

**Curriculum Vitae**

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**Place of Birth:** Los Sarmientos, Tucuman, Argentina

**Citizenship:** United States

**Marital Status:** Married Sept. 18, 1965 to Dr. Haydee E. Pascual;  
Five children: Patricia Bazan Garrubbo, JD (1966), Andrea Bazan, MHA, MSW (1967),  
Nicolas Bazan, III (1969), Hernan Bazan, MD (1972),  
Maria Bazan Clark (1978)

**Education:**

1958 Bachiller Colegio Belgrano, Salta, Argentina

1965 M.D. Medical School, U. Tucumán (Facultad de Medicina, Universidad,  
Nacional de Tucumán, Argentina)

1971 D. Med. Sci. Medical School, U. Tucuman, Argentina  
(Ph.D. equivalent) (Thesis research conducted during 1966-68 at Harvard Medical School,  
Boston, MA)

**Teaching-Research Fellowships:**

1960-1965 Departments of Pathology, Pharmacology and Anatomy, Faculty of Medicine, University  
of Tucuman, Argentina

1962 Fellowship in Institute of Altitude Biology Jujuy, Univ. Tucuman, Argentina

1963 Teaching Assistant, Dept. of Biology, Embryology & Genetics,  
Faculty of Medicine University of Tucuman, Argentina

1963-1965 Institute of Biology, Faculty of Biochemistry, U. Tucuman

1964 Instituto de Investigaciones Bioquímicas, Fundación Campomar,  
Buenos Aires, Argentina

1964 Winter International Courses on New Aspects in Biology and  
“Basis of the Modern Genetics,” University of Buenos Aires, Argentina

**Postdoctoral Research Training:**

1965-1966 Postdoctoral Research Fellow, Department of Physical Medicine and Rehabilitation,  
College of Physicians and Surgeons,  
Columbia University, New York, NY

1966-1968 Postdoctoral Research Fellow, Massachusetts Mental Health Center, Department of  
Biological Chemistry, Harvard Medical School, Boston, MA

**Academic Appointments:**

1968-1970 Assistant Professor, Department Biochemistry, Faculty of Medicine, University of  
Toronto, Canada  
Assistant Director, Department Neurochemistry, Clarke Institute of Psychiatry, Toronto,  
Canada

1970-1971 Consejo Superior (Deans Council), University of the South, Bahia Blanca, Argentina

1970-1973 Director (Founder), Department of Biology, University of the South, Bahía Blanca,  
Argentina

1970-1981 Professor and Chair of Biological Chemistry, University of the South, Bahia Blanca,  
Argentina

1970-1981 Director (Founder), Instituto of Biochemical Investigations, Universidad Nacional del  
Sur-Consejo Nacional de Investigaciones Científicas y Técnicas, Bahía Blanca, Argentina

1977 Visiting Professor, Department Ophthalmology, Baylor College of Medicine, Houston, TX

1981- Professor of Ophthalmology, Biochemistry and Molecular Biology and Neurology, LSU  
Medical Center School of Medicine, New Orleans, LA

1984- The Ernest C. and Yvette C. Villere Chair for Research in Retinal Degeneration Eye, Ear,  
Nose and Throat Hospital, New Orleans, LA

1988- Director (Founder), Neuroscience Center of Excellence, LSU Medical Center School of  
Medicine, New Orleans, LA

1994- Boyd Professor, LSU Medical Center, New Orleans, LA (the highest academic title in the  
Louisiana State University system)

***Community Awards in New Orleans:***

1994	Role Model Awardee, Young Leadership Council of New Orleans
2002	CityBusiness 2002 Innovator of the Year Award, New Orleans, LA
2002	The Alzheimer's' Association Greater New Orleans Chapter Award, New Orleans, LA
2003	Career Service Award, 20 years, LSU Health Sciences Center, New Orleans, LA
2003	Family Services of Greater New Orleans (Ten Outstanding Persons) Award, New Orleans, LA
2008	New Orleans CityBusiness Health Care Heroes Award
2010	Junior Achievement Business Hall of Fame, New Orleans, LA
2011	Excelencia Award for Medical Research and Business, Hispanic Chamber of Commerce of Louisiana, New Orleans, LA

***Editorial Boards:***

1981-1989	Journal of Neurochemistry
1983-1988	Neurochemical Pathology
1986-1993	Neurochemical Research
1988-1993	Journal of Lipid Mediators
1988-1996	Journal Cerebral Blood Flow & Metabolism
1994-1997	Journal of Lipid Mediators & Cell Activation
1985-	Journal of Neuroscience Research
1987-	Molecular Neurobiology (Editor-in-Chief and Founder, Impact factor 6.190)
1988-1998	Molecular and Chemical Neuropathology
1989-1990	Journal of Molecular Neuroscience
1990-2001	Journal of Nutritional Biochemistry
1993-1999	Journal of Clinical Neuroscience
1996-2016	Neurochemical Research (Associate Editor)
1996-1998	Receptors and Signal Transduction
1997-2002	Journal of Biological Chemistry
2003-	Cellular and Molecular Neurobiology
2004-2016	Current Neurovascular Research
2005-2016	Recent Patent Reviews on CNS Drug Discovery
2005-	Handbook of Neurochemistry and Molecular Neurobiology, 3 <sup>rd</sup> Edition At Large Editor – Nicolas G. Bazan
2007-	Cell Death & Differentiation (Nature Journal)
2010-	Metabolic Brain Disease
2010-	Cell Death & Disease (Nature journal)
2014-2016	Neurology

***Chairmanships and Organizer of Scientific Events/Program Committees:***

1975	Chair, Round-Table on Neurochemistry of Sensory Systems: Retina International Meeting of the International Society for Neurochemistry, Barcelona, Spain
1975	Co-chair and Organizer, International Symposium on Function and Biosynthesis of Lipids, Sierra de La Ventana, Argentina
1976	Chair and Organizer, Annual Meeting of the Argentine Biochemical Society, Sierra de La Ventana, Argentina
1977 & 1980	Co-Organizer, "Nutrition and Atherosclerosis," Tucuman, Argentina
1978	Chaired and Organized, Annual Meeting of the Argentine Biophysical Society, Pehuen-Co, Argentina
1977-1979	Program Committee, 7th International Meeting International Society for Neurochemistry, Jerusalem
1973-	Chair and Organizer, Symposia and Workshops in the Neurosciences in Jerusalem,

- Mexico, Birmingham, Tokyo, Taipei, Nijmegen, Vancouver, Hot Springs, Alicante, Baltimore, Montreal
- 1979 Co-Chair and Organizer, International Symposium on Neurochemistry of the Retina, Athens, Greece
- 1980 Co-Chair and Organizer, International Symposium on Nutrition, Lipid Research and Cardiovascular Diseases, Bahia Blanca, Argentina
- 1982 Co-Chaired and Organizer, Symposium on Retina Neurochemistry, 5th International Congress of Eye Research, Netherlands
- 1985 Co-Organizer, of International Symposium on Phospholipids in the Nervous System: Biochemical and Molecular Pharmacology, Satellite meeting of the International Society for Neurochemistry, Mantova, Italy
- 1985-1986 Program Committee, 17th Annual Meeting American Society of Neurochemistry, Baltimore, MD
- 1986 Chair and Organizer, ASN Symposium Formation and Functions of Eicosanoids in the Central Nervous System, Montreal, Quebec
- 1986 Co-Chair and Organizer, International Symposium on Prostaglandins and Related Compounds in Ophthalmology, Tokyo, Japan
- 1986-1987 Chair, Neuroscience Steering Committee of LSU Medical School
- 1987 Chair and Organizer, Phospholipid in the Nervous System: Biochemical and Molecular Pathology, Satellite Symposium of ISN-ASN Joint Meeting, Puerto La Cruz, Venezuela
- 1987 Co-Organizer, Satellite of 17th Annual Society for Neuroscience Meeting, The Role of Nutrition in the Development, Differentiation and Function of the Central Nervous System, New Orleans, LA
- 1987-1989 Member, Program Committee, 20th Annual Meeting, American Society for Neurochemistry, Chicago, IL
- 1988 Chair, Local Organizing Committee, 19th Annual Meeting American Society for Neurochemistry, New Orleans, LA
- 1988 Co-Organizer and Co-chair, The New York Academy of Sciences Conference on Arachidonic Acid Metabolism in the Nervous System: Physiological and Pathological Significance, Bethesda, MD
- 1987-1989 President, Pan American Association for Research in Ophthalmology
- 1990 Organizer, Minisymposium, American Soc. for Neurochemistry, Phoenix, AZ
- 1990 Co-Organizer, Satellite Meeting of the 9th ISER on The Ocular Functions of Eicosanoids and Other Lipids Mediators, Haikko, Finland
- 1991 Chair, Sendai Forum 91, International Workshop on Molecular Mechanisms of Ischemic Brain Damage, Okinawa, Japan
- 1991 Chair, Session, Receptor and Second Messengers, American Society for Neurochemistry, Charleston, SC
- 1991 Co-Organizer, Meeting of Eicosanoid Group, The Role of Eicosanoids in the Modulation of the Intraocular Pressure and in Other Ocular Functions, Longboat Key, FL
- 1991 Co-Organizer, Joint Meeting of American Uveitis Society and Eicosanoid Group, Interplay between Eicosanoids, Other Lipid Mediators and Cytokines in the Eye, Longboat Key, FL
- 1991 Co-Organizer, Satellite Meeting of the 13th International Society for Neurochemistry, "Neurobiology of Essential Fatty Acids," Cairns, Australia
- 1991 Co-Organizer, International Symposium of the 13th International Society for Neurochemistry, Molecular Events in Neurotransmissions, Sydney, Australia
- 1991 Co-Organizer, Satellite Meeting of the Society for Neuroscience, "Immediate Early Genes of the Nervous System: Physiological Role and Pathological Significance," New Orleans, LA
- 1991 Co-Organizer and Co-chair, Symposium on "Lipid Mediators in Synaptic Transmission

- and Signal Transduction of Neuronal Cells: Physiological and Pathological Implications,” Society for Neuroscience, New Orleans, LA
- 1990-1992 Program Committee, American Society for Neurochemistry, Houston, Texas
- 1991-1993 Program Committee, International Society for Neurochemistry, Montpellier, France
- 1991-1993 Council Member, International Society for Pathophysiology
- 1992 International Advisory Committee, International Symposium on Retinal Degeneration, Costa Smeralda, Sardinia
- 1992 Co-Organizer, Ocular Cell and Molecular Biology Conference, Dallas, TX
- 1993 Advisory Board, ISN Satellite Meeting, 6th International Symposium, New Frontiers in the Biochemistry and Biophysics on Diagnosis and Treatment of Stroke, Neurotrauma and Other Neurological Diseases, Martin, Slovak Republic
- 1993 Program Committee, International Society for Neurochemistry, 14th ISN Biennial Meeting, Montpelier, France
- 1993 Advisory Board, Neurotrauma Society, 11th Neurotrauma Symposium, Washington, DC
- 1994 Organizer and Chair, Leon Wolfe Symposium, Lipids in the Central Nervous System: From Structure to Signal Transduction, New Orleans, LA
- 1994 International Advisory Board, 9th International Conference on Prostaglandins and Related Compounds, Florence, Italy
- 1994 Advisory Board, International Symposium on Pharmacology of Cerebral Ischemia, Marburg, Germany
- 1995 Chair, Program Committee, Association for Ocular Pharmacology and Therapeutics, New Orleans, LA
- 1995 Co-Chair, ASN Satellite Symposium, Neural and Glial Injury: Signal Transduction and Neuroprotection, Santa Monica, CA
- 1995 Co-Chair, ASN Symposium on Physiological Significance and Pathophysiological Role of PAF in Nervous System, Santa Monica, CA
- 1995 Chair Session, on Growth Regulation and Apoptosis/Calcium Transport and Regulatory Proteins at Neurodegenerative Diseases: Molecular and Cellular Mechanisms and Therapeutic Advances, XV Washington Spring International Symposium in Washington, DC
- 1995 Co-Chair Session, on Free Radical Pathophysiology in the Brain Disease at the 7th International Symposium on New Frontiers in the Biochemistry and Biophysics on Diagnosis and Treatment of Stroke, Neurotrauma and Other Neurological Disorders, Kurashiki, Japan
- 1996 Organizer, International Symposium, Fundamental Issues in Stroke and Epilepsy: Excitotoxicity, Cell Signaling and Neuroprotection, New Orleans, LA
- 1996 Co-Chair, American Society for Neurochemistry Symposium, Epileptogenesis and Neural Plasticity, Philadelphia, PA
- 1996 Co-Chair, International Symposium, New Targets in Inflammation: Inhibitors of COX-2 or Adhesion Molecules, New Orleans, LA
- 1996 Program Committee Co-Chair, Second Annual Association for Ocular Pharmacology and Therapeutics, Los Angeles, CA
- 1996 Chair, Session on “Animal Models of Diabetic Nephropathy and/or Mechanistic Approaches, at Diabetic Nephropathy: Secondary Phenomenon or Disease Entity,” Baden, Austria
- 1996 Chair, Session at the ICP’96 - 10th International Conference on Prostaglandins and Related Compounds, Vienna, Austria
- 1997 Co-Moderator, Photooxidative Damage and Protective Mechanisms in Retina Session, Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL
- 1997 Chair and Organizer, 8th International Symposium on Stroke, Neurotrauma, and Other Neurological Diseases, Satellite of the Joint Meeting of the 16th Biennial Meeting of the

