CURRICULUM VITAE

**Arthur J. Weber, PhD**

**AFFILIATION** Professor

 Department of Physiology

 Michigan State University

**MAILING ADDRESS** Rm 2198

 Biomedical and Physical Sciences Bldg

 East Lansing, MI 48824

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**E-mail** weberar@msu.edu

**EDUCATION**

 1974-1978 A.B., Biology, Princeton University, Princeton, NJ

 1978-1979 Teaching/Research Assistant

 Department of Zoology

 University of Wisconsin-Milwaukee

 1979-1984 Ph.D., Neuroscience, Neuroscience Training Program,

 University of Wisconsin, Madison, WI

 1984‑1985 Postdoctoral Fellow

 Department of Molecular, Cellular and Developmental

 Biology, University of Colorado, Boulder, CO.

 1985‑1986 Postdoctoral Fellow

 Department of Comparative Biosciences, University of

 Wisconsin School of Veterinary Medicine, Madison, WI

**ACADEMIC POSITIONS**

 1986-1990 Research Associate

 Waisman Center on Mental Retardation and Human

 Development, University of Wisconsin, Madison, WI

 1990-1994 Assistant Scientist

 Waisman Center on Mental Retardation and Human

 Development, University of Wisconsin, Madison, WI

 1994-1999 Assistant Professor

 Department of Anatomy (Dept. closed 1999)

 Michigan State University, East Lansing, MI

 1999-2001 Assistant Professor

 Department of Physiology

 Michigan State University, East Lansing, MI

 2001-2007 Associate Professor, Associate Chair

 Director of Research and Graduate Studies

 Department of Physiology

 Michigan State University, East Lansing, MI

 2007-2011 Professor, Associate Chair

 Director of Research and Graduate Studies

 Department of Physiology

 Michigan State University, East Lansing, MI

 2011-present Professor

 Department of Physiology

 Michigan State University, East Lansing, MI

**MAJOR RESEARCH INTERESTS**

 1) Glaucoma-related cellular changes in the mammalian retina and lateral geniculate nucleus

 2) Neuroprotectant-based strategies for promoting the functional survival of neurons in the

 Mammalian visual system following trauma or disease.

 3) Development of a contact lens-based intraocular pressure sensor

**PREVIOUS, CURRENT, and PENDING RESEARCH SUPPORT**

 1) Structure/Function Correlations in Cat Retinal Ganglion Cells

 NIH-NEI, Co-PI with Dr. Laurence Stanford 1988-1994.

 2) Retinal Ganglion Cell Changes in Glaucomatous Monkeys.

 National Glaucoma Research, American Health Assistance Foundation.

 4/1/93-3/31/95; TDC: $50,000.

 3) Glaucoma-related Neuronal Degeneration in the Primate Retina and Dorsal Lateral Geniculate Nucleus.

 Alcon Laboratories

 6/1/94-12/31/94; TDC: $39,674.

 4) Structure/Function Relations of Ganglion Cells in the Glaucomatous Retina.

 The Glaucoma Foundation.

 9/1/94-8/31/96; TDC: $11,550.

 5) Neuronal Changes in the Retina and Thalamus of Glaucomatous Monkeys.

 NIH-NEI.

 12/1/94-11/30/98; TDC: $607,545.

 6) Neuroprotectant-based Rescue of Retinal Neurons Undergoing Retrograde Degeneration Due to Damage to the Optic Nerve.

 MSU Foundation, Strategic Partnership Fund, Center for Clinical Neurosciences and

 Ophthalmology, Michigan State University

 7/1/97-6/30/00; TDC: $76,449.

 7) Retinal Changes in Glaucoma and with Neuroprotection

 NIH/NEI.

 4/01/99-3/31/03; TDC: $629,580.

 8) Development of a Microelectronic Device for Monitoring Intraocular Pressure of the Eye

 MNEC/ Co-PI

 7/1/2000-6/30/2001; $31,000

 9) A Confocal Microscope for Neurobiology

 NIH/NCRR Shared Instrumentation Grant

 Co-PI

 4/1/01-3/31/02; TDC: $183,065

 10) Development of an Implantable MEMS Device for Continuous Monitoring of Intraocular

 Pressure (Phase I)

 Alcon Research Ltd, Fort Worth, TX

 PI

 1/1/03-12/31/05; TDC $49,680

 11) Structure-Function of the Retina with Neuroprotection

 NIH/NEI

 PI

 12/1/04-11/30/08; TDC: $1,000,000

 12) Development of an Implantable MEMS Device for Continuous Monitoring of Intraocular

