

Heidi J. Chial, PhD

Assistant Research Professor, Director of Grant Strategy and Development, and Scientific Administrator
University of Colorado Alzheimer's and Cognition Center, Department of Neurology, and
Linda Crnic Institute for Down Syndrome
University of Colorado Anschutz Medical Campus (CU-AMC)
Email: Heidi.Chial@CUAnschutz.edu

EDUCATION

University of Colorado at Boulder (Boulder, CO) PhD, Molecular, Cellular, and Developmental Biology	1993–1998
Gustavus Adolphus College (St. Peter, MN) BA, Chemistry, Biochemistry and Molecular Biology, Magna Cum Laude	1989–1993

POSTDOCTORAL RESEARCH TRAINING

Stanford University School of Medicine (Stanford, CA) Dept. Neurology and Neurological Sciences and the Neuroscience Institute at Stanford	2006–2008
Marine Biological Laboratory (MBL) (Woods Hole, MA) Summer 2005 Neurobiology Course	2005
Wake Forest University School of Medicine (Winston-Salem, NC) Dept. Cancer Biology	2002–2006
Mayo Clinic College of Medicine (Rochester, MN) Depts. Biochemistry and Molecular Biology, Pediatric and Adolescent Medicine, Lab Medicine and Pathology	1998–1999

ACADEMIC HONORS and AWARDS

NIA Butler-Williams Scholar	2023
NIH NRSA Postdoctoral Research Fellowship, NCI	2005–2008
MBL Scholarship for Post-Course Research	2005
Surdna Foundation Scholarship for the MBL Summer Neurobiology Course	2005
Top Postdoctoral Research Presentation, Wake Forest University School of Medicine	2004
Postdoctoral Travel Grant Award, ASM, Yeast Genetics and Human Disease II Meeting	1999
Magna Cum Laude	1993
American Institute of Chemists Foundation Award (outstanding Senior Chemistry major)	1993
Sigma Xi Scientific Research Society	1993
Iota Sigma Pi National Honor Society of Women in Chemistry	1993
Guild of St. Ansgar (award for scholarship, leadership, and extra-curricular activities)	1993
Francis Engelman Knock Scholarship (awarded to two Junior Chemistry majors)	1992
Bush-Knight Research Fellowship	1992
Dean's List	1989–1993

Ph.D. DISSERTATION

Title: Analysis of *S. cerevisiae* *NDC1* reveals a link between spindle pole bodies and nuclear pore complexes. These studies: 1) demonstrated a shared localization of yeast Ndc1p to spindle poles and nuclear pore complexes, 2) identified and characterized genetic interactions between *NDC1*, *EAP1*, and *POM152*, and 3) uncovered *NDC1* gene dosage effects that lead to genetic

instability phenotypes in yeast. This research provided new insights into the role of aneuploidy in cancer cells and in many forms of neurodegenerative disease, including Alzheimer's disease and frontotemporal dementia.

PROFESSIONAL EXPERIENCE

Assistant Research Professor/Director of Grant Strategy and Development/Scientific Administrator 2021–present

Faculty Research Instructor/Director of Grant Strategy and Development/Scientific Administrator 2018–2021

Faculty Research Instructor/Writing Specialist 2017–2018

Faculty Research Associate/Writing Specialist 2015–2017

University of Colorado Alzheimer's and Cognition Center (formerly Rocky Mountain Alzheimer's Disease Center), Dept. Neurology, and Linda Crnic Institute for Down Syndrome

University of Colorado Anschutz Medical Campus (CU-AMC)

- Work with members of the University of Colorado Alzheimer's and Cognition Center, Dept. Neurology, and Linda Crnic Institute for Down Syndrome to develop and write grant applications, manuscripts, meeting abstracts, and presentations.
- Worked with PIs for submission of NIH (R01, R21, P20/Exploratory Alzheimer's Disease Research Center, P30/Alzheimer's Disease Core Center/ADCC, P30/Alzheimer's Disease Research Center/ADRC, P01, UG3/UH3, R03, R61/R33, K01, K23, K99/R00, F99/K00, K99/R00, DP2/NIH Director's New Innovator Award, U54, R61/R33, LRP), Alzheimer's Association (Part the Cloud/PTC, Sex and Gender in Alzheimer's/SAGA, and Alzheimer's Association Research Fellowship to Promote Diversity/AARF-D, Part the Cloud Supplement, Alzheimer's Association Research Grant/AARG), Alzheimer's Drug Discovery Foundation (ADDF), Dept. of Defense (Peer Reviewed Alzheimer's Disease [PRARP], Congressionally Directed Medical Research Programs [CDMRP], Convergence Science Research Award [CSRA]), and Patient Centered Outcomes Research Institute (PCORI), Lewy Body Dementia Association (LBDA) Research Center of Excellence, and North American Neuro-Ophthalmology Society (NANOS, Society Pilot Grant), American Academy of Neurology (Young Investigator Award), Association for Frontotemporal Degeneration (AFTD), Doris Duke Foundation, and NextFifty Initiative applications.
- Work with Development Office to prepare newsletters, impact reports, grant applications, progress reports, and other documents related to philanthropic support.
- Work with Communications Coordinator to prepare University of Colorado Alzheimer's and Cognition Center newsletters, brochures, and other public-facing documents.
- Work with investigators and outside counsel to draft and submit patent applications, both provisional and nonprovisional.
- Co-Faculty Member, Hypothesis Development and Experimental Design (Cancer Biology 7680, Spring 2016–2019).
- Co-Director, Grant Writing in Cancer Biology (Cancer Biology 7690, Spring 2020–2022).
- Teach workshops for staff and faculty members.

President and Chief Scientific Officer 2010–present

BioMed Bridge, LLC, a biomedical writing, editing, and consulting company

- Work with clients to address biomedical editing, writing, educational, and consulting needs.
- Focus on the development of scientific manuscripts, grants, training grants, white papers, presentations, abstracts, posters, teaching materials, and other technical documents in diverse biomedical and basic science subject areas.
- Provide individually tailored services to researchers, including scientists and physicians, from private and academic institutions; biotechnology, pharmaceutical, publishing, and scientific editing companies; and educational organizations.
- Extensive, long-term work with Nature Education (Nature Publishing Group).
- Experience with the following funding agencies: NIH (R01, R21, U01, DP2/NIH Director's New Innovator Award, R15/AREA, T32 Training Program, P50/Alzheimer's Disease Research Center/ADRC, and SBIR Awards), March of Dimes, Searle Foundation, Alfred P. Sloan Foundation, Whitehall Foundation, Dept. of Defense, Rita Allen Foundation, Brain and Behavior Research Foundation, Simons Foundation Autism Research Initiative, and Patient Centered Outcomes Research Institute (PCORI).

Consultant (Writer, Editor, and Reviewer) 2012–2015

McAllister & Quinn

- Provide ongoing writing, editing and reviewing services to McAllister & Quinn's higher education and healthcare clients, including private and public colleges, universities, and hospitals, with a focus on federal funding opportunities. (This work was contracted through BioMed Bridge, LLC.)

