

PART I: General Information

DATE PREPARED: July, 2014

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Education:

1986 **M.D.** Beijing University, School of Medicine, Beijing, P. R. China

1992 **Ph.D.** Neuroanatomy, Department of Anatomical Sciences and Neurobiology,
University of Louisville, School of Medicine, Louisville, KY

Postdoctoral training:

1992-1995 **Postdoctoral fellow**, Neuroscience, Department of Brain and Cognitive
Sciences, Massachusetts Institute of Technology, Cambridge, MA

1995-1998 **Senior Postdoctoral Associate**, Molecular Neurobiology, Center for Learning
and Memory, Department of Biology, Massachusetts Institute of Technology,
Cambridge, MA

Academic Appointments:

1998-2009 **Assistant Professor**, Dept. of Ophthalmology, Harvard Medical School

2009-present **Associate Professor**, Dept. of Ophthalmology, Harvard Medical School

2009-present **Research Health/Non-clinician Scientist**, Rehabilitation Research and
Development (RR&D) Center of Excellence, Clinical Science Research and
Development/Biological Laboratory Research and Development
(CSR&D/BLR&D) Center of Excellence, VA Boston Healthcare System,
Harvard Medical School

Affiliated Institution Appointment:

1998-2006 **Assistant Scientist**, Schepens Eye Research Institute, Harvard Medical School

2006-present **Associate Scientist**, Schepens Eye Research Institute, Harvard Medical School

2000-present **Faculty affiliate**, Program in Neuroscience, Harvard Medical School

2004-present **Faculty affiliate**, Harvard Stem Cell Institute, Harvard Medical School

2004-present **Faculty affiliate**, Center for Nervous System Repair, Massachusetts General
Hospital, Harvard Medical School

Other Professional Positions and Major Visiting Appointments:

- 2004-present **Scientific Advisory Board**, The Glaucoma Foundation
2006-present **Scientific Advisory Board**, New Jersey Commission on Brain Injury Research

Major Administrative Responsibility:

- 2004-2005 Leader and Organizer, Optic Nerve Club, Schepens Eye Research Institute and Massachusetts Eye and Ear Infirmary, Harvard Medical School
2004-2009 Director, Retinal Laser Injury Research Program, Schepens Eye Research Institute
2009-2010 Director, Traumatic Injury Focus Group, Schepens Eye Research Institute
2005-2010 Organizer, Massachusetts General Hospital-HMS Center for Nervous System Repair Inter-lab meeting, Massachusetts General Hospital, Harvard Medical School
2010-2013 **Chair**, Seminar Committee, Schepens Eye Research Institute
2011-present **Chair**, Women's Eye Health Organization (member since 2009)
2012-present **Director**, Flow Cytometry Core Facility, Schepens Eye Research Institute
2012-present **Director**, International Research and Training Program, Schepens Eye Research Institute/Massachusetts Eye and Ear, Department of Ophthalmology, Harvard Medical School, Boston, MA
2012-present **Chair**, Salary Equity Taskforce Committee (a subcommittee of Joint Committee on the Status of Women), Harvard Medical School
2013-present Member, Molecular Bases of Eye Diseases Selection Committee, Massachusetts Eye and Ear, Department of Ophthalmology, Harvard Medical School

Major Committee Assignments:

Harvard Medical School:

- 2000-2006 Curriculum committee, Training Program in Molecular Bases of Eye Disease, Harvard Medical School, member.
2004-2010 Committee on Microbiological Safety, Harvard Medical School, Member.
2008-present Harvard Stem Cell Institute Seed Grant Committee, Harvard Medical School, member.
2009-present Joint Committee on the Status of Women, Harvard Medical School/Harvard School of Dental Medicine; member.
2012-present: **Chair**, Salary Equity Taskforce Committee
2012-present Harvard Medical School Ophthalmology Nominations and Awards Committee; member
2013-present Harvard Medical School Ophthalmology Residency Managing Committee, member

Affiliated Institute:

- 1999-2006 Member, Training Committee, Schepens Eye Research Institute
2000-2004 Chair, Safety and Use Committee for Gene Expression and Delivery System, Schepens Eye Research Institute
2001-2006 Member, Research Planning and Review Committee, Schepens Eye Research Institute
2005-2013 Member, Technology Transfer Committee, Schepens Eye Research Institute
2007-2011 Member, Animal Care and Use Committee, Schepens Eye Research Institute