 Pressure (Phase II)

 Alcon Research Ltd, Fort Worth, TX

 PI

 7/1/06-12/31/06; TDC $62,455

 13) Structural and Functional Characterization of a Novel Model for Glaucoma Research

 NIH/NEI

 Co-sponsor: Provide support concerning morphometric analysis of retina from glaucomatous cats

 PI: Gillian McLellen (1K08EY018609-01A1)

 09/15/2008-06/30/2013; TDC: $152,188

 14) Structure-Function of the Retina with Neuroprotection

 NIH/NEI. Recovery Act Funds - Administrative Supplement, submitted 6/1/2009

 PI

 12/1/2009-4/1/2011; $399,453 TDC

 15) Development of New Models for Studying Glaucoma and Neuroprotection

 CHM

 PI

 4/1/11 – 3/31/13; $20,000 TDC

 17) Ultrasound Neuroprotection Preliminary Data Study

 CHM

 PI

 8/1/13 – 7/31/14; $9,500 TDC

 19) Application of Pulsed Ultrasound Toward Neuroprotection and Preservation of Vision

 Following Optic Nerve Trauma

 DoD/CDMRP

 PI (Co-PI: Wen Li, Dept. of ECE

 (revision needed)

 20) Functional Mapping and Control of the Visual Cortex: Toward a Cortically-based Visual

 Neuroprosthetic System

 MSU Strategic Partnership Fund

 7/1/2014 – 6/30/2017; $400,000 TDC

 21) Implantable Three-dimensional Opto-uECoG Interface for Neuroprotection and Restoration of

 Vision in Glaucoma.

 NSF

 Co-PI (PI: Dr. Wen Li)

 5/16/13 – 5/15/17; $370,000 TDC

 22) Implantable, Wireless, and Power-Efficient Trimodal Neural Interface for Electro-Optogenetic

 Manipulation of Visual Cortex in Small Freely Behaving Animals.

 NSF ECCS

 Co-PI (PI: Dr. Wen Li)

 8/16/14 – 8/15/20; TDC $400,000

 25) Relationship between Optic Nerve Axon Counts and Clinical Assessments of Retinal Function

 and Structure in Dogs.

 ACVO Vision for Animals Foundation

 Co-PI

 Co-PI  (PI: Shin Park)

 2/2/16-2/1/17; $5,000

26) Flexible Diamond-Polymer Thin Film electronics for Electrical and Chemical Sensing of Brain

 Signals

NIH/NINDS

Co-PI (PI: Dr. Wen Li)

9/1/16-8/31/19; $364,704 TDC

27) Wireless, Wearable Smart Strain Sensor for Real-Time Monitoring of Intraocular Pressure.

 Targeted Support Grants for Technology Development (TSGTD – MSU)

 PI (Co-PI: Dr. Wen Li)

 9/1/17 – 8/31/18, $50,000

 28) Variable Inductor-Based Passive IOP Sensor I

 Mi-Kickstart – Life Sciences

 FastForward Medical Innovation

 Michigan Economic Development Corporation

 **PI** (Co-PI: Dr. Wen Li)

 7/1/19 – 6/30/2020: $42,500 TDC

 29) Variable Inductor-Based Passive IOP Sensor II

 Targeted Support Grants for Technology Development (TSGTD – MSU Technologies)

 **PI** (Co-PI: Dr. Wen Li)

 7/1/19 – 6/30/20: $82,857 TDC

 30) Variable Inductor Passive Contact Lens-Based IOP Sensor

 MTRAC – Life Sciences

 FastForward Medical Innovation

 Michigan Economic Development Corporation

 Spartan Innovations

 **PI** (Co-PI: Dr. Wen Li)

 2/1/21 – 1/31/2021: $95,207 TDC

 NCE: 4/30/22

 31) Flexible nitrogen ultrananocrystalline diamond microelectrode array for nongenetic, light driven

 retinal prosthesis.