Project Manager, Writer and Editor

2008–2015

Nature Education (www.scitable.com), Nature Publishing Group

- **Scientific Coordinator and Expert**, “Ask an Expert” board, Scitable.com website (<http://www.nature.com/scitable/students-page>). Coordinate answers to incoming questions from genetics professors/teachers, students (graduate, undergraduate, and high school), and the general public from around the world, which are posted on Scitable.com.
- **Lead Writer**, Genes and Disease Topic Room, and **writer**, Genomics Topic Room. Managed the work of three authors, and was the sole author of 14 articles and a co-author of two articles focused on topics related to human genetic disease and genomics for Scitable.com.
- **Writer**, Nature Education’s Spotlight Article Series, Essentials of Genetics online course, and Frontiers in Research Articles series. Wrote articles about epigenetics, restriction enzymes, how to make a knockout mouse, telomeres, and nuclear pore complexes.
- **Editor**, genetics modules for Nature Education’s “Principles of Biology” online textbook and “Essentials of Genetics” online genetics course for undergraduates.
- **Managing Editor and Writer**, Nature Education’s Accessibility Project, which involved remediating the Scitable.com online content to comply with Accessibility Standards for individuals with disabilities.
- **Series Editor**, Nature Education’s Frontiers in Research Articles series, which produced a collection of 30 articles that accompany new editions of undergraduate textbooks from Bedford Freeman Worth Publishing and are published on the World Library of Science website (<http://www.nature.com/wls>), a partnership between UNESCO and Nature Education. I selected the topics, recruited the authors and scientific reviewers, and managed the work of authors, reviewers, illustrators, and copy editors.

Technical Specialist, Intellectual Property Law

2008–2009

Biotechnology and Pharmaceutical Practice Groups

Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Palo Alto, CA

- Procured patent applications in the fields of recombinant DNA technology, therapeutic proteins, antibodies, oncology, stem cells, bioassays, nanotechnology, and small molecules.
- Drafted patent applications (provisional and nonprovisional), and prepared responses to Office Actions.
- Provided scientific analysis related to due diligence and opinion letters regarding patentability, patent validity, and freedom to operate.

Scientific Writer and Editor

2007–2015

Write Science Right

- Edit and write scientific articles in subject areas, including cell biology, biochemistry, molecular biology, genetics, neuroscience, oncology, developmental biology, and medical sciences.
- Responsible for more than 185 diverse editing and writing projects with Write Science Right through my contract work.

Postdoctoral Research Scholar and Research Associate

2006–2008

Stanford University School of Medicine, Dept. Neurology and Neurological Sciences and The Neuroscience Institute at Stanford, Stanford University School of Medicine, Stanford, CA, laboratory of Dr. William Mobley, M.D., Ph.D. Functional characterization of APPL1 and APPL2 proteins in neurotrophin-mediated signaling pathways and links to Alzheimer’s disease and Down syndrome. Secured funding and initiated studies focused on live tracking of BDNF transport in neurons using quantum dots as a novel assay to target Huntington disease.

Postdoctoral Student

2005

Marine Biological Laboratory, Summer Neurobiology Course, Woods Hole, MA. Confocal microscopy-based FRET analysis of homotypic and heterotypic protein-protein interactions involving human APPL1 and APPL2 proteins and immuno-electron microscopy to characterize APPL1 localization in rat brain (Aug. 2005).

Postdoctoral Research Fellow

2002–2006

Wake Forest University School of Medicine, Dept. Cancer Biology, Winston-Salem, NC, laboratory of Dr. Yong Chen, Ph.D. Characterization of human APPL1/DIP13 α and APPL2/DIP13 β BAR, PH, and PTB domains: phosphoinositide binding, membrane targeting, and protein-protein interactions.

Consultant (Scientific Curator) 2001–2002
Incyte Genomics - Proteome Division, Beverly, MA

Assistant Professor 1999–2001
Depts. Biology and Chemistry, St. Olaf College, Northfield, MN

- Professor for lecture and laboratory components of all courses taught (up to 65 students):
 - Intermediate Genetics (Bio233)
 - Cellular Biology and Genetics (Bio125)
 - Elementary Bio-Organic Chemistry (Chem122)
 - Genetics, Evolution, and Society (Bio127)

Postdoctoral Research Fellow 1998–1999
Depts. Biochemistry and Molecular Biology, Pediatric and Adolescent Medicine, Lab Medicine and Pathology, Mayo Clinic College of Medicine, Rochester, MN. Laboratory of Dr. Grazia Isaya, M.D., Ph.D., genetic and biochemical analyses of *S. cerevisiae* *YFH1*, a homolog of human frataxin, which is associated with Friedreich ataxia. Laboratory of Dr. Fergus Couch, Ph.D., analysis of the human *BRCA2* breast cancer gene.

Graduate Research Assistant 1993–1998
University of Colorado at Boulder, Dept. of Molecular, Cellular, and Developmental Biology (MCDB), laboratory of Dr. Mark Winey, Ph.D., Ph.D. Thesis: Analysis of *S. cerevisiae* *NDC1* reveals a link between spindle pole bodies and nuclear pore complexes.

Undergraduate Research Assistant 1991–1993
Gutavus Adolphus College, Dept. of Chemistry, laboratory of Dr. Allan Splittgerber, Ph.D., Dept. of Chemistry. Investigating protein-binding properties of Coomassie Brilliant Blue dye.

PUBLICATIONS

PRIMARY RESEARCH ARTICLES

Ethan James, Anne Vielle, Karen Cusato, Helen Li, Byoungin Lee, Shama Parween, Anna C. Howell, Noah Johnson, **Heidi J Chial**, Huntington Potter, M Natalia Vergara. Human iPSC-derived retinal organoids develop robust Alzheimer's disease neuropathology (In Press, *Frontiers in Cellular Neuroscience*).

Stefan H. Sillau, Christina Coughlan, Md. Mahiuddin Ahmed, Kavita Nair, Paula Araya, Matthew D. Galbraith, Joaquin M. Espinosa, Brianne M. Betcher, **Heidi J. Chial**, Neill Epperson, Timothy D. Boyd, Huntington Potter. GM-CSF Alzheimer's treatment reverses age-, sex-induced neurodegeneration (Submitted).

Julbert Caneus, Antoneta Granic, Rosa Rademakers, Dennis W. Dickson, **Heidi J. Chial**, and Huntington Potter. Mosaic Aneuploidy and Apoptosis in Neurons Indicate a Cell Cycle Defect in Sporadic and Familial Frontotemporal Dementia. (Under Revision).

Elos, M., Caneus, J., Ahmed, M.M., Markham, N., Potter, H., and **Chial, H.J.** Role of mosaic aneuploidy in the development and progression of Huntington's disease (In preparation).

Peter S. Pressman, Kuan Hua Chen, James Casey, Stefan Sillau, **Heidi J. Chial**, Christopher M. Filley, Bruce L. Miller, Robert W. Levenson. Incongruences Between Facial Expression and Self-Reported Emotional Reactivity in Frontotemporal Dementia and Related Disorders *J Neuropsychiatry Clin Neurosci.* 2023 Spring;35(2):192-201. doi: 10.1176/appi.neuropsych.21070186. Epub 2022 Aug 22. PMID: 35989572.

Secora C, Vielle A, Wang AC-J, Lenhart P, Salcedo E, Johnson NR, Ahmed MM, **Chial HJ**, Boyd TD, Potter H, and Vergara MN (2021). Traumatic Brain Injury Exacerbates Alzheimer's Disease Pathology in the Retinas of TgF344-AD Rats. (Submitted).

Lucero, E.M., Freund, R.K., Smith, A., Johnson, N.R., Dooling, B., Sullivan, E., Prikhodko, O., Ahmed, M.M., Bennett, D.A., Hohman, T.J., Dell'Acqua, M.L., **Chial, H.J.***, Potter, H.*, Increased KIF11/Kinesin-5 expression offsets Alzheimer A β -mediated toxicity and cognitive dysfunction, *ISCIENCE* (2022), doi: <https://doi.org/10.1016/j.isci.2022.105288>. *Indicates Co-Senior Authors.

Johnson NR, Wang ACJ, Coughlan C, Sillau S, Lucero E, Viltz L, Markham N, Allen C, Dhanasekaran AR, **Chial HJ**, Potter H. (2022) Imipramine and olanzapine block apoE4-catalyzed polymerization of A β and show evidence of improving Alzheimer's disease cognition. *Alz Res Ther.* 14(1):88. PMID: 35768831.

Ahmed MM, Wang AC, Elos M, **Chial HJ**, Sillau S, Solano DA, Coughlan C, Aghili L, Anton P, Markham N, Adame V, Gardiner KJ, Boyd TD, Potter H. The innate immune system stimulating cytokine GM-CSF improves learning/memory and interneuron and astrocyte brain pathology in Dp16 Down syndrome mice and improves learning/memory in wild-type mice. *Neurobiol Dis.* 2022 Jun 15;168:105694. doi: 10.1016/j.nbd.2022.105694. Epub 2022 Mar 18. PMID: 35307513; PMCID: PMC9045510.

John Galvin, Elizabeth Curran, Francisco Arteaga, Alicia Goossens, Nicki Aubuchon-Endsley, Michael A McMurray, Jeffrey Moore, Kirk C Hansen, **Heidi J Chial**, Huntington Potter, Jeffrey L Brodsky, Christina M Coughlan. Proteasome activity modulates amyloid toxicity (2022). *FEMS Yeast Res.* Mar 9;22(1):foac004. doi: 10.1093/femsyr/foac004.

Rajic AJ, Pressman PS, Woodcock JH, **Chial HJ**, Filley CM. Use of coffee grounds to test olfaction for predicting cognitive dysfunction and decline. *J Neurol Sci.* 2021 Aug 15;427:117516. doi: 10.1016/j.jns.2021.117516. Epub 2021 May 31. PMID: 34111761.

Potter, H., Woodcock, J.H., Boyd, T.D., Coughlan, C.M., O'Shaughnessy, J.R., Borges, M.T., Thaker, A.A., Raj, B.A., Adamszuk, K., Scott, D., Adame, V., **Chial, H.J.**, Gray, H., Daniels, J., Stocker, M.E., Sillau, S.H. (2021). Safety and Efficacy of Sargramostim in the Treatment of Alzheimer's Disease. *Alzheimer's & Dementia: Translational Research & Clinical Interventions.* 2021;7:e12158. <https://doi.org/10.1002/trc2.12158>.

Coughlan, C., Bruce, K. D., Burgy, O., Boyd, T. D., Michel, C.R., Garcia-Perez, J. E., Adame, V., Anton, P., Bettcher, B. M., **Chial, H. J.**, Koenigshoff, M., Hsieh, E. W. Y., Graner, M., Potter, H. (2020). Exosome Isolation by Ultracentrifugation and Precipitation and Techniques for Downstream Analyses. *Curr Protoc Cell Biol. Sep*;88(1):e110. doi: 10.1002/cpcb.110. PMID: 32633898.

Caneus, J., Granic, A., Rademakers, R., Dickson, D. W., Coughlan, C. M., **Chial, H. J.**, Potter, H. (2018). Mitotic defects lead to neuronal aneuploidy and apoptosis in frontotemporal lobar degeneration caused by MAPT mutations. *Molecular Biology of the Cell* 29(5):575-586. (doi: 10.1091/mbc.E17-01-0031).

Chial, H. J., Lenart, P., and Chen, Y. Q. (2010). APPL Proteins FRET at the BAR: Direct Observation of APPL1 and APPL2 BAR Domain-Mediated Interactions on Cell Membranes Using FRET Microscopy. *PLoS ONE* 5(8): e12471 (<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0012471>).

Chial, H. J., Wu, R., Ustach, C., McPhail, L. C., Mobley, W. C., and Chen, Y. Q. (2008). Membrane Targeting by APPL1 and APPL2: Dynamic Scaffolds that Oligomerize and Bind Phosphoinositides. *Traffic* 9: 215-229 (<http://onlinelibrary.wiley.com/doi/10.1111/j.1600-0854.2007.00680.x/full>).

Chial, H. J., Stemm-Wolf, A. J., McBratney, S., and Winey, M. (2000). Yeast Eap1p, an eIF4E-Associated Protein, has a Separate Function Involving Spindle Pole Bodies and Genetic Stability. *Current Biology* 10: 1519-1522 (<http://www.sciencedirect.com/science/article/pii/S0960982200008290>).

Chial, H. J., Giddings, T. H. Jr., Siewert, E. A., Hoyt, M. A., and Winey, M. (1999). Altered Dosage of the *Saccharomyces cerevisiae* Spindle Pole Body Duplication Gene, NDC1, Leads to Aneuploidy and Polyploidy. *Proceedings of the National Academy of Sciences* 96: 10200-10205 (<http://www.pnas.org/content/96/18/10200.long>).

Chial, H. J., Rout, M. P., Giddings, T. H., and Winey, M. (1998). *Saccharomyces cerevisiae* Ndc1p is a Shared Component of Nuclear Pore Complexes and Spindle Pole Bodies. *Journal of Cell Biology* 143: 1789-1800 (<http://jcb.rupress.org/content/143/7/1789.full>).

Chial, H. J., Congdon, R. W., and Splittgerber, A. G. (1995). A Ligand Binding Assay Based on a Protein Assay Method. *Journal of Chemical Education* 72: 76-79.

Chial, H. J. and Splittgerber, A. G. (1993). A Comparison of the Binding of Coomassie Brilliant Blue to Proteins at Low and Neutral pH. *Analytical Biochemistry* 213: 362-369.

Chial, H. J., Thompson, H. B., and Splittgerber, A. G. (1993). A Spectral Study of the Charge Forms of Coomassie Brilliant Blue G. *Analytical Biochemistry* 209: 258-266.

PREPRINT ARTICLES

Secora C, Vielle A, Wang AC-J, Lenhart P, Salcedo E, Johnson NR, Ahmed MM, **Chial HJ**, Boyd TD, Potter H, and Vergara MN (2021). Traumatic Brain Injury Exacerbates Alzheimer's Disease Pathology in the Retinas of TgF344-AD Rats. *bioRxiv*, 2021.2009.2023.461334. doi: <https://doi.org/10.1101/2021.09.23.461334>.

REVIEW ARTICLES

Ahmed, M.M., Johnson, N.R., Boyd, T., Coughlan, C., **Chial, H.J.**, and Potter, H. (2021). The Role of Innate Immune System Activation and Neuroinflammation in Down Syndrome: Therapeutic Targets or Partners? *Front. Aging Neurosci.* doi: 10.3389/fnagi.2021.718426.

Potter H.*, **Chial H. J.***, Caneus J., Elos M., Elder N., Borysov S., Granic A. (2019). Chromosome Instability and Mosaic Aneuploidy in Neurodegenerative and Neurodevelopmental Disorders. *Frontiers in Genetics*, 10:1092. Epub 2019/12/04. doi: 10.3389/fgene.2019.01092 (*Contributed equally.)

Potter, H. and **Chial, H. J.** (2019) Targeting the Interaction Between Apolipoprotein E and Amyloid Precursor Protein: A Novel Alzheimer's Disease Therapy. *Biological Psychiatry*, 86(3):169-170.

Hamlett, E., Ledreux, A., Potter, H., **Chial, H.**, Espinosa, J., Bettcher, B.M., Granholm, A-C. (2017) Exosomal Biomarkers in Down Syndrome and Alzheimer's Disease. Special Issue on Down Syndrome, *FREE RADICAL BIOLOGY & MEDICINE*. pii: S0891-5849(17)30744-X. doi: 10.1016/j.freeradbiomed.2017.08.028.

Chial, H. J. and Winey, M. (1999). Mechanisms of genetic instability revealed by analysis of yeast spindle pole body duplication. *Biology of the Cell* 91: 439-450.

BOOK CHAPTERS

Huntington Potter, Julbert Caneus, Antoneta Granic, Steven P. Bennett, and Ching-Jung Wang, **Heidi J. Chial**. "Systemic Cell Cycle Defects in Neurodegenerative Diseases." *Systems Biology of the Cell Cycle: Towards Integration with Cell Physiology*. Ed. M. Barberis. New York: Springer (In Press).