- International Society for Neurochemistry and the 28th Annual Meeting of the American Society for Neurochemistry, New Orleans, LA
- 1997 Chair and Organizer, Lipid Messengers in the Nervous System, Satellite of the Joint Meeting of the 16th Biennial Meeting of the International Society for Neurochemistry and the 28th Annual Meeting of the American Society for Neurochemistry, New Orleans, LA
- 1997 Co-organizer, on “Matrix Metalloproteinases and the Central Nervous System,” New Orleans, LA
- 1998 Co-organizer, Asthma: Clinical and Research Perspectives meeting, New Orleans, LA
- 1998 Chair, 8th International Congress on “Platelet-Activating Factor and Related Lipid Mediators,” New Orleans, LA
- 1999 Chair, Organizer and President, Thirtieth Annual American Society for Neurochemistry Meeting, New Orleans, LA
- 1999 Organizer and Chair, Fourth International Workshop on Maturation Phenomenon in Cerebral Ischemia-Apoptosis and/or Necrosis, Neuronal Recovery vs. Death, and Protection for Infarction, New Orleans, LA
- 2000 Co-Chair, Session, XIV International Congress of Eye Research, Santé Fe, NM
- 2002-2004 President, Pan-American Association for Research in Ophthalmology
- 2004 Co-Organizers, Retinal Cell Biology Session on Oxidative Damage and Signal Transduction in the Retina, XVI International Congress for Eye Research (ICER), Sydney, Australia
- 2004 Co-Chair, Research Committee of the Pan-American Association of Ophthalmology
- 2006 Co-Chair, Session, XII International Symposium on Retinal Degeneration, October 23-28, 2006, San Carlos de Bariloche, Argentina
- 2006 Co-Organizer, XII International Symposium on Retinal Degeneration, October 23-28, 2006, San Carlos de Bariloche, Argentina
- 2007 Member Scientific Committee, 3<sup>rd</sup> International Conference on Phospholipases A<sub>2</sub> and Lipid Mediators, May 9-12, 2007, Sorrento (Naples), Italy.
- 2007 Co-Chair, ARVO Ocular Cell and Molecular Biology, September 6-8, 2007, Sarasota, Florida
- 2008 Co-Chair, Session on Stroke Research-From Past to Future Perspectives, 5<sup>th</sup> International Symposium on Neuroprotection and Neurorepair, Cerebral Ischemia and Stroke, May 17-20, 2008, Magdeburg, Germany
- 2008 Member of International Advisory Committee, XIII International Symposium on Retinal Degeneration, September 18-23, 2008, Emeishan, Sichuan, China
- 2009 Invited Keynote Lecturer at the British Pharmacological Society Meeting, July 8-10, 2009, Edinburgh, UK
- 2009 Co-Chair, Session on Current Opinions in Cell Death Signaling at Satellite Meeting on Cell Death, July 10-11, 2009, Edinburgh, UK
- 2009 Co-Chair, Session on Oxidative Stress-mediated Signaling in Neurodegeneration Diseases, 22<sup>nd</sup> Biennial Meeting of the ISN/APSN, August 23-28, 2009, BEXCO, Busan, Korea
- 2010 Co-Chair
- 2011 Faculty, Neuroscience School of Advanced Studies, Neurodegeneration and Molecular Neuropathology. San Quirico d’Orcia, Siena, Italy - June 13-25
- 2012 Coordinator, Neuroscience School of Advanced Studies, Neuroinflammation. San Quirico d’Orcia, Siena, Italy - June 13-25
- 2013 Coordinator (with S. Tonegawa, A.Silva) Neuroscience School of Advanced Studies, Cellular and Systems Mechanism of Learning and Memory, Convento di Sant’ Agostino, Cortona, Italy: July 20-28
- 2011-14 Chairman, Board of Governors, ARVO Foundation,
- 2014 Coordinator, Neuroscience School of Advanced Studies, Neuroinflammation: Molecular Principles and Translational Approach, Bressanone, Italian Alps - August 23-30

- 2014 Plenary Lecture, 5th International Congress on Stem Cells and Tissue Formation, Dresden, Germany – July 8-11
- 2014 Invited Speaker, Nobel Forum, Lipid Mediators in Health and Disease: A Tribute to Bengt Samuelsson at Karolinska Institut, Stockholm, Sweden – August 27-29
- 2014 Keynote Opening Lecture, German Center for Neurodegenerative Diseases (DZNE), Scientific Retreat, Schorfheide, Germany – September 24-26
- 2015 Neuroscience School of Advanced Studies, Learning and Memory: Cellular and Systems Mechanisms, S. Tonegawa, A.Silva and N. Bazan (Coordinators), Florence, Italy - May 23-30  
<http://www.nsas.it/learning-and-memory-cellular-and-system-mechanisms>
- 2015 Chair Nanosymposium: Neuroprotection: In Vivo Studies.  
 Neuroscience 2015: Society for Neuroscience Annual Meeting, Chicago, IL - October 20
- 2015 Opening Keynote Lecture, “The significance of a novel molecular switch for the DHA lipidome in cell function and disease” The 12th Fatty Acids in Cell Signaling Conference: From Genes to Human Physiology, Toronto, Canada - October 25-27
- 2015 The Pan-American Association for Biochemistry and Molecular Biology Plenary Lecturer, 56th Int. Conf. Bioscience of Lipids, 9-21-25,Iguazu, Argentina
- 2016 Conference Chair and Organizer, Lipid Mediators in Health and Disease II: From the Cutting Edge and 7th International Conference on Phospholipase A2 and Lipid Mediators: From Bench to Translational Medicine, La Jolla, CA – May 19-20.
- 2016 Faculty, Venusberg Neuroinflammation School, Conil de la Frontera, Spain, Oct 11-16th
- 2017 Faculty, Venusberg Meeting, Bonn, Germany, May 11-14, 2017
- 2017 Neuroscience School of Advanced Studies, Learning and Memory: Cellular and Systems Mechanisms, S. Tonegawa, A.Silva and N. Bazan (Coordinators), Cortona, Italy - May 27-June 3
- 2017 Invited Editor of Mini-review thematic series of Journal of Biological Chemistry on “Molecular Principles of the Inflammatory Response Governed by Gene Transcriptional Control”

***Federal Advisory Committees, U.S. Public Health Service, National Institute of Health:***

- Member, Task Force for Developmental Neurobiology, National Institute of Child Health and Human Development, 1983-1984.
- Member, Special Review Committee, National Institute of Neurological and Communicative Diseases and Stroke (NIH), January 1985.
- Ad hoc member, Basic Psychopharmacology Research Neurosciences, Review Committee, National Institute of Mental Health, June 1985.
- Reviewer, Research Scientist Development Review Committee, National Institute of Mental Health, 1985.
- Reviewer, Visual Sciences Study Section, Special Review Committee, National Institute of Neurological and Communicative Diseases and Stroke (NIH), 1986
- Reviewer, National Science Foundation, Veterans Administration Hospital, 1986.
- Special Review Committee, January 1986.
- Special Reviewer, VISA 1 Study Section, January 1986.
- Member, Special Review Committee, National Institute of Neurological and Communicative Diseases and Stroke (NIH), February 1986.
- Special Review Committee, October 1986.
- Ad hoc Member, NIH Neurology B Study Section, Division of Research Grants, February 1988.
- NIH Behavioral and Neurosciences Study Section, Division of Research Grants, 1988-1992.
- Review Committee Member, NIH Basic Research Science Grant (BRSB), LSU Medical Center School of Medicine, New Orleans, July 1989-1991.
- Special Review Committee, Neuronal Ceroid Lipofuscinoses (Batten Disease), 1991.

- Reviewer, NIH, NIAAA Board of Scientific Counselors and Ad Hoc Reviewers of the Laboratory of Membrane Biochemistry and Biophysics (LMBB), Washington, DC, 2001
- Review Committee, National Eye Institute, National Institutes of Health, Lutin/DHA Advisory Group, 2004
- Review Committee member, National Institutes on Drug Abuse (NIDA), Targeted Lipidomics: Signaling Lipids and Drugs of Abuse, 2004
- Reviewer, MU-AD-PPG, NIH Study section, St. Louis, MO, 2004
- Review Committee member, Brain Uptake and Utilization of Fatty Acids, Lipids and Lipoproteins, Bethesda, MD, 2004
- Chair, NIH Study Section, Review Committee, Bethesda, Maryland, 2006
- Reviewer, Biology and Diseases of the Posterior Eye Study, 2006 Section, (formerly Visual Sciences C Study Section) Center for Scientific Review, NIH, Bethesda, MD, 2006
- Reviewer, Biophysics of Neural Systems (BPNS), Center for Scientific Review, National Institutes of Health, Bethesda, MD, 2006
- Reviewer, National Institute of General Medical Sciences, NIH, Bethesda, MD, 2007
- Reviewer, Special Emphasis Panel/Scientific Review Group 2007/05 ZRG1, MDCN-B, Mitochondrial and Cerebral Ischemia, Center for Scientific Review, NIH, Bethesda, MD, 2007
- Reviewer, U.S. Army Medical Research and Material Command (USAMRMC), American Institute of Biological Sciences, Scientific Peer Advisory and Review Services, Reston, VA, 2007
- Reviewer, Alzheimer's Association Grant Reviews, Chicago, IL, 2007
- Reviewer, Molecular and Integrative Signal Transduction (MIST) Study Section, Bethesda, MD, 2008
- Member, Institutional Clinical Translational Science Award (CTSA) Center Special Emphasis Panel review panel, National Center for Research Resources, February 19-20, 2008
- Reviewer, NIH Study Section, Biophysical and Physiological Neuroscience ZRG1 F03B (20), Washington, DC, June 18-19, 2009
- Reviewer, Center for Scientific Review, Special Emphasis Panel, Challenge Grant review ZRG1-CB-N 58, July 20-21, 2009.
- Reviewer, S10 Shared Instrumentation and Microscopy Review, Center for Scientific Review, NIH, November 12-13, 2009, Chicago, IL
- Reviewer, Brain Disorders and Clinical Neuroscience Integrated Review Group, Clinical Neuroplasticity and Neurotransmitters Study Section (CNNT), San Francisco, CA, February 11-12, 2010. Washington, DC
- Reviewer, Biology and Disease of the Posterior Eye Study Section, Center for Scientific Review, NIH, July 1, 2010, Bethesda, MD
- Reviewer, NIH Workshop "Clarifying Directions and Approaches to Mechanistic and Translational Research on Omega-3 Fatty Acids and their Metabolites", February 14-15, 2011, Bethesda, MD.
- Reviewer, Biology and Disease of the Posterior Eye Study Section, Center for Scientific Review, NIH, February 22-23, 2011, Bethesda, MD
- Reviewer, Biology and Disease of the Posterior Eye Study Section, Center for Scientific Review, NIH, June 20-21, 2011, Chicago, IL
- Reviewer, NIH, Biology and Disease of the Posterior Eye Study Section, October 24-25, 2011, Bethesda, MD
- Reviewer, Special Emphasis Panel, NEI Translational Research on Therapy for Visual Disorders (R24), Washington, DC, 2011
- Reviewer, Biology of the Visual System Study Section, Center for Scientific Review, NIH, February 13-14, 2012, Bethesda, MD.
- Reviewer, American Heart Association, Brain 4 Peer Review Committee, Teleconference meeting, April 2, 2012.
- Reviewer, NIH, Biology and Disease of the Posterior Eye Study Section, June 4-5, 2012, San Francisco, CA
- Reviewer, NIH, Biology and Disease of the Posterior Eye Study Section, June 10-11, 2013, San Francisco, CA
- Reviewer, American Heart Association Peer Review, Teleconference meeting, October 23, 2013
- Reviewer and Member, Biology of the Visual System Study Section, NIH, Washington, DC, Teleconference call, December 5-6, 2013.
- Reviewer, Biology of the Visual System Study Section, NIH, Bethesda, MD, February 13-14, 2014.
- Reviewer, Biology of the Visual System Study Section, NIH, San Francisco, CA, June 19-20, 2014



- Reviewer, American Heart Association, IRG Vascular Science (Brain), BSc1 Conference Call, October 20, 2014
- Reviewer, Botanical Dietary Supplement Research Center (BDSRC) (p50), Washington, DC, December 17-18, 2014
- Reviewer, NINDS Study Section, NIH, Washington, DC, June 17, 2015
- Reviewer, NEI Translational Research Program on Therapy for Visual Disorder Study Section, Bethesda, MD, July 31, 2015
- Peer Review Panel Member, 2016 Clinical and Rehabilitative Medicine Research, Intramural Research, U.S. Army Medical Research and Material Command's office of Congressionally Directed Medical Research Programs and SRA International Inc., November 11, 2015 – December 31, 2017
- Reviewer, Videoconference NIH CSR Special Emphasis Panel (SEP) "Fellowship: Cell Biology, Developmental Biology and Bioengineering (FOS-U), February 23-24, 2016
- Reviewer, Clinical and Rehabilitative Medicine Research, Intramural Research, U.S. Army Medical Research and Material Command's office of Congressionally Directed Medical Research Programs and SRA International Inc., April 11, 2016
- Reviewer, ZNS1 SRB-L 07, Centers without Walls for Collaborative Research in the Epilepsies, Special Emphasis Panel, NIH, NINDS, June 28-29, 2016
- Reviewer, NEI Translational Research (R24) and Patient-Oriented Mentoring Training (K23), August 4, 2016
- Reviewer, NIH Special Emphasis Panel, "Synapses, Cytoskeleton & Trafficking (SYN) Scientific Review Group", November 30, 2016
- Reviewer, NEI Special Emphasis Panel ZEY1 VSN (3) NEI Translational Research Program to Develop Novel Therapies and Devices for the Treatment of Visual System Disorders (R24A), July 25-26, 2017

***Other Advisory Committees:***

- |           |  |
|-----------|--|
| 1988-1989 | Glaxo Inc., Cardiovascular Discovery Grant Advisory Board  |
| 1988-1990 | Fundamental Research Related to Multiple Sclerosis, National Multiple Sclerosis Society, New York, NY                        |
| 1988-1990 | Chairman, Task Force on Research as an Economic Force for the Future, LSU Medical Center School of Medicine, New Orleans, LA |
| 1988-1991 | Boyd Professorship Review Committee, LSU Systems, Baton Rouge, LA  |
| 1990-     | Administrative Council, LSU Health Sciences Center New Orleans, LA   |
| 1990-     | Scientific Adv. Board Member, Fondazione Giovanni Lorenzini, Houston, TX   |
| 1992      | International Advisory Board, International Conference on Prostaglandins and Related Compounds, Montreal, Quebec, Canada     |
| 1992      | Chairman, SACS Accreditation Committee on Externally Funded Grants and Contracts, LSU School of Medicine, New Orleans, LA    |
| 1994      | Board Member, William Harvey Medical Research Foundation   |
| 1995-1998 | President and Trustee, William Harvey Medical Research Foundation  |
| 1996      | Search Committee Member, Endowed Chair in Parkinson Disease, LSU School of Medicine, New Orleans, LA                         |
| 1998-     | Member, Scientific Board of Visitors, Oklahoma Medical Research Foundation, Oklahoma City, OK                                |
| 1998-     | Board Member, William Harvey Medical Research Foundation   |
| 1998-     | Member, Fondazione Giovanni Lorenzini, Houston, TX   |
| 1998-     | Member, Southern Dominican Province New Orleans Advisory Board   |
| 1998-1999 | Advisory Board Member, Interdisciplinary Development for Celecoxib in Alzheimer's disease, Chicago, IL                       |
| 1999      | Advisory Board member, G.D. Searle & Co. Celecoxib-Alzheimer's Disease Development, Irving, TX                               |
| 1999-2003 | Advisory Board Member, Book Series "Nutrition, Brain and Behavior"   |
| 2000      | Peer Reviewer, American Heart Association, Brain Res. Group, Dallas, TX  |
| 2000      | Consultant, Merck 2000 Management of Acute Pain and Arthritis, Dallas, TX  |

2000 Peer Reviewer, Spinal Cord Injury Research Board, Sarasota Springs, NY  
 2000- Board Member, University of New Orleans Research and Technology Foundation, New Orleans, LA  
 2001-2014 Member, Board of Directors, Atrix Laboratories, Inc., Denver, CO  
 2001- 2014 Member, Board of Directors, The Lighthouse for the Blind in New Orleans, Inc, New Orleans, LA  
 2001 Member, Department of Economic Development Screening Committee, Baton Rouge, LA  
 2001 Peer Review, American Heart Association Affiliate Brain/Stroke Study Group, Dallas, TX  
 2002-2006 Chair, Research Council, LSU Health Sciences Center, New Orleans, LA  
 2003- Member, Business Advisory Group for the Proof of Concept Fund, MetroVision, Louisiana Technology Council  
 2004- Member, External Board meeting for MU-AD-PG, St. Louis, MO  
 2005 Pharmacology Department Head Search Committee, LSU Health Sciences Center, New Orleans, LA  
 2006-2009 Chairperson, Executive Research Council, New Orleans, LA  
 2007-2016 COBRE EAC (External Advisory Committee) member, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma  
 2007 Pharmacology Chair Search Committee, New Orleans, LA  
 2007 Dean of the School of Medicine Search Committee, New Orleans, LA  
 2007 Chair, Neurology Search Committee, New Orleans, LA  
 2007 Member, International Scientific Committee, 3<sup>rd</sup> International Conference on Phospholipases A2 and Lipid Mediators, Sorrento, Italy, May 9-12, 2007  
 2010- Member, Board of Governors for Association for Research in Vision and Ophthalmology Foundation  
 2010-2016 Founding Senate Member, Deutsches Zentrum für Neurodegenerative Erkrankungen (German Centre for Neurodegenerative Diseases) of the Helmholtz Gemeinschaft  
 2010 Ad Hoc Committee members, Harvard Medical School, Office for Faculty Affairs, Boston, MA  
 2010-2013 Member, LSU Health Sciences Center, Committee on Community Outreach, New Orleans, LA  
 2010-2013 Member, LSU Health Sciences Center, Research Space Advisory Committee, New Orleans, LA  
 2010-2014 Member, NIH, Biology and Diseases of the Posterior Study Section, Center for Scientific Review

