

March 23, 2017

I am writing this letter to express my interest in the position of Vice President for Research and Economic Development (VPRED) position at the University of Wyoming. Below I describe my vision for the office, and I touch on what I think are a few of the major issues confronting academic research. Finally, I summarize my experience and expertise that are relevant for this position.

Vision: The office of the Vice President for Research and Economic Development (VPRED) at the University of Wyoming will strive to enhance the university's research excellence with the result that the University of Wyoming is recognized internationally for its culture of scholarly creativity, innovation, and diversity and serves as an essential partner to the City of Laramie, and is a source of pride and inspiration for all citizens of Wyoming, the nation, and beyond.

Challenges and strategies: The University of Wyoming and indeed every educational institution in the nation that includes research as a critical element in its mission is facing a host of issues that challenge the realization of this mission. These include a historically difficult federal research funding environment, intense pressure on state funding (for those that receive any at all), and increased competition for philanthropic support. All of this is set against a backdrop of increasing federal and state oversight and compliance requirements with a concomitant increase in administrative burden for both faculty and research administration. Subcontracts vs fee-for-service; Core Facility management and oversight, data security and open access; FISMA moderate standards for Controlled Unclassified Information-the list of issues that confront research administration is seemingly endless.

How can research institutions grow or even maintain their research enterprise in the current environment? In my view, the first step is a robust strategic planning process. New sources of revenue have to be identified and pursued; undergraduate and graduate education has to evolve in order to prepare students for careers in a highly complex professional environment; and ways have to be found to reduce the administrative burden on investigators and staff. Perhaps most importantly, institutions must find a way to balance risk against the increasing costs and burden of compliance with state and sponsor expectations. An important approach is to assess and, when appropriate, revise research administration functions, which are often a source of frustration for faculty who perceive, sometimes justifiably, that delivery of services is slow, the processes often inefficient, and the system plagued by poor communication.

In my current role first as Assistant and now as Associate VP for Research, I've had the opportunity to try to tackle some of these issues. I've worked with colleagues across the campus to increase efficiency and transparency of research administration policies and procedures. In addition to electronic systems that allow investigators to track their funding applications through every step of the process, I developed a transparent process to identify institutional nominees for funding opportunities where the sponsor limits the number of nominees the institution can put forward. In a related area, I co-lead an effort to organize and

implement a peer-based “panels” program to improve UAB investigators’ success in applications for federal and non-federal funding. This program has resulted in a substantial increase in the hit rate for those investigators who have utilized the panel program.

More recently, I organized a group of the directors of key research core facilities to develop an institutional strategy for organizing and administering cores. I also took the lead in developing guidance for investigators and their students on best practices for data collection, curation, and storage, all of which are essential for IP documentation and to facilitate response to allegations of research misconduct. A more complete summary of my experience and accomplishments follows.

Summary of qualifications and experience:

The bullets below summarize my relevant experience at UAB.

- I’ve been funded by NIH and NSF and a number of foundations.
- Work from my lab has been published in many high impact journals including, but not limited to, the Journal of Biological Chemistry, Journal of Neuroscience, PNAS, and Journal of Neurophysiology.
- I directed an NIH-funded graduate program during which time I initiated and oversaw a complete curriculum revision. In this role I was PI on successful applications for NIH T32 and T35 training grants.
- In addition to my own graduate students and postdocs, I’ve served on more than 40 thesis or dissertation committees.
- I served as the Director of an NIH P30-funded center for 13 years and successfully renewed the P30 twice in that period. Our center conceived of and implemented a 4 year program to provide health screenings and referrals in the Black Belt counties of Alabama, a project that received a direct federal appropriation through the CDC as well as substantial foundation funding.
- I established and still run a core facility, the High Resolution Imaging Facility. This core has been supported by NIH-funded centers including the Comprehensive Cancer Center (NCI), the Rheumatic Disease Core Center (NIAMS), the Vision Science Research Center (NEI), the Hepatorenal Fibrocystic Disease Core Center (NIAMS), and others.
- I developed and lead a university-wide Core Facilities assessment and funding program.
- I took a leadership role in overhauling UAB’s University-Wide Research Centers program and am responsible for center annual progress reviews and, in collaboration with other institutional officials, funding decisions.
- Over the past 4 years I have stressed the identification and development of new research clusters and cores in areas such as the microbiome and exercise medicine. Partly as a result of these efforts, and the efforts of many, many others, UAB in 2015 was ranked number 18 among public universities in the nation according to the NSF HERD survey. According to the same source, UAB ranks number 34 among all US institutions.

