of Neuropsychopharmacology)
Mathilde Solowey Award for Research in Neuroscience, (1985 from the Foundation for Advanced Education in the Sciences)
First Ariens Lecture (1985, The Dutch Pharmacological Society; DUPHAR)
Family Therapy Institute of Washington, DC, Part-time Family Therapy Training, 1983-1985. Jay Haley and Cloe Madanes, Supervisors. 276 individual and group supervision hours.
Sterling Lecture (1987, Tufts Univ. School of Medicine; 1988, University of Kentucky Medical School)

Gold Lecture on Substance Abuse (1988, University of Florida Medical School at Gainesville)
Senior Executive Service Appointment (November 20, 1988, Dept. of Health & Human Services)
Administrator's Award for Meritorious Achievement (1989, ADAMHA)
Upjohn Lecture (1989, Uniformed Services University of the Health Sciences)
Thomas L. O'Donohue Memorial Lecture (1989, Howard University)
A. Ross McIntyre Award (1990, University of Nebraska Medical Center)
Presidential Symposium Lecturer (1990, Society for Neuroscience)
First Ivan F.W. Davidson Memorial Lecture (1990, Bowman Gray School of Medicine)
Distinguished Lecturer (1992, Stritch School of Medicine)
Otto Krayer Award (1992, American Society for Pharmacology and Experimental Therapeutics)
Harry Williams Lectureship Award (1992, Emory University School of Medicine)
Grass Lecture (1993, University of Kansas, MO)
Boots Distinguished Neuroscientist Lecture (1993, Louisiana State University Medical Center)
Visiting Committee, Medical Department (1993-1997, Brookhaven National Laboratory)
Consultant, Guilford Pharmaceuticals (1995)
Charles Howard Candler Professor (1995, Emory University)
Distinguished Lecturer (1996, University of South Alabama)
Eminent Scholar Award (1996, State of Georgia and Emory University)
Center for Brain Research (status appointment) Ege University, Turkey (1997-)
The Dana Alliance, Member (1997-2022)
Advisory Board, Addiction Studies Institute, Wake Forest University (1999-2009)
President, College on Problems of Drug Dependence, Inc. (1999-2000)
Testified before a Congressional appropriations subcommittee supporting the NIH budget (03/2000)
Invitation to White House on occasion of presenting the ONDCP policy on drugs (2/12/2002, and another time)
Scientific Advisory Board, Amethyst Technologies (1999-2000)
Scientific Advisory Board, Addiction Therapies, Inc. (1999-2003)
NIDA K05 Senior Scientist Award (1999-2004; 2004-2009)
NIDA Special Emphasis Panels (member or chair, 1999-2008)
Listed (by ISI) among the 250 most cited scientists in Neuroscience from 1981-2000 (rank 23rd)
Scientific Advisory Board, Center for Psychiatric Neuroscience, Univ of Mississippi Med School (2000-2005)
Director, Institutional Training Program in Drug Abuse, Emory University (2003-2014)
NIDA K Study Section (*Ad hoc*, 2003-2004; regular member, 2004-2008)
NIDA study sections, ad hoc member or chair (2008 – 2019).
Board of Directors, Aptotec, Inc. (2004-2015)
International Drug Abuse Research Society (IDARS) [First President (2004-2008)]
Establishment of the annual Michael Kuhar Travel Award for trainees at IDARS meetings (2009)
External Advisory Board, Center of Research Excellence in Natural Products Neuroscience, University of Mississippi at Oxford (2006-2022)
Wendy and Stanley Marsh Lecture in Substance Abuse and Addictive Disorders, Texas Tech University Health Sciences Center, 2007
Citations: over 67,000 lifetime citations (Research.com in 2023. https://research.com/scientists-rankings/biology-and-biochemistry)
Fulbright Award for Catholic University in Chile, South America (2008)
Teaching the Dalai Lama's Tibetan Buddhist Monks and Nuns at Dharamsala, India, through the Emory-Tibet Science Initiative (summers, 2009-2011).
Nathan B Eddy Award (for achievement in research, 2011, College on Problems of Drug Dependence)
Journal of Drug and Alcohol Research, Ashdin Press, Founding Editor-in-Chief, (2012 - 2019)
Gregory Bagby Distinguished Mentor lecture, LSU Med Sch (New Orleans), Dept Physiol, 4/2015.
Advisory Board for PrayerSpark, Inc. (2015 -)
Science Advisory Board, Chair, National Families in Action (2016 - 2023)
Reviewer for Fulbright Fellowship applications (2017 -)
Establishment of the "Michael Kuhar Neuroscience Travel Award" (competitive prize for trainees) by the Emory Primate Center of Emory University (December 2019)
Board of Directors of "Loving Solutions Inc.", a drug addiction treatment facility (May 2021).
Pioneer Award, from Frontiers in Addiction Research and Pregnancy teaching program, (January 2022).
Lifetime Achievement Award, International Drug and Alcohol Research Society (September 2022).
Scientific Integrity Award, Emory Univ School of Medicine (October 2023).

