

**DATE:** September 21<sup>th</sup>, 2020

**FULL NAME AND DEGREE/S:** Catherine Cook Kaczorowski

**CURRENT TITLE:** Associate Professor and Evnin Family Endowed Chair in Alzheimer's

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## **EDUCATION**

### Undergraduate

<i>Year of Degree</i>	<i>Degree</i>	<i>Institution</i>
1997-2000	BA, Psychology	University of Wisconsin at Milwaukee

### Graduate School

<i>Year of Degree</i>	<i>Degree</i>	<i>Institution</i>
2001-2006	PhD, Neuroscience	Northwestern University, Institute for Neuroscience (conferred 12/28/2006)

## **POSTDOCTORAL TRAINING**

### Fellowships

<i>Date</i>	<i>Specialty</i>	<i>Institution</i>
2007-2009	Cognitive aging, Postdoctoral Trainee	University of Wisconsin-Milwaukee
2009-2012	Neuroproteomics of Alzheimer's, Medical College of Wisconsin, Kern Innovation Fellow & Postdoctoral Trainee	

## **ACADEMIC APPOINTMENTS** (old and new)

*Date, Title, Department, Institution*

07/12 – 07/13, Research Assistant Professor (non-tenure track), Medical College of Wisconsin

- K99 phase of Pathway to Independence Award (mentored)

08/13 – 10/16, Assistant Professor, Department of Anatomy and Neurobiology, UTHSC

- R00 phase of Pathway to Independence Award (independent)

11/16 – 03/18, Assistant Professor, The Jackson Laboratory

04/18 – present, Associate Professor, Evnin Family Endowed Chair, The Jackson Laboratory

- Affiliated Faculty Member, Sackler School of Graduate Biomedical Sciences, Genetics Graduate Program, Tufts University School of Medicine
- Affiliated Faculty Member, Sackler School of Graduate Biomedical Sciences, Neuroscience Graduate Program, Tufts University School of Medicine
- Affiliated Graduate Faculty Member, School of Biomedical Science and Engineering, The University of Maine

## **AWARDS AND HONORS**

### *Date and Organization*

- 2019 Finalist, Glenn Foundation for Medical Research Breakthroughs in Gerontology Award
- 2018 Evnin Family Endowed Chair in Alzheimer's Research
- 2018 Sponsor AARF fellowship grant award (PI: Amy Dunn, postdoc. fellow, \$175,000)
- 2018 Dorothy Dillon Eweson Lecture Series on the Advances in Aging Research Award
- 2018 International Behavioural and Neural Genetic Society Young Investigator Award
- 2017 The Jackson Laboratory nominee for Blavatnik National Award
- 2017 Glenn Award for Research in Biological Mechanisms of Aging (\$60,000)
- 2017 Grant from the Wright Family Fund (\$5,000)
- 2017 Invited Chair of the Neuroscience 2017 Nanosymposium: "Protective and Pathogenetic Mechanisms in Alzheimer's Disease". International meeting of the Society for Neuroscience, Washington, DC
- 2017 Invited panelist, BIOME 2017 Annual Conference, Portland, ME
- 2016 BrightFocus Foundation Award (PI: Kaczorowski, \$300,000)
- 2016 Graduate Student Executive Committee Outstanding Mentor Award, UTHSC
- 2015 Sponsor AFAR fellowship grant award (PI: Lynda Wilmott, postdoc. fellow, \$52,500)
- 2015 Patriot Award, Employer Support of the Guard and Reserve, Dept. of the Secretary of Defense
- 2015 Sponsor F31 NIA NRSA grant award (PI: Sarah Neuner, graduate student, \$147,000)
- 2014 NIA Butlers-Williams Scholar
- 2014 American Federation on Aging Research Young Investigators Award (\$100,000), UTHSC
- 2014 UT Nominee for Searle Scholar Award
- 2013 NIH R00 Pathway to Independence Award (\$747,000)
- 2012 NIH K99 Pathway to Independence Award (\$180,000)
- 2012 Postdoctoral Travel Award, Medical College of Wisconsin Postdoctoral Assoc. (\$750)
- 2012 Cold Spring Harbor Proteomics Course Travel Award (\$750)
- 2011 Kern Innovation Center Fellowship, Biotechnology and Bioengineering Center, MCW
- 2011 Society for Neuroscience Poster Presentation Award, Milwaukee WI
- 2003-2006 NIMH NRSA Predoctoral Fellowship Award (\$108,420)
- 2002-2003 NIH Neuroscience in the Early Years Training Grant Award (\$40,781)
- 2002-2003 Northwestern Graduate School University Scholar Award (\$12,756)
- 2003 Cold Spring Harbor Ion Channel Physiology Course Award (\$1512)
- 2002 NIH Neuroscience in the Early Years Travel Award (\$750)
- 2002 Gordon Research Conference on Synaptic Transmission Travel Award (\$650)
- 2001-2002 Northwestern University Fellowship Award (\$49,920)
- 2001-2002 Northwestern University Institute for Neuroscience Award (\$3,200)
- 2000 Commencement Honors: Summa cum Laude, University of Wisconsin-Milwaukee
- 2000 Golden Key National Honor Society, University of Wisconsin-Milwaukee
- 1999 Phi Kappa Phi National Honor Society, University of Wisconsin-Milwaukee
- 1999 Phi Chi National Honor Society, University of Wisconsin-Milwaukee
- 1999 Outstanding Tutor Award, University of Wisconsin-Milwaukee
- 1998 All-American Scholar, University of Wisconsin-Milwaukee

## **UNIVERSITY COMMITTEE ASSIGNMENTS:**

- 04/13 Judge for talks at UTHSC Graduate Research Day
- 11/13 Junior faculty representative for COM for LCME accreditation
- 12/13 Judge for talks at UTHSC Postdoctoral Research Day
- 06/15 – 08/16 Co-Director of the NI seminar series, UTHSC
- 12/15 – 10/16 UTHSC faculty search committee, A&N, Neuroinflammation and Neurodegeneration
- 05/15 – 08/16 CGHS Strategic Plan Implementation Planning - Career Development UTHSC
- 01/15 – 08/16 Member, UTHSC Proteomics Advisory Board
- 09/13 – 08/16 Safety officer, Department of Anatomy and Neurobiology (2nd floor Wittenberg)
- 12/15 Reviewer, 5 grants (Methodological Innovation in Pharmacology Award, UTHSC, Dopic)
- 04/16 Judge for talks at UTHSC Graduate Research Day
- 12/16 – Prsnt Ad hoc member, Research Grants Committee
- 2016 - Petkov, R01 0
- 2017 - Sutphin, K01; Petkov, R01
- 2018 - Pera, R01; Korstanje, R01
- 2019 - Korstanje, R01; Saul, R03; Tang-Schomer, R01
- 2020 - Saul, U18; Bloss, BRAIN
- 05/17 Judge for posters at JAX Scientific Symposium
- 02/16 – 02/17 Member of JAX Retreat Committee
- 06/17 Qualifying exam committee - Tufts University student Candice Byers
- 08/17 Judge for Jackson Laboratory Graduate Student Organization Flashtalk event
- 12/18 JAX at Tufts Admission Committee
- 02/18 – 02/19 Chair of JAX Retreat Committee
- 05/19 Judge for talks at The Jackson Laboratory Scientific Symposium
- 06/18 – 11/19 Steering Committee, JAX Genetic Diversity Initiative (Phenotype Committee)
- 01/18 – 01/20 Elected faculty, Senior Advisory Committee (Bar Harbor Chair 2019-2020)
- 01/20 Member (Ad-hoc), JAX Tenure and Promotions Committee
- 07/17 – Prsnt Advisor to the JAX Proteomics and Protein Chemistry Committee
- 05/18 – Prsnt Executive Member, JAX Center for Alzheimer’s Disease and Related Dementias
- 06/18 – Prsnt Steering Committee, JAX Genetic Diversity Initiative (Executive Committee)
- 06/18 – Prsnt Steering Committee, JAX Genetic Diversity Initiative (Informatics/Website)
- 03/19 – Prsnt Faculty Partner, JAX Center for Biometric Analyses (Neurobehavioral Domain)
- 09/19 – Prsnt Director, JAX Center for Alzheimer’s Disease and Related Dementias (CADRD)
- 05/20 – Prsnt Steering Committee, Precision Genetics of Aging, Alzheimer’s Disease and Related Dementias (PGAD) T32 Training Program
- 05/20 – Prsnt JAX Research Grants Committee
- 06/20 – Prsnt Admissions officer GENEJAX Program

## **JAX SERVICE IN DEVELOPMENT, EDUCATION, and STRATIGIC**

### **COMMUNICATIONS AND TRANSLATION: 2019 and onward**

- 04/24/2019 Keynote, The Jackson Laboratory Science Day “Mouse to human translation (and back) and Alzheimer’s disease”. Host: BJ Bormann (Cambridge MA).
- 04/24/2019 Interview with STATNews for article about the benefits of using diversity outbred mice (Cambridge MA).

04/26/2019 Presentation to the Knight Science Journalism Fellows in Bar Harbor in May

05/19/2019 Speaker, JAX Center for Precision Genetics Executive Advisory Board Meeting

05/28/2019 Speaker, Translational Research Council. Host: Ken Fasman (Bar Harbor, ME)

06/09/2019 Katy Longley reception: Featured speaker at a home reception in Bar Harbor in July. The event had approximately 25 guests.

06/19/2019 Watson Family Tour: Arranged by Laura Eldridge, participated as part of the family's visit to The Lab and meetings with Ed Liu this past July.

07/15/2019 Interview with Alice Park, Senior Medical Writer, Time Magazine.

08/06/2019 Speaker, JAX Nathan Shock Aging Center 2019 Executive Advisory Board Meeting

09/19/2019 Invited speaker, Tufts CTSI Team Science Summit: Innovations in Alzheimer's Disease and Healthy Aging Research. Host: Susie Airhart (Boston, MA).

09/29/2019 Trustee dinner: attended with Trustee and major donor, Tony Evnin.

10/09/2019 Strategic planning meeting, JMCRS, with Cat Lutz and Auro Nair

10/21/2019 Panelist, JAX Health Care Forum, Farmington, CT

11/25/2019 Catherine had dinner on November 25 with Lauren Aguirre (the writer who is writing a book about memory).

11/16 – 02/20 Advisor to JAX Nathan Shock Aging Center and Scientific Coordinator on Pilot Project entitled "Rapamycin restores oral health in aging mice" with PI: Matt Kaeberlein (EAB member, University of Seattle, WA). Weekly participation in Shock Center meetings, data review, advisor to translational core and phenotyping.

01/19 – Prsnt Collaborator, Interventional testing program. Advised on health span and life span studies, conceived of and piloted cognitive studies on ITP aging cohorts, revised renewal application with JAX, UM and UTHSCSA. Member of ITP Access Panel.

01/19 – Prsnt Scientific lead, TRPC3 drug discovery program with Icagen, GVK and Intellisym. This program has set up screens on TRPC3 ion channel activity, has made a 3-D computational model of TRPC3, synthesized a panel of reference compounds, accessed and screened ~265,000 compounds. Plan to launch the 'Structure-activity relationship' of 'hit' chemical molecules to define quality chemical 'leads' in 2020.

02/20 – Prsnt Associate Member of the JAX Center for Aging Research

05/06/2020 BOT Strategy Committee Meeting, presenter on team translation program: TRPC3

05/20/2020 Meeting with Donor, Marta Frank Research Fund Endowment and Nancy Fox

09/16/2020 JAXTAPOSITION, HEALTHY AGING AND ALZHEIMER'S DISEASE: Detecting the genes that protect us from Alzheimer's

**TRAINING OF STUDENTS/POST DOCTORAL** (present and past with select achievements)

- 06/17 – Prsnt Amy Dunn, postdoctoral fellow
- STAT 2019 Wunderkind Award
  - Symposia Chair 2019 "Gene-by-environment interactions in brain function and behavior", International Behavioural and Neural Genetics Society' (IBANGS)
  - Alzheimer's disease Association Research Award (02/2018-02/2021, 175 K costs)
  - 2018 The Jackson Laboratory (JAX) Scholar Awardee
  - IBANGS Travel Award and Membership Award (2018)
  - Oral presentation IBANGs meeting, Rochester, MN. May 17th-21st, 2018
  - Alfond Leaders award recipient (2018)

- 05/18 – Prsnt Sarah Heuer, graduate student, Genetics Track, The Jackson Laboratory
- Predoctoral fellow, Precision Genetics of Aging, Alzheimer’s Disease and Related Dementias (PGAD) T32 Training Program (2020-2022)
  - Burroughs Wellcome Training Fellow (2018-2019)
  - Oral presentation, 2019 Society for Neuroscience Meeting, Chicago (10/19/2019)
  - Speaker, Complex Trait Consortium meeting, San Diego, CA (06/10/2019)
  - Invited speaker, ROSMAP meeting, Chicago, IL (04/15/2019)
  - Speaker, AAIC, Virtual (07/27/2020)
- 03/19 – Prsnt Niran Hadad, postdoctoral fellow, The Jackson Laboratory
- Pyewacket fellow (11/19 – present)
- 05/19 – Prsnt Brianna Gurdon, research intern, The Jackson Laboratory
- Resident Assistant (19<sup>th</sup>) and graduate (18<sup>th</sup>), JAX Summer Student Program
  - Project Lead, BRAINSPACE award, Human Brain Project
  - Quantitative analysis of brain cell types associated with resilience to AD
- 05/19 – Prsnt David Anderson, research intern, The Jackson Laboratory
- Quantitative analysis of transposable elements associated with resilience to AD
- 07/19 – Prsnt Maria Telpoukhovskaia, research scientist, The Jackson Laboratory
- Invited speaker, Single-Nucleus/Single Cell Profiling, Joint Meeting of the Molecular Mechanism of the Vascular Etiology of Alzheimer’s Disease (M2OVE-AD) and the Resilience-Alzheimer’s Disease Consortia
  - Scientific Organizer and Session Chair, JAX AD Workshop 2021
- 09/19 – Prsnt Andrew Ouellette, graduate student, University of Maine, GSBSE program
- Predoctoral fellow, UMaine GSBSE T32 Training Program (2020-2022)
  - 1<sup>st</sup> author paper in Cell Reports (09/01/20)
  - Co-author in publications: eLife (04/20, 3<sup>rd</sup> author) and GBB (11/19, 2<sup>nd</sup> author)
  - 1<sup>st</sup> author poster at Society for Neuroscience Meeting, Chicago IL (10/19)
- 03/20 – Prsnt Jill King, postdoctoral fellow, The Jackson Laboratory
- 07/20 – Prsnt Miko Dai, rotation student, The Jackson Laboratory

### **Alumni**

- 09/20 – 11/20 Jiaxin Li, GENEJAX rotation student, The Jackson Laboratory
- 09/20 – 11/20 Yehya Barakat, JAX/Tufts Neuro rotation student, The Jackson Laboratory
- 09/18 – 05/20 Patricia Doyle, research intern, The Jackson Laboratory
- 6<sup>th</sup> place poster presenter (60+ posters from interns, grad students, postdocs and research scientists) at The Jackson Laboratory Scientific Symposium, 05/2019
  - Current position, doctoral PhD student, University of Kentucky
- 11/18 – 11/19 Alex Bednarek, research intern, The Jackson Laboratory
- Characterized impact of genetic context on ALS and FTD mutations
  - Software Engineering, Plutoshift, Palo Alto, CA
- 05/18 – 08/19 Erin Merchant, summer intern and student intern, The Jackson Laboratory
- Developed workflow for brain-wide quantification of amyloid
- 06/19 – 08/19 Andrea Mirow, summer student, undergraduate at Amherst College, MA
- Graduate of JAX Summer Student Program
  - Current position, Kauffman Fellow, Amherst College, MA

- 01/14 – 06/19 Sarah Neuner, graduate student, Neuroscience Track, UTHSC
- 2018 BrightFocus Travel Award, Molecular Neurodegeneration, Sweden
  - Awarded F31 NIA NRSA grant award (2015-2019)
  - Invited talk, Nanosymposium, Society for Neuroscience 11/15/2017
  - Travel award - Systems Genetics of Neurodegeneration, Germany (08/25-09/01/2017)
  - Invited talk, Nanosymposium, Society for Neuroscience 2017
  - Awarded Best graduate student talk 2017 JAX Scientific Symposium
  - Presenter award for graduate talk 2017 Complex Trait Consortium meeting
  - Research abstract selected for Press Conference on Aging at SFN, 2015
  - Current position, postdoctoral fellow in Alison Goate's lab, Mt. Sinai, NY
  - HHMI 2020 Hanna Gray Fellow, Semi-finalist (Goate lab, Mt. Sinai, NY)
- 02/17 – 08/19 Andrew Ouellette, research intern
- 1<sup>st</sup> author poster at Complex Trait Consortium Meeting (06/08/19)
  - 1<sup>st</sup> author poster at Society for Neuroscience Meeting, San Diego CA (11/05/18)
  - 1<sup>st</sup> author poster at Maine Chapter Society for Neuroscience Meeting (11/04/17)
  - Current position, doctoral student, University of Maine
- 11/17 – 6/19 Natalia Bachelder, research intern, The Jackson Laboratory
- Current position, EMT and Nursing student at UNE (2020)
- 05/18 – 06/19 Grace Fisher, research intern, The Jackson Laboratory
- Current position, data analyst, Athena Health
- 05/18 – 08/18 Brianna Gurdon, summer student, The Jackson Laboratory
- Current position, research intern, The Jackson Laboratory
- 01/18 – 12/18 Glen Acosta, postdoctoral fellow
- Oral presentation International Behavioural and Neural Genetics Society (IBANGS)
  - IBANGS Genes, Brain and Behavior Travel Award (May 17<sup>th</sup>-21<sup>st</sup>, 2018)
  - Current position, Scientist I at Dicerna Pharmaceuticals, Cambridge MA
- 04/18 – 12/18 Travis McMurphy, postdoctoral fellow
- Current position, postdoctoral fellow AstraZeneca, Gaithersburg, MD
- 06/16 – 05/17 John Buttross, undergraduate research assistant: Systems genetics of AD
- Best paper award at 2017 Tennessee Academy of Science's meeting (role: mentor)
  - 1<sup>st</sup> place presentation in Cell Biology at the The Kathryn Hoyle Bradley Prize in Health Sciences at the 2017 Alpha Chi National College Honor Society
  - Robert H. Buckman and Joyce Mollerup Scholarship for Lasallian Fellow
  - Current position, medical student, UTHSC (MD, graduate class of 2022)
- 06/17-08/17 Michelle Kung, summer student, undergraduate at Villanova, PA
- Graduate of JAX Summer Student Program
  - Project developed workflow for brain-wide quantification of astrocytes
  - Semifinalist for the Fulbright Scholarship (2018-2019)
  - Current position, medical student, Temple University School of Podiatric Medicine (class of 2023)
- 01/14 – 11/16 Lynda Wilmott, postdoctoral fellow, Neuroscience Track, UTHSC
- Awarded American Federation of Aging Research Grant Award, 2015-2016
  - Awarded Alzheimer's Disease Drug Discovery Scholarship, 2015
  - Current position, Research Scientist, Washington University (PI: Paul Kotzbauer)

