Heidi J. Chial, PhD, DipACLM

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

EDUCATION

University of Colorado at Boulder (Boulder, CO) 1993–1998
PhD, Molecular, Cellular, and Developmental Biology

Gustavus Adolphus College (St. Peter, MN) 1989–1993
BA, Chemistry, Biochemistry and Molecular Biology, Magna Cum Laude

POSTDOCTORAL RESEARCH TRAINING

Stanford University School of Medicine (Stanford, CA) 2006–2008
Dept. Neurology and Neurological Sciences and the Neuroscience Institute at Stanford

Marine Biological Laboratory (MBL) (Woods Hole, MA) 2005
Summer 2005 Neurobiology Course

Wake Forest University School of Medicine (Winston-Salem, NC) 2002–2006
Dept. Cancer Biology

Mayo Clinic College of Medicine (Rochester, MN) 1998–1999
Depts. Biochemistry and Molecular Biology, Pediatric and Adolescent Medicine, Lab Medicine and Pathology

ACADEMIC HONORS and AWARDS

Diplomate, American College of Lifestyle Medicine (DipACLM)	2025
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 2021–present
Faculty Research Instructor/Director of Grant Strategy and Development 2018–2021
Faculty Research Instructor/Writing Specialist 2017–2018
Faculty Research Associate/Writing Specialist 2015–2017
University of Colorado Alzheimer's and Cognition Center (CUACC) and Dept. Neurology
University of Colorado Anschutz Medical Campus (CU-AMC)

- At the University of Colorado Alzheimer's and Cognition Center (CUACC), I am advancing a research program focused on how defects in mitotic spindle assembly and chromosome segregation lead to aneuploidy (abnormal chromosome number) in neurons and other brain cells and serve as a shared mechanism underlying brain cell death in Alzheimer's disease (AD) and AD-related dementias (AD/ADRD), including AD, Down syndrome-associated AD (DS-AD), frontotemporal lobar dementia (FTLD), and Huntington's disease (HD). Such aneuploidy is well established in AD, DS, DS-AD, and MAPT-associated FTLD. I have collaborated with CUACC members to discover that aneuploidy is associated with and likely contributes to the progression of other neurodegenerative diseases including sporadic and other familial forms of FTLD and HD. With respect to AD, I am co-leