

## CURRICULUM VITAE

### NANCY M. BONINI

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#### **Education & Training:**

- 1981 A.B. Biology, Princeton University  
Undergraduate thesis advisor: Dr. William G. Quinn, Department of Biology  
Project: Learning behavior in *Drosophila*.
- 1987 Ph.D. Neuroscience, Neurosciences Training Program, Univ. of Wisconsin-Madison  
Graduate thesis advisor: Dr. David L. Nelson, Department of Biochemistry  
Project: Regulation of ciliary motility by membrane potential in *Paramecium*.
- 1983 Cold Spring Harbor summer course "Molecular and Cellular Neurobiology"  
1988 Cold Spring Harbor summer course "Neurobiology of *Drosophila*"  
1988-1994 Research Fellow in Biology, California Institute of Technology.  
Postdoctoral Advisor: Dr. Seymour Benzer, Division of Biology  
Project: Molecular control of cell survival in the nervous system.
- 2008 Cold Spring Harbor summer course "*C elegans*"

#### **Positions:**

- 1994-2000 Assistant Professor, Department of Biology, University of Pennsylvania  
1995- Member of David Mahoney Institute for Neurological Sciences  
2000-2005 Associate Professor, Department of Biology, University of Pennsylvania  
2000- Department of Neuroscience, University of Pennsylvania Medical School, Secondary Faculty Appointment
- 2000-2013 Investigator of the Howard Hughes Medical Institute  
2005- Professor, Department of Biology, University of Pennsylvania  
2006-2012 Lucille B Williams Term Professor of Biology, University of Pennsylvania  
2009-2014 Member of the Penn Genome Frontiers Institute  
2012- Florence RC Murray Professor of Biology, University of Pennsylvania  
2012- Member of the Institute of Regenerative Medicine, Neuroscience Program  
2013- Cell and Developmental Biology Department, University of Pennsylvania Medical School, Adjunct Faculty Appointment
- 2013- Affiliate Scientist, Lawrence Berkeley National Laboratory, Dept of Genome Dynamics  
2014, 2018 Visiting scientist Feb 2014, Jan 2018, Salk Institute, with Dr. Joe Ecker  
2014- Associate Member, Computational and Integrative Biology Center, Rutgers University Camden, NJ

#### **Honors & Awards:**

- 1983 Grass Foundation Fellowship CSH, for summer course "Molecular & Cellular Neurobiology"
- 1988 Jerzy E. Rose Neuroscience Award for Research in the Neural Sciences, University of Wisconsin-Madison, for PhD thesis work.
- 1988 CSH Laboratory scholarship, for summer course "Neurobiology of *Drosophila*"  
1989 American Cancer Society postdoctoral fellowship  
1991 American Cancer Society postdoctoral fellowship, California Division  
1995 John Merck Scholars Award in the Biology of Developmental Disabilities in Children

1996	March of Dimes, Basil O'Connor Award
1997	Alzheimer's Association Award
1997	David and Lucile Packard Fellowship for Science and Engineering
1998-2000	Huntington's Disease Society of America, Coalition for the Cure Award
1999-2001	Hereditary Disease Foundation, Cure Huntington's Disease Initiative Award
2000	Investigator of the Howard Hughes Medical Institute, national competition
2001, 2002	G. William Fox Corporate Humanitarian Award
2002	Princeton Day School Achievement Award, Princeton, NJ, outstanding achievement
2008	Fidelity Foundation Award
2009	NIH EUREKA (Exceptional, Unconventional Research Enabling Knowledge Acceleration)
2009	Ellison Medical Foundation Senior Scholar in Aging Research
2012	Elected Fellow of the American Association for the Advancement of Science
2012	Elected Member of the National Academy of Sciences
2012	Elected Member of the National Academy of Medicine
2014	Elected Fellow of the American Academy of Arts and Sciences
2015	Glenn Award for Research in the Biological Mechanisms of Aging
2016	NIH Outstanding Investigator R35 Award
2017	Excellence in Teaching Award, Department of Biology, University of Pennsylvania

### **Major Meeting Organizer:**

2000	Co-organizer, 12 <sup>th</sup> National Academy of Sciences Symposium <i>Frontiers of Science</i> , November
2001	Co-organizer of the Neurobiology of Disease Workshop on Triplet Repeat Diseases, Society for Neuroscience, November
2003	Co-organizer Society for Developmental Biology Mid-Atlantic Meeting, May
2006	Co-organizer, Parkinson's Disease: Insights from Genetic and Toxin Models, Banbury Center, Cold Spring Harbor Laboratory, May
2005	Session organizer, Cold Spring Harbor Laboratory Drosophila Neurobiology Meeting, for session entitled "Neuronal Cell Biology and Pathology," October
2006	Organizing Committee, 1 <sup>st</sup> International Parkinson's Disease World Congress Meeting
2008	Co-organizer, 49 <sup>th</sup> Annual <i>Drosophila</i> Research Conference, April
2011	Co-organizer, Cold Spring Harbor Laboratory meeting on "Neurobiology of <i>Drosophila</i> ", October
2016	Co-organizer, 57 <sup>th</sup> Annual <i>Drosophila</i> Research Conference. Launch of a new meeting format, with integrated genetics meetings of multiple systems, including mouse, <i>C elegans</i> and zebrafish.

### **Scientific & Review Boards:**

1995-1997	Council Member Society for Neuroscience, Philadelphia Chapter
2001-2002	Neurobiology of Disease Advisory Committee, Society for Neuroscience
2001-2003	Coalition for the Cure Steering Committee, Huntington's Disease Society of America
2002-2004	Member of the NINDS Scientific Review Council
2004-2008	Medical & Scientific Advisory Committee, Huntington's Disease Society of America
2004-2008	Coalition Review Committee, Huntington's Disease Society of America
2004-2008	Grants and Fellowships Review Committee, Huntington's Disease Society of America
2004-2007	Janelia Farms Group Leader Search Committee, Howard Hughes Medical Institute
2005	Scientific Advisory Board for the Thomas Hartman Foundation Cold Spring Harbor Laboratory Parkinson's Research Partnership
2005	Reviewer, Taube Prize for Huntington's Disease Research, for Institute of Neurodegenerative Diseases of the University of California
2005-2009	Member of Cellular and Molecular Neurodegeneration (CMND) study section, NIH
2007-2009	Genetics Society of America, Board of Directors
2007-2010	Scientific Advisory Board member, Genome Espana, Cetegen, Spain
2010-2013	National Drosophila Board
2010	VIB Review Board, Department of Molecular and Developmental Genetics, Belgium
2012-2016	Scientific Review Board, The Telethon Foundation, Italy
2016	Scientific Reviewer, Howard Hughes Medical Institute International Predoctoral Fellowships.

- 2016 Theme Selection Committee for the 2018 Bower Award and Prize for Achievement in Science, The Franklin Institute, Philadelphia, PA
- 2017 Selection Committee, National Academy of Sciences, Lounsbery Award
- 2011- Scientific Review Board, National Ataxia Foundation
- 2012- Scientific Research Advisory Board, Project A.L.S
- 2012- Scientific Advisory Board for the Bloomington *Drosophila* Stock Center
- 2017- Scientific Advisory Board, Glenn Foundation for Medical Research
- 2017- Image Award Committee, *Drosophila* Research Conference.
- 2016, 2018 Class Membership Committee (CMC), Class II, National Academy of Sciences.

#### **Editorial Positions:**

- 2004-2007 Associate Editor, Journal of Neuroscience
- 2010-2012 Associate Editor, Journal of Clinical Investigation
- 2005-2015 Editorial Board, Annual Reviews of Genetics
- 2015-2016 Guest Editor, Disease models and Mechanisms, with Norbert Perrimon
- 2016-2017 Guest Editor, Current Opinion in Developmental Genetics, with Allen Roses.
- 2016- Editorial Board, Disease Models and Mechanisms
- 2016- Editor, Annual Reviews of Genetics

#### **Federal Advisory and Other National Service:**

- 2002-2004 Member of the NINDS Scientific Review Council
- 2005-2009 Member of CMND study section (formerly NDBG)
- 2009, 2011 Reviewer for NIH Pioneer Awards
- 1994- Ad-hoc reviewer NEI, NINDS, NIA, Pioneer grants, Transformative grants.
- 2015-2016 Ad-hoc member of MNG (Molecular Neurogenetics) study section.
- 2016- Member of MNG (Molecular Neurogenetics) Study Section
- 2018- Chair, Molecular Neurogenetics Study Section (from fall 2018)

#### **Scientific Society Memberships**

- American Association for the Advancement of Science
- American Physiological Society
- American Society for Biochemistry & Molecular Biology
- American Society for Cell Biology
- Genetics Society of America
- International Society for Frontotemporal Dementias, Founding Member
- Society for Neuroscience

#### **Patents and Disclosures:**

- US patent Application No 12/965,618, July 2011, UPenn Docket No W5390US  
Compositions and methods for the diagnosis and treatment of Amyotrophic Lateral Sclerosis
- US patent Application/not being pursued NO. 61/547,594, Oct 2012, UPenn Y6028.  
Trimmer-mediated microRNA processing
- Disclosure Reference Y6128, Dec 2011  
Novel fly wing model for acute neural injury.
- Disclosure Reference X5985, June 2011  
miR-34 modulation with anti-aging and anti-neurodegenerative therapeutic applications
- Disclosure Oct 2016  
Device to produce traumatic brain injury in model organisms

#### **Plenary, Symposia & Distinguished Lectures**

- 1995 Gordon Research Conference on Cell Death, July
- 1996 13th Annual Neuroscience Retreat Symposium, U Penn Medical School, April
- 1997 *Drosophila* Research Conference, Workshop on Aging, Washington, DC
- 1997 Developmental Biology Symposium, Department of Cell and Molecular Biology,

- University of Pennsylvania Medical School, Sept
- 1998 XIII International Congress on Eye Research, Symposium  
"Responsible genes for early development of the eye," Paris, France, July
- 1998 The Royal Society, London, Symposium on Glutamine Repeats & Inherited Neurodegenerative Diseases: Molecular Aspects, October
- 1999 FASEB conference Amyloids and Other Protein Misfolding Processes, Copper Mountain, CO, June
- 1999 American Society for Cell Biology, 39<sup>th</sup> Annual Meeting, Symposium Cellular Degeneration and Disease, Washington DC, December
- 1999 National Academy of Sciences, 11<sup>th</sup> annual symposium on *Frontiers of Science*, Polyglutamine Disease/Cell Death, November
- 1999 International Symposium on Parkinson's Disease Research, Sixth National Parkinson Foundation Meeting, Miami, Fla., Oct
- 1999 German Society of Genetics, Annual Meeting, Symposium, Neuherberg, Oct
- 2000 University of Tokyo, Symposium on Neural Development and Degeneration, Tokyo, Japan, Jan
- 2000 Society for Neuroscience, 30<sup>th</sup> Annual Meeting, Symposium organizer & speaker, "Invertebrate models for human neurodegenerative disease," New Orleans, Nov.
- 2000 NIH Fly workshop program "Drosophila: Direct flight to understanding human disease and behavior," HHMI Conference Center, Chevy Chase, Maryland, Sept
- 2000 NINDS Retreat, Arlington, VA, July
- 2000 World Alzheimer's Congress 2000 event, 7<sup>th</sup> International Conference on Alzheimer's Disease and Related Disorders, Symposium speaker, Washington DC, July
- 2000 *Drosophila* Research Conference, 41<sup>st</sup> Annual Meeting, Plenary speaker, Pittsburgh, PA, March
- 2001 Gordon Research Conference on CAG Triplet Repeat Disorders, July
- 2001 American Academy of Neurology, "Genetics in Neurology", 53<sup>rd</sup> Annual Mtg, May
- 2001 University of Pennsylvania Neuroscience Retreat, April 19, 2001
- 2001 Workshop on "Molecular, Cellular and Clinical Aspects of Neurodegenerative diseases," Zermatt, Switzerland, January
- 2002 Adler Symposium, The Salk Institute, La Jolla, CA, January
- 2002 Sackler Colloquium on Self-perpetuating Structural States in Biology, Disease and Genetics, National Academy of Sciences, Washington, D.C., March
- 2002 Molecular Chaperones and the Heat Shock Response, Cold Spring Harbor Laboratory, May
- 2002 Pharmacia Symposium, Kalamazoo, MI, October
- 2002 Therapeutic Opportunities in Neurodegenerative Diseases, CSH Laboratory, Dec
- 2003 Gordon Conference on Aging, Irvine, California, March
- 2003 "Genetics in Neurology", American Academy of Neurology, 55<sup>th</sup> Annual Mtg, Hawaii, May
- 2003 Queenstown Molecular Biology Meeting, Queenstown, New Zealand, August
- 2003 National Parkinson's Convention, 8<sup>th</sup> International, New Orleans, November
- 2004 Genetics Society of Australia, 51<sup>st</sup> Annual Conference, Melbourne, Australia, July
- 2004 Annual Meeting of the Swedish Society for Biochemistry & Molecular Biology, Linkoping University, Sweden, October
- 2004 Gerontological Society of America, Washington, DC, Nov.
- 2005 Onassis Lectures on "Programmed cell death and cell signaling in development and disease, Heraklion, Crete,
- 2005 Session Chair, Gordon Conference on CAG Triplet Repeat Disorders, Mt. Holyoke, July
- 2005 Scripps/Oxford International Biotechnology Conference Symposium, Palm Beach, Florida, Nov.
- 2006 Speaker & organizer, Parkinson's Disease: Insights from Genetic and Toxin Models, Banbury Center, Cold Spring Harbor Laboratory, May
- 2006 Speaker & session chair, Keystone Symposium on Protein Misfolding Diseases: Mechanisms of Misfolding, Pathology and Therapeutic Strategies, Feb
- 2006 Swiss Society of Neuropathology biannual Meeting, St. Moritz, Switzerland, March
- 2006 Plenary, European Drosophila Neurobiology Meeting, Sept. 2-6, 2006

- 2007 Speaker & session chair, Keystone Symposium on Molecular Mechanisms of Neurodegeneration, Jan
- 2007 Franklin Institute Symposium in honor of Dr. Nancy Wexler, Franklin Life Sciences Award winner, Penn Department of Genetics, April
- 2007 Speaker, EMBO conference, The Biology of Molecular Chaperones, Tomar, Portugal, June
- 2007 Session leader, Gordon Research Conference, Oxford University, August
- 2007 Keynote Lecture, Protein misfolding and Neurological disorders symposium, Dunk Island, Australia, October
- 2008 Speaker, A Memorial to Seymour Benzer, Caltech, March
- 2008 Speaker, 2<sup>nd</sup> International Genome Dynamics & Neuroscience Meeting, Asilomar, June
- 2008 Speaker, RNA and the Etiology of Disease, Rome, Italy, June
- 2008 Speaker, 20<sup>th</sup> International Congress on Genetics, Berlin, Germany, July
- 2008 Zu Rhein Lecturer, Gabriele M. Zu Rhein Lecture, University of Wisconsin-Madison, Oct
- 2009 Speaker, 6<sup>th</sup> International Conference on Unstable Microsatellites and Human disease, Costa Rica, Jan
- 2009 Speaker, Research and Perspectives in Neurosciences, Fondation IPSEN, Paris, April
- 2009 Donders Lecturer, The Donders Institute for Brain, Cognition and Behaviour, The Radboud University Nijmegen Medical Centre, The Netherlands, May
- 2009 59<sup>th</sup> Annual Meeting of the American Human Genetics, Symposium on Model Organisms and Darwin's legacy, October
- 2010 Charlie Rose: The Brain Series with Eric Kandel—The Disordered Brain (guests Nancy Bonini, John Donoghue, John Krakauer, and Mahlon DeLong), July
- 2010 Penn Genomic Frontiers and the Franklin Institute public program "Genomics and Health: Cradle to Grave", March
- 2010 EMBO workshop, Proteolysis and Neurodegeneration, Organized by InProteolys, Spain, May
- 2010 OzBio2010, International Conference on "Molecules of Life: from discovery to Biotechnology" Melbourne, Australia, Oct
- 2010 7<sup>th</sup> International Conference on Frontotemporal Dementias, Oct
- 2011 Model Systems of Aging, Cologne, Germany, March
- 2011 European Society of Human Genetics, Amsterdam, May
- 2011 CAG Triplet Repeat Disorders Gordon Research Conference, June
- 2011 Keynote, Penn Genetics Symposium on Human Disease Models, Nov
- 2012 Keystone Symposium "Protein-RNA Interactions in Biology and Disease, March
- 2012 Keynote, Fourth Ataxia Investigators Meeting "Advancing Toward Therapeutics", San Antonio, Texas, March
- 2012 7<sup>th</sup> International Conference on Unstable Microsatellites and Human Disease, France, June
- 2013 Plenary, 54<sup>th</sup> Annual Drosophila Research Conference, April
- 2013 Colloquium on the Biology of Human Aging, Brown University, May
- 2013 Ellison Meeting on the Biology of Aging, Woods Hole, Aug
- 2013 SFN Satellite meeting RNA metabolism in Neurological Disease, Sept
- 2014 Liu Lecturer, University of Pennsylvania School of Medicine, April
- 2014 Wellcome Trust Meeting, Translational Control of Brain Function in Health and Disease, July
- 2014 Ellison Meeting on the Biology of Aging, Woods Hole, Aug
- 2014 ALS/FTD Satellite Meeting, Society for Neuroscience, Nov
- 2015 Simons Science Series Speaker, Simons Foundation, May
- 2015 NIH workshop Neurocognition & Metabolism, July
- 2015 41<sup>st</sup> Annual Yoga Research Society, Plenary Speaker, Oct, "Insights into Genetic Healing"
- 2015 SFN Satellite meeting RNA metabolism in Neurological Disease, October
- 2016 Templeton Foundation Meeting speaker, "Big Questions in Neuroscience", January, Tucson, AZ
- 2016 Annual Society of Neurology, Plenary Speaker, Denver, CO, March
- 2017 Symposium Speaker, Year of Neuroepigenetics, Perelman School of Medicine, January
- 2017 Everson Lecture in Biochemistry, UW-Wisconsin, March
- 2017 Special Lecture, Plenary for Neurodegenerative Disorders & Injury, Society for Neuroscience, Washington DC, November

