

CURRICULUM VITAE

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EDUCATION

B.Sc., 1970, Calcutta University, India (physiology—honors)
M.Sc., 1973, Calcutta University, India (physiology/biophysics)
Ph.D., 1975, Calcutta University, India (physiology/endocrinology)
D.Phil., 1979, University of Oxford, UK (physiology/neuroendocrinology)

PROFESSIONAL EXPERIENCE

Postdoctoral Research Assistant, University of Oxford, Department of Anatomy (1979–1980)
Visiting Postdoctoral Fellow, Yale University School of Medicine, Section of Neurological Surgery (1979)
Research Associate, Michigan State University, Department of Physiology (1980–1983)
Assistant Professor, University of California, San Diego, Department of Reproductive Medicine (1983–1988)
Associate Professor (Tenured), Department of Veterinary and Comparative Anatomy, Pharmacology and Physiology, Washington State University (1988–1996)
Professor, Department of Veterinary and Comparative Anatomy, Pharmacology and Physiology, Washington State University (1996–1999)
Adjunct Professor, Program of Pharmacology and Toxicology and Department of Genetics and Cell Biology, Washington State University (1989–1999)
Director, Alcohol and Drug Abuse Program, Washington State University (1998–1999)
Professor (Tenured), Department of Animal Sciences (4/1999–6/2001); Biotechnology Center for Agriculture & Environment (4/1999–6/2001); Center of Alcohol Studies (07/2000–6/2001), Rutgers–The State University of New Jersey
Chairman Department of Animal Sciences, Rutgers–The State University of New Jersey (4/1999–10/2001)
Professor II and Distinguished Professor, Department of Animal Sciences; the Biotechnology Center of Agriculture & Environment, Rutgers–The State University of New Jersey (7/2001–present)
Director, Biomedical Division, Center of Alcohol Studies, Rutgers–The State University of New Jersey (10/2001–Present)
Director, Program for Endocrinology, Rutgers–The State University of New Jersey (10/2001–Present)
Faculty member, South Asian Studies Program, Rutgers–The State University of New Jersey (10/2003–Present)
Faculty Advisor, Bengali Student Association, Rutgers–The State University of New Jersey (10/1999–Present)
Co-Chairs, Ad Hoc Faculty Strategic Planning Committee for India (04/2012 – 12/2013)
Board of Governor Professor, Department of Animal Sciences; Rutgers–The State University of New Jersey (12/09/15–Present)
Member, Committee on Academic Planning and Review, Rutgers–The state University of New Jersey

ADMINISTRATIVE TRAINING

Leadership Workshop, Spring 1999, Washington State University
Recently Appointed Administrator Workshop, May 30–June 2, 2000, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln

SCIENTIFIC ORGANIZATIONS

American Association for Advancement of Science
American Association for Cancer Research
American Neuroendocrine Society
The Endocrine Society
International Brain Research Organization
International Society for Biomedical Research on Alcoholism
International Society of Neuroendocrinology
Research Society on Alcoholism
Society for Neuroscience
Society for the Study of Reproduction

Association of Scientist of Indian Origin
Indian Academy of Neurosciences
International Behavioural and Neural Genetics Society

RESEARCH AND ACADEMIC HONORS

National Merit Scholarship, Indian Government, 1971–1973
Gold Medal Award, Calcutta University, India, 1973
UGC Research Fellowship, Calcutta University, India, 1973–1975
State Scholarship, West Bengal Government, India, 1975–1978
Wellcome Trust Research Scholarship, UK, 1978–1980
Best Thesis Award, Society for Endocrinology, UK, 1979
Mellon Foundation Faculty Scholar Award, USA, 1983–1986
Basil O'Connor Research Award, March of Dimes, USA, 1985–87
Fellow, American Association for the Advancement of Science, 1996–present
Senior Scientist Award, Association of Scientist of Indian Origin, New Orleans, 1997
Research Scientist Developmental Award, National Institutes of Health, 1997–2002
Sustained Research Excellence Award, Cook College, Rutgers University, 2004
Suva Mukherjee Memorial Oration Gold Medal, Physiological Society of India, 2006
Merit Award, National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health, 2009-2019.
Fellow, Indian Academy of Neurosciences (IAN), 2014-present
2013 S.K. Manchanda Memorial FIPS Oration, 2013
Selected Faculty Honor by Rutgers During 2014 University Commencement Ceremony
Research Society on Alcoholism 2017 Distinguished Researcher Award
Nominated by Research Society on Alcoholism (RSA) for Tharp Award (result will be announced in November).

SOCIETY BOARD MEMBERSHIP

Membership Committee, Endocrine Society, 1996–1999
Finance Committee, Research Society on Alcoholism, 1997–1998
Charter Member, American Neuroendocrine Society, 1997
President, Society for Neuroscience Northern Rocky Mountain Chapter, 1998–1999
Public Communication Committee, Research Society on Alcoholism, 1999–2001
President and Charter Member, Alcohol Researcher of Indian Origin, 2009
Indian Academy of Neurosciences (IAN)- US Chapter organizing committee, 2015
Secretary international affairs of Indian Academy of NeuroSciences (IAN). 2015
Member, Executive committee of the American Association of Indian Scientists in Cancer Research (AAISCR)

FEDERAL ADVISORY BOARDS AND GRANT REVIEW

Federal Advisory Board

NIAAA Editorial Advisory Board for Alcohol Research & Health, 2009-2013
Advisory Board of the NIAAA Center for Neurobiology of Adolescent Drinking in Adults (NADIA)
Advisory Board of the NIAAA Center for Alcohol Research in Epigenetics (CARE).

Regular NIH Study Section Member

Alcohol Biomedical Research Review Committee, Neuroscience and Behavior Subcommittee, 1992–1996
ALTX III, 2001–2003
AA4 -2010-2014

Ad Hoc NIH Study Section Member

Member, Biochemistry, Physiology and Medicine Subcommittee (ALCB1) 1991
Member, Neuroscience and Behavior Subcommittee (ALCB2) 1991–1992

Member, Metabolic Pathology Special Emphasis Panel 1996
Member, ALTX Special Emphasis Panel 1997, 1999
Member, Neurotoxicology 4, July and November 1999; October 2000
Member, NIAAA Center Grant Special Review Panel, 2002–2004
Member, ZRG1 Special Emphasis Panel 1997–2000; Ad hoc member 2002–2008
Chair, ZRG NMB, Neurotoxicology of Heavy Metals Study Section, 2004
Member, ZRG1 IMM, 2005
Member, ZDK1 GRB-4 M, 2005
Member, Neurotoxicity and Alcohol Study Section, 2006
Member, ZDK1 GRB-4 M3, 2006
Member, NIAAA P20 AND P50 Center Grant Special Review Panel, 2007, 2008, 2012
Chair, ZAA1CC16 Study section and NAL, 2007
Member, ZA1CC and NAL, 2008
Member, NAL; MCE, Challenge grants, 2009
Ad hoc member, AA4, 2010
Ad hoc member, ZAA1 DD (05), March, 2015
Ad hoc member, ZAA1 GG (65), June, 2015
Ad hoc member, ZAA1 DD (05), Nov, 2015
Ad hoc member, ZRG1 IFCN-L (02) M, Nov, 2016
Adhoc member, ZRG1 OBT-J (55), ZRG1 OBT-H (07), March 29, 2017

Ad Hoc Grant Reviewer for other agencies

National Science Foundation, 1987, 1991–2005
The New York Academy of Sciences, 1991
Department of Veterans Affairs, 1995
NSERC, Canada, 2006
Deutsche Forschungsgemeinschaft (DFG), 2010
European Foundation for Alcohol Research, 2013
Prostate Cancer UK, 2013

Graduate Program Reviewer

National Research Council Assessment of Research Doctorate Program, 2007

EDITORIAL BOARDS AND MANUSCRIPT REVIEW

Field Editor:

2015-2018: Alcoholism: Clinical & Experimental Research

Editorial Board Member

Neuroendocrinology 1987–1990, *Endocrinology* 1989–1992, *Open Endocrinology Journal*, 2007-2014, *Journal of Stem Cell Research and Transplantation*, present; *Journal of Hormones*, present.

Ad Hoc Reviewer for Journals

Alcohol; Alcoholism: Clinical and Experimental Research; Biology of Reproduction; Cells, Tissues and Organs; Brain Research; Cancer Research; Endocrine; Endocrinology; Journal of Endocrinology; Journal of Molecular Endocrinology; Journal of Neurochemistry; Journal of Neuroendocrinology; Journal of Neuroscience; Life Sciences; Molecular and Cellular Neurosciences; Molecular Endocrinology; Nature Medicine; Neuroendocrinology; Pharmacological Research; Synapse Journal of Pharmacology and Experimental Therapeutics,

Neuropeptide, Indian Journal of Experimental Biology, Alcohol, BBA - Gene Structure and Expression, Neuroscience, Infection and Immunity, Journal of Physiology, Gene Therapy, Journal of Neuropathology and Experimental Neurology, Journal of Biological Rhythms, International Journal of Cell Biology, Journal of Immunology, Clinical and Experimental Metastasis, Addiction Biology, Frontiers in Genetics, Journal of Neuroimmune Pharmacology, Alcohol Research: Current Reviews, The International Journal of Neuropsychopharmacology, PLoS One.

RESEARCH CONSULTANT

Gynex Corporation, Chicago, 1985–1987

INVITATION TO INTERNATIONAL AND NATIONAL MEETINGS & INSTITUTES

Plenary Lectures:

Distinguished Foreign Scientist Lecture, Congress of International Chinese Integrative Medicine Oncology. “Role of Stress Control in Cancer Prevention.” Shanghai, China, 18-19 October, 2008.

Platinum Jubilee Lecture, “Epigenetic Transgenerational Actions of Alcohol on Stress and Neuroimmune Axes” Platinum Jubilee Celebration of Physiological Society of India, Science City Convention Center, Kolkata, Nov 12-14, 2009.

Distinguished Foreign Scientist Lecture, “Gene and Environment Interaction in Regulating Body Stress and Immune Functions” 98th Indian Science Congress, SRM University, Chennai, January 3 – 7, 2011

Keynote Address, “Male germline carries for many generation some alcohol modified genes that promote stress, anxiety and cancer,” at the Indo-US Symposium on Impact of Early Life Adversity on Developing Brain, at the Department of Biochemistry, K. G. Medical University, Lucknow, October 29, 2013.

S.K. Manchanda Memorial Oration lecture, “Beta-Endorphin Neuronal Activation: A Potential Measure to Prevent Cancer Growth, Progression and Metastasis” at the Fifth Congress of the Federation of Indian Physiological Societies (FIPS) in Tirupati, India on December 17, 2013.

7th Plenary Lecture, “Alterations in Genes Impacting Circadian Rhythms and Stress Axis: Possible Markers for FASD” at the 7th International Conference on FASD, Vancouver, Canada, March 1-4, 2017.

Plenary Lecture, 7th International Conference on Fetal Alcohol Spectrum Disorder, “Alterations in Genes Impacting Circadian Rhythms and Stress Axis: Possible Markers for FASD”, Vancouver, BC, March 1-4, 2017.

Plenary Lecture, International conference on Metabolic Diseases: Genetics, Epigenetic and Proteomics, “Preconception alcohol drinking alters glucose homeostasis and increases diabetes susceptibility in the offspring”, Sofia, Bulgaria, May 19-21, 2017.

Keynote Address, 5th Asia-Pacific Society for Alcohol and Addiction Research (APSAAR) conference, “Alcohol epigenetic programming of the stress axis transmits from mother to child with fetal alcohol syndrome disorders” Taipei, Taiwan, May 29th until June 3rd, 2017.

Plenary Lecture, Distinguished Researcher Award Lecture, Research society on Alcoholism, 41st Annual RSA Scientific Conference, “Understanding health outcomes of excessive alcohol use through the window of the neuro-endocrine-immune system,” Denver, Colorado. June 24th – June 28th, 2017

Chair, Scientific Sessions at International and National Meetings

Satellite Symposium of Endocrine Society on Brain-Gut-Peptides, Pullman, WA, 1989.

FASEB Meeting: “The Recent Progress in Neuroendocrinology,” Washington DC, 1990.

- Research Society on Alcoholism & International Society for Biomedical Research on Alcoholism Meeting: “Neuroendocrine-Immune Axis of Alcoholics,” Washington DC, 1996.
- International Society for Biomedical Research on Alcoholism and Research Society on Alcoholism—ISBRA: “Role of Estrogen in Alcohol Promotion of Breast Cancer and Prolactinoma,” Japan, 2000.
- Gordon Research Conference on Hormonal Carcinogenesis, “Role of Cell–Cell Communication in Hormonal Carcinogenesis,” Colby, CT, 2001.
- Research Society on Alcoholism National Meeting, “Circadian Rhythms,” Vancouver, Canada, June 2004.
- 12th World Congress Biomedical Alcohol Research, International Society for Biomedical Research on Alcoholism Congress, “Clock Genes and the Interaction with Alcohol,” Heidelberg, Germany, September 2004.
- 50th Anniversary of Deaddiction Center, National Institute of Mental Health and Neuroscience, “Chronic Alcohol drinking alters body’s innate immunity”, Bangalore, India, November 2005.
- 13th World Congress Biomedical Alcohol Research, ISBRA, Alcohol effects on neuronal stem cell differentiation, Sydney, Australia, September, 2006.
- International Update on Basic and Clinical Neuroscience Advances and the XXIV Annual Meeting of Indian Academy of Neurosciences. “Mother’s alcohol drinking habit may make the baby susceptible to sleep trouble, stress-hyperreactivity and immune problem,” Lucknow, India, December 17 - 20, 2006.
- International Symposium on Advances in Neurosciences & Silver Jubilee Conference of Indian Academy of Neurosciences, Conference on Molecular and Cellular Basis of Brain Functions and Disorders, “Why Stress Promotes Drug Abuse”. Banaras Hindu University, Varanasi, India, November 22-25, 2007.
- Research Society on Alcoholism National Meeting, “Epigenetic of Alcohol Effects on the Nervous System,” San Diego, California, June 2009.
- Research Society on Alcoholism National Meeting, “Molecular mechanism of alcohol-induced fetal programming,” San Francisco, California, June 2012.
- 2012 International Society for Biomedical Research on Alcoholism Biomedical Alcohol Research, ISBRA, "Fetal Programming effect of alcohol" Sapporo, Japan., September, 2012.
- Research Society on Alcoholism National Meeting, “Neuroimmune, microglia and alcohol addiction,” Orlando, Florida, June 2013.
- International Symposium on Translational Neuroscience and 32nd Annual Conference of Indian Academy of Neurosciences. “Neurobiology of Addiction,” National Institute of Mental Health and Neuro Sciences (NIMHANS), Bangalore from November 1-3, 2014.
- 7th International Conference on Fetal Alcohol Spectrum Disorder, “Alterations in Genes Impacting Circadian Rhythms and Stress Axis: Possible Markers for FASD”, Vancouver, BC, March 1-4, 2017.
- 41st Annual RSA Scientific Conference – “Impact of Brain-Gut-Liver Axis and Alcohol Induced Neuroinflammation on Organ Injury” June 2017, Denver, Colorado.
- 5th Asia-Pacific Society for Alcohol and Addiction Research (APSAAR) conference, “Alcohol epigenetic programming of the stress axis transmits from mother to child with fetal alcohol syndrome disorders” Taipei, Taiwan, May 29th until June 3rd, 2017.
- 6th meeting of the International Drug Abuse Research Society, “Alcohol tissue injury and addiction“ September 5, Dubrovnik, Croatia.

Invited Speaker at International, National and Regional Meetings

- Eleventh International Symposium, Division of Brain Sciences: "The Mechanisms of the Action of Prolactin on Gonadotropin Release," The Taniguchi Foundation, Kyoto, Osaka, Japan, 1987.
- New York Academy of Sciences, Oxytocin in Maternal Sexual and Social Behavior: "Pituitary Portal Plasma Levels of Oxytocin during the Estrous Cycle, Lactation and Hyperprolactinemia," Arlington, VA, May 1991.
- Alberta Heritage Foundation for Medical Research, Department of Physiology: "Transforming Growth Factor in the Pituitary Gland: A Possible Role in Tumorigenesis," University of Alberta, Edmonton, Canada, October 1991.
- Cascades Chapter Neuroscience Society Meeting: "Transforming Growth Factor Regulated Function of Lactotropes in the Pituitary Gland," Portland, OR, May 1992.
- Gordon Research Conference on Prolactin: "Role of Transforming Growth Factor," Oxnard, CA, January 1994.
- International Society of Psychoneuroendocrinology: "Alcohol Actions on β -endorphin Neuronal Differentiation and Neurotransmission," Munich, Germany, August 1995.
- International Society for Biomedical Research on Alcoholism and Research Society on Alcoholism: "Effects of Ethanol in Immune Signal-Modulated Secretion of a Hypothalamic Opioid Peptide β -endorphin," Washington, DC, June 1996.
- Research Society on Alcoholism: "Ethanol Effects on Intracellular Calcium Signaling," Denver, CO, June 2000.
- International Society for Biomedical Research on Alcoholism and Research Society on Alcoholism: "Evaluation of the Role of Estrogen in Mediation of Ethanol Effect on Prolactinoma: Studies Using Animals," Yokohama, Japan, July 2000.
- Gordon Research Conference on Hormonal Carcinogenesis, "A New Role of Folliculo-Stellate Cells in Controlling Pituitary Prolactin Cells Tumor," Kimbal Union Academy, New Hampshire, July 2001.
- National Institute on Alcohol Abuse and Alcoholism and the Office of Rare Diseases, NIH sponsored Research Society on Alcoholism Satellite Workshop, "Detection of Prenatal Fetal Alcohol Exposure: Signaling Cascades," Montreal, Canada, June 2001.
- International Symposium and 10th Annual Convention of the Indian Society for Veterinary Immunology and Biotechnology, Tamil Nadu Veterinary and Animal Sciences University, Madras, India, December 2003.
- Annual Scientific Meeting of the Research Society on Alcoholism, "Astroglia protect neurons from ethanol-induced apoptotic death by a paracrine mechanism in the developing hypothalamus," Vancouver, Canada, June 2004.
- Annual Scientific Meeting of the Research Society on Alcoholism, "Laser capture microdissection analysis of proopiomelanocortin and clock-regulating gene expression in β -endorphin neurons: effects of ethanol and cAMP," Vancouver, Canada, June 2004.
- 12th World Congress Biomedical Alcohol Research, ISBRA, "Ethanol effects on the central and peripheral clock machineries and the circadian rhythm of the neuroendocrine-immune axis" and "Clock Genes and the Interaction with Alcohol," Heidelberg, Germany, September 2004.
- Annual Scientific Meeting of the Research Society on Alcoholism, "Chronic alcohol exposure impairs the circadian expression of arginine vasopressin and *Per* Genes in suprachiasmatic nucleus and paraventricular nucleus of the hypothalamus," Santa Barbara, California, June 2005.
- Pituitary today: Molecular, physiological and clinical aspects, "TGF-beta regulation of prolactinomas", Iguazu, Argentina-Brazil, November, 2005.

- 13th World Congress Biomedical Alcohol Research, ISBRA, Alcohol effects on neuronal stem cell differentiation, "In vitro differentiation of embryonic neuronal stem cells into beta-endorphin neurons: potential use in preventing hyperresponsiveness of the stress axis in fetal alcohol exposed offspring," Sydney, Australia, September, 2006.
- International Update on Basic and Clinical Neuroscience Advances and the XXIV Annual Meeting of Indian Academy of Neurosciences. "Mother's alcohol drinking habit may make the baby susceptible to sleep trouble, stress-hyperreactivity and immune problem," Lucknow, India, December 17 - 20, 2006.
- Association of Scientist of Indian Origin in America, Recent Advances in Basic and Clinical Neuroscience. "The potential use of stem cell therapy in stress disorders", Chicago, May 11, 2007.
- Annual Scientific Meeting of the Research Society on Alcoholism, Symposium on Signaling mechanisms in alcohol dependence and neurotoxicity. "Alcohol-induced neurotoxicity is caused by the imbalance in the production of cytokines and cAMP from glia and neuronal cells," Chicago, Illinois, July, 2007
- International Symposium on Fetal Alcohol Spectrum Disorder and Stress: New Insight from Basic Science Studies. "Circadian Clocks, Neuroendocrine-Immune-Stress Axis, and Fetal Alcohol Spectrum Disorders,' Volterra, Tuscany, Italy, May 6-8, 2008.
- Pituitary Today II. "The Communication Between Dopamine D2S Receptor and TGF- β type II Receptor is Vital for Normal Lactotrope Function." Angra dos Reis (Brasil) November 12-14, 2008.
- International Conference on Advances in Neurosciences & XXVI Annual Meeting of Indian Academy of Neurosciences at Center for Neuroscience. "Molecular and Epigenetic Mechanisms Involved in Alcohol-Induced Stress Axis Dysfunction." Cochin, India 12-14 December, 2008.
- 41st Annual Conference of the Indian Pharmacological Society, "Alcohol Effect on the Neuroendocrine-immune system." New Delhi, India 18-20 December, 2008.
- 100th Annual Meeting of American Association of Cancer Research, "Neural stem cell-derived beta-endorphin neuron transplants into the brain increase natural killer cell activity, decrease antiinflammatory cytokines and prevent metastatic colonization in rats" Denver, Colorado, April, 2009.
- 32nd Annual RSA Scientific Conference, "Epigenetic Transgenerational Action of Alcohol on Stress and Immune Axes, San Diego California June, 2009
- Platinum Jubilee Celebration of Physiological Society of India, Science City Convention Center, Kolkata, Nov 12-14, 2009.
- 15th World Congress Biomedical Alcohol Research, ISBRA, Mechanisms of alcohol on carcinogenesis and tumor progression, "Increased susceptibility to prostate cancer in fetal alcohol exposed offspring: Role of the neuroendocrine-immune axis," September 13-16, 2010, Paris.
- European Society for Biomedical Research on Alcoholism (ESBRA), Nordmann Award Meeting 2010, Role of Neuroendocrine-immune axis in alcohol promotion of cancer, September 17-18, 2010, Heidelberg.
- 34th Annual RSA Scientific Conference, "Fetal alcohol-induced hypermethylation of proopiomelanocortin gene in the hypothalamus transmits through germline, Atlanta, June, 2011

- European Society for Biomedical Research on Alcoholism (ESBRA), 2011, Fetal alcohol-induced hypermethylation of proopiomelanocortin gene in the hypothalamus transmits through germline, September 3-7, 2011, Vienna, Austria.
- NIAAA workshop on Epigenetic Inheritance and the Transmission of Acquired traits: Implications for Alcohol Use Disorders. A satellite workshop to the International Behavioral and Neural Genetics Society Annual Meeting, Transgenerational epigenetic effect from fetal alcohol exposure. May, 2012, Boulder, CO.
- Society for Research on Biological Rhythms (SRBR), Circadian Regulation of Natural Killer Cell Functions, May 2012, Destin, Florida.
- 36th Annual RSA Scientific Conference, “Alcohol fetal programming for stress and immune abnormalities and tumorigenesis,” June 2012, San Francisco, CA.
- 19th Society on NeuroImmune Pharmacology, “Microglial mediation of alcohol programming of the neuroendocrine-stress axis.” April 2013, San Juan, Puerto Rico.
- 2nd Alcohol and Cancer Conference, “Fetal alcohol exposure increases susceptibility to carcinogenesis and promotes tumor progression in endocrine tissues,” May 2013, Breckenridge, Colorado.
- 37th Annual RSA Scientific Conference, “Prenatal alcohol exposure increases susceptibility to mammary and prostate carcinogenesis and alters tumor phenotypes in adults,” June 2013, Orlando, FL.
- International Symposium on Neurosciences and XXXI Annual Conference of Indian Academy of Neurosciences, “Male germline carries for many generation some alcohol modified genes that promote stress, anxiety and cancer,” October 25th-27th, 2013, Allahabad, India.
- National Meeting for the American Association of Cancer research. Mini Symposium on Prevention Research. “Hypothalamic Beta-endorphin Neuron Suppress Pre-neoplastic and Neoplastic Lesions and Modulates Colonic Pro-Inflammatory Cytokines and Epithelial-Mesenchymal Transition (EMT) in 1,2-dimethylhydrazine Induced Colon Cancer Model” April, 2014, San Diego, CA.
- 3rd Alcohol and Cancer Conference, “Alcohol programming of the stress axis suppresses innate immune function and promote carcinogenesis” May 29- June 2, 2015, Crete, Greece.
- 39th Annual RSA Scientific Conference, “Fetal alcohol programming of the neuroendocrine-immune axis increases the susceptibility to carcinogenesis” June 2015, San Antonio, TX.
- 39th Annual RSA Scientific Conference –Satellite meeting on Concept to Drug Development Translational Approaches in Alcoholic Liver Disease, “Targeting the neuroimmune system to control liver disease” June 2015, San Antonio, TX.
- 4th APSAAR/5th IDARS Conference, “Endocrine, metabolic and immune disorders in fetal-alcohol-exposed adult animals” August, 2015, Sydney, Australia.
- European Society for Biomedical Research on Alcoholism (ESBRA), “Transgenerational epigenetic inheritance in alcoholism”, September 17-18, 2015, Valencia, Spain.
- 103rd Indian Science Congress, University of Mysore, “Transgenerational epigenetic inheritance: Evidence from alcoholism”, January 3-7, 2016, Mysore, India.
- 40th Annual RSA Scientific Conference – “Transgenerational epigenetic inheritance: Evidence from fetal alcohol exposures,” June 2016, New Orleans, LA.
- The 2017 Genes, Brain and Behavior meeting of the International Behavioral and Genetics Society, “Neural Alcohol induced epigenetic modifications of stress regulatory genes transmit via germline,” May 14-18, 2017
- 41st Annual RSA Scientific Conference – “Alcohol induced epigenetic modification of stress regulatory genes transmit via germline” June 2017, Denver, Colorado.

6th meeting of the International Drug Abuse Research Society, "Alcohol epigenetic marks transmits for multiple generation" September 4-8, Dubrovnik, Croatia.

Invited Speaker at Various institutes and Universities

Center for Biomedical Research, The Population Council, The Rockefeller University, New York, June 1978

Vincent Research Laboratories, Massachusetts General Hospital, Boston, June 1978.

Oxford Endocrine Group: "Neuroendocrine Control of Gonadotropin Secretion in Rats," University of Oxford, England, March 1979.

Department of Neuroanatomy, School of Medicine: "Hypothalamic Control of the Pituitary," Yale University, New Haven, CT, November 1979.

Second Department of Anatomy, Semmelweis University Medical School, Budapest, Hungary, July 1980.

Department of Pathology and Laboratory Medicine: "Transforming Growth Factor in the Pituitary Gland: A Possible Role in Tumorigenesis," Albany Medical Center, Albany, NY, September 1996.

Department of Physiology: "Catecholamine Control of Gonadotropin Secretion," University of Calcutta, Calcutta, India, October 1980.

Animal Science, Department of Physiology: "Control of the Secretion of Hypothalamic LHRH," Michigan State University, East Lansing, MI, April 1981.

Department of Zoology: "A Novel Concept for the Development of Prolactin Adenomas," Michigan State University, East Lansing, MI, August 1981.

Department of Physiology: "Control of the Secretion of LHRH in Pituitary Portal Blood," School of Medicine, Wayne State University, Detroit, MI, September 1981.

Department of Physiology: "Degeneration of Tuberoinfundibular Neurons: A Novel Concept for the Development of Pituitary Tumor," Michigan State University, East Lansing, MI, November 1981.

Endocrine Research Unit, Department of Physiology: "Techniques for Neuroendocrine Research," Michigan State University, East Lansing, MI, December 1981.

College of Physicians and Surgeons, Department of Obstetrics and Gynecology: "Does LHRH Meet the Criteria for a Hypothalamic Releasing Factor?" Columbia University, New York, April 1982.

Department of Anatomy, School of Medicine: "Neuroendocrine Control of LHRH Release," University of California, Los Angeles, CA, November 1985.

Reproductive Neuroendocrinology Section: "Hypothalamo-Pituitary Portal Vascular System: A Window for Peptidergic and Aminergic Neurotransmission," National Institute Environmental Health Science, Research Triangle Park, NC, December 1984.

Fishberg Research Center for Neurobiology: "Mechanism of the Action of Prolactin on Gonadotropin Release," The Mount Sinai Medical Center, New York, NY, April 1988.

Department of Animal Science: "Role of Neuropeptide Y in the Initiation of Puberty," Rutgers, The State University of New Jersey, New Brunswick, NJ, April 1991.

Section of Neuroscience: "Transforming Growth Factor in the Pituitary Gland: A Possible Role in Tumorigenesis," Oregon Regional Primate Center, Beaverton, OR, July 1991.

Department of Zoology: "Regulation of LHRH Release during Reproductive Cycle and Hyperprolactinemia," University of Alberta, Edmonton, Canada, October 1991.

Department of Obstetrics, Gynecology and Reproduction, Division of Reproductive Endocrinology: "Transforming Growth Factor in the Pituitary Gland: A Possible Role in Tumorigenesis," Beth Israel Hospital, Harvard Medical School, Boston, MA, July 1994.

- Department of Pathology and Laboratory Medicine, Albany Medical Center: "Transforming Growth Factor in the Pituitary Gland: A Possible Role in Tumorigenesis," Albany, NY, September 1996.
- Center for Reproductive Biology: "Cell-Cell Communication in the Anterior Pituitary Controlling Estrogen-Induced Lactotropic Cell Proliferation," Washington State University, Pullman, WA, February 1997.
- Pharmaceutical Sciences Seminar Series: "Can Alcoholism Lead to a Predisposition for Hormonal Carcinogenesis?" Washington State University, Pullman, WA, March 1997.
- Department of Bioregulation, Institute of Gerontology, Nippon Medical School: "Estrogen-Induced Prolactinomas," Kawasaki, Japan, July 2000.
- Department of Veterinary Pathobiology, University of Minnesota: "Stress-related Diseases: Cellular Perspectives," St. Paul, Minnesota, October 2000.
- Department of Physiology and Biophysics, UMDNJ-Robert Wood Johnson Medical School, Piscataway, NJ. "Stress-related Diseases: Cellular Perspectives," November 2000.
- The Advances in Therapeutic Agents, Discovery and Development Workshop, Rutgers University and the New Jersey Agriculture Experiment Station: "Novel Potential Therapeutic Approaches in Treatment of Pituitary Tumors," NJ, January 2002.
- Department of Developmental & Molecular Biology, Albert Einstein College of Medicine, Bronx, NY. "Role of cell-cell communication in estrogen-induced carcinogenesis in the pituitary gland." April, 2005.
- Department of Neural and Behavioral Sciences, Penn State College of Medicine, Hershey, PA. "Targeting β -endorphin neuron differentiation in repairing stress axis dysfunction in fetal alcohol exposed offspring." May, 2005.
- Department of Cell Biology, University of Cincinnati, Cincinnati, OH. "Role of cell-cell communication in estrogen-induced tumorigenesis in the pituitary gland." September, 2005.
- Mental Health Research Institute, Parkville, Melbourne, Victoria, Australia. "Mother's alcohol drinking habit may make the baby susceptible to sleep trouble, stress-hyperreactivity and immune problem, September 2006.
- Fifth Tripartite Workshop in Biotechnology and BioEnergy, The potential use of stem cell therapy in stress disorders, 9-12 April 2007, Hilton Hotel, East Brunswick, NJ.
- Department of Pharmacology, College of Medicine, Howard University, Washington DC, "Clock gene regulation of neuroendocrine-immune function," October 10, 2007.
- Division of Endocrinology, Metabolism and Clinical Nutrition, Medical College of Wisconsin, MCW Clinic, Froedherst East, E4950, Milwaukee, Wisconsin. "The potential use of beta-endorphin cell therapy in controlling stress and prostate cancer progression." June 5th, 2008.
- Dept. of Psychiatry, National Drug Dependence Treatment Centre, All India Institute Medical Sciences, New Delhi-110029, India, "Epigenetic Transgenerational Actions of Alcohol on Stress and Neuroimmune Axes." November 9, 2009.
- LSUHSC School of Medicine, New Orleans, LA, Physiology Seminar Series, "Use of beta-endorphin cell therapy in the treatment of cancer and immune diseases." March 4, 2010.
- Center for Substance Abuse Research, Temple University, Use of beta-endorphin cell therapy in the treatment of cancer and immune diseases." May 18, 2010.
- Texas A&M University, College of Veterinary Medicine, Toxicology Program, "Role of neuroendocrine-immune axis in alcohol promotion of cancer." January 31, 2011.
- Center for Cancer Prevention Research, Ernest Mario School of Pharmacy, Rutgers, The State University of New Jersey, "Controlling cancer growth by endorphin cells." February 18, 2010.

The Cancer Institute of New Jersey, New Jersey, Cancer Center Ground Rounds, "Protective role of endorphin neurons against metastatic diffusion and cancer progression,' September 21, 2011.

Department of Neuroscience, University of New Mexico, Albuquerque, New Mexico, "fetal alcohol programming of the neuroendocrine-immune axis may contribute to the etiology of chronic diseases for generations," March 20-22, 2013.

Department of Psychiatry, College of Medicine, University of Illinois at Chicago, "Can alcohol effects be inherited", October 8, 2014.

Department of Neuroscience, Lewis Katz School of Medicine at Temple University, "Transgenerational epigenetic effects of fetal alcohol exposures," September 20, 2017

MEETINGS ORGANIZED

Symposia and Workshops

Member of Organizing Committee: "Satellite Symposium of Endocrine Society on Brain-Gut-Peptides," July 1989.

Organizer, Theme Symposium: "The Recent Progress in Neuroendocrinology," American Physiological Society, FASEB Meeting, February 1990.

Organizer: "Symposium on Neuroendocrine-Immune Axis of Alcoholics," Research Society on Alcoholism and ISBRA, July 1996.

Member of Organizing Committee: SSR Annual National Meeting, August 1998.

Chair of Organizing Committee: "21st Century Workshop on Animal Biotechnology," Rutgers, The State University of New Jersey, New Brunswick, NJ, April 2000.

Organizer: "Role of Estrogen in Alcohol Promotion of Breast Cancer and Prolactinoma," ISBRA, Yokohama, Japan, July 2000.

Organizer: "Circadian Rhythms," Annual Scientific Meeting of the Research Society on Alcoholism, Vancouver, Canada, June 2004.

Organizer: "Clock Genes and the Interaction with Alcohol," 12th World Congress Biomedical Alcohol Research, International Society for Biomedical Research on Alcoholism Congress, Heidelberg, Germany, September 2004

Organizer: International Naltrexone-Immunology Research Meeting, Rutgers University, June, 2005.

Organizer: "Why Stress Promotes Drug Abuse". International Symposium on Advances in Neurosciences & Silver Jubilee Conference of Indian Academy of Neurosciences, Conference on Molecular and Cellular Basis of Brain Functions and Disorders, Varanas Hindu University, Varanasi, India, November, 2007.

Organizer: "Epigenetic of alcohol effect on the nervous system." Annual Scientific Meeting of the Research Society on Alcoholism, San Diego, California, June, 2009.

Organizer: "Pioneers in Endocrinology Workshops." Rutgers University, 2008-present.

Organizer: "Molecular mechanism of alcohol-induced fetal programming," Research Society on Alcoholism National Meeting, San Francisco, California, June 2012.

Organizer: "Fetal Programming effect of alcohol," International Society for Biomedical Research on Alcoholism Biomedical Alcohol Research, ISBRA, Sapporo, Japan, September, 2012.

Organizer: "Developmental Alcohol and Neuroinflammation." 40th Annual Scientific Meeting of the Research Society on Alcoholism, New Orleans, Louisiana, June, 2016.

Organizer: "Role of early life environment, co-morbid depression, neurochemical regulation and epigenetic reprogramming in stress abnormalities in fetal alcohol spectrum disorders" Stress and Alcoholism meeting, Volterra, Italy, May, 2017

Organizer: “Impact of brain-gut-liver axis and alcohol-induced neuroinflammation on organ injury.” 41st Annual Scientific Meeting of the Research Society on Alcoholism, Denver, Colorado, June, 2017.

Organizer: “Current Status and Diagnosis of Fetal Alcohol Research” Indian Academy of Neurosciences, Cuttack, Odisha, India, Oct 29-31, 2017

SEMINARS AND JOURNAL CLUBS

In charge, Departmental Weekly Seminars, WSU, 1995

In charge, Departmental Seminars, University of California at San Diego, 1985–1986

In charge, Neuroendocrine Journal Club at WSU, 1992–1994

In charge, Cell Biology Journal Club at WSU, 1997–1999

In charge, Endocrine Journal Club at Rutgers, 1999–Present

Organizer, Endocrine Interest Group, Rutgers-UMDNJ, 2000–Present

In charge, Departmental Weekly Seminars, Rutgers, 2004–2005

In charge, Departmental Weekly Seminars, Rutgers, Fall, 2008

UNIVERSITY SERVICE AND COMMITTEES

Member, Physiology/Pharmacology Graduate Program, 1984

Member, Proposition Committee, 1984

Member, Review Committee for Summer Graduate Research Assistantships, 1989

Member, Review Committee for Alcohol and Drug Abuse Program, 1990–1997

Representative, Graduate Studies Committee, 1989, 1992, 1993, 1995

Member, Faculty Search Committee for Theriogenologist, 1992

Member, Space Committee, VCAPP, 1990–1991

Member, Information Technology Committee, School of Vet. Medicine, 1990–1995

Chair, Space Committee, VCAPP, 1993–1995

Member, Resource Committee, VCAPP, 1992–1994

Member, Curriculum Committee, Neuroscience Graduate Program, 1994

Member, Search Committee, Director of Center for Reproductive Biology, 1996

Chair, Wegner Vivarium Committee, 1989–1998

Member, Pharmacology Toxicology Curriculum and Policy Committee, 1996–97

Member, Steering Committee, Center for Reproductive Biology, 1996–1999

Chair, Resource Committee, VCAPP, 1996–1999

Member, VCAPP 5-year Planning Committee, 1997–1999

Chair, Molecular Neurobiology Faculty Search Committee, 1997–98

Member, Vet School Tenure and Promotion Committee, 1997–1999

Member, Genetics and Cell Biology Graduate Affairs Committee, 1997–1999

Member, Curriculum Committee, Neuroscience Undergraduate Program, 1997–1999

Member, Cook/NJAES Award Committee, 2000

Member, Cook/NJAES Research Committee, 1999–2002

Chair, Agricultural Animal Facility Advisory Committee, 1999–2002

Member, Cook/NJAES Research/Planning Committee, 2000–2001

Member, Food, Nutrition and Health Council, 2000–2001

Chair, Agricultural Animal Facility Advisory Committee, 1999–2001

Faculty Adviser, Bengali Student Association, 2001–Present

Faculty Adviser, Animal Science Undergraduate Majors, 2002–Present

Member, Conflict of Interest Committee, 2003–2005

Associate Member, South Asian Studies Initiative, 2003–2009
Member, Food & Agriculture Biosecurity Institute, 2003–2005
Member, Exploratory Research Grants Review Committee–EOHHSI, 2004
Member, Various departmental PII Promotion Committees, 2004, 2005, 2007
Member, Curriculum Committee, Graduate Program in Physiology, 2004–Present
Member, Cook/NJAES Award Committee, 2005
Member, Cook PII Promotion Committee, 2005-2006, 2009-2011.
Member, Endocrinology and Animal Biosciences Admission Committee, 2007-2014
Chair, Bengali Cultural and Language initiative Committee (Raised \$38,000 for the Rutgers Bengali language program), 2007
Member, Endocrine Faculty Search Committee, 2009
Steering Committee for the Animal Sciences Departmental retreat, 2009
Chair, Graduate Admission Committee, 2009-2011.
Member, Rutgers' Strategic Planning Committee: Understanding and creating a sustainable world through discovery, innovation, engineering, and technology, 2014
Member, Rutgers' Committee on Academic Planning and Review, 2014-2017.
Member, Endocrine Faculty Search Committee, 2016
Member, Endocrinology Division Chair Search Committee, 2016

MENTORING JUNIOR FACULTY

Carey A. Williams, Assistant Professor, Department of Animal Sciences, 2005-2009
Andrzej Pietrzykowski's KO8 grant from NIH, 2009-2014
Nicolas Bello, Assistant Professor, Department of Animal Sciences, 2010 – present
William Belden, Assistant Professor, Department of Animal Sciences, 2013 – present
Nadia Rachdaoui, Research Assistant Professor, Department of Animal Sciences, 2014 – present

ADVISING STUDENT ORGANIZATION

Bengali Student Association, 2000-present

FUNDRAISING

1. Raised fund to construct the Endocrine Research Facilities (A new research building at Cook Campus of Rutgers University)
2. Raised \$45,000 to establish the Hahn-McGuire State-of-the-Art Lectureship in Endocrinology
3. Chair, Bengali Language and Culture Initiative Fund Raising Committee. Raised \$38,000.

FORMAL COURSE TEACHING

1984	Instructor, 151 Physiology, Endocrinology Section
1985–1987	Course Director, 227 Reproductive Medicine (Neuroendocrinology)
1986–1987	Instructor, 234 Neurosciences, Neuroendocrine Systems Section
1988–1991	Instructor, VPH 557 Advanced Mammalian Physiology, Endocrine Section, Fall
1989	Course Director, P/T 599 Graduate Student Seminar, Fall
1989–1995	Instructor, VM 406 Vet Cell Biology, Endocrine Section, Fall
1990–1997	Course Director, VPH 538/AnSc 538, Neuroendocrinology, Spring
1993, 1995	Course Director, VPH 592, Research Topics in Physiology
1995–1997	Instructor, PT 501, Perspectives in Pharmacology/Toxicology, Spring

1998	Instructor, PT 506, Principles of Pharmacology, Spring
1999	Instructor, 16:067:502, Reproductive Physiology, Fall
1999–2001	Instructor, 01:119:407, Research in Biology, Fall and Spring
1999–2001	Instructor, 11:015:497, Cook Honors Program, Spring and Fall
2000–2006	Instructor, 11:067:450, General Endocrinology, Fall
2001–2006	Course Director, 16:067:510, Neuroendocrinology
2001–Present	Instructor, 11:067:494 and 701, Research in Animal Sciences
2003-2005	Instructor, Medical Physiology, Neuroendocrinology, UMDNJ
2007-2016	Solo teacher, 11:067:410, Neuroendocrinology (alternate spring semester)
2007-2016	Solo teacher, 16:067:510, Neuroendocrinology (alternate spring semester)
2008-present	Solo teacher, 11:090:101, Endocrine Health and Diseases (every fall)
2008-2010	Instructor, Physiological basis of diseases, spring
2016	Solo teacher, 11:067:410, Neuroendocrinology (Fall semester)
2016	Solo teacher, 16:067:510, Neuroendocrinology (Fall semester)

RESEARCH TRAINING

Training *Programs*

Faculty, Physiology and Pharmacology Graduate Program, UCSD
 Faculty, Neuroscience Graduate Program, UCSD
 Faculty, NIH-funded pre- and postdoctoral training in Reproductive Medicine, UCSD
 Faculty, Veterinary Sciences Graduate Program, WSU
 Faculty, Pharmacology and Toxicology Graduate Program, WSU
 Faculty, Genetics and Cell Biology Graduate Program, WSU
 Faculty, Neuroscience Graduate Program, WSU
 Faculty, Center for Reproductive Biology Graduate Program, WSU
 Faculty, NIH institutional short-term training for students in health science, WSU
 Faculty, NIH institutional short-term training for minority high school students, WSU
 Faculty, NIH-funded pre- and postdoctoral training in Alcohol and Immunity, WSU
 Sponsor, NIH/NIAAA Minority Faculty Research Training (Dr. German Torres)
 Sponsor, NIH/NINDS International Neurological Science Fellowship (Dr. Nadka Boyadjieva)
 Faculty, Animal Sciences Graduate Program, Rutgers
 Faculty, Molecular Biology and Neuroscience Graduate Program, Rutgers
 Faculty, Physiology Graduate Program, Rutgers
 Sponsor, NIH/NIAAA Minority Graduate Student Research Training (Maria Agapito), Rutgers
 Sponsor, NIH/NCI Minority Graduate Student Research Training (Tiffany Polanco), Rutgers
 Sponsor, NIH/NIAAA Minority Graduate Student Research Training (Tina Franklin), Rutgers
 Sponsor, NIAAA Graduate Student Research Training (Rola Bekdash), Rutgers
 Sponsor, NIAAA Rentry training (Nadia Rachdaoui), Rutgers
 Sponsor, NIAAA F32 grant (Lucy Chastain), Rutgers

Ph.D. Graduate Students

Major Professor

Balakrishna Prasad, VCAPP, 1992–1993
 Greg Fraley, VCAPP, 1992–1993
 Shane Hentges, Neuroscience, 1995–1999
 Madhavi Dokur, Animal Sciences, 2000–2004
 Alvaro Arjona, Animal Sciences, 2002–2006
 Jason Marano, Animal Sciences, 2003–2005

Maria Agapito, Neuroscience, 2006-2013
Tiffany Polanco, Animal Science (Co-advisor with Cohick), 2007-2011
Rola Bekdash, Neuroscience, 2007-2011
Changqing Zhang, Endocrinology and Animal Biosciences, 2007-2013
Tina Franklin, Physiology and Integrative Biology, 2009-2013
Shaima Jabbar, Endocrinology and Animal Science, 2013-present
Miguel Cabrera, Endocrinology and Animal Science, 2013-present
Ali Al-Yasari, Endocrinology and Animal Science, 2013-present

Ph.D. Graduate Students

Committee Member

Han Insuk, Biochemistry/Biophysics, member, 1991–1993
Deanna Russell, Genetics & Cell Biology, member, 1992–1993
Cao Zhiping, Neuroscience, member, 1993–1994
B. Craig Prince, Animal Science, member, 1993–1994
Setu Sankaranarayanan, Neuroscience, 1995–1996
Amanda Moore, Pharmacology Toxicology, 1996–1997
Carleton Buck Jones, Pharmacology Toxicology, 1997–98
Mark Clements, Pharmacology Toxicology, 1997–98
Nomeli Nunez, Pharmacology Toxicology, 1997–98
Keith W. Sockman, Zoology, 1997–98
Michael Zimmer, Neuroscience, 1997–98
Michele Nicols, Animal Sciences, 2005-2006
Catina Crismale-Gann, Cell and Developmental Biology, 2009-2014
Elizabeth Kuhn Spiegler, Nutritional Science, 2011-2014
Lisa Maeng, Psychology, 2012-2014
Amar Hekmat Mahdl, Physiology and Integrative Biology, 2015-present

Rotation Graduate Students

Tallie Z. Baram, PhD, Rotation Student, 1979
Adrian Harris, PhD, Rotation Student, 1987
Mark Roman, PhD, Rotation Student, 1988
Lisa Teodecki, PhD, Rotation Student, 1996
Sonia Cohen, Physiology and Neurobiology, 2001
Piya Ghose, Animal Sciences, 2005-2006
Luci Terenin, Molecular Biosciences, 2004
Shannon M. Smith, GSBS, 2007
Changqing Zhang, Endocrinology and Animal Science, 2008
Kathleen M. Ferio, Endocrinology and Animal Sciences, 2008
Lydia Louis, Toxicology Graduate Program, 2009
Srilatha Simhadri, Physiology and Integrative Biology, 2009
Hilary Stires, Endocrinology and Animal Science, 2011
Jennifer Perfater, Toxicology, 2012, fall.
Amar Hekmat, Physiology and Integrative Biology, 2013
Gregory Berger, Endocrinology and Animal Science, 2017

M.S. Graduate Students

Major Professor

Richard Bailey, Master's thesis, 1985–1986
 Mark Rothrock; Gary Kroft, Master's thesis, 1984–1985
 Sonia Cohen, Master thesis, 2004- 2005

International Student

Claudia Hereñú, PhD student from Argentina, 2002
 Daniela Radl, PhD student from Argentina, 2009

Postdoctoral Fellows, Research Professor and Visiting Scientists

Naoto Mitsugi, MD, Postdoctoral Fellow, 1986–1988
 Romi Roy, PhD, Postdoctoral Fellow, 1987
 Sally Frautschy, PhD, Postdoctoral Fellow, 1987–1989
 Shiro Minami, MD, PhD, Postdoctoral Fellow, 1989–1990
 Qi-Wen Xie, PhD, Visiting Professor, 1990
 Tapas K. Mondal, PhD, Postdoctoral Fellow, 1991–1992
 Vijayabhasker Reddy, PhD, Postdoctoral Fellow, 1992–1994
 Martine Pastorcic, PhD, Postdoctoral Fellow, 1992–1995
 Alok De, PhD, Postdoctoral Fellow/Research Associate, 1993–2000
 Nadka Boyadjieva, MD, PhD, Visiting Scientist, 1993–2012, 2016-present
 German Torres, PhD, Research Assistant Professor, 1994
 Janice Willard, DVM, Visiting Assistant Research Professor, 1996
 G. Rolands Aravindan, PhD, Postdoctoral Fellow, 1997–1998
 Raghava Reddy, PhD, Postdoctoral Fellow, 1997–1998
 Lihua Yang, MD, Research Associate, 1998–2000
 Jorge R. Ronderos, PhD, Visiting Assistant Professor, 1999
 Deepthi E. Reddy, PhD, Postdoctoral Fellow, 1999–2000
 Sudhir Jain, PhD, Postdoctoral Fellow, 2000
 Soichi Oomizu, PhD, Postdoctoral Fellow, 2000–2002
 Peter E. Kuhn, PhD, Postdoctoral Fellow, 2000–2006
 Hemanta Koley, PhD, Postdoctoral Fellow, 2001–2002
 Cui P. Chen, PhD, Postdoctoral Fellow, 2001–2006
 Kirti Chaturvedi, PhD, Assistant Research Professor, 2001–2006
 Nurul Kabir, PhD, Assistant Research Professor, 2003–2004
 Suchira Pande, PhD, Assistant Research Professor, 2003–2004
 Liansheng Liu, PhD, Research Associate, 2003–2006
 Anita Thyagarajan, Visiting Scientist, 2004
 Damodor Kethidi, Postdoctoral Research Associate, 2006-2007
 Maria Ortigüela, Postdoctoral fellow, 2006
 Emmerson M. Clement, Postdoctoral Research Associate, 2006-2008
 Oindrila Chatterje, Postdoctoral Research Associate, 2006-2007
 Amitabha Sengupta, Postdoctoral Research Associate, 2007-2012
 Xiaodong Cheng, Postdoctoral Research Associate, 2007-2008
 Sepidah Mojtehedzadeh, Postdoctoral Fellow, 2008-2008
 Dmitry Govorko, Postdoctoral Research Associate, 2008-2013
 Finla Chathu, Postdoctoral Research Fellow, 2009
 Madhabi Dokur, Postdoctoral Research Fellow, 2008-2009.
 Somporn Kamolsiripichaiporn, Visiting scientist, 2008
 Vaishali Kulkarni, Research Associate, 2009
 Meera Vaswani, Visiting Professor, 2009
 Ryan Logan, Postdoctoral Research Fellow, 2009-2011

Sengottuvelan Murugan, Postdoctoral Research Fellow, 2009-2015, 2017-
 Rupa Mukherjee, Postdoctoral Research Fellow, 2010.
 Olivia Wynne, Postdoctoral Research Associate, 2011-2012
 Omkaram Gangisetty, Postdoctoral Research Associate, 2011- present
 Nadia Rachdaoui, Research Assistant professor, 2012- present
 George Maglakelidze, Postdoctoral Fellow, 2013
 Tania Das Banerjee, Postdoctoral Fellow, 2013
 Anitha Malat, Visiting Postdoctoral, 2013
 Pallavi Shrivastave, Postdoctoral Fellow, 2013-2016
 Lucy Chaistain, Postdoctoral Fellow, 2014-present
 Edward A. Mead, Postdoctoral Fellow, 2014-2015
 Rupa Mukherjee, Postdoctoral Research Fellow, 2015-present.
 Sayani Mukherjee, Postdoctoral Research Fellow, 2016-present.
 Bénédicte Rousseau, Postdoctoral Fellow, 2016-present

Independent Studies—Undergraduate

Susan Friedman, DVM, 1986–1987
 Linda S. Freeman, DVM, 1989
 Shane Hentges, Genetics and Cell Biology, 1994–1995
 Rousie Hertz, Genetics and Cell Biology, Fall 1994, Fall 1996
 Jacob Searles, Genetics and Cell Biology, Fall 1995, Summer 1996
 Melain Valloni, Genetics and Cell Biology, Spring 1997
 Ellen Boyed, DVM, Summer 1997
 Sara Chapman, Genetics and Cell Biology, Fall 1997–Summer 1998
 Tanya Howard, Biology, 1999–2000
 Samuel Giordano, George H. Cook Honors Program, 2000–2001
 Stephanie Decarlo, Animal Sciences, Spring 2001–2002
 Kristina Willoughby, Animal Sciences, Spring and Summer 2001
 Craig Burns, Biotechnology Internship, Summer 2001
 Kristina Willoughby, George H. Cook Honors Program, 2001–2002
 Henry C. Stokes, George H. Cook Honors Program, 2001–2002
 Erika L. Fialkoff, Animal Sciences, 2002
 Jennifer Sebalusky, Animal Sciences, 2002
 Suzanne Boyle, Mabel Smith Douglass Honors Program, 2002–2003
 Dan Arellano, George H. Cook Honors Program, 2001–2003
 Michael Poplawski, George H. Cook Honors Program, 2002–2003
 Chidubem Orazulike, George H. Cook Honors Program, 2002–2003
 Arnold Gonzalez, Animal Sciences, 2003
 Veera D’Mello, Visiting Fellow, 2003–2004
 Punam Patel, Biotechnology, Summer 2004, Summer 2005
 Sairam Subramaniam, Animal Sciences, Summer 2004
 Abby Sarkar, Animal Science Research Problems, Summer 2004
 Hemal A. Bhatt, George H. Cook Honors Program, 2004–2006
 Chrysanne A Marzan, Animal Sciences, 2004–2005
 Rachel A. Roby, Animal Sciences, 2004–2005
 Yonaira Rivera Figueroa, Mable Smith Douglas Honors Program, 2005-2006
 Crystal Darby, Animal Sciences, George H. Cook Honors Program, 2005 -2006
 Yonaira Rivera Figueroa, Biotech Summer Program, 2005

Maryann Wozniak, George H. Cook Honors Program, 2005-2006
 Scott Bourlier, Animal Sciences, Fall 2005 -Spring 2006
 Suzanne Bardari, Animals Sciences, Summer 2006 - Spring 2007
 Aneesh Vaze, Research in Biotechnology, Spring 2007-Fall-2007
 Niharika Das, Spring 2007-present
 Rola Bekdash, Summer 2007
 Ravali Tammareddy, Summer 2007
 Benjamin Major, Aresty Summer Scholar, 2007-present
 Gagandeep Kaur, Fall 2007
 Thailyn Lopez, Fall 2007-Spring 2008
 Gol M. Golshani, Fall 2007-Spring 2008
 Priyank Deep, Spring 2008
 Aradia Herbst-Gervasoni, Spring 2008
 Winter Walker, RISE summer fellow, 2008
 Monisha Kanumuri, Fall 2008, Spring 2009
 Nicole M. Rafferty, Fall, Summer, 2008
 Gourav Singh, Fall 2008, Spring 2009
 Nadia Mian, Spring, 2009
 Amanda Mortillaro, 2009-2010
 Prerana Pradhan, Summer, Fall 2009
 Deepa Kalvala, Summer, Fall 2009-2010
 Jacklin Barreria, Summer, Fall 2009-2010
 Riddhi Gundani, Summer, 2009-2010
 Lisa Furbeck, Fall, 2009-2011
 Rupa Karmakar, Fall, 2009
 Sussanna Gonzales, Spring, 2010
 Dale Levitt, Spring, 2010-2013
 Lisamarie Ross, Spring, 2010
 Rachelle Oldmixon, summer 2010
 Greeshma Hegde, Animal Science, summer 2010
 Smrithy Jacob, summer 2010
 Archita Patel, Animal Sciences, summer 2010-2012
 Stephanie O'Connell, Animal Sciences, summer 2010-2012
 Debbi Price, Animal Sciences, fall 2011
 Brendan Striano, Animal Sciences, fall 2011
 Megan O'Connell, Animal Sciences, fall 2011
 Spruha Magodia, Biology, spring 2011-spring 2012
 Monica Smetts, Animal Science, spring, 2012-present
 Priscilla Lopez, Animal Science, spring 2012
 Ritika Roy, Biotechnology, summer 2012
 Rachel Levy, Biology, summer, 2012
 Yatee Dave, Biotechnology, fall 2012-spring 2013
 Lily Payvandi, 1st yr Medical student, 2013
 Sreya Mukherjee, Biology, summer, 2014
 Melinda Mordarski, Animal Sciences, 2014
 Anandita Ananthakumar, summer, 2014
 Helly Shah, Biological Sciences, fall, 2014-2015
 Kamil Sohacki, Biological Sciences, fall, 2014-current

Chelsea Cherenfant, RiSE program, summer, 2015
Courtney Stevens, Animals Sciences, 2016 - present
Santhosh Gumudavell, Cell Biology and Neuroscience, 2016- present
Nickolas Lisanti, Biological Sciences, 2016- present
Goyathri Narayan, Animal Sciences, 2016- present
Divya Mohanraj, Biological Sciences, 2016- present

Summer Research Apprentice—High School

Teresa Leung, 1993, Summer
James Thomas Statler, 1994, Summer
Param Chattapadhaya, 1996, Spring and Summer
Abby Sarkar, 1996, 2002, 2003, Summer
Subir Baksi, 1996, Summer
Eihab Daoud, 1996, Summer
Stela Lusha, 2001, Summer
Alli Rosenthal, 2006, 2007, Summer
Cory Donovan Benjamin, 2006, Summer
Sophie Sarkar, 2006, 2007, 2008, Summer
Rohan Reddy, 2009, Summer
Rohan Bhoumik, 2010, summer
Korno Sarkar, 2010, summer
Mark Shapses, 2010, summer
Rahul Rakhit, 2011, 2012, summer
Ankush Rakhit, 2012, 2013, summer
Arjun Sarkar, 2012, summer
Hrid Biswas, 2013, summer
Parama Das, 2014, summer; 2015, summer
Roshni Banerjee, summer, 2015
Natasha Sarkar, summer, 2015
Puloma Sen, summer, 2015, 2016
Saketh Lattupally, summer, 2016
Ananya Swaminathan, summer, 2016
Rishi Roy, summer, 2016
Rishav Das, summer, 2016
Aniketh Sarkar, 2016

APPROVED PROVISIONAL PATENT APPLICATION

Serial Number: 60/076,819	Title: Methods for Estrogen Detection Utilizing PR1 Cells
RU 07-078/11-055	Title: Use of Beta-Endorphin Cell Therapy in the Treatment of Cancer and Immune Diseases

RESEARCH FUNDING

Current Research Funding

1. Role of Opiates in Alcohol-Induced Neurotoxicity (Sarkar, PI) NIH 5R37AA008757-13-23, 12/08-12/2018, \$3,520,000
2. Alcohol and Hyperprolactinemia (Sarkar, PI) NIH (2R01AA011591-09-14), 07/11-06/16, \$1,644,750

3. Fetal alcohol, estrogen-regulated genes and prostate cancer (Sarkar PI) NIH (PA12-291). 3/14-2/16. \$426,250
4. Role of Opiates in Alcohol-Induced Neurotoxicity (Sarkar, PI) NIH 3R37AA008757-18S1, 09/01/14 -8/31/15. \$71,87
5. Microglial opioid receptor regulation of HPA axis disruption by neonatal alcohol (Chaistain, PI; Sarkar- Mentor) NIH F32AA023434, 05/15 -04/18, \$165,318
6. Role of Opiates in Alcohol-Induced Neurotoxicity-supplement (Sarkar, PI) NIH (PA15-034); 3R37AA008757-19S1, 07/01/15 -06/30/18. \$180,680
7. Rates of histone turnover and functional significance in fetal alcohol syndrome (Sarkar, PI) NIH R21AA024641, 07/01/16 -06/30/18. \$426,250
8. Role of Sry in transgenerational fetal alcohol effects on proopiomelanocortin gene (Sarkar PI) 07/01/17-06/30/2022. \$1,743,750
9. Targeting Opioidergic and Adrenergic Systems to Control Breast Cancers (Sarkar, PI) NIH 1R01CA208632-01. 06/01/2017-05/31/2022. \$1,550,000

Pending Research Funding

1. Molecular Neuroendocrinology of Alcohol Research Training (Sarkar, PI), NIH T32AA025607-01, 05/1/2018 – 04/30/2023.
2. Role of microRNAs in fetal alcohol induced alteration of stress function (Sarkar, PI), NIH R01AA025571-01, 03/1/2018 – 02/28/2020

Previous Research Funding [Principal Investigator]

1. New Junior Faculty Research Grant, Andrew Mellon Foundation, 05/83-04/86, \$191,000.
2. Effect of Carrier Estradiol on Reproductive Function of Female Rats, San Diego Reproductive Medicine Research and Education Foundation (Gynex), 05/85-04/87, \$200,000.
3. Role of Gonadotropin-Releasing Hormone in the Maintenance of Pregnancy, March of Dimes—Basil O'Connor Starter Research Grant, 09/85-08/87, \$50,000.
4. Neuroendocrine Mechanisms of Prolactinomas in Old Rats, NIH/NIA (R01), 09/85-01/89, \$349,863.
5. Neuroendocrine Control of Hypothalamic β -Endorphin, NIH/NICHD (R01), 04/86-03/89, \$366,104.
6. Role of Opiates in Alcohol-Induced Fetal Neurotoxicity, WSU Alcohol and Drug Abuse Program, 07/88-06/90, \$32,000.
7. Role of Transforming Growth Factor-Beta in the Control of Lactotropic Function in Primary Cultures of Pituitary Cells, WSU/BRSG, 07/89-06/90, \$12,000.
8. Mechanism By Which Neuropeptide Y Induces Precocious Puberty, WSU/OGRD, 07/90-06/91, \$10,000.
9. Supplemental Fund for Equipment, NIH/NIAAA, 08/92-08/93, \$11,000.
10. Equipment Matching Fund, WSU/OGRD, 08/92-08/93, \$11,000.
11. Role of Opiates in Alcohol-Induced Neurotoxicity, NIH (R01), 08/91-07/95, \$339,700.
12. Role of Opiates in Alcohol-Induced Neurotoxicity, WSU/ADA, 07/94-06/95, \$34,141.
13. Estrogen Regulation of TGF- β in Pituitary Tumor Induction and Growth, NIH (R01), 08/92-08/96, \$425,870.
14. Calcium Imaging, WSU Graduate School, \$26,000.
15. Role of Opiates in Alcohol-Induced Neurotoxicity, NIH/NIAAA (R01), 04/95-03/96, \$26,000.

16. Dr. K. Tobias, Pfizer Animal Health Competitive Research Grant, 07/97-06/98, \$9,989.
17. Effect of Environmentally Persistent Alkylphenols on the Sexual Brain Differentiation, Farrell Endowment and Health Formula Funds, 07/97-06/98, \$4,340.
18. Role of Opiates in Alcohol-Induced Neurotoxicity, NIH (R01), 04/95-03/99, \$713,950.
19. Xenoestrogens Screen Assay: A Novel Method for Detection of Low Concentrations of Estrogen Utilizing PR1 cells, WSU Adler Funds, 07/98-06/99, \$8,414.
20. Alcohol and Hyperprolactinemia, NIH (R01), 04/98-03/02, \$493,476.
21. Enhancement of Animal Sciences Program by Promoting Animal Biotechnology Research, New Jersey Research Grant Fund: Capacity Building Projects, 09/00-08/02, \$300,000.
22. Role of Opioids in Alcohol-Regulated Immune Function, NIH (K02), 10/97-09/02, \$509,484
23. Polymerix Corporation grant to study pharmacodynamics of polymers, 11/02-10/03, \$12,000.
24. Effects of Alcohol on Retinoid Signaling in Testis Development (Sarkar, Co-PI), NIH (R01), 03/01-02/04, \$975,024. [Sarkar's subcontract: \$134,616.]
25. Role of Opioids in Alcohol-Regulated Immune Function, NIH, (R01), 07/99-06/04, \$666,850.
26. Estrogen Mitogenic Action in the Pituitary (Sarkar, PI) NIH (R01 CA77550), 07/99-06/04, \$800,703.
27. Role of Opiates in Alcohol-Induced Neurotoxicity (Sarkar, PI) NIH (R01 AA08757), 09/00-07/05, \$1,313,047.
28. Cellular and Molecular Biology Research Facilities Construction-Bartlett Extension (Sarkar, PI) NIH NCRR (C06 RR155512) For construction of research core facilities. 05/02-07/07, \$2,000,000.
29. Effects of Alkylphenols on Development of Hypothalamic-Pituitary-Ovarian Axis (Sarkar, PI) NIH P30 ES05022-19 (pilot project). 4/06-3/07. \$15,000.
30. Alcohol and Hyperprolactinemia (Sarkar, PI) NIH (R01 AA11591), 02/03-01/09, \$1,550,000.
31. Fetal Alcohol Effects on Circadian Clocks and POMC (Sarkar, PI) NIH (R01 AA015718-supplement), 09/06-08/09 \$196,390.
32. Model System Studies of Naltrexone and Alcohol Interaction (Sarkar, PI) NIH (R21) 03/15/07-02/28/10, \$405,563.
33. Role of opiates in alcohol-induced neurotoxicity (Sarkar, PI) (3R01AA008757-supplement), 01/09-12/09, \$42,902
34. Epigenetics of alcohol effects on stress axis development. (Sarkar, PI) NIH (R21) 10/08-09/10, \$424,125.
35. Effect of Alcohol Exposure *in utero* on Mammary Carcinogenesis (Cohick and Sarkar, CoPI) NIH F31CA132620-01, 10/08-09/11. \$196,390.
36. Biology of the NK cell cytolytic activity rhythm (Sarkar, PI) NIH (R01 HL088041-2), 07/01/2009 - 06/31/2011, \$530,292.
37. Fetal Alcohol Effects on Circadian Clocks and POMC (Sarkar, PI) NIH (R01 AA015718-5), 03/06-02/12 \$1,550,000.
38. Circadian Genes, Stress Axis and Fetal Alcohol Spectrum Disorder (Sarkar, PI), Pilot project of U24 Collaborative Initiative on Fetal Alcohol Spectrum Disorder (CIFASD). 08/01/12-07/30/15. \$420,000

Training Grants

39. Supplement for Under-Represented Minority Investigator Award for G. Torres, ADAMHA/NIAAA (Sarkar, PI), 08/92-08/94, \$66,164.
40. NIH International Training Fellowship, Trainee: N. Boyadjieva, (Sarkar, PI) 01/94-01/96, 36,000.
41. Research Training on Alcohol and Immunity, NIH (T32), (T. Jerrels, PI) 01/96-03/99, \$103,126.
42. Students in Health Professional Schools, NIH/NCRR (T35), (D. Prieur, PI) 12/95-12/01, Direct cost: \$115,080.
43. Welcome Trust Travel Grant toward visit to Yale University, 1980.
44. University of Oxford Travel Grant to attend American Endocrine Society Meeting, 1979.
45. Society for Endocrinology Travel Grant for Annual Meeting, 1978.

Sponsor of fellowships for students

Howard Hughes Undergraduate Research Fellowship for Shane Hentges, 1985
 Poncin Predoctoral Fellowship for Shane Hentges, 1988-1989.
 Bevier fellowship for Alvaro Arjona, 2005-2006
 Rutgers Excellence Student Fellowships for Piya Ghose, 2005-2006
 Rutgers Excellence Student Fellowship for Changqing Zhang, 2008-2009

COLLABORATING LABORATORIES

Dr. George Fink, Ph.D. Advisor, University of Edinburgh, Scotland
 Dr. Joseph Meites, Postdoctoral advisor, Michigan State University, MI
 Dr. S.S.C. Yen, University of California, San Diego, La Jolla, CA
 Dr. J.P. Advis, Rutgers University, New Brunswick, NJ
 Dr. Aaron J. Hsueh, Stanford University, Stanford, CA
 Dr. Paul Plotsky, Emory University, Atlanta, GA
 Dr. K.H. Kim, Washington State University, Pullman, WA
 Dr. Steven M. Simasko, Washington State University, Pullman, WA
 Dr. Gary Meadows, Washington State University, Pullman, WA
 Dr. James L. Robert, Mount Sinai Medical Center, New York, NY
 Dr. Caleb Finch, Andrus Gerontology Center, USC, Los Angeles, CA
 Dr. Sushanta Banerjee, VA Medical Center, Kansas City, MO
 Dr. Harold Moses, The Vanderbilt Cancer Center, Nashville, TN
 Dr. Howard Hosick, Washington State University, Pullman, WA
 Dr. Dennis Rasmussen, University of Washington, Seattle, WA
 Dr. Kim Neve, Oregon Health Science University, Portland, WA
 Dr. Lindsey Grandison, UMDNJ-RWJMS, Piscataway, NJ
 Dr. Rudolfo Gustavo Goya, National University of La Plata, Argentina
 Dr. Nira Ben-Jonathan, University of Cincinnati, Cincinnati, OH
 Dr. Alessandro Weisz, Seconda Università degli Studi di Napoli, Italy
 Dr. Jyotirmoy Chakraborty, Presidency College, India
 Dr. Mehmet Uzumcu, Rutgers University, NJ.
 Dr. Malcolm J. Low, Oregon Health & Science University, Portland, OR
 Dr. Wendie Cohick, Rutgers University, New Jersey
 Dr. Kenneth Reuhl, EOHSI, Rutgers University, New Jersey
 Dr. Lei Yu, Genetics, Rutgers University, New Jersey
 Dr. Andre Pietrzykowski, Rutgers University, New Jersey
 Dr. Meera Vaswani, All India Institute of Medical Sciences, New Delhi
 Dr. Gunter Schumann, Institute of Psychiatry at King's College London

Dr. Rajita Sinha, Yale Stress Center, Yale University School of Medicine

PUBLICATIONS

Book and ebook

Sarkar DK and Barnes CD (eds) (1995) Reproductive Neuroendocrinology of Aging and Drug Abuse. CRC press, Boca Raton, FL.

Sarkar DK, Jung K, Wang H.J (eds) (2015) *Alcohol Research: Current Reviews -Alcohol and the Immune System*. NIAAA. Washington, DC, Volume 37.

PUBLICATIONS

Refereed Journals

1. Sarkar DK, Chiappa SA, Fink G, Sherwood NM (1976) Gonadotropin-releasing hormone surge in pro-oestrous rats. *Nature* (London) 264:461-463.
2. Biswas NM, Paul B, Sarkar DK (1977) Role of phentolamine on the length of pregnancy and fetal development in nicotine-treated pregnant rats. *Endocrinologie* 69:359-360.
3. Fink G, Sarkar DK, Chiappa, SA (1977) Gonadotropin releasing hormone surge during pro-oestrus: Role of steroid hormones. *Journal of Endocrinology* 75:46p-47p.
4. Sarkar DK, Fink G (1979) Effects of gonadal steroids on output of luteinizing hormone releasing factor into pituitary stalk blood in the female rats. *Journal of Endocrinology* 80:303-313.
5. Sarkar DK, Fink G (1979) Mechanisms of the first spontaneous gonadotropin surge and that induced by pregnant mare serum and effects of neonatal androgen in rats. *Journal of Endocrinology* 83:339-354.
6. Sarkar DK, Fink G (1980) Luteinizing hormone releasing factors in pituitary stalk plasma from long-term ovariectomized rats: effects of steroids. *Journal of Endocrinology* 86:511-524.
7. Fink G, Malnick S, Sarkar DK, Twine M (1980) Sex difference in the anesthetic dose of a steroid anesthetic althesin in the rat: effect of oestradiol-17 β . *Journal of Physiology* 284: 27-28.
8. Sherwood NM, Chiappa SA, Sarkar DK, Fink G (1980) Gonadotropin releasing hormone (GnRH) in pituitary stalk blood from proestrous rats: effects of anesthetics and relationship between stored and released GnRH and luteinizing hormone. *Endocrinology* 107:1410-1417.
9. Sarkar DK, Fink G (1981) Gonadotropin-releasing hormone surge: possible modulation through post-synaptic alpha-adrenoreceptors and two pharmacologically distinct dopamine receptors. *Endocrinology* 108:862-867.
10. Sarkar DK, Smith GC, Fink G (1981) Effect of manipulating central catecholamines on puberty and the surge of luteinizing hormone and gonadotropin releasing hormone induced by pregnant mare serum gonadotropin in female rats. *Brain Research* 213:335-349.
11. Fink G, Sarkar DK, Dow RC, Dick H, Borthwick N, Malnick S, Twine M (1982) Sex difference in response to alphaxalone anesthesia may be oestrogen dependent. *Nature* (London) 298:270-272.
12. Sarkar DK, Gottschall PE, Meites J (1982) Damage to hypothalamic dopaminergic neurons is associated with development of prolactin-secreting pituitary tumors. *Science* 218:684-686.
13. Sarkar DK (1983) Does LHRH meet the criteria for a hypothalamic releasing factor? *Psychoneuroendocrinology* 8:259-275.

14. Sarkar DK, Miki N, Meites J (1983) Failure of prolactin short loop feedback mechanism to operate in old as compared to young female rats. *Endocrinology* 113:1452-1458.
15. Sarkar DK, Gottschall PE, Meites J, Horn A, Dow RC, Fink G, Cuello AC (1983) Uptake and release of [³H] dopamine by the median eminence: evidence for presynaptic dopaminergic receptors and for dopaminergic feedback inhibition. *Neuroscience* 10:821-830.
16. Sarkar DK, Gottschall PE, Xie Q-W, Meites J (1984) Reduced tuberoinfundibular dopaminergic neuronal function in rats with *in situ* prolactin-secreting pituitary tumors. *Neuroendocrinology* 38:498-503.
17. Sarkar DK, Miki N, Xie Q-W, Meites J (1984) Inhibition by estrogen of autofeedback regulation of prolactin secretion. *Life Sciences* 34:1819-1823.
18. Sarkar DK, Gibbs DM (1984) Cyclic variation of oxytocin in the blood of pituitary portal vessels of rats. *Neuroendocrinology* 39:481-483.
19. Sarkar DK, Gottschall PE, Meites J (1984) Decline of tuberoinfundibular dopaminergic function resulting from chronic hyperprolactinemia in rats. *Endocrinology* 115:1269-1274.
20. Sylvester PW, Sarkar DK, Briski KP, Meites J (1985) Relation of gonadal hormones to differential LH response to naloxone in prepubertal male and female rats. *Neuroendocrinology* 40:165-170.
21. Sarkar DK, Yen SSC (1985) Changes in beta-endorphin-like immunoreactivity in pituitary portal blood during the estrous cycle and after ovariectomy in rats. *Endocrinology* 116:2075-2079.
22. Sarkar DK, Yen SSC (1985) Hyperprolactinemia decreases the luteinizing hormone releasing hormone concentration in pituitary portal plasma: a possible role for beta-endorphin as a mediator. *Endocrinology* 116:2080-2084.
23. Gottschall PE, Sarkar DK, Meites J (1986) Persistence of low hypothalamic dopaminergic activity after removal of chronic estrogen treatment (42227). *Proceedings of the Society for Experimental Biology and Medicine* 181:78-86.
24. Lira S, Phipps DW Jr, Sarkar DK (1986) Loss of estradiol-positive feedback action on LH release during prepubertal period in rats treated postnatally with an opiate antagonist. *Neuroendocrinology* 44:331-337.
25. Sarkar DK (1986) Gonadotropin releasing hormone-like immunoreactivity in rat placenta. *Neuroendocrinology* 44:397-400.
26. Liu Y-X, Ny T, Sarkar DK, Loskutoff D, Hsueh AJW (1986) Identification and regulation of tissue plasminogen activator activity in rat cumulus-oocyte complexes. *Endocrinology* 119:1578-1587.
27. Sarkar DK (1987) *In vivo* secretion of LHRH in ovariectomized rats is regulated by a possible autofeedback mechanism. *Neuroendocrinology* 45:510-513.
28. Sarkar DK (1988) Immunoneutralization of oxytocin attenuates preovulatory prolactin secretion during proestrus in the rat. *Neuroendocrinology* 48:214-216.
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30. Sarkar DK (1989) Evidence for prolactin feedback actions on hypothalamic oxytocin, vasoactive intestinal peptide and dopamine secretion. *Neuroendocrinology* 49:520-524.
31. Sarkar DK, Mitsugi N (1990) Correlative changes of the gonadotropin-releasing hormone (GnRH) and GnRH associated peptide (GAP) immunoreactivities in the pituitary portal plasma in female rats. *Neuroendocrinology* 52:15-21.

32. Sarkar DK, Friedman SJ, Yen SSC, Frautschy SA (1989) Chronic inhibition of hypothalamic-pituitary-ovarian axis and body weight gain by a brain-directed delivery of estradiol-17 beta in female rats. *Neuroendocrinology* 50:204-210.
33. Sarkar DK, Sakaguchi DS (1990) Characterization of the neurosecretory activity of hypothalamic beta-endorphin containing neurons in primary culture. *Endocrinology* 126:349-356.
34. Minami S, Frautschy SA, Plotsky PM, Sutton SH, Sarkar DK (1990) Facilitatory role of neuropeptide Y (NPY) on the onset of puberty: effect of immunoneutralization of (NPY) on the release of LH and LHRH. *Neuroendocrinology* 52:112-115.
35. Sarkar DK, Minami S (1990) Effect of acute ethanol on beta-endorphin secretion from rat fetal hypothalamic neurons in primary cultures. *Life Sciences* 47:PL31-36.
36. Minami S, Sarkar DK (1992) Central administration of neuropeptide Y induces precocious puberty in female rats. *Neuroendocrinology* 56:930-934.
37. Sarkar DK, Kim KH, Minami S (1992) Transforming growth factor- β 1 mRNA and protein expression in the pituitary gland: its action on prolactin secretion and lactotropic growth. *Molecular Endocrinology* 6:1825-1833.
38. Sarkar DK, Frautschy SA, Mitsugi N (1992) Pituitary portal plasma levels of oxytocin during the estrous cycle, lactation and hyperprolactinemia. *Annals of the New York Academy of Sciences* 652:397-410.
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40. Burns G, Sarkar DK (1993) Transforming growth factor- β 1-like immunoreactivity in the pituitary gland of the rat: effect of estrogen. *Endocrinology* 133:1444-1449.
41. Prasad BM, Conover CD, Sarkar DK, Rabii J, Advis JP (1993) Feed restriction in prepubertal lambs: effect on puberty onset and on *in vivo* release of luteinizing-hormone-releasing hormone, neuropeptide Y and beta-endorphin from the median eminence. *Neuroendocrinology* 57:1171-1181.
42. Reddy V, Sarkar DK (1993) Effect of alcohol, acetaldehyde and salsolinol on beta-endorphin secretion from the hypothalamic neurons in primary cultures. *Alcoholism: Clinical and Experimental Research* 17:1261-1267.
43. De A, Boyadjieva N, Pastorcic M, Reddy BV, Sarkar DK (1994) cAMP and ethanol interact to control apoptosis and differentiation in hypothalamic beta-endorphin neurons. *Journal of Biological Chemistry* 269:26697-26705.
44. Boyadjieva N, Sarkar DK (1994) Effects of chronic alcohol on beta-endorphin secretion from hypothalamic neurons in primary cultures: evidence for alcohol tolerance, withdrawal and sensitization responses. *Alcoholism: Clinical and Experimental Research* 18:1497-1501.
45. Pastorcic M, Boyadjieva N, Sarkar DK (1994) Comparison of the effects of alcohol and acetaldehyde on proopiomelanocortin mRNA expression and beta-endorphin secretion from hypothalamic neurons in primary cultures. *Molecular and Cellular Neuroscience* 5:580-586.
46. Banerjee SK, De A, Sarkar DK (1994) Colocalization of prolactin and PCNA in the anterior pituitary during estrogen induced pituitary tumors. *Cancer Letter* 87:139-144.

47. Boyadjieva N, Sarkar DK (1994) Effects of chronic alcohol on immunoreactive beta-endorphin secretion from hypothalamic neurons in primary cultures: evidence for alcohol tolerance, withdrawal and sensitization responses. *Alcoholism: Clinical and Experimental Research* 18:1497-1501.
48. Frautschy SA, Sarkar DK (1994) Estrogen augments hypothalamic beta-endorphin secretion and activates an inhibitory beta-endorphin short-loop feedback system. *Endocrine* 3:273-275.
49. Sarkar DK, Minami S (1995) Diurnal variation in luteinizing hormone releasing hormone and beta-endorphin release in pituitary portal plasma during the rat estrous cycle. *Biology of Reproduction* 53:38-45.
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52. Boyadjieva NI, Sarkar DK (1995) Effects of dopamine D1 and D2 receptor agonists and antagonists on basal and ethanol-modulated beta-endorphin secretion from hypothalamic neurons in primary cultures. *Journal of Neuroendocrinology* 17:819-825.
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54. De A, Morgan TE, Speth RC, Boyadjieva N, Pastorcic M, Sarkar DK (1996) Pituitary lactotrope expresses TGF- β type II receptor mRNA and protein and contains [125 I]TGF- β 1-binding sites. *Journal of Endocrinology* 149:19-27.
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58. Boyadjieva N, Sarkar DK (1997) The role of cAMP in ethanol-regulated beta-endorphin release from hypothalamic neurons. *Alcoholism: Clinical and Experimental Research* 21:728-731.
59. Boyadjieva N, Reddy B, Sarkar DK (1997) Forskolin delays the ethanol-induced desensitization of hypothalamic beta-endorphin neurons in primary cultures. *Alcoholism: Clinical and Experimental Research* 21:477-482.
60. Banerjee SK, Sarkar DK, Weston AP, De A, Campbell DR (1997) Over-expression of vascular endothelial growth factor and its receptor during the development of estrogen-induced rat pituitary tumors may mediate estrogen-initiated tumor angiogenesis. *Carcinogenesis* 18:1155-1161.
61. Boyadjieva NI, Sarkar DK (1997) The secretory response of hypothalamic beta-endorphin neurons to acute and chronic nicotine treatments and following nicotine withdrawals. *Life Sciences* 61:PL 59-66.

62. Boyadjieva N, Sarkar DK (1997) Effects of ethanol on basal and prostaglandin E1-induced increases in beta-endorphin release and intracellular cAMP levels in hypothalamic cells. *Alcoholism: Clinical and Experimental Research* 21:1005-1009.
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65. Sarkar DK, Pastorcic M, De A, Engel M, Moses H, Ghasemzadeh MB (1998) Role of TGF- β type I and TGF- β type II receptors in the TGF- β 1-regulated gene expression in pituitary prolactin-secreting lactotropes. *Endocrinology* 138:3620-3628.
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69. De A, Boyadjieva N, Sarkar DK (1999) Effect of voltage-dependent calcium channel blockers on ethanol-induced beta-endorphin release from hypothalamic neurons in primary cultures. *Alcoholism: Clinical and Experimental Research* 23:850-855.
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72. Boyadjieva N, Sarkar DK (1999) Effects of ethanol on basal and adenosine-induced increases in beta-endorphin release and intracellular cAMP levels in hypothalamic cells. *Brain Research* 824:112-118.
73. Hentges S, Boyadjieva N, Sarkar DK (2000) Transforming growth factor- β 3 stimulates lactotrope cell growth by increasing basic fibroblast growth factor from folliculo-stellate cells. *Endocrinology* 141:859-867.
74. Hentges S, Pastorcic M, De A, Boyadjieva N, Sarkar DK (2000) Opposing actions of two transforming growth factor- β isoforms on pituitary lactotropic cell proliferation. *Endocrinology* 141:1528-1535.
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87. De A, Boyadjieva N, Oomizu S, Sarkar DK (2002) Ethanol induces hyperprolactinemia by increasing prolactin release and lactotrope growth in female rats. *Alcoholism: Clinical and Experimental Research* 26:1420-1429.
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94. Rasmussen DD, Sarkar DK, Roberts JL, Gore AC (2003) Chronic daily ethanol and withdrawal: 4. Long-term changes in plasma testosterone regulation. *Endocrine* 22:143-150.
95. Chaturvedi K, Sarkar DK. (2004) Involvement of PKC dependent p44/42 MAP kinase signaling pathway for cross-talk between estradiol and TGF- β 3 in increasing bFGF in folliculostellate cells. *Endocrinology* 145:706-715.
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97. Arjona A, Boyadjieva N, Sarkar DK. (2004) Circadian Rhythms of granzyme B, perforin, IFN- γ and natural killer cell cytolytic activity in the spleen: effects of chronic ethanol. *Journal of Immunology* 172:2811-2817.
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RESEARCH INTERESTS: Neuroendocrine Cell Growth, Differentiation And Secretion

Major Accomplishments

Hypothalamic LHRH cells

1. LHRH is produced in the hypothalamus and is secreted into the blood of pituitary portal vessels to regulate the release of pituitary LH and FSH.
2. First to identify that LHRH is secreted in a daily and a cyclical rhythm during the reproductive cycle in female animals.
3. The onset of cyclical release of LHRH starts at the time of puberty.

4. Cyclic release of LHRH is governed by the positive feedback action of estrogen and by the negative feedback action of progesterone.
5. Estrogen stimulates LHRH secretion by activating alpha-adrenergic neurons and incerto-hypothalamic dopaminergic neurons in the hypothalamus.
6. Progesterone inhibits LHRH secretion by activating β -endorphin and tubero-hypothalamic dopamine neurons.
7. The basal secretion of LHRH is governed by a negative feedback action of LHRH itself.
8. Several other peptides—NPY, oxytocin, prolactin—affect LHRH secretion.
9. The diurnal release of LHRH is governed by the hypothalamic opioid peptide β -endorphin, and the neural circuitry between these two neurons is developed during the developmental period. An alteration in the development of the circuitry between LHRH and β -endorphin neurons leads to an abnormal reproductive cycle during adulthood.
10. Exposure to alkylphenols during the critical period of sexual differentiation affects puberty and reproductive cycle in female rats.
11. Alkylphenols, plastic-derived substances, produce detrimental effects on reproductive development in the young.

Hypothalamic β -endorphin cells

1. Hypothalamic β -endorphin neurons participate in the regulation of LHRH secretion and reproduction.
2. The opioid peptide is involved in the anxiolytic effect of alcohol and in the development of alcohol tolerance.
3. First to show that fetal alcohol exposure alters the diurnal rhythm in β -endorphin secretion and also induces the onset of reproductive aging in female animals.
4. First to identify that fetal alcohol exposure in rats alters β -endorphin neuron differentiation.
5. First to demonstrate that alcohol induces programmed cell death in β -endorphin neurons, possibly by decreasing intracellular cAMP production.
6. First to show that chronic alcohol causes cell death in β -endorphin neurons by forming acetaldehyde by the use of catalase enzyme in the hypothalamus. cAMP diminishes the neurotoxicity of acetaldehyde.
7. Alcohol stimulates β -endorphin secretion by activating cAMP and PKC cell signaling systems as well as calcium channels.
8. Chronic alcohol causes the development of tolerance by causing heterologous desensitization of the cAMP system.
9. First to show that exogenous cAMP can delay the development of β -endorphin neuronal tolerance by chronic ethanol.
10. Reproductive abnormality normally occurs in animals during hyperprolactinemia (a disease caused by the pituitary prolactin-secreting tumors) and is partly caused by hyper-secretion of β -endorphin.
11. Fetal alcohol-exposed animals show abnormalities in clock machineries in the brain that govern body's biological rhythms.
12. A novel molecular mechanism exists involving adenylyl cyclases and transforming growth factor beta controlled neuronal-programmed cell death.
13. Growth factor like brain-derived growth factor modulates communications between astroglia and neurons to protect the fetal brain from neurotoxic actions of alcohol.
14. Identification of a developmental defect in opioid neurons in fetal alcohol-exposed animals, a new clue to the stress-coping problems in fetal alcohol-exposed patients.

15. Development of in vitro method to differentiate neuronal stem cells into β -endorphin neurons.
16. Discovery that prenatal alcohol effect is transgenerational
17. Discovery that prenatal ethanol increases incidence of prostate and breast cancers.

Pituitary prolactin cells

1. The incidence of the development of prolactinomas is increased following chronic elevation of estrogen.
2. Estrogen may induce prolactinomas by inhibiting dopaminergic regulation of prolactin secretion.
3. Chronic prolactin is neurotoxic to dopaminergic neurons.
4. First to demonstrate that the growth of prolactin-secreting lactotropic cells is controlled by an autocrine growth inhibiting growth factor, TGF- β 1.
5. First to show that another TGF- β isoform, TGF- β 3, is produced in the lactotropes and stimulates this cell proliferation.
6. Estrogen increases lactotropic cell proliferation by increasing TGF- β 3 expression and by inhibiting TGF- β 1 expression.
7. Estrogen action on lactotropes' proliferation involves cell-cell communication between lactotropes and stellar cells in the pituitary.
8. Chronic estrogen may cause transformation of lactotropes by inducing mutation in the TGF- β family of genes and their receptors.
9. Alcohol promotes the development of prolactinomas by altering the expression of the TGF- β gene.
10. Identified the cellular mechanisms by which cell-cell communication takes place to promote tumorigenesis in the pituitary gland following excess administration of estrogen.
11. Potential application of adeno-virus-based delivery of tumor-killing agents in the treatment of prolactinomas.

Natural Killer Cells

1. The body's immune function, particularly tumors and virus/bacteria killing natural killer cells, maintains a circadian rhythmicity which is disrupted following chronic alcohol administration.
2. Potential use of an opioid receptor antagonist in the treatment of immune deficiency.
3. Feedback interaction between G protein-coupled opioid receptors in immune cells.
4. Showed the potential use of stem cells-derived beta-endorphin cell transplants to enhance NK cell activity
5. Elucidated immune deficiencies in fetal alcohol exposed animals
6. Identified the potential use of stem cells-derived beta-endorphin cell transplants to prevent immune deficiencies in fetal alcohol exposed animals

Cancers

1. Elucidated mechanisms by which estrogen and alcohol induce prolactin-producing pituitary tumors
2. Cell-cell communication between cancer cells and supporting cells in pituitary tumor progression
3. Discover increased incidence of high graded mammary cancers in fetal alcohol-exposed rats.
4. Identified the potential use of stem cells-derived beta-endorphin cell transplants to prevent prostate tumor growth.

Epigenetic

1. Demonstrated first that fetal alcohol induces epigenetic modification of POMC gene that transmits through generation via male germ line.
2. Showed that choline supplementation may be beneficial to prevent stress-axis dysfunction in fetal alcohol exposed animals.

Ongoing Research Projects

- Signal transduction pathways for alcohol action on β -EP neurotransmission in rats.
- Signal transduction pathways for alcohol action on β -EP neuronal differentiation in rats.
- Alcohol and opioid peptide interaction in the control of NK cell cytotoxicity and the control of immune function in rats.
- Cell–cell (paracrine and gap-junctional) communications in the control of hormonal carcinogenesis in pituitary lactotropic cells in rats.
- Early genes controlling lactotropic cell transformation in rats.
- TGF- β effects on lactotropic cell growth and transformation in rats.
- Lactotropic cell differentiation and growth in TGF- β 1 knock-out mice and TGF- β 3 transgenic mice.
- Determination of the efficacy of adenoviral vector delivery of growth factors in the pituitary
- Effects of alkylphenols in the control of sexual differentiation of the neuroendocrine brain and the development of reproductive functions in rats.
- Circadian rhythm of NK cells.
- Clock genes regulation of neuroendocrine and immune functions.
- Fetal alcohol effects on stress axis.
- Fetal alcohol effects on circadian rhythms
- Neuronal stem cells and their differentiation
- Neuronal stem cell transplants in fetal alcohol related disorders
- Biological markers for fetal alcohol
- Stem cell differentiation of beta-endorphin neurons
- Beta-endorphin cell involvement in the control of breast and prostate cancers.
- Beta-endorphin cell control of anxiety behavior and alcohol drinking
- Fetal alcohol effects on tumor susceptibility
- Alcohol induced oxidative stress and toxicity in developing neurons
- Transgenerational epigenetic effects of alcohol on the stress axis
- Opioid receptor homodimerization

Future Plans

My long-term research plan focuses on understanding how stress promotes infection, cancers and alcohol-related diseases. We have recently identified developmental defect in opioid neurons in fetal alcohol-exposed animals which provides a new clue to the stress-coping problems in FAS (fetal alcohol-exposed subjects). Deficit in opioid neurons also have been found in human patients suffering with schizophrenia and depression. We are studying the cellular mechanism of the neuronal stem cells that differentiate into opioid neurons, so that we could develop potential cell therapy for these stress-related neuronal diseases and immune dysfunctions and cancers. We are determining how alcohol, natural estrogens, and environmental estrogens alter neuroendocrine, reproductive, and immune functions thereby increasing the risk of the development of tumors, including prolactinomas, breast and prostate cancers. Also, we are evaluating the feasibility of cell

therapy, gene therapy and tissue-targeted transgenic procedures to understand and prevent these tumors.