Editorial Boards:

Advances in Drug and Alcohol Research	(2021 -)
Biochemical Pharmacology	(2004-2013)
Brain Research	(1980-1989)
Current Molecular Pharmacology	(2008- 2020)
Current Opinion in Central and Peripheral Nervous Systems	(1998-2000)
Current Protocols in Pharmacology	(1996-2001)
Drug and Alcohol Dependence	(1995-2001)
Experimental and Clinical Psychopharmacology	(1992-2000)
International Journal of Molecular Medicine	(1997-2013)
Journal of Chemical Neuroanatomy	(1987-2000)
Journal of Drug and Alcohol Research, Editor-in-Chief	(2012-2019)
Journal of Neurochemistry	(1980-1985)
Journal of Neuroscience	(1983-1989)
Journal of Pharmacology and Experimental Therapeutics	(1993-2006)
Life Sciences	(2003-2012)
Medical Hypotheses and Research	(2003-2013)
Molecular and Cellular Neuroscience	(1990-1995)
Neurobiology of Aging	(1980-1985)
NeuroImage	(1991-1995)
Neuropeptides	(1980- 2011)
Neuropharmacology	(1980-1992)
Neuropsychopharmacology	(1991-1995)
Neuroscience-Net	(1996- 2005)
Peptide Research	(1989-1994)
Peptides	(2007-2011)
Research Communications in Substances of Abuse	(1991-1995)
Substance and Alcohol Misuse	(1980-1985)
Synapse	(1992-2008)
Trends in Neuroscience	(1982-1994)
The Open Ethics Journal	(2007- 2011)
Substance Abuse: Research and Treatment	(2007- 2012)

Seminar and Symposia invitations:

Dr Kuhar has presented more than 300 invited seminars, symposia lectures, and special and keynote lectures since 1972 when he became an Assistant Professor. For example, in the 14-year period between 1987 and 2001, 143 presentations were given, and in 2012, 17 presentations were given. In 1980, 18 presentations were given. These invited presentations were made from various institutions from approximately 40 countries. The inviting institutions included Yale, Princeton, UCSF, Columbia, the NIH, Dupont Pharmaceuticals., and many others. There also were many lectures in symposia at major societies and special events in many countries.

SELECTED BOOKS AND VOLUMES

1. Yamamura, H.I., Enna, S.J., and Kuhar, M.J. (Eds.). Neurotransmitter Receptor Binding. Raven Press, New York, 1978.

2. Kuhar, M.J. and Pasternak, G.W. (Eds.). Analgesics: Neurochemical, Behavioral and Clinical Perspectives, Part of set in Neuropharmacology (S.J. Enna, Set Ed.). Raven Press, New York, 1984.

3. Bjorklund, A., Hokfelt, T., and Kuhar, M.J. (Eds.). Handbook of Chemical Neuroanatomy, Vol. 3, Classical Transmitters and Transmitter Receptors in the CNS Part II. Elsevier North-Holland Biomedical Press, Amsterdam, 1985.

4. Yamamura, H.I., Enna, S.J., and Kuhar, M.J. (Eds.). Methods in Neurotransmitter Receptor Analysis. Raven Press, New York, 1990.

5. Rapaka, R.S., Makriyannis, A., and Kuhar, M.J. (Eds.). Emerging Technologies and New Directions in Drug Abuse Research, NIDA Research Monograph Series 112. U.S. Government Printing Office, Wash. DC, 1991.