- 2018 Key Speaker, 38<sup>th</sup> Blankenese Conference, “Translating translation: From basic mechanisms to molecular medicine,” May
- 2019 Symposium Speaker, National Ataxia Meeting, Washington, DC November 2019
- 2020 Symposium Speaker, Gordon Research Conference, Hong Kong, July 2020  
St. Geme Lectureship, University of Colorado Medical School, Sept 2020

***Invited seminar presentations:***

- 1995 Temple University, Department of Biology, 2/95  
Bryn Mawr College, Department of Biology, 3/95  
University of Pennsylvania, Department of Genetics, 11/95
- 1996 City College of New York, Department of Biology, 2/96  
Rutgers University, Department of Molecular Biology and Biochemistry, 3/96  
University of Pennsylvania, Department of Chemistry, 4/96  
University of Toronto, The Hospital for Sick Children,  
Dept of Molecular & Medical Genetics, 5/96  
University of Pennsylvania, Department of Neuroscience, 9/96
- 1997 Drexel University, Department of Biosciences, 1/97  
National Eye Institute, National Institutes of Health, 2/97  
Princeton University, Department of Molecular Biology, 5/97  
University of Pennsylvania, Department of Psychology, 11/97
- 1998 University of Pittsburgh, Department of Neuroscience, 2/98  
University of Iowa, Department of Biology, 10/98
- 1999 University of Pennsylvania Women’s Club, 10/99  
University of Texas Southwest Medical Center, Dept of Cell Biology & Neuroscience, 11/99
- 2000 University of Pennsylvania, Department of Neuroscience, 2/00  
Temple University, Department of Biology, 2/00  
Skirball Institute of NYU School of Medicine, Developmental Genetics Program, 4/00  
Mass General Hospital, Cancer Center, 4/00  
University of Pennsylvania, Vet school, Department of Biochemistry, 5/00  
Baylor College of Medicine, Memory and Aging Program, 9/00  
University of Pennsylvania, Center for Neurobiology and Behavior Seminar Series, 9/00  
University of Wisconsin, Department of Genetics, 10/00  
Fox Chase Cancer Center, 11/00  
Harvard University School of Medicine, Dept of Cell Biology, 12/00
- 2001 University of Washington, Seattle, WA, Department of Genetics, 2/01  
UCSF, Department of Physiology, Neuroscience Seminar Series, 2/01  
Carnegie Institute of Washington, Baltimore, MD 2/01  
University of Iowa Medical College, Department of Neurology, 2/01  
Emory University School of Medicine, Dept of Cell Biology, Atlanta, Georgia 3/01  
Stowers Institute, Kansas 11/01
- 2002 University of Virginia, Charlottesville, Department of Biology, 2/02  
NIH Neuroscience series, NINDS 3/02  
Grace Kimball Memorial Seminar Speaker, Wilkes University, 4/02  
Merck Pharmaceutical Company, Ft. Collins, PA 6/02  
California Institute of Technology, Department of Biology, Pasadena, CA 9/02  
Yale University, Department of Biochemistry and Biophysics, New Haven, Conn. 11/02
- 2003 University of Pennsylvania, Department of Chemistry, 2/03  
Johns Hopkins University, Department of Biology, Baltimore, MD, 5/03  
MRC Human Genetics Unit, Edinburgh, Scotland, 6/03  
University of Michigan, Ann Arbor, 10/03  
Burnham Institute, La Jolla, CA 12/03
- 2004 Gladstone Institute of Neurological Disease, San Francisco, CA 4/04  
Lawrence Berkeley National Laboratories, Berkeley, CA 4/04  
Franklin Institute, “The human brain—Research & Rewards” prequel webcast seminar

- for Dr. Seymour Benzer, Bower Laureate for Achievement in Science, 4/04  
 Max Delbrück Center for Molecular Medicine, Berlin, Germany 6/04  
 Children's Hospital of Philadelphia, Inaugural speaker for Genes, Genomes & Pediatric  
 Disease Seminar Series, 9/04
- 2005 University of Arizona, Tucson, spring 2005  
 Columbia University, Department of Physiology, spring 2005  
 Washington University at St. Louis, Department of Neuroscience, spring 2005  
 Vollum Institute and Oregon Health Sciences University, Portland, Oregon, Dec 2005
- 2007 Stanford University, Pathology and Neurobiology Departments, Feb 2007
- 2008 University of Arizona, Tucson, Neuroscience Program, Sept 2008  
 University of California, Santa Cruz, Molecular Cell & Developmental Biology, Nov 2008  
 University of Minnesota, Genetics, Cell Biology & Development, Nov 2008
- 2010 Yale University, Cellular Neuroscience, Neurodegeneration & Repair, May 2010  
 Heller Lecture, Interdisciplinary Center for Neural Computation, Hebrew University of  
 Jerusalem, June 2010  
 Roland Lecture, Interdisciplinary Center for Neural Computation, Hebrew University of  
 Jerusalem, June 2010  
 University of Indiana, Bloomington, Department of Biology, Nov 2010
- 2011 Columbia University School of Medicine, Motor Neuron Center Seminar, Feb 2011  
 Institute of Molecular Biology, Academia Sinica, National Academy of Taiwan, Taipei. Sept  
 Shanghai Jiaotong University, Shanghai, Sept 2011  
 Brandeis University, Department of Biochemistry, Nov 2011  
 U Mass-Worcester, Department of Neurology, Nov 2011
- 2012 Friedman Brain Institute, Mt Sinai School of Medicine, Neuroscience series, Sept 2012  
 The Jackson Laboratory, Oct 2012  
 MIT, Picower Brain Institute, Nov 2012
- 2013 University of Colorado, Boulder, Feb 2013  
 University of California, Santa Barbara, Feb 2013  
 University of Pennsylvania Medical School, Department of Genetics, Sept 2013  
 Lawrence Berkeley National Laboratory, Oct 2013  
 Harvard Medical School, Department of Genetics, Nov 2013
- 2014 The Scripps Research Institute, Department of Molecular & Experimental Medicine, Feb 2014  
 Brown University, Department of Neuroscience, Dec 2014
- 2016 Weill Medical College, NYC, NY, April 2016
- 2017 Drexel University, January 2017  
 NIH NIDDK, March 2017  
 Denver Medical School, April 2017  
 Haverford College, Department of Biology, Sept 2017  
 Translational Research Seminar, CHOP, Philadelphia, October 2017
- 2018 Cornell University, March 2018  
 University of Iowa, April 2018  
 Northwestern University, April 2018
- 2019 Calico, San Francisco, CA. April 2019

## RESEARCH SUPPORT:

### Ongoing Research Support

National Institutes of Health/NINDS, R35

12/01/16-11/31/24

Title: Molecular Insight into Neurodegenerative Disease from *Drosophila*

The goals of this project are to employ the power of the model organism *Drosophila* to provide insight into mechanisms of human neurodegenerative disease.

Role: PI

Effort in months: 6 months/year

This grant will be the sole funding source for the lab from the NINDS in line with the guidelines for this grant.

Robert J. Kleberg, Jr. and Helen C. Kleberg Foundation  
(Berger, Shelley, and Bonini, co-Principal Investigators)  
Epigenetic dysfunction in human Alzheimer's disease  
The goals of this project are to study enhancer dysfunction in Alzheimer's disease.  
Role: co-PI  
Effort: 1 month/year

**Pending Research Support:**

NIH Alzheimer's disease supplement  
To National Institutes of Health/NINDS, R35-NS097275 (Bonini, PI) 7/2019-6/2020  
Molecular genetic insight into neurodegenerative disease from *Drosophila*  
The goals of this supplement are to define epitranscriptomic modifications in Alzheimer's disease models.

**Member of Training Grants:**

Neurodegeneration Training Grant (PI: Virginia Lee)  
Molecular Biology Training Grant (PI: Marisa Bartolemei)  
Developmental Biology Training Grant (PIs: Jonathan Raper)  
Systems Integrative Biology training grant (PI: Mike Nusbaum)  
Sleep/Aging Training Grant (PI: Allan Pack)  
Behavioral Biology Training Grant (PI: Ted Abel)  
Genetics Training Grant (PI: Meera Sundaram)

**TRAINEES:**

**Postdoctoral Fellows:**

1995-1999 Dr. John Zimmerman (Research Specialist, Center for Sleep and Respiratory Neurobiology, University of Pennsylvania School of Medicine, Philadelphia, PA; now Lecturer, College of Liberal and Professional Studies, University of Pennsylvania)  
1996-2002 Dr. John Warrick, 1996-2002 (Associate Prof, University of Richmond, Richmond, VA)  
1997-2004 Dr. Beth Gordesky-Gold (Senior Research Specialist, UPenn Medical School)  
1999 Dr. Maria Jose Jorquera (Ayudante de Investigación (Investigation assistant), in the Estacion Experimental de Zonas Aridas (Arid Zones Research Station) Institute of the Spanish National Council for Research, Almeria, Spain)  
1999-2001 Dr. Edwin Chan, 1999-2001 (Associate Prof, The Chinese University of Hong Kong)  
2001-2003 Dr. Sebastien Gaumer, 2001-2003 (Associate Professor, Université Versailles-St Quentin-en-Yvelines, France)  
2001-2008 Dr. Joonil Jung (Research Scientist, Broad Institute, MIT, Cambridge, MA; then Pharma). *Deceased.*  
2002-2004 Dr. Cecilia Gold (childraising)  
2003-2011 Dr. Zhenming Yu (Research Scientist, Children's Hospital of Philadelphia, Philadelphia)  
2005-2008 Dr. Kangning Liu, 2005-2008 (Scientific Leader, Galaxo-Smith Kline, Shanghai, China; now Research Specialist, Children's Hospital of Philadelphia, Philadelphia, PA)  
2005-2011 Dr. Ling-Yang Hao (Research Scientist, Lycera Corp., Plymouth Michigan)  
2006-2014 Dr. Lorena Soares (Project Manager, Regional Fund for Science and Technology, Azores)  
2008-2013 Dr. Hyung-Jun Kim (Research Scientist, Korea Brain Research Institute, Daegu, South Korea)



- 2008-2013 Dr. Yanshan Fang (Principal Investigator, Interdisciplinary Research Center on Biology and Chemistry, Shanghai, China)
- 2009-2017 Dr. Alondra Burguete (NIH NRSA Postdoctoral Fellowship) (Research Associate Scientist, Taub Institute, Columbia University)
- 2010-2018 Dr. Jason Kennerdell (Research Scientist, University of Pittsburgh)
- 2011-2019 Dr. Amit Berson (NIH NRSA Postdoctoral Fellow) (Scientist, Aquinnah, Boston, MA)
- 2008-present Dr. Leeanne McGurk (National Ataxia Foundation Awardee)

***Master's students:***

- 2006-2007 Michael Fitzen (PhD program, Karolinska Institute, Stockholm, Sweden; now postdoctoral scientist, Oxford University)
- 2007-2008 Marijn van Jaarsveld (PhD program, Erasmus Medical Center, Rotterdam, The Netherlands)
- 2008-2010 Lindsay Yurcaba
- 2010-2011 Gert-Jan Hendriks (PhD program, Basel)

***Graduate students:***

- 1999-2004 Julide Bilen, Biology (Postdoctoral Scientist, Janelia Farm, Virginia with Lynn Riddiford; Postdoctoral Scientist, Harvard University; currently Research Scientist, Perlara, South San Francisco, CA)
- 2000-2006 Lingbo Li, Biology (Postdoctoral Scientist, Stanford University, with Dr. Keng Shen; now Medical Writer, Merck, Palo Alto)
- 2000-2003 Pavan Auluck, Neuroscience (MD/PhD program) (Resident, Dept of Pathology, Massachusetts General Hospital, Boston, MA & postdoctoral scientist with Dr. Susan Lindquist, Whitehead Institute, Boston, MA; then BioGen Idec.; now MIMH in charge of mental health brain collection and pathology program)
- 2000-2007 Melanie Watson, Neuroscience (Medical writer, AlphaBioCom, Radnor, PA)
- 2001-2005 Marc Meulener, Cell and Molecular Biology (MD/PhD program) (Resident, Dept of Medicine, Robert Wood Johnson Medical School, New Brunswick, NJ and Resident, Dept of Dermatology, St Luke's-Roosevelt Hospital, New York, NY)
- 2004-2010 Nan Liu, Biology (Postdoctoral scientist, UCSD with Dr. Yishi Jin; now Principal Investigator, Interdisciplinary Research Center on Biology and Chemistry, Shanghai, China).
- 2006-2011 Shin-yi Shieh, Biology (Student Advisor)
- 2008-2013 Masashe Abe, Biology (Research scientist, Astellas Pharma, Tokyo, Japan and Boston, MA).
- 2011-2013 Mimi Nick Cushman, Neuroscience (co-advisor with Dr. Jim Shorter) (Postdoctoral scientist, UCSF, with Dr. William DeGrado and Dr. Stan Pruisner; now education and lab consulting, Charlotte, NC)
- 2012-2017 Inny Lekova, Cell and Molecular Biology (medical writer)
- 2013-2018 Chia-Yu Chung, Cell and Molecular Biology (postdoctoral scientist, Novartis)
- 2013-present Lindsey Goodman, Neuroscience
- 2014-present Janani Saikumar, Biology (HHMI International Predoctoral Fellowship Awardee)
- 2015-present Ananth Srinivasan, Biology
- 2017-present China Byrns, Neuroscience (MD/PhD)
- 2017-present Alexandra Perlegos, Neuroscience

***Undergraduate students:***

- 1994-1997 Stacey Pusin

1995-1996	Sunil Mehta
1995-1996	Grace Kao (Vagelos Scholar)
1995	Kathryn Assad
1998	Eric Yecies
2003-2005	Yuanxiang Liu (Vagelos Scholar)
2003-2005	Rachel Bernstein (Vagelos Scholar)
2007-2009	Liane Toohey (Vagelos Scholar)
2008-2010	Michelle Min (Vagelos Scholar)
2010-2013	Rosaline Zhang (Vagelos Scholar)
2012-2013	Chang Su
2012-2014	Van Tran (Vagelos Scholar)
2013-2015	Jesi Kim
2014-2015	Matthews Lan (Vagelos Scholar)
2014-2016	Henry Zhou (Vagelos Scholar, Provost Award)
2013-2017	Ashley Sartoris (Vagelos Scholar, submatriculation masters) (NYU MD/PhD program)
2016	Sara Zhou
2016-2017	Decklan Cerza
2017 summer	Lizmarie Garcia, University of Puerto Rico
2015-2018	Olivia Rifai (Vagelos Scholar)
2017-2018	James Aykit
2018	Alexander Chen
2017-present	Luis Martinez-Ramirez
2018-present	Sofiya Patra
2018-present	Johanna Inamagua
2018-present	Joshua Kim
2018-present	Zhecheng Jin
2018-present	Jinghan Xu

### ***Visiting Scientists:***

2000	Dr. Michael Atchison, Associate Professor, Head, Laboratories of Biochemistry, Dept of Animal Biology, School of Veterinary Medicine, University of Pennsylvania
2011-2012	Dr. Robert Fairman, Professor of Biology, Haverford University
2016-17	Dr. Oksana Shcherbakova, Biology Faculty, Ivan Franco National University of Lviv, Ukraine (Fulbright Grantee)
2019-	

### ***EDUCATIONAL MISSION TO THE UNIVERSITY:***

1994-1997 (fall)	Biology 101: Introductory Biology, Course Co-Director (~200 students)
1996-2000 (sp)	Biology 540: Genetic systems (~30 students), Course Developer & Director
2000	Co-Developer Biology special concentration “neurobiology”
1994-present	Biol399/499 Undergraduate Independent Study (5-10 students sponsored/semester)
1994-present	Biology Undergraduate Advisor
1999-present (fall)	Biology 221: Molecular Biology and Genetics (~100 students), Course Co-Director, 1999-2015 spring, 2015 fall – present.
2004-present (fall)	Biology 527: Advanced Molecular Biology and Genetics (~5 students), Bio 221 lectures, plus additional reading & writing assignments
2014-present (fall)	Biology 466: Molecular Genetics of Neurological Disease (~20 students), Course Developer & Director
2014-present	Developer & Director of Biology special concentration “Mechanisms of Disease”

*Lectures in various courses, including the following:*

Biol 122: Living systems (~150 students)  
 Biol 254: Developmental Biology (~30 students)  
 Biol 421: Molecular Genetics (~ 30 students)  
 Biol 488/Neurosci 578: Advanced Topics in Behavioral Genetics (~20 students)  
 Biol 526: Principles of Genetics (~30 students)  
 Biol 540: Genetic Systems (~35 students)  
 Biol 999 Independent Study: (1 student at a time, with selected topics and papers)  
 CAMB 511: Principles of Development (~30 students)  
 CAMB 542: Topics in Molecular Medicine (~30 students)  
 CAMB 615: Protein Conformation Diseases (~15 students)  
 Cell 620: Developmental Biology (~15 students)  
 Coll 100: "How do you know?" (~50 students)  
 HSOC 241/STSC 241- Stem cells, science and society (~ 30 students)  
 Molecular Biology 605: Post-transcriptional Regulation in Development (~30 students)  
 Neuroscience 597: Developmental Neurobiology (~30 students)  
 Neuroscience Core I, INSC 571: Cell and Molecular Neuroscience (~30 students)  
 Neuroscience INSC 600-601: Neurobiology of Disease (~ 10 students)  
 Neuroscience Seminar Course (~15 students)  
 INSC Basic Skills/Journal Club Course (~30 students)

#### **SERVICE TO THE DEPARTMENT:**

Awards Committee, Department of Biology, 2019-  
 Mentoring Committee, Dr. Ishmail Abdus-Saboor, Department of Biology, 2018-  
 Executive Committee, for the Chair, Department of Biology, 2018-  
 Graduate Admissions Committee, Department of Biology, 2018-  
 Mentoring Committee, Dr. Nick Betley, Department of Biology, 2016-  
 Sponsor for Adjunct Professorships, since 2000  
 Departmental Undergraduate Advisor & Neuroscience & Mechanisms of Disease concentration, 2000-  
 Biology Graduate Group, since 1994  
 Member of many preliminary exam and thesis committees, since 1994

Promotion Committee for Dr. Nick Betley, Department of Biology, 2018  
 Promotion Committee for Dr. Marc Schmidt, Department of Biology, 2017  
 Mentoring Committee, Dr. Tim Linksvayer, Department of Biology, 2012-2017  
 Mentoring Committee for the Graduate Student 2014 class, 2014-2016  
 Mentoring Committee, Dr. Brian Gregory, Department of Biology, 2010-2016  
 Member of the Search Committee in Neurobiology, 2014-2015  
 Development and Launch of the Mechanisms of Disease concentration, 2014-2015  
 Promotions committee guidelines, Biology, 2014  
 Promotion committee, Dr. Brian Gregory, Department of Biology, 2012  
 Promotion to tenure committee, Dr. Deijen Ren, Department of Biology, 2009  
 Biology Undergraduate Honors Committee, Dept Biology, 2009  
 Committee to select new Biology Department Chair, spring 2008  
 Biology graduate group, Biology 700 Revision Committee, 2008  
 Search Committee, Neurological basis of behavior, Department of Biology, 2006-2008  
 Promotion to full professor committee for Dr. Ted Abel, Department of Biology, 2006-2007  
 Chair, Promotion tenure committee for Dr. Marc Schmidt, Department of Biology, 2005-2006  
 Promotion tenure committee for Dr. Doris Wagner, Department of Biology, 2005-2007  
 Graduate Admissions Committee, Chair, Graduate Group in Biology, 1999-2006  
 Biology newsletter Advisory Committee, 2001-2004  
 Promotion tenure committee for Dr. Ted Abel, Department of Biology, 2003-2004.

Undergraduate Advising Committee, 2000-2003  
 Established undergraduate Concentration in Neuroscience, 2000  
 Cell Biology and Genomics Search, 1999-2000  
 Penn Advisory Board Presentation, 10/99  
 Neurobiology Search, 1998-1999  
 Biology Department Seminar Committee, chairman, 1997-1999.  
 Board of Overseers presentation, 11/96  
 Penn Alumni Club of New York speaker for "Biotech Horizons", 9/96  
 Neurobiology Search, 1995-1996  
 Biology Undergraduate Student Night speaker, 2/96  
 Advisor, Graduate Group in Biology, 1994-1996  
 Admissions, Graduate Group in Biology, 1994-1996  
 Physiology Search, 1995-1996

### **SERVICE TO THE UNIVERSITY:**

Mentoring Committee, Dr. Lan Lin, Department of Pathology and Laboratory Medicine, CHOP, 2019-  
 Year of Neurodegeneration Organizing Committee, Dept of Neuroscience, Penn Medicine, 2018-2019  
 Chemistry Catastrophe Committee, Dean of Arts and Sciences, Fall 2018  
 Selection Committee for Packard Fellows, VPR, 2018, 2019  
 Member, MindCore Vision Committee, School of Arts and Sciences 2017-  
 Mentoring Committee, Dr. Yuanquan Song, Department of Pathology and Laboratory Medicine,  
 CHOP, 2017-  
 Institute of Regenerative Medicine, Neuroscience member, 2012-  
 Institute on Aging, Advisory Committee, U Penn Medical School, 2003-  
 Ad-hoc member of various Promotion-to-Tenure Committees, U Penn Medical School, 2001-  
 Member of many preliminary exam and thesis committees for students in various departments of the  
 Medical School, 1994-

Personnel Committee, Natural Sciences Subpanel, 2014-2017  
 Tenure Task Force Committee, School of Arts and Sciences, for Dean of Arts & Sciences, 2015-2016  
 Selection Committee for HHMI international predoctoral students, for Vice Provost for Research, 2015  
 Scientific Reviewer for the Center for the Penn Medicine Neuroscience Center, 2014, 2015  
 Selection committee for Blavatnick Awards, for the VPR, Nov 2014  
 Center for Technology Transfer, Scientific Oversight Committee, 2012-2014  
 Provost Consultation Committee for selection of new Vice Provost for Research, 2013  
 Member of Search Committee, BGS (Biological Graduate Studies graduate group) director and  
 Associate Dean of Graduate Education search, Penn Medical School, spring 2013  
 Institute of Regenerative Medicine, Review Committee, 2012-2013  
 Penn Medicine Neuroscience Center Pilot Grant Review Committee, 2012  
 Search Committee, Biomedical Graduate Studies (BGS) Director and Associate Dean of Graduate  
 Education, School of Medicine, 2013  
 Faculty Senate Nominating Committee, School of Arts and Sciences, 2012-2013  
 Professors of Integrative Medicine Advisory Committee, 2009-2012  
 Planning and Priorities Committee, School of Arts and Sciences, 2009-2012  
 Mentoring Committee, Dr. Aaron Gitler, Cell and Developmental Biology, 2007-2011  
 Mentoring Committee, Dr. Sara Cherry, Dept of Microbiology, 2006-2012  
 Penn Genomic Frontiers Institute, Scientific Advisory Committee, 2007-2011  
 Department of Neuroscience Search Committee, 2008-2009  
 PGFI-SOM search committee, Chair, 2008-2009  
 Tenure advising Committee, Dr. Laurie Flanagan-Cato, Dept of Psychology, 2008  
 CAMB Review Committee, 2008  
 Internal Scientific Advisory Group for Aging Program Project Grant, PI: Allan Pack, 2006  
 School of Arts and Sciences, Committee on Undergraduate Education, 2004-2006