- 2010-2013 Chair, Seminar Committee, Schepens Eye Research Institute
2010-present Member, Glaucoma Focus Group, Center of Excellence for Age-related Macular Degeneration, and Ocular Regeneration Research Center, Schepens Eye Research Institute
2012-present Appointment and Promotion Committee, Schepens Eye Research Institute, Harvard Medical School, Member
2013-present Faculty Award Nomination Committee, Massachusetts Eye and Ear, Harvard Medical School, Member

National and International:

- 2007-2010 Member and **Chair** (since 2009), Retinal Cell Biology Program committee, the Association of Vision and Ophthalmology (ARVO)
2008-present Member and **Chair** (since 2011), Executive Committee, Women's Eye Health Organization
2011-present Member, Advisory board and organizing committee, the 5th Military Vision Symposium on Ocular and Vision Injury
2011 Member, US Air Force Directed Energy Strategic Planning Counsel, D.C.
2013-2016 Member, Professional Development and Education Committee, ARVO
2013-present Member, Women in Ophthalmology
2014-2015 Scientific Program Committee for Neuroscience, Stem Cell and Regenerative Medicine, Asian-Pacific Academy of Ophthalmology

Grant Review Activities

- 2002-present Ad hoc reviewer, NIH CSR, Neurogenesis and Cell Fate study section; the Molecular, Developmental, and Cellular Neuroscience Integrated Review Group (Fellowship study section); Support Competitive Research (SCORE) Program study section; Drug Discovery SBRI (ETTN-M) study section.
2005-2008 Ad hoc grant reviewer, The Wellcome Trust, Molecular and Cellular Neuroscience Science program
2005 Ad hoc grant reviewer, the National Glaucoma Foundation
2006-present Ad hoc grant reviewer, Research Grants Council, Hong Kong, China
2006-2008 Ad hoc grant reviewer, Fight for Sight, The British Eye Research Foundation
2007-present Reviewer, Seed Grant Committee, Harvard Stem Cell Institute
2008 Ad hoc grant reviewer, National Science Foundation
2008 Ad hoc grant reviewer, Translational Stem Cell Research Program, Medical Research Council, London
2008 Congressionally Directed Medical Research Programs (DRMRP) Review Panel, Department of Defense, SRA International Inc.
2008 Ad hoc grant reviewer, NIH NCF (Neurogenesis and Cell Fate) Study Section
2010-2012 Reviewer, NIH F02B (Sensory, Motor and Cognitive Neuroscience Fellowships) Study Section
2011 Ad hoc grant reviewer, French Research Agency
2011-2012 **Chair**, Eye and Ear and Head and Neck Study Section, National Nature Science Foundation China
2013 Reviewer, Biomedical and Health Sciences, Qatar national Research Fund, Qatar Foundation

- 2013 ad hoc reviewer, VA RR&D Service Regenerative Medicine Panel, Dept. of Veterans Affairs
- 2014 Ad hoc reviewer, NIH CSR, Support Competitive Research (SCORE) Program study section
- 2014 Ad hoc reviewer, NIH CSR, Drug Discovery SBRI (ETTN-M) study section

Professional Societies:

- 1989-1990 American Society for Anatomical Sciences, Member
- 2002-2003 American Society for Gene Therapy, Member
- 1989-present Society for Neuroscience, Member
- 2000-present Association for Research in Vision and Ophthalmology (ARVO), Member
- 2007-2010 Member, Retinal Cell Biology Program Committee, ARVO
- 2009-2010 **Chair**, Retinal Cell Biology Program Committee, ARVO
- 2013-2016 Member, Professional Development and Education Committee, ARVO
- 2013-present Women in Ophthalmology, Member
- 2014-present **International Coordinator**, Scientific Program Committee for Neuroscience, Stem Cell and Regenerative Medicine, Asian-Pacific Academy of Ophthalmology (APAO)

Editorial Boards:

- 1999-present **Ad hoc reviewer:** *Nature Neuroscience, Stem Cells, Journal of Neuroscience, Journal of Cellular and Molecular Medicine, European Journal of Neuroscience, Brain Research, Investigative Ophthalmology and Visual Science, American Journal of Pathology, Journal of Cell Science, Molecular Vision, Diabetes*
- 2008-present **Editorial Board Member**, *Stem Cells*
- 2011-present **Editorial Board Member**, *Asia-Pacific Journal of Ophthalmology*
- 2011-present **Editorial Board Member**, *Neural Regeneration Research*

Awards and Honors:

- 1997 Travel Award for the Seventh International Neural Regeneration Symposium
- 1999 Junior Faculty Award, Charles H. King Foundation
- 2000 Lilly Center on Aging Fellowship through 50th Anniversary Program for Shore Scholars in Medicine, Harvard Medical School
- 2006 Sybil B. Harrington Scholar, Research to Prevent Blindness, New York, NY
- 2008 Outstanding Scientific Achievement Award, the Vision Awards, RP International
- 2011 Leadership award, Bridge Medical Summit, Boston, MA
- 2012 Outstanding Alumni, Beijing University Medical College 100th Anniversary Award

PART II: Research, Teaching, and Clinical Contributions

A. Narrative report of Research, Teaching, and Clinical Contributions.

I am a neurobiologist with research interest focusing on neurodegeneration and regeneration in the retina and optic nerve. I received my M.D. from Beijing University and my Ph.D. in neurobiology from the University of Louisville, School of Medicine in Louisville, Kentucky. My research focuses on understanding the molecular mechanisms regulating the stem cell niche and axon regeneration in the central nervous system, with a goal of applying such knowledge to the development of novel regenerative approaches for treating neural damage and diseases in the eye and brain. I teach undergraduate students from Harvard College and graduate students, residents, and postdoctoral fellows for the Program of Neuroscience and Department of Ophthalmology of Harvard Medical School (HMS). I serve on national committees and play a significant role in the Association of Research in Vision and Ophthalmology (ARVO).

In the past, using mouse genetic tools my laboratory demonstrated, for the first time, successful full-length regeneration of optic nerve from the eye into the brain in postnatal mice. The finding represents an important breakthrough in the field and provides hopes for reversing blindness and developing new treatments for patients with spinal cord injury or CNS damage. Our recent endeavors in neural stem cell research has led to another exciting discovery showing that neural stem cells with the capacity to give rise to neurons and glia are widely distributed in the adult CNS but are kept quiescent by inhibitory niche signals. We demonstrated further that absence of ephrin-A2 and -A3, the negative regulators of stem cell growth, awakens neural stem cells to generate new neurons, even in non-conventional neurogenic CNS regions in adult mice. These findings identify a novel pathway that regulate neuroregeneration and repair in the adult brain and retina. They suggest that reactivating endogenous regenerative potential of the CNS may be developed as a therapy for reversing blindness or neuron loss of the CNS. These works have led to major publications in *Science*, *Nature Neurosci.*, *Proc. Natl. Acad. Sci.*, *Stem Cells*, *EMBO J*, and *Invest. Ophthalmol. Vis. Sci.* and awards from Prevent Blindness (Sybil B. Harrington Scholar award) and the RP International (Outstanding Scientific Achievement Award).

I play an active role as a member of ARVO, and I was elected as a member of the ARVO Program Committee in 2007 and Chair of that committee for 2009-2010. In 2013, I have been selected to serve on the Professional Development and Education Committee. As an affiliated faculty member of the Harvard Stem Cell Institute and Center for Nervous System Repair at Massachusetts General Hospital, I ran a successful series of monthly inter-lab meeting between years 2010 – 2012 that brought 12 laboratories in different Harvard Affiliated Institutes together to discuss research progress and discoveries. I am also a Scientific Advisory Board member for the New Jersey Commission on Brain Injury Research; I serve on grant review panels for NIH, VA and NSF study sections, and the Department of Defense; I chaired the Ophthalmology Study Section at the National Science Foundation of China as well as served as reviewers for many other international foundations, such as Research Grants Council in Hong Kong and the French Research Agency.

In community service, I am the Chair of Women's Eye Health Committee, an international group founded in the Department of Ophthalmology, HMS. Our mission is to educate patients and society about eye diseases, and to reach out to people in different countries with different educational backgrounds.