6. Jaffe, J.H., Anthony, J.C., Johanson, C.-E., Kuhar, M.J., Moore, M.H., and E.M. Sellers (Eds.). Encyclopedia of Drugs and Alcohol. Simon & Schuster Macmillan, New York, 1995.

7 Schuster, C.R. and Kuhar, M.J. (Eds.). Pharmacological Aspects of Drug Dependence, Vol. 118, Handbook of Experimental Pharmacology. Springer-Verlag, New York, 1996.

8. Kuhar, M.J. and Pogun, S. (Eds.). Special Supplement Issue: Mathematical Modeling of Mental Disorders and Processes. Neuropsychopharmacology 28(Suppl. 1): 2003.

9. Kuhar, M.J. (Editor of Special Issue on CART Peptides). Peptides, Vol. 27, August. 2006.

10. Sibley, D.R., Hanin, I., Kuhar, M., and Skolnick, P. (Eds). Handbook of Contemporary Neuropharmacology, Vols. 1-3. John Wiley & Sons, Hoboken, NJ, 2007.

11. Ali, S.F. and Kuhar, M.J. (Eds). Drug Addiction: Research Frontiers and Treatment Advances, Ann N Y Acad Sci, Vol 1139, 2008.

12. Kranzler, HR and Korsmeyer, P (Eds). Kuhar MJ et al., (Assoc Eds.). Encyclopedia of Drugs, Alcohol, and Addictive Behavior, 3rd Edition. MacMillan Reference USA, New York, 2009.

13. Kuhar, MJ. The Addicted Brain: why we abuse drugs, alcohol, and nicotine. FT Press, Upper Saddle River, NJ, 2012. ISBN-10: 0-13-254250-1. Four printings of the hardback, many sales of softcover, and Translations into Korean, Japanese, Spanish, Chinese, and parts of book into Polish and Russian.

14. Kuhar, MJ. The Addicted Brain. A MOOC (online course) by Coursera and Emory University. First given on June 23, 2014, and continuing, https://www.coursera.org/course/addictedbrain, accessed on July 25, 2020. Expanded and edited in 2018.

15. Kuhar, MJ. Research Ethics in the Life Sciences. Amazon.com. Self-Published. Second Edition. Oct 9, 2019, ISBN-13: 9781080760237. Third Edition. April, 2022, ISBN 9798413967607.

16. Kuhar, MJ. The Art and Ethics of Being a Good Colleague. Amazon. First edition, 2016. Second Edition, April 1, 2020. ISBN-13: 978-1656762917.

17. . Kuhar, MJ. The Addicted Brain: why we abuse drugs, alcohol, and nicotine. Second Edition, 2023, Amazon, ISBN : 9798374305302.

PATENTS Issued

1. Carroll, F.I., Lewin, A.H., Abraham, P., Kuhar, M.J., and Boja, J.W. Cocaine Receptor Binding Ligands. Patent Number: 5,128,118. July 7, 1992.

2. Uhl, G.R., Kuhar, M.J., Shimada, S., Kitayama, S., Patel, A., Lin, C.L. cDNA Encoding a Dopamine Transporter and Protein Encoded Thereby. Patent Number: 5,312,734. May 17, 1994.

3. Kuhar, M.J., Boja, J.W., Carroll, F.I., Lewin, A.H., and Abraham, P. Cocaine Receptor Binding Ligands. Patent Number: 5,380,848. January 10, 1995.

4. Kuhar, M.J., Carroll, F.I., Boja, J.W., Lewin, A.H., and Abraham, P. Cocaine Receptor Binding Ligands. Patent Number: 5,413,779. May 9, 1995.

5. Kuhar, M.J., Carroll, F.I., Boja, J.W., Lewin, A.H., and Abraham, P. Cocaine Receptor Binding Ligands. Patent Number: 5,496,953. March 5, 1996.

6. Kuhar, M.J., Carroll, F.I., Boja, J.W., Lewin, A.H., and Abraham, P. Methods for Controlling Invertebrate Pests Using Cocaine Receptor Binding Ligands. Patent Number: 5,935,953. August 10, 1999.

7. Carroll, F.I., Kuhar, M.J., Boja, J.W., Lewin, A.H., and Abraham, P. Cocaine Receptor Binding Ligands. Patent Number: 6,329,520. December 11, 2001.