**Offices and New Programs:**

7/70-8/71, 3/75-2/76 Member, Dean Council and member of several committees, Universidad Nacional del Sur Bahia Blanca, Argentina  
 1970 Organizer and Founder, Inst. of Biochemical Research, and School of Biology (the Natural Sciences), Universidad Nacional del Sur, Bahia Blanca, Argentina  
 1970 Organized graduate studies curriculum towards Ph.D. and M.S. Sc. in Biochemistry and Biology, Universidad Nacional del Sur, Bahia Blanca, Argentina  
 1979 Founder and First President, Foundation for the Promotion of Science and Culture, Bahia Blanca, Argentina  
 October, 1983 Expert, United Nations Educational and Scientific Mission to India (UNESCO-UNDP Project)  
 1984-1988 Neuroscience Steering Committee, LSUMC, New Orleans, LA  
 1988 Chairman, Neuroscience Steering Committee, LSUMC, New Orleans, LA  
 July 1989-1991 Local Review Committee Member, NIH BRSG Award, LSUMC School of Medicine, New Orleans, LA  
 1990- Administrative Council, LSUMC School of Medicine, New Orleans, LA

1990	Committee Member, Clinical Sciences Research Building Planning, LSU Medical Center School of Medicine, New Orleans, LA
1991-1992-	Clinical Department Head Committee, LSUMC School of Medicine, New Orleans, LA Advisory Committee, Neuroscience Training Program, LSUMC School of Medicine, Neuroscience Center of Excellence, New Orleans, LA
1992-	Executive Committee for the Interdisciplinary Ph.D. Program, LSUMC School of Medicine, Neuroscience Center of Excellence, New Orleans, LA
1996-	Chair, Honorary Host Committee of Brain Awareness Week, LSUMC School of Medicine, Neuroscience Center of Excellence, New Orleans, LA
1996-1997	Committee Member, Endowed Chair in Parkinson Disease, LSUMC School of Medicine, New Orleans, LA
1996-	Committee Member, Faculty Awards and Fellowships, LSU Medical School, New Orleans, LA
1996-2001	Chair, Research Council, LSU Medical School, New Orleans, LA
1999	Committee Member, Search Committee for Director of Excellence in Oral and Craniofacial Biology and Assistant Dean for Research
2003-	Committee Member, Dean's Search Committee, LSU Health Sciences Center School of Medicine, New Orleans, LA
2003-	Chair, Research Committee, LSU Health Sciences Center, New Orleans, LA
2004-	Committee Member, Neurosurgery Chair Search Committee, LSU Health Sciences Center, New Orleans, LA
2005	Committee Member, Louisiana Biotechnology Community: Building on the Foundation, Baton Rouge, LA – Session on Where Do We Go From Here? “Proof of Principle: It can be done in Louisiana”
2006	Board Member of the Chamber, New Orleans, LA, 2006
2007	Committee Member, Pharmacology Chair Search Committee, LSU Health Sciences Center, New Orleans, LA
2008	Committee Member, Neurology Chair Search Committee, LSU Health Sciences Center, New Orleans, LA
2009	Committee Member, Ophthalmology Chair Search Committee, LSU Health Sciences Center, New Orleans, LA, 2009
2011-14	Chairman Board of Governors, Association for Research in Vision and Ophthalmology (ARVO) Foundation

**Research Support:**

1969-1971	- Medical Research Council Canada
1970-1981	- National Research Council Argentina (several grants) - Scientific Research Council, Province of Buenos Aires, Argentina (several grants)
1970-1980	- Science and Technology, Subsecretary Argentina (several grants)
1973-1981	- Interamerican Bank of Development (\$16,000,000) - National Research Council of Argentina Training-Core-Program Project
1982-1983, 1985-1986	- Klingenstein Foundation (\$753,000)
1982-1983, 1988-1989	- International Research Scholar and other awards, Research to Prevent Blindness, Inc. (\$440,000)
1982-1983	- The March of Dimes (\$107,000)
1982-1983	- Fight for Sight (\$49,000)
1983-1984	- American Epilepsy Foundation (\$133,000)
1984-1986, 1991-1992	- National Retinitis Pigmentosa Foundation, Inc. (\$290,000)
1984-1986	- American Diabetes Association (\$50,000)
1986-1989, 2007-	- Edward G. Schlieder Educational Foundation (\$99,000)
1986-1991	- IPSEN Beaufour, Paris, France (\$2,600,000)

1989-1994	- GLAXO (1,500,000)
1981-1982	Pilot Project EY04274 Biosynthesis of Phosphatidic Acid in the Retina (\$15,000)
1982-1986	EY04428 Role of Lipids in Retinal Degenerative Disease (\$587,516)
1984-1987	EY05121 Prostaglandins and Lipoxygenase Metabolites in Retina (\$432,911)
1986-1996	NS23002 Role of Phospholipids and Arachidonic Acid in Epilepsy (\$1,602,887) Jacob Javits Investigatorship Award from National Institutes of Neurological Diseases and Stroke
1987-1992	EY04428 <b>Docosahexaenoic Acid</b> Metabolism in Retina (\$697,537)
1987-1992	EY05121 Leukotrienes and Prostaglandins in Photoreceptor Renewal (\$676,552)
1992-1996	EY05121 Leukotrienes and Messengers in Photoreceptor Renewal (\$608,000)
1994-1998	- <b>DAMD17-93-V-3013 Program Project (Medical Research and Development Command Cooperative Agreement)</b> (\$13,800,000) Neural Responses to Injury: Prevention, Protection and Repair Role of Growth Factors and Cell Signaling in the Response of Brain and Retina to Injury Neurochemical Protection of the Brain: Neural Plasticity and Repair
1995-1998	- Institute de Recherches Internationales Servier, France (\$1,120,000) Pathophysiology of Diabetic Retinopathy: Identification of New Targets of Potential Treatment
1996-2001	NS23002 Role of Phospholipids and Arachidonic Acid in Epilepsy (\$966,041)
1996-2001	EY05121 RPE Messengers, Transcription and Photoreceptor Renewal (\$638,290)
1998	- Eye, Ear, Nose and Throat Foundation (\$750,000)
1998	- Daughters of Charity (\$750,000)
1999-2003	- <b>Department of Transportation for the Automotive Highway Safety Initiative</b> (\$878,600)
2000-2001	- <b>Space and Naval Warfare Systems Command</b> (\$598,517) “Is Hippocampal Long-Term Potentiation Modified after Sleep Deprivation in Rats?”
2001-2003	- <b>Novartis</b> (\$338,000) “Cell Signaling and Pharmacology in the Eye”
2001-2004	- <b>NSF/EPSCoR/Board of Regents</b> (\$2,775,000) “Micro/Nano Technologies: Neural Signaling Research”
2002-2004	- <b>Defense Advanced Research Projects Agency (DARPA)</b> (\$10,630,000 Phase I, 2.3M begins April 1, 2002) “Identification of Synaptic Signaling Events and Behavioral Correlates in Sleep Deprivation: Development of Novel Pharmacologic Agents”
2002-2008	NS23002 Role of Phospholipids and Arachidonic Acid in Epilepsy (\$1,079,675)
2003	- <b>Neurobiotechnology Program in Louisiana</b> (\$833,000)
2003-2008	- <b>Bio-Magnetics Interfacing Concepts: A Microfluidic System using Magnetic Nanoparticles for Quantitative Detection of Biological Species</b> (\$494,500/year=\$2,472,500)
2004-2010	R01 NS046741, NIH, National Institute of Neurological Disorders and Stroke, Neuroprotection: Lipid Signaling in Ischemia-Reperfusion (\$225,816)
2010-2015	R01 NS046741, NIH, National Institute of Neurological Disorders and Stroke, Neuroprotection: Lipid Signaling in Ischemia-Reperfusion (\$225,816)
2010-2015	R01 NS046741, NIH, National Institute of Neurological Disorders and Stroke Neuroprotection: Lipid Signaling in Ischemia-Reperfusion (\$1,553,125)
2009-2011	1RC2AT005909-01 NIH, NCCAM (Bazan NG, Serhan C, Petasis N) (\$1,418,175.00) - “Mechanism of Action of Omega-3 <b>fatty Acids</b> in Brain Injury”
2001-2004	EY05121 RPE Messengers, Transcription and Photoreceptor Renewal (\$1,001,000)
2005-2010	EY05121 RPE Messengers, Transcription and Photoreceptor Renewal (\$244,125)
2009-2011	EY05121 RPE Messengers, Transcription and Photoreceptor Renewal Supplement (S1) – (\$337,824)

- 2002-2007 - **R21COBRE, NIH** (\$9,800,000)  
“Mentoring Neuroscience in Louisiana”
- 2007-2012 - **P20RR16816 COBRE, NIH** (\$1,662,639)  
“Mentoring Neuroscience in Louisiana: A Biomedical Program to Enhance Neuroscience”
- 2009-2010 - **CoBRE Supplement (S1), NIH** (\$147,840)  
“Mentoring Neuroscience in Louisiana”
- 2004-2007 - **American Health Assistance Foundation (AHAF), Macular Degeneration Research** (\$300,000), “Signaling in RPE Cell Survival”
- 2010-2012 - **American Health Assistance Foundation (AHAF), Macular Degeneration Research** (\$100,000), “**NPD1** Promotes Survival Signaling in the Ccl2-/-/Cx3cr1-/- mouse AMD Model”
- 2009-2010 - **Foundation Fighting Blindness** (Bronya Keats, PhD: Former PI) (\$110,000)
- 2009-2012 - **TA-NP-0808-0463-LSUNO, Foundation Fighting Blindness** (\$89,964), “**Neuroprotectin D1** slows photoreceptor degeneration”
- 2010-2012 - **Beckman Initiative for Macular Research; The Arnold and Mabel Beckman Foundation, Doheny Eye Institute 1101** (\$100,000), “Neuroprotective Bioactivity of Neuroprotectin-D1 with Nanoparticle-enhanced Delivery in Experimental Retinal Degeneration”
- 2012-2017 - **P30GM103340 COBRE, NIH** (\$1,031,174)  
“Mentoring Neuroscience in Louisiana: A Biomedical Program to Enhance Neuroscience”

**Graduate Students, Postdoctoral Fellows, Research Fellows/Current Apointments:**

- S.A. Morelli de Liberti
- M.S.D.F. de Escalante
- A. Gauna de Rositano
- Victor Marcheselli, Former Research Assistant Professor, Department of Ophthalmology, LSU Eye Center, New Orleans, LA
- Maria Pediconi, Assistant Professor of Biological Chemistry, University of South, Bahia Blanca, Argentina
- Monica Ilincheta de Boschero, Assistant Professor of Biological Chemistry, University of South, Bahia Blanca, Argentina
- Idi Bonini, Assistant Professor of Biological Chemistry, University of South, Bahia Blanca, Argentina
- Dale L. Birkle, Associate Professor of Pharmacology and Toxicology, West Virginia University
- Burton Scott, Assistant Professor, Neurology, Duke University, NC
- Geoffrey Allan, Post-doctoral Fellow, Department of Ophthalmology, LSU Medical Center, New Orleans, LA
- Rex Martin, Assistant Professor of Anatomical Sciences, University Oklahoma Health Science Center, OK
- Z.E.G. Oliveira
- R. Alcalde
- Hugo Caldironi
- Marta Matzkin de Rosujovsky
- Graciela Cascone
- Maria M. Careaga
- Carlos A. Barassi, Professor and Head of Biological Chemistry, University of Mar del Plata, Argentina
- Enrique Politi, Post-doctoral fellow, Harvard Medical School
- Marcos Crupkin, Professor of Biological Chemistry, University of Mar del Plata, Argentina
- Magdalena Rossowska, Assistant Professor, Physiology, LSU School of Dentistry, New Orleans, LA
- Marisa Abreu, Professor of Ophthalmology, University of Sao Paulo, Brazil
- Wilson Tang
- T. Sanjeeva Reddy, LSU Medical School, New Orleans, LA
- Lucio Van Rooijen, Bayer AG, Head of Neurochemistry, Tropon, Berkshire, UK
- Michael Limberg
- Feng Cai, Montreal, Canada

- Naigang Lin, Alcon Laboratories, Fort Worth, TX
- Christophe Baudouin, Professor and Chair, Department of Ophthalmology, University of Paris, France
- Françoise Baudouin, Assistant Professor of Ophthalmology, University of Paris, France
- Fernando Santos, M.D., Curitiba, Brazil
- Roberto Cohen, Centro de Enfermedades Oculares, Sante Fe, Argentina
- David Linn, Tulane University Medical Center, New Orleans, LA
- Walter Lukiw, Ph.D., Assistant Professor of Ophthalmology and Neuroscience Center, LSUHSC, New Orleans, LA
- Alexey Ershov, Ph.D., Amersham Pharmacia Biotech, Inc., Piscataway, NJ
- Sebastian Barreiro, M.D., Buenos Aires, Argentina
- Vittorio Colangelo, M.D., Research Fellow, LSUHSC, New Orleans, LA
- Mathieu Soriano, Ph.D. Buenos Aires, Argentina
- Marcos Crupkin, M.S., Professor of Biological Chemistry, University of Mar del Plata, Argentina, 1974
- Marta I. Aveladano, Ph.D., Professor and Head of Biological Chemistry, University of South, Bahia Blanca, Argentina, 1975
- Carlos A. Barassi. Ph.D., Professor and Head of Biological Chemistry, University of Mar del Plata, Argentina, 1975
- Ana M. Pechen, Ph.D., Professor and President of Biological Chemistry, University of Comahue, Neuquen, Argentina, 1975
- Norma M. Giusto, Ph.D., Professor of Biochemical Pathology, University of South, Bahia Blanca, Argentina, 1976
- Haydee E. Pascual, Ph.D., Professor of Ophthalmology, LSU Eye Center, New Orleans, LA
- Elena B. Rodriguez de Turco, Ph.D., Former Associate Professor of Ophthalmology, LSU Eye Center, New Orleans, LA, 1981
- Telma S. Alonso, Ph.D., Associate Professor of Biological Chemistry, University of South, Bahia Blanca, Argentina, 1982
- Robert Vadnal, Chief, Psychiatry Service, Director, Molecular Neuroscience Program, Louisville Veterans Administration Medical Center, Louisville, KY, 1982-1988
- John Doucet, Ph.D., Dear and Professor, Nicholls State University, LA
- Ying Tao, Ph.D., Neurology Resident, Saint Louis University Hospital, St. Louis,
- Mark Stellingworth, M.D., Resident, LSU Medical Center, New Orleans, LA
- Lisa Teather, Ph.D., Assistant Professor, MIT, Boston, MA
- Michael Serou, M.D., Ph.D., Resident LSU Medical School
- Mark Parker, Ph.D Postdoctoral Fellow, Harvard Medical School
- Daoling Zhang, MD Resident Ophthalmology, Duke University, NC
- Bin Tu, Postdoctoral Fellow, Duke University, NC
- Mark Parker, Ph.D., Postdoctoral Research Fellow, Harvard Medical School, Boston, MA, 2001
- Peimin Zhu, Postdoctoral Fellow, U Penn, PA
- Miriam Kolko, M.D, PhD. Professor Ophthalmology and Head of Glaucoma Research, University of Copenhagen, Denmark
- Hiroshi Hito, Associate Professor, University of Tokyo, Japan
- Antony Rajee, Department of Biological Chemistry and Molecular Pharmacology, Harvard Medical School
- Jorgelina Calandria, Ph.D., Research Assistant Professor, LSU Health Sciences Center, New Orleans, LA
- Zahra Faghiri, Dept. of Pharmacology, Harvard Medical School
- Aram Asatryan, Ph.D., Post-Doctoral Fellow, LSU Health Sciences Center, Neuroscience Center of Excellence, New Orleans, LA
- Eric Knott, Ph.D., M.S. Public Health; Research Associate, LSU Health Sciences Center, Neuroscience Center of Excellence, New Orleans, LA
- Surjyadipta Bhattacharjee, Ph.D.; Post-Doctoral Researcher, LSU Health Sciences Center, Neuroscience Center of Excellence, New Orleans, LA

### **Current Ph.D., M.D/Ph.D. Candidates, and M.D./Ph.D. Graduates**

- Khanh V. Do (Ph.D. candidate)
- Katelyn Robillard (M.D./Ph.D. candidate)
- Tiffany N. Eady, Senior Neurology Resident, Beth Israel Deaconess Medical Center, Harvard Medical School Teaching Hospital, Children's Hospital (M.D./Ph.D. graduate)
- Tabitha Quebedeaux, Resident, Obstetrics and Gynecology, LSU Health New Orleans, School of Medicine (M.D./Ph.D. graduate)
- David Stark, EyeSTAR Resident UCLA Stein Eye Institute, Department of Ophthalmology, David Geffen School of Medicine at UCLA (M.D./Ph.D. graduate)

### **Honors and Awards**

- Argentine Association for the Advancement of the Sciences, Goytia Prizes, 1968, 1970;
- Award best medicine thesis Univ. Tucuman, Argentina; 1971-72;
- Ten Outstanding Young Persons of Argentina, Junior Chamber Buenos Aires Research to Prevent Blindness, Incorporated, NY, 1976;
- International Research Scholar, 1977;
- William & Mary Greve International Scholar, 1983-84;
- Elected to Council ISN, 1979-83;
- Elected to Council ASN, 1988-90;
- Gold Medal, Fondazione Giovanni Lorenzini, Milan, Italy, 1981;
- Honorary Professor, Universidad de Tucuman, Argentina, 1987-;
- Javits Neuroscience Investigator Award NINDS, NIH, 1989;
- Citation Classic, "Neural Stimulation or Onset of Cerebral Ischemia Activates Phospholipase A2" Current Contents/Life Sciences, 30:10, July 29, 1991;
- Elected Member, Academy of Medical Sciences, Cordoba, Argentina, 1991-;
- Merck Lecture in Pharmacology, McGill University, Canada, 1992;
- Elected Member, Royal Academy of Sciences, Spain, 1993;
- Boyd University Professor, Louisiana State University; 1994;
- 11th William Harvey Lecture, London, 1994;
- Role Model Awardee, Young Leadership Council of New Orleans, 1994;
- Caputto Gold Medal, Argentine Neurochemical Society, 1994;
- Elected Member, Dana Alliance for Brain Initiative, 1995;
- Elected Member, Royal Academy of Medicine, Spain, 1996;
- Welcome Professorship and Lecture (Burroughs Welcome Fund/FASEB) At University of North Carolina, 1996;
- Merit Award, Distinguished Argentine Abroad, National Research Council of Argentina, Presented by the President of Argentina, 1996;
- Annual John Dorsey Lecture, Wayne State University, Detroit, Michigan, 1996;
- Guest of Honor, Inaugural Symposium, Frontiers in Neuroscience, Wallenberg Neuroscience Center, Lund University, Sweden, 1996;
- President elect, President (1999-2001), American Society for Neurochemistry, 1997-2001;
- Distinguished Lecturer in Neuroscience, Oklahoma Neuroscience Center, Oklahoma University Medical Center, Oklahoma City, OK, 1997;
- William H. Bell Lectureship, Oklahoma Medical Research Foundation, Oklahoma City, OK, 1997;
- Robert Schwab Lecturer, 13th Ann. American Academy of Clinical Neurophysiology, 1998;
- Mayerson-Di Luzio Lecture, Tulane University School of Medicine, Dept. Physiology, 1998;
- Loris & David Rich Lecture in Visual Science, University of Alabama, Birmingham, AL, 1999;
- President, American Society for Neurochemistry, 1999-2001;
- Elected Fellow, Medical Society of Ireland, The Royal College of Physicians Of Ireland, Dublin Doctor Honoris Causa, Universidad Nacional del Tucuman, Argentina, 1999;

- Endre A. Balazs Prize, International Society of Eye Research, 2000;
- Neurochemical Research journal issue dedicated to Nicolas Bazan, Vol. 25, No. 5, <http://www.wkap.nl/journalhome.htm/0364-3190>, 2000;
- President, American Society for Neurochemistry, 1999-2001;
- Citybusiness 2002 Innovator of the Year Award New Orleans, LA, 2002;
- The Alzheimer's Association Greater New Orleans Chapter Award, NOLA, 2002;
- Career Service Awards, 20 years, LSUHSC, NOLA, 2003;
- Family Services of Greater New Orleans (Ten Outstanding Persons) Award, 2003;
- First Leon Wolfe Lecturer, Montreal Neurol. Inst., Canada, 2004;
- Association for Research in Vision and Ophthalmology, Proctor Medal and Lecture, 2007;
- Advances in Experimental Medicine and Biology, Vol. 613, Recent Advances in Retinal Degeneration book dedicated to Nicolas Bazan, <http://www.springer.com/medicine/ophthalmology/book/978-0-387-74902-0>, 2008;
- Association for Research in Vision and Ophthalmology Silver Fellow, 2009;
- Association for Research in Vision and Ophthalmology Gold Fellow, 2011;
- Chevreul Medal, Paris, France, 2011;
- Alkmeon International Prize, 2011;
- Keynote Speaker and Excellence Award, Annual European Association for Vision and Eye Research (EVER) Meeting, 2013;
- Distinguished Speaker, Pioneers in Neuroscience Lecture Series, University of Buffalo The State of University of New York, Buffalo, NY, 2013;
- Medal, Mirosław M. Mossakowski, Polish Academy of Sciences, 2013
- The Pan-American Association for Biochemistry and Molecular Biology Plenary Lecturer, 56th Int. Conf. Bioscience of Lipids, Iguazu, Argentina, 2015
- Gradle Medal and Lecture. The Pan-American Association of Ophthalmology/World Ophthalmology Congress, Guadalajara, Mexico, 2016
- Featured on cover of Research Features for article *A marvelous mind*: <http://researchfeatures.com/wp-content/uploads/2016/12/Dr-Nicolas-Bazan-lsuhch-Neuroscience-2.pdf>, 2016
- American Society of Biochemistry and Molecular Biology; Lipid Corner: Nicolas G. Bazan, LSUHSC School of Medicine, video lecture: <https://www.youtube.com/watch?v=EDc5RW3Mc8s>, 2017

## **Business/Entrepreneurial Activities**

### Consulting

- FIDIA, Italy, 1982-1985
- IPSEN-BEAUFOR, France, 1986-1990
- TEIJIN, Japan, 1985-1986
- EISAI, Japan, 1986-1991
- MONSANTO, U.S.A., 1984-1985
- Cardiovascular Drug Discovery Board, GLAXO, North Carolina, 1988-1990
- ICOS, Seattle, Washington, 1996-1999
- SERVIER, France, 1996-2000
- Interdisciplinary Development Advisory Board on Celecoxib in Alzheimer's Disease, SEARLE, Skokie, Illinois, 1998-1999
- CENTAUR, Sunnyvale, California, 1997-2000
- Consultant, MERCK 2000 Management of Acute Pain and Arthritis, Dallas, Texas, 2000

### Start-Up Companies

- Co-Founder and Consultant, In Site Vision, Alameda, California, 1987-1989



- Operating Committee, Member, In Site Vision, Alameda, California, 1987-1989
- Scientific Advisory Board, Centaur, Sunnyvale, California, 1997-2000
- Scientific Founder, St. Charles Pharmaceuticals New Orleans, Louisiana, 1997-2000
- Board of Directors, Atrix Laboratories, Inc., 2001-2004
- Scientific Co-Founder and Chairman of the Board (in organization), South Rampart Pharmaceuticals, LLC, 2016-present
- Scientific Co-Founder and CEO, Neuresto Therapeutics, LLC 2017-present (Publicly Traded Company)

#### University-Industry Interactions

- Chairman, Task Force Research as an Economic Force for the Future at LSU Medical Center, New Orleans, Louisiana, 1988-1990
- Member Chair of Bioscience Committee, New Orleans New Business Initiative City Hall, New Orleans, Louisiana, 1989-1991

#### Other Activities

- Healthcare & Scientific Advisory Board, BlueStone Capital Partners, LP, New York, 1997-1998
- Genome Securities, Inc., Scientific Advisory Board, Scranton, Pennsylvania, 1998-1999
- eMed Securities, Inc., Chair, Scientific Advisory Board, Scranton, Pennsylvania, 2000-2002
- President, Louisiana Alliance for Biotechnology, Baton Rouge, Louisiana, 2000-2002

#### **Development of Novel Synthetic Compounds and Therapeutic Applications**

Based on fundamental research in the Bazan lab, patents were developed by effective collaborations with medicinal chemists. Novel molecules developed include: Platelet-activating factor receptor (PAF-R) antagonists, elovanoids, analgesics and other compounds. The lab uncovered receptor mediation (PAF-R) in brains damaged by the phospholipid mediator PAF, which is released during ischemic stroke. Excessive PAF release activates the receptor, triggering a myriad of pro-neuroinflammatory events that include: enhanced excitotoxicity by stimulating glutamate release, inhibition of ionotropic GABA receptor, apoptosis, induction of matrix metalloproteinases 1 and 9, activation of COX-2 transcription, and complement activation. Therefore, PAF-R antagonists for certain neuroinflammatory signaling activated by PAF were developed. The receptor antagonists are called LAU compounds (Louisiana Alcala Universities, reflecting the collaboration of the Bazan lab with Prof. Alvarez-Builla from the University of Alcala, Spain). One of the members of this series, LAU-0901 downregulates neuroinflammation and reduces the penumbra volume after an experimental ischemic stroke. Thus LAU PAF-R antagonists are highly neuroprotective. Bazan and collaborators also developed a series of acetaminophen (APAP) analogs, 2-(1,1-dioxido-3-oxo-1,2-benzisothiazol-2(3H)-yl)-N-(4-hydroxyphenyl) alkanecarboxamides, bearing a heterocyclic moiety linked to the pacylaminophenol fragment. Unexpectedly, these compounds maintained their *in vivo* analgesic profile, while the hepatotoxicity of APAP was abolished. Analgesic and antipyretic efficacy was comparable to that of APAP and display an overall favorable safety profile as an orally delivered compound.

**Abstracts**

1. Barbieri FD, **Bazan NG**: Observaciones preliminares sobre la molecula de glucogeno de embriones de anfibios en desarrollo por medio de la reaccion de iodo. Segundo symposio sobre metabolismo de los hidratos de carbono, Tucumán, Argentina, 1964.
2. Chiodi HP, **Bazan NG**: Fatty liver induced in the infant rat by chronic carbon monoxide hypoxia. *The Physiologist* 9:153, 1966.
3. **Bazan NG**, Joel CD: Free **fatty acids** in brain. *Fed. Proc.* 27:751, 1968.
4. **Bazan NG**, Cummings M: The turnover of brain **fatty acids** following decapitation or convulsions. Proc Second Int Meeting Int Soc Neurochem, R Paoletti, R Fumagelli, C Galli (eds), Tamburini Editore, Milan, Italy, 83-84, 1969.
5. **Bazan NG**: Factors affecting the brain free **fatty acid** pool. *Trans. Amer. Soc. Neurochem.* 1:28, 1970.
6. Bazan HEP, **Bazan NG**: Efectos de la isquemia y del desarrollo postnatal sobre los acidos grasos libres del encefalo. Congreso Argentino de Ciencias Biologicas, Fac de Medicina, Universidad de Buenos Aires, Buenos Aires, Argentina, 1970.
7. **Bazan NG**: Analisis de los acidos grasos libres cerebrales y los efectos del shock hipoglucemico, anfetaminas y alfa metil-p-tirosina. Congreso Argentino de Ciencias Biologicas, Fac de Medicina, Universidad de Buenos Aires, Argentina, 1970.
8. **Bazan NG**: Distribución de fosfolipasas en fracciones subcelulares y algunas de sus propiedades en homogenados y preparaciones particuladas del cerebro de la rata. Congreso Argentino de Ciencias Biologicas, Fac de Medicina, Universidad de Buenos Aires, Argentina, 1970.
9. **Bazan NG**: Efectos de anestésicos y convulsiones sobre el contenido y composición de los acidos grasos libres cerebrales. Congreso Argentino de Ciencias Biológicas, Facultad de Medicina, Universidad de Buenos Aires, Argentina, 1970.
10. **Bazan NG**: Variaciones en acidos grasos libres neurales producidos por convulsiones y fosfolipasas A de fracciones subcelulares del cerebro de la rata. VI Reunion Nacional de la Sociedad Argentina de Investigaciones Bioquimicas, LA Plata, Buenos Aires, Argentina, 1970.
11. Bazan HEP, **Bazan NG**: Cambios inducidos en lipidos del sistema nervioso central de la rata, por la isquemia. VI Reunion Nacional del la Sociedad Argentina de Invesigaciones Bioquimicas, La Plata, Argentina, 1970.
12. Aveldano MI, **Bazan NG**: Diferencias en el contenido y composición de los grupos acilos de fracciones lipidicas de cerebro y retina. VII Reunion Nacional de la Sociedad Argentina de Investigaciones Bioquimicas, Bariloche, Argentina, 1971.
13. Crupkin M, **Bazan NG**: Estudios preliminares sobre la incorporación de <sup>32</sup>P durante el desarrollo embrionario temprano. VII Reunion Nacional de la Sociedad Argentina de Investigaciones Bioquimicas, Bariloche, Argentina, 1971.
14. Barassi CA, **Bazan NG**: Observaciones preliminares de los grupos acilos de lipidos neutros y polares en ovocito y blástula. VII Reunion Nacional de la Sociedad Argentina de Investigaciones Bioquimicas, Bariloche, Argentina, 1971.
15. **Bazan NG**: Lipidos y fosfolipasas de biomembranas. VII Reunion Nacional de la Sociedad Argentina de Investigaciones Bioquimicas, Bariloche, Argentina, 1971 (By invitation).
16. **Bazan NG**: Factors affecting the brain free **fatty acids**. 25th International Congress of Physiol Sci, Munich, Germany, 1971.
17. **Bazan NG**: Increased production of brain free **fatty acid** by ischemia, electroshock and drug induced convulsions. 3rd International Meeting Int Soc Neurochemistry, J Domorkos, A Fonyo, I Huszak, J Szentagothai (eds), Akademi Kiado, Budapest, Hungary, 1971.
18. Barassi CA, Crupkin M, **Bazan NG**: Heterogeneidad metabolica de especies moleculares y clases de lipidos de membranas durante el desarrollo embrionario del Bufo Arenarum. VI Congreso Argentino de Biología, S Miguel de Tucumán, Argentina, 1973.

19. Bazan HEP, Rodriguez de Turco EB, **Bazan NG**: Catabolismo de lipidos de membranas en el sistema nerviosos central. VI Congreso Argentino de Biología, S Miguel de Tucumán, Argentina, 1973.
20. Aveldano MI, Giusto NM, **Bazan NG**: Active transferencia in vitro de acidos grasos libres entre la retina y el medio de incubacion. IX Reunion Nacional de la Sociedad Argentina de Investigaciones Bioquimicas, Rosario, Argentina, 1973.
21. Crupkin M, **Bazan NG**: Carencia de refosforilacion de las fosfoproteinas de la retina en homogenados. IX Reunion Nacional de la Sociedad Argentina de Investigaciones Bioquimicas, Rosario, Argentina, 1973.
22. **Bazan NG**, Aveldano MI, Bazan HEP, Rodriguez EB: Dinamica del pool de acidos grasos libres y de otros componentes derivados de lipidos polares en el tejido nervioso. IX Reunion Nacional de la Sociedad Argentina de Investigaciones Bioquimicas, Rosario, Argentina, 1973.
23. Barassi CA, **Bazan NG**: Comparación entre el contenido de AND y los cambios en la actividad específica y el nivel de lipidos polares durante el desarrollo embrionario. IX Reunion Nacional de la Sociedad Argentina de Investigaciones Bioquimicas, Rosario, Argentina, 1973.
24. Pechen AM, **Bazan NG**: Transferencia de lipids polares y de la fracción acido soluble entre organelas subcelulares de embriones en desarrollo. IX Reunion Nacional de la Sociedad Argentina de Investigaciones Bioquimicas, Rosario, Argentina, 1973.
25. Perez Ballester BM, Gonzalez de Castro SR, **Bazan NG**: Studies on the adipose tissue, endometrium and serum lipids composition and on the <sup>32</sup>P incorporation into human endometrial phospholipids during normal cycle during anovulatory treatment. Excerpta Medica nE 279, 893, 1973.
26. Crupkin M, **Bazan NG**: Phosphoprotein phosphatases activities in neural tissues. 9th International Congress of Biochemistry, Stockholm, Sweden, 1973.
27. Bazan H, Aveldano de Caldironi MI, **Bazan NG**: Modifications in the free **fatty acids**, triacylglycerols, and monoacylphosphoglycerides during ischemia in the central nervous system of homeotherms and poikilotherms. Fourth International Mtg of the Int Soc of Neurochemistry, Tokyo, Japan, 1973.
28. Rodriguez de Turco EB, Pascual Bazan HEP, **Bazan NG**: Possible significado fisiologico de los caminos catabólicos de los componentes lipidicos de biomembranas del sistema nervioso. XI Congreso Latinoamericano de Ciencias Fisiologicas, Mendosa, Argentina, 1973.
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1095. **Bazan NG.** ISN-ASN Satellite Meeting on "Unveiling the Significance of Lipid Signalin in Neurodegeneration and Neuroprotection", Cancun, Mexico. Title: "Is There a Molecular Login that Sustains Neuronal Functional Integrity and Survival?" Lipid Signaling is Necessary for Neuroprotective Neuronal Transcriptional Programs" April 17-19, 2013
1096. **Bazan NG.** ARVO, Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL. Title: "Docosahexaenoic acid Bolters mild Oxidative Stress Preconditioning in Retinal Epithelial Cells" May 5-9, 2013
1097. **Bazan NG.** May 20-21, 2013 – Chairman and Organizer; 5th International Conference on Phospholipase A2-Mediated Signaling in Translational Medicine, New Orleans, LA. Title: "PLA2 and Lipid-Derived Mediators in Stroke, Alzheimer's Disease, Parkinson's Disease and Age-Related Macular Degeneration"



1098. **Bazan NG.** Advanced Course on Learning and Memory, Cortona, Tuscany. Title: “Lipid Signaling in Synaptic Circuitry” June 20-28, 2013
1099. **Bazan NG.** Pioneers in Neuroscience, Buffalo, New York. Title: “The Challenge of Deciphering Early Responses to Neurodegenerative Diseases: Novel Mechanisms for Neuronal Survival” September 15-17, 2013
1100. **Bazan NG.** EVER, European Association for Vision and Eye Research, Nice, France. Title: “Molecular Sensors to Homostatic Departures in Retinal Pigment Epithelium: Lessons to Understand and Treat Retinal Degenerative Diseases” September 18-21, 2013
1101. **Bazan NG.** Mossakowski Medical Research Centre, Polish Academy of Sciences Committee of Neurological Sciences, Polish Academy of Sciences, Neurochemical Conference, Warsaw, Poland. Title: “Early Survival Signaling Responses to Neurodegenerative Diseases: Significance for New Therapies and Diagnosis” October 24-25, 2013
1102. **Bazan NG.** Society for Neuroscience, San Diego, CA. Title: “CREL is an Intracellular Messenger of the Essential Docosahexaenoic Acid-Derived Mediator Neuroprotectin D1 in RPE Cell Survival” November 9-13, 2013
1103. **Bazan NG.** Third International Epilepsy Research Center (EpiCenter) Symposium, Hyatt Regency Newport Beach, CA. Title: “Hippocampal Synaptic Network Modulation by the Bioactive Mediator Neuroprotectin D1 Derived from Excitable Membrane Lipids” February 20-22, 2014.
1104. **Bazan NG.** Massachusetts Eye and Ear Infirmary and Harvard Medical School Department of Ophthalmology Seminar Series, Boston, MA. Title: “Molecular Principles and Sensor for Decoding Homeostasis Disruptions in the Retinal Pigment Epithelium: Implications to Retinal Degenerative Diseases” February 28, 2014
1105. **Bazan NG.** The 15th International Winter Eicosanoid Conference, Baltimore, MD. Title: “Phospholipase A2 Activation in Generating Neuroprotectin D1 on Demand upon Responses to Injury in the Brain and Retina” March 9-11, 2014
1106. **Bazan NG.** 4th Annual Gladstone/DZNE Workshop, Bonn, Germany. May 10-13, 2014
1107. **Bazan NG.** Advancing Neuroscience at MU, Symposium to Honor Professor Grace Y. Sun, Columbia, Missouri. Title: “Early Survival Signaling Responses to Neurodegenerative Diseases – Significance for New Therapies and Diagnosis” June 26-28, 2014
1108. **Bazan NG.** Karolinska Institute Lipid Seminar at ISSFAL 2014 in Stockholm, Sweden. Title: “Omega-3 Fatty Acids in CNS ischemia and Neurodegenerative Diseases” June 28, 2014
1109. **Bazan NG.** 5th International Congress on Stem Cells and Tissue Formation in Dresden, Germany. Title: “Non-redundant Transcriptional Target for Cell Survival of the Essential Docosahexaenoic Acid derived Mediator Neuroprotectin D1” July 8-11, 2014
1110. **Bazan NG.** XVI International Symposium on Retinal Degeneration (RD 2014), Pacific Grove, California. Title: “Novel Molecular Principles for Decoding Homeostasis Disruptions in the Retinal Pigment Epithelium: Significance to Retinal Degenerative Diseases” July 13-18, 2014
1111. **Bazan NG.** XXI Biennial Conference of the International Society for Eye Research. (ISER), San Francisco, CA. Title: “CREL is an Intracellular Messenger of the Essential Docosahexaenoic Acid-Derived Mediator Neuroprotectin D1 in RPE Cell Survival” July 20-22, 2014
1112. **Bazan NG.** Lipid Mediators in Health and Disease A Tribute to Bengt Samuelsson, Stockholm, Sweden. Title: “Lipid Mediators in Vision and Neuroprotection” August 27-29, 2014
1113. **Bazan NG.** DZNE Scientific Retreat, Schorfheide, Germany. Keynote Lecture. Title: “Lipid Mediators in Vision, Neuronal Plasticity and Neuroprotection” September 24-26, 2014
1114. **Bazan NG.** Oklahoma Nathan Shock Center for Excellence in the Biology of Aging and Oklahoma Center for Neuroscience/Dean McGee Eye Institute Special Seminar, Oklahoma City, OK. Title: “Molecular Principles of Neuroinflammatory Signaling: Significance in Vision and Neuroprotection” October 4-7, 2014
1115. **Bazan NG.** Visit to Karolinska Institut and present a Seminar in Stockholm, Sweden. Title:

- “Unraveling Molecular Principles of Neuronal Survival: Significance in Vision and Neuroprotection” November 29-December 3, 2014
1116. Anthony M. DiGiorgio, Erin S. Fannin, Eric Knott, Caroline L. Davidson, Rachel H. Kopkin, Janet L. Rossi, Bok Kyoo Jun, Brenda B. Chiappinelli, Shelly Mullenix, Marisa Fromica, Jacques Courseault, Vincent Shaw, Stephen Etheridge, **Nicolas G. Bazan**, Frank Culicchia, Larry H. Hollier: Experimental design to assess blood biomarkers in concussed collegiate football players: A matched cohorts study. Congress of Neurological Surgeons meeting, New Orleans, LA, January 16-17, 2015.
1117. **Nicolas G. Bazan**: Phospholipase A2 and neuroprotectin D1 in experimental ischemic stroke and epilepsy. The 10th IGAKUKEN International Symposium on “Phospholipase A2 and Lipid Mediators”. Tokyo, Japan, February 9, 2015
1118. **Nicolas G. Bazan**: Molecular principles for retention specificity and function of docosahexaenoic acid in the retina and brain: A necessary, integral membrane protein, phospholipase A2 and neuroprotectin D1. 6th International Conference on Phospholipase A2 and Lipid Mediators (PLM2015), Tokyo, Japan, February 9-12, 2015
1119. **Nicolas G. Bazan**, Larissa Khoutorova, Julio Alvarez-Builla, Ludmila Belayev: Novel platelet-activating factor receptor antagonists attenuate brain injury after experimental stroke. International Stroke Conference 2015, Nashville, TN, February 11-13, 2015.
1120. **Nicolas G. Bazan**: Molecular principles for docosahexaenoic acid (DHA) retention specificity and cell function in the nervous system, Journées Chevreul 2015, “Lipid and Brain 3, Paris, (FIAP Jean Monnet), France, March 16-18, 2015.
1121. **Nicolas G. Bazan**: Alzheimer’s disease is a world affairs. OHSU Brain Institute, Brain Awareness, Public Lecture Series of the Brain Awareness, Portland, Oregon, March 31, 2015
1122. Russell Amato, Robert Rosencrans, Francine M. Jodelka, Anthony J. Hinrich, **Nicolas G. Bazan**, Frank Rigo, Michelle L. Hastings, Jennifer J. Lentz: Early effects of antisense oligonucleotide treatment on photoreceptor function and retinal structure in a mouse model of Usher Syndrome. ARVO, Association for Research in Vision and Ophthalmology, Denver, CO, May 3-7, 2015
1123. Aram Asatryan, Jorgelina Calandria, **Nicolas G. Bazan**: NPD1 transcriptional activation of c-REL is essential to contain AIM2 and NOD-2 inflammasome formation in RPE cells ARVO, Association for Research in Vision and Ophthalmology, Denver, CO, May 3-7, 2015.
1124. **Nicolas G. Bazan**: Moderator, “Lipid/oxidation/ischemia reperfusion/hypoxia preconditioning”. ARVO, Association for Research in Vision and Ophthalmology, Denver, CO, May 3-7, 2015
1125. **Nicolas G. Bazan**: Moderator, “Aqueous humor dynamics, corneal disease”. ARVO, Association for Research in Vision and Ophthalmology, Denver, CO, May 3-7, 2015
1126. **Nicolas G. Bazan**, Dennis S. Rice, William C. Gordon, Jorgelina M. Calandria: The integral membrane protein adiponectin receptor 1 (Adipo-R1) is necessary to retain docosahexaenoic acid (DHA) and to sustain photoreceptor cell (PRC) integrity. ARVO, Association for Research in Vision and Ophthalmology, Denver, CO, May 3-7, 2015
1127. Jorgelina Calandria, Aram Asatryan, John Cefalu, **Nicolas G. Bazan**: HMGB1 potentiates NPD1-mediated protection to oxidative stress through the inhibition of PTPRZ1-mediated activation of the  $\beta$ -catenin pathway. ARVO, Association for Research in Vision and Ophthalmology, Denver, CO, May 3-7, 2015
1128. William C. Gordon, Bok Kyoo Jun, **Nicolas G. Bazan**: Phosphatidylcholine (PC) molecular species-containing very long chain polyunsaturated fatty acids (VLC-PUFAs) are altered in AMD. ARVO, Association for Research in Vision and Ophthalmology, Denver, CO, May 3-7, 2015
1129. Bok Kyoo Jun, William C. Gordon, **Nicolas G. Bazan**: Adiponectin receptor 1 (AdipoR1) is necessary for the synthesis of very long chain polyunsaturated fatty acids (VLC-PUFAs) in photoreceptor cells. ARVO, Association for Research in Vision and Ophthalmology, Denver, CO, May 3-7, 2015.