- I've served on councils that are advisory to the Dean of the Graduate School, the Office of the VP for Research and Economic Development, the UAB-wide Research Advisory Group (Chair), the Council of Center Directors (Chair), and the executive or advisory committees of seven University-Wide Centers.
- I've served an Advisory boards for Centers at Tufts University, Yale, UT Memphis, and others.
- I've served on study sections for most of the common NIH funding mechanisms (P30, T32, T35, R01, R21 etc.) and served as a reviewer for NSF.
- In the fall of 2016 I assumed a leadership role in developing an institutional strategy to deal with the impact of Fair Labor Standards Act on graduate students and postdocs.
- In collaboration with other institutional leaders, including the Dean of the Graduate School, I've developed a plan to ensure that Responsible Conduct of Research training is available to all postdoctoral trainees, graduate students and undergraduate students engaged in mentored research.
- I have experience with IP disclosures and licensing and am currently advisory to a team developing a new device that has significant commercialization potential.
- I currently serve on the Executive Council of the Center for Clinical and Translational Science (the home of the UAB CTSA), and co-direct the Investigator and Project Development Panels, and the Pilot Grant Program.
- During the last 18 years I've developed and served as course director for five new courses, and continue to teach parts of 2. They include, most recently, a new class in Imaging and Microscopy for graduate students. This course includes both lectures and intensive, hands-on experience with optics, bright field and, fluorescence microscopy, confocal imaging, digital imaging, other imaging modalities, and the ethics of image manipulation.
- I serve as UAB's POC for the Alabama Experimental Program to Stimulate Competitive Research (ALEPSCoR) program and work closely with the ALEPSCoR Director. We've enjoyed success with the award of nearly \$7.9M in new federal research funding during FY 2014 and over \$8.9M during FY 2015.
- In recognition of my efforts to build collaborations and effective teams I was awarded the UAB Sam Brown Bridge Builders award in 2012.
- In recognition of my efforts I was named University Professor in 2014. This status has been awarded to fewer than 20 faculty members in UAB's history.

As I have undertaken these tasks I've tried to ensure that the opinions of my colleagues are always considered and that the bases for decisions (sometimes unpopular) are explained. Building and maintaining the trust of the faculty is an essential part of being effective in research administration.

In closing, I believe my experience and expertise would position me to successfully carry out the responsibilities of the Vice President for Research and Economic development at the University of Wyoming.

Sincerely,

Kent T. Keyser PhD
Associate VP for Research
University of Alabama at Birmingham

Curriculum Vitae

Kent T. Keyser, Ph.D.
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 Office of the Vice President for Research
 University of Alabama at Birmingham
 Administration Building 720G1
 701 20th Street South
 Birmingham, AL 35294

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 Cell: (205) 492-0015

Email: ktkeyser@uab.edu

EDUCATION:

- 1972 Oberlin College, Oberlin, Ohio
 BA, Biology
- 1980 SUNY at Stony Brook, Stony Brook, NY
 Ph.D., Neurobiology and Behavior

EXPERIENCE:

- 2016-present Associate Vice President for Research
 2013-2016 Assistant Vice President for Research
- 2011-2013 UAB Center for Clinical and Translational Science Executive Committee
 Co-Director for Strategic Partnerships
- 2009-2011 Co-Director for Translational Platforms
 UAB Center for Clinical and Translational Science
- 2008-2011 Director, Translational Technologies and Novel Methodologies Component
 UAB Center for Clinical and Translational Science
- 2005-present Director, Neuroimaging Core, Alabama Neuroscience Blueprint Grant
- 2000-present Professor, Department of Vision Sciences, School of Optometry, University of
 Alabama at Birmingham
- 1999-2013 Director, Vision Science Research Center