B. Report of Current Research Activities other than those mentioned above (bench research, clinical trials, outcome studies, efficacy studies as applicable)

1. Immunoregulation of neurodegeneration in glaucoma and other forms of optic neuropathy
2. Molecular mechanisms controlling optic nerve regeneration
3. Epigenetic regulation of retinal development, degeneration and regeneration
4. Molecular signals governing the regenerative potential of retinal stem cells

C. Report of Teaching

1. Local contributions

a. Medical School/student teaching:

- 1988 Gross Anatomy, University of Louisville, School of Medicine; **Tutor**, 150 medical students/year, 12 h/wk for 9 months.
- 1988 Neuroscience, University of Louisville, School of Medicine; **Lecturer and tutor**, 150 medical students/year, 6 hr/wk for 4 months.
- 1989 Microanatomy and Histology, University of Louisville, School of Medicine; **Tutor**, 150 medical students/year, 3 h/wk for 4 months
- 1998 “Neural Development and Regeneration”, Massachusetts Institute of Technology, **Organizer and Lecturer**, 8 senior undergraduate students, 3 h/wk for 18 weeks.

b. Graduate/Medical courses:

- 1999 Neuro 300 “Development and Regeneration of the CNS”, Harvard Medical School; **Organizer and Lecturer**, 10 graduate students, 3 hr/wk for 12 weeks.
- 2004 “Biological Bases of Ophthalmic Diseases,” Harvard Medical School; **Lecturer**, 40 graduate students, residents and postdoctoral fellows/year, 4 hr/wk for 12 weeks.
- 2005 Grand Round, New York Eye and Ear Infirmary, New York, NY; **Lecturer**, 50 residents, postdoctoral fellows and faculty members, 2 hrs.
- 2006 “Nanocourse: Neural Survival and Regeneration,” Harvard Medical School; **Lecturer**, 10 graduate students and 20 postdoctoral fellows, 6 hr.
- 2012- Neurobiology 309qc. “The molecular pathology and current therapies for retinal diseases”, Harvard Medical School; **Organizer and Lecturer**, 20 graduate students, resident and postdoctoral fellows, 2 hr/wk for 12 weeks.
- 2013 “Molecular basis of eye diseases”, Department of Ophthalmology, Harvard Medical School; **Lecturer**, 20 graduate students, resident and postdoctoral fellows, 2 hr/wk for 12 weeks.

c. Local invited teaching presentations:

- 1999 – Seminar Series, Schepens Eye Research Institute, Harvard Medical School; **Lecturer**, 50 students, postdoctoral fellows and faculty members, 1 hr/year.
- 2001 Neuroscience Seminar Series, Children’s Hospital, Department of Neurology, Harvard Medical School; **Lecturer**, ~25 medical students and 75 postdoctoral fellows, residents and faculty members, 1 hr.
- 2008 Biology Seminar Series, **Lecturer**, Department of Biology, Brandeis University, 40 undergraduate students, 20 postdoctoral fellows and faculty members, 1 hr.

2. Regional, national, or international contributions:

Local and regional contributions:

- 2000 Invited speaker, Seminar Series, Joslin Diabetes Center, Harvard Med. School, Boston, MA
- 2004 Invited speaker, Neuroscience Seminar Series, Massachusetts General Hospital, Boston, MA
- 2007 Invited speaker, Neuroscience Seminar Series, Massachusetts General Hospital, Harvard Medical School, Boston, MA
- 2008 Invited speaker, Neuroscience Seminar, Novartis Pharmaceuticals, Cambridge, MA
- 2009 Invited keynote speaker, Ophthalmology Retreat, Tufts University, Boston, MA
- 2013 Invited speaker, VA Research Seminar Series, West Roxbury, MA

National contributions:

- 1997 Invited speaker, International Business Communications' (IBC's) Conference on Neurodegenerative Disease; Philadelphia, PA
- 1997 Invited speaker, National Public Radio: "Talk to the Nation: Science Friday." Boston, MA
- 1999 Department of Neurobiology and Anatomy seminar series, Hahnemann University, Philadelphia, PA.
- 1999 Invited speaker, Department of Psychiatry and Neuroscience, Wayne State University, Detroit, MI.
- 2001 Neuroscience Seminar Series, Neuroscience Center, University of North Carolina, School of Medicine, Chapel Hill, NC.
- 2002 Invited speaker, Wills Eye Hospital / Jefferson Medical College, Philadelphia, PA
- 2002 Invited speaker, NIH/NIMH, Bethesda, MD
- 2002 Invited speaker, The Glaucoma Foundation's 9th Annual Scientific Think Tank Meeting, Chicago, IL
- 2005 Visiting Scholar/Visiting Professor Lecture Series, New York Eye and Ear Infirmary, New York, NY
- 2005 Invited keynote speaker, Tissue Bioengineering and Regenerative Medicine, Symposium at the 141st Annual Meeting for the American Ophthalmology Society; Sea Island, GA
- 2006 Seminar in Basic Ocular Science, Department of Ophthalmology, Mount Sinai School of Medicine, New York, NY
- 2006 Invited speaker, Special Interest Group, "Cellular Response to Retinal Detachment: Strategies for Improving Visual Outcomes" Association for Research in Vision and Ophthalmology Annual Meeting, Ford Lauderdale, FL
- 2007 Academic Seminar Series, the Vanderbilt Eye Institute, Vanderbilt University Medical Center, Nashville, TN
- 2009 Invited speaker, Sixteenth Annual Optic Nerve Rescue and Restoration Think Tank, The Glaucoma Foundation, New York, NY
- 2009 Invited chair and speaker, Mini-symposium "Optic nerve regeneration – a dream or approaching reality," ARVO, Ford Lauderdale, FL
- 2010 Invited speaker, Academic Seminar Series, Washington University School of Medicine at St. Louis, St. Louis, MO

- 2010 Invited speaker, Military Vision Research Symposium, Boston, MA
- 2011 Invited speaker, USAF DEW (lasers) Strategic Meeting, Crystal City, VA
- 2012 Invited speaker, "Repairing Damaged Eyes through Tissue Bioengineering: The Beginning" platform session, ARVO, Fort Lauderdale, FL
- 2012 Invited speaker, "Innovation in vision restoration lecture series", Louis J. Fox Center for Vision Restoration, University of Pittsburgh School of Medicine, Pittsburgh, PA
- 2013 Invited speaker, Hope for Vision Science Meeting, Maimi, FL
- 2013 Invited speaker, Pharmaceutical Sciences, College of Pharmacy, North Texas Eye Research Institute, University of North Texas Health Science Center, Fort Worth, TX
- 2013 Invited speaker, "Epigenetic regulation of retinal development and disease", Special Interest Group, ARVO, Seattle, WA
- 2013 Invited speaker, The 3rd Annual CME International Conference: Vision Restoration: Regenerative Medicine in Ophthalmology, Pittsburgh, PA
- 2013 Invited speaker, Roche Mini-symposium: Stem Cell and Regenerative Medicine, Boston, MA
- 2014 Invited speaker, Vanderbilt Eye Institute Regenerative Medicine Seminar Series, Vanderbilt University, School of Medicine, Nashville, TN

International contributions:

- 2003 Invited speaker, 4th Asian Pacific Symposium on Neural Regeneration, Osaka, Japan
- 2006 Invited speaker, Peking University First Hospital, Beijing, P. R. China
- 2008 Invited speaker, the 4th Congress of the Asian Neuro-ophthalmology Society, Taipei, Taiwan
- 2008 Invited speaker, Stem cells and retinal repair session, The International Congress for Eye Research, Beijing, P. R. China.
- 2008 Invited keynote speaker, the 20th Anniversary Celebration of Beijing Society for Neurosciences, Beijing, P. R. China
- 2008 Seminar series, Eye & ENT Hospital of Fudan University, Shanghai, P. R. China
- 2009 Invited chair and speaker, Mini-symposium "Optic nerve regeneration – a dream or approaching reality," ARVO annual conference, Ford Lauderdale, FL
- 2009 Invited speaker, Tissue Bioengineering and Nanotechnology Symposium, the 24th Congress of the Asia-Pacific Academy of Ophthalmology, Bali, Indonesia
- 2009 Invited speaker, Hong Kong Nanosymposium, Hong Kong, P. R. China
- 2009 Invited keynote speaker, Forties International Society for Cosmetic Laser Surgeons, Boston, MA
- 2010 Moderator, Symposium "Genetic and Epigenetic Regulation of Eye Development and Disease – the Future of Vision Research", Association of Research in Vision and Ophthalmology Annual Meeting, Ford Lauderdale, FL
- 2010 Invited speaker, US-China Networking Lunch, Association of Research in Vision and Ophthalmology Annual Meeting, Ford Lauderdale, FL
- 2010 Invited speaker, "New frontiers in glaucoma neuroprotection", XIX Biennial Meeting of the International Society for Eye Research, Montreal, Canada