 NIH/NEI

 Co-I (PI: Dr. Wen Li)

 4/1/22 – 3/31/24: $393,600 TDC **NOT FUNDED**

 32) Acquisition of a Nanoscale 3D printer for medical device precision manufacturing at Michigan

 State University

 NSF/MRI (Major Research Instrument)

 Submitted January 19, 2022

 Collaborator (PI: Dr. Wen Li)

 8/6/22 – 8/15/22: $589,100 (funds requested)

**TEACHING**

 1978‑1979 Lecturer, Zoology 610, Experimental Neurophysiology, Department of Zoology,

 University of Wisconsin‑Milwaukee

 1982‑1984 Teaching Assistant, Medical Science 714, Neuroanatomy and Neurophysiology,

 University of Wisconsin School of Medicine, Madison, WI

 1986‑1989 Guest Lecturer, Veterinary Neuroanatomy-Neurophys­iology 934-505, University of

 Wisconsin School of Veterinary Medicine, Madison, WI

 1989-1990 Guest Lecturer, Neurobiology II, Structure and Function of the Mammalian Central

 Visual System, Neuroscience Training Program, Univ. of Wisconsin, Madison, WI

 1989-1991 Lecturer, Anatomy 637, Functional Neuroanatomy, Department of Kinesiology,

 University of Wisconsin School of Education, Madison, WI

 1995-1998 Lecturer/Lab Instructor, Anatomy 551, Human Gross Anatomy: Head and Neck,

 Department of Anatomy, Michigan State University, East Lansing, MI

 1997-present Lecturer, Radiology/Pharmacology/Physiology 839, Systems Neuroscience,

 Neuroscience Program, Michigan State University, East Lansing, MI

 (2019 changed to NEU 805)

 1999-2016 Lecturer, Radiology/Physiology/Neurology-Ophthalmology 552, Medical

 Neuroscience, Michigan State University, East Lansing, MI

 2000 Lecturer, Physiology 910, Cellular and Molecular Physiology, Department of

 Physiology, Michigan State University, East Lansing, MI

 2001-present Lecturer, Physiology 828, Cellular and Integrated Physiology, Department of

 Physiology, Michigan State University, East Lansing, MI

 2002-2007 Preceptor, HM513 Neuromusculoskeletal Domain, Problem Based Learning,

 College of Human Medicine, Michigan State University, East Lansing, MI

 2002-2007 Preceptor, HM514 Major Mental Disorders Domain, Problem Based Learning,

 College of Human Medicine, Michigan State University, East Lansing, MI

 2002 Lecturer, Pharmacology/Physiology/Zoology 827, Physiology and Pharmacology of

 Excitable Cells, Michigan State University, East Lansing, MI

 2003-2015 Lecturer, PDI 514, Veterinary Neuroscience, Michigan State University, East

 Lansing, MI

 2003-2009 Lecturer, Physiology 950, Topics in Physiology, Michigan State University

 2010 Physiology 475: Capstone Lab, Michigan State University, East Lansing, MI

 2010 Pharmacology/Physiology 827: Physiology and Pharmacology of Excitable Cells,

 Michigan State University, East Lansing, MI

 2012-2020 Pharmacology/Physiology 827 (now NEU 805): Physiology and Pharmacology of

 Excitable Cells, Michigan State University, East Lansing, MI

 2012-2016 Course Director and Lecturer, HM513, Chair: Neurological Domain, CHM Block II

 2013-present Lecturer, OST571, Medical Physiology

 2013 Guest Lecture – LB 274, Lyman Briggs special lecture on optics of the eye.

 2015-present Content Expert – CHM Shared Discovery Curriculum (SDC)

 2016-2021 Course Director – HM 555 Clinically-related Neuroscience Intersession, SDC

 2017-2019 Course Assistant – HM 552/553 - ECE Neuroanatomy Lab

 2017-present Content/Instructor – HM 554 Large Group Activity, Neuro Sections 16-20, SDC

**COMMITTEE WORK**

#  **Departmental**

 1997-1999 Department of Anatomy: Advisory Committee (Past Faculty Secretary)

 1996-1999 Department of Anatomy: Graduate Affairs Committee (Past Co-Chair)

 1997-1999 Department of Anatomy: Space, Safety and Research (Past Chair)

 1998 Department of Anatomy: Task Force on Undergraduate Education

 1999 Department of Anatomy closed; Joined Department of Physiology

 2001 Department of Physiology: Asthma/Pulmonary Faculty Search Committee

 2001-2009 Department of Physiology: Animal Use Committee

 2002-2010 Department of Physiology: Assoc. Chair/Dir. of Research and Graduate Studies

 2002-2011 Dir. of Research and Graduate Studies/ Chair – Graduate Affairs Committee