Secondary appointment: Department of Biomedical Engineering
Secondary appointment: Department of Cell, Developmental, and Integrative Biology
Secondary appointment: Department of Neurobiology
Secondary appointment: Department of Psychology

- 1998-present Director, UAB High Resolution Imaging Facility
- Scientist, UAB Comprehensive Cancer Center
- Senior Scientist, Comprehensive Arthritis, Musculoskeletal and Autoimmunity Center
- Other Center memberships: Civitan International Research Center, Nephrology Research and Training Center, Center for Clinical and Translational Science, Minority Health and Health Disparities Research Center, Hepatorenal Fibrocystic Disease Core Center.
- 12/2003-6/2004 Interim Chair, Department of Physiological Optics, University of Alabama at Birmingham
- 1996-2000 Associate Professor, Department of Physiological Optics
 Secondary appointment: Department of Neurobiology
- 1995-1996 Associate Research Neuroscientist, Step 2,
 Dept. of Neurosciences, UCSD, La Jolla, CA
- 1994-1995 Assistant Research Neuroscientist, Step 6
 Dept. of Neurosciences, UCSD, La Jolla, CA
- 1993-1994 Assistant Research Neuroscientist, Step 5
 Dept. of Neurosciences, UCSD, La Jolla, CA
- 1988-1993 Assistant Research Neuroscientist, Step 3
 Dept. of Neurosciences, UCSD, La Jolla, CA
- 1986-1988 Post Graduate Research Scientist, Step 4
 Dept. of Neurosciences, UCSD, La Jolla, CA
- 1983-1986 Research Scientist
 Dept. of Psychiatry, Health Sciences Center
 SUNY at Stony Brook, NY
- 1981-1983 Research Scientist
 Long Island Research Institute, Stony Brook, NY
- 1979-1981 Staff Fellow

NIH, Laboratory of Experimental Pathology
NIAMDD, Bethesda, MD

PROFESSIONAL SOCIETIES:

Society for Neuroscience
Association for Research in Vision and Ophthalmology
American Association for the Advancement of Science
Microscopy Society of America
FAAO
Society for Translational Research

OTHER PROFESSIONAL ACTIVITIES:

Member of the Editorial Board, *Visual Neuroscience*, 1993-1997.

Guest Editor, *Investigative Ophthalmology and Visual Science*, 2000, 2001

Ad hoc reviewer for a number of journals including, but not limited to, *J. Neuroscience*, *Visual Neuroscience*, *J. Comparative Neurology*, *PNAS*, *J. Neurochem.*, and agencies including NSF.

President, Birmingham Area Chapter of the Society for Neuroscience: 1997-2004.

Chair, Host Committee for the NEI LOW VISION exhibit. Official national opening: Brookwood Mall, Birmingham, AL, January 2000.

Association for Research in Vision and Ophthalmology: Anatomy and Pathology Program Committee: 1999-2002.

Association for Research in Vision and Ophthalmology: Anatomy and Pathology Program Committee, Anatomy Subsection Chair 2002

Association for Research in Vision and Ophthalmology: Public Relations Committee, 2002-2005
Association for Research in Vision and Ophthalmology: Chair, Public Relations Committee, 2004-5

External Advisory Committee, Bascom Palmer Eye Institute, Miami, FL. 2002-2006

Scientific Advisory Committee: Neuroscience Research Center, Tufts University Medical School, Tufts University, Boston, MS. 2003-present

Visual Neuroscience Section Co-organizer and presenter, XVI International Congress of Eye Research, Sydney Australia, 2004

Visual Neuroscience Section Co-organizer and presenter, XVIII International Congress of Eye Research, Beijing, China, 2008