8. Kuhar, M.J., Carroll, F.I., Boja, J.W., Lewin, A.H., and Abraham, P. Dopamine Transporter Imaging Ligand. Patent Number: 6,358,492. March 19, 2002.

9. Carroll, F.I., Kuhar, M.J., Boja, J.W., Lewin, A.H., and Abraham, P. Cocaine Receptor Binding Ligands. Patent Number: 6,531,483. March 11, 2003.

10. Carroll, F.I., Kuhar, M.J., Boja, J.W., Lewin, A.H., and Abraham, P. Cocaine Receptor Binding Ligands. Patent Number 6,706,880 B2. March 16, 2004.

11. Kuhar, M.J., Carroll, F.I., Boja, J.W., Lewin, A.H., and Abraham, P. Cocaine Receptor Binding Ligands. Patent Number 7,011,813. March 14, 2006.

SELECTED REFEREED JOURNAL ARTICLES.

Dr Kuhar has published about 460 articles in refereed journals. These have generated more than 67,000 lifetime citations. This selected list shows typical publications from Dr Kuhar's lab. A more complete list can be found at PubMed using the search term "Kuhar MJ."

1. Kuhar, M.J. and Snyder, S.H. The Subcellular Distribution of Free ^{3}H-Glutamic Acid in Rat Cerebral Cortical Slices. J. Pharmacol. Exp. Ther. 171: 141-152, 1970.

2. Kuhar, M.J., Green, A.I., Snyder, S.H., and Gfeller, E. Separation of Synaptosomes Storing Catecholamines and Gamma-Aminobutyric Acid in Rat Corpus Striatum. Brain Res. 21: 405-417, 1970.

3. Wofsey, A.R., Kuhar, M.J., and Snyder, S.H. A Unique Synaptosomal Fraction, Which Accumulates Glutamic and Aspartic Acids in Brain Tissue. Proc. Natl. Acad. Sci. (USA) 68: 1102-1106, 1971.

4. Kuhar, M.J., Roth, R.H., and Aghajanian, G.K. Synthesis of Catecholamines in the Locus Coeruleus from ^{3}H-Tyrosine *in vivo*. Biochem. Pharmacol. 21: 2280-2282, 1972.

5. Bustos, G., Kuhar, M.J., and Roth, R.H. Effect of Gamma- Hydroxybutyrate on Dopamine Synthesis and Uptake by Rat Striatum. Biochem. Pharmacol. 21: 2649-2652, 1972.

6. Aghajanian, G.K., Kuhar, M.J., and Roth, R.H. Serotonin-Containing Neuronal Perikarya and Terminals: Differential Effects of *p*-Clorophenylalanine. Brain Res. 54: 85-101, 1973.

7. Kuhar, M.J. and Aghajanian, G.K. Selective Accumulation of ^{3}H-Serotonin by Nerve Terminals of Raphe Neurones: An autoradiographic Study. Nature 241: 187-189, 1973.

8. Kuhar, M.J., Pert, C.B., and Snyder, S.H. Regional Distribution of Opiate Receptor Binding in Monkey and Human Brain. Nature 245: 447-450, 1973.

9. Coyle, J.T. and Kuhar, M.J. Subcellular Localization of Dopamine Beta-Hydroxylase and Endogenous Norepinephrine in the Rat Hypothalamus. Brain Res. 65: 475-487, 1974.

10. Kuhar, M.J. and Simon, J.R. Acetylcholine Uptake: Lack of Association with Cholinergic Neurons. J. Neurochem. 22: 1135-1137, 1974.

11. Mulder, A.H., Yamamura, H.K., Kuhar, M.J., and Snyder, S.H. Release of Acetylcholine from Hippocampal Slices by Potassium Depolarization: Dependence on High Affinity Choline Uptake. Brain Res. 70: 372-376, 1974.

12. Rommelspacher, H., Goldberg, A.M., and Kuhar, M.J. Action of Hemicholinium-3 on Cholinergic Nerve Terminals After Alteration of Neuronal Impulse Flow. Neuropharmacology 13: 1015-1023, 1974.

13. Yamamura, H.I., Kuhar, M.J., and Snyder, S.H. *In vivo* Identification of Muscarinic Cholinergic Receptor Binding in Rat Brain. Brain Res. 80: 170-176, 1974.