 2002-2012 Dir. of Research and Graduate Studies

 2008 Department of Physiology: Webpage Re-design Committee

 2007-2012 Coordinator – Annual Meites Seminar Series

 2012-2015 Faculty Advisory Committee (FAC) member

 2013-2015 Faculty Advisory Committee Chair

 2015-2016 Professional Education Committee member

 2016 Chair – Neuroscience Faculty Search Committee

 2016 Veterinary Medicine – Vet. Ophthalmologist Faculty Search Committee (member)

 2016 Neuroscience Faculty Search Committee (member)

 2016 Physiology Awards Committee - member

 2017- 2018 Faculty Advisory Committee – member

 2018-2020 Faculty Advisory Committee – Chair

 2018-2020 Physiology Awards Committee – Chair

 2021 – present Graduate Affairs Committee

 2021 – present BMS Admissions Committee

#  **College**

1996 Department Representative: Basic Science Subcommittee for LCME Review

 1997-2012 Interviewer: College of Human Medicine (CHM), Medical School Admissions

 2001-2016 Curriculum Development Group: Neurological Domain - CHM Problem Based

 Learning

 2001-2007 CHM College Advisory Committee

 2002-2007 Preceptor: CHM Problem Based Learning

 2003 CAC-CHM Awards Committee

 2003-2012 Van Andel Res. Institute Fellowship Reviewer - College of Natural Sciences

 2004-2012 Rosenberg Fellowship Reviewer – College of Natural Sciences

 2004-2012 Hensely Fellowship Reviewer - College of Natural Sciences

 2004-2012 Zeits Fellowship Reviewer - College of Natural Sciences

 2005 CHM Grievance Committee

 2006 CHM LCME Self-Study: Research Subcommittee

 2007-2012 Degree Completion Fellowship Committee - College of Natural Sciences

 2007-2012 Summer Support Fellowship Committee - College of Natural Sciences

 2007-2012 CHM Graduate Studies Committee

 2007-2009 CHM MD/PhD Program Committee

 2007-2009 CHM MD/PhD Candidate Selection Committee

 2008-2012 CHM College Advisory Committee

 2011 CHM Faculty Awards Committee

 2012-2016 Chair, Curriculum Development Group – HM 513 - Neurological Domain, CHM

 2012-2016 Course Director – HM 513 – Neurological Domain, Block II CHM

 2013-2015 CHM Conflict of Interest Committee

 2013-2014 CHM LCME Self-Study Institutional Setting Committee

 2015 CHM Neuroanatomy position interviewer

 2016 – 2020 CHM College Advisory Council

 2017 CHM/COM Neuroanatomist Search Committee

 2017 – 2020 CHM Awards Committee – Chair

#  **University**

 1997 Biomedical Future Search: Infrastructure-Animal Use Committee (Chair)

 1996-1999 Advisory Board, Neuroscience Program

 1995-1998 Advisory Board, Center for Clinical Neuroscience and Ophthalmology

 1998 Advisory Board, Life Sciences Committee (Neuroscience), Michigan Health and Aging Research and Development Initiative (Life Sciences Corridor)

 1996-1997 Spartan Speaker Program

 2001 Frontiers in Science Program: Division of Science and Mathematics Education

 2001-2005 Treasurer, Michigan Chapter of the Society for Neuroscience

 2003-2012 University Distinguished Fellowship Reviewer

 2003-2012 University Enhancement Fellowship Reviewer

 2003 National Research Council Pilot Study

 2004-2006 Life Sciences Task Force: Joint Recruitment Initiative

 2006-2007 National Research Council Graduate Program 10 Year Assessment

 2007 Comprehensive Exam Chair: Cellular Neurobiology Group, Neuroscience Program

 2008-2012 Institutional Animal Care and Use Committee (IACUC)

**COMMUNITY SERVICE**

 1996–present Member – East Lansing Knights of Columbus Catholic Fraternal Organization

 2013-2015 Grand Knight – E. L. Knights of Columbus Catholic Fraternal Organization

 2015-2017 Treasurer – E. L. Knights of Columbus Catholic Fraternal Organization

 2017-2020 Trustee – E. L. Knights of Columbus Catholic Fraternal organization

 1998-2005 Science Fair presenter – St Thomas Aquinas Elementary School

 2012-2018 Department of Physiology “PhUn” Day – Impressions 5 Children’s Science Museum

 2013 Bioengineering Symposium – Neuroscience Program, MSU

 2013-2018 ‘Brain Bee’ Neuroscience Fair – Neuroscience Program, MSU

 2020-present Treasurer – E. L. Knights of Columbus Catholic Fraternal Organization