Caneus, J., Granic, A., **Chial, H.J.**, and Potter, H. (2017) Using Fluorescence In Situ Hybridization (FISH) Analysis to Measure Chromosome Instability and Mosaic Aneuploidy in Neurodegenerative Diseases. In *Genomic Mosaicism in Neurons and Other Cell Types*. Eds. Jose M. Frade and Fred H. Gage, *Neuromethods*, Humana Press, 131: 329-359.

EDUCATIONAL ARTICLES

Chial, H. (2012). Telomeres, aging, and cancer. *World Library of Science, UNESCO, and Nature Publishing Group* (<http://www.nature.com/wls/topicpage/telomeres-aging-and-cancer-131040675>).

Chial, H. (2012). How to build a nuclear pore complex. *World Library of Science, UNESCO, and Nature Publishing Group* (<http://www.nature.com/wls/topicpage/the-architecture-of-a-nuclear-pore-complex-131753016>).

Chial, H. and Akst, J. (2012). Spotlight on Epigenetics. *Nature Education, Nature Publishing Group*, (<http://www.nature.com/scitable/spotlight/epigenetics-26097411>).

Chial, H.J. (2011). Spotlight on Restriction Enzymes. *Nature Education, Nature Publishing Group* (<http://www.nature.com/scitable/spotlight/restriction-enzymes-18458113>).

- Chial, H.** (2009). Scientists Can Analyze Gene Function by Deleting Gene Sequences. Scitable.com, Essentials of Genetics eBook, Nature Education, Nature Publishing Group (<http://www.nature.com/scitable/topicpage/scientists-can-analyze-gene-function-by-deleting-6526138>).
- Chial, H.** (2008). Cytogenetic Methods in Diagnosing Genetic Disorders. Nature Education 1(1):34 (<http://www.nature.com/scitable/topicpage/cytogenetic-methods-in-diagnosing-genetic-disorders-875>).
- Chial, H.** (2008). Polygenic Inheritance and Gene Mapping. Nature Education 1(1):17 (<http://www.nature.com/scitable/topicpage/polygenic-inheritance-and-gene-mapping-915>).
- Chial, H.** (2008). Mendelian Genetics: Patterns of Inheritance and Single-Gene Disorders. Nature Education 1(1):63 (<http://www.nature.com/scitable/topicpage/mendelian-genetics-patterns-of-inheritance-and-single-966>).
- Chial, H.** (2008). Proto-Oncogenes to Oncogenes to Cancer. Nature Education 1(1):33 (<http://www.nature.com/scitable/topicpage/proto-oncogenes-to-oncogenes-to-cancer-883>).
- Chial, H.** (2008). Tumor Suppressor (TS) Genes and the Two-Hit Hypothesis. Nature Education 1(1):177 (<http://www.nature.com/scitable/topicpage/tumor-suppressor-ts-genes-and-the-two-887>).
- Chial, H.** (2008). Gene Mapping and Disease. Nature Education 1(1):50 (<http://www.nature.com/scitable/topicpage/gene-mapping-and-disease-34600>).
- Chial, H.** (2008). Huntington's Disease: The Discovery of the Huntingtin Gene. Nature Education 1(1):71 (<http://www.nature.com/scitable/topicpage/huntington-s-disease-the-discovery-of-the-851>).
- Chial, H.** (2008). Somatic Mosaicism and Chromosomal Disorders. Nature Education 1(1):69 (<http://www.nature.com/scitable/topicpage/somatic-mosaicism-and-chromosomal-disorders-867>).
- Chial, H.** (2008). DNA Sequencing Technologies Key to the Human Genome Project. Nature Education 1(1):219 (<http://www.nature.com/scitable/topicpage/dna-sequencing-technologies-key-to-the-human-828>).
- Chial, H.** (2008). Rare Genetic Disorders: Learning About Genetic Disease Through Gene Mapping, SNPs, and Microarray Data. Nature Education 1(1):192 (<http://www.nature.com/scitable/topicpage/rare-genetic-disorders-learning-about-genetic-disease-979>).
- Chial, H.** (2008). Genetic Regulation of Cancer. Nature Education 1(1):67 (<http://www.nature.com/scitable/topicpage/genetic-regulation-of-cancer-891>).
- Chial, H.** (2008). DNA Fingerprinting Using Amplified Fragment Length Polymorphisms (AFLP): No Genome Sequence Required. Nature Education 1(1):176 (<http://www.nature.com/scitable/topicpage/dna-fingerprinting-using-amplified-fragment-length-polymorphisms-39051>).
- Chial, H.** (2008). Cytogenetic Methods and Disease: Flow Cytometry, CGH and FISH. Nature Education 1(1):76 (<http://www.nature.com/scitable/topicpage/cytogenetic-methods-and-disease-flow-cytometry-cgh-772>).
- Chial, H.** (2008). Gene-Based Therapeutic Approaches. Nature Education 1(1):210 (<http://www.nature.com/scitable/topicpage/gene-based-therapeutic-approaches-3881>).
- Chial, H.** and Craig, J. (2008). Genome-Wide Association Studies (GWAS) and Obesity. Nature Education 1(1):80 (<http://www.nature.com/scitable/topicpage/genome-wide-association-studies-gwas-and-obesity-752>).
- Chial, H.** and Craig, J. (2008). mtDNA and Mitochondrial Diseases. Nature Education 1(1):217 (<http://www.nature.com/scitable/topicpage/mtdna-and-mitochondrial-diseases-903>).

LEADERSHIP TRAINING

Butler-Williams Scholars Program, NIA
August 23-25, 2023

Selected to participate in this NIA-sponsored program that provides unique opportunities for junior faculty and researchers who are new to the field of aging to gain insight about research on aging from a number of perspectives.

Leadership for Innovative Team Science (LITeS) Program
August 2017 – April 2018

Colorado Clinical and Translational Sciences Institute (CCTSI), University of Colorado Anschutz Medical Campus
Selected as part of a team from the University of Colorado Alzheimer's and Cognition Center for the LITeS program, which is offered annually by the CCTSI to a selected cohort of 20-30 University of Colorado senior and emerging campus leaders.

TEACHING EXPERIENCE

University of Colorado Anschutz Medical Campus (CU-AMC)

- Co-Director, Grant Writing in Cancer Biology (Cancer Biology 7690), CU-AMC, Interdepartmental Cancer Biology Program, Graduate Student Course, Spring 2020, 2021, 2022, 2023, and 2024.
- Co-Faculty Member, Hypothesis Development and Experimental Design (Cancer Biology 7680), CU-AMC, Interdepartmental Cancer Biology Program, Graduate Student Course, Spring 2016, 2017, 2018, and 2019.
- Co-taught lecture for Tissue Biology and Disease Mechanism Course IDPT 7646 ("Molecular and Cellular Correlates of Alzheimer's Disease") with Dr. Huntington Potter, December 2018.

Wake Forest University School of Medicine, Depts. of Cancer Biology and Pathology

- External Reviewer, Cell Biology of Cancer (CanBio704), WFUSM, Cancer Biology Department, Graduate Student Course, Spring 2009.
- Course Lecturer (Topic: FRET Microscopy), Microscopic Research Techniques (PATH 719), WFUSM, Pathology Department, Graduate Student Course, Spring 2006.
- Co-Faculty Member, Cell Biology of Cancer (CanBio704), WFUSM, Cancer Biology Department, Graduate Student Course, Spring 2005 and Spring 2006.
- Faculty Course Facilitator, Cancer Biology Journal Club (CanBio711), WFUSM, Cancer Biology Department, Graduate Student Course, Fall 2004, Spring 2005, and Fall 2005.