14. Rommelspacher, H. and Kuhar, M.J. Effects of Dopaminergic Drugs and Acute Medial Forebrain Bundle Lesions on Striatal Acetylcholine Levels. Life Sci. 16: 65-70, 1975.

15. Simon, J.R., Mittag, T.W., and Kuhar, M.J. Inhibition of Synaptosomal Uptake of Choline by Various Choline Analogs. Biochem. Pharmacol. 24: 1139-1142, 1975.

16. Kuhar, M.J. and Yamamura, H.I. Light Autoradiographic Localization of Cholinergic Muscarinic Receptors in Rat

Brain by Specific Binding of a Potent Antagonist. Nature 253: 560-561, 1975.

17. Simon, J.R. and Kuhar, M.J. Impulse-Flow Regulation of High Affinity Choline Uptake in Brain Cholinergic Nerve Terminals. Nature (London.) 255: 162-163, 1975.

18. Pert, C.B., Kuhar, M.J., and Snyder, S.H. Autoradiographic Localization of the Opiate Receptor in Rat Brain. Life Sci. 16: 1849-1854, 1975.

19. Enna, S.J., Kuhar, M.J., and Snyder, S.H. Regional Distribution of Postsynaptic Receptor Binding for Gamma-Aminobutyric Acid (GABA) in Monkey Brain. Brain Res. 93: 168-174, 1975.

20. Bunney, B.S., Walters, J.R., Kuhar, M.J., Roth R.H., and Aghajanian, G.K. D & L Amphetamine Stereoisomers: Comparative Potencies in Affecting the Firing of Central Dopaminergic and Noradrenergic Neurons. Psychopharmacol. Comm. 1: 177-190, 1975.

21. Rommelspacher, H. and Kuhar, M.J. Effects of Drugs and Axotomy on Acetylcholine Levels in Central Cholinergic Neurons. Naunyn-Schmiedeberg's Arch. Pharmacol. 291: 17-21, 1975.

22. Atweh, S., Simon, J.R., and Kuhar, M.J. Utilization of Sodium-Dependent High Affinity Choline Uptake *in vitro* as a Measure of the Activity of Cholinergic Neurons *in vivo*. Life Sci. 17: 1535-1544, 1975.

23. Simantov, R., Kuhar, M.J., Pasternak, G.W., and Snyder, S.H. The Regional Distribution of a Morphine-like Factor Enkephalin in Monkey Brain. Brain Res. 106: 189-197, 1976.

24. Simon, J.R., Atweh, S., and Kuhar, M.J. Sodium-Dependent High Affinity Choline Uptake: A Regulatory Step in the Synthesis of Acetylcholine. J. Neurochem. 26: 909-922, 1976.

25. Kuhar, M.J. and Yamamura, H.I. Localization of Cholinergic Muscarinic Receptors in Rat Brain by Light Microscopic Radioautography. Brain Res. 110: 229-243, 1976.

26. Simon, J.R. and Kuhar, M.J. High Affinity Choline Uptake: Ionic and Energy Requirements. J. Neurochem. 27: 93-99, 1976.

27. Pert, C.B., Kuhar, M.J., and Snyder, S.H. Opiate Receptor: Autoradiographic Localization in Rat Brain. Proc. Natl. Acad. Sci. (USA) 73: 3729-3733, 1976.

28. Murrin, L.C. and Kuhar, M.J. Activation of High Affinity Choline Uptake *in vitro* by Depolarizing Agents. Mol. Pharmacol. 12: 1082-1090, 1976.

29. Atweh, S.F. and Kuhar, M.J. Autoradiographic Localization of Opiate Receptors in Rat. Brain. I. Spinal Cord and Lower Medulla. Brain Res. 124: 53-67, 1977.

30. Simantov, R., Kuhar, M.J., Uhl, G.R., and Snyder, S.H. Opioid Peptide Enkephalin: Immunohistochemical Mapping in Rat Central Nervous System. Proc. Natl. Acad. Sci. (USA) 74: 2167-2171, 1977.

31. Atweh, S.F. and Kuhar, M.J. Autoradiographic Localization of Opiate Receptors in Rat Brain. II. The Brain Stem. Brain Res. 129: 1-12, 1977.

