

Curriculum Vitae

RUTH HEIDELBERGER, M.D., PH.D.

TITLE Frederic B. Asche Chair in Ophthalmology
Professor, Department of Neurobiology and Anatomy

WORK ADDRESS Department of Neurobiology and Anatomy
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CITIZENSHIP USA

UNDERGRADUATE EDUCATION

1984 B.S. Summa Cum Laude with Departmental Honors in Chemistry
State University of New York at Stony Brook,
Stony Brook, New York.
Research Advisor: Paul C. Lauterbur (Nobel Laureate)

GRADUATE EDUCATION

1984-1993 M.D./Ph.D. Program,
State University of New York at Stony Brook,
Stony Brook, New York.

1991 Ph.D.
Department of Neurobiology and Behavior
State University of New York at Stony Brook (Stony Brook University),
Stony Brook, New York.
Thesis Advisor: Dr. Gary G. Matthews

1993 M.D.
State University of New York at Stony Brook Medical School
Stony Brook, New York.

POSTGRADUATE TRAINING

1993-1996 Postdoctoral Fellow. Department of Membrane Biophysics,
Max Planck Institute for Biophysical Chemistry,
Göttingen, Germany.
Research Advisor: Dr. Erwin Neher (Nobel Laureate)

ACADEMIC APPOINTMENTS

1996 - 2004	Assistant Professor (Tenure-track). Department of Neurobiology and Anatomy. McGovern Medical School at the University of Texas Health Science Center at Houston (UTHealth)
2004 - 2009	Associate Professor (with Tenure). Department of Neurobiology and Anatomy. McGovern Medical School at the University of Texas Health Science Center at Houston (UTHealth)
1997 - Present	Joint Appointment. Department of Ophthalmology and Visual Science. McGovern Medical School at the University of Texas Health Science Center at Houston (UTHealth)
1998 - Present	Graduate Faculty. The University of Texas Graduate School of Biomedical Sciences at Houston.
2009 - Present	Full Professor (with Tenure). Department of Neurobiology and Anatomy. McGovern Medical School at the University of Texas Health Science Center at Houston (UTHealth)
2016 – Present	Frederic B. Asche Chair in Ophthalmology, McGovern Medical School at the University of Texas Health Science Center at Houston (UTHealth)

CERTIFICATION

1986	National Board of Medical Examiners - Part 1
1992	National Board of Medical Examiners - Step 2

PROFESSIONAL ORGANIZATIONS

Biophysical Society
Association of Research in Vision and Ophthalmology
Society for Neuroscience

HONORS AND AWARDS

1981	Sigma Beta (Stony Brook University Honor Society)
1983	Phi Beta Kappa
1983	Junior Class Award nominee
1983	Emerson Award (Chemistry Department award for Outstanding Junior)
1984	Sigma Xi Award for Excellence in Research (undergraduate level)
1984	Graduated Summa Cum Laude with Departmental Honors in Chemistry
1986-1991	Predoctoral Fellowship, NIMH Training Grant
1991	Sigma Xi Award for Excellence in Research (graduate level)
1993-1995	Alexander von Humboldt Fellow
1995-1996	Max-Planck Institute Gesellschaft Fellow
1997-2001	Klingenstein Fellow

- 1997-2001 Alfred P. Sloan Research Fellow
- 2001, 2007, 2012 Outstanding Faculty Award/Reappointed with Commendation. Graduate School of Biomedical Sciences, University of Texas Houston-Health Science Center
- 2002 Distinguished Alumnus Award. Department of Neurobiology and Behavior, Stony Brook University.
- 2014 Convocation speaker. Stony Brook University, Department of Chemistry
- 2016 Committee on the Status of Women Distinguished Professional Woman Award nominee; Woman Faculty Forum Excellence Award nominee
- 2016 GSBS Faculty Recognition Award.
- 2017 Reappointment with Commendation. Graduate School of Biomedical Sciences, University of Texas Houston-Health Science Center.

LEADERSHIP

- 2001 - 2003 Executive Committee. Association of Women Faculty. The University of Texas Health Science Center (UTHealth)
- 2004 - 2006 Faculty Senate. McGovern Medical School at The University of Texas Health Science Center (UTHealth)
- 2006 Chair of the Committee on Committees. McGovern Medical School at The University of Texas Health Science Center (UTHealth)
- 2006 - 2016 Executive Committee. Biophysical Society's Subgroup on Exocytosis and Endocytosis (served multiple terms)
- 2008 Chair. Biophysical Society's Subgroup on Exocytosis and Endocytosis
- 2004 - Present Co-Director, M.D./Ph.D. Program
The University of Texas Health Science Center (UTHealth) and The University of Texas M.D. Anderson Cancer Center.
- 2012 - 2016 Executive Committee. Neuroscience Research Center.
McGovern Medical School at The University of Texas Health Science Center (UTHealth)
- 2015 – Present Council Member. Women Faculty Forum. McGovern Medical School at The University of Texas Health Science Center (UTHealth)
- 2015 - 2018 Member of the Biophysical Society Council. (This is the governing body of this international scientific society. Council members are elected by the membership).
- 2018 - Present Co-Chair, Women Faculty Forum

EDITORIAL POSITIONS

- 2003 - 2014 Editorial Board, Journal of Neurophysiology

Dr. Heidelberger regularly reviews manuscripts for Nature, Science, Proceedings of the National Academy of Sciences, Neuron, Nature Neuroscience, Journal of Neuroscience, Biophysical Journal and Visual Neuroscience, PLOS Biology and PLOS One.

SERVICE ON NATIONAL GRANT REVIEW PANELS, STUDY SECTIONS, COMMITTEES

A. Grant Reviews, Study Sections

1997 - 1998	Proposal Reviewer. Pennsylvania Academy of Sciences
1998	Proposal Reviewer (Ad Hoc). NIH Study Section MDCN-4
2000 - 2013	Proposal Reviewer. NSF
2007	Proposal reviewer (Ad Hoc). Wellcome Trust (Great Britain)
2010	Proposal reviewer. NIH Special Emphasis Panel MDCN-B(02)
2011	Proposal reviewer. NIH Special Emphasis Panel MDCN-P(04) and for NIH Special Emphasis Panel MDCN-N(04)
2013	Member. NSF Pre-Proposal Review Panel for the Organization Program in the Neural Systems Cluster
2017, 2018	Temporary member NIH, IRG MDCN, NTRC Study Section

B. Committees and Committee Service

2006 - 2012	Biophysical Society's Committee for Professional Opportunities for Women (CPOW)
2006 - 2012	Organizer, Moderator. Biophysical Society's CPOW Career Roundtable Luncheon, Career Transition Panel and Postdoc to Faculty Luncheon.
2008	Chair. Biophysical Society's Subgroup on Exocytosis and Endocytosis
2011, 2012	Reviewer. Biophysical Society's CPOW Travel Awards
2016	Poster Judge at FASEB meeting entitled, "Retinal Neurobiology and Visual Processing."
2006 - 2016	Executive Committee. Biophysical Society's Subgroup on Exocytosis and Endocytosis (served multiple terms during this interval)
2007 - 2018	Poster Judge. Biophysical Society's Student Research Achievement Award (served five times during this period)
2015 - 2018	Member of Council (elected). Biophysical Society
2018 - 2019	Nominating Committee. Biophysical Society