1130. Eric J. Knott, Blake A. Lemoyne, **Nicolas G. Bazan**: The significance of 15 lipoxygenase-1 and docosanoid signaling in retinal ischemic preconditioning. ARVO, Association for Research in Vision and Ophthalmology, Denver, CO, May 3-7, 2015.
1131. Pranab Mukherjee, **Nicolas G. Bazan**: Sirtuin 1 (SIRT1) is a neuroprotectin D1 (NPD1) target in retinal pigment epithelial cell survival signaling. ARVO, Association for Research in Vision and Ophthalmology, Denver, CO, May 3-7, 2015.
1132. Robert Rosencrans, Russell J. Amato, Yongdong Zhou, **Nicolas G. Bazan**, Jennifer J. Lentz: Early changes in retinal structures in a mouse model of Usher Syndrome. ARVO, Association for Research in Vision and Ophthalmology, Denver, CO, May 3-7, 2015
1133. Swornin Man Shrestha, Jorgelina M. Calandria, Khanh Do, Jonathan D. Wren, **Nicolas G. Bazan**: Neuroprotectin D1 (NPD1) homeostatic response induces transcription events that target a NF- $\kappa$ B member, cREL in retinal pigment epithelial cells (RPE). ARVO, Association for Research in Vision and Ophthalmology, Denver, CO, May 3-7, 2015.
1134. **Nicolas G. Bazan**: Integral membrane protein necessary for omega-3 fatty acid retention in photoreceptor cells and neurodegeneration. Lipidomics Impact on Cancer, Metabolic and Inflammatory Diseases, LIPID MAPS Annual Meeting, LaJolla, CA, May 12-13, 2015
1135. **Nicolas G. Bazan**: Moderator, Novel approaches to neuroprotection, XXVII International Symposium on Cerebral Blood Flow, Metabolism and Function & XIIth International Conference on Quantification of Brain Function with PET, Vancouver, Canada, June 27-30, 2015.
1136. **Nicolas G. Bazan**: Molecular principles for retention specificity, cell survival bioactivity and function of docosahexaenoic acid. 56th International Conference on Bioscience of Lipids, Puerto Iguazu, Misiones, Argentina, September 22-26, 2015.
1137. **Nicolas G. Bazan**, Sung-ha Hong, Larissa Khoutorova, Andre Obenaus, Nicos A. Petasis, Ludmila Belayev: A PAF-receptor antagonist plus docosanoids leads to remarkable neuroprotectin in experimental stroke. Society for Neuroscience, October 17-21, 2015.
1138. Ludmila Belayev, Larissa Khoutorova, Andre Obenaus, Sung-ha Hong, **Nicolas G. Bazan**: Docosahexaenoic acid therapy protects the ischemic penumbra after experimental stroke in female rats. Society for Neuroscience, October 17-21, 2015.
1139. **Nicolas G. Bazan**: The significance of a novel molecular switch for the DHA lipidome in cell function and disease. The 12th Fatty Acids in Cell Signaling (FACS) Conference: From Genes to Human Physiology, Toronto, Canada, October 25-27, 2015.
1140. **Nicolas G. Bazan**: Research update: The movement toward healing the mind. 17th Annual McGinty Conference on Alzheimer's., The Mind, Memory and Music, Alzheimer's Association Oregon Chapter, Portland, Oregon, November 3, 2015.
1141. **Nicolas G. Bazan**: Molecular clues to understanding retinal degenerative diseases: Novel neuroprotection mechanisms. Gradle Lecture at World Ophthalmology Congress (WOC) of International Council of Ophthalmology, Guadalajara, Mexico, February 5-9, 2016.
1142. L. Belayev, L. Khoutorova, A. Obenaus, and N.G. Bazan. Experimental stroke during aging: Docosahexaenoic acid therapy provides robust neuroprotection. 40th International Stroke Conference. Los Angeles, CA, February 17-19, 2016
1143. **Nicolas G. Bazan**: The vulnerability of sight and cognition in aging. 12<sup>th</sup> Annual Aging Research Day, Sensory Systems in Aging, Charleston, SC, February 26, 2016.
1144. Desire Alexander; Anuradha Dhingra; William C. Gordon, Bok Kyoo Jun; **Nicolas G. Bazan**, Kathleen Boesze-Battaglia, Alvia Bragin: Loss of MREG dependent LC3 associated phagocytosis (LAP) by the RPE leads to altered intracellular lipid processing. ARVO, Association for Research in Vision and Ophthalmology, Seattle, Washington, May 1-5, 2016.
1145. Russell Amato, Robert F. Rosencrans, Francine M. Jodelka, Frederic Depreux, **Nicolas G. Bazan**, Frank Rigo, Michelle Hastings, Jennifer J. Lentz: Cumulative dosing enhances the beneficial efforts of antisense oligonucleotide treatment on visual function in a mouse model of Usher Syndrome.

- ARVO, Association for Research in Vision and Ophthalmology, Seattle, Washington, May 1-5, 2016.
- 1146 Aram Asatryan, **Nicolas G. Bazan**: Stereoselective transcriptional modulation of inflammasome in hRPE cells by the docosanoid Neuroprotectin D1 (NPD1) ARVO, Association for Research in Vision and Ophthalmology, Seattle, Washington, May 1-5, 2016.
- 1147 **Nicolas G. Bazan**, Bok Kyoo Jun, Bo Chang, William C. Gordon: Membrane-type frizzled related protein (MFRP) is needed for photoreceptor cell function by retaining docosaheptaenoic acid (DHA). ARVO, Association for Research in Vision and Ophthalmology, Seattle, Washington, May 1-5, 2016.
- 1148 Jorgelina Calandria, Khanh Do, Swornin Man Shrestha, **Nicolas G. Bazan**: The tyrosine phosphatase receptor PTPRZ1 inhibits  $\beta$ -catenin-dependent gene expression in RPE cells. ARVO, Association for Research in Vision and Ophthalmology, Seattle, Washington, May 1-5, 2016.
- 1149 Khanh Do, Jorgelina M. Calandria, **Nicolas G. Bazan**: Neuroprotectin D1 (NPD1) modulates amyloid precursor protein (APP) processing in human retinal pigment epithelial cells (RPE). ARVO, Association for Research in Vision and Ophthalmology, Seattle, Washington, May 1-5, 2016.
- 1150 William C. Gordon, Bok Kyoo Jun, **Nicolas G. Bazan**: Very long chain polyunsaturated fatty acids (VLC-PUFAs) in cone- and rod-rich regions of the human retina. ARVO, Association for Research in Vision and Ophthalmology, Seattle, Washington, May 1-5, 2016.
- 1151 Bok Kyoo Jun, Robert F. Rosencrans, Hamilton E. Farris, Corinne Richards-Zawacki, William C. Gordon, **Nicolas G. Bazan**: Lipid profiling in a diurnal frog retina shows no VLC-PUFA ARVO, Association for Research in Vision and Ophthalmology, Seattle, Washington, May 1-5, 2016.
- 1152 Azucena H. Kakazu, Bokkyoo Jun; **Nicolas G. Bazan**, Haydee E. Bazan: Synthesis of pro-homeostatic docosanoids in corneas stimulated with pigment epithelial derived factor (PEDF) or 44-mer PEDF plus docosaheptaenoic acid (DHA) ARVO, Association for Research in Vision and Ophthalmology, Seattle, Washington, May 1-5, 2016.
- 1153 Pranab K. Mukherjee, **Nicolas G. Bazan**: NeuroprotectinD1 (NPD1) mediates Sirtuin signaling in cell survival under-uncompensated oxidative stress in retinal pigment epithelial (RPE) cells. ARVO, Association for Research in Vision and Ophthalmology, Seattle, Washington, May 1-5, 2016.
- 1154 Robert F. Rosencrans, Keith Perkins, William C. Gordon, Corinne Richards-Zawacki, **Nicolas G. Bazan**, Hamilton E. Farris: Validating optical predictions of sensitivity in vertebrate eyes. ARVO, Association for Research in Vision and Ophthalmology, Seattle, Washington, May 1-5, 2016.
- 1155 Marcell SJ, Freitas RS, Menghani H, Belayev L, Khoutorova L, Obenaus A and Bazan NG. Docosanoid-mediated neuroprotection in experimental ischemic stroke. Lipid Mediators in Health and Disease, La Jolla, CA, May 19-20, 2016.
- 1156 Freitas SR, Marcell SJ, Menghani H, Hong SH, Khoutorova L, Obenaus A, Petasis NA, Belayev L, Bazan NG. A therapeutic approach for experimental ischemic stroke combining a PAF-receptor antagonist plus docosanoids. Lipid Mediators in Health and Disease, La Jolla, CA, May 19-20, 2016.
- 1157 Bazan NG, Mukherjee PK, Balaszczuk V, Obenaus A, Khoutorova L, Hong SH, Belayev L. Docosaheptaenoic acid provides neuroprotection by upregulating Iduna expression in the ischemic penumbra after experimental stroke. Society for Neuroscience, San Diego, CA, November 12-16, 2016.
- 1158 Belayev L, Khoutorova L, Obenaus A, Bazan NG. Is docosaheptaenoic acid neuroprotective after traumatic brain injury in rats? Society for Neuroscience, San Diego, CA, November 12-16, 2016.
- 1159 Belayev L Hong SH, Mukherjee PK, Menghani H, Khoutorova L. and Bazan NG. Induction Profile of Mesencephalic Astrocyte-Derived Neurotrophic Factor by Cerebral Ischemia and its Implication for Neuroprotection. 41st International Stroke Conference. Houston, TX, February 22-24, 2017.

- 1160 Bazan NG, Hong SH, Menghani H, Khoutorova L. and L. Belayev, Docosahexaenoic Acid Provides Neuroprotection by Increasing Neurogenesis After Experimental Stroke. 41st International Stroke Conference. Houston, TX, February 22-24, 2017.
- 1161 Bazan NG., Hong SH, Menghani H, Marcell S, Mukherjee PK, Khoutorova L. and Belayev L. Upregulation of mesencephalic astrocyte-derived neurotrophic factor by cerebral ischemia promotes tissue repair after experimental stroke. XXVIII International Symposium on Cerebral Blood Flow and Metabolism, Berlin, Germany, April 1-4, 2017.
- 1162 Belayev L, Khoutorova L, Pizarro Cabral LM, Marcell S, Cong L, Semikov R, Obenaus A and Bazan NG. The salutary effects of omega-3 fatty acids on cognition and tissue repair after traumatic brain injury in rats. XXVIII International Symposium on Cerebral Blood Flow and Metabolism, Berlin, Germany, April 1-4, 2017.
- 1163 Asatryan, Aram; Kautzmann, Marie-Audrey I.; Heap, Jessica; **Nicolas G. Bazan**. Single human retinal pigment epithelial (hRPE) cell analysis under oxidative stress reveals differential expression of pro-inflammatory and apoptosis related genes. ARVO, Association for Research in Vision and Ophthalmology, Baltimore, Maryland, May 7-11, 2017.
- 1164 **Nicolas G. Bazan**; Asatryan, Aram; Mukherjee, Pranab K.; Yang, Rong; Petasis, Nicos; Jun, Bokkyoo. The discovery of a new family of lipid mediators, the elovanoids, biosynthesized in human RPE cells. ARVO, Association for Research in Vision and Ophthalmology, Baltimore, Maryland, May 7-11, 2017.
- 1165 Calandria, Jorgelina M.; Do, Khanh; **Nicolas G. Bazan**. DHA-NPD1 signaling via cREL downregulates pro-inflammatory Wnt5a in RPE cells. ARVO, Association for Research in Vision and Ophthalmology, Baltimore, Maryland, May 7-11, 2017.
- 1166 Do, Khanh; **Nicolas G. Bazan**. Neuroprotectin D1 (NPD1) downregulates amyloid beta (A $\beta$ 42) oligomer-induced senescence in human retinal pigment epithelial (RPE) cells. ARVO, Association for Research in Vision and Ophthalmology, Baltimore, Maryland, May 7-11, 2017.
- 1167 Fuerst, Jonathan; Kautzmann, Marie-Audrey I.; Gordon, William C.; **Nicolas G. Bazan**. Optimization of mouse photoreceptor isolation and micro-fluidic single cell capture for downstream molecular analysis. ARVO, Association for Research in Vision and Ophthalmology, Baltimore, Maryland, May 7-11, 2017.
- 1168 Gordon, William C; **Nicolas G. Bazan**. Early photoreceptor cell impairment upon AdipoR1 genetic ablation. ARVO, Association for Research in Vision and Ophthalmology, Baltimore, Maryland, May 7-11, 2017.
- 1169 Heap, Jessica; Kautzmann, Marie-Audrey I.; **Nicolas G. Bazan**. Gene signatures of single photoreceptor cells (PRC) using microfluidic technology. ARVO, Association for Research in Vision and Ophthalmology, Baltimore, Maryland, May 7-11, 2017.
- 1170 Jun, Bokkyoo; Kautzmann, Marie-Audrey I.; Hill, Helen E.; Patel, Uday B.; Gordon, William C.; **Nicolas G. Bazan**. Retina-specific molecular species (PC and PE) alterations by ablation of AdipoR1 or MFRP. ARVO, Association for Research in Vision and Ophthalmology, Baltimore, Maryland, May 7-11, 2017.
- 1171 Kautzmann, Marie-Audrey I.; Heap, Jessica; **Nicolas G. Bazan**. Transcriptomics of isolated photoreceptor cells reveal profiling of genes linked to function and retinal degeneration. ARVO, Association for Research in Vision and Ophthalmology, Baltimore, Maryland, May 7-11, 2017.
- 1172 Miyagishima, Kiyoharu J.; Sharma, Ruchi; Clore-Gronenborn, Katharina; Qureshy, Zoya; Jun, Bokkyoo; Gordon, William C.; Hotaling, Nathan; Zhang, Congxiao; Cukras, Catherine A.; Sieving, Paul A.; **Nicolas G. Bazan**; Miller, Sheldon S.; Bharti, Kapil. Analysis of Secretory Lipidomics and Proteomics of Late-Onset Retinal Degeneration iPSC-derived RPE. ARVO, Association for Research in Vision and Ophthalmology, Baltimore, Maryland, May 7-11, 2017.
- 1173 Muhale, Filipe A.; Asatryan, Aram; Heap, Jessica; Kautzmann, Marie-Audrey I.; **Nicolas G. Bazan**. Single human retinal pigmented epithelial cells (hRPE) transcriptome analysis reveals

upregulation of a subset of autophagy-related genes in response to uncompensated oxidative stress (UOS). ARVO, Association for Research in Vision and Ophthalmology, Baltimore, Maryland, May 7-11, 2017.

- 1174 Mukherjee, Pranab K.; Bender, Veronica; Calandria, Jorgelina M.; **Nicolas G. Bazan**. Neuroprotectin D1 (NPD1) upregulates Iduna expression and provides protection against uncompensated oxidative stress (UOS) in Human Retinal Pigment Epithelial Cells. ARVO, Association for Research in Vision and Ophthalmology, Baltimore, Maryland, May 7-11, 2017.

**Papers:**

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2. **Bazan NG**, Norton JM: Algunas contribuciones al estudio del tejido adiposo pardo de la rata. *Archa de Bioquim Quim y Farm*, Tucuman 13:101-114, 1966.
3. **Bazan NG**, Joel CD: Gradient-thickness thin-layer chromatography for the isolation and analysis of trace amounts of free **fatty acids** in large lipid samples. *J Lipid Res* 11:42-47, 1970.
4. **Bazan NG**, Rakowski H: Increased levels of brain free **fatty acids** after electroconvulsive shock. *Life Sci* 9:501-507, 1970.
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9. **Bazan NG**: Modifications in the free **fatty acids** of developing rat brain. *Acta Physiol LatinoAmer* 21:15-20, 1971.
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11. **Bazan NG**, Cellik S: Improved separation and quantification of free **fatty acids** and other tissue lipids by gradient-thickness thin-layer chromatography. *Anal Biochem* 45:309-314, 1972.
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13. Aveldano MI, **Bazan NG**: **Fatty acid** composition and level of diacylglycerols and phosphoglycerides in brain and retina. *Biochim Biophys Acta* 296:1-9, 1973.
14. Crupkin M, **Bazan NG**: Protein phosphorylation level and in vivo <sup>32</sup>P incorporation in retina and in brain. *Brain Res* 52:378-381, 1973.
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16. Crupkin M, Barassi CA, **Bazan NG**: Incorporation of <sup>32</sup>P during early amphibian embryo-genesis. *Comp Biochem Physiol* 45:523-528, 1973.
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19. Aveldano MI, **Bazan NG**: Displacement into incubation medium by albumin of highly unsaturated retina free **fatty acids** arising from membrane lipids. *FEBS Letters* 40:53-56, 1974.
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## Other Books, Films and Collaborations:

1. Una Vida: A Fable of Music and the Mind; Nicolas Bazan (<https://www.amazon.com/Una-Vida-Fable-Music-Mind/dp/158985098X>)
2. The Dark Madonna: A Fable of Resiliency and Imagination; Nicolas Bazan ([https://www.amazon.com/Dark-Madonna-Fable-Resiliency-Imagination/dp/0983605890/ref=sr\\_1\\_1?s=books&ie=UTF8&qid=1502810231&sr=1-1&keywords=The+Dark+Madonna%2C+Bazan](https://www.amazon.com/Dark-Madonna-Fable-Resiliency-Imagination/dp/0983605890/ref=sr_1_1?s=books&ie=UTF8&qid=1502810231&sr=1-1&keywords=The+Dark+Madonna%2C+Bazan))
3. *Of Mind and Music* (Nicolas Bazan, co-screenplay writer and executive producer; based on the novel *Una Vida: A Fable of Music and the Mind*) ([https://www.amazon.com/Mind-Music-Aunjanue-Ellis/dp/B01DEC7BT8/ref=sr\\_1\\_1?ie=UTF8&qid=1502810468&sr=8-1&keywords=of+mind+and+music](https://www.amazon.com/Mind-Music-Aunjanue-Ellis/dp/B01DEC7BT8/ref=sr_1_1?ie=UTF8&qid=1502810468&sr=8-1&keywords=of+mind+and+music))

## Selected Major Publications - Listed in groups preceded by a brief description of the findings

### Finding of brain free docosahexaenoic and arachidonic acid release during seizures and ischemia through phospholipase A<sub>2</sub> (1970).