Search Committee for Chair of Genetics, U Penn Medical School, 2004-2006  
 Penn Genomics Institute, Seed Grant Review Committee, 2004-2006  
 Penn Reading Project, 2004, 2005, 2006  
 Cell Center Advisory Committee, 2000-2008  
 Stellar Task Force, Department of Neuroscience, U Penn Medical School, 2004-2006  
 Seminar Committee, Department of Neuroscience, 2004  
 Speaker for Student Committee on Undergraduate Education, January 2004  
 Search Committee, Vice Provost for Research, 2003  
 Search Committee, Dept of Pharmacology and Institute on Aging, 2003  
 University Council Committee on Research, 2001-2002  
 INSC Advisory Committee, 2001-2003  
 INSC Preliminary Examination Topic Committee, 2001-2002  
 Aging subgroup, University of Penn Medical School strategic planning, 2002  
 Pharmacology Graduate Group Review Committee, Academic year 2001-2002  
 Chemistry Search Committee, Academic year 2001-2002  
 MD/PhD Admissions Committee for Neuroscience, 2000-2002  
 Speaker for Academic Job Market: Penn Career Services, 9/25/01  
 Conflict of Interest Standing Committee, 2001-2002  
 Search Committee, Department of Animal Biology, Vet School, 2000-2001  
 Penn on the Road Presentation, Boston, MA, 11/9/99  
 University of Pennsylvania representative for the Science Coalition "Science: Invest  
 in the Future" event, Washington, DC, 9/22/99  
 Speaker for University of Pennsylvania Women's Club, 10/26/99  
 Thesis Template Committee, Department of Neuroscience, 2000  
 Academic Review Committee, Department of Neuroscience, 1999-2003  
 Retreat Committee, Department of Neuroscience, academic year 1999-2001  
 Steering Committee, Program in Developmental Biology, CAMB, 1999-2000  
 Speaker for Career Services "Faculty conversations on the Academic Job Search and  
 Academic Life: Preparing for Campus Interviews for Academic Jobs," Jan 19, 1999  
 Speaker for Career Services "Academic Career Conference: Going on the Job Market", Sept. 22,  
 1998  
 Committee on Undergraduate Research Proposals, 1998  
 Speaker for "Biotech Horizons", New York Penn Club, 9/97  
 Graduate Student Rotation Talk Committee, Department of Neuroscience, 1997-2002  
 Freshman Advisor, 1997-2002  
 Seminar Selection Committee, Department of Neuroscience, 1997-1998  
 Graduate Group Representative to Selection Committee for Department of Neuroscience,  
 Cell & Molecular Biology Training Grant, 1997  
 Cell and Developmental Biology Retreat committee, 1996

#### **Graduate Group Memberships:**

1994-present Biology Graduate Group  
 1996-2003 Cell and Molecular Biology Graduate Group  
 1996-2005 Vision Center member and Faculty Trainer of Vision Training Grant,  
 1996-present Neuroscience Graduate Group, University of Pennsylvania  
 2012-present Cell and Molecular Biology Graduate Group

**PUBLICATIONS (\*non-peer-reviewed):****As an undergraduate:**

1. Tempel BL, Bonini NM, Dawson DR, and Quinn WG (1983) Reward learning in normal and mutant *Drosophila*. Proc. Natl. Acad. Sci. USA 80:1482-1486.

**As a graduate student:**

2. Bonini NM, Gustin MC and Nelson DL (1986) Regulation of ciliary motility by membrane potential in *Paramecium*: A role for cyclic AMP. Cell Motil. Cytoskeleton 6:256-272.
3. Bonini NM and Nelson DL (1988) Differential regulation of *Paramecium* ciliary motility by cAMP and cGMP. J. Cell Biol. 106:1615-1623.
4. Bonini NM and Nelson DL (1990) Phosphoproteins associated with cyclic nucleotide stimulation of ciliary motility in *Paramecium*. J Cell Science 95:219-230.
5. \*Bonini NM, Evans TC, Miglietta LAP, and Nelson DL (1991) The regulation of ciliary motility in *Paramecium* by Ca<sup>2+</sup> and cyclic nucleotides. Advances in Second Messenger and Phosphoprotein Research. Vol. 23: 227-272.
6. Bonini NM, Leiserson WM, and Benzer S (1993) The *eyes absent* gene: genetic control of cell survival and differentiation in the developing *Drosophila* eye. Cell 72:379-395.
7. Leiserson WM, Bonini NM and Benzer S (1994) Transvection at the *eyes absent* gene of *Drosophila*. Genetics 138:1171-1179.

**As a Principal Investigator:**

8. \*Bonini NM and Choi K-W (1995) Early decisions in *Drosophila* eye morphogenesis. Current Opinion in Genetics and Development 5: 507-515.
9. \*Bonini NM (1997) Surviving *Drosophila* eye development. Cell Death & Differentiation 4:4-11.
10. Zimmerman J, Bui Q, Steingrimmson E, Nagle DL, Fu W, Genin A, Spinner N, Copeland NG, Jenkins NA, Bucan M, and Bonini NM. (1997) Cloning and characterization of two vertebrate homologs of the *Drosophila eyes absent* gene. Genome Research 7:128-141.
11. Boyle M, Bonini N and DiNardo S. (1997) Expression and function of *cliff* in the development of somatic gonadal precursors within the *Drosophila* mesoderm. Development 124:971-982.
12. Bonini NM, Bui QT, Gray-Board GL and Warrick JM (1997) The *Drosophila eyes absent* gene directs ectopic eye formation in a pathway conserved between flies and vertebrates. Development 124: 4819-4826.
13. Bonini NM, Leiserson WM and Benzer S. (1998) Expression and multiple roles of the *eyes absent* gene in *Drosophila*. Developmental Biology, 129: 42-57.
14. Leiserson WM, Benzer S and Bonini NM. (1998) Dual functions of the *Drosophila eyes absent* gene in the eye and embryo. Mechanisms of Development 73:193-202.
15. Warrick JM, Paulson H, Gray-Board GL, Bui QT, Fischbeck K, Pittman RN, and Bonini NM. (1998) Expanded polyglutamine protein forms nuclear inclusions and causes neural degeneration in *Drosophila*. Cell 93: 939-949.
16. Perez MK, Paulson HL, Pendse SJ, Saionz SJ, Bonini NM and Pittman RN (1998) Recruitment and the role of nuclear localization in polyglutamine-mediated aggregation. J Cell Biol 143: 1457-1470.
17. \*Bonini NM (1999) A genetic model for human polyglutamine-repeat disease in *Drosophila melanogaster*. Phil. Trans. R. Soc. Lond. B 354: 1057-1060.
18. Bonini NM and Fortini, ME (1999) Survival during *Drosophila* eye development: Integrating cell death with cell differentiation during formation of a neural structure. BioEssays 21: 991-1003.

19. Zimmerman J, Bui Q, Liu H, and Bonini NM (1999) Molecular genetic analysis of *Drosophila* eye *absent* mutants reveals features critical for eye cell expression. *Genetics*, 154: 237-246.
20. Chai Y, Koppenhafer SL, Bonini NM and Paulson HL (1999) Analysis of the role of heat shock protein (Hsp) molecular chaperones in polyglutamine disease. *J Neuroscience*, 19: 10338-10347.
21. Warrick J, Chan HYE, Gray-Board GL, Paulson H and Bonini NM (1999) Suppression of polyglutamine disease in *Drosophila* by the molecular chaperone hsp70. *Nature Genetics*, 23: 425-428.
22. Fortini ME and Bonini NM (2000) Modeling human neurodegenerative diseases in *Drosophila*: on a wing and a prayer. *Trends in Genetics* 16: 161-167.
23. \*Bonini NM (2000) *Drosophila* as a genetic tool to define vertebrate pathway players. *Methods Mol Biol.* 136:7-14.
24. \*Bonini NM (2000) Methods to detect patterns of cell death in *Drosophila*. *Methods Mol Biol.* 136:115-21.
25. Bui QT, Zimmerman JE, Liu H, Gray-Board GL and Bonini NM. (2000) Functional analysis of an eye enhancer of the *Drosophila* eyes *absent* gene: Differential regulation by eye specification genes. *Dev Biol* 221: 355-364.
26. Bui QT, Zimmerman JE, Liu H and Bonini NM. (2000) *Drosophila* eyes *absent* mutants reveal functional subdomains within the conserved Eya domain. *Genetics* 155: 709-720.
27. \*Paulson H and Bonini NM. (2000) Spinocerebellar ataxia type 3. *Neuroscience News* 3:87-93.
28. Chan HYE and Bonini NM. (2000) Neuropathological Cell death in *Drosophila*. *Cell Death Differ.* 7: 1075-1080.
29. Chan HYE, Warrick JM, Gray-Board GL, Paulson HL and Bonini NM (2000) Mechanisms of chaperone suppression of polyglutamine disease: selectivity, synergy, and modulation of protein solubility in *Drosophila*. *Hum Mol Genetics* 9:2811-2820.
30. \*Paulson HL, Bonini NM and Roth KA (2000) Polyglutamine disease and neuronal cell death. *Proc. Natl. Acad. Sci. USA* 97: 12957-12958.
31. \*Bonini NM. (2001) *Drosophila* as a genetic approach to human neurodegenerative disease. *Parkinsonism Relat. Disord.* 7:171-175
32. \*Bonini NM (2001) A genetic model for human polyglutamine-repeat disease in *Drosophila melanogaster*. In *Glutamine repeats and neurodegenerative diseases: molecular aspects*, edited by Prof. P.S. Harper and Dr. M. Perutz, Oxford University Press.
33. \*Bonini, NM (2001) Stores to die for. *Developmental Cell* 1:447-448.
34. \*Bonini NM and Fortini ME (2002) "Applications: Models for Human Disease" pp. 257-275 in *Drosophila Eye Development*, K Moses editor, Springer-Verlag, Berlin.
35. \*Chan HYE and Bonini NM (2002) *Drosophila* models of polyglutamine diseases, pp. 241-251 in *Methods in Molecular Biology, vol 217: Neurogenetics: Methods and Protocols*, Potter NT, editor.
36. Auluck PK, Chan HYE, Trojanowski JQ, Lee VML and Bonini NM (2002) Chaperone Suppression of  $\alpha$ -Synuclein Toxicity in a *Drosophila* Model for Parkinson's Disease. Online 1067389. *Science* 295:865-868.  
[Publication highlighted in *Science Perspectives in the same issue, Science* 295: 809-10].
37. Bonini NM (2002) Chaperoning brain degeneration. *Proc. Natl. Acad. Sci. USA* 99: 16407-16411

38. Chan HYE, Warrick JM, Andriola I, Merry D, and Bonini NM (2002) Genetic modulation of polyglutamine toxicity by protein conjugation pathways in *Drosophila*. *Human Molecular Genetics* 11: 2895-2904.
39. Auluck PK and Bonini NM (2002) Pharmacologic Prevention of Parkinson's disease in *Drosophila*. *Nature Medicine* 8:1185-1186.
40. Atchison L, Ghias A, Wilkinson F, Bonini N and Atchison ML (2003) Transcription factor YY1 functions as a PcG Protein in vivo. *EMBO J.* 22:1347-58.
41. \*Bonini NM and Fortini ME (2003) Human neurodegenerative disease modeling using *Drosophila*. *Ann. Rev. Neurosci.* 26:627-56. Epub 2003 Apr 10.
42. Gunawardena S, Her LS, Bruschi RG, Laymon RA, Niesman IR, Gordesky-Gold B, Sintasath L, Bonini NM, Goldstein LS (2003) Disruption of axonal transport by loss of huntingtin or expression of pathogenic polyQ proteins in *Drosophila*. *Neuron* 40: 25-40.  
[Publication highlighted in news and views articles: Love, R (2003) *The Lancet Neurology*, Vol 2: 651; Feany and LaSpada (2003) *Neuron* 40: 1-2]
43. Auluck PK, Meulener MC and Bonini NM (2005) Mechanisms of suppression of alpha-synuclein neurotoxicity by geldanamycin in *Drosophila*. *J Biol Chem.* 280: 2873-8. Epub 2004 Nov 18.
44. Warrick JM, Gordesky-Gold B, Morabito L, Faust L, Paulson HL, and Bonini NM. (2005) Ataxin-3 suppresses polyglutamine neurodegeneration in *Drosophila* by a ubiquitin-associated mechanism. *Molecular Cell* 18: 37-48.
45. Meulener MC, Graves CL, Sampathu DM, Armstrong-Gold CE, Bonini NM and Giasson BL. (2005) DJ-1 is present in a large molecular complex in human brain tissue and interacts with alpha-synuclein. *J. Neurochemistry* 93: 1524-32.
46. Bilen J and Bonini NM (2005) *Drosophila* models of human age associated neuro-degenerative diseases. *Ann. Rev. Genetics* 39: 153-171.
47. \*Bonini NM and Giasson BI (2005) Snaring the function of alpha-synuclein. *Cell* 123: 359-361.
48. Meulener M, Whitworth AJ, Armstrong-Gold CE, Rizzu P, Heutink P, Wes PD, Pallanck LJ, Bonini NM (2005) *Drosophila* DJ-1 mutants are selectively sensitive to environmental toxins with Parkinson's disease. *Curr Biol* 15: 157207.  
[Publication highlighted in *Nature Reviews Genetics*, among other journals]
49. Bonini NM and LaSpada AR (2005) Silencing polyglutamine degeneration with RNAi. *Neuron* 48: 715-8.
50. Giasson BI, Covy JP, Bonini NM, Hurtig HI, Farrer MJ, Trojanowski JQ, Van Deerlin VM (2006) Biochemical and pathological characterization of Lrrk2. *Ann. Neurol.* 59: 315-322.
51. Uryu K, Richter-Landsberg C, Welch W, Sun E, Goldbaum O, Norris EH, Pham CT, Yazawa I, Hillburger K, Micsenyi M, Giasson BI, Bonini NM, Lee VM, Trojanowski JQ (2006) Convergence of heat shock protein 90 with ubiquitin in filamentous alpha-synuclein inclusions of alpha-synucleinopathies. *Am J Pathol.* 168: 947-961.
52. Boeddrich A, Gaumer S, Haacke A, Tzvetkov N, Albrecht M, Evert BO, Müller EC, Lurz R, Breuer P, Schugardt N, Plaßmann S, Xu K, Warrick JM, Suopanki J, Wüllner U, Frank R, Hartl FU, Bonini NM, Wanker EE. (2006) An arginine/lysine-rich motif in ataxin-3 is responsible for the interaction with the molecular chaperone VCP that modulates aggregate formation and neurotoxicity. *EMBO J* 25:1547-1558.
53. Cooper AA, Gitler AD, Cashikar A, Haynes CM, Hill KJ, Bhullar B, Liu K, Xu K, Strathearn KE, Liu F, Cao S, Caldwell GA, Marsischky G, Kolodner RD, Labaer J, Rochet JC, Bonini NM, Lindquist S (2006) Alpha-synuclein blocks ER-Golgi traffic and rab1 rescues neuron loss in Parkinson's models. *Science* 313: 324-8. Epub 2006 Jun 22.



54. Meulener M, Xu K, Thomson L, Ischiropoulos H and Bonini NM (2006) Mutational analysis of DJ-1 in *Drosophila* implicates functional inactivation by oxidative damage and aging. *Proc. Natl. Acad. Sci USA* 103: 12517-22. Epub 2006 Aug 7.
55. Bilen J, Liu N, Burnett BG, Pittman RN, and Bonini NM (2006) MicroRNA pathways modulate polyglutamine-induced neurodegeneration. *Molecular Cell* 24: 157-63.
56. Bilen J, Liu N and Bonini NM (2006) A new role for microRNA pathways: modulation of degeneration induced by pathogenic human disease proteins. *Cell Cycle* 5: 2835-8.
57. \*Liu N and Bonini NM (2006) Hosting neurotoxicity in polyglutamine disease. *Cell* 127: 1299-300.
58. \*Bilen J and Bonini NM (2006) Invertebrate models of age-associated neurodegenerative diseases, in Uversky VN and Fink AL, eds, *Protein misfolding, aggregation and conformational diseases*, Kluwer Academic/Plenum publishers.
59. Jung J and Bonini NM (2007) CREB-binding Protein Modulates Repeat Instability in a *Drosophila* Model for PolyQ Disease. *Science* 315: 1857-1859. Published online 1 March 2007 10.1126/science.1139517.  
[Publication highlighted in *Science News & Views*, *Nature Structural & Molecular Biology*, among others]
60. Bilen J and Bonini NM (2007) Genome-wide screen for modifiers of ataxin-3 neurodegeneration in *Drosophila*. *PLoS Genet.* 3:1950-64.
61. Li LB, Xu K and Bonini NM (2007) Suppression of polyglutamine toxicity by the yeast sup35 prion domain in *Drosophila*. *J Biol Chem* 282: 37694-701.
62. Lessing D and Bonini NM (2008) Polyglutamine genes interact to modulate the severity and progression of neurodegeneration in *Drosophila*. *PLoS Biol.* 6: e29.  
[Publication highlighted in *PLoS series*]
63. Li LB, Yu Z, Teng X and Bonini NM (2008) RNA toxicity is a component of ataxin-3 degeneration in *Drosophila*. *Nature*, 453:1107-11. Epub 2008 Apr 30.  
[Publication highlighted in *Current Biology*]
64. Watson MR, Lagow RD, Xu K, Zhang B and Bonini NM (2008) A *Drosophila* model for amyotrophic lateral sclerosis reveals motor neuron damage by human SOD1. *J Biol Chem* 283: 24972-81. Epub 2008 Jul 2.  
[Selected Paper of the Week, with Author profile of Melanie Watson]
65. \*Bonini NM (2008) A tribute to Seymour Benzer, 1921-2007. *Genetics* 180: 1265-73.
66. \*Bonini NM (2008) *Drosophila* models for Parkinson's disease Research. In Nass R and Przedborski S "Parkinson's disease: Pathogenic and therapeutic insights from toxin and genetic models". Elsevier Press, San Diego, CA.
67. Lessing D and Bonini NM (2009) Maintaining the brain: Insight into human neurodegeneration from *Drosophila* mutants. *Nature Rev Genet* 10: 359-370. Epub 2009 May 12.
68. Jung J, Xu G, Lessing D and Bonini NM (2009) Preventing ataxin-3 protein cleavage mitigates degeneration in a *Drosophila* model of SCA3. *Hum Mol Genet* 18: 4843-4852. Epub 2009 Sept 25. PMID: 19783548.
69. Li LB and Bonini NM (2010) Roles of trinucleotide-repeat RNA in neurological disease and degeneration. *Trends Neurosci* 33: 292-8. PMID 20398949.
70. Hao L-Y, Giasson B and Bonini NM (2010) DJ-1 is critical for mitochondrial function and rescues PINK1 loss of function. *Proc Natl Acad Sci USA* 107: 9747-52. Epub 2010 May 10. PMID: 20457924.