**SERVICE ON THE UNIVERSITY OF TEXAS - HOUSTON MEDICAL SCHOOL
COMMITTEES**

A. Completed Service

1996 - 1997	Faculty Search Committee. Department of Ophthalmology and Visual Science
2001-2003	Executive Committee. Association of Women Faculty (Health Science Center committee)
1998 - 2000	Faculty Search Committee. Department of Neurobiology and Anatomy
2000 – 2001	Research Activities Subcommittee. Department of Neurobiology and Anatomy Self-Study
2002 - 2004	M.D./Ph.D. Program Committee
2004 - 2009	Director. Neurotrack of the M.D./Ph.D. Program
2004 - 2006	Faculty Senate
2005	Committee on Committees (Medical School)
2006	Chair. Committee on Committees (Medical School)
2007	NIH/NINDS Training Grant, “Training in Neuroplasticity” (T32 NS041226) Steering Committee
2007 – 2008	Neurobiology Advisory Committee to the Search Committee for the Replacement Research Facility
2008 – 2009	Advisory Committee on Resource Development and Utilization at the University of Texas
2012 - 2014	Executive Committee. Houston-area Vision Training Grant 2 T32 EY007024-31
2000 – 2016	Finance Committee. Department of Neurobiology and Anatomy
2011 - 2016	Seminar Committee. Department of Neurobiology and Anatomy
2012 - 2016	Executive Committee. Neuroscience Research Center, University of Texas, Houston Medical School at Houston
2015 - 2016	Faculty Compensation Committee (Medical School)
2016	Dean’s Catalyst Award Committee

B. On-Going Service

2004 - Present	Co-Director. M.D./Ph.D. Program
2015 - Present	Women Faculty Forum Council (founding member).
2016 – Present	Peer Review Committee. Department of Neurobiology and Anatomy
2017 – Present	Faculty Appointments, Promotions and Tenure Committee, Ad hoc

2018 Co-Chair, Women Faculty Forum

SERVICE ON GRADUATE SCHOOL COMMITTEES

A. Standing Committees

2000 – 2003 Curriculum Committee
2002 - 2004 M.D./Ph.D. Program Committee
2004 - 2009 Director, Neurotrack of the M.D./Ph.D Program
2013 - 2015 Outreach Council
2013 - 2016 Academics Standards Committee
2004 – Present Co-Director, M.D./Ph.D. Program

B. Student Advisory/Supervisory Committees

1996 - 2001 Jeannie Chin
1998 - 2001 Matthew Gastinger
1999 - 2000 Eric Robson
1999 - 2002 Jennifer O'Brien
1999 - 2003 Wei Li
2000 - 2005 Sally Kim
2000 - 2006 Evangelos Antzoulatos
2001 - 2002 Cheryl Komanduri
2001 - 2005 Marcy Wainwright
2000 - 2002 Meng Wang, (University of Houston)
2002 – 2003 Fredy Reyes
2002 - 2003 Roger Belizaire
2003 - 2006 Ramal Weragoda
2003 - 2006 Tong-Wey Koh, (Baylor College of Medicine)
2003 - 2008 Diana Lazzell
2003 - 2006 Diasinou Fioravante
2004 - 2008 Feng Pan
2004 - 2010 Debra Smith
2004 - 2006 Jennifer O'Brien
2005 Matthew Murphy
2005 - 2010 Leigh Beth Curtis
2005 - 2008 Cindy Ly, (Baylor College of Medicine)
2006 - 2008 Prasad Phatarpekar
2006 - 2008 Fredy Reyes
2006 - 2012 Proleta Datta (Chair)
2007 - 2009 Joshua Gowin
2007 – 2010 George Zanazzi, (Stony Brook University)
2008 - 2009 Andrew Barrow, (Rice University)
2008 – 2011 Rene Colorado
2008 – 2011 Audrey Nath
2010 – 2013 Anuja Chandrasekar
2010 – 2015 Madeline Burgoyne

2010 – 2015	Chris Conner
2010 – 2017	Curtis Neveu
2010 – 2013	Sarah Baum
2012 – 2017	Brittany Coughlin
2013 – 2014	Denisse Meza
2013	Adam Wolfe
2014 – 2015	Henry Wu
2014 – 2016	Charles Beaman
2014 - 2017	Drew Dolino
2014 – 2017	Albert Hunt
2015 – 2018	Ryan Fortune
2015 – 2018	Matthew Howe
2016 – Present	Jamie Wright
2016 – Present	John O'Malley
2016 – Present	Renan Murillo Costa
2017 - Present	Kristen Clemons
2017 – Present	Ryan Durham
2018 – Present	Kathryn Tombridge

C. Student Examining Committees

1999	Jeannie Chin
1999	Sally Kim
2000	Marcy Wainwright
2000	Meng Wang, University of Houston
2001	Wei Li
2002 - 2003	Diasinou Fioravante
2002 - 2003	Evangelos Antzoulatos
2002 - 2003	Amy Whitetree
2005	Ramal Weragoda
2005	Feng Pan
2006	Brian Kalmbach
2007	Matthew Swilius
2007	Cameron Jeter
2007	Debra Smith (Chair)
2008	Andrew Barrow, Rice University
2009	Chirag Patel
2009	Sarah Alwin
2010	Audrey Nath
2010	Rene Colorado
2011	Anuja Chandrasekar (Chair)
2012	Curtis Neveu
2013	Charles Beaman
2013	Cihan Kadipasaoglu
2014	Drew Dolino
2014	Ryan Fortune
2015	Courtney Olsen
2015	Caitlin Nurik
2016	Charissa Kim
2016	Douglas Litwin

2016	Matthew Howe
2017	Meaghan Roy-O'Reilly
2018	Nicholas Karagas

D. MD/PhD Program Advisees

2004-2005	Youngsin Jessica Jung
2005 – 2012	Audrey Nath
2005 – 2013	Amy Reid
2005 – 2012	Rene Colorado
2006 – 2009	Diana DeRosa
2007 – 2014	Cheng-ju Henry Wu
2007 – 2012	Debra Smith
2010 – 2012	Chirag Patel
2009 – 2017	Charles Beaman
2010 – 2015	Chris Connor
2013 - 2014	Grant Fisher
2015 – 2018	Kathleen Brown
2013 - Present	Jamie Wright
2013 - Present	Natasha Kharas
2015 – Present	Pedram Honarpisheh
2015 – Present	Kiefer Forseth
2016 – Present	Meaghan Roy-O'Reilly
2016 – Present	Edward Koellhoffer

SERVICE TO THE COMMUNITY

1998	Science Fair Judge. St. Thomas High School, Houston Texas
2001	Neuroscience panelist. Forum on science and the quest for humanity. Houston, Texas
2002	Learn Project participant. School of Health Information Sciences, University of Texas, Houston, Texas.
2005 - 2010	Judge, Neuroscience Research Center Annual Poster Competition. Houston, Texas. (served three times during this period)
2010 - 2014	Invited panelist. American Physician Scientists Association's (APSA) APSA South Regional Meeting. Texas. (served two times during this period)
2011-2014	Invited panelist. Cullen Trust for Higher Education MD/PhD Career Development Workshop. Houston, Texas. (served two times during this period)
2015	Leadership Day Participant. Shearn Elementary School, Houston Independent School District, Houston, Texas.
2013 - Present	Guest neuroscience lecturer at Kinkaid High School, Houston Texas (served several times during this period)

TRAINING AND EDUCATION OF UNDERGRADUATES

- 1997, 1999 Career roundtable for undergraduates interested in medicine and biomedical sciences. Cedar Crest College, Allentown, Pennsylvania
- 2004 Summer Research Mentor. David Kuten and Iwan Sufjan. UTHSC-Houston Summer Research Undergraduate Program
- 2007, 2008 Research Mentor for Gabriel Duncan, an undergraduate from Columbia University. (lead author on research article #21)
- 2008, 2009 Summer Research Mentor. Ian Gemp, an undergraduate from Northwestern University. (co-author on research article #21)
- 2009 Summer Research Mentor. Benjamin Leung, a Rice undergraduate and participant in the REU for Theoretical and Computational Neuroscience
- 2010, 2011 Summer Research Mentor. Adolfo Laras, a University of Houston student in the MARC program.
- 2011 Summer Research Mentor. Kaitlyn Bolduc. UTHSC-Houston Summer Research Undergraduate Program
- 2015 Summer Research Mentor. Nhi Dinh, as part of the UTHSC-Houston Summer Research Undergraduate Program, and Saira Alex from the University of Texas, Dallas.
- 2018 Summer Research Mentor. Lexus Tatge, a Hamline University undergraduate.