Core (P30) and Infrastructure (R24) grant study section (NEI), 2004, 2005, 2007

BDPE (formerly VIS C) Study Section (NEI) *ad hoc* member 2002, 2004, 2005

UAB member of the Federal Demonstration Partnership: 2008-present

UAB rep for Council on Governmental Relations 2013-present

SCHOOL AND INSTITUTIONAL (CAMPUS-WIDE) SERVICE AT UAB

Director of the Translational Technologies and Novel Methodologies Component of the UAB Center for Clinical and Translational Science (CCTS) 2008-2012

Co-Director for Translational Platforms of the UAB Center for Clinical and Translational Science (CCTS) 2009-2012

Co-Chair of the University Community Incubator of the One Great Community component of the UAB Center for Clinical and Translational Science (CCTS) 2008-2012

Co-Leader of the research development Program, CCTS (Panels and Pilot Grant Program)

Director, Graduate Program in Vision Science 1998-2012

Director, Vision Science Research Center 1999-2012

Founder and Director, High Resolution Imaging Facility 1998-present

Chair, UAB Research Advisory Group, 2005-2008 (The group is advisory to the UAB Provost and Vice President for Research on research investments and funding programs)

UAB Research Advisory Group member, 1999-2008

Council of Center Directors (Chair Elect January 2006-December 2007; Chair January 2007-December 2008): A group established by the VP FOR Research that advises the administration on various issues, and works closely with the leadership of the new Center for Clinical and Translational Science.

Cores Committee (Chair): Developed an institutional strategy for core facilities for the VP for Research, and now directing implementation.

Minority Health and Research Center Internal Review Board Member 2002-2013

Arthritis and Musculoskeletal Disease Executive Committee, 2000-present

CCTS Executive Committee 2009-present

Hepatorenal Fibrocystic Disease Core Center SAC 2009-2014

Epitope Recognition and Immunoreagent Core Scientific Advisory Committee

School of Optometry Executive Committee, 2003-2012

UAB Committee on Postdoctoral Education 2004-2008

UAB Graduate School Advisory Committee 1998-2012

UAB Faculty Senate 1997-99

Neuroscience Theme (GBS) Curriculum Committee 2010- present

Responsible Conduct of Research AdCom 2016

Countless faculty and administrative search committees including (past 5 years):

UAB Vice President for Research

UAB School of Medicine Senior Associate Dean for Research

Department of Neurobiology, Chair

UAB School of Optometry, Dean

Department of Vision Sciences Chair, (Committee Chair)

Department of Biomedical Engineering, Chair

UAB Comprehensive Cancer Center, Director

COMMUNITY SERVICE

Rural Alabama Diabetes and Glaucoma Initiative: Founder, and Advisory Committee Chair

This was an outreach effort directed at the underserved population of the 17 Black Belt Counties of Alabama funded in part by a federal appropriation through the CDC

Alabama Underserved Health Partnership: Executive Committee member 2001-2005

This was a consortium of UAB Centers together with groups from other state institutions and civic organizations to coordinate minority health initiatives and federal funding requests for initiatives to serve underserved areas of Alabama.

McWane Science Center, Birmingham, AL: Consultant for exhibit development 2005-2007

This was really fun.

TEACHING EXPERIENCE:

New Course Development (while at UAB)

Developmental Neuroscience: How to build a brain. 1997-present, (students in Neuroscience, Vision Science, Cell Biology, Behavioral Neuroscience, Neurobiology, Biomedical Engineering, and others)

Dauphin Island Sea Lab Introduction to Neuroscience: Co-developer with Paul Gamlin, PhD: 1997-Present, Laboratory-intensive residential course held at DISL for 2.5 weeks for early stage graduate students.

Dauphin Island Sea Lab Introduction to Neuroscience: Co-developer with Dr Anne Theibert PhD and Christianne Strang PhD: 2011-Present, Laboratory-intensive residential course held at DISL for 2 weeks for undergraduates

Development of the Human Visual System: was offered for the first time in 2009. The course involves both didactic lectures and discussion groups and covers cellular and molecular aspects of visual system development. Clinicians, especially pediatric optometrists and ophthalmologists participate to discuss clinical observations and specific cases of developmental abnormalities.