- 01/14 – 01/15 Kevin Hope, graduate student (EPhys), Neuroscience Track, UTHSC
- Current position, postdoctoral fellow in Clement Chow’s lab, University of Utah
- 09/14 – 09/15 Iman Abutineh, undergraduate research assistant: Immunohistochemistry (CBU)
- Current position, resident physician, UTHSC (MD, graduate class of 2019)
- 06/14 – 09/14 Anna Zhu, M1 medical student summer research rotation, UTHSC (class of 2018)
- Gold Humanism Honor Society
  - Current position, Psychiatry resident, UCLA Semel Institute for Neuroscience and Human Behavior

### **MENTORING OF WOMEN and UNDERREPRESENTED IN STEM** (within/outside JAX)

2019 – Liaison for Women and Underrepresented Minorities in STEM

- Andrea Mirow, Kauffman Fellow (Amherst College)
- Ann Wells, PhD, Laboratory of Dr. Greg Carter (JAX)
- Selcan Aydin, PhD, Laboratory of Dr. Steve Munger (JAX)
- Lindsay Hohsfield, PhD, Laboratory of Dr. Kim Green (UCI)
- Berenice Benayoun, PhD, Assistant Professor (USC)
- Sarah Parker, PhD, Research Scientist (Cedars-Sinai Medical Center)

### **LEADERSHIP TRAINING**

09/19 – Prsnt Coaching for the feminist, progressive, and cutting-edge professional (private)

05/20 – Prsnt Executive coaching, Barbara Babkirk of Heart at Work Associates (JAX)

### **LEADERSHIP and PROFESSIONAL SOCIETIES**

- 1999 - 2001 American Psychological Association, Student Member
- 2001 - Society for Neuroscience, Member
- 2014 - Gerontological Society of America, Member
- 2016 - American Association for the Advancement of Science
- 2017- International Behavioural and Neural Genetics Society
- 2018- New York Academy of Sciences, Member
- 2018 - Member of the Steering Committee, Winter Conference on Neural Plasticity
- 2019 - Executive Committee of the Neurodegenerative Disease Working Group, NYGC
- 2019 - Member, AMP-AD single-cell Working Group, NIA
- 2019 - Member, Planning Committee American Federation for Aging Research New Investigator in AD Meeting
- 2019 - Member, NIA Reserve and Resilience Animal Studies Workgroup
- 2019- Director of the JAX Center for Alzheimer’s and Dementia Research
- 2020- Awards Committee, International Behavioural and Neural Genetics Society
- 2020- Member, NIA Intervention Testing Program Access Panel

### **THESIS and QUALS COMMITTEE MEMBERSHIP**

- 12/14 – 08/16 Jesse Gammons (O’Connell Lab), University Tennessee Health Science Center
- 12/14 – 05/19 Sarah Neuner (Kaczorowski Lab), University Tennessee Health Science Center and The Jackson Laboratory
- 01/17 – 06/17 Candice Byers (Baker Lab), Tufts University, Genetics program
- 09/18 – Prsnt Sarah Heuer (Kaczorowski Lab), Tufts University, Genetics program
- 03/19 – Prsnt Sarah Holbrook (Cox Lab), University of Maine, GSBSE program

09/19 – Prsnt Andrew Ouellette (Kaczorowski Lab), University of Maine, GSBSE program  
06/20 – Prsnt Luke Parsley (Tewhey Lab), Tufts University, Genetics program

### **TEACHING RESPONSIBILITIES** (present and past) chronological

*Date, Course, Program, Department/Affiliation*

August 2020 Co-organizer "Systems Genetics of Ageing", Summer School in Systems Medicine, Frauenchiemsee, Germany

10/20/2019 Lecture, Professional Development Workshop at Society for Neuroscience "Bringing Genetic Diversity to Neuroscientific Research"

04/12/2019 Lecturer, Development of Preclinical Models, The Jackson Laboratory

09/06/2019 Webinar | Incorporating Genetic Diversity in Mouse Models "Incorporating Genetic Diversity in Mouse Models and the Potential for Precision-Medicine for Alzheimer's" "Invited webinar: Nathan Shock Center at the Jackson Lab. Host: Steve Austad.

10/20/2019 Invited Speaker, Development Workshop at Society for Neuroscience. "Bringing Genetic Diversity to Neuroscientific Research" Professional

08/01/2018 Lecturer, Neurological Disease and Aging, The Jackson Laboratory

04/05/2018 Session Chair and Lecturer "Genetics, Environment and Alzheimer's Disease Susceptibility" at Alzheimer Association 2018 CT Dementia Education Conference (Overall rating, 96% excellent, 80+ participants) Host: Stacy Chavis

09/05/2017 Lecture "Model systems for GWAS validation" Conference on Advanced Psychometric Methods in Cognitive Aging Research (Overall rating, 89% excellent, 54 participants) Host: Paul Crane and Dan Mungas

04/21/2017 Workshop on Neurogenetic Tools, JAX

09/15 – 10/16 Co-director of the Neuroscience Seminar Series, UTHSC

03/15/2016 Teaching Cellular Neuroscience lecture (Topic: Aging, Channels and Receptors) (6 of 6 anonymous student assessments of lecture ranked outstanding)

09/05 – 05/06 Student of Searle Center for Teaching Excellence Certification Program, Northwestern University

09/05 – 05/05 Teaching Assistant for Dr. Teresa Horton Science & engineering research and teaching synthesis (SERTS), Northwestern University

09/02 – 05/03 Teaching Assistant for Dr. Nelson Spruston and Dr. Mark Segraves SERTS, Northwestern University Institute for Neuroscience

09/98 – 05/99 Academic Tutor, Tutoring and Academic Resource Center University of Wisconsin at Milwaukee, WI

### **MAJOR RESEARCH INTERESTS** (1/2 page maximum)

**Genetic mechanisms underlying cognitive decline and Alzheimer's disease** – A goal is to identify early causative events that underlie cognitive deficits associated with 'normal' aging and Alzheimer's disease. We use multidisciplinary approaches that combine systems genetics with innovative high resolution and high throughput membrane proteomics, viral-based gene transduction approaches, behavioral assays, *in vitro* brain slice electrophysiology and *in vivo* electrophysiological recordings in freely behaving mice, to identify and understand how genetic factors and misregulated membrane proteins in the hippocampus of aging and AD mouse models alter hippocampal neuron excitability, functional connectivity of neural networks, and memory.



**Cognitive resilience to Alzheimer's disease** - Although we know of many gene mutations that cause Alzheimer's disease, some people that carry these mutations are somehow resistant to the mental decline caused by this devastating condition. If we understand more about the genes and biological mechanisms that allow these individuals to be resistant to Alzheimer's disease, we should be able to develop new cures and preventions that take advantage of this knowledge. Because it is very difficult to find the genes and mechanisms behind resistance to Alzheimer's Disease in humans, we will employ a strategy that uses sophisticated computational and statistical methods to merge knowledge from our mouse experiments with human data; this strategy will vastly improve our ability to find candidate Alzheimer's resistance genes and mechanisms in humans.

**Mechanisms of resilience to neurodegenerative diseases and mixed-pathology dementias**

– Greater mechanistic insight into the causal factors that underlie selective neuronal vulnerability and resilience to neurodegeneration across diseases like Parkinson's, Huntington's, Mixed-pathology dementia, Frontotemporal dementia and Alzheimer's are needed to identify novel therapeutic targets. We have developed models and computational tools to identify these targets.

PRESS COVERAGE

Physician's Weekly, [Early Cognitive Enrichment as Kids Equals Better Cognition as Adults](#)

06/30/2020

MEDPADE TODAY, [Alzheimer's Changes Tied to Childhood Cognitive Experience](#) 06/29/2020

Dentistry Today, [Rapamycin Fights Gum Disease and Spurs Bone Growth in Older Mice](#)

05/02/2020

Bangor Metro, [Why Maine's doctors and researchers want to watch you sleep](#) 02/16/2020

STAT, [Wunderkind Award to postdoctoral fellow Dr. Amy Dunn in Kaczorowski lab](#)

New Scientist, [Anti-ageing drug rejuvenates the mouths and oral microbiome of mice](#) 12/16/2019

Nature, LabAnimal, [Animal models of Alzheimer's disease embrace diversity](#) 08/19/2019

Nathan Shock Centers of Excellence in the Basic Biology of Aging, [Webinar | Incorporating Genetic Diversity in Mouse Models](#), 08/08/2019

Neuron Previews, [Effects of Species-Specific Genetics on Alzheimer's Mouse Models](#) 02/06/2019

Speaking of Research, [Research Roundup](#) 01/04/2019

Journal Tribune [A better mouse: Using genetic diversity to accelerate Alzheimer's research](#)

12/29/2018

Alzforum ["Missing Ingredient: New Mice Model Alzheimer's Genetic Variability"](#) 12/28/2018

genomeweb [New mice for the job](#) 12/28/2018

NIH ["Better mouse model built to enable precision-medicine research for Alzheimer's"](#) 12/27/2018

Science Daily [Better mouse model built to enable precision-medicine research for Alzheimer's](#)

12/27/2019

UPI [Genetic diversity could bring about better Alzheimer's treatment, study says](#) 12/27/2018

Genetic Engineering & Biotechnology News ["Improved Alzheimer's Mouse Model Paves the Way to Precision Medicine"](#) 12/27/2018

Nature Press ["Frustrated Alzheimer's researchers seek better lab mice"](#) 11/21/2018

Neuro Central ["From risk to resilience: understanding the role of genetics in Alzheimer's disease"](#) 9/19/2018

The American Federation for Aging Research (AFAR) “‘Biomarkers of Resilience’ May Protect Us From Alzheimer’s” 09/20/2018

Alzforum “‘Can Common Genetic Variation in Mice Nail Genes of Aging, Alzheimer’s?’”, 11/26/15  
Society for Neuroscience Meeting, Oct 20<sup>th</sup> 2015, Chicago, IL

**RESEARCH SUPPORT** (present and brief summary of past)

*Grant Title:* “Workflow optimization for brain-wide spatial analysis to identify regional and cell-type correlates of resilience to Alzheimer’s in the AD-BXD mouse population (BRAINSPEACE).”

*Funding Agency:* Human Brain Project

*Amount:* Voucher, Software Development

*Period:* 2020 – 2021

*Role:* Kaczorowski (Co-PI, Puchades)

*Grant Title:* RF1 AG063755, “Systems Genetic Analysis of Cognitive Resilience Using Multi-Parent Crosses.”

*Funding Agency:* NIH, NIA

*Amount:* \$6.8 million total costs (\$4.2 million direct costs)

*Period:* 09/01/2019 – 03/30/2024

*Role:* Kaczorowski (PI)

*Grant Title:* U01AG022308, “Interventions that retard mammalian aging”

*Funding Agency:* NIA

*Amount:* \$7.8 million total costs

*Period:* 09/01/2019 - 03/31/2024

*Role:* Kaczorowski (collaborator, salary only, 5% effort)

*Grant Title:* R61 NS115129, “Alzheimer's Disease-Related Dementia Models by Precision Editing and Relevant Genetic x Environmental Exposures.”

*Funding Agency:* NIH, NINDS

*Amount:* \$4.5 million total costs (\$2.5 million direct costs)

*Period:* 09/01/2019 - 08/31/2024

*Role:* Kaczorowski (MPI, corresponding)

*Grant Title:* Gene x Environment Interactions in Hypothalamic Dysfunction in Alzheimer's Disease (Multi-PI: O’Connell and Kaczorowski) AG059778-01

*Funding Agency:* NIH, NIA

*Amount:* \$4.2 million total costs (\$2.4 million direct costs)

*Period:* 07/01/2018-06/30/2023

*Role:* Kaczorowski (Co-PI; Kristen O’Connell is corresponding PI)

*Supplement AG059778-01S1 \$437,500 (total)*

*Grant Title:* Systems Genetics Approach to Determine Interactors of Apolipoprotein E in Alzheimer’s Disease (R01 AG055104 01A1; Carter, Howell, Sasner)

*Funding Agency:* NIH, NIA

*Amount:* Salary Only 0.60 calendar

*Period:* 04/01/2018-03/31/2023

*Role:* Co-I, salary only

*Grant Title:* Systems Genetics Analysis of Resilience to Alzheimer's disease AG057914-01

*Funding Agency:* NIH, NIA

*Amount:* \$5.4 million total costs (\$3.3 million direct costs)

*Period:* 09/15/2017 – 08/31/2022

*Role:* Kaczorowski (PI)

*Supplement R01 AG057914-02S1 Kaczorowski (PI) 09/01/18-05/31/19 \$437,500 (total)*

*Supplement R01 AG057914-03S1 Kaczorowski (PI) 09/01/19-05/31/20 \$437,500 (total)*

*Grant Title:* R01 AG054180, "Systems Control of Normal Aging and Alzheimer's Disease."

*Funding Agency:* NIH, NIA

*Amount:* \$3.2 million total costs (\$1.92 million direct costs)

*Period:* 05/15/2017 – 03/31/2022

*Role:* Kaczorowski (PI)

*Supplement R01 AG054180-02S1 Kaczorowski (PI) 09/01/18-04/30/19 \$420,294 (total)*

*Supplement R01 AG054180-03S1 Kaczorowski (PI) 09/01/19-04/30/20 \$420,294 (total)*

*Grant Title:* Mechanisms of an interaction between genetics and diet in Alzheimer's Disease

*Funding Agency:* Alzheimer's Association AARF-18-565506 Dunn (PI)

*Amount:* \$174,973 direct costs

*Period:* 03/01/18-02/28/21 *Role:* Mentor (PI, Amy Dunn Ph.D)

### **Completed Research Support**

*Grant Title:* U01DA041668-03, "Genetic mapping of sleep and circadian architecture as a risk factor in Alzheimer's Disease in diverse mouse models"

*Funding Agency:* NIH/NIDA

*Amount:* \$250,000 direct costs

*Period:* 03/01/18-02/28/19

*Role:* MPI, Kumar, O'Connell, Kaczorowski

*Grant Title:* System Genetics to Identify Modifiers of Alzheimer's Disease

*Funding Agency:* Bright Focus Foundation

*Amount:* \$300,000 direct costs

*Period:* 07/1/2016 – 06/30/2020

*Role:* Kaczorowski (PI)

*Grant Title:* Identification of Genetic Modifiers of Neuronal Deficits and Memory Failure in Alzheimer's Disease (F31 AG050357)

*Funding Agency:* NIH

*Amount:* \$172,480 total costs

*Period:* 07/01/2015 – 06/30/2019

*Role:* Kaczorowski (Sponsor)

*Grant Title:* Mapping AD memory failure: molecules to connectivity of brain networks (R21AG048446)

*Funding Agency:* NIH

*Amount:* \$418,000 total costs

*Period:* 08/14/2015 – 08/13/2017 (in NCE)

*Role:* Kaczorowski (PI)

*Grant Title:* 2017 Glenn Award for Research in Biological Mechanisms of Aging

*Funding Agency:* Glenn Foundation For Medical Research *Amount:* (\$60,000)

*Grant Title:* Novel drug discovery method to identify and validate Kv12.2 as a target for cognitive enhancement

*Funding Agency:* AFAR grant

*Amount:* \$52,500 total costs

*Period:* 12/31/2015 – 11/21/2016

*Role:* Kaczorowski (Sponsor)

*Grant Title:* Proteomics of memory: Normal Aging and Alzheimer's Disease (K99/R00 AG039511)

*Funding Agency:* NIH

*Amount:* \$927,000 total costs, entering NCI

*Period:* 07/01/2012 – 05/31/2016

*Role:* Kaczorowski (PI)

*Grant Title:* New Investigator Award in Alzheimer's disease (RAG14141)

*Funding Agency:* American Federation for Aging Research

*Amount:* \$100,000 total costs

*Period:* 07/01/2014 – 06/30/2016 *Role:* Kaczorowski (PI)

*Grant Title:* Learning in a Mouse Model of Alzheimer's Disease (F31 MH067445)

*Funding Agency:* NIH

*Amount:* \$43,978 (2002), \$46,594 (2004), \$46,594 (2005)

*Period:* 09/01/2003 – 08/31/2006 *Role:* Kaczorowski (Trainee)

## **EDITORIAL BOARDS AND ACTIVITY**

2020 – present	Reviewer, Science
2020 – present	Reviewer, eLife
2020 – present	Reviewer, Stem Cell Reports
2020 – present	Reviewer, Molecular Neuropsychiatry
2019 – present	Review Editor, Frontiers Cellular Neuroscience
2019 – present	Reviewer, Neuropsychopharmacology
2019 – present	Reviewer, Trends in Genetics
2019 – present	Reviewer, Science Signaling
2019 – present	Reviewer, Cell Reports
2019 – present	Reviewer, Genome Research
2018 – 2020	Reviewer, Alzheimer's Association International Conference® (AAIC), (Abstract review/selection of oral and poster sessions)
2018	Reviewer, Alzheimer's Association International Conference® (AAIC), Chicago, Illinois (Abstract review/selection of oral and poster sessions)
2018 – present	Reviewer, Nature Neuroscience
2017	Special Edition Editor, Behavioural Brain Research - Mechanisms of Aging and Alzheimer's
2017 – present	Reviewer, Learning and Memory
2016 – present	Review Editor, Frontiers in Molecular Neuroscience
2016 – present	Reviewer, Molecular Brain
2015 – present	Reviewer, Behavioural Brain Research
2015 – present	Reviewer, Computational and Structural Biotechnology Journal
2015 – present	Reviewer, Experimental Biology and Medicine

2015 – present      Reviewer, Nutritional Neuroscience  
2014 – present      Reviewer, Behavioral Brain Research  
2014 – present      Reviewer, PLOS ONE  
2012 – present      Reviewer, Biophysical Journal  
2010 – present      Reviewer, Physiological Genomics

### **PATENT APPLICATIONS**

TRPC3 as a therapeutic target for Alzheimer’s Disease (WGS Ref. No. J022770063US00, filed 11/20/2018)

DLGAP2 as a therapeutic target for and Alzheimer’s Disease and Age-related cognitive decline (WGS Ref. J0227.70064US00/US01, filed 10/29/2018)

### **INVITED GRANT REVIEWER**

2020-2024, Cellular and Molecular Biology of Neurodegeneration Study section (standing member)  
2020 American Federation for Aging Research, Sagol Network Geromic Award for Junior Faculty  
2020 ZRG1 MDCN-P(56) “Molecular and Cellular Causal Aspects of AD” (4 grants) 07/16/2020  
2020 SEP, Exploratory Alzheimer’s Disease Research Center (11 P20 grants) 01/31/2020  
2019 Special ZAG1 ZIJ G Review Panel: PAR-18-296 (1 U19 grant) 06/24/2019  
2019 Cellular and Molecular Biology of Neurodegeneration Study section (7 grants) 06/10/2019  
2018 Alzheimer’s Association Research Fellowship Review Committee (1 grant) 11/29/2018  
2018 Glenn/AFAR Postdoctoral Fellowship Committee (23 grants) 06/21/2018  
2018 NIH study section: ZRG1 MDCN-E (7 R01 grants) Special Emphasis Panel- 06/28/2018  
2018 NIH study section: NIA special emphasis panel (1 P01 grant, 04/27/2018)  
2018 Alzheimer’s Association Research Fellowship Review Committee (2 grants)  
2017 Glenn/AFAR Postdoctoral Fellowship Committee (23 grants): Study Section (12/4/2017)  
2017 DOD - Department of Defense (DOD) Peer Reviewed Alzheimer’s Research Program (PRARP) (6-8 grants): Study Section (11/27-11/30)  
2017 NIH special emphasis panel (4 grants): ZRG1 GGG-E (90) MGB Study Section (09/12/2017)  
2017 NIH study section (7 grants): ZRG1 MDCN-E (56) and (57) special emphasis panel (06/20/17), DC  
2017 NIH study section (6 grants): ZRG1 MDCN-T (56) special emphasis panel (03/02/17), DC  
2017 Alzheimer’s Association Research Fellowship Review Committee (5 grants)  
2016 NIH study section (5 grants): ZRG1 MDCN-T(56) MDCN-E(07) special emphasis panel (09/17/16), DC  
2016 Alzheimer's Association Research Fellowship Review Committee (7 grants)  
2015 Alzheimer's Association NIRG Review Committee (4 grants)  
2015 Methodological Innovation in Pharmacology Award, UTHSC, Dopicco (5 grants)  
2015 Arizona Alzheimer’s Consortium (Director: Carol Barnes – 1 grant)

### **\*BIBLIOGRAPHY**

#### *a1) Preprint papers*

Nackenoff, A.G., Hohman, T.J., Neuner, S.M., Akers, C.S., Weitzel, N.C., Shostak, A., Ferguson, S., Bennett, D.A., Schneider, J.A., Jefferson, A.L., **Kaczorowski, C.C.**, Schrag, M.S. (2019)

PLD3 is a neuronal lysosomal phospholipase D associated with  $\beta$ -amyloid plaques and cognitive function in Alzheimer's disease. [bioRxiv](https://doi.org/10.1101/746222), doi.org/10.1101/746222

Roy, S., Sleiman, Jha, Williams, E., Ingels, J., Chapman, C., McCarty, M., Hook, M., Sun, A., Zhao, W., Huang, J., Neuner, S.M., Wilmott, L., Shapaker, T., Centeno, A., Mozhui, K., Mulligan, M., **Kaczorowski, C.C.**, Lu, L., Read, R., Sen, S., Miller, R., Auwerx, J., Williams, R.W. (2019) Modulation of longevity by diet, and youthful body weight, but not by weight gain after maturity. [bioRxiv](https://doi.org/10.1101/776559), doi.org/10.1101/776559

*a2) Refereed (i.e., peer-reviewed) papers*

Dunn, A.R., Hadad, N., Neuner, S.M., Zhang, J., Philip, V.M., Dumitrescu, L., Hohman, T.J., Herskowitz, J.H., O'Connell, K.M.S., **Kaczorowski, C.C.** (2020) Identifying mechanisms of cognitive aging using a novel mouse genetic reference panel. [Frontiers in Cell and Developmental Biology](https://doi.org/10.3389/fcell.2020.562662), section Molecular Medicine. 8(895):1-16. Published online September 11, 2020. doi.org/10.3389/fcell.2020.562662

Ouellette, A., Neuner, S.M., Dumitrescu, L., Anderson, L.C., Gatti, D.M., Mahoney, E.R., Bubier, J.A., Churchill, G., Peters, L., Huentelman, M.J., Herskowitz, J.H., Yang, H., Smith, A.N., Reitz, C., Kunkle, B.W., White, C.C. De Jager, P.L., Schneider, J.A., Bennett, D.A., Seyfried, N.T., Alzheimer's Disease Genetics Consortium, Chesler, E.J., Hadad, N., Hohman, T.J, **Kaczorowski, C.C.** (2020) Cross-species analyses identify DLGAP2 as a regulator of age-related cognitive decline and Alzheimer's dementia. [Cell Reports](https://doi.org/10.1016/j.celrep.2020.108091). Published online September 1, 2020. doi.org/10.1016/j.celrep.2020.108091

Dumitrescu, L., Mahoney, E.R., Mukherjee, S., Lee, M.L., Bush, W.S., Engelman, C.D., Lu, Q., Fardo, D.W., Trittschuh, E.H., Mez, J., **Kaczorowski, C.C.**, Hernandez Saucedo, H., Widaman, K.F., Buckley, R., Properzi, M., Mormino, E., Yang, H., Harrison, T., Hedden, T., Nho, K., Andrews, S.J., Tommet, D., Hadad, N., Sanders, R.E., Ruderfer, D.M., Gifford, K.A., Moore, A.M., Cambronero, F., Zhong, X., Raghavan, N.S., Vardarajan, B., The Alzheimer's Disease Neuroimaging Initiative (ADNI), Alzheimer's Disease Genetics Consortium (ADGC), A4 Study Team, Pericak-Vance, M.A., Farrer, L.A., Wang, L., Cruchaga, C., Schellenberg, G., Cox, N.J., Haines, J.L., Keene, C.D., Saykin, A.J., Larson, E.B., Sperling, R.A., Mayeux, R., Bennett, D.A., Schneider, J.A., Crane, P.K., Jefferson, A.L., Hohman, T.J. (2020) Genetic Variants and Functional Pathways Associated with Resilience to Alzheimer's Disease. [Brain](https://doi.org/10.1093/brain/awaa209). 143(8):2561-2575. doi: 10.1093/brain/awaa209.