SPONSORSHIP OF CANDIDATES FOR POSTGRADUATE DEGREE

- 1995 - 1996 Co-supervisor with Dr. Erwin Neher for Mirjam Haller. University of Göttingen and the Max Planck Institute for Biophysical Chemistry. Göttingen, Germany.
Degree: Diplomarbeit (the equivalent of a research Masters Degree).
Project title: "Investigation of the two kinetic components of secretion in chromaffin cells." (research article #7, below).
- 2006 - 2012 Proleta Datta, PhD.
Ph.D. thesis title: "The functional organization of vesicle pools in a retinal bipolar neuron."
- Ms. Datta was a two-time winner of the Sam Taub and Beatrice Burton Endowed Fellowship in Vision Disease and the recipient of the Biophysical Society's Student Research Achievement Award. Her thesis received "Honorable Mention" by the Sigma Xi Research Society, Rice University-Texas Medical Center Chapter.

SPONSORSHIP OF POSTDOCTORAL FELLOWS

1999	Dr. Elizabeth Yamada
2001 – 2005	Dr. Zhen-yu Zhou
2003 - 2007	Dr. Barbara Innocenti
2004 - 2006	Dr. Pratima Thakur
2005 - 2013	Dr. QunFang Wan (In 2011, Dr. Wan was promoted to Research Scientist)
2008 - 2009	Dr. Renata Frazao
2009 – 2010	Dr. Everett Nixon
2011 – 2013	Dr. Jared Gilliam
2011 – 2013	Dr. Alfredo Davalos*
2013 – 2015	Dr. David Moreno*
2014 – 2015	Dr. Hongyan Li
2015 – 2017	Dr. Ramon Elizondo*
2016 – 2018	Dr. Alejandro Rodarte*
2017 – 2019	Dr. Albert Hunt, Jr

* shared mentorship with Dr. Roberto Adachi at MDAnderson Cancer Center

TEACHING RESPONSIBILITIES

A. Past Teaching Responsibilities: Regional and National

1983	Teaching assistant for general chemistry laboratory (undergraduate)
1997	Lecturer for the graduate Advanced Neuroscience courses
1997 - 2011	Lecturer for the graduate course entitled “Vision Science I.” (This course is offered based upon demand)
1998 - 2009	Course Director and Lecturer for the graduate course entitled: “Cellular Neurobiology: Biophysics.” Dr. Heidelberger taught approximately 1/3 of the course. This was a core course for the Neuroscience Graduate Program until 2009, when the program curriculum was revised, and Dr. Heidelberger created a new course.
1999	Laboratory instructor for block three of the Medical School course in “Gross Anatomy.”
1999, 2008	Lecturer for “Topics in Molecular Medicine.”
2000 – 2003	Lecturer for the Medical School course in “Gross Anatomy.”
2000	Cold Spring Harbor Laboratory Course guest lecturer for course entitled, “Physiological Approaches to Ion Channel Biology.”
2001	Co-Director and lecturer for Cold Spring Harbor Laboratory Course entitled, “Physiological Approaches to Ion Channel Biology.”
2003	Lecturer for “Seminars in Regulatory Biology”
2004	Woods Hole Marine Biological Laboratory guest lecturer for summer course entitled, "Neurobiology."

- 2004 – 2006 Lecturer for “Current Topics in Neuroscience.”
- 2009 - 2016 Course Director and Lecturer for “Cellular Neurophysiology”
This course was conceived and developed by Dr. Heidelberg and is a required core course for the Neuroscience Graduate Program. Dr. Heidelberg gives approximately one-third of the lectures.

B. On-going Teaching Responsibilities

- 2009 - Present Faculty facilitator for “Topics in Molecular Medicine.”
This is a required course for students in the MD/PhD Program.
- 2017 – Present Instructor for the required graduate course entitled “Cellular Neurophysiology.” *Dr. Heidelberg teaches approximately one third of the course.*

C. Laboratory Tutorials

- 1999 John Ksar and April Johnson
- 2000 Evangelos Antzoulatos
- 2002 Matthew Murphy
- 2004 Feng Pan
- 2005 Leigh Beth Curtis
- 2006 Proleta Datta
- 2006 Amy Reid (M.D./Ph.D student)
- 2006 Alexander Vila
- 2007 Henry Wu (M.D./Ph.D student)
- 2010 Curtis Neveu
- 2010 Brittany Coughlin
- 2011 Lin Chen
- 2015 Kathleen Brown (M.D./Ph.D. student)
- 2016 Renan Murillo Costa

CURRENT GRANT SUPPORT

- 1998 – 2019 NIH, National Eye Institute R01 EY012128
"Mechanisms of Neurotransmission in Vertebrate Retina."
Role: P.I.
- 2015 - 2019 NIH, National Eye Institute R01 EY12857
“Regulation of Retinal Gap Junctions”
Role: Co-investigator
(P.I. Dr. John O’Brien, UTHealth)
- 2018 - 2023 NIH, National Institute of General Medical Sciences, 1T32GM129462
Medical Scientist Training Program (MSTP)
Role: Co-investigator
(P.I. Dianna Milewicz)

PAST GRANT SUPPORT

- 1997 William M. Keck Foundation “Center for the Neurobiology of Learning and Memory.”
Role: Co-Investigator.
(P.I.: Dr. John H. Byrne, UT-Houston)
- 1997 – 2001 The Esther A. and Joseph Klingenstein Fund. “Regulation and Modulation of Glutamate Exocytosis in Single Synaptic Terminals.”
Role: P.I.
- 1997 – 2001 Research Fellowship from the Alfred P. Sloan Foundation.
Role: P.I.
- 2001 - 2002 NIH/NEI administrative supplement to R29 EY12128
Purpose: to help offset the negative impact of Tropical Storm Allison on the research program supported by EY12128.
Role: P.I.
- 2001 – 2003 NIH R01 EY10542 "Regulation of Photoreceptor Neurotransmission".
Role: Subcontract P.I.; Co-Investigator
(P.I.: Dr. Wallace Thoreson, University of Nebraska)
- 2005 - 2008 NIH EY06472 renewal, "Retinopetal Axons of Mammalian Retina."
Role: Co-investigator
(P.I.: Dr. David W. Marshak, UT-Houston)
Total Direct Costs: \$1,680,000
- 2005 - 2009 NIH R01-EY016452-01, "Role of SV2B in Ribbon Synapses of the Retina"
Role: Co-Investigator
(P.I.: Dr. Roger Janz, UT-Houston)
- 2007 NIH 1 G20 RR024000-01, “Facilities for Research Use of Fish.”
Role: Co-investigator
(P.I.: Dr. John O’Brien)
- 2010 – 2011 NIH, National Institute of Allergy and Infectious Diseases
R56AI085156
“Protective and deleterious roles of regulated exocytosis from mast cells”
Role: Subcontract P.I.; Co-investigator
(P.I.: Dr. Roberto Adachi, MD Anderson)
- 2013 – 2014 UTHealth, Dean’s Interim Bridge Award
Role: PI
- 2011 – 2016 NIH, National Institute of Allergy and Infectious Diseases
5R01-AI093533