Lecturer in courses in the following graduate and professional programs at UAB (1996-present)
Surgical Physician's Program, Neuroscience section (School of Health Related Professions)
Integrated Biomedical Sciences (School of Medicine)
Cell and Molecular Biology (School of Medicine)
Behavioral Neuroscience (Psychology)
Biomedical Engineering (School of Engineering)
Vision Science (campus-wide)
Neuroscience Graduate Training Program (campus-wide)
Medical Neuroscience
Optometry-Dentistry Neuroscience
Graduate Biomedical Sciences (campus-wide)

STUDENT and POSTDOC TRAINING (since 1996)

Post Doctoral Fellows (past): Yu Wang
Nina Dmitrieva, PhD
Margot Andison, PhD
Kosta Gavrikov (Research Associate)
Christianne Strang PhD
Christianne Strang PhD (Research Instructor)

Past Students: Meghan Miller-Behavioral Neuroscience Program (M.S. 2000)
Chuan-Qing Ding-Vision Science Program (Ph.D. 2002)
Christianne Strang, M.A. -Behavioral Neuroscience Program (Ph.D. 2004)
Brian Reed-Vision Science Program (Ph.D. 2004)
Laura Brockway-Vision Science Program (Ph.D. 2004)
Jordan Renna-Vision Science Program (Ph.D. 2008)
Ryan Splittgerber-Vision Science (Ph.D. 2008)
Ye Long-Vision Science PhD (PhD 2012)
Marci Smith- Behavioral Neuroscience Program (Ph.D. 2013)

Service on dissertation committees since 1996: partial list

Catherine Fenster	Neurobiology (PhD)
Grace Zhai	Neurobiology (PhD)

Kim Gerecke	Neurobiology (PhD)
Chang-Hoon Cho	Neurobiology (PhD)
Zhendong Ma	Cell Biology (PhD)
Yi Pang	Vision Science (PhD)
Jennifer Williams	Behavioral Neuroscience (MS)
Gregory McGillem	Vision Science (PhD)
Thomas Rotolo	Vision Science (PhD)
Xiaochuan Guo	Vision Science (PhD)
Chengwen Zhou	Vision Science (PhD)
Goldis Malek	Vision Science (PhD)
Susan Campbell	Neurobiology (PhD)
Anisha German	Behavioral Neuroscience (PhD)
Josh Shows	Vision Science (MS)
Chris Mazzochi	Cell Biology (PhD)
Qiang Wang	Neurobiology (PhD)
Brandon White	Vision Science (PhD)
Richard Pearson	Cell Biology
Meredith Turnbough	Behavioral Neuroscience (PhD)
Brian Erkkila	Neurobiology (PhD)
YouWen Zhang	Vision Science (PhD)
John Chijuka	Vision Science (PhD)
Ferial Zeried	Vision Science (PhD)
Shanta Sarfare	Vision Science (PhD)
Sudipto Mukherjee	Vision Science (PhD)
Weiming Mao	Vision Science (PhD)
Martin LaFrance	Vision Science (PhD)
Yizhe Tang	Vision Science (PhD) Graduated 2008
Portia McCoy	Neurobiology (PhD) Graduated 2008
Martin LaFrance	Vision Science (PhD) Graduated 2008
Jordan Renna	Vision Science (PhD) Graduated 2008
Ryan Splittgerber	Vision Science (PhD) Graduated 2008
Mauro Chavez	Vision Science (PhD) Graduated 2008
David McDougal	Vision Science (PhD) Graduated 2008
Laxmikanth Kankipati	Vision Science (PhD) Graduated 2009
Rob Carter	Biochem and Mol Genetics (PhD) Graduated 2009
Shanta Sarfare	Vision Science (PhD) Graduated 2010
Michael Risner	Vision Science (PhD) Graduated 2010
Chinwe Asomugha	Vision Science (PhD) Graduated 2011
Kate Kosmac	Cell Biology (PhD) Graduated 2013
Mack Nowac	Neuroscience Theme/Vision Sciences (PhD) Graduated 2013
Alex Ward	Cell and Developmental Theme (PhD) Graduated 2015
Hieu D Hoang	Cell and Developmental Theme (PhD) Graduated 2015

McNair Fellows (Minority): Crystal Gardner
 Rachael Cowan
 Anayi Reynolds

GRANT SUPPORT (in chronological order; details available on request):

Completed

Various competitively awarded scholarships and honors during graduate school and postdoctoral training.