Heuer, S.E., Neuner, S.M., Hadad, N., O'Connell, K.M.S., Williams, R.W., Philip, V., Gaiteri, C., **Kaczorowski, C.C.** (2020) Elucidating the molecular systems that influence cognitive resilience to Alzheimer's disease in genetically diverse mice. [Learning & Memory](https://doi.org/10.1101/lm.051839.120), 2020 SfN Special Issue: [Neurobiological disorders affecting cognition](#). Published online August 17, 2020. doi/10.1101/lm.051839.120. [Featured article \(cover\)](#)

Hohman, T.J. and **Kaczorowski, C.C.** (2020) Modifiable Lifestyle Factors in Alzheimer's Disease: An Opportunity to Transform the Therapeutic Landscape through Transdisciplinary Collaboration. [JAMA Neurology](https://doi.org/10.1001/jamaneurol.2020.1114). Published online June 29, 2020. doi:10.1001/jamaneurol.2020.1114 Press coverage in Physician's Weekly, [Early Cognitive Enrichment as Kids Equals Better Cognition as Adults](#) and MEDPADE TODAY, [Alzheimer's Changes Tied to Childhood Cognitive Experience](#)

An, J., Kerns, K.A., Ouellette, A., Robinson, L., Morris, D., **Kaczorowski, C.C.**, Park, S.I., Mekvanich, T., Kang, A., Mclean, J.S., Cox, T.C., Kaeberlein, M. (2020) Rapamycin restores oral health in aging mice. eLife. doi: 10.7554/eLife.54318 [Press coverage in New Scientist](#)

Wan, Y-W., Al-Ouran, R., Mangleburg, C.G., Perumal, T.M., Lee, T.V., Allison, K., Swarop, V., Funk, C., Gaiteri, C., Allen, M., Wang, M., Neuner, S.M., **Kaczorowski, C.C.**, Phillip, V., Howell, G., Martini-Stoica, H., Zheng, H., Kim, J.W., Dawson, V., Dawson, T., Pao, P-C., Tsai, L-H., Haure-Mirande, J-V., Ehrlich, M.E., Mei, H., Zhong, X., Chakrabarty, P., Levites, Y., Wang, M., Dammer, E.B., Srivastava, G., Mukherjee, S., Sieberts, S.K., Omberg, L., Dang, K.D., Eddy, J.A., Snyder, P., Chae, Y., Amberkar, S., Wei, W., Hide, W., Preuss, C., Ergun, A., Ebert, P.J., Airey, D.C., Mostafavi, S., Yu, L., Klein, H., Carter, G.W., Collier, D.A., Y., Golde, T.E., Levey, A.I., Bennett, D.A., Estrada, K., Townsend, M.T., Zhang, B., Schadt, E., De Jager, P., Price, N.D., Ertekin-Taner, N., Liu, Z., Shulman, J.M., Mangravite, L., Logsdon, B. (2020) Meta-analysis of the Alzheimer's disease human brain transcriptome and functional dissection in mouse models. Cell Reports. Published online July 14, 2020. doi.org/10.1016/j.celrep.2020.107908

Dunn, A.R. and **Kaczorowski, C.C.** (2019) Regulation of intrinsic excitability: Roles for learning and memory, aging and Alzheimer's disease, and genetic diversity. Neurobiology of Learning and Memory. doi.org/10.1016/j.nlm.2019.107069

O'Connell, K.M.S., Ouellette, A.R., Neuner, S.M., Dunn, A.R., **Kaczorowski, C.C.** (2019) Genetic background modifies CNS-mediated sensorimotor decline in the AD-BXD mouse population. Genes, Brain and Behavior. doi: 10.1111/gbb.12603.

Dunn, A.R., O'Connell, K.M.S.\*, **Kaczorowski, C.C.\*** (2019) Gene-by-environment interactions in Alzheimer's disease and Parkinson's disease. Neuroscience & Biobehavioral Reviews, 103:73-80. doi.org/10.1016/j.neubiorev.2019.06.018; \* denotes co-senior authors

Neuner, S.M., Heuer, S., Huentelman, M., O'Connell, K.M.S. and **Kaczorowski, C.C.** (2019) Harnessing genetic complexity to enhance Alzheimer's disease mouse models: a path towards experimental precision medicine. Neuron doi:10.1016/j.neuron.2018.11.040 [Featured article \(cover\) and F1000 Recommendation by Paul Franken](#)

Neuner, S.M., Heuer, S., Zhang, J., Philip, V., and **Kaczorowski, C.C.** (2019) Identification of pre-symptomatic gene signatures that predict resilience to Alzheimer's disease. Frontiers in Genetics, Special Topics Systems Genetics of Neurodegenerative Disease, doi:10.3389/fgene.2019.00035

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Dunn, A.R.\*, Neuner, S.M.\*, Ding, S., Hope, K.A., O'Connell, K.M.S. and **Kaczorowski, C.C.** (2019) Cell-type specific changes in intrinsic excitability in the subiculum following novel experimental contexts and learning, eNeuro, doi.org/10.1523/ENEURO.0484-18.2018 \* co-firsts

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Garfinkel, B.P., Arad, S., Neuner, S.M., Netser, S., Wagner, S., **Kaczorowski, C.C.**, Rosen, C.J., Gal, M., Soreq, H., Orly, J. (2016) HP1BP3 expression determines maternal behavior and offspring survival. Genes Brain Behavior (PMID: 27470444).

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Clayton, T., Poe, M.M., Rallapalli, S., Biawat, P., Savic, M.M., Rowlett, J.K., Gallos, G, Emala, C.W., **Kaczorowski, C.C.**, Stafford, D.C., Arnold, L.A., and Cook, J.M. (2015) A Review of the Updated Pharmacophore for the Alpha 5 GABA(A) Benzodiazepine Receptor Model. International Journal of Medicinal Chemistry. (PMID: 26682068)

Neuner, S.M., Wilmott, L., Hope, K.A., Hoffmann, B., Chong, J.A., Abramowitz, J., Birnbaumer, L., O'Connell, K.M.S., Tryba, A.K., Greene, A.S., Chan, C.S., and **Kaczorowski, C.C.** (2015) TRPC3 channels critically regulate hippocampal neuron excitability and memory. Behavioural Brain Research, 281, 69-77 (PMID: 25513972)

Li, L., Chen, E., Yang, C., Zhu, J., Jayaraman, P., De Pons, J., **Kaczorowski, C.C.**, Jacob, H.J., Greene, A., Hodges, M.R., Cowley, A.W. Jr., Liang, M., Xu, H., Liu, P., Lu, Y. (2015) Improved Rat Genome Gene Prediction by Integration of ESTs with RNA-Seq Information. Bioinformatics, 31, 25-32. (PMID: 25217576).

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hypothalamus. Journal of Neuroscience. 34, 5486-5496. (PMID: 24741039) \***Faculty of 1000 Recommended Article**

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*h) Published abstracts (optional)*

Sarah M Neuner, Lynda Wilmott, Matthew DeBoth, Thomas Shapaker, Jesse Ingels, Lu Lu, Rob Williams, Gerd Kempermann, Matthew Huentelman, **Catherine C Kaczorowski** (2015) Multi-scale study of normal aging predicts novel late-onset Alzheimer's disease risk variants. BMC Bioinformatics, 16 (Suppl 15): p11.

Sarah M Neuner and **Catherine C. Kaczorowski** (2017) Discovering genetic modifiers of Alzheimer's Disease Using Novel Mouse Models. Alzheimer's and Dementia, Volume 13, Issue 7, Supplement, Page P975

Sarah M Neuner, Lynda A. Wilmott, Kristen M. O'Connell and **Catherine C. Kaczorowski** (2017) Mapping Resilience to Motor Symptoms and Frailty in Alzheimer's Disease. Alzheimer's and Dementia, Volume 13, Issue 7, Supplement, Page P646

Kristen MS O'Connell, Amy R Dunn, Andrew R Ouellette, Sarah M Neuner, **Catherine C Kaczorowski** (2018) Hypothalamic energy balance dysfunction in the etiology of Alzheimer's disease. Alzheimer's and Dementia, Volume 14, Issue 7, P1121

Amy R Dunn, Andrew Ouellette, Sarah M Neuner, Kristen MS O'Connell, **Catherine C Kaczorowski** (2018) Gene x diet interactions modify symptoms of Alzheimer's disease. Alzheimer's and Dementia, Volume 14, Issue 7, P332-3

Glen HG Acosta, Sarah M Neuner, Andrew Ouellette, Kristen O'Connell, **Catherine C Kaczorowski** (2018) CNS-mediated sensorimotor decline in a novel transgenic mouse model of Alzheimer's disease. Alzheimer's & Dementia, 14(7): p711

Christoph Preuss, Xulong Wang, Guruprasad Ananda, Sarah M Neuner, Vivek Philip, Kwangsik Nho, Ben Logsdon, Bruce T Lamb, **Catherine C Kaczorowski**, Michael Sasner, Gareth R Howell, Gregory W Carter (2018) Whole-exome analysis of late-onset Alzheimer's disease reveals novel candidate genes involved in cognitive function. Alzheimer's & Dementia, 17(7): p1402

Sarah M Neuner, Vivek Philip, Matthew J Huentelman, **Catherine C Kaczorowski** (2018) Identifying presymptomatic gene signatures predictive of resilience to Alzheimer's. Alzheimer's & Dementia, 17(7): p1451-1452

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Sarah E Heuer, Sarah M Neuner, Chris Gaiteri, **Catherine C Kaczorowski** (2019) MULTI-OMIC ANALYSIS IDENTIFIES TRANSCRIPTIONAL NETWORKS AND DRIVERS ASSOCIATED WITH COGNITIVE AGING AND ALZHEIMER'S DISEASE. Alzheimer's & Dementia, 15(7): p1260-1261.