“Mechanism and pathophysiological significance of mast cell regulated exocytosis”

Role: Subcontract P.I.; Co-investigator

(P.I.: Dr. Roberto Adachi, MD Anderson Cancer Center, Houston, Texas)

PUBLICATIONS

A. Abstracts (selected)

1. Mun, S.K., Mendonca-Dias, M.H., Lauterbur, P.C., **Heidelberg, R.**, and Chrzan, C.J. Multicomponent water proton T1 analysis in organs and tissues of animals injected with manganese. *Magnetic Resonance in Medicine* 1:86, 1982.
2. Mun, S.K., Mendonca-Dias, M.H., Lauterbur, P.C., **Heidelberg, R.**, and Chrzan, C.J. Multicomponent water proton T1 in tissue. *Medical Physics* 10:544, 1983.
3. Matthews, G., and **Heidelberg, R.** Depolarization-induced calcium influx in retinal bipolar neurons. *Invest. Opth. Vis. Sci.* 31:389, (1990).
4. Matthews, G., and **Heidelberg R.** Calcium current of synaptic terminals of goldfish retinal bipolar cells. *Soc. Neurosci. Abstr.*, 16(2): 1273, 1990.
5. **Heidelberg, R.**, and Matthews, G. Inhibition by GABA of depolarization induced calcium influx in retinal bipolar neurons. *Soc. Neurosci. Abstr.*, 16(1):465, 1990.
6. Matthews, G., Ayoub, G., and **Heidelberg, R.** Inhibition of presynaptic calcium current via GABA_C receptors. *Soc. Neurosci. Abstr.*, 17(1):900, 1991.
7. **Heidelberg, R.**, and Matthews, G. GABA reduces calcium current of retinal bipolar neurons. *Biophys. J.* 59:A83, 1991.
8. **Heidelberg, R.**, and Matthews, G. Potentiation of presynaptic calcium influx by elevation of cAMP. *Soc. Neurosci. Abstr.*, 17(2):1096, 1991.
9. **Heidelberg, R.**, Heinemann, C., Neher, E., and Matthews, G. Calcium dependence of the rate of exocytosis in single synaptic terminals. *Soc. Neurosci. Abst.* 20(1):62, 1994.
10. Haller, M., Chow, R. **Heidelberg, R.**, Klingauf, J., and Neher, E. Comparison of capacitance and amperometric measurement of secretion following flash photolysis of caged-calcium. *Biophys. J.* 70:A86, 1996.
11. **Heidelberg, R.**, and Matthews, G. Caged-calcium, capacitance, and exocytosis. *Biophys. J.* 70:A86, 1996.
12. **Heidelberg, R.**, and Matthews, G. A requirement for MgATP in endocytosis and pool refilling, but not in late steps of exocytosis. *Biophys. J.* 72:A228, 1997.

13. Haller, M., Heinemann, C., Chow, R., **Heidelberger, R.**, and Neher, E. Comparison of secretory responses as measured by membrane capacitance and by amperometry. *Soc. Neurosci. Abstr.*, 23(2):1173, 1997.
14. **Heidelberger, R.** The nucleotide and calcium dependence of endocytosis in synaptic terminals. *Soc. Neurosci. Abstr.*, 25(1):475, 1999.
15. Sherry, D.M., Wang, M, and **Heidelberger R.** ATP-Dependent fast endocytosis in bipolar cell terminals and differential distribution of dynamin in the goldfish retina. *Invest. Ophthalm. and Vis. Sci.* 42(4):S672, 2001.
16. **Heidelberger, R.**, Sterling, P., and Matthews, G. Roles of ATP in depletion and replenishment of the releasable pool of synaptic vesicles. *Soc. Neurosci. Abstr.* 27:273.5, 2001.
17. **Heidelberger R.**, and Sherry, D.M. Differential labeling of endocytotic proteins among synapses in the goldfish and mouse retina. *2002 Annual Meeting Abstract and Program Planner accessed at www.arvo.org. Association for Research in Vision and Ophthalmology. Abstract 3769.*
18. Thoreson W, Rabl K, and **Heidelberger R.** Linearity between Ca^{2+} influx and exocytosis at the rod photoreceptor synapse. FASEB Summer Research Conference entitled, "Retinal Neurobiology and Visual Processing," July 2002.
19. **Heidelberger R**, Wang MM, Sherry DM. Differential labeling for synaptotagmin among conventional and ribbon synapses in the goldfish retina. FASEB Summer Research Conference entitled, "Retinal Neurobiology and Visual Processing," July 2002.
20. **Heidelberger R**, Wang MM, Sherry DM. Differential labeling for synaptotagmin among conventional and ribbon synapses in the goldfish retina. *Soc. Neurosci. Abst.*, 2002.
21. Zhou, Z-Y, Matthews G, and **Heidelberger, R.** Multiple components of membrane retrieval in synaptic terminals revealed by changes in hydrostatic pressure. *Soc. Neurosci. Abst.*, 2002.
22. **Heidelberger R**, Thoreson W, Townes-Anderson E, and Rabl K. Properties of exocytosis at the rod photoreceptor terminal. *2003 Annual Meeting Abstract and Program Planner accessed at www.arvo.org. Association for Research in Vision and Ophthalmology. E-Abstract 1067.*
23. Zhou, Z-Y, Hamaker ME, Janz R, **Heidelberger R.** Calcium and capacitance measurements in rod bipolar cells of wild-type and SV2B knock-out mice. *2004 Annual Meeting Abstract and Program Planner accessed at www.arvo.org. Association for Research in Vision and Ophthalmology. E-Abstract 1337.*
24. Zhou Z-Y, Thakur P., Hamaker ME, Janz R, **Heidelberger R.** SV2 regulates presynaptic calcium in mouse rod bipolar cells. *Soc. Neurosci. Abst.*, 2004.
25. Innocenti B, Thakur P, and **Heidelberger R.** Neurotransmitter release in cone photoreceptors. *Annual Houston Conference on Biomedical Engineering Research, Houston, TX. February 2005*