St. Olaf College, Depts. of Biology and Chemistry
Assistant Professor of Biology and Chemistry, St. Olaf College

Intermediate Genetics (Bio233)	Spring 2001
Cellular Biology and Genetics (Bio125)	Fall 2000
Elementary Bio-Organic Chemistry (Chem122)	Spring 2000
Genetics, Evolution, and Society (Bio127)	Interim 2000
Cellular Biology and Genetics (Bio125)	Fall 1999

Teaching responsibilities at St. Olaf College: Professor for lecture and laboratory components of all courses taught (up to 65 students), prepared all lectures using PowerPoint slide shows and posted to course websites, responsible for all grading, designed lab exercises and wrote lab manuals, academic advisor for 30 students each semester.

University of Colorado at Boulder, Dept. of Molecular, Cellular, and Developmental Biology

- Molecular Biology Tutor Spring 1996
- Introduction to Genetics Teaching Assistant Spring 1995
- Cell Biology Teaching Assistant Fall 1994

Gustavus Adolphus College, Dept. of Chemistry

- Chemistry Department Academic Assistant 1992–1993
- Inorganic Chemistry Lab Teaching Assistant Spring 1993
- Biochemistry I Lab Teaching Assistant Fall 1992
- General Chemistry Tutor Fall 1992
- Inorganic Chemistry Lab Teaching Assistant Spring 1992
- Inorganic Chemistry Tutor Spring 1992
- Biochemistry Tutor Spring 1992
- Biochemistry Lab Teaching Assistant January Term 1992
- Organic Chemistry II Tutor and Grader Fall 1991
- General Chemistry Lab Teaching Assistant Fall 1991

SCIENTIFIC FUNDING and GRANTS

CURRENT SUPPORT

1RF1AG078965-01A1 NIA

Role: Co-Investigator and Scientific Administrator; Johnson, PI

Investigating and targeting apolipoprotein E4 in Down Syndrome-associated Alzheimer's disease

07/15/2023-06/30/2026

Total Costs: \$2,275,172

1F31AG084295 – 01 NIA

Role: Consultant; PI: Breanna Dooling; Mentor: Huntington Potter; Co-Mentor: Noah Johnson

Interrogating the Role of APOE4 in Alzheimer's Disease and Down Syndrome Using hiPSC-Derived Cerebral Organoids

1R01NS128739-01/1RF1NS128739-01

Role: Co-Investigator and Scientific Administrator; Potter, Huang, Sullivan (Co-PIs)

Neurovascular unit dysfunction in Down syndrome revealed by TBI

09/07/2022-08/31-2025

Total Costs: \$2,601,812

1R61AG074859-01 NIA

Role: Co-Investigator and Scientific Administrator; Potter and Pressman, Co-PIs

GM-CSF/sargramostim treatment to improve cognition in Down syndrome

09/01/2021-08/30/2026

Total Costs: \$4,568,981

NIH 1R01AG071151-01

Role: Co-Investigator and Scientific Administrator; Potter and Pressman, Co-PIs

Phase II trial of GM-CSF/sargramostim in Alzheimer's Disease

02/01/2021-11/30/2024

Total Costs: \$7,573,215

Philly and Charlie Dake Family Foundation

Role: Co-PI; Potter, Co-PI

Mechanistic and Drug Targeting Studies of Aneuploidy in Huntington's Disease

2022-2024

Total Costs: \$300,000

PENDING SUPPORT

1 P30 AG086435-01

Roles: Scientific Administrator, Administrative Core; Co-Leader, Research Education Component; Co-Investigator, Translational Therapeutics Core; Potter, PI

University of Colorado Alzheimer's Disease Research Center (CU-ADRC)

04/01/2024- 03/31/2029

Total Costs: \$22,177,464

1R21AG083614-01 (Role: Co-PI with Dr. Huntington Potter)

Identification of drugs that block amyloid beta-mediated inhibition of the Kinesin-5/KIF11 microtubule motor protein

Total Costs: \$429,000

07/01/2024 - 06/30/2026

Resubmitted November 2023

CCTSI Huntington's Disease Pilot Grants (HD-Pilot) (Role: Co-PI with Dr. Huntington Potter)

2024 Award Cycle for Clinical Translational Science (CTS) Pilots

Targeting Mitotic Defects as a Novel Mechanism for Drug Discovery in Huntington's Disease

March 2024 – February 2025

Total Costs: \$30,000

Submitted November 2023

1R01EY033911-01 (Role: Co-Investigator and Scientific Administrator; Vergara, PI)

Repeated Mild Traumatic Brain Injury as a Modulator of Alzheimer's Disease Pathology: Insights from the Retina.

07/01/2024-06/30/2029

Total Costs: \$2,775,579

NIH 1 T32 AG081462-01 (Role: Co-Investigator and Scientific Administrator; Potter, PI)

Training Program in Translational Research on Alzheimers Disease and Alzheimers Disease-Related Dementias (ATRTP)

Total Costs: \$2,457,172

To be resubmitted in May 2024

1R21AG083614-01 (Role: Co-PI with Dr. Huntington Potter)

Identification of drugs that block amyloid beta-mediated inhibition of the Kinesin-5/KIF11 microtubule motor protein

To be resubmitted in 2024

R01 AI174011-01 (Role: Co-Investigator and Scientific Administrator; Potter, PI)

Investigating GM-CSF as a Treatment to Reduce SARS-CoV-2 Infection and Associated Mortality in a Mouse Model of COVID-19

To be resubmitted in 2024

R01 AG075971-01 (Role: Co-Investigator and Scientific Administrator; Huang and Potter, Co-PIs)

Targeting acute and chronic inflammation to treat TBI and ADRD

To be resubmitted in 2024

R01 AG072792-01A1 NIA (Role: Co-Investigator and Scientific Administrator; Potter, PI)

Targeting Alzheimer's disease by inhibiting apolipoprotein E4-catalyzed amyloid- β fibrillization

To be resubmitted in 2024

NIH R01 NS076291 (Roles: Co-Investigator and Scientific Administrator; Potter, PI)

Neuronal Inhibition Caused by Abeta Inhibition of MT Motors

To be revised and resubmitted in 2024

NIH R01 AG061710-01 (Role: Co-Investigator; Potter, PI)

Aneuploidy and Apoptosis in Alzheimer's Disease and Other Neurodegenerative Diseases

To be revised and resubmitted in 2024

NIH R01 (Role: Co-Investigator; Potter, PI)

Role of Cell Cycle Defects, Aneuploidy, and Apoptosis in TDP43-Dependent Neurodegeneration
To be revised and resubmitted in 2024

NextFifty Initiative (Role: Strategic Outreach Writing Specialist; Pressman, PI)
Rocky Mountain Alzheimer's Disease Center (RMADC) Outreach Partnership for Dementia Diagnosis and Care in Colorado
To be revised and resubmitted in 2024

COMPLETED SUPPORT:

Philly and Charlie Dake Family Foundation (Role: Co-Investigator and Scientific Administrator; Potter, PI)
Drug Screen to Target Aneuploidy in Huntington's Disease
2021-2022
Total Costs: \$300,000

NIH 1F99NS115330-01 (Role: Co-Mentor; Lucero, PI)
Targeting Kinesin-5 Activity for treatment of Alzheimer's disease
09/01/2019-06/30/2025
Total Costs: \$57,619 (first two years)

Alzheimer's Association, Part the Cloud Challenge on Neuroinflammation (Role: Co-Investigator and Scientific Administrator; Potter, PI)
Safety & Efficacy of GM-CSF/Leukine® in Mild-to-Moderate Alzheimer's Disease
The major goal of this project is to carry out a longer trial to further assess the safety of recombinant human GM-CSF/Leukine® in human AD subjects and to additionally assess its ability to modulate neuroinflammation in the brains of AD subjects, to improve cognition, and to reverse AD pathology.
12/01/2016-12/31/2023
Total Cost: \$1,000,000