32. Atweh, S.F. and Kuhar, M.J. Autoradiographic Localization of Opiate Receptors in Rat Brain. III. The Telencephalon. Brain Res. 134: 393-405, 1977.

33. Uhl, G.R., Kuhar, M.J., and Snyder, S.H. Neurotensin: Immunohisto-chemical Localization in Rat Central Nervous System. Proc. Natl. Acad. Sci. (USA) 74: 4059-4063, 1977.

34. Atweh, S.F., Murrin, L.C., and Kuhar, M.J. Presynaptic Localization of Opiate Receptors in the Vagal and Accessory Optic System: An Autoradiographic Study. Neuropharmacol. 17: 65-71, 1978.

35. Kuhar, M.J., Atweh, S.F., Murrin, L.C., and Simon, J.R. Sodium-Dependent High Affinity Choline Uptake: Its Significance and Practical Use. Neuropsychopharmacologie 1(10): 469-475, 1978.

36. Kuhar, M.J., Murrin, L.C., Malouf, A.T., and Klemm, N. Dopamine Receptor Binding *in vivo*: The Feasibility of Autoradiographic Studies. Life Sci. 22: 203-210, 1978.

37. Murrin, L.C., Lewis, M.S., and Kuhar, M.J. Amnio Acid Transport: Alterations Due to Synaptosomal Depolarization. Life Sci. 22: 2009-2016, 1978.

38. Coyle, J.T., Molliver, M.E., and Kuhar, M.J. *In situ* Injection of Kainic Acid: A Method for Selectively Lesioning Neuronal Cell Bodies While Sparing Axons of Passage. J. Comp. Neurol. 180: 301-324, 1978.

39. Kuhar, M.J. and Zarbin, M.A. Synaptosomal Transport: A Chloride Dependence for Choline, GABA, Glycine and Several Other Compounds. J. Neurochem. 31: 251-256, 1978.

40. Uhl, G.R., Kuhar M.J., and Snyder, S.H. Enkephalin-Containing Pathway: Amygdaloid Efferents in the Stria Terminalis. Brain Res. 149: 223-228, 1978.

41. Kuhar, M.J., Mak, L.L., and Lietman, P.S. Autoradiographic Localization of ^{3}H-Gentamycin in the Proximal Renal Tubules of Mice. Antimicrob. Agents Chemother. 15: 131-132, 1979.

42. Uhl, G.R., Goodman, R.R., Kuhar, M.J., Childers S.R., and Snyder, S.H. Immunohistochemical Mapping of Enkephalin-Containing Cell Bodies, Fibers and Nerve Terminals in the Brain Stem of the Rat. Brain Res. 166: 75-94, 1979.

43. Klemm, N. and Kuhar, M.J. Post-mortem Changes in High Affinity Choline Uptake. J. Neurochem. 32: 1487-1494, 1979.

44. Klemm, N., Murrin, L.C., and Kuhar, M.J. Neuroleptic and Dopamine Receptors: Autoradiographic Localization of ^{3}H-Spiperone in Rat Brain. Brain Res. 169: 1-9, 1979.

45. Young, W.S., III, and Kuhar, M.J. Autoradiographic Localization of Benzodiazepine Receptors in the Brain of Humans and Animals. Nature 280: 393-395, 1979.

46. Young, W.S., III, and Kuhar, M.J. Noradrenergic Alpha-1 and Alpha-2 Receptors: Autoradiographic Visualization. Eur. J. Pharmacol. 59: 317-319, 1979.

47. Young, W.S., III, and Kuhar, M.J. A New Method for Receptor Autoradiography: [^{3}H]Opioid Receptors in Rat Brain. Brain Res. 179: 255-273, 1979.

48. Niehoff, D.L., Palacios, J.M., and Kuhar, M.J. *In vivo* Receptor Binding: Attempts to Improve Specific/ Non-specific Ratios. Life Sci. 25: 819-826, 1979.

49. Murrin, L.C., Gale, K., and Kuhar, M.J. Autoradiographic Localization of Neuroleptic and Dopamine Receptors in the Caudate-Putamen and Substantia Nigra: Effects of Lesions. Eur. J. Pharmacol. 60: 229-235, 1979.