1. **Bazan NG**: Effects of ischemia and electroconvulsive shock on free **fatty acid** pool in the brain. *Biochim Biophys Acta* 218:1-10, 1970. (**Citation Classic**, "Neural Stimulation or Onset of Cerebral Ischemia Activates Phospholipase A<sub>2</sub>", **Bazan NG** *Current Content/Life Sciences* 30:10, 1991).
2. **Bazan NG**, Joel CD: Gradient-thickness thin-layer chromatography for the isolation and analysis of trace amounts of free **fatty acids** in large lipid samples. *J Lipid Res* 11:42-47, 1970.
3. **Bazan NG**, Rakowski H: Increased levels of brain free **fatty acids** after electroconvulsive shock. *Life Sci* 9:501-507, 1970.
4. **Bazan NG**: Free **fatty acid** production in cerebral white and grey matter of the squirrel monkey. *Lipids* 6:211-212, 1971.
5. **Bazan NG**: Changes in free **fatty acids** of brain by drug-induced convulsions, electroshock and anesthesia. *J Neurochem* 18:1379-1385, 1971.

### This finding has been referred as the "Bazan effect".

Horrocks LA, Farooqui AA: NMDA receptor-stimulated release of arachidonic acid: Mechanisms for the Bazan effect. In: *Cell Signal Transduction, Second Messengers, and Protein Phosphorylation in Health and Disease*, AM Municio, MT Miras-Portugal (eds.), Plenum Press, New York, pps. 113-128, 1994.

Sun GY, Xu J, Jensen MD, Simonyi A: Phospholipase A<sub>2</sub> in central nervous system: Implications for neurodegeneration diseases. *J Lipid Res* 45:205-213, 2004.

### Demonstration that the brains of newborn mammal and adult poikilotherms accumulate free arachidonic and docosahexaenoic acid sluggishly, correlating with the known resistance of these animals to anoxia. In contrast, mature homeothermic animals, vulnerable to relatively short periods of anoxia, rapidly accumulate arachidonic acid as a result of phospholipase A<sub>2</sub> activation.

6. Aveldano MI, **Bazan NG**: Differential lipid deacylation during brain ischemia in a homeotherm and a poikilotherm. Content and composition of free **fatty acids** and triacylglycerols. *Brain Res* 100:99-110, 1975.
7. Rodriguez de Turco EB, **Bazan NG**: Changes in free **fatty acids** and diglycerides in mouse brain at birth and during anoxia. *J Neurochem* 41:794-800, 1983.

### Finding that the diacylglycerol accumulated in brain in ischemia is derived from inositol lipids and postulated the hypothesis that selective vulnerability at synapses is due to degradation of inositol lipids.

8. Aveldano MI, **Bazan NG**: Rapid production of diacylglycerols enriched in arachidonate and stearate during early brain ischemia. *J Neurochem* 25:919-920, 1975.

**Demonstration that the activation of phospholipase A<sub>2</sub> that gives rise to brain free arachidonic acid upon stimulation is related to neurotransmission.**

9. Aveldano de Caldironi MI, **Bazan NG**: Alpha-Methyl-p-Tyrosine inhibits the production of free arachidonic acid and diacylglycerols in brain after a single electroconvulsive shock. *Neurochem Res* 4:213-221, 1979.

**Identification of inositol lipid degradation, and of phospholipase A<sub>2</sub> activation, in neural cell damage in experimental epilepsy and stroke.**

10. Pediconi MF, Rodriguez de Turco EB, **Bazan NG**: Diffusion of intracerebrally injected [<sup>14</sup>C]arachidonic acid and [<sup>2-3</sup>H]glycerol in the mouse brain. Effects of ischemia and electroconvulsive shock. *Neurochem Res* 7:1453-1463, 1982.
11. **Bazan NG**, Morelli de Liberti SM, Rodriguez de Turco EB: Arachidonic acid and arachidonoyl-di-glycerides increase in rat cerebrum during bicuculline-induced status epilepticus. *Neurochem Res* 7:839-843, 1982.
12. Pediconi MF, Rodriguez de Turco EB, **Bazan NG**: Effects of post decapitation ischemia on the metabolism of [<sup>14</sup>C]arachidonic acid and [<sup>14</sup>C]palmitic acid in the mouse brain. *Neurochem Res* 8:835-845, 1983.
13. Rodriguez de Turco EB, Morelli de Liberti S, **Bazan NG**: Stimulation of free **fatty acid** and diacylglycerol accumulation in cerebrum and cerebellum during bicuculline-induced status epilepticus. Effect of pretreatment with alpha-methyl-p-tyrosine and p-chlorophenylamine. *J Neurochem* 40:252-259, 1983.
14. Van Rooijen LAA, Vadnal R, Dobard P, **Bazan NG**: Enhanced inositide turnover in brain during bicuculline-induced status epilepticus. *Biochim Biophys Res Comm* 136:827-834, 1986.
15. Vadnal RE, **Bazan NG**: Electroconvulsive shock stimulates polyphosphoinositide degradation and inositol trisphosphate accumulation in rat cerebrum: Lithium pretreatment does not potentiate these changes. *Neurosci Lett* 80:75-79, 1987.
16. Reddy TS, **Bazan NG**: Arachidonic acid, stearic acid and diacylglycerol accumulation correlates with the loss of phosphatidylinositol 4,5-bisphosphate in cerebrum 2 seconds after electroconvulsive shock. Complete reversion of changes 5 minutes after stimulation. *J Neurosci Res* 18:449-455, 1987.
17. Vadnal RE, **Bazan NG**: Carbamazepine inhibits the electroconvulsive shock-induced [H]-IP<sub>3</sub> accumulation in rat cerebral cortex and hippocampus. *Biochem Biophys Res Comm* 153:128-134, 1988.
18. Sheu F-S, Marais RM, Parker PJ, **Bazan NG**, Routtenberg A: Neuron-specific protein F1/GAP-43 shows substrate specificity for the beta subtype of protein kinase C. *Biochem Biophys Res Commun* 171:1236-1243, 1990.
19. Katsura K, Rodriguez de Turco EB, Folbergrová J, **Bazan NG**, Siesjö: The coupling among energy failure, loss of ion homeostasis, and lipolysis during ischemia. *J Neurochem* 61:1677-1684, 1993.
20. **Bazan NG**, Allan G, Rodriguez de Turco EB: Role of phospholipase A<sub>2</sub> and membrane-derived lipid second messengers in excitable membrane function and transcriptional activation of genes. Implications in cerebral ischemia. *Prog in Brain Res* 96:247-257, 1993.
21. Visioli F, Rihn LL, Rodriguez de Turco EB, Kreisman NR, **Bazan NG**: Free **fatty acid** and diacylglycerol accumulation in rat brain during recurrent seizures is related to cortical oxygenation. *J Neurochem* 37:54-61, 1994.

**Identification of unique features of docosahexaenoic acid metabolism in the retina.**

22. Aveldano MI, **Bazan NG**: Free **fatty acids**, diacyl- and triacylglycerols and total phospholipids in vertebrate retina: Comparison with brain, choroid and plasma. *J Neurochem* 23:1127-1135, 1974.
23. Aveldano MI, **Bazan NG**: Displacement into incubation medium by albumin of highly unsaturated retina free **fatty acids** arising from membrane lipids. *Febs Letters* 40:53-56, 1974.
24. Bazan HEP, **Bazan NG**: Phospholipid composition and (<sup>14</sup>C)glycerol incorporation into glycerolipids of toad retina and brain. *J Neurochem* 27:1051-1057, 1976.

25. Giusto NM, **Bazan NG**: Phospholipids and acylglycerols biosynthesis and  $^{14}\text{CO}_2$  production from ( $^{14}\text{C}$ )glycerol in the bovine retina: The effect of incubation time, oxygen and glucose. *Exp Eye Res* 29:155-168, 1979.

**Finding that phospholipids in photoreceptors contain two docosahexaenoyl chains per molecule, rather than a saturated chain at C<sub>1</sub> and an unsaturated chain at C<sub>2</sub>. Identification of unique metabolism of these novel molecular species of phospholipids.**

26. Aveldano de Caldironi MI, **Bazan NG**: Composition and biosynthesis of molecular species of retina phosphoglycerides. *Neurochem Internat* 1:381-392, 1980.
27. **Bazan NG**: Metabolism of phospholipids in the retina. *Vision Res* 22:1539-1548, 1982.
28. Aveldano MI, **Bazan NG**: Molecular species of phosphatidylcholine, -ethanolamine, -serine and -inositol in microsomal and photoreceptor membranes of bovine retina. *J Lipid Res* 24:620-627, 1983.
29. Aveldano MI, Pasquare de Garcia SJ, **Bazan NG**: Biosynthesis of molecular species of inositol, choline, serine, and ethanolamine glycerophospholipids in the bovine retina. *J Lipid Res* 24:628-638, 1983.

**Identification of the activating enzyme for docosahexaenoic acid with very low K<sub>m</sub> that allows photoreceptors and other excitable membranes retain this fatty acid.**

30. Reddy TS, **Bazan NG**: Kinetic properties of arachidonoyl-coenzyme A synthetase in rat brain microsomes. *Arch Biochem Biophys* 226:125-133, 1983.
31. Reddy TS, **Bazan NG**: Synthesis of arachidonoyl coenzyme A and docosahexaenoyl coenzyme A in retina. *Curr Eye Res* 3:1225-1232, 1984.
32. Reddy TS, Sprecher H, **Bazan NG**: Long-chain acyl coenzyme A synthetase from rat brain microsomes: Kinetic studies using [ $^{14}\text{C}$ ]docosahexaenoic acid substrate. *Eur J Biochem* 145:21-29, 1984.
33. Reddy TS, **Bazan NG**: Synthesis of docosahexaenoyl-, arachidonoyl- and palmitoyl-coenzyme A in ocular tissues. *Exp Eye Res* 41:87-95, 1985.
34. Reddy TS, **Bazan NG**: Synthesis of arachidonoyl coenzyme A and docosahexaenoyl coenzyme A in synaptic plasma membranes of cerebrum, cerebellum and brain stem of rat brain. *J Neurosci Res* 13:381-390, 1985.

**Demonstration that the concept commonly described in textbooks that the essential fatty acid docosahexaenoic acid is introduced through the acylation-deacylation cycle in retina membranes (and in other excitable membranes) is incorrect. Rather, Dr. Bazan laboratory found that this fatty acid is introduced through the de novo synthesis of phosphatidic acid.**

35. Giusto NM, **Bazan NG**: Phosphatidic acid of retinal microsomes contains a high proportion of docosahexaenoate. *Biochem Biophys Res Comm* 91:791-794, 1979.
36. **Bazan NG**, di Fazio de Escalante MS, Careaga MM, Bazan HEP, Giusto NM: High content of 22:6 (docosahexaenoate) and active [ $^3\text{H}$ ]glycerol metabolism of phosphatidic acid from photoreceptor membranes. *Biochim Biophys Acta* 712:702-706, 1982.
37. Bazan HEP, Careaga MM, Sprecher H, **Bazan NG**: Chain elongation and desaturation of eicosapentaenoate to docosahexaenoate and phospholipid labeling in the rat retina *in vivo*. *Biochim Biophys Acta* 712:123-128, 1982.
38. Bazan HEP, Sprecher H, **Bazan NG**: De novo biosynthesis of docosahexaenoyl phosphatidic acid in bovine retinal microsomes. *Biochim Biophys Acta* 796:11-19, 1984.

**Identification that leukotrienes, HETEs (hydroxyeicosatetraenoic acids), inositol lipids and prostaglandins are key molecules in the communication between retinal pigment epithelial cells and photoreceptors.**

39. Birkle DL, **Bazan NG**: Lipoxygenase and cyclooxygenase reaction products and incorporation into glycerolipids of radiolabeled arachidonic acid in the bovine retina. *Prostaglandins* 27:203-216, 1984.

40. Birkle DL, **Bazan NG**: Effects of K<sup>+</sup> depolarization on the synthesis of prostaglandins and hydroxyeicosatetra(5,8,11,14)enoic acids (HETE) in the rat retina. Evidence for esterification of 12-HETE in lipids. *Biochim Biophys Acta* 795:564-573, 1984.
41. **Bazan NG**, Birkle DL, Reddy TS: **Docosahexaenoic acid** (22:6, n-3) is metabolized to lipoxygenase reaction products in the retina. *Biochem Biophys Res Comm* 125:741-747, 1984.
42. **Bazan NG**, Bazan HEP, Birkle DL, Rossowska M: Synthesis of leukotrienes in the frog retina and retinal pigment epithelium. *J Neurosci Res* 18:591-596, 1987.
43. Birkle DL, Rossowska M, Woodland J, **Bazan NG**: Increased levels of leukotriene C<sub>4</sub> in retinal pigment epithelium are correlated with early events in photoreceptor shedding in *Xenopus laevis*. *Curr Eye Res* 8:557-561, 1989.
44. Rodriguez de Turco EB, Gordon WC, **Bazan NG**: Light stimulates *in vivo* inositol lipid turnover in frog retinal pigment epithelial cells at the onset of shedding and phagocytosis of photoreceptor membranes. *Exp Eye Res* 55:719-725, 1992.
45. Beuckmann CT, Gordon WC, Kanaoka Y, Eguchi N, Marcheselli VL, Gerashchenko DY, Urade Y, Hayaishi O, **Bazan NG**: Lipocalin-type prostaglandin D synthase ( $\beta$ -trace) is located in pigment epithelial cells of rat retina and accumulates within interphotoreceptor matrix. *J Neurosci* 16:6119-6124, 1996.
46. Gerashchenko DY, Beuckmann CT, Marcheselli VL, Gordon WC, Kanaoka Y, Eguchi N, Urade Y, Hayaishi O, **Bazan NG**: Localization of lipocalin-type prostaglandin D synthase ( $\beta$ -trace) in iris, ciliary body, and eye fluids. *Invest Ophthalmol Vis Sci* 39:198-203, 1998.
47. Gerashchenko D, Beuckmann CT, Kanaoka Y, Eguchi N, Gordon WC, Urade Y, **Bazan NG**, Hayaishi O: Dominant expression of rat prostanoid DP receptor mRNA in leptomeninges, inner segments of photoreceptor cells, iris epithelium, and ciliary processes. *J. Neurochem.* 71:937-45, 1998.