**ADVISOR**

 1996-2001 Hao Chen, Doctorate, Department of Anatomy (Primary Advisor)

 1994-2000 Lee Lipsitz, Doctorate, Department of Anatomy,

 (Committee Member, Primary Advisor)

 1996-1998 Lisa Belt, Masters Degree, Department of Anatomy (Committee Member)

 1999-2005 Nalinee Tuntivanich, Doctoral candidate, School of Veterinary Medicine

 (Committee Member)

 2002 Andrea Merchant, McNair/SROP Scholar Program advisor

 2002 Yanny Lau, MD/PhD candidate, research rotation mentor

 2002 Wen-hsin Ku, Doctoral candidate, Department of Physiology, research rotation

 2002-2004 Lisa Bartner, Masters candidate, Department of Physiology (Committee Member)

 2002-2005 Robert Cable, Masters Degree, Department of Mechanical Engineering

 (Committee Member)

 2003-2004 Magan Butler-Coleman, McNair/SROP Scholar Program mentor

 2005-2007 Gillian Shaw, Masters candidate,School of Veterinary Medicine, (Committee

 Member)

 2005 Samuel Pappas, undergraduate research project mentor

 2005-2006 Kofo Onaleye, undergraduate research project mentor

 2005-2007 Jenna DenHouter, Masters candidate, School of Veterinary Medicine (Com. Member)

 2006 Steven Agemy, undergraduate research project mentor

 2006-2008 Onyinyechi Nweke, undergraduate research project mentor

 2006-2007 Chidambaram Ramanathan, Visiting Scientist

 2006 (summer) Nicholas Frecker, undergraduate research experience (Indiana Wesleyan Univ.)

 2006-2009 Hui Wang, Doctoral candidate, Department of Physiology (Committee Member)

 2007-2011 Lindsay Martin, Doctoral candidate, Department of Physiology (Committee Member)

 2007-2010 Justin Lockwood, Medical Scholar, undergraduate research project mentor

 2009-2012 Tim Houchin, Doctoral candidate, Department of Physiology, Committee Member)

 2009-2011 Xu Gao, Master’s candidate, Department of Physiology (Committee Member)

 2009-2012 Matthew Annear, Doctoral Candidate, Department of Veterinary Medicine

 (Committee Member)

 2011-2012 Hamant Patel, pre-med student, Human Biology Program

 2011-2014 Ki Yong Kwon, Doctoral Candidate, Department of Electrical and Computer

 Engineering, (Committee Member)

 2012-2017 Bin Fan, Doctoral Candidate, Department of Electrical and Computer

 Engineering, (Committee Member)

 2012 Priyanka Pandey, Masters Candidate, Department of Physiology, (Committee

 Member)

 2012-2018 Marianna Silva, Doctoral Candidate, Comparative Medicine and Integrative Biology,

 School of Veterinary Medicine, (Committee Member)

 2012-2015 Brian Fischer, pre-med, Physiology Major, undergraduate research advisor

 2012-2016 Ron Tsai, Masters Candidate, Dept. of Physiology (Committee Member)

 2013-2016 Connie Yeh, DVM, ophthalmology resident and Master’s Candidate, Department of

 Medicine and Integrative Biology, School of Veterinary Medicine, (Committee

 Member)

 2013-2016 Annie Oh, Masters Candidate, Department of Medicine and Integrative Biology,

 School of Veterinary Medicine, (Committee Member)

 2012-2013 Brian Crum, Masters Candidate, Department of Elect. Eng. (Committee Member)

 2013-2014 Candace Igert, Masters Candidate, Department of Physiology (Committee Member)

 2012-2016 Kathleen Louis, Doctoral Candidate, Neuroscience Program (Committee Member)

 2015-2019 Wasif Afsari Khan, Masters Candidate, Electrical and Computer Engineering

 2016-2018 Fatma Madi, Masters Candidate, Department of Physiology (Mentor)

 2016-2020 Kristin Koehl, Masters Candidate, School of Vet. Medicine, (Committee Member)

 2016-2020 Yue Guo, PhD Candidate, Electrical and Computer Engineering (Committee

 Member)

 2016-2020 M.H. Mazaherikouhani, PhD Candidate, Electrical and Computer Engineering

 (Committee Member)

 2017-2021 Jessica Burn Masters Candidate, School of Vet. Medicine, (Committee Member)

 2019-2021 Nate Pasmanter, Masters Candidate, School of Vet. Med. (Committee Member) 2019 (summer) Kathryn Schwartz, HS Biology Teacher

 2020-2021 Weiyang Yang, PhD Candidate, Electrical and Computer Engineering

 (Committee Member)

**HONORS and AWARDS**

 1978 High Honors, Senior Thesis, Princeton University

 1981‑1984 National Institutes of Health Pre-doctoral Fellow

 1984 Knapp Meeting Travel Fellowship

 1986‑1989 U.S. Public Health Service National Research Service Award

 1993-1995 National Glaucoma Research Award, American Health Assistance

 Foundation

 1994 Ruth Salta Junior Investigator Achievement Award, National Glaucoma

 Research Award, American Health Assistance Foundation.