26. Innocenti, B., and **Heidelberger R.** Neurotransmitter release in cone photoreceptors. *Invest. Ophthalmol. Vis. Sci.* 46: E-Abstract 4533, 2005.
27. Innocenti B., and **Heidelberger R.** Kinetics of exocytosis at the cone photoreceptor synapse. *Jacques Monod Conference "Synaptic communication in neuronal networks: From molecule to neural code,"* 2005.
28. Innocenti, B., and **Heidelberger, R.** Kinetics of exocytosis at the cone photoreceptor synapse. *Biophysical Journal* 90:1111, 2006.
29. **Heidelberger, R.** and Zhou, Z. Capacitance measurements in mouse bipolar neurons, *Biophysical Journal* 90:1802, 2006
30. Innocenti, B. and **Heidelberger R.** Optimizing tonic release: the cone ribbon synapse. FASEB Meeting "Retinal Neurobiology and Visual Processing," 2006.
31. Wan, Q.-F., Vila, A. and **Heidelberger, R.** Synaptic vesicle dynamics in mouse bipolar cells. *Invest. Ophthalmol. Vis. Sci.* 48: E-Abstract 3223. 2007.
32. **Heidelberger, R.**, Wan, Q.-F., Janz, R., and Zhou, Z.-Y. Synaptic vesicle protein 2 (SV2) regulates intracellular calcium and synaptic vesicle dynamics in terminals of mouse rod bipolar cells. *Invest. Ophthalmol. Vis. Sci.* 48: E-Abstract 4906. 2007.
33. Wan, Q.-F, Thakur, R, Zhou Z.-Y, Janz, R, and **Heidelberger R.** SV2B regulates intraterminal Ca^{2+} and synaptic vesicle dynamics in retinal bipolar neurons. *Biophysical Journal* 94: 1290, 2008.
34. **Li, X.**, Mitchell, C. K., **Heidelberger, R.**, and J. O'Brien. The interaction of calmodulin with connexin 35 and its effects on gap junction coupling *Invest. Ophthalmol. Vis. Sci.* 49: E-Abstract 3051. 2008.
35. Janz, R., Curtis, L., Datta, P., Bogdanova, N. and **Heidelberger, R.** Characterization of syntaxin 3b from goldfish retina. *Invest. Ophthalmol. Vis. Sci.* 49: E-Abstract 1290. 2008.
36. Wan, Q.-F, Thakur, R, Zhou Z.-Y, Janz, R, and **Heidelberger R.** SV2B regulates intraterminal Ca^{2+} and synaptic vesicle dynamics in retinal bipolar neurons. FASEB Meeting "Retinal Neurobiology and Visual Processing," July 2008, Snowmass Colorado.
37. Duncan G*, Thoreson WB, Rabl K, and **Heidelberger R.** Quantitative modeling of the synaptic release at the rod photoreceptor synapse. The 6th Annual GCC Conference on Theoretical and Computational Neuroscience. November 2008, Rice University, Houston, Texas.
*Note: G. Duncan was an undergraduate researcher in the Heidelberger lab.
38. Datta P, Curtis LB, Janz R, and **Heidelberger R.** SNARE Complex Assembly in Retinal Bipolar Neuron Exocytosis. *Biophysical Journal* 98(3):678a, 2010.
39. Duncan G*, Rabl K, Gemp I*, Thoreson WB, and **Heidelberger R.** Quantitative Modeling

of Synaptic Release at the Photoreceptor Synapse. *Biophysical Journal* 98(3):681a, 2010.

*Note: Gabe Duncan and Ian Gemp were undergraduate researchers in the Heidelberger laboratory.

40. Frazao R, **Heidelberger R**, Marshak DW. Histamine Effects on Dopaminergic Amacrine Cells. *Invest. Ophthalmol. Vis. Sci.* 49: E-Abstract 1854, 2010.

41. Datta P, Curtis L, Janz R, and **Heidelberger R**. Synaptic Vesicle Pools Associated With SNARE Complexes in Bipolar Cells. *Invest. Ophthalmol. Vis. Sci.* 49: E-Abstract 4124, 2010.

42. Wan, Q.-F and **Heidelberger R**. regulation of presynaptic calcium in a rod bipolar cell. *Invest. Ophthalmol. Vis. Sci.* 52: E-Abstract 1160, 2011.

43. Datta P, Latham-Curtis LB, Janz R, and **Heidelberger R** Functional organization of vesicle pools in a retinal bipolar cell. *Invest. Ophthalmol. Vis. Sci.* 52: E-Abstract 4805, 2011.

44. Davalos AJ, Rodarte EM, Moreira DC, Sanchez E, Tortoriello A, Petrova Y, Manllo J, **Heidelberger R**, and Adachi R. Electrophysiologic assessment of the role of MUNC13-4 in mast cell regulated exocytosis. *Biophysical Society Annual Meeting, Late Poster Presentation* POS-L148, 2012.

45. **Heidelberger R**, and Wan QF. Roles of mitochondria and plasma membrane Ca^{2+} ATPases (PMCAs) in synaptic terminals of mammalian rod bipolar cells. FASEB Science Research Conference "Retinal Neurobiology and Visual Processing." Steamboat Springs, CO, 2012.

45. Wan QF and **Heidelberger R**. Steady-state Ca modulates rod bipolar cell exocytosis. *ARVO Annual Meeting*, Poster 6163 - B0234, 2013.

44. Liu X, **Heidelberger R**, and Janz R. Phosphorylation of syntaxin 3B by CaMKII regulates the formation of t-SNARE complexes. *Society for Neuroscience Annual Meeting*, Poster 424.08. November 2013.

45. **Heidelberger R**, Wan QF, Datta P and Janz R. Ca^{2+} and the modulation of neurotransmitter release in a retinal ribbon synapse. FASEB Science Research Conference "Retinal Neurobiology and Visual Processing." Saxtons River, VT, 2014.

46. Sanchez, E, Moreno DS, Tortoriello, A, Petrova Y, Ramos MA, Rodarte EM, **Heidelberger R**, and Adachi R. Control of mast cell exocytosis by syntaxin 3. MDAnderson Cancer Center Research Retreat, Houston, Texas 2015.

47. Sanchez, E, Moreno DS, Petrova Y, Tortoriello, A, Ramos MA, Cardenas EI, Molina S, Rodarte EM, **Heidelberger R**, and Adachi R. Control of mast cell exocytosis by syntaxin 3. 2015 American Thoracic Society Meeting, *American Journal of Respiratory and Critical Care Medicine* 191:A5672, 2015.

48. Hunt Jr AJ, Wang YZ, Li HY, Liu XQ, Janz R and Heidelberger R. The phosphorylation state of the retinal ribbon synapse t-SNARE syntaxin3B is regulated by neuronal activity. Accepted for presentation at the *Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting*, 2018.

49. Hays C, Grassmeyer J, Janz R, **Heidelberg R** and Thoreson WB. Multiquantal release from rod ribbons is facilitated by syntaxin 3B. FASEB Science Research Conference "Retinal Neurobiology and Visual Processing." Olean, NY, 2018.
50. **Heidelberg R**, Li HY, Hunt Jr AJ, Wang YZ, Wan QF, and Janz R. The retinal ribbon synapse t-SNARE syntaxin3B is phosphorylated in a light- and Ca²⁺-dependent manner. FASEB Science Research Conference "Retinal Neurobiology and Visual Processing." Olean, NY, 2018.
51. Janz R, Punuru S, LiuX, Hemmati R, and **Heidelberg R**. The role of syntaxin 3 in the human retina. Program No. 577.07. 2018 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2018. Online.
52. Kozhemyakin MB and **Heidelberg R**. CaBP5 is essential for normal synaptic transmission from rod bipolar cells to AII amacrine cells. Program No. 395.17. 2018 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2018. Online.

B. Refereed Original Articles in Journals

1. Mann, W.J., Mendonca-Dias, M.H., Lauterbur, P.C., Klimek, R., Bernardo, M.L., Chumas, J., **Heidelberg, R.**, Acuff, V., and Taylor, A. Preliminary *In Vitro* studies of NMR Spin-lattice relaxation times (T1) and 3-D imaging in gynecologic oncology. *Am. J. Obstet. Gynecol.* 148:91-95, 1984.
2. **Heidelberg, R.**, and Matthews, G. Inhibition of calcium influx and calcium current by GABA in single synaptic terminals. *Proc. Natl. Acad. Sci. USA*, 88:7135-7139, 1991.
3. **Heidelberg, R.**, and Matthews, G. Calcium influx and calcium current in single synaptic terminals of goldfish retinal bipolar neurons. *Journal of Physiology* 447:235-256, 1992.
4. Matthews, G., Ayoub, G., and **Heidelberg, R.** Presynaptic Inhibition by GABA is Mediated Via Two Distinct GABA Receptors with Novel Pharmacology. *Journal of Neuroscience* 14(3): 1079-1090, 1994.
5. **Heidelberg, R.**, and Matthews, G. Dopamine Enhances Ca²⁺ Responses in Synaptic Terminals of Retinal Bipolar Neurons. *NeuroReport* 5:729-732, 1994.
6. **Heidelberg, R.**, Heinemann, C., Neher, E., and Matthews, G. Calcium Dependence of the Rate of Exocytosis in a Synaptic Terminal. *Nature* 371:513-515, 1994.
7. Haller, M.*, Heinemann, C., Chow, R.H., **Heidelberg, R.**, and E. Neher. Comparison of secretory responses as measured by membrane capacitance and by amperometry. *Biophysical Journal* 74:2100-2113, 1998. * Dr. Heidelberg co-supervised graduate student M. Haller.
8. **Heidelberg, R.** ATP and the Late Steps in Calcium-Dependent Exocytosis at a Ribbon Synapse. *Journal of General Physiology* 111:225-241, 1998.