Department of Defense, Congressionally Directed Medical Research Programs (CDMRP), Peer Reviewed Alzheimer's Research Program (PRARP) Convergence Science Research Award
AZ160059 (Role: Co-Investigator and Scientific Administrator; Potter, PI)
Neuropathology and Immune Biomarker Discovery in a Rat Model of Alzheimer's Disease, TgF344-AD, with Single or Repetitive Traumatic Brain Injury
The goals of this project are to develop new models of AD and TBI and to identify peripheral immune system and neuroimmune signaling biomarkers associated with AD and TBI using these models.
8/1/2017-12/31/2021
Total Costs: \$550,000

Sprout Foundation, Invited Application (Role: Co-Investigator and Scientific Administrator; Potter, PI)
Safety, Efficacy of GM-CSF (Leukine®) For Treatment of Alzheimer's Disease
2017-2022
Total Costs: \$1,000,000

Hewitt Foundation (Role: Co-Investigator and Scientific Administrator; Potter, PI)
\$500,000/year through 2021

Philly and Charlie Dake Family Foundation (Role: Co-Investigator and Scientific Administrator; Potter, PI)
Investigating and Targeting the Biological Mechanism(s) Underlying Aneuploidy in Huntington's Disease
2019-2021
Total Costs: \$400,000

MDC Richmond American Homes Foundation (Role: Scientific Administrator; Potter, PI)
Huntington's Disease
2017-2019
Total Costs: \$150,000

High Q Discovery Initiative Award (H. Chial: Co-Investigator, responsible for writing the proposal; Mobley: PI)
High Q Foundation for Huntington Disease Research (\$86,900)
Live Tracking of BDNF Transport in Neurons Using Quantum Dots: A Novel Assay to Target Huntington Disease, 2/1/08–1/31/09
(funding remained with Dr. Mobley's lab)
This study was designed to test the hypothesis that defective BDNF transport contributes to the degeneration of HD-associated neuronal populations.

NRSA 7F32-CA108196-03 (PI: H. Chial)
NIH, NCI (\$91,890)
DIP13 α and DIP13 β Phosphoinositide Binding, 7/1/06–4/27/08
The long-term objective of this proposal was to determine whether domain-mediated homotypic and heterotypic interactions between APPL1 and APPL2 proteins (previously called DIP13 α and DIP13 β) and APPL-phosphoinositide interactions act in concert to organize RAB5 platforms on NGF-containing signaling endosomes that undergo retrograde axonal transport from the synapse to the cell body.

NRSA 5F32-CA108196-02 (PI: H. Chial)
NIH, NCI (\$83,269)
DIP13 α and DIP13 β Phosphoinositide Binding, 2/1/05–6/30/06
The focus of this grant was to determine the functional role of phosphoinositide binding by human APPL1/DIP13 α and APPL2/DIP13 β proteins.

MBL Scholarship for Post-Course Research (PI: H. Chial)
Marine Biological Laboratory (MBL), Neurobiology Course, Woods Hole, MA (\$2,000), 8/7/05–8/18/05
This funding allowed me to remain at the MBL to continue experiments I initiated during the Neurobiology course.

Surdna Foundation Scholarship for the MBL Summer Neurobiology Course (PI: H. Chial)
Marine Biological Laboratory (MBL), Neurobiology Course, Woods Hole, MA (\$3,200), 6/5/05–8/6/05
This funding allowed me to be a student in the 2005 MBL Summer Neurobiology course. This was an intensive nine-week long course consisting of electrophysiology, imaging, and molecular sections. This course included 150 hours of lectures and over 400 hours of laboratory training in key concepts and techniques important for neurobiology research from leading experts.

SCIENTIFIC MEETING PARTICIPATION

PLATFORM PRESENTATION

Chial, H. J., Rout, M. P., and Winey, M. (1996). The *S. cerevisiae* spindle pole body duplication gene, NDC1, encodes a protein that localizes to nuclear pore complexes. Yeast Genetics and Molecular Biology Annual Meeting, University of Wisconsin, Madison, WI.

MEETING ABSTRACTS/PRESENTATIONS

Huntington Potter, Timothy D. Boyd, Jonathan H. Woodcock, Stefan H. Sillau, Heather Jim, Md. Mahiuddin Ahmed, Athena Wang, **Heidi J. Chial**, Christina M. Coughlan, Lon Kendall, Angela Bosco-Laut, Neil Markham, Sarah Stonedahl, Derek Fong, Penny Clarke, Kenneth L. Tyler. The immune cytokine granulocyte-macrophage colony-stimulating factor (GM-CSF) is an effective treatment for both Alzheimer's disease and the viral diseases caused by West Nile Virus and SARS-CoV-2 infection, indicating that inflammation and viral infection may be partners and therapeutic co-targets in many brain disorders. Alzheimer's Association International Conference (AAIC) 2023 July 16-20, 2023, Amsterdam, Netherlands.

Md. Mahiuddin Ahmed, Leila Aghili, Athena Ching-Jung Wang, Mihret Elos, Timothy D. Boyd, **Heidi J Chial**, and Huntington Potter. GM-CSF Treatment Increases the Number of Purkinje Cells in a Mouse Model of Down Syndrome. Alzheimer's Association International Conference (AAIC) 2023 July 16-20, 2023, Amsterdam, Netherlands.

Athena Ching-Jung Wang, Timothy Boyd, Vanesa Adame, Neil Markham, **Heidi J. Chial**, Huntington Potter. GM-CSF reduces amylin amyloid, inhibits pancreatic islet cell apoptosis, and sustains lowered blood glucose levels in the hIAPP mouse model of Type 2 diabetes mellitus, a known risk factor for Alzheimer's disease. Alzheimer's Association International Conference (AAIC) 2022, July 31-August 4, 2022, San Diego, CA.

Mihret Elos, Julbert Caneus, Md. Mahiuddin Ahmed, Paula M. Grissom, Neil Markham, **Heidi J. Chial**, Huntington Potter. Elevated levels of mosaic aneuploidy in brain cells and fibroblast cell lines from human Huntington's disease donors and in brain cells from Huntington's disease mouse models. Alzheimer's Association International Conference (AAIC) 2022 July 31-August 4, 2022, San Diego, CA.

Md. Mahiuddin Ahmed, Athena Ching-Jung Wang, Timothy D. Boyd, D. Adriana Solano, Anne Vielle, Neil Markham, Christina M. Coughlan, **Heidi J. Chial**, M. Natalia Vergara, Huntington Potter. Granulocyte-Macrophage Colony-Stimulating Factor Reduces Two Major Pathological Hallmarks of Alzheimer's Disease and Astrogliosis in the TgF344-AD Rat Model. Alzheimer's Association International Conference (AAIC) 2022 July 31-August 4, 2022, San Diego, CA.

Noah R. Johnson, Breanna Dooling, Leila Aghili, **Heidi J. Chial**, Huntington Potter. Alzheimer's disease neuropathologies in cerebral organoids are reduced by imipramine. Alzheimer's Association International Conference (AAIC) 2022 July 31-August 4, 2022, San Diego, CA.

M. Natalia Vergara, Anne Vielle, Helen Li, Ethan James, Noah R. Johnson, **Heidi J. Chial**, and Huntington Potter. Modeling retinal Alzheimer's disease histopathology with human iPSC-derived retinal organoids for mechanistic and drug development studies. Alzheimer's Association International Conference (AAIC) 2022 July 31-August 4, 2022, San Diego, CA.

M. Natalia Vergara, Conner Secora¹, Anne Vielle, Athena Ching-Jung Wang, Patricia Lenhart, Ernesto Salcedo, Noah R. Johnson, Md. Mahiuddin Ahmed, **Heidi J. Chial**, Timothy D. Boyd, and Huntington Potter. Traumatic Brain Injury Exacerbates Retinal Alzheimer's Disease Histopathology in the TgF344 Rat Model. Alzheimer's Association International Conference (AAIC) 2022 July 31-August 4, 2022, San Diego, CA.

Athena Ching-Jung Wang, Timothy Boyd, Vanesa Adame, Neil Markham, **Heidi J. Chial**, Huntington Potter. GM-CSF reduces amylin amyloid and prevents pancreatic cell death in the hIAPP mouse model of Type 2 diabetes mellitus, a known risk factor for Alzheimer's disease. Alzheimer's Association International Conference (AAIC) 2022 July 31-August 4, 2022, San Diego, CA.

Anne Vielle, Helen Li, Ethan James, Noah R. Johnson, **Heidi J. Chial**, Huntington Potter, and M. Natalia Vergara. Modeling retinal Alzheimer's disease histopathology with human iPSC-derived retinal organoids. ARVO (Association for Research in Vision and Ophthalmology) Annual Meeting, Denver, CO, May 1-4, 2022.

Huntington Potter, Jonathan H. Woodcock, Timothy D. Boyd, Stefan H. Sillau, Christina M. Coughlan, John R. O'Shaughnessy, Thomas Borges, Ashesh Thaker, Balaibail A. Raj, Vanesa Adame, Katarzyna Adamszuk, David Scott, **Heidi J. Chial**, Helen Gray, Joseph Daniels, Michelle E. Stocker. Recruiting the Innate Immune System to Treat Mild-to-Moderate Alzheimer's Disease: Short-Term, Double-Blind, Placebo-Controlled Phase II Trial Shows that GM-CSF/Sargramostim Treatment Leads to Improvements in MMSE and Blood Biomarkers of Neuropathology/Neurodegeneration (A β , Tau, and UCH-L1). Clinical Trials on Alzheimer's Disease (CTAD) 2021 Annual Meeting, Boston, MA, November 9-12, 2021. Selected for oral presentation.

Huntington Potter, Timothy D. Boyd, Md. Mahiuddin Ahmed, Lon V. Kendall, Christina M. Coughlan, Penny Clarke, Sarah Stonedahl, **Heidi J. Chial**. Inflammation and Innate Immune System Activation in Neurodegeneration, Down Syndrome, Aging, and Infection: Therapeutic Target or Partner? Alzheimer's & Dementia (2021), Volume 17, Issue S9.

Md. Mahiuddin Ahmed, Athena Ching-Jung Wang, Timothy D. Boyd, D. Adriana Solano, Anne Vielle, Neil Markham, Christina M. Coughlan, **Heidi J. Chial**, M. Natalia Vergara, Huntington Potter. Granulocyte-Macrophage Colony-Stimulating Factor Reverses Alzheimer's Disease Pathology in the TgF344-AD Rat Model. Alzheimer's & Dementia (2021), Volume 17, Issue S3.

Noah R. Johnson, Athena Ching-Jung Wang, Christina Coughlan, Stefan Sillau, Esteban Lucero, Lisa Viltz, Neil Markham, Cody Allen, A. Ranjitha Dhanasekaran, **Heidi J. Chial**, Huntington Potter. Identification of small molecule drugs that target apolipoprotein E4-catalyzed amyloid- β fibrillization: a new therapeutic approach to Alzheimer's disease. Alzheimer's & Dementia (2021), Volume 17, Issue S9.

Johnson, N.R, Chin-Jung Wang, A., Coughlan, C., Lucero, E.M., Viltz, L., Allen, C., Markham, N., **Chial, H.J.**, Potter, H. Small molecule inhibitors of apolipoprotein E4-catalyzed amyloid- β fibrillization as novel therapeutics for Alzheimer's disease. Alzheimer's & Dementia (2020), Volume 16, Issue S2.

Elos, M., Caneus, J., Ahmed, M.M., Markham, N., **Chial, H.J.**, Potter, H. Role of mosaic aneuploidy in the development and progression of Huntington's disease. Alzheimer's & Dementia (2020), Volume 16, Issue S3.

Huntington Potter, Jonathan H. Woodcock, Timothy D. Boyd, Stefan H. Sillau, Christina M. Coughlan, John R. O'Shaughnessy, Thomas Borges, Ashesh Thaker, Balaibail A. Raj, Vanesa Adame, Katarzyna Adamszuk, David Scott, **Heidi J. Chial**, Helen Gray, Joseph Daniels, Michelle E. Stocker. The Innate Immune System Modulator GM-CSF/Sargramostim is Safe and Potentially Efficacious in Participants with Mild-to-Moderate Alzheimer's Disease (2020). 13th Clinical Trials on Alzheimer's Disease (CTAD) Meeting, Boston, MA, Nov. 4-7, 2020. Selected for oral presentation.

Elos, M., Md. Mahiuddin Ahmed. M.M., Caneus, J., Markham, N., **Chial, H. J.**, and Potter, H. Role of Mosaic Aneuploidy in the Development and Progression of Huntington's Disease (2020). Alzheimer's Association International Conference (AAIC) 2020 | July 26-30, 2020, Amsterdam, Netherlands. Journal of Alzheimer's & Dementia.

Neuropathology and Immune Biomarker Discovery in a Rat Model of Alzheimer's disease, TgF344-AD, with Controlled Cortical Injury model of Traumatic Brain Injury (2020). Athena Ching-Jung Wang, Vanesa Adame, Neil Markham, **Heidi J. Chial**, Timothy D. Boyd, Huntington Potter. Alzheimer's Association International Conference (AAIC) 2020 | July 26-30, 2020, Amsterdam, Netherlands. Journal of Alzheimer's & Dementia.

Small molecule inhibitors of apolipoprotein E4-catalyzed amyloid- β fibrillization as novel therapeutics for Alzheimer's disease (2020). Noah R. Johnson, Athena Ching-Jung Wang, Christina Coughlan, Esteban Lucero, Lisa Viltz, Leila Aghili, Cody Allen, Neil Markham, **Heidi J. Chial**, Huntington Potter. Alzheimer's Association International Conference (AAIC) 2020 | July 26-30, 2020, Amsterdam, Netherlands. Journal of Alzheimer's & Dementia.

Noah R. Johnson Lisa Viltz, Athena Ching-Jung Wang, Christina Coughlan, Esteban Lucero, C Allen Neil Markham, **Heidi J. Chial**, Huntington Potter. Novel small molecule therapeutics for Alzheimer's disease inhibit apolipoprotein E4-catalyzed amyloid-beta fibrillization. Front Range Neuroscience Group (FRNG) Annual Meeting 2019, December 1, 2019, Fort Collins, CO.

Ahmed, M.M., Ching Jung Wang, A., Boyd, T., Elos, M., **Chial, H.J.**, Gardiner, K.J., and Potter, H. GM-CSF Reverses Memory Deficits in Normal Aged Mice and in the Dp(16)1Yey Mouse Model of Down Syndrome. Alzheimer's Association International Conference | July 14-18, 2019, Los Angeles, CA.

Elos, M., Caneus, J., **Chial, H.J.**, and Potter, H. Investigating the Role of Aneuploidy in the Development and Progression of Huntington's Disease. Alzheimer's Association International Conference | July 22-26, 2018, Chicago, IL.

Coughlan, C.M., Chin-Jung Wang, A., Viltz, L.M., **Chial, H.J.**, and Huntington Potter. Screening for Inhibitors of ApoE4-Catalyzed A β Oligomer/Filament Formation: A Novel Approach to Alzheimer's Disease Drug Discovery. Alzheimer's Association International Conference | July 16-20, 2017, London, England.

Julbert Caneus, J., Granic, A., Rademakers, R., Dickson, D.W., Coughlan, C.M., **Chial, H.J.**, and Potter, H. Abnormal Chromosome Copy Number and Associated Neuronal Cell Death in Frontotemporal Lobar Degeneration. Alzheimer's Association International Conference | July 16-20, 2017, London, England.

Mobley, W.C., Salehi, A., Nosheny, R., Maloney, M., Zhan, K., **Chial, H.J.**, Sung, K., Brown, H., Belichenko, P.V., Kleschenikov, A.M., Shamloo, M., He, L., Valetta, J., Chen, L., Wu, C., Chu, S. NGF signaling to secure neuronal circuits. 40th Annual Meeting of the American-Society-for-Neurochemistry, Volume: 108.

Chial, H. J., Lenart, P., Wu, R., Belichenko, P., Maloney, M. T., Nosheny, R., Ramirez, A., Wu, C., Zhan, K., Valetta, J., McPhail, L., Chen, Y. Q., and Mobley, W. C. (2007). APPL1 and APPL2 proteins: dynamic scaffolds linking RAB5 to NGF-containing signaling endosomes. Society for Neuroscience 37th Annual Meeting, San Diego, CA.

Chial, H. J., Lenart, P., Wu, R., McPhail, L. C., and Chen, Y. Q. (2006). Domain-mediated oligomerization, phosphoinositide binding, and membrane targeting by human DIP13/APPL RAB5 effector proteins. American Society for Cell Biology 46th Annual Meeting, San Diego, CA.

Chial, H. J., Lenart, P., Wu, R., and Chen, Y. Q. (2005). BAR (Bin/Amphiphysin/Rvs) domains of human DIP13 α /APPL1 and DIP13 β /APPL2 mediate homotypic and heterotypic protein-protein interactions. American Society for Cell Biology 45th Annual Meeting, San Francisco, CA.

Chial, H. J. and Chen, Y. Q. (2004). Identification of phosphoinositide binding by human DIP13 α /APPL1 and DIP13 β /APPL2. American Society for Cell Biology 44th Annual Meeting, Washington, DC.

Chial, H. J. and Chen, Y. Q. (2004). Identification of pleckstrin homology domain-mediated phosphoinositide binding by human DIP13 α /APPL and DIP13 β , American Association for Cancer Research 95th Annual Meeting, Orlando, FL.

Chial, H. J., Siewert, E. A., Giddings, T. H. Jr., and Winey, M. (1999). Altered dosage of the *S. cerevisiae* spindle pole body duplication gene, NDC1, leads to genetic instability in yeast. Yeast Genetics and Human Disease II, American Society for Microbiology, Vancouver, BC.

Chial, H. J., Giddings, T. H., Rout, M. P., and Winey, M. (1998). The budding yeast NDC1 encodes a component of spindle pole bodies and nuclear pore complexes. 38th ASCB Annual Meeting, San Francisco, CA.

Chial, H. J., Rout, M. P., Siewert, B. A., and Winey, M. (1997). The *Saccharomyces cerevisiae* spindle pole body duplication gene, NDC1: gene dosage phenotypes and localization to nuclear pore complexes. The American Society for Cell Biology, European Molecular Biology Organization, H. Dudley Wright Foundation Fifth Joint Meeting on Centrosomes and Spindle Pole Bodies, University of California, Santa Cruz, Santa Cruz, CA.

Chial, H. J., Thompson, H. B., and Splittgerber, A. G. (1993). A spectral study of the charge forms of coomassie blue G. National Conference on Undergraduate Research (NCUR VII), University of Utah, Salt Lake City, UT.

Chial, H. J. and Splittgerber, A. G. (1993). A comparison of the binding of coomassie brilliant blue to proteins at low and neutral pH. National Conference on Undergraduate Research (NCUR VII), University of Utah, Salt Lake City, UT.

RESEARCH PRESENTATION AWARD

Award for Top Postdoctoral Research Presentation, Cancer Biology Dept. Annual Retreat, Wake Forest University School of Medicine, August 2004.

ACADEMIC SERVICE, OUTREACH, AND MENTORING

- Speaker, Cancer Biology 2024 Seminar Series, Career Opportunities Beyond the Bench, January 2024.
- Panelist, Cancer Biology 2023 Annual Program Retreat, CU-AMC, Career Panel, October 2023.
- Presentation, "Career Opportunities Beyond the Bench," Mostly Molecular Biology Seminar Series, University of Colorado-Boulder, MCDB Department, April 16, 2021.
- Presentation, "Career Opportunities Beyond the Bench," CU-Anschutz Campus for graduate students in CANB7690 and other programs, April 28, 2021.
- Review Editor, Editorial Board of Genetics of Common and Rare Diseases, a specialty section of Frontiers in Pediatrics and Frontiers in Genetics (2021-present).
- Member, University of Colorado Alzheimer's and Cognition Center Diversity and Inclusion Committee (2020-present).
- Co-Mentor for NIH Blueprint D-SPAN Award (F99/K00) recipient, Esteban Lucero (September 2019-present).
- Mentoring graduate students, postdocs, and early-stage faculty members in the laboratory of Dr. Huntington Potter, Dept. Neurology, CU-AMC (2015-present).
- Panelist, Cancer Biology Program Annual Retreat, CU-AMC, Career Panel, September 22, 2017.

- Panelist, “Women in Science and Engineering (WiSE) Alternative Careers” Panel Discussion Event, University of Colorado at Boulder, November 18, 2016.
- Panelist, “Wonder Women of STEM” Panel Discussion Event, University of Colorado Denver, April 29, 2016.
- Panelist, “Pathways to Industry” Panel Discussion, CU Biotech Club, November 20, 2014.
- Speaker, “Beyond the Bench: Alternative Careers in Science,” Postdoctoral Research Group, Department of Molecular, Cellular and Developmental Biology (MCDB), University of Colorado at Boulder, May 20, 2013.
- Ph.D. Thesis Co-Mentor, Dept. Neurology and Neurological Sciences, Neuroscience Institute at Stanford, Stanford University School of Medicine. Responsible for training and co-mentoring Stanford University Biophysics Graduate Student Kijung Sung together with Dr. William Mobley, 2006-2008.
- Trained and mentored graduate students, undergraduate students, and research technicians in the laboratory of Dr. Yong Chen, Dept. Cancer Biology, Wake Forest University, 2002-2006.
- Cancer Biology Department Representative, Postdoc Society, Wake Forest University School of Medicine, 2002-2005.
- Undergraduate Student Advisor, Dept. of Biology, St. Olaf College. Responsible for academic planning and career development of 30 undergraduate Biology majors each semester, 2000-2001.
- Graduate Student Representative, Committee on Graduate Student Affairs (COGSA), Department of Molecular, Cellular, and Developmental Biology, University of Colorado at Boulder, 1996-1997.
- Member of the organizing committee for the 1995 Graduate Student Symposium entitled: “Self vs. Non-Self: Modes of Organismal Recognition and Defense” featuring talks by 13 invited speakers, Department of Molecular, Cellular, and Developmental Biology, University of Colorado at Boulder.

DIVERSITY, EQUITY, AND INCLUSION

Health Equity in Action Lab (HEAL): Foundations in Equity Certificate Program (Completed April 2023)

Member, DEI Task Force, Dept. Neurology, University of Colorado Anschutz Campus (Sept. 2021-present)

PROFESSIONAL SOCIETIES

Member, Gerontological Society of America (GSA)	2023-present
Professional Member, American College of Lifestyle Medicine (ACLM)	2023-present
Alzheimer’s Association International Society to Advance Alzheimer’s Research and Treatment (ISTAART)	2018–present
American Medical Writers Association (AMWA)	2008–2011
Council of Scientific Editors (CSE)	2008–2011
Society for Neuroscience (SFN)	2007–2011
American Society for Cell Biology (ASCB)	2004–2011
American Association for Cancer Research (AACR)	2002–2011
American Society for Microbiology (ASM)	1999
Genetics Society of America (GSA)	1996