71. Elden AC<sup>^</sup>, Kim H-J<sup>^</sup>, Hart M<sup>^</sup>, Chen-Plotkin AS<sup>^</sup>, Johnson BS, Fang X, Armakola M, Geser F, Greene R, Lu MM, Padmanabhan A, Clay D, McCluskey L, Elman L, Juhr D, Gruber PJ, Rub U, Auburger G, Trojanowski JQ, Lee VM-Y, Van Deerlin VM, Bonini NM\* and Gitler AD\* (2010) Ataxin-2 intermediate length polyglutamine expansions are associated with increased risk for ALS. *Nature* 466: 1069-75. PMID: 20740007.  
[Publication highlighted in *Nature News & Views*, *Nature Reviews Neurology*, among others]  
<sup>^</sup>co-first authors \*co-corresponding authors
72. Jung J, van Jaarsveld M, Shieh S-Y, Xu K and Bonini NM (2011) Defining genetic factors that modulate intergenerational repeat instability in *Drosophila melanogaster*. *Genetics* 187: 61-71. Epub 2010 Nov 1.
73. Lee T, Li YR, Ingre C, Weber M, Grehl T, Gredal O, de Carvalho M, Meyer T, Tysnes OB, Auburger G, Gispert S, Bonini NM, Andersen PM, Gitler AD. (2011) Ataxin-2 intermediate-length polyglutamine expansions in European ALS patients. *Hum Mol Genet* 20: 1697-700. Epub 2011 Feb 3.
74. Yu Z, Teng X, and Bonini NM (2011) Triplet repeat-derived siRNAs enhance RNA-mediated toxicity in a *Drosophila* model for myotonic dystrophy. *PLoS Genet* 7:e1001340. Epubl 2011 Mar 17.
75. Yu Z, Zhu Y, Chen-Plotkin AS, Clay-Falcone D, McCluskey L, Elman L, Kalb RG, Trojanowski JQ, Lee VM, Van Deerlin VM, Gitler AD\*, Bonini NM\* (2011) PolyQ repeat expansions in ATXN2 associated with ALS are CAA interrupted repeats. *PLoS One* 6: e17951.  
\*\*co-corresponding authors.
76. \*Yu Z and Bonini NM (2011) Modeling human trinucleotide repeat diseases in *Drosophila*. *Int Rev Neurobiol.* 99:191-212.
77. Lee T, Li T, Chesi A, Mart MP, Ramos D, Jethava N, Hosangadi D, Epstein J, Hodges B, Bonini NM and Gitler AD (2011) Evaluating the prevalence of polyglutamine repeat expansions in amyotrophic lateral sclerosis. *Neurology* 76: 2062-5. Epub 2011 May 11.
78. Shieh SY, Bonini NM (2011) Genes and pathways affected by CAG-repeat RNA-based toxicity in *Drosophila*. *Hum Mol Genet.* 20: 4810-21. Epub 2011 Sept 20
79. Liu N<sup>^</sup>, Abe M<sup>^</sup>, Sabin LR, Hendriks G-J, Naqvi A, Yu Z, Cherry S\*, Bonini NM\* (2011) The exoribonuclease Nibbler controls 3'end processing of microRNAs in *Drosophila*. *Current Biology*, 21: 1888-93. Epub 2011 Nov 3  
[Publication highlighted in *Nature Genetics*, among others]  
<sup>^</sup>co-first authors \*co-senior authors
80. McGurk L, Bonini NM (2012) Protein interacting with C kinase (PICK1) is a suppressor of spinocerebellar ataxia type 3-associated neurodegeneration in *Drosophila*. *Hum Mol Genet* 21:76-84. Epub 2011 Sep 23. PMID: 21949352.
81. Couthouis J, Hart MP, Shorter J, DeJesus-Hernandez M, Erion R, Oristano RE, Liu XA, Ramos D, Jethava N, Hosangadi D, Epstein J, Chiang A, Diaz Z, Nakaya T, Ibrahim F, Kim H-J, Soliski JA, Williams KL, Mojsilovic-Petrovic J, Ingre C, Boylan K, Graff-Radford N, Dickson D, Clay-Falcone D, Elman L, McCluskey L, Greene R, Kalb RG, Lee VM, Trojanowski JQ, Ludolph AC, Robberecht W, Andersen PM, Nicholson GA, Blair IP, King OD, Bonini NM, Van Deerlin VM, Rademakers R, Mourelatos Z, Gitler AD (2011) A yeast functional screen predicts new candidate ALS disease genes. *Proc. Natl. Acad. Sci, USA* 108: 20118-90. Epub 2011 Nov 7
82. \*McGurk L and Bonini NM (2011) Yeast informs Alzheimer's disease. *Science* 334: 1212-3.
83. Liu N, Landreh M, Cao K, Abe M, Hendriks GJ, Kennerdell JR, Zhu Y, Wang LS, Bonini NM (2012) The microRNA miR-34 modulates ageing and neurodegeneration in *Drosophila*. *Nature* 482: 519-23. Doi 10.1038/nature 10810.  
[publication highlighted in *Alzheimer's disease forum*, *Nature podcast* and *Cell Research*, etc]  
<sup>^</sup>co-first authors \*co-corresponding authors

84. Fang Y, Soares L, Teng X, Geary M and Bonini NM (2012) A novel *Drosophila* model of nerve injury reveals an essential role of endogenous Nmnat in maintaining axon integrity. *Curr Biol* 22: 590-595.  
*[publication highlighted in Current Biology]*
85. Couthouis J, Hart MP, Erion R, King OD, Diaz Z, Nakaya T, Ibrahim F, Kim HJ, Mojsilovic-Petrovic J, Panossian S, Kim CE, Frackelton EC, Solski JA, Williams KL, Clay-Falcone D, Elman L, McCluskey L, Greene R, Hakonarson H, Kalb RG, Lee VM, Trojanowski JQ, Nicholson GA, Blair IP, Bonini NM, Van Deerlin VM, Mourelatos Z, Shorter J, Gitler AD. (2012) Evaluating the role of FUS/TLS-related gene EWSR1 in amyotrophic lateral sclerosis. *Hum Mol Gen.* 2012 Mar 27.
86. \*Fang Y and Bonini NM (2012) Axon degeneration and regeneration: Insights from *Drosophila* models of nerve injury. *Ann Rev Cell Dev Biol* 28: 575-97. Epub 2012 Jul 23.
87. Abe M and Bonini NM (2013) MicroRNAs and neurodegeneration: Role and impact. *Trends Cell Biol* 23: 30-6. Epub 2012 Sep 28.
88. Fang Y, Soares L and Bonini NM (2013) Design and implementation of in vivo imaging of neural injury responses in the adult *Drosophila* wing. *Nat Protocol* 8: 810-19. Epub 2013 Mar 28.
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### ***Manuscripts in revision***

118. Goodman LD, Prudencio M, Kramer NJ, Martinez-Ramirez LF, Srinivasan AR, Matthews L, Parisi MJ, Zhu Y, Chew J, Cook CN, Berson A, Gitler AD, Petrucelli L, Bonini NM (in revision) Expanded GGGGCC repeat transcription is mediated by the PAF1 complex in *c9orf72*-associated FTD. *Nat Neurosci*.
119. McGurk L, Rifai O and Bonini NM (submitted) Poly(ADP-ribosylation) in age-related neurological disease. *Trends Genet*
120. Berson A\*, Goodman LD\*, Sartoris AN, Otte CG, Aykit JA, Lee VMY, Trojanowski JQ, Bonini NM (in revision) Targetting ALYREF suppresses neurodegeneration in TDP-43 associated ALS/FTD. *Acta Neuropathol Commun*. \*co-first authors.
121. Goodman LD, Prudencio M, Lee VMY, Petrucelli L, Bonini NM (in revision) eIF4B and eIF4H mediate GR production from expanded G4C2 in a *Drosophila* model for *c9orf72*-associated ALS. *Acta Neuropathol Commun*.