9. **Heidelberger, R.** ATP is Required at an Early Step in Compensatory Endocytosis in Synaptic Terminals. *Journal of Neuroscience* 21(17):6367-6474, 2001.
10. **Heidelberger, R.**, Sterling P., and Matthews, G. Roles of ATP in synaptic vesicle pool depletion and replenishment. *Journal of Neurophysiology* 88:97-106, 2002.
11. **Heidelberger, R.**, Zhou, Z-Y., and Matthews, G. Multiple Components Of Membrane Retrieval in Synaptic Terminals Revealed by Changes in Hydrostatic Pressure. *Journal of Neurophysiology*, 88(5):2509-17, 2002.
12. **Heidelberger, R.**, Wang, M.M., and Sherry, D.M. Differential Distribution of Synaptotagmin Immunoreactivity Among Synapses in the Goldfish, Salamander and Mouse Retina. *Visual Neuroscience*, 20(1):37-49, 2003.
13. Thoreson WB, Rabl K, Townes-Anderson E, **Heidelberger R.** A highly Ca²⁺-sensitive pool of vesicles contributes to linearity at the rod photoreceptor ribbon synapse. *Neuron* 42(4):595-605, 2004. (This article was featured in *Nature* 429:620, 2004)
14. Sherry DM, and **Heidelberger R.** Distribution of proteins associated with synaptic vesicle endocytosis in the mouse and goldfish retina. *Journal of Comparative Neurology*, 484(4):440-457, 2005.
15. Burr GS, Mitchell CK, Keflemariam YJ, **Heidelberger R** and O'Brien J. Calcium-dependent binding of calmodulin to neuronal gap junction proteins. *Biochemical and Biophysical Research Communications*, 335:1191-1198, 2005.
16. Zhou ZY, Wan QF, Thakur P and **Heidelberger R.** Capacitance measurements in the mouse rod bipolar cell identify a pool of releasable synaptic vesicles. *Journal of Neurophysiology*, 96(5):2539-2548, 2006.
17. Innocenti, B and **Heidelberger, R.** Mechanisms contributing to tonic release at the cone photoreceptor ribbon synapse. *Journal of Neurophysiology*, 99(1):25-36, 2008.
18. Wan, QF, Vila, A, Zhou ZY, **Heidelberger R.** Synaptic vesicle dynamics in mouse rod bipolar cells. *Visual Neuroscience*, 25(4):523-533, 2008.
19. Melicoff E, Sansores-Garcia L, Gomez A, Moreira DC, Datta P*, Thakur P*, Siddiqi T, Murthy J, Dickey BF, **Heidelberger R.** and Adachi R. Synaptotagmin-2 controls regulated exocytosis but not other secretory responses of mast cells. *Journal of Biological Chemistry*, 284(29):19445-51, 2009. * trainees in the Heidelberger laboratory
20. Curtis L*, Datta P*, Liu X, Bogdanova N, **Heidelberger R** and Janz R. Syntaxin 3B is essential for the exocytosis of synaptic vesicles in ribbon synapses of the retina. *Neuroscience* 166(3):832-41, 2010. *both authors contributed equally
21. Duncan G*, Rabl K, Gemp, I*, **Heidelberger R** and Thoreson WB. Quantitative analysis of synaptic release at the photoreceptor synapse. *Biophysical Journal*, 98(10):2102-2110, 2010. *Note: G Duncan and I Gemp were undergraduate researchers in the Heidelberger laboratory.

22. Wan QF, Zhou ZY, Thakur P, Vila A, Sherry D, Janz R, **Heidelberg R**. SV2B regulates intracellular Ca²⁺ and synaptic vesicle dynamics. *Neuron*, 66:884-895, 2010.
23. Frazão R, McMahon DG, Schunack W, Datta P, **Heidelberg R**, Marshak DW. Histamine effects on dopaminergic cells in mouse retina. *Invest Ophthalmol Vis Sci*. 52:3083-3088, 2011.
24. Wan QF and **Heidelberg R**. Synaptic release at mammalian bipolar cell terminals. *Visual Neuroscience*, 28(1):109-19, 2011.
25. Wan QF, Nixon E, **Heidelberg R**. Regulation of presynaptic calcium in a mammalian synaptic terminal. *Journal of Neurophysiology*, 108(11):3059-3067, 2012.
Note: this article was highlighted as an "Editor's Pick"
26. Liu X, **Heidelberg R**, and Janz R. Phosphorylation of syntaxin 3B by CamKII regulates the formation of a t-SNARE complex. *Molecular and Cellular Neuroscience*, 60:553-562, 2014.
27. Datta P, Gilliam J, Thoreson WB, Janz R, and **Heidelberg R**. Two pools of vesicles associated with synaptic ribbons are molecularly-prepared for release. *Biophysical Journal*, 113(10):2281-2298, 2017.
28. Rodarte EM, Ramos MA, Davalos AJ, Moreira DC, Moreno DS, Cardenas EI, Rodarte AI*, Petrova Y, Molina S, Rendon LE, Sanchez E, Breaux K, Tortoriello A, Tuvim MJ, Dickey BF, Burns AR, **Heidelberg R**, Adachi R. Munc13 proteins control regulated exocytosis in mast cells. *Journal of Biological Chemistry*, 293(1): 345-358, 2018.
29. Gutierrez BA, Chavez MA, Rodarte AI, Ramos MA, Dominguez A, Petrova Y, Davalos AJ, Costa RM, Elizondo R, Tuvim MJ, Dickey BF, Burns AR, **Heidelberg R**, Adachi R. Munc18-2, but not Munc18-1 or Munc18-3, controls compound and single-vesicle regulated exocytosis in mast cells. *Journal of Biological Chemistry* 293(19):7148-7159, 2018.
30. Sanchez E, Gonzalez EA, Moreno DS, Cardenas, RA, Ramos RA, Davalos AJ, Manllo J, Rodarte AI, Petrova Y, Moreira DC, Chavez MA, Tortoriello A, Lara A, Gutierrez BA, Burns AR, **Heidelberg R** and Adachi R. Syntaxin 3, but not syntaxin 4, is required for mast cell regulated exocytosis, where it plays a primary role mediating compound exocytosis. *Journal of Biological Chemistry*, 294:3012-3023, 2019.

C. Invited Articles and Reviews in Journals

1. **Heidelberg, R**. Calcium and the Rate of Neurotransmitter Exocytosis. *J. of NIH Research*, 7(10):51-52, 1995
2. **Heidelberg, R**. Bipolar Cells in the Spotlight: Cause for Excitement. *Neuron* 25:2-4, 2000.
3. **Heidelberg, R**. Electrophysiological Approaches to the Study of Neuronal Exocytosis and Synaptic Vesicle Dynamics. *Reviews of Physiology, Biochemistry and Pharmacology*. 143:1-80, 2001.