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SELECTED BOOK CHAPTERS, REVIEWS AND OTHER

There are about 195 items in this category, but only selected ones are shown.

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STUDENTS, FELLOWS AND VISITORS

More than seventy pre- and postdoctoral students, visitors and other trainees have spent time training in Dr Kuhar's laboratory in research. Many went on to important positions in academia, industry, and government.

TEACHING AND RELATED CONTRIBUTIONS (January 1995 to June 2022 at Emory University)

Dr Kuhar has been involved in teaching and training: graduate students in the Neuroscience Program and in the Molecular and Systems Pharmacology Program, medical students in the psychiatry and pharmacology courses, post-doctoral fellows and PGY IV residents in the Addictions Psychiatry Program. He also gives lectures in eight courses in various programs. (Note that in addition to this teaching and mentoring at Emory, He did similar work in the Depts of Pharmacology and Neuroscience at The Johns Hopkins University School of Medicine from 1972 to 1985 as faculty, and then from 1985 to 1995 as an Adjunct.)

Molecular and Systems Pharmacology Graduate Program:

1. Executive Committee for 3 years.
2. Director of student qualifying exams, 2 years.
3. Director of IBS 531, the main Pharmacology course for incoming graduate students, for 3 years.
4. Lectures in IBS 531, 532, 506Y, 717, 501, 570R
5. Course Director for IBS 717, Neuropharmacology, and course Director for MSP501 Ethics.
6. Involvement in new student interviewing and recruiting.
7. Since 1995, mentored about 30 trainees.
8. Thesis committees for 15 students.

Neuroscience Graduate Program:

1. Mentored rotation students, about 2 per year.
2. Chair of Nominating Committee for new program directors and committee members, for 6 years.
3. Thesis committees.
4. Involvement in new student interviewing and recruiting.
5. Course Director for Frontiers in Neuroscience, a required seminar course for 2 years.
6. Course C0-Director for NS570 and IBS717.
7. Lectures in Systems Neuroscience Course and in Frontiers of Neuroscience Series.
8. Executive Committee, 3 years.

Medical Students:

1. Lectures on antidepressant, antipsychotic and Alzheimer's drugs in the Pharmacology Course.
2. Lectures on psychostimulants in the Behavioral Neuroscience and Psychiatry Course.
3. Lectures on Pharmacokinetics in Module 1.

PGY IV Addictions Psychiatry Program:

1. Advisor to Program Director since inception of the program.
2. Lectures on general drug abuse, psychostimulants, buprenorphine and drug development to residents and Fellows in Addiction Psychiatry.

Postdoctoral Fellows:

1. Mentor to 20 fellows.

Other:

1. In the role of Senior Scientist and Chief of the Neuroscience Division at Yerkes, I both formally and informally mentored young faculty as well as students and fellows.
2. Lectures in Grants Workshop for Emory faculty and fellows and students.
3. Director of the Institutional NIDA Training Program (2003 – 2014), "The Neurobiology of Drug Abuse", which provided 10 training slots to our training faculty per year.
4. Ethics lectures on Authorship, Research Misconduct, Mentoring, Data Management and Collegial Ethics
5. Lectures to Tibetan monks in the ETSI program in India, 3 consecutive summers (2008-11), on drug Addiction.
6. Lectures on drug addiction to Anesthesiology Associates and in IBS532, NS570, IBS506, MSP501, and IBS717. Also, discussion leader on Research Misconduct in GAH601.
7. Development and presentation of a MOOC with Emory and Coursera: "The Addicted Brain"
8. Numerous lectures on ethics and addiction to the community in various forums or courses.
9. Mentor to trainee in the Center for Ethics.
10. Various lectures on ethical topics in a variety of meetings and forums.

Grant Support

In addition to university funds and salary, Dr Kuhar's research and teaching has been supported by grant funds; these amounted to more than 38 million dollars.

The federal sources of these grants include the National Institute of Mental Health, the National Institute on Drug Abuse, The National Institute of General Medical Sciences, The National Institute of Neurologic Disorders and Stroke, and The Office of National Drug Control Policy,

State sources include the Georgia Research Alliance.

Private and industry sources include Pfizer, Hoffman-La Roche, Lederle, Upjohn, Solvay, the Mcknight Foundation, and the Huntington's Disease Fund.

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