Association for Research in Vision and Ophthalmology Travel Fellowship, 1987

National Eye Institute Research Award, RO1-EY07845, PI, 1988-1993

Tobacco Related Disease Research Program Award, PI, 1992-1994

National Eye Institute Research Award, RO1-EY07845, PI, 1993-1998

Mississippi-Alabama Sea Grant Consortium, Neurobiology Course Development, PI, 1997

Mississippi-Alabama Sea Grant Consortium, Neurobiology Course Development, PI, 1998

NIH NCRR Award, 1 S10 RR12930-01, MRC Krypton/Argon Imaging System, PI, 1998-2000

UAB Health Services Foundation Award, Imaging Facility 1998-2000 (Keyser, P.I.) \$221,000

National Cancer Institute, P30 CA13148, Comprehensive Cancer Center-Imaging Core PI, (LoBuglio-PI), 1998-2003

UAB Health Services Foundation Award (Supplement), Imaging Facility 2000-2002 (Keyser, P.I.) \$150,000

National Science Foundation, IBN-0090388, Neurobiology Research Experience for Upper Level Undergrads, PI, 2000-2001

Provost's Educational Foundation Award, PI, 2001

National Eye Institute Training Grant T35 EY07084, PI, 2001-2006

National Institute of Arthritis, Musculoskeletal & Skin Disease, P30 AR48311, Imaging Core PI, (Kimberly-PI), 2001-2006

Lions Clubs International Foundation Award: Rural Alabama Glaucoma and Diabetes Initiative, 2002 (PI, with Christopher Girkin, MD; Dennis Pillion, PhD; Mary Jean Sanspree, PhD) \$50,000

Central Alabama Community Foundation Award: Rural Alabama Glaucoma and Diabetes Initiative, 2002-2006 (PI, with Christopher Girkin, MD; Dennis Pillion, PhD; Mary Jean Sanspree, PhD)
Total funding including CDC award: \$700K

National Eye Institute Training Grant T32 EY07033, PI, 2003-2008

National Eye Institute Research Award, RO1-EY07845 2004-2009 (Keyser, P.I.)
Total Award: 348,159

NIAMS: Skin Diseases Research Center P30, Pilot and Feasibility Study, PI, 2005-2007
\$25,000

NEI: National Eye Institute Training Grant T32 EY07033 (Keyser, P.I.) \$250,000/yr

National Rosacea Society Research Grant 2006-2007 \$27,500

NIH: Alabama Neuroscience Blueprint Award, 2006-2011 (Roth, PI)
Neuroimaging Core, PI 2006-2011: \$1.8 million over five years

EyeSight Foundation of Alabama 2010-2013 (Keyser, P.I.) \$57,000

NCRR: Center for Clinical and Translational Science, (Guay-Woodford, PI) Total Award: \$ 15,438,151
2008-2013
Keyser, Co-Leader Translational Technologies and Novel Methodologies, Executive Council member, Co-Leader for Strategic Partnerships

Active:

NIAMS: Rheumatic Disease Core Center (John Mountz, PI) 2013-2018
Recommended total costs: \$ 2,944,375
(Keyser, Co-PI) Analytical Imaging and Immunoreagent Core, Executive Council member

NCI: Comprehensive Cancer Center Core Support Grant (Partridge, PI) 2017-2021
Recommended total costs: \$13,756,420
(Keyser, PI) High Resolution Imaging Shared Resource

NCATS: Center for Clinical and Translational Science, (Robert P. Kimberly, PI) 2014-2018
Recommended total costs: \$29,724,501.00
Keyser, Co-Leader Pilots and Panels Program, Executive Council member

HONORS AND AWARDS (since 1996):

UAB President's Award for Excellence in Teaching (nominee): 1999, 2000

UAB President's Award for Excellence in Teaching: 2001

Association for Research in Vision and Ophthalmology Fellow (Silver): 2009

Sam Brown Bridge Builder Award: 2011

Designated as University Professor: 2013

INVITED TALKS

Selected talks:

Winter Retina Conference '96: Physiology, Computation, and Neuromorphic Engineering for Vision.