Matteo Grudny, Sarah M Neuner, Amy R Dunn, Marjory Pompilus, **Catherine C Kaczorowski\***, Marcelo Febo\* (2019) BACKGROUND GENETICS IMPACTS MICROSTRUCTURE MEASURES IN MOTOR CORTEX AND HIPPOCAMPUS OF WILDTYPE AND 5XFAD MICE. Alzheimer's & Dementia, 15(7): p622

Amy R Dunn, Andrew R Ouellette, Sarah M Neuner, Jigang Zhang, Vivek Philip, Kristen O'Connell, **Catherine C Kaczorowski** (2019) GENE-BY-ENVIRONMENT REGULATION OF ALZHEIMER'S DISEASE PATHOGENESIS. Alzheimer's & Dementia, 15(7): p1308

**Catherine C Kaczorowski**, Amy R Dunn, Sarah M Neuner, Vivek Kumar, Kristen MS O'Connell (2019) IDENTIFICATION OF SIPA1L1 AS A NOVEL CANDIDATE GENE MEDIATING PRECLINICAL WEIGHT LOSS IN A MOUSE MODEL OF ALZHEIMER'S DISEASE. Alzheimer's & Dementia, 15(7): p625

*i) Invited lectures (2015 - present)*

**2021**

“Systems Approach to Identify Resilience-based Targets for Aging and Alzheimer's” – Host: Pankaj Kapahi, The Buck Institute, January 15<sup>th</sup>, 2021 (Virtual)

**2020** (15)

“Discovery of genetic and environmental factors that promote resilience to familial ALS may hold key to novel therapeutics”. Host: Kim Staats, Prevent ALS Workshop, October 6, 2020 (Virtual)

“Harnessing Genetic Diversity in Mice to Discover Mechanisms of Polygenic Human Diseases”, Host: Dr. Larry Tabak and Dr. Barbara Wold. NIH Advisory Committee to the Director (ACD) Working Group on Enhancing Rigor, Transparency, and Translatability in Animal Research. October 26<sup>th</sup>, 2020 (Virtual)

“How did I get here?” – Host: Stephanie Lederman, AFAR September 27<sup>th</sup>, 2020 (Virtual)

“Systems Approach to Identify Resilience-based Targets for Aging and Alzheimer's” – Host: NYGC Neurodegenerative Disease Working Group Executive Committee, September 18<sup>th</sup>, 2020 (Virtual)

“Systems Approach to Identify Resilience-based Targets for Aging and Alzheimer's” – Host: Paul Anirban, Penn State, September 10<sup>th</sup>, 2020 (Virtual)

“Single nuclear RNA sequencing reveals microglia diversity associated with cognitive resilience in the AD-BXD mouse model of human Alzheimer's disease” – Alzheimer's Association International Conference. July 27<sup>th</sup>, 2020. (Virtual, recorded by Sarah Heuer).

“Precision Medicine Approach to Novel Target and Biomarker Discovery to Promote Resilience” - 3rd Annual NIA-AA Symposium ENABLING PRECISION MEDICINE FOR ALZHEIMER'S DISEASE THROUGH OPEN SCIENCE, Host: Suzana Petanceska, July 23<sup>rd</sup>, 2020. (Virtual).

“Single nuclear RNA sequencing reveals microglia diversity associated with cognitive resilience in the AD-BXD mouse model of human Alzheimer's disease” – Alzheimer's Afternoon Seminar Series. Host: Lance Johnson, University of Kentucky, Sanders-Brown Center on Aging/Alzheimer's Disease Research Center. July 2<sup>nd</sup>, 2020. (Virtual)

“Precision Medicine Approach to Novel Target and Biomarker Discovery to Promote Resilience” - University of Michigan, June 26<sup>th</sup>, 2020. (Virtual).

“Differential composition and molecular diversity of hippocampal single-cell nuclei in mice exhibiting extreme susceptibility and resilience to autosomal dominant AD” - Rush University, Host: David Bennett, May 5<sup>th</sup>, 2020. (Virtual)

“Harnessing genetic diversity to identify cognitive resilience genes and pathways “Invited speaker: Harvard Medical School/Mass General Hospital. Host: Brad Hyman. April 30<sup>th</sup>, 2020 (Virtual).

“Resilience to AD is associated with changes in composition and molecular diversity of hippocampal cell nuclei“, 2020 Winter Conference on Neural Plasticity (data blitz), St. Kitts, February 9<sup>th</sup>, 2020.

“Multi-Omic Analysis Identifies Transcriptional Networks and Drivers Associated with Resilience to Cognitive Aging and Alzheimer’s Dementia“, Neurodegenerative and Neuropsychiatric disorders - IBANGS, May 16<sup>th</sup>, 2020. (rescheduled, Coronavirus travel advisory)

“Precision Medicine Approach to Novel Target and Biomarker Discovery to Promote Resilience” - Tufts Department of Integrative Physiology and Pathobiology, Host: Shruti Sharma, April 29<sup>th</sup>, 2020 (rescheduled, Coronavirus travel advisory).

“Multi-Omic Analysis Identifies Transcriptional Networks and Drivers Associated with Resilience to Cognitive Aging and Alzheimer’s Dementia “University of Florida, Host: Tom Foster, April 16<sup>th</sup>, 2020 (rescheduled, Coronavirus travel advisory).

### **2019** (20)

“Multi-Omic Analysis Identifies Transcriptional Networks and Drivers Associated with Resilience to Cognitive Aging and Alzheimer’s Dementia“, Gladstone Institute of Neurological Disease/UCSF, Host: Lennart Mucke, December 16<sup>th</sup>, 2019.

“Optimal Use of Mice and Rats in Aging Research” Invited speaker: National Institute on Aging. Bethesda, MD. Hosts: Francesca Macchiarini and Rich Miller. Dec. 10-11, 2019.

“Harnessing genetic diversity to identify cognitive resilience genes and pathways“ Invited speaker: Baylor College of Medicine. Host: Josh Shulman. Nov. 21, 2019.

“Multi-Omic Analysis Identifies Transcriptional Networks and Drivers Associated with Cognitive Aging and Alzheimer’s Disease“ Invited session chair and speaker: Gerontological Society of America (GSA) 2019 Annual Meeting. Host: Matt Kaeberlein, Chair of the GSA Biological Sciences Section and invited speaker. Nov. 16, 2019.

“Systems Genetics Approach to Discover and Validate Resilience-Based Therapeutic Targets for AD prevention “ Invited speaker: ACT-AD/FDA/Alzheimer's Disease Allies Meeting. Host: Accelerate Cure/Treatments for Alzheimer’s Disease Coalition. Nov. 13, 2019.

“*Bringing Genetic Diversity to Neuroscientific Research* “ Invited speaker: Professional Development Workshop at Society for Neuroscience. Host: Elissa Chesler. October 20<sup>th</sup>, 2019.

“Genetics and Genomics Approaches to Study Resilience to Cognitive Aging and Alzheimer’s“ Invited speaker: Molecular and Cellular Cognition Society Meeting. Host: Ted Abel. October 18<sup>th</sup>, 2019.

“Single-Nucleus/Single Cell Profiling”: Chair and speaker. Host: Suzana Petencheska, Joint Meeting of the Molecular Mechanism of the Vascular Etiology of Alzheimer’s Disease (M2OVE-AD) and the Resilience-Alzheimer’s Disease Consortia. October, 2<sup>nd</sup>, 2019.

“Research Definitions for Reserve and Resilience in Cognitive Aging and Dementia “ Invited speaker: 1st Workshop on Research Definitions for Reserve and Resilience in Cognitive Aging and Dementia. Host: Yaakov Stern. Sept. 9<sup>th</sup>, 2019.

“Genetically Diverse Mice to Study Aging and its Diseases“ Invited speaker: Systems Biology of Aging: Data Science Meets Geroscience. Host: Duygu Ucar. Sept. 4<sup>th</sup>, 2019.

“Incorporating Genetic Diversity in Mouse Models and the Potential for Precision-Medicine for Alzheimer’s “ Invited webinar: Nathan Shock Center at the Jackson Lab. Host: Steve Austad. August 6<sup>th</sup>, 2019. [Webinar | Incorporating Genetic Diversity in Mouse Models](#)

“Multi-Omic Analysis Identifies Transcriptional Networks and Drivers Associated with Cognitive Aging and Alzheimer’s Disease“ Invited speaker: Alzheimer’s Association International Conference. July 17<sup>th</sup>, 2019.

“Enabling Precision Medicine for AD through Open Science. Your session is entitled: Predictors of AD Risk and Resilience: The Impact of Sex Differences and the Rise of the Microbiome“, Session Chair, 2019 NIA-AMP AD Symposium, Los Angeles, CA. July 12<sup>th</sup>, 2019. Host: Maria Carrillo, Alzheimer’s Association and Eliezer Masliah, NIA

“Genetics and Genomics Approaches to Study Resilience to Cognitive Aging and Alzheimer’s“ Invited speaker: University of Michigan. Host: Geoff Murphy. June 26<sup>th</sup>, 2019.

“Harnessing Mouse Diversity to Identify Mechanisms of AD Resiliency” Invited Speaker: AD Spring Symposium Presentation by MODEL-AD and University of Washington ADRC. Host: 'Lara Mangravite. May 9<sup>th</sup>, 2019.