 1995 Michigan M.D. Magazine, feature article: “Glaucoma Research Focuses on

 Neuronal Degeneration in the Retina”

 1998 Society for Neuroscience Annual Meeting Press Conference/News Release:

 “Brain-derived neurotrophic factor (BDNF) prevents retinal ganglion cell death

 in the cat retina after optic nerve crush.”

 1999-present Scientific Advisory Committee, The Glaucoma Research Foundation, San

 Francisco, CA.

 2000-2001 NIH/NEI Visual A Study Section

 2000 COM Communiqué: Neurology and Ophthalmology article on Building Broad

 Research Programs.

 2003 Golden Apple Teaching Award-Class of 2006, College of Osteopathic Medicine

 2004 NIH/NEI Biology and Diseases of the Posterior Eye Study Section (ad hoc reviewer)

 2005 NIH/NEI Anterior Eye Disease Study Section (ad hoc reviewer)

 2005 Michigan M.D. Magazine: feature article: “Erasing the Boundary Between Medicine

 and Engineering.

 2006 Session co-Moderator: Association for Research in Vision and Ophthalmology

 Annual Meeting 2007 Chapter Invitation: The Primate Model of Glaucoma, In:

 Mechanisms and Therapeutics of Glaucoma, Humana Press.

 2007 Invited Speaker: Symposia on Form and Function of Retinal Ganglion Cells in

 Glaucoma, Association for Research in Vision and Ophthalmology.

 2007 Session co-Moderator: Neuroprotection, Neurodegeneration and Blood Flow,

 Association for Research in Vision and Ophthalmology Annual Meeting.

 2007 Invited Speaker: The Retina and Neuroprotection, Annual Meeting of the American

 Academy of Optometry

 2008 Invited Speaker: Journal of Physiology Education Workshop: Retinal Ganglion Cells

 in Model Organisms: Development, Function, and Disease, Association for Research

 in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL

 2009 NIH-NEI Study Section (Ad Hoc Reviewer)

 2010 Invited Speaker: ARVO/Pfizer Ophthalmics Research Institute Conference, Current

 Prospects in Optic Nerve Protection and Regeneration, Ft Lauderdale, FL

 2010 Invited Speaker: Neural Degeneration in Glaucoma-New Insights, Pathological

 changes in the structure and function of ganglion cells in glaucoma, International

 Society for Eye Research Meeting, Montreal, Canada.

 2010 Invited Speaker: Effects of Downstream Neuroprotection on Retinal Ganglion Cell

 Survival and Function Following Optic Nerve Injury; Visiting Speakers Program, North

 Texas Eye Research Institute, UNTHSC, Ft. Worth, TX.

 2011 Invited Speaker: Looking Beyond the Eye for Retinal Neuroprotection, Association for

 Ocular Pharmacology and Therapeutics, Ft. Worth, TX

 2016 Co-Moderator – Mini symposium on Retinal Ganglion Cell Dendrite pathology and

 Synapse Loss: Implications for Glaucoma. (ARVO Annual Meeting)

**PATENTS**

2005 J.R. Lloyd, T. Grotjohn, A. Weber, and F. Rosenbaum, “Implantable Micro-Scale Pressure

 Sensor System for Glaucoma Monitoring and Management,” Full Patent awarded 2005.

2011 A. Weber, W. Li, “Development of a Wireless Passive Intraocular Pressure Sensor” Invention

 Disclosure Submitted to MSU Technologies (62/474,750)

2018 IOP Sensor - US Provisional Patent, serial # US16/494,894 (filed 3/22/2017)

2018 Regional European Patent Application # 18772211.1 (filed 3/21/2018)

2018 Patent Cooperation Treaty, PCT/US2018/023502 (filed 3/22/2018)

2022 Intraocular pressure sensor – US Patent US11,484,202 B2 (issued 11/1/2022)

**MEMBERSHIPS**

 Association for Research in Vision and Ophthalmology (ARVO)

 International Brain Research Organization (IBRO)

**AD HOC REVIEWER**

 Glaucoma Research Foundation - San Francisco

 The Glaucoma Foundation-New York

 MSU-Intramural Research Grants Program (IRGP)

 Journal of Comparative Neurology

 Journal of Neuroscience Research

 Journal of Glaucoma

 Brain Research

 Neuroscience Research Communications

 Visual Neuroscience

 Alzheimer’s Association (cell death-related work)

 Investigative Ophthalmology and Visual Science

 Experimental Eye Research

 Molecular Neurobiology

 PLOS ONE

 Molecular Vision

**CONSULTING/COLLABORATIONS**

 Alcon Laboratories, Inc., Fort Worth TX

 Sierra Biomedical, Inc., Sparks, NV

 Regeneron Pharmaceuticals, Inc. Tarrytown, NY

 Pfizer, Inc., Ann Arbor, MI

 Ophthy-DS, Kalamazoo, MI

**INVITED PRESENTATIONS**

 1989 Wenner-Gren Symposium on Brain Repair, Stockholm, Sweden

 1991 Department of Anatomy, University of Wisconsin-Madison School of Medicine, "The

 development and organization of synaptic connections in the retina and dorsal lateral

 geniculate nucleus of the cat."

 1993 University of Wisconsin Regional Primate Research Center, University of Wisconsin-

 Madison, "Neuronal changes in the retina and thalamus of monkeys with experimentally-

 induced glaucoma."

 1993 Department of Ophthalmology, University of Wisconsin-Madison, "Glaucoma and the

 single neuron: effects of elevated intraocular pressure on single retinal ganglion cells."

1993 Alcon Laboratories, Inc., "Pressure-induced neuronal degeneration in the

 retinogeniculate pathway of the primate."

 1994 Think Tank on Optic Nerve Regeneration, The Glaucoma Foundation, New York.

 1994 Michigan Optometric Society, "Glaucoma-related changes in the primate central

 visual pathway: neuronal degeneration in the retina and lateral geniculate

 nucleus."

 1995 Optic Nerve Restoration Think Tank, The Glaucoma Foundation, New York

 1995 Neuroscience Training Program, Michigan State University, “Neuronal changes in the

 retina and thalamus of monkeys with experimentally-induced glaucoma.”

 1995 Department of Biological Sciences, Ferris State University, “Pressure-induced neuronal degeneration in the primate visual system.”

 1996 Optic Nerve Rescue and Restoration Think Tank, The Glaucoma Foundation, New York

 1996 Department of Biology, Siena Heights College, “Under pressure: neuronal changes in

 the primate visual system induced by elevated pressure in the eye”.

 1997 Optic Nerve Rescue and Restoration Think Tank, The Glaucoma Foundation, New York

 1998 Clinical Neurosciences Research Program, Michigan State University, “Neuroprotection:

 are we covering all of the bases?”

 1998 Department of Ophthalmology and Visual Sciences, University of Louisville School of

 Medicine, “Patterns of neuronal degeneration in the glaucomatous visual system”.

 1998 Department of Physiology, Michigan State University, “Neuronal degeneration and neuroprotection in the mammalian visual system”.

 1998 Department of Pharmacology and Toxicology, Michigan State University, “Neuronal

 degeneration and strategies for neuroprotection following optic nerve damage”.

 1999 Department of Physiology and Biophysics, Wright State University, “Neuronal changes in the retina and lateral geniculate nucleus in experimental glaucoma and following

 optic nerve crush.

 1999 Center for Clinical Neuroscience and Ophthalmology, Residents Program, Michigan State University, “Life and death in the glaucomatous retina: perspectives of the single

 neuron"

1999 Department of Ophthalmology, Dalhousie University, Halifax, Nova Scotia, “Neuronal

 changes in the visual system of primates with experimental glaucoma”.

 2000 Alcon Laboratories, Fort Worth, TX, Glaucoma and the primate central visual pathway:

 where have we come from, where are we going?”

 2000 Department of Ophthalmology and Visual Sciences, University of Wisconsin-Madison, "Degenerative effects of elevated intraocular pressure on retinal ganglion cells and

 their target neurons in the primate visual system".

2000 XIV International Congress of Eye Research, Santa Fe, New Mexico, “Latex microsphere-

 induced experimental glaucoma and neuronal degeneration in primates.”