- 2011 Invited keynote speaker, Japanese Society of Ophthalmology Annual Meeting, Japan
- 2011 Invited speaker, Department of Ophthalmology Seminar, Eye and ENT Hospital, Shanghai, China
- 2012 Invited speaker, the 27 Asia-Pacific Academy of Ophthalmology Congress, Busan, Korea
- 2012 Invited speaker, Department of Ophthalmology Seminar, Shanghai 9th People's Hospital, Shanghai, China
- 2012 Invited speaker, "Repairing Damaged Eyes through Tissue Bioengineering: The Beginning" platform session, ARVO annual conference, Fort Lauderdale, FL
- 2012 Invited speaker, "New Frontiers of Eye Disease and Treatment", Beijing, China
- 2012 Invited speaker, "1st Corneal Forum of Harvard-Osaka-Xiamen Universities (CHOX)", Xiamen, China
- 2013 Invited speaker, "Epigenetic regulation of retinal development and disease", Special Interest Group, ARVO annual conference, Seattle, WA
- 2014 Invited chair and speaker, "Hot Topics in Glaucoma – Stem Cell-based Therapy for Glaucoma", The World Ophthalmology Congress (WOC), Tokyo, Japan
- 2014 Invited speaker, "Animal Model of Glaucoma – Defining an autoimmune mechanism of glaucoma in a microbead-induced disease model", International Society of Eye Research (ISER), San Francisco, CA

Patents:

Schneider, G. E., Chen, DF, Tonegawa, S., & Jhaveri, S. Methods of controlling axonal growth. MTE-199CP.

Chen, DF, Chen J, & Chen H. Therapeutics that target autoimmunity for treating glaucoma and optic neuropathy. PCT/US2012/027036

Chen, DF Composition for controlling axonal outgrowth. PCT/US2012/026931

Chen, DF. Alpha-aminoadipate for treatment of vision loss and restoring sight. US provisional application 61/892,822