**Finding that PAF is also an endogenous neurotoxin: demonstration of neuroprotection by PAF antagonists.**

48. Panetta T, Marcheselli VL, Braquet P, Spinnewyn B, **Bazan NG**: Effects of a platelet-activating factor antagonist (BN 52021) on free **fatty acids**, diacylglycerols, polyphosphoinositides and blood flow in the gerbil brain: Inhibition of ischemia-reperfusion induced cerebral injury. *Biochem Biophys Res Comm* 149:580-587, 1987.
49. Birkle DL, Kurian P, Braquet P, **Bazan NG**: Platelet-activating factor antagonist BN 52021 decreases accumulation of free polyunsaturated **fatty acid** in mouse brain during ischemia and electroconvulsive shock. *J Neurochem* 51:1900-1905, 1988.
50. Marcheselli VL, Rossowska M, Domingo MT, Braquet P, **Bazan NG**: Distinct platelet-activating factor binding sites in synaptic endings and in intracellular membranes of rat cerebral cortex. *J Biol Chem* 265:9140-9145, 1990.
51. Gilboe DD, Kinter D, Fitzpatrick JH, Emoto SE, Esanu A, Braquet PG, **Bazan NG**: Recovery of postischemic brain metabolism and function following treatment with a free radical scavenger and platelet-activating factor antagonists. *J Neurochem* 56:311-319, 1991.

**Finding that seizure-induced PAF production activates gene expression.**

52. Squinto SP, Block AL, Braquet P, **Bazan NG**: Platelet-activating factor stimulates a Fos/Jun/AP-1 transcriptional signaling system in human neuroblastoma cells. *J Neurosci Res* 24:558-566, 1989.
53. Squinto SP, Braquet P, Block AL, **Bazan NG**: Platelet-activating factor activates HIV promoter in transfected SH-SY5Y neuroblastoma cells and MOLT-4 T lymphocytes. *J Mol Neurosci* 2:79-84, 1990.
54. Marcheselli VL, Rossowska M, Domingo MT, Braquet P, **Bazan NG**: Distinct platelet-activating factor binding sites in synaptic endings and in intracellular membranes of rat cerebral cortex. *J Biol Chem* 265:9140-9145, 1990.
55. **Bazan NG**, Squinto SP, Braquet P, Panetta T, Marcheselli VL: Platelet-activating factor and polyunsaturated **fatty acids** in cerebral ischemia or convulsions: Intracellular PAF-binding sites and activation of a Fos/Jun/AP-1 transcriptional signaling system. *Lipids* 26:1236-1242, 1991.

56. Marcheselli VL, and **Bazan NG**: Platelet-activating factor is a messenger in the electroconvulsive shock-induced transcriptional activation of *c-fos* and *zif-268* in hippocampus. *J Neurosci Res* 37:54-61, 1994.

**Identification of a new neuroprotection site.**

57. Marcheselli VL, Rossowska M, Domingo MT, Braquet P, **Bazan NG**: Distinct platelet-activating factor binding sites in synaptic endings and in intracellular membranes of rat cerebral cortex. *J Biol Chem* 265:9140-9145, 1990.

**Finding that PAF modulates glutamate release and is a retrograde messenger of long-term potentiation and enhances memory formation.**

58. Clark GD, Happel LT, Zorumski CF, **Bazan NG**: Enhancement of hippocampal excitatory synaptic transmission by platelet-activating factor. *Neuron* 9:1211-1216, 1992.
59. Jerusalinsky D, Fin C, Quillfeldt JA, Beatriz CF, Schmitz PK, Da Silva RC, Walz R, **Bazan NG**, Medina JH, Izquierdo I: Effect of antagonists of platelet-activating factor receptors on memory of inhibitory avoidance in rats. *Behav and Neural Biol* 62:1-3, 1994.
60. Kato K, Clark GD, **Bazan NG**, Zorumski CF: Platelet activating factor as a potential retrograde messenger in Ca<sup>1</sup> hippocampal long-term potentiation. *Nature* 367:175-179, 1994.
61. Izquierdo I, Fin C, Schmitz PK, Da Silva RC, Jerusalinsky D, Quillfeldt JA, Ferreira MBG, Medina JH, **Bazan NG**: Memory enhancement by intrahippocampal, intraamygdala, or intraentorhinal infusion of platelet-activating factor measured in an inhibitory avoidance task. *Proc Natl Acad Sci* 92:5047-5051, 1995.
62. Packard MG, Teather L, **Bazan NG**: Effect of intra-caudate nucleus injections of platelet-activating factor and the PAF antagonist BN 52021 on memory. *Neurobiol Learn Mem* 66:177-182, 1996.

**Finding that Platelet-activating factor (PAF) also activates transcription of the inducible prostaglandin synthase (COX-2).**

63. **Bazan NG**, Fletcher BS, Herschman HR, Mukherjee PK: Platelet-activating factor and retinoic acid synergistically activate the inducible prostaglandin synthase gene. *Proc Natl Acad Sci* 91:5252-5256, 1994.
64. Marcheselli VL, **Bazan NG**: Sustained induction of prostaglandin endoperoxide synthase-2 by seizures in hippocampus: Inhibition by a platelet-activating factor antagonist. *J Biol Chem* 271:24794-24799, 1996.
65. Lukiw WJ, **Bazan NG**: Budesonide epimer R or dexamethasone selectively inhibit PAF- or IL-1 $\beta$ -induced DNA-binding activity of cis-acting transcription factors and cyclooxygenase-2 gene expression in human epidermal keratinocytes. *Proceedings of the National Academy of Sciences* 95:3914-3919, 1998.

**Finding that secretory phospholipases A modulate neuronal survival and glutamate transmission.**

66. Kolko M, DeCoster MA, Rodriguez de Turco EB, **Bazan NG**: Synergy by secretory phospholipase A<sub>2</sub> and glutamate on inducing cell death and sustained arachidonic acid metabolic changes in primary cortical neuronal cultures. *J Biol Chem* 271:32722-32728, 1996.
67. Kolko M, Bruhn T, Christensen T, Lazdunski M, Lambeau G, **Bazan NG**, Diemer NH: Secretory phospholipase A<sub>2</sub> potentiates glutamate-induced rat striatal neuronal cell death *in vivo*. *Neurosci Letters* 274:167-170, 1999.
68. Rodriguez de Turco EB, Jackson FR, DeCoster MA, Kolko M, **Bazan NG**: Glutamate signaling and secretory phospholipase A<sub>2</sub> modulate the release of arachidonic acid from neuronal membrane. *J Neurosci Res* 68:558-567, 2002.
69. Kolko M, Nielsen M, **Bazan NG**, Diemer N: Secretory phospholipase A<sub>2</sub> induces delayed neuronal COX-2 expression as compared to glutamate. *J Neurosci Res* 69:169-177, 2002.

**Finding that neuronal diacylglycerol kinase epsilon is necessary in seizures and neuroprotection.**

70. Rodriguez de Turco EB, Tang W, Tophan MK, Sakane F, Marcheselli VL, Chen C, Taketomi A, Prescott SM, **Bazan NG**: Diacylglycerol kinase  $\epsilon$  regulates seizure susceptibility and long-term potentiation through arachidonoyl-inositol lipid signaling. *Proc Natl Acad Sci* 98:4740-4745, 2001.

**Demonstration that phagocytosis by retinal pigment epithelial cells induces gene expression.**

71. Ershov AV, Lukiw WJ, **Bazan NG**: Selective transcription factor induction in retinal pigment epithelial cells during photoreceptor phagocytosis. *J Biol Chem* 271:28458-28462, 1996.
72. Rodriguez de Turco EB, Parkins N, Ershov AV, **Bazan NG**: Selective retinal pigment epithelial cell lipid metabolism and remodeling conserves photoreceptor **docosahexaenoic acid** following phagocytosis. *J Neurosci Res* 57:479-486, 1999.
73. Ershov AV, **Bazan NG**: Induction of cyclooxygenase-2 gene expression in retinal pigment epithelium cells by photoreceptor rod outer segment phagocytosis and growth factors. *J Neurosci Res* 58:254-261, 1999.
74. Ershov AV, **Bazan NG**: Photoreceptor phagocytosis selectively activates PPAR $\gamma$  expression in retinal pigment epithelial cells. *J Neurosci Res* 60:328-337, 2000.
75. Ershov AV, Parkins N, Lukiw WJ, **Bazan NG**: Modulation of early response gene expression by prostaglandins in cultured rat retinal pigment epithelium cells. *Curr Eye Res* 21:968-974, 2000.
76. Ershov AV, **Bazan NG**: Selective cyclooxygenase-2 gene expression in retinal pigment epithelium cells by rod outer segments phagocytosis and growth factors. *J Neurosci Res* 58: 254-261, 1999.

**Demonstration that genes are upregulated in models of retinal pathoangiogenesis.**

77. Lukiw WJ, Gordon WC, Rogaev EI, Thompson H, **Bazan NG**: Presenilin-2 (PS2) expression up-regulation in a model of retinopathy of prematurity and pathoangiogenesis. *NeuroReport* 12:53-57, 2001.
78. Lukiw WJ, Ottlecz A, Lambrou G, Grueninger M, Finley J, **Bazan NG**: Activation of HIF-1 $\alpha$  and NF- $\kappa$ B-DNA binding and COX-2 and VEGF gene transcription in monkey choroid-retinal RF/6A cells by hypoxia. *Invest Ophthalmol Vis Sci*
79. Lukiw WJ, Ottlecz A, Lambrou G, Grueninger M, Finley J, Thompson HW, **Bazan NG**: Coordinate activation of HIF-1 and NF- $\kappa$ B DNA binding and COX-2 and VEGF expression in retinal cells by hypoxia. *Invest Ophthalmol Vis Sci* 44:4163-4170, 2003.

**Identification that the conservation pathways for docosahexaenoic acid are impaired in Usher's syndrome.**

80. **Bazan NG**, Scott BL, Reddy TS, Pelias MZ: Decreased content of docosahexanoate and arachidonate in plasma phospholipids in Usher's syndrome. *Biochem Biophys Res Commun* 141:600-604, 1986.
81. Rodriguez de Turco EB, Gordon WC, Peyman GA, **Bazan NG**: Preferential uptake and metabolism of **docosahexaenoic acid** in membrane phospholipids from rod and cone photoreceptor cells of human and monkey retinas. *J Neurosci Res* 27:522-532, 1990.

**Identification of the liver to retina transport route for the essential fatty acid docosahexaenoic acid.**

**Demonstration of a mechanism for the supply and conservation of the essential fatty acid docosahexaenoic acid in photoreceptors.**

82. **Bazan NG**, Reddy TS, Redmond TM, Wiggert B, Chader GJ: Endogenous **fatty acids** are covalently and non covalently bound to interphotoreceptor retinoid-binding protein in the monkey retina. *J Biol Chem* 260:13677-13680, 1985.
83. O'Brien PJ, St. Jules R, Reddy TS, **Bazan NG**, Zatz M: Acylation of disc membrane rhodopsin may be non-enzymatic. *J Biol Chem* 262:5210-5215, 1987.
84. Scott BL, Reddy TS, **Bazan NG**: Docosahexaenoate metabolism and **fatty acid** composition in developing retinas of normal and rd mutant mice. *Exp Eye Res* 44:101-113, 1987.

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86. Scott BL, **Bazan NG**: Membrane docosahexanoate is supplied to the developing brain and retina by the liver. *Proc Nat Acad Sci USA* 86:2903-2907, 1989.
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88. Rodriguez de Turco, EB, Gordon WC, **Bazan NG**: Rapid and selective uptake, metabolism, and cellular distribution of **docosahexaenoic acid** among rod and cone photoreceptor cells in the frog retina. *J Neurosci* 11:3667-3678, 1991.
89. Martin RE, **Bazan NG**: Changing **fatty acid** content of growth cone lipids prior to synaptogenesis. *J. Neurochem* 59:318-325, 1992.
90. Gordon WC, Rodriguez de Turco EB, **Bazan NG**: Retinal pigment epithelial cells play a central role in the conservation of **docosahexaenoic acid** by photoreceptor cells after shedding and phagocytosis. *Curr Eye Res* 11:73-83, 1992.
91. Gordon WC, **Bazan NG**: Visualization of [<sup>3</sup>H]**docosahexaenoic acid** trafficking through photoreceptors and retinal pigment epithelium by electron microscope autoradiography. *Invest Ophthalmol Vis Sci* 34:2402-2411, 1993.
92. **Bazan NG**, Gordon WC, Rodriguez de Turco EB: The uptake, metabolism, and conservation of **docosahexaenoic acid** (22:6 $\omega$ 3) in brain and retina: Alterations in liver and/or retinal 22:6 metabolism during inherited progressive retinal degeneration. *Amer Oil Chem Soc* pp. 107-115, 1993.
93. **Bazan NG**, Rodriguez de Turco EB, Gordon WC: Pathways for the uptake and conservation of **docosahexaenoic acid** in photoreceptors and synapses: Biochemical and autoradiographic analysis. *Can J Physiol Pharmacol* 71(9):690-698, 1993.
94. Martin RE, Rodriguez de Turco EB, **Bazan NG**: Developmental maturation of hepatic n-3 polyunsaturated **fatty acid** metabolism: Supply of **docosahexaenoic acid** to retina and brain. *J Nutr Biochem* 5:151-160, 1994.

**Demonstration that docosahexaenoic acid is transported from the post-Golgi network to the photoreceptor disk membranes with rhodopsin.**

95. Rodriguez de Turco EB, Deretic D, **Bazan NG**, Papermaster D: Post-golgi vesicles cotransport docosahexaenoyl-phospholipids and rhodopsin during frog photoreceptor membrane biogenesis. *J Biol Chem* 272:10491-10497, 1997.

**Finding that photoreceptors have a DNA repair mechanism that is induced by light damage.**

96. Gordon WC, Casey DM, Lukiw WJ, **Bazan NG**: DNA damage and repair in light-induced photoreceptor degeneration. *Invest Ophthalmol Vis Sci* 43:3511-3521, 2002.
97. Cortina MS, Gordon WC, Lukiw WJ, **Bazan NG**. DNA repair in photoreceptor survival *Mol Neurobiol* 28:111-122, 2003.

**Identification of prostaglandin D synthetase in the interphotoreceptor matrix and cloning of its receptor.**

98. Beuckmann CT, Gordon WC, Kanaoka Y, Eguchi N, Marcheselli VL, Gerashchenko DY, Urade Y, Hayaishi O, **Bazan NG**: Lipocalin-type prostaglandin D synthase ( $\beta$ -trace) is located in pigment epithelial cells of rat retina and accumulates within interphotoreceptor matrix. *J Neurosci* 16:6119-6124, 1996.
99. Gerashchenko DY, Beuckmann CT, Marcheselli VL, Gordon WC, Kanaoka Y, Eguchi N, Urade Y, Hayaishi O, **Bazan NG**: Localization of lipocalin-type prostaglandin D synthase ( $\beta$ -trace) in iris, ciliary body, and eye fluids. *Invest Ophthalmol Vis Sci* 39:198-203, 1998.
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