 2001 Frontiers in Science and Mathematics Workshop, Division of Science and Mathematics

 Education, Michigan State University, “Neuronal degeneration and neuroprotection in

 glaucoma.”

 2004 Eye Research Institute, Oakland University, Rochester, MI, “Retinal ganglion cell structure

 and function following optic nerve injury and neuroprotection.”

 2004 Indiana School of Optometry, Bloomington, IN, “Glaucomatous neuropathy: looking

 beyond the retina.”

 2004 XVI International Congress of Eye Research, Sydney Australia, “Effects of elevated

 intraocular pressure on retinal ganglion cell structure and function.”

 2007 Symposia on Form and Function of Retinal Ganglion Cells in Glaucoma, Association for

 Research in Vision and Ophthalmology. Ft. Lauderdale, FL

 2007 Michigan Chapter of the Association for Assessment of Laboratory Animal Care(AALAC), “Neuronal degeneration and neuroprotection in the cat and primate eye in glaucoma”.

 2007 American Academy of Optometry Annual Meeting, Vision Science Section, Tampa, FL. “Neuroprotection within the mammalian retina following optic nerve injury”.

 2008 Journal of Physiology Education Workshop-Retinal Ganglion Cells in Model Organisms:

 Development, Function, and Disease, Association for Research in Vision and Ophthalmology

 Annual Meeting, Ft Lauderdale, FL

 2008 Michigan State University Physiological Society, Careers in Physiology, MSU

 2008 Keynote Speaker, Distinguished Neuroscience Training Program Alumnus Lecture,

 Neuroscience Program, University of Wisconsin-Madison. “Neuroprotection

 in the Mammalian Retina Following Glaucoma-related Optic Nerve Injury”.

 2010 ARVO/Pfizer Ophthalmic Research Institute Conference, Guest speaker, discussion leader:

 Neuroprotective Effects of BDNF; Potential Retinal Therapeutic Agent? Ft. Lauderdale FL

 April 2010.

 2010 International Society for Eye Research (ISER). Pathological changes in the structure and

 function of ganglion cells in glaucoma. Montreal, Canada. July 2010

 2010 Effects of Downstream Neuroprotection on Retinal Ganglion Cell Survival and Function Following Optic Nerve Injury; Visiting Speakers Program, North Texas Eye Research Institute, UNTHSC, Ft. Worth, TX.

 2011 Association for Ocular Pharmacology and Therapeutics (AOPT), Looking Beyond the Eye for

 Retinal Neuroprotection, University of North Texas Health Science Center, Ft. Worth, TX

 2012 Department of Biosciences, Novel Neuroprotection Strategies for Glaucoma and Other Optic

 Neuropathies. Western Michigan University, Kalamazoo, MI

 2013 Bioengineering Symposium, Neuroscience Program, MSU

 2014 Ganglion cell dendritic structure in glaucoma. Glaucoma Research Society Meeting. Jackson

 Lake Lodge, Grand Teton National Park

 2015 Consortium of Osteopathic Residencies in Ophthalmology (CORO), Department of Neurology

 and Ophthalmology, Michigan State University.

 2016 Eye Research Institute, Oakland University, Rochester, MI, Glaucomatous Neuropathy:

 Current and Novel Strategies for Assessing and Preventing.

 2018 Consortium of Osteopathic Residencies in Ophthalmology (CORO), Department of Neurology

 and Ophthalmology, Michigan State University.

 2019 Innovation Cup – FastForward Medical Innovation, Michigan Economic Development

 Corporation, Variable Inductor-based Passive IOP Sensor, University of Michigan

 2020 MTRAC Research Program – FastForward Medical Innovation, Michigan Economic

 Development Corporation, Variable Inductor-based Passive IOP Sensor, University of

 Michigan

 2022 MSU Innovation Celebration – IOP Sensor Presentation, MSU Technologies, Michigan State

 University

**PUBLICATIONS**

Weber, A.J., and R.E. Kalil (1983) The percentage of interneurons in the dorsal lateral geniculate nucleus of the cat and observations on several variables that affect the sensitivity of horseradish peroxidase as a retrograde marker. J. Comp. Neurol. 220:336‑346.

Weber, A.J., R.E. Kalil, and T.L. Hickey (1986) Genesis of interneurons in the dorsal lateral geniculate nucleus of the cat. J. Comp. Neurol. 252:385‑391.

Weber, A.J., and R.E. Kalil (1987) Development of corticogeniculate synapses in the cat. J. Comp. Neurol. 264:171‑192.

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