

## **Xin Qi, Ph.D.**

Jeanette M. and Joseph S. Silber Professor in Brain Sciences  
Professor, Department of Physiology & Biophysics  
Co-Director, Center for Mitochondrial Research and Therapeutics  
School of Medicine, Case Western Reserve University  
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Lab website: <https://www.xinqi-lab.com>

### **EDUCATION AND TRAINING**

1995-1999 B.S., ShenYang Pharmaceutical University, China  
1999-2002 M.S., ShenYang Pharmaceutical University, China  
2002-2005 Ph.D., Hokkaido University, Japan (Advisor: Yasuyuki Nomura)  
2005-2010 Postdoctoral fellow, Stanford University School of Medicine  
(Advisor: Daria Mochly-Rosen)  
2010-2011 Research Associate, Stanford University School of Medicine (Advisor: Daria Mochly-Rosen)

### **PROFESIONAL APPOINTMENTS**

2011-2017 Tenure-Track Assistant Professor, Department of Physiology & Biophysics,  
Case Western Reserve University School of Medicine  
2017-2020 Associate Professor with Tenure, Department of Physiology & Biophysics,  
Case Western Reserve University School of Medicine  
2020- Present Professor with Tenure, Department of Physiology & Biophysics,  
Case Western Reserve University School of Medicine  
2022- Present Director, Department Graduate Program of Physiology & Biophysics,  
Case Western Reserve University  
2023- Present Jeanette M. and Joseph S. Silber Professorship in Brain Sciences  
2023- Present Co-Director, Center for Mitochondrial Research and Therapeutics,  
Case Western Reserve University

### **HONORS AND AWARDS**

2002-2005 Research Fellowship, Uehara Memorial Research Foundation, Japan  
2003-2005 Zonda Women Fellowship, Zonda Foundation, Japan  
2009 Stanford University Cardiovascular Institute Young Investigator Award  
2012, 2013 Spitz Scholar, The Spitz Brain Health Innovation Fund  
2016-2017 CAHH Investigator, Council to Advanced Human Health, CWRU  
2017-2018 Falk Medical Research Trust Catalyst Award, Falk Medical Foundation  
2018-2021 Harrington Rare Disease Scholar Award, Harrington Discovery Institute  
2019-2021 Falk Transformative Research Award, Falk Medical Foundation  
2022-2025 Vinney Scholar for Alzheimer's disease, Harrington Discovery Institute  
2023-2024 Faculty Distinguished Research Award, Case Western Reserve University  
2023-2024 The John S. Diekhoff Award for Excellence in Graduate Mentoring,  
Case Western Reserve University

### **OTHER ACADEMIC POSITIONS**

2018- Present Associate Editor, Frontiers- Cellular Neuroscience  
2019- Present Associate Editor, Frontiers-Neurodegeneration  
2020- Present Member, Harrington Discovery Institute Executive Review Board  
2023- 2024 Topic Editor, Women in Cellular Neuropathology

2023- Present Associate Editor, Frontiers-Molecular Biosciences  
2024-2026 Chair, NIH NOMD study section

### **MEMBERSHIP AND PROFESSIONAL SOCIETIES**

2011- Present Society for Neuroscience (SFN)  
2014- Present American Society for Neurochemistry (ASN)  
2016- Present American Association for the Advancement of Science (AAAS)  
2023- Present American Physiology Society (APS)

### **PATENTS**

US 8,784,393 B2 Inhibitors of Mitochondrial Fission and Methods of Use Thereof  
US 11,129,866 B2 Inhibitors of Valosin-containing Protein and Methods of Use Thereof  
US2021/0322524 A1 Compositions and methods for treating neurodegenerative disorders  
US2024/0110004 A1 Mutant Huntingtin mimetic protein-like polymers and uses thereof  
US 63/662,559 Development of mitochondrial enhancer for treating neurodegenerative diseases  
Pending Inhibitors of alpha-synuclein-mitochondrial interaction and method of use

### **INDUSTRY RELATIONSHIP**

2018- Present Co-founder, JanusQ LLC  
2024- Present Scientific co-founder, BeanPod Biosciences  
2024- Present Board Member, NeuroTher LLC