4. **Heidelberger, R.** and Matthews, G. Vesicle Priming and Depriming: A SNAP decision. *Neuron* 41:311-313, 2004.
5. **Heidelberger, R.** and von Gersdorff, H. Illuminating the calcium sensor for exocytosis in a flash. *Nature Neuroscience* 8(4):402-404, 2005.
6. **Heidelberger, R.**, Thoreson W.B., and Witkovsky, P. Synaptic Transmission at Retinal Ribbon Synapses. *Progress in Retinal Eye Research* 24(6):682-720, 2005.
7. **Heidelberger, R.**, and Innocenti, B. Neurotransmitter release at a tonic synapse: how ordinary mechanisms accomplish an extraordinary task. *Cellscience Reviews* 3(2):151-183, 2006.
8. **Heidelberger, R.** Mechanisms of tonic, graded release: lessons from the vertebrate photoreceptor. *Journal of Physiology* 585:663-667, 2007.
9. **Heidelberger, R.** Neuroscience: sensors and synchronicity. *Nature* 450(7170):623-625, 2007.
10. Wan QF and **Heidelberger R.** Synaptic release at mammalian bipolar cell terminals. *Visual Neuroscience*, 28(1):109-19, 2011.

D. Chapters

Heidelberger, R., Shouval, H., Zucker R.S., and Byrne JH. Synaptic Plasticity. In: From Molecules to Networks; an introduction to cellular and molecular neuroscience, 3rd Edition. Editors: J.H. Byrne, R. Heidelberger, and M.N. Waxham. Elsevier, copyright 2014.

E. Books

Byrne, J.H., **Heidelberger, R.**, and Waxham, M.N., Editors. From Molecules to Networks; an introduction to cellular and molecular neuroscience, 3rd Edition. Elsevier, copyright 2014.

F. Other Professional Communications

1a. Invited Symposium Presentations at Regional/National Meetings

1. Gordon Conference entitled, "Theoretical Biology and Biomathematics." Tilton, New Hampshire, 1996.
2. Society of General Physiologists Symposium entitled, "Mechanisms of Secretion." Woods Hole, Massachusetts, 1997.
3. UT-Houston Meeting on Retinal Circuitry and Color Vision entitled, "A Festschrift for Harry G. Sperling, Ph.D." Houston, TX, 1997.

4. FASEB meeting entitled, "Retinal Neurobiology and Visual Processing." Saxtons River, Vermont, 1998.
5. Gordon Research Conference entitled, "Synaptic Transmission" Plymouth, New Hampshire, 1998.
6. Gordon Research Conference entitled, "Cell Biology of the Neuron." Plymouth, New Hampshire, 2000.
7. The Third Annual Simpson Neuroscience Symposium, entitled "Information Transmission at the Synapse, Anterograde and Retrograde Mechanisms. University of Illinois at Chicago. Hosted by Dr. Simon Alford. Chicago, Illinois, 2002.
8. Symposium speaker for symposium entitled, "Exocytosis at Ribbon-Type Synapses." Society for Neuroscience Annual Meeting. Orlando, Florida, 2002.
9. Symposium speaker for symposium entitled, "Biophysical Studies of Membrane Trafficking" at the annual meeting of Experimental Biology. Washington, D.C., 2004.
10. Symposium speaker for the 2006 Biophysical Society Exocytosis and Endocytosis Subgroup Meeting. Salt Lake City, Utah, 2006
11. Invited speaker for the 24th Annual Houston Conference on Biomedical Engineering Research. Houston, Texas, 2007.
12. Invited speaker for the FASEB Meeting entitled, "Retinal Neurobiology and Visual Processing." Snowmass, Colorado, July 2008.
13. Speaker for a "Meet the Expert" session at the FASEB Meeting entitled, "Retinal Neurobiology and Visual Processing." Steamboat Springs, Colorado, July 2012.
14. Invited speaker, selected from posters, for the FASEB Meeting entitled, "Retinal Neurobiology and Visual Processing." Saxtons River, VT June 2014.
15. Invited speaker for the symposium entitled, "Giant synapses: Mechanistic Insight Into Synaptic Function." National Institutes of Health, Bethesda, MD, November 2014
16. Invited speaker for the symposium entitled, "Celebration of Gary G. Matthews and his science." Stony Brook University, Stony Brook, NY, June 2017.
17. Invited speaker for the symposium entitled, "Synaptic vesicle fusion and retrieval." 62nd Annual Meeting of the Biophysical Society, San Francisco, CA. February 2018.
18. Invited speaker at symposium in honor of Dr. Robert S. Zucker. Berkeley, CA. March 2019.

1b. Invited Symposium Presentations at International Meetings

1. Invited speaker: European Neuroscience Association (ENA) Meeting. Symposium entitled “Calcium signalling in neurons.” Amsterdam, Holland, 1995.
2. Invited speaker: International workshop entitled, “Heterogeneity of Calcium Microdomains and Cell Activation.” Sponsored by the European Chapter of The Calcium Club. Lake Como, Italy, 1995.
3. Invited speaker: LifeSciences 2007 Meeting. This meeting was a joint venture of the Physiological Society, the British Pharmacological Society, and the Biochemical Society. Glasgow, Scotland, 2007.
4. Invited speaker: Ribbon Synapse Symposium 2009. Max Planck Institute for Experimental Medicine, Göttingen, Germany, 2009.
5. Invited speaker: Ribbon Synapse Symposium 2011. Max Planck Institute for Experimental Medicine, Göttingen, Germany, 2011.
6. Invited speaker: ISER 2012: The International Society for Eye Research biennial meeting. July 2012, Berlin Germany
7. Invited speaker: Presynaptic Mechanisms Minisymposium. Hosted by the Max Planck Institute for Biophysical Chemistry and the Collaborative Research Center on Cellular Mechanisms of Sensory Processing. Göttingen, Germany, 2014.
8. Invited speaker: Membrane Biophysics Symposium. Max Planck Institute for Biophysical Chemistry, Göttingen, Germany, 2014.
9. Invited speaker: Ribbon Synapse Symposium. Max Planck Institute for Experimental Medicine, Göttingen, Germany, September 2017.

1c. Session Chair and Other Invited Participation at National and International Meetings

1. Poster presentation and short talk. CNRS Jacques-Monod Conference: “Mechanisms of Exocytosis.” La Londe-les-Maures, France, 1994.
2. Poster presentation. The Tenth Annual Symposium on Frontiers of Science. Sponsored by the National Academy of Sciences. Irvine, CA, 1998.
3. Participant. Conference of Klingenstein Fellows in the Neurosciences. Sponsored by the Klingenstein Fund. Cold Spring Harbor, NY, 1999.
4. Session Chair. FASEB meeting entitled, “Retinal Neurobiology and Visual Processing.” Copper Mountain, Colorado, 2000. (In addition to chairing the session, I gave an introductory overview of the topics covered)

5. Participant. "The Genetic Basis of Neurological and Behavioral Disorders." Sponsored by the Klingenstein Fund. Cold Spring Harbor, NY, 2001.
6. Session Chair. FASEB meeting entitled, "Retinal Neurobiology and Visual Processing." Saxton's River, Vermont, 2002. (In addition to chairing the session, I presented an introductory overview of the topics covered)
7. Session Moderator. 2003 Association for Research in Vision and Ophthalmology (ARVO) annual meeting.
8. Poster presentation. "Synaptic transmission: From ion channels to neuronal network function." Max Planck Institute for Biophysical Chemistry. Göttingen, Germany. 2004.
9. Session Chair. FASEB meeting entitled, "Retinal Neurobiology and Visual Processing." Saxton's River, Vermont, July 2010.
10. Session Moderator. 2011 Association for Research in Vision and Ophthalmology (ARVO) annual meeting.
11. Session Moderator. 2015 Giant Synapse Symposium "Molecules to Circuits." University of Chicago, Chicago, IL, October 2015.
12. Invited Poster Judge. FASEB meeting entitled, "Retinal Neurobiology and Visual Processing." Keystone, Colorado, July 2016.
13. Co-Chair, Biophysical Society Symposium entitled, "Synaptic Vesicle Fusion and Retrieval" for the 62nd Annual Meeting of the Biophysical Society. San Francisco, CA, February 2018.
14. Invited Poster Judge. FASEB meeting entitled, "Retinal Neurobiology and Visual Processing." Olean, New York, June 2018.