Jackson Hole, Wyoming, USA

Title: Structural and functional heterogeneity of nicotinic acetylcholine receptors in the visual system.
January 1996.

Avian Brain and Behavior Conference, Tihany, Hungary. August 25, 1996.

Title: Nicotinic acetylcholine receptors in the retina and retinorecipient areas of birds.

Max Planck Institute for Brain Research, Frankfurt, Germany

Dept. of Neuroanatomy. August 30, 1996.

Title: Structural and functional heterogeneity of nicotinic acetylcholine receptors in the visual system.

Ruhr-Universität, Bochum, Germany

Dept. of Biopsychology, September 2, 1996.

Title: Structural and functional heterogeneity of nicotinic acetylcholine receptors in the visual system.

University of Lausanne, Lausanne, Switzerland,

Institut d'Anatomie, September 5, 1996.

Title: Structural and functional heterogeneity of nicotinic acetylcholine receptors in the visual system.

The University at Stony Brook, Stony Brook, NY,

Department of Neurobiology and Behavior, December 4, 1996.

Title: Structural and functional heterogeneity of nicotinic acetylcholine receptors in the visual system.

The University of Tennessee Health Sciences Center

Department of Anatomy and Neurobiology October 2000

Title: Structural and functional heterogeneity of nicotinic acetylcholine receptors in the visual system.

Tufts Center for Vision Research, Tufts New England Medical Center, March 2003

Title: Structural and functional heterogeneity of nicotinic acetylcholine receptors in the visual system.

New England Eye Center, March 2004

Title: Structural and functional heterogeneity of nicotinic acetylcholine receptors in the visual system, and The UAB Vision Science Research Center

XVI International Congress of Eye Research; September 2004

Title: Direct and Indirect Modulation of Retinal Ganglion Cell Responses Mediated by Cholinergic Receptors

Session organizer

XVIII International Congress of Eye Research; September 2004

Title: Cholinergic signaling in the mammalian retina

Session organizer

Ohio State University College of Optometry

Title: Cholinergic signaling in the mammalian retina 2010

At UAB:

Department of Neurobiology, January 1997

Title: Structural and functional heterogeneity of nicotinic acetylcholine receptors in the visual system.

Department of Physiology and Biophysics, December, 1998

Title: Structural and functional heterogeneity of nicotinic acetylcholine receptors in the visual system.

Cardiac Rhythm Management Laboratory, February, 1999

Title: The UAB High Resolution Imaging Facility

Comparative Medicine, September, 1999

Title: The UAB High Resolution Imaging Facility

Division of Clinical Immunology and Rheumatology, January, 2000

Title: The UAB High Resolution Imaging Facility

Behavioral Neuroscience Program January, 2000

Title: The UAB High Resolution Imaging Facility

Department of Dermatology, June, 2000

Title: Structural and functional heterogeneity of nicotinic acetylcholine receptors in the visual system and other tissues

Gene Therapy Center seminar series, October 2001

Title: New technologies for detecting changes in gene expression

Skin Disease Research Center seminar series February 2007

Nicotine-evoked increases in intracellular Ca^{2+} in human dermal microvascular endothelial cells

Recent publications that are not primary research reports:

1. Keyser, KT & Strang, CE, (2009) Optical Imaging of Cancer: Enhancing Detection and Resection, in Optical Imaging in Cancer, Rosenthal EN & Zinn, KR, Eds. Springer, New York.
2. Keyser, KT, Wotring VE, & Strang, CE, (2010) The Role of Acetylcholine and its Receptors in Retinal Processing. 204. Invited paper in: Encyclopedia of the Eye, Vol 4 p 153. Besharse, J., Co- Editor, Dartt, D, Editor-in-Chief. Elsevier, Oxford, UK. ISBN-13: 978-0-12-374198-1
3. Keyser, KT, Wotring VE, & Strang, CE. The Role of Acetylcholine and its Receptors in Retinal Processing. Invited review. Reference Module in Neuroscience, Neuroscience and Biobehavioral Psychology, Elsevier. In press

SELECTED RESEARCH PUBLICATIONS

- (1) Keyser, K.T. and Lent, C.M. (1977). On neuronal homologies within the central nervous system of leeches. *Comparative Biochemistry and Physiology A*, 58:285-297.
- (2) Lent C.M., Ono, J., Keyser, K.T. and Karten, H.J. (1979). Identification of serotonin within vital-stained neurons from leech ganglia. *Journal of Neurochemistry* 32:1559-1564.
- (3) Keyser, K.T. and Lent, C.M. (1982). The Leydig cells within the central nervous system of the leech. *Journal of Comparative Physiology* 146:379-392.
- (4) Reiner, A., Krause, J.E., Keyser, K.T., Eldred, W.D., and McKelvey, J.F. (1984). Substance P distribution in the turtle nervous system: A immunohistochemical and radioimmunoassay study. *Journal of Comparative Neurology* 226:50-75.
- (5) Walcott, B., Keyser, K.T., and Sibony, P. (1985). Association of nerves and plasma cells in a tear gland. In *Leukocytes and Host Defense*. Edited by Oppenheim and Jacobs, Alan R. Liss Inc. p227-247.
- (6) Jones, Paul S., Tesser, Paul, Keyser, Kent T., Quitschke, Wolfgang, Samadi, Ramin, Karten, Harvey J., and Schecter, Nisson. (1986). Immunohistochemical localization of origin in the goldfish optic nerve: Specific molecular markers for optic nerve structures. *Journal of Neurochemistry* 47: 1226-1234.
- (7) Berman, P., Gray, P., Chen, E., Keyser, K., Ehrlich, D., Karten, H., LaCorbiere, M., Esch, F., and Schubert, D. (1987). Sequence analysis, cellular localization, and expression of a neuroretina adhesion and cell survival molecule. *Cell* 51: 1135-142.
- (8) Keyser, K.T., Karten, H.J., Katz, B., and Bohn, M.C. (1987) Catecholaminergic horizontal and amacrine cells in the ferret retina. *Journal of Neuroscience* 7:3996-4004.

- (9) Ehrlich, D., Keyser, K.T., and Karten, H.J. (1987) The distribution of substance P-like immunoreactive retinal ganglion cells and their pattern of termination in the optic tectum of the chick (*Gallus gallus*). *Journal of Comparative Neurology* 266:220-233.
- (10) Britto, L.R.G., Keyser, K.T., Hamassaki, D.E., and Karten, H.J. (1988) Catecholaminergic subpopulation of retinal displaced ganglion cells projects to the accessory optic nucleus in the pigeon (*Columba livia*). *Journal of Comparative Neurology* 269:109-117.
- (11) Keyser, K.T., Hughes, T.E., Whiting, P.J., Lindstrom, J.M., and Karten, H.J. (1988) Cholinceptive neurons in the retina of the chick: An immunohistochemical study of the nicotinic acetylcholine receptors. *Visual Neuroscience* 1:349-366.
- (12) Walcott, B., Sibony, P., and Keyser, K.T. (1989) Neuropeptides and the innervation of a lacrimal gland. *Investigative Ophthalmology and Visual Science* 30:1666-1674.
- (13) Schoepfer, R., Whiting, P., Luther, M., Keyser, K., Karten, H., and Lindstrom, J. (1989) Structure of muscle and neuronal acetylcholine receptors. In: *Molecular Biology of Receptors and Ion Channels*, (A. Maelicke, Ed.), NATO-ASI Series, Springer-Verlag, Berlin, Heidelberg Vol. H32:37-53.
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