### **PROFESSIONAL SERVICE**

#### **International/National Conference**

Organization: Conference “24 hours of Huntington’s disease”  
Committee Name/Role: Co-organizer of Conference Organization Committee  
Dates of Service: October 4-5, 2012, Cleveland, Ohio

Organization: American Society of Neurochemistry  
Committee Name/Role: Co-Chair on session of Mitochondrial Dysfunction in Neuro-degeneration Session  
Dates of Service: March 13-18, 2015, 46<sup>th</sup> annual meeting, Atlanta, Georgia

Organization: 9<sup>th</sup> World Gene Convention-2018  
Committee Name/Role: Symposium Chair on session of “Drug Discovery Science and Technology, BioDrugs”  
Dates of Service: November 13-15, 2018, Singapore

Organization: Drug Discovery & Therapy World Congress 2019  
Committee Name/Role: Track Chair on session of “*CNS Drug Discovery & Therapy*”  
Dates of Service: September 3-5, 2019, Boston

#### **Study Section and Grant Review Committee**

2013 Medical Research Council (MRC), UK (June)  
2015 NIH MDCN Special emphasis panel (Feb cycle)  
NIH NOMD study section (Feb cycle)  
NIH CMND study section (June cycle)  
The Wellcome Trust Biomedical Research Fellowship Program, UK (Nov)  
2016 NIH MDCN Special emphasis panel (April)

2017	NIH MDCN Special emphasis panel (Feb, Oct cycle) NIH NCF study section (June cycle)
2018	AIBS for the Nevada-INBRE research Program 2018 (Jan cycle) Volkswagen Foundation, Lichtenberg Professorships Program, Germany (Oct) NIH ZRG1 CFS/ME special emphasis panel (Nov cycle)
2019	NIH BDCN-Q special emphasis panel (March cycle) NIH ZRG1 MDCN-T Special emphasis panel (April cycle) NIH NOMD study section (Nov cycle) NIH ZRG1 CFS-N (80)S study section (Dec cycle)
2020	Israel Science Foundation (Feb) NIH CMND study section (March cycle) NIH NOMD study section (June cycle) External reviewer for the Health and Medicine Division of the National Academy Sciences (NAS), Engineering, and Medicine (June) NIH ZRG1 CFS/ME special emphasis panel (March, Nov cycle)
2022	NIH NOMD study section (June cycle)
2019-2021	NIH ZRG1 ETTN-H (11) B Small Business: Drug Discovery for Aging, Neuropsychiatric and Neurologic Disorders
2020, 2021, 2023	Innovation reviewer, National Academy of Medicine (NAM) Catalyst Award
2021, 2023	Discovery Award for Neurological Disorders, Department of Defense Congressionally Directed Medical Research Programs
2024	Reviewer, Falk Medical Research Award Program Review Committee
2022-2026	Standing member of NIH NOMD study section (Chair, from 7/1/2024-6/30/2026)

### **Journal Reviewers**

*Nature Medicine, Nature Communications, Journal of Clinical Investigations, Acta Neuropathologica, Advanced Science, Science Advances, Science Translational Medicine, EMBO, Autophagy, Brain, Molecular Neurodegeneration, Cell Death Differentiation, Journal of Cell Biology, Cell Report, Genomic Medicine, JCI Insight, FASEB Journal, Journal of Neuroscience, Communication Biology, Journal of Neuroinflammation, Human Molecule Genetics, Ageing Cells, Neurotherapeutics, Scientific Report, Journal of Neurochemistry, Stem Cells, Plos One, J Cerebral Blood Metabolism, Translational Neurodegeneration, Mitochondrion, BBA-molecular basis of disease, Journal of Cell Science, Metabolic Brain Disease, Frontiers-Cellular Neuroscience, Frontiers-Neurodegeneration*

### **COMMITTEE SERVICE**

#### **Case Western Reserve University and School of Medicine**

2014- 2022	Member, Admission Committee of Biomedical Sciences Training Program (PhD program)
2015- Present	Member, Interview Committee for the CWRU Medical School (MD) Program
2018- 2021	Member, Search Committee for faculty position, Department of Pathology, CWRU
2019- Present	Member, Steering Committee of Neurodegeneration T32 training grant
2021- 2026	Member, University Faculty Senate Finance Committee, CWRU
2022- 2023	Member, School of Medicine Standing Committee on Budget, Finance and Compensation
2023- Present	Member, Steering Committee of Medical Scientist Training Program (MD/PhD program)
2024- Present	Member, Committee of Biomedical Research (CBR), School of Medicine

#### **Case Western Reserve University, Department of Physiology & Biophysics**

2013- 2021	Academic Advisor of Master Program, Department of Physiology & Biophysics
2014- 2020	Member, Department Committee on Appointment, Promotion and Tenure (DCAPT)

2020- Present Chair, Department Committee on Appointment, Promotion and Tenure (DCAPT)  
 2022- Present Chairs Cabinet member, Department of Physiology & Biophysics  
 2022- Present Director, Department Graduate Education Committee, Department of Physiology & Biophysics

### **Case Western Reserve University, Education Committee**

2012- 2015 Matthew Cohen, PhD thesis committee member, Department of Pharmacology  
 2014- 2016 Chun-Lun Ni, PhD thesis committee member, Department of Microbiology  
 2014- 2019 Di Hu, PhD Advisor, Department of Physiology and Biophysics  
 2015- 2016 Anne Jessica Roe, Master Advisor, Department of Physiology and Biophysics  
 2017- 2019 Awuri Asuru, PhD thesis committee member, Center for Proteomics  
 2017- 2022 Yutong Shang, PhD Advisor, Department of Physiology & Biophysics  
 2018- 2023 Preethy Sridharan, MD/PhD thesis committee member, Department of Pathology  
 2019- 2020 Katherine Horan, PhD advisor, Department of Physiology & Biophysics  
 2020- 2022 Jessica Dudman, PhD advisor, Department of Physiology & Biophysics  
 2020- 2022 Jose Diaz-Aponte, PhD thesis committee member and Chair, Department of Physiology & Biophysics  
 2020- 2022 Filipa Blasco Tavares Pereira Lopes, PhD thesis committee member, Center for Proteomics  
 2020- 2023 Solomiia Boyko, PhD thesis committee member, Department of Physiology & Biophysics  
 2021- 2022 Angela Whittsette, Master thesis committee member, Department of Physiology & Biophysics  
 2020- Present Aya Jishi, PhD advisor, Department of Physiology & Biophysics  
 2020- Present Omid Hajihassani, PD thesis committee member, Department of Biochemistry  
 2021- Present Emily Arzola, PhD thesis committee member, Department of Neuroscience  
 2022- Present Anika Wu, PhD thesis committee member, Department of Neuroscience  
 2022- Present Yeojung Koh, PhD thesis committee member, Department of Pathology  
 2022- Present Xin Lan, PhD thesis committee member, Department of Biochemistry  
 2022- Present Cassandra Barone, PhD advisor, Department of Physiology & Biophysics  
 2023- Present Kyle McGill Perce, PhD advisor, Department of Physiology & Biophysics  
 2023- Present Jack Zunren Liu, PhD advisor, Department of Physiology & Biophysics  
 2024- Present Sarah Cooke, PhD advisor, Department of Physiology & Biophysics  
 2024- Present Taravat Khodaei, PhD thesis committee member, School of Bioengineering

### **Thesis Committee Chair**

2022- Present Brandon Miller, PhD thesis committee member and chair, Department of Physiology & Biophysics  
 2023- Present Katie Dominic, MD/PhD thesis committee member and Chair, Department of Physiology & Biophysics  
 2023- Present Marnie Williams, PhD thesis committee member and chair, Department of Physiology & Biophysics  
 2023- Present Xi Chen, PhD thesis committee member and chair, Department of Physiology & Biophysics  
 2023- Present Jennifer Pan, PhD thesis committee member and chair, Department of Physiology & Biophysics  
 2023- Present Beverley Wood, PhD thesis committee member and chair, Department of Physiology & Biophysics

### **Faculty Mentoring Committee**

2022- 2024 Alexa Jung A Woo, Assistant Professor, Department of Pathology, CWRU  
 2022- 2024 Ignazio Cali, Assistant Professor, Department of Pathology, CWRU  
 2022- Present Aaron Burberry, Assistant Professor, Department of Pathology, CWRU  
 2022- Present Agustin Gonzalez-Vicente, Instructor, Department of Physiology & Biophysics, CWRU  
 2022- Present Tian Liu, Assistant Professor, Department of Pathology, CWRU  
 2024- Present Ben Clayton, Assistant Professor, Department of Genetics and Genome Sciences, CWRU

## **TEACHING ACTIVITIES**

### **CWRU Medical Program Teaching**

2012 – 2019	Year one, Block 2-School of Medicine, Cell Physiology and Cancer Biology, Medium Size Group
2012 – 2019	Year one, Block 4-School of Medicine, Cardiovascular Cell Physiology, Medium Size Group / Team-based learning
2016 – 2019	Year one, Block 6- School of Medicine, Cognition, Sensation, and Movement, Medium size group
2023- Present	Sciences and Art of Medicine Integrated: Change in Behavior

### **CWRU Graduate Program Teaching**

2011	Mitochondria in human health and diseases
2013	Thematic workshop: Mitochondrial diseases- Identification and Treatment
2014 – 2020	PHOL514: Advanced Cardiac Physiology - Mitochondria & oxidative stress - Ischemia/reperfusion and preconditioning
2014 – Present	PHOL466: Cell Signaling - MAPK signaling
2017 – Present	CBIO456: Since you were born: Nobel Prize Biomedical Research 1995-2016 - Mechanism of signal transduction in the nervous system
2018 – Present	PATH444: Neurodegenerative Diseases - Induced pluripotent stem cells and its application in neurodegenerative diseases
2023 – Present	PATH555: Advanced topics in neurodegeneration research - Mitochondrial proteostasis and quality control
2024 – Present	IBMS453 Cell Biology- Unit 6, Neuron, Brain and Disease

### **Master Program Teaching**

2017-2023	Translational Physiology 483 - Development of mitochondrial enhancers for treatment of neurodegenerative diseases
2019-2023	PHOL 402A Physiology Basis of Diseases - Nervous system

## **TRAINEES**

### **Postdoctoral trainees**

<b>Year</b>	<b>Name</b>	<b>Current position</b>
2011-2014	Yu-Chin Su	Investigator, Institute of Cellular and Organismic Biology, Taiwan
2011-2016	Xing Guo	Professor, Nanjing Medical University, China
2014-2020	Yuanyuan Zhao	Research Associate, Cleveland Clinic Foundation
2020-2021	Xin Tun	Scientist, StemRim, Japan
2021-2022	Trong Bao Nyugen	Scientist in biotech company, US
2021-2023	Shuai Wang	Associate Professor, Jining Medical University, China
2022-2023	Rui Zhang	Scientist, Vertex Pharmaceuticals, US
2018-present	Rihua Wang	Research Scientist, CWRU
2019-present	Di Hu	Research Scientist, CWRU
2020-present	Philip Ropelewski	Postdoctoral Scholar, CWRU
2023-present	Yutong Shang	Postdoctoral Scholar, CWRU
2023-present	Na Liu	Postdoctoral Scholar, CWRU

### **Ph.D. Student Trainees**

<b>Year</b>	<b>Name</b>	<b>Department</b>
2014- 2019	Di Hu	Department of Physiology & Biophysics, CWRU
2017- 2022	Yutong Shang	Department of Physiology & Biophysics, CWRU

2020- Present	Aya Jishi	Department of Physiology & Biophysics, CWRU
2021- Present	Cassandra Barone	Department of Physiology & Biophysics, CWRU
2022- Present	Zunren Jack Liu	Department of Physiology & Biophysics, CWRU
2022- Present	Kyle McGill Percy	Department of Physiology & Biophysics, CWRU
2023- Present	Sarah Cooke	Department of Physiology & Biophysics, CWRU

### Medical Student Trainees

Year	Name	Institution
2016-2017	Evan Miller	Medical School of CWRU
2017	Nicholas Venetos	Medical School of CWRU
2018	Yeong-Ran Ahn	Medical School of CWRU
2023	Juliana Condoleo	Medical School of CWRU

### Master Student Trainees

Year	Name	Current position
2015-2016	Anne Roe	PhD candidate at University of California at Los Angeles
2019-2020	Omid Hajihassani	PhD candidate at CWRU
2019-2020	Katherine Horan	Research Assistant at CWRU
2020-2022	Jessica Dudman	Research Assistant at CWRU

### Undergraduate Student Trainees

Year	Name	Institution
2012	Leslie Gair	Miami University
2014	Phyu Khin	Montana State University
2016	Hajar Alreedi	Alfaisal University, Saudi Arabia
2018- 2019	David Yan	Case Western Reserve University
2020- 2022	Zunren Jack Liu	Case Western Reserve University
2023- 2024	Julien Kouassi	Case Western Reserve University
2023- present	Elissa Frankel	Case Western Reserve University
2024- present	Ashley Grant	Case Western Reserve University
2024- present	Matthew Chen	Case Western Reserve University
2024- present	Cameron Wiener	Case Western Reserve University

## SCIENTIFIC ACTIVITIES

### Seminars and Invited Lectures

2004	Invited talk, 10 <sup>th</sup> Free Radical Conference in Hokkaido, Sapporo, Japan
2004	Invited talk, 124 <sup>th</sup> Japanese Pharmaceutical Congress, Sendai, Japan
2008	Invited talk, Keystone Symposia on Hypoxia, Vancouver, Canada
2008	Invited talk, 14 <sup>th</sup> meeting on Protein Phosphorylation and Cell Signaling, Salk Institute, La Jolla, CA
2010	Invited talk, Department of Pharmacology, University of Minnesota Twin Cities
2010	Invited talk, Department of Pharmacology, Purdue University
2011	Invited talk, Department of Neuroscience, Case Western Reserve University School of Medicine
2012	Invited talk, Gordon Research Conference, Brain Energy Metabolism & Blood Flow, Waterville, ME
2012	Invited talk, Bio-X IIP Symposium, Stanford University
2012	Invited talk, 24 hours of Huntington's Disease, Cleveland, OH
2012	Invited talk, Mitochondria & Metabolism Symposium, Philadelphia, PA
2012	Invited talk, The MetroHealth Seminar, Cleveland
2012	Invited talk, National Center for Regenerative Medicine Retreat, Cleveland
2013	Invited talk, Neurology grand rounds, Neurological Institute of University Hospital, Cleveland, OH
2014	Invited talk, Department of Genetics, University of Alabama School of Medicine

- 2014 Invited talk, Department of Pathology, Case Western Reserve University School of Medicine
- 2015 Invited talk, 46<sup>th</sup> Annual Meeting of American Society For Neurochemistry, Atlanta, Georgia
- 2015 Invited talk, Department of Molecular Medicine, Cleveland State University, Cleveland
- 2015 Invited talk, Cardiovascular Institute, Case Western Reserve University School of Medicine
- 2016 Invited talk, Spring Brain Conference, Sedona, Arizona
- 2016 Invited talk, Scientific program in FutuRx, New York City (December 2016)
- 2016 Invited talk, Annual Council to Advance Human Health Executive Session, Boston
- 2016 Invited talk, Department of Pharmacology, Case Western Reserve University School of Medicine
- 2016 Invited talk, Annual Council to Advance Human Health Executive Session, Cleveland (November 2016)
- 2017 Invited talk, 3<sup>rd</sup> Neurological Disorder Summit, San Francisco
- 2017 Invited talk, New Medicine Program Seminar, Research & Development, UCB Scientific Research Company, Brussels, Belgium
- 2017 Invited talk, 3<sup>rd</sup> Annual Data and Life Science Collaboration and Symposium, Cleveland
- 2017 Invited talk, Department of Cellular and Molecular Medicine, Cleveland Clinic Foundation
- 2018 Invited talk, The Michael J Fox Parkinson's Disease Foundation, New York
- 2018 Invited talk, 9<sup>th</sup> World Gene Convention-2018, Singapore
- 2018 Invited talk, International Drug Discovery Science and Technology, Boston
- 2018 Invited talk, Neuroscience World Conference (Society for Neuroscience)-Session of Alpha-synuclein Biology
- 2018 Invited talk, Keystone Symposia -- Advances in Neurodegenerative Disease Research and Therapy (Z3), Colorado
- 2019 Invited talk, Department of Pharmacology & Therapeutics, University of Florida, Gainesville
- 2019 Invited talk, Sanofi Research Seminar Series—"Development of novel therapeutics for Neurodegenerative diseases", Sanofi Pharmaceutical Company, Boston
- 2019 Invited talk, Harrington Discovery Institute Scientific Symposium 2019, Cleveland
- 2019 Invited talk, Drug Discovery & Therapy World Congress 2019, Track "*CNS Drug Discovery & Therapy*", Boston
- 2020 Invited talk, International Conference on Medical Pathology (MedPath-2020), Houston, TX, USA
- 2021 Invited talk, 14<sup>th</sup> Gottingen meeting of the German Neuroscience Society, Germany
- 2021 Invited talk, Neuroscience department of Gladstone Institute and University of California at San Francisco
- 2021 Invited talk, Department of Biochemistry & Molecular Biology University of Massachusetts
- 2022 Invited talk, International Research on Neurodegenerative Disease 2022, Omaha, NE
- 2022 Invited talk, Department of Pathology, University of Texas Southwestern Medical Center, Dallas, TX
- 2022 Invited talk, Department of Internal Medicine, Texas Tech University Health Sciences Center, Lubbock, TX
- 2023 Invited talk, Department of Neuroscience and Pharmacology, University of Iowa School of Medicine
- 2023 Invited talk, Harrington Discovery Institute Annual Symposium 2023, Cleveland, Ohio
- 2023 Invited talk, Department of Physiology & Biophysics, State University of New York at Buffalo
- 2023 Invited talk, 10<sup>th</sup> Meeting of Translational Research in Mitochondria/Metabolism Aging & Disease, Pittsburgh, PA
- 2023 Invited talk, Department of Otolaryngology-Head Surgery, University Hospitals Cleveland Medical Center
- 2024 Invited talk, Department of Neuroscience, University of Connecticut School of Medicine
- 2024 Invited talk, International Research on Neurodegenerative Disease 2024, Atlanta GA
- 2024 Invited talk, 10th Annual Data Science in Engineering and Life Sciences Symposium, Cleveland, OH
- 2024 Invited talk, Linda and Jack Gill Center for Biomolecular Science, Indiana University School of Medicine (Scheduled)

## **RESEARCH SUPPORTS**

### **Current Research Support**

NIH R01AG650240 (Qi, X)

3/1/2020-12/31/2024

NIH/NIA

Title: Role of brain lipid metabolism in Alzheimer's disease

Direct cost: \$1,875,230; Indirect cost: \$1,143,890

The major goal of this project is to determine the role of ATAD3A oligomerization in the pathogenesis of AD.

NIH R01NS115903 (Qi, X)

5/1/2020-4/30/2025

NIH/NINDS

Title: Proteostasis dysregulation and alpha-synuclein

Direct cost: \$1,501,788; Indirect cost: \$916,090 (*no-cost extension*)

The major goal of this project to investigate mitochondrial unfolded protein response in alpha-synuclein-associated Parkinson's disease and Lewy Body Dementia

NIH R01 AG076051 (Qi, X)

2/1/2022-11/30/2026

NIH/NIA

Title: Mechanism of white matter pathology in Alzheimer's disease

Direct cost: \$1,886,635; Indirect cost: \$1,150,847

The major goal of this project is to determine the role of oligodendrocyte impairment in white matter degeneration of AD.

NIH R01 AG074346-01A1 (Qi, X)

6/1/2022-5/30/2027

NIH/NIA

Title: Regulation of CHCHD6 in Alzheimer's disease

Direct cost: \$1,326,729; Indirect cost: \$809,304

The major goal of this project is to determine the role of mitochondrial MICOS component CHCHD6 in neurodegeneration and brain lipid metabolism of Alzheimer's disease

Vinney Award of Alzheimer's disease (Qi, X)

9/1/2022-9/30/2025

Harrington Discovery Institute (HDI)

Title: Development of ATAD3A peptide inhibitor as a potential treatment for Alzheimer's disease

Direct cost: \$450,000

The major goal of this project is to optimize ATAD3A peptide inhibitors for treating Alzheimer's disease

### **Pending Support**

NIH R01NS141199 (Qi, X)

4/1/2025-3/31/2030

NIH-NINDS

Title: Regulation of ATAD3A in TDP43-associated ALS/FTD

Direct cost: \$2,467,232; Indirect cost: \$1,509,750

The goal of this project is to elucidate mitochondria-dependent molecular and cellular mechanisms of TDP43 nuclear exclusion and its roles in neurodegeneration and neuroinflammation in ALS/FTD.

NIH R01AG094155 (mPIs: Xu, R and Qi, X)

4/1/2025- 3/31/2028

NIH-NIA

Title: Uncovering the Therapeutic Potential of Semaglutide in Alzheimer's Disease: Insights from Animal Models and Real-World Clinical Data

Direct cost: \$1,336,860; Indirect cost: \$815,485

The goal of this project is to examine the efficacy and molecular features of semaglutide in Alzheimer's disease using animal models and real-world patient clinical electronic record.

Translational Therapeutics Accelerator Grant (Qi, X)

1/1/2025-12/31/2026

Title: A novel ATAD3A oligomers inhibitor for treating Huntington's disease

Total cost with 10% indirect cost: \$250,000

The goal of this project is to develop a new therapeutic inhibitor of ATAD3A oligomers to treat Huntington's disease and other rare/orphan diseases



## Completed research support

American Heart Association Beginning Grant-in-aid (12BGIA8800014) (Qi, X) 1/1/2012-12/31/2013  
Title: Regulation of mitochondrial dynamics in ischemic stroke

Spitz Pilot Funds from Spitz foundation (Qi, X) 10/1/2012-9/30/2014  
Title: Enhancing neuronal survival in Parkinson's Disease by inhibition of excessive mitochondrial fission

American Parkinson's Disease Association (Qi, X) 9/1//2013-8/30/2014  
Title: Protection of mitochondrial function in patient neurons of Parkinson's disease

NIH R21 AT008265-01A1 (Hoffer, Barry) 9/1/2014-3/31/2017  
NIH/NINDS  
Title: Role of GDNF, ER stress and mitochondrial function in effects of acupuncture in models of Parkinsonism  
Role: Co-investigator

NIH1R21NS087588-01A1 (Zou/Tesar/Qi) 9/30/2014-8/31/2017  
NIH/NINDS  
Title: Generating iPSCs-derived neurons to explore formation and inhibition of human prions

NIH R01 NS094152 (Hoffer, Barry) 9/30/2015-6/30/2018  
NIH/NINDS  
Title: Repositioning Gliptins for Parkinson's Disease Treatment  
Role: Co-investigator

Michael J Fox Parkinson's Disease Foundation- Target Validation for Parkinson's disease (Qi, X) 10/1/2016-9/30/2017  
Title: Targeting mitochondrial unfolded protein response in alpha-synuclein-associated Parkinson's disease

Falk Medical Research Trust Catalyst Award (Qi, X) 11/30/2017-11/30/2018  
Title: Identification of mitochondrial enhancers for treatment of Huntington's disease

NIH R56 NS105632A1 (Qi, X) 4/1/2019-3/31/2020  
NIH/NINDS  
Title: Mitochondrial protein quality control and alpha-synuclein

NIH 5R01 NS088192 (Qi, X) 6/1/2014-5/31/2020  
NIH/NINDS  
Title: Dynamin-related protein 1, neurodegeneration and Huntington's disease

R01AG057028-01A1 (Miller, Jonathan) 9/30/2018-8/30/2020  
NIH/NINDS  
Title: Brain injury; Acute effects and progression to Alzheimer's-like psychopathology  
Role: co-investigator

NIH R01GM117208-03S1 (Chance, Mark) 9/1/2018-6/30/2020  
NIH/NIGM  
Title: Phospho Proteomics and Alzheimer's Disease  
Role: co-investigator

Harrington Rare Disease Scholar Award (Phase I and II) (Qi, X) 4/1/2018-8/30/2021  
Harrington Discovery Institute  
Title: Identification of mitochondrial enhancers for Huntington's disease

NIH R21 NS107897-01A1 (Qi, X) 3/15/2019-2/28/2021

NIH/NINDS

Title: Mitochondrial biomarker in Huntington's Disease

Falk Medical Research Transformative Award (Qi, X)

Falk Medical Research Trust

11/30/2019-8/30/2022

Title: Identification of small molecules for treatment of Huntington's disease

Total cost: \$1,000,000, including 10% indirect cost

NIH R01 GM121583-1A1 (Ramachandran, R)

6/1/2017- 8/30/2023

NIH/NIGM

Title: Mechanism of Mitochondrial Dynamics

Role: Co-investigator

Direct Cost: \$1,000,000; Indirect cost: \$610,000

5R01LM012980 - 03S1 (Koyuturk, Mehmet)

4/1/2021-3/31/2024

NIH/NLM

Title: Alzheimer's supplement- Construction, Analysis, and Utilization of Co-Phosphorylation Networks to Characterize Cellular Signaling

Role: Co-investigator

NIH R01 5R01AG057557 (Xu, R)

9/15/2017-5/31/2024

NIH/NIA

Title: An integrated reverse engineering approach toward rapid drug re-positioning for Alzheimer's Disease

Role: Co-investigator

Direct Cost: \$1,886,845; Indirect cost: \$1,150,975 (no cost extension)

The goal of this project is develop AI-based platform and identify potential repurposed drug candidates for treating Alzheimer's disease

## **PUBLICATIONS**

*Chronological, from oldest to newest*

\*, indicate corresponding author; # co-first authors; **Key papers were highlighted by blue.**

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### **Publications before joining CWRU**

1. Hosoi T, Okuma Y, Kawagishi T, **Qi X** and Nomura Y. Bacterial endotoxin induces STAT3 activation in mouse brain. *Brain Res.* 2004 Oct 8; 1023(1):48-53. PMID: 15364018.
2. **Qi X**, Okuma Y, Hosoi T and Nomura Y. Edaravone protects against hypoxia/ischemia-induced endoplasmic reticulum dysfunction. *J Pharmacol Exp Ther.* 2004 Oct; 311(1): 388-93. PMID: 15178695.
3. **Qi X**, Hosoi T, Okuma Y, Kaneko M and Nomura Y. Sodium 4-phenylbutyrate protects against cerebral ischemic injury. *Mol Pharmacol.* 2004 Oct; 66(4): 899-908. PMID: 15226415.
4. **Qi X**, Okuma Y, Kaneko M, Hosoi T and Nomura Y. Induction of murine HRD1 in experimental cerebral ischemia. *Brain Res Mol Brain Res.* 2004 Nov 4; 130(1-2):30-8. PMID: 15519674
5. **Qi X**, Vallentin A, Churchill E and Mochly-Rosen D. DeltaPKC participates in endoplasmic reticulum stress-induced response in cultured cardiac myocytes and ischemic heart. *J Mol Cell Cardiol.* 2007 Oct; 43(4): 420-8. PMID: 17825316.
6. **Qi X**, Inagaki K, Sobel RA and Mochly-Rosen D. Sustained pharmacological inhibition of deltaPKC protects against hypertensive encephalopathy through prevention of blood-brain-barrier breakdown. *J Clin Invest.* 2008 Jan; 118(1): 173-82. PMID: 18097471.
  - **Commentary:** *Hypertensive encephalopathy and blood-brain-barrier: is deltaPKC a gatekeeper? J. Clin. Invest.* 2008 118: 17-20.

- **Media Report:** *New Potential Target In The Treatment Of Fatal Brain Disease. Science Daily; Medical News Today*

7. **Qi X** and Mochly-Rosen D. Complex of deltaPKC and c-Abl communicates endoplasmic reticulum stress to mitochondria: an essential step for subsequent apoptosis. *J Cell Sci.* 2008 Mar 15; 121: 804-13. PMID: 18285444.
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