PART III: Format for Bibliography**Original Articles**

1. **Chen DF**, Jhaveri S & Schneider GE. Intrinsic changes in developmental retinal neurons result in regenerative failure of their axons. *Proc. Natl. Acad. Sci.* 1995; 92, 7287-7291. (see comments on *Science* 1995; 269: 925).
2. Wu M, **Chen DF**, Sasaoka T & Tonegawa S. Neural tube defects and abnormal brain development in F52-deficient mice. *Proc. Natl. Acad. Sci.* 1996; 93: 2110-2115.
3. Tsien JZ., **Chen DF**, Gerber D, Tom C, Mercer EH, Anderson DJ, Mayford M, Kandel ER & Tonegawa S. Subregion- and cell type- restricted gene knockout in mouse brain. *Cell* 1996; 81, 1317-1327.
4. **Chen DF**, Schneider GE, Martinou J-C & Tonegawa S. *Bcl-2* promotes regeneration of severed axons in mammalian CNS. *Nature* 1997; 385, 434-439 (see comments on *Nature* 1997; 385, 391-392).
5. Shen J, Bronson TB, **Chen DF**, Xia W, Selkoe DJ & Tonegawa S. Skeletal and CNS defects in *Presenilin-1* deficient mice. *Cell* 1997; 89, 629-640.
6. Iwasato T, Erzurumlu RS, Huerta PT, **Chen DF**, Sasaoka T, Ulupinar E & Tonegawa S. NMDA receptor-dependent refinement of somatotopic maps. *Neuron* 1997; 19: 1201-1210.
7. Zhou, L., Connors, T., **Chen, DF**, Murray, M., Tessler, A., Kambin, P. & Saavedra, R. A. Red nucleus neurons of *Bcl-2* overexpressing mice are protected from cell death induced by axotomy. *Neuroreport* 1999; 10: 3417-3427.
8. Holm, K. H., Cicchetti, F., Bjorklund, L., Boonman, Z., Tandon, P., Costantini, L. C., Deacon, T. W., Huang, X., **Chen, DF**, Isacson, O. Enhanced axonal growth from fetal human *Bcl-2* transgenic mouse dopamine neurons transplanted to the adult rat striatum. *Neuroscience* 2001; 104, 397-405.
9. Huang X, Wu D-Y, Chen G, Manji H, and **Chen DF**. Support of retinal ganglion cell survival and axon regeneration by lithium via a *Bcl-2*-dependent mechanism. *Invest. Ophthalmol. Vis. Sci.* 2003; 44, 347-354.
10. Lu C, Huang X, Ma HF, Gooley JJ, Aparacio J, Roof DJ, Chen C, **Chen DF**, and Li T. Normal Retinal Development and Retinofugal Projections in Mice Lacking the Retina-Specific Variant of AbLIM. *Neuroscience* 2003; 120, 121-131.
11. Kinouchi R, Takeda M, Yang L, Wilhelmsson U, Pekny M, and **Chen DF**. Robust neural integration and nerve regeneration from retinal transplants in mice deficient in GFAP and vimentin. *Nature Neuroscience* 2003; 6, 863-868.
12. Yang L, Bula D, Arroyo JG, and **Chen DF**. Preventing retinal detachment-associated photoreceptor cell loss in *Bax*-deficient mice. *Invest. Ophthalmol. Vis. Sci.* 2004; 45, 648-654.
13. Cho KS, Yang L, Ma HF, Lu B, Huang X, Pekny M, and **Chen DF**. Re-establishing the regenerative potential of CNS axons in adult mice. *J Cell Sci.* 2005; 118, 863-872.
14. Arroyo JG, Yang L, Bula D, and **Chen DF**. Retinal biopsy techniques for the removal of retinal tissue fragments. *Ophthalmic Surg Lasers Imaging.* 2005; 36, 76-78.
15. Jiao J, Huang X, Feit RA, Snider WD, and **Chen DF**. *Bcl-2* signaling Ca^{2+} to stimulate the intrinsic regenerative capacity of CNS axons. *EMBO J.* 2005; 24, 1068-1078.
16. Arroyo JG, Yang L, Bula D, and **Chen DF**. Photoreceptor apoptosis in human retinal detachment. *Am J Ophthalmology.* 2005; 139, 605-610.

17. Feit-Leichman RA, Kinouchi R, Kern TS, Mohr S, and **Chen DF**. The Mouse Model of Diabetic Retinopathy: Vascular Damage without Müller Glial Cell Activation and Neuronal Loss. *Invest. Ophthalmol. Vis. Sci.* 2005; 46, 4281-4287.
18. Koprivica V, Cho KS, Park JB, Yiu G, Atwal J, Gore B, Kim JA, Lin E, Tesser-Lavigne M, **Chen DF**, and He Z. EGFR Activation Mediates Inhibition of Axon Regeneration by Myelin and Chondroitin Sulfate Proteoglycans. *Science* 2005; 310,106-10.
19. Nakazawa T, Matsubara A, Noda K, Hisatomi T, She H, Skondra D, Miyahara S, Sobrin L, Thomas KL, **Chen DF**, Grosskreutz CL, Hafezi-Moghadam A, Miler JW. (2006) Characterization of cytokine responses to retinal detachment in rats. *Mol Vis.* 12, 867-878.
20. Nakazawa T, Takeda M, Lewis GP, Cho K-S, Jiao J, Wilhelmsson U, Fisher SK, Pekny M, **Chen DF***, Miller JW*. (2007) Attenuated Glial Reactions and Photoreceptor Degeneration after Retinal Detachment in Mice Deficient in Glial Fibrillary Acidic Protein and Vimentin. *Invest. Ophthalmol. Vis. Sci.* 48:2760-2768 (*co-corresponding authors).
21. Takeda M, Takimiya A, Jiao J, Cho KS, Trevion SG, Matsuda T, and **Chen DF**. (2008) Alpha-amino adipate induces Photoreceptor Regeneration and Progenitor Cell Properties of Muller Glia in Adult Mice. *Invest Ophthalmol Vis Sci.* 49(3):1142-1150.
22. Tukker B, Klassen H, Yang L, **Chen DF**, and Young MJ. Elevated MMP Expression in the MRL Mouse Retina Creates a Permissive Environment for Retinal Regeneration. (2008) *Invest Ophthalmol Vis Sci.* 49, 1686-1695.
23. Verardo M, Lewis GP, Takeda M, Linberg KA, Byun J, Luna G, Wilhelmsson U, Pekny M, **Chen DF**, Fisher SK. Abnormal Reactivity of Mueller Cells After Retinal Detachment in Mice Deficient in GFAP and Vimentin. (2008) *Invest Ophthalmol Vis Sci.*; 49(8):3659-3665.
24. Cho K and **Chen DF**. Promoting optic nerve regeneration in adult mice with pharmaceutical approach. (2008) *J Neurochem Res.* 33(10):2126-2133.
25. Jiao J and **Chen DF**. Niche Astrocytes Stimulate Neurogenesis from Dormant Neural Progenitors in Non-conventional Neurogenic Regions of the Adult CNS. (2008) *Stem Cells.* 26(5):1221-1230.
26. Jiao J, Feildheim D, and **Chen DF**. Ephrins as negative regulators of adult neurogenesis in diverse CNS regions. (2008) *Proc. Natl. Acad. Sci.* 105(25):8778-8783.
27. Rao RC, Tchedre KT, Fang Y, Coleman N, Marquez VE, and **Chen DF**. Dynamic Patterns of Histone Lysine Methylation in the Developing Retina. (2010) *Invest Ophthalmol Vis Sci.*; 51(12): 6784-6792.
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30. Wei X, Yu Z, Cho K-S, Chen H, Wang X, and **Chen DF**. Neuroglobin: Endogenous Neuroprotectant for Retinal Ganglion Cells against Glaucomatous Damage. (2011) *American J Path.* 179(6):2788-2797.
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- carbohydrate epitope inhibits axon regeneration after injury. (2012) *Proc. Natl. Acad. Sci.* 109(13):4768-73.
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 33. Yang Q, Cho K-S, Chen H, Yu D, Wang W-H, Luo G, Pang I-H, Guo W, **Chen DF**. Microbead-induced Ocular Hypertensive Mouse Model for Screening and Testing of Aqueous Production Suppressants for Glaucoma. (2012) *Invest Ophthalmol Vis Sci.* 53(7):3733-41.
 34. Watson FL, Mills EA, Wang X, Guo C, **Chen DF**, Marsh-Armstrong N. Cell type-specific translational profiling in the *Xenopus laevis* retina. (2012) *Dev Dyn.* 241(12):1960-72.
 35. Chen H, Cho K-S, Shen C-H, Chen G, Mathew R, McHam ML, Fazelat A, Lashkari K, Stein-Streilein J, Chen J, **Chen DF**. Autoimmune CD4 T cell responses to heat shock protein 27 mediate progressive neurodegeneration in glaucoma. *Nature Medicine under revision.*
 36. Fang Y, Cho K-S, Tchedre K, Lee SW, Guo C, Fried S, Sun X, **Chen DF**. Ephrin-A3 suppresses Wnt signaling to control retinal stem cell potency. (2013) *Stem Cells* 31(2):349-59.
 37. West SK, Bates MN, Lee JS, Schaumberg DA, Lee DJ, Adair-Rohani H, **Chen DF**, Araj H. Is household air pollution a risk factor for eye disease? (2013) *Int J Environ Res Public Health.* 10(11):5378-5398.
 38. Pasovic L, Utheim TP, Lyberg T, Messelt E, Aabel P, **Chen DF**, Chen X, Roger J. Optimization of Storage Temperature for Cultured ARPE-19 Cells. (2013) *J Ophthalmol. In press.*

Reviews, Chapters, and Editorials:

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