1d. Departmental Seminars (Regional/National/International)

1. Department of Neuroanatomy, MPI for Brain Research, Frankfurt, Germany. Host: Dr. Heinz Wässle, 1992.
2. Department of Membrane Biophysics, MPI for Biophysical Chemistry, Goettingen Germany. Host: Dr. Erwin Neher, 1992.
3. Department of Molecular Cell Research, MPI for Medical Research, Heidelberg, Germany. Host: Dr. Wolfhard Almers, 1994.
4. Department of Neurobiology and Anatomy. University of Texas Medical School, Houston, Texas. Host: Dr. John H. Byrne, 1995.
5. Department of Physiology. University of Colorado School of Medicine. Denver, Colorado. Host: Dr. William J. Betz, 1995.

6. Neuroscience Research Center. University of Alabama, Birmingham, Alabama. Host: Dr. Michael J. Friedlander, 1995.
7. Neurosciences Institute. University of Dundee, Dundee, Scotland. Host: Dr. David G. Nicholls, 1995.
8. Department of Molecular Physiology and Biophysics. Baylor College of Medicine. Houston, TX. Host: Dr. Burton Dickey, 1998.
9. Department of Biology and Biochemistry. University of Houston, Houston, TX. Host: Dr. Laura Frishman, 1998.
10. Department of Physiology and Biophysics. University of Texas Medical Branch at Galveston, Galveston, TX. Host: Dr. Mae Huang, 1998.
11. Department of Biology. Cedar Crest College, Allentown, PA. Host: Dr. Suzanne Giordano, 1999.
12. M.D.-Ph.D. Program. UT-Houston Medical School, Houston TX. Host: M.D./Ph.D. students in the neuroscience track, 1999.
13. Department of Neuroscience. Baylor College of Medicine, Houston TX. Host: graduate students in the Neuroscience Program, 1999.
14. Institute of Molecular Medicine and Genetics. Medical College of Georgia, Augusta GA. Host: Dr. Steven Vogel, 2000.
15. Cold Spring Harbor Laboratory . Cold Spring Harbor, New York. Host: Dr. Angeles Ribera. As part of the summer course, “Physiological Approaches to Ion Channel Biology,” 2000.
16. Department of Neurobiology and Anatomy. University of Texas Medical School at Houston, Houston, TX. As part of the departmental colloquium series, 2001.
17. Cold Spring Harbor Laboratory . Cold Spring Harbor, New York. Host: Dr. Laurance Trussell. As part of the summer course, “Physiological Approaches to Ion Channel Biology,” 2001.
18. Department of Pharmacology. Wayne State University, School of Medicine, Detroit MI. Host: Dr. Arun Wakade. Cancelled due to events of September 11th, 2001.
19. Department of Pharmacological and Pharmaceutical Sciences. University of Houston, Houston, TX. Host: Dr. Kelly Standifer, 2002.
20. Distinguished Alumnus Lecture at the Dept. of Neurobiology and Behavior Graduate Student Symposium at the State University of New York at Stony Brook, Stony Brook, New York, 2002.

21. Dept. of Physiology. Northwestern University Feinberg School of Medicine. Chicago, IL. Host: Dr. Steven DeVries, February 2003.
22. University of Utah, Salt Lake City, Utah. Hosted by: graduate students in the Neuroscience Program, April 2003.
23. UT-Houston Neuroscience Research Program Graduate Student Retreat. The Woodlands, Texas, May 2003.
24. Medical Research Council Laboratory of Molecular Biology, Cambridge, England. Host: Dr. Harvey McMahon, August 2003.
25. Department of Medical Pharmacology and Toxicology. Texas A&M. College Station, Texas. Host: Dr. Ursula Winzer-Serhan, January 2004.
26. Vollum Institute, Oregon Health and Sciences University, Portland, Oregon. Host: Dr. Laurence Trussell, February 2004.
27. Woods Hole Marine Biological Laboratory. Woods Hole, MA. Seminar for the summer course, "Neurobiology." Host: Dr. Ed McClesky, June 2004.
28. Department of Integrative Biology and Pharmacology. University of Texas Medical School at Houston, Houston TX. Host: Dr. Thomas Rich, October 2004.
29. Department of Neurobiology and Anatomy. University of Texas Medical School at Houston, Houston TX. As part of the departmental colloquium series, 2004.
30. Center for Basic Neuroscience. University of Texas Southwestern Medical Center, Dallas TX. Host: Dr. Ege Kavalali. 2006.
31. Department of Neurobiology and Anatomy. University of Texas Medical School at Houston, Houston TX. As part of the departmental colloquium series, 2006.
31. Department of Pharmacological and Physiological Science, St. Louis University School of Medicine, St. Louis, Mo. Host: Dr. Amy Harkins, December 2006.
32. Center for Hearing and Balance, The Johns Hopkins School of Medicine, Baltimore, MD. Host: Dr. Elisabeth Glowatzki, March 2007.
33. The University of Oklahoma College of Pharmacy. Oklahoma City, Oklahoma. Host: Dr. Richard Shough, August 2007.
34. Moran Eye Center. University of Utah, Salt Lake City, Utah. Host: Dr. Robert Marc, November 2007.
35. College of Optometry. University of Houston, Houston, Texas. Host: Dr. Don Fox, April 2009.

36. Department of Ophthalmology. Georg August University Göttingen, Göttingen, Germany. Host: Prof. Hans Hoerauf, July 2009.
37. Max Planck Florida Institute. Jupiter, Florida. Host: Dr. Samuel Young, May 2011.
38. Department of Neurobiology and Anatomy. University of Texas Medical School at Houston, Houston TX. As part of the departmental colloquium series, 2014.
39. Center for Vision Research. SUNY Upstate Medical University, Syracuse, NY. Host: Dr. William J. Brunken. September 2015.
40. Department of Biological Sciences. University of Illinois at Chicago, Chicago, IL. Host: Dr. Robert Paul Malchow. October 2015.

Organizer of National and International Conferences and Symposia

1. Organizer of the Annual Symposium of the Exocytosis and Endocytosis Subgroup of the Biophysical Society. This is a one-day meeting held in advance of the annual Biophysical Society meeting. As a multi-term member of the subgroup executive committee (2006-2009 and 2013-2015) and as subgroup chair (2008), Dr. Heidelberg has participated in the organization of this subgroup meeting 7 times.
2. Conference organizer for “Ribbon Synapse Symposium.” This two-day conference was held at the Max Planck Institute for Experimental Medicine, Göttingen, Germany, September 2017.
3. Symposium organizer for “Synaptic Vesicle Fusion and Retrieval” for the 62nd Annual Meeting of the Biophysical Society. This two-hour symposium was selected for presentation at the 62nd Annual Meeting. San Francisco, CA, February 2018.

Other Academic Publications, Non-refereed

1. Harkins A and **Heidelberg, R.** “Career Luncheon.” Biophysical Society Newsletter March/April issue, page 6. 2007.
2. **Heidelberg, R.** and Harkins A. “Grant Writing Tips.” Biophysical Society Newsletter September/October Issue, pages 20-21. 2007.
3. Harkins A and **Heidelberg, R.** "Benched: Research Science Careers Beyond Academia." Biophysical Society Newsletter, December issue, page 6. 2011.