“Mouse to human translation (and back) and Alzheimer’s Disease” Invited Speaker (\*Sarah Heuer, Tufts graduate student presented in my place). 10<sup>th</sup> Annual Rush Alzheimer’s Disease Center ROSMAP Investigator’s Meeting. Host: David Bennett. April 15<sup>th</sup>, 2019.

“Genetics and Genomics Approaches to Study Resilience to Cognitive Aging and Alzheimer’s“ Invited speaker: AD/PD 2019 Common Features of Neurodegenerative Diseases, Lisbon, Portugal. Host: Guojun Bu. March 26<sup>th</sup>, 2019.

“Harnessing mouse genetics to identify mechanisms of resilience to Alzheimer’s“, Gladstone Institute of Neurological Disease Seminar Series, Host: Lennart Mucke, March 21<sup>st</sup>, 2019.

“Harnessing mouse genetics to identify mechanisms of resilience to Alzheimer’s “, University of Alabama, Host: Jeremy Herskowitz, February 28<sup>th</sup>, 2019.

“Systems Genetic Analysis of Neural Plasticity in the Context of Neurological Disease“, Session Chair, 2019 Winter Conference on Neural Plasticity, Tahiti, February 13<sup>th</sup>, 2019.

“Harnessing mouse genetics to identify mechanisms of resilience to Alzheimer’s “, Session Chair and Speaker, 2019 Winter Conference on the Neurobiology of Learning and Memory, Park City, UT, January 3<sup>rd</sup>, 2019.

## **2018** (13)

“Harnessing Genetic Diversity in Mice: a Path Towards Experimental Precision Medicine”, Invited Speaker, UTHSC Neurogenetics Symposium, Memphis, TN. Host: Rob Williams. November 30<sup>th</sup>, 2018.

“Systems genetics reveals novel mechanisms underlying resilience to Alzheimer’s Disease “Invited Plenary Lecturer, Columbia University Taub Institute Retreat, NY, Host: Jennifer Manly and Adam Brickman. November 9<sup>th</sup>, 2018.

“Harnessing Mouse Genetics to Test the Mechanisms Responsible for Neural Dysfunction in Alzheimer's Disease“ Invited speaker: 2018 Neuroinflammation symposium at the New York Academy of Sciences, NY, Host: Phil De Jager. September 25<sup>th</sup>, 2018.

“Systems Genetics Reveals Microglia Involvement in Resilience to Alzheimer’s Disease“ Invited speaker: 2018 Immune-dependent mechanisms in neurodegenerative disease symposium at the Broad Institute, MA, Host: Beth Stevens. September 21<sup>st</sup>, 2018.

“Systems Genetics Analysis of Resilience to Alzheimer’s Disease“ Co-Chair and Speaker, NIA-AA Symposium on Enabling Precision Medicine for Alzheimer’s Disease Through Open Science, Chicago, IL Host: Richard Hodes, NIA-AA. July 20<sup>th</sup>, 2018.

“Systems Genetics Analysis of Resilience to Alzheimer’s Disease“ Invited speaker, The 31<sup>st</sup> Annual AFAR Grantee Conference Paul F. Glenn/AFAR Conference on the Biology of Aging, Santa Barbara, CA. Host: Mark Lachs. June 5<sup>th</sup>, 2018.

“Systems genetics identifies modifiers of AD risk and resilience” Invited Speaker, 9<sup>th</sup> Annual Rush Alzheimer’s Disease Center ROSMAP Investigator’s Meeting, Chicago, IL. Host: David Bennett, May, 29, 2018.

“Systems genetics reveals novel mechanisms underlying resilience to Alzheimer’s Disease” New Investigator Award Lecture: 20<sup>th</sup> Annual Genes, Brain & Behavior Meeting, Rochester, MN, May 20<sup>th</sup>, 2018.

“JAX Scientific Symposium Faculty Talk” Farmington, CT. May 3, 2018.

“Genetics, environment, and Alzheimer’s disease susceptibility” Chair and invited Speaker at Alzheimer Association Connect Chapter’s 2018 CT Dementia Conference, April 19<sup>th</sup>, 2018, Uncasville, CT.

“Students Choice Faculty Campus Talk” Tufts University Sackler School of Graduate Biomedical Sciences. Portland, ME. March 10, 2018.

“Harnessing Mouse Genetics to Enable Precision Medicine for AD” Invited speaker: 2018 NIH Alzheimer’s Research Summit: Path to Treatment and Prevention, Bethesda, MD, Host: Suzana Petanceska. March 2<sup>nd</sup>, 2018.

"Systems genetics identifies modifiers of Alzheimer's disease risk and resilience" Speaker in Richard Thompson New Concepts Session, Winter Conference on Neural Plasticity, Curacao, January 28<sup>th</sup>, 2018.

## **2017** (11)

“Systems genetics analysis of Alzheimer’s disease: mice to the rescue”, Invited lecture at UCI MIND Seminar Series, Host: Kim Green, University of California Irvine, November, 2<sup>nd</sup>, 2017.

Invited Chair of the Neuroscience 2017 Nanosymposium: "Protective and Pathogenetic Mechanisms in Alzheimer's Disease". International meeting of the Society for Neuroscience, Washington, DC, November, 15<sup>th</sup>, 2017.

“Systems genetics analysis of Alzheimer’s disease: mice to the rescue”, Invited lecture at UCI MIND Seminar Series, Host: Kim Green, University of California Irvine, November, 2<sup>nd</sup>, 2017.

“Validation Approaches for Systems Genetics”. Invited lecture at 2017 Friday Harbor Advanced Psychometrics Methods in Cognitive Aging Research Meeting, WA, September 10<sup>th</sup>, 2017.

“Systems Genetics Identifies Resilience Factors in Normal Cognitive Aging”. Invited lecture at 2017 American Aging Association 46th Annual Meeting and Nathan Shock Centers Pre-Conference Symposium, NY, June 9<sup>th</sup>, 2017.

“Systems Genetics Analysis of Risk and Resilience to Alzheimer’s disease: mice to the rescue?”, Invited lecture, Host: Jenny Van Eyk, Cedars-Sinai, CA, June 7<sup>th</sup>, 2017.

“Novel Resources for Systems Genetics Analysis of Resilience to Alzheimer’s disease”, Invited speaker, Host: Stephanie Lederman, Executive Director of American Federation of Aging Research, New Investigators in Alzheimer’s disease Grantee Meeting, Santa Barbara, June 5<sup>th</sup>, 2017.

“Systems Genetics Analysis of Resilience to Alzheimer’s disease”. Invited lecture, Hosts: Bruce Lamb and Gareth Howell, IU/JAX MODEL-AD mini-symposium, Bar Harbor, ME. May 22<sup>nd</sup>, 2017.

“Creation of Clinically Relevant Models”, Invited lecture, Host: Kelly LaRue, Workshop on Neurogenetic Tools: Using Mouse Models to Study Human Neurodegenerative Disease, ME, May 12<sup>th</sup>, 2017.

“Systems Genetics Analysis of Risk and Resilience to Alzheimer’s disease: mice to the rescue?”, Invited lecture, Host: Jane Disney, 44<sup>th</sup> Maine Biological and Medical Sciences Symposium, ME, April 28<sup>th</sup>, 2017.

“Systems Genetics Analysis of Risk and Resilience to Alzheimer’s disease: mice to the rescue?”, Invited lecture, Host: Joseph Lee and Richard Mayeux, Columbia University, NY, April 3-4<sup>th</sup>, 2017.  
Invited talk at MemoryWorks Aging & Memory Conference, Portland ME, March 30<sup>th</sup>, 2017

### **2016** (2)

“Systems Genetics of Cognitive Aging and Alzheimer’s Disease”, Host: American Federation of Aging Meeting, Santa Barbara, CA, June 6<sup>th</sup>, 2016.

“Proteomic and Genomic Advances Expose Modulators of Memory Decline in Normal Aging and Alzheimer's Disease”, Host: Beth Stutzmann, Rosalind Franklin Neuroscience Seminar, Chicago, IL, April 4<sup>th</sup>, 2016.

### **2015** (5)

“Systems genetics of ‘normal’ aging identifies novel candidates misregulated in Alzheimer’s disease”, Host: Angela Jefferson, Vanderbilt University, Nov 2<sup>nd</sup> 2015, Nashville, TN

“Systems Genetics Identifies Risk and Protective Factors of Cognitive Aging and Alzheimer’s Disease”, Host: Paul F. Glenn Conference on Aging, Santa Barbara, CA, June 2<sup>nd</sup>, 2015

“Genomic and Proteomic Advances Expose Aberrant Plasticity in Memory Disorders”, Host: Bill Armstrong, Neuroscience Institute, UTHSC, March 31<sup>st</sup>, 2015

“Genomic and Proteomic Advances Expose Aberrant Plasticity in Memory Disorders”, Host: Carol Barnes, Winter Conference on Neural Plasticity, Feb 13<sup>th</sup>, 2015, Bridgetown, Barbados

“Genomic and Proteomic Advances Expose Aberrant Plasticity in Memory Disorders”, Host: Francesca-Fang Liao, Department of Pharmacology, UTHSC, Feb 4<sup>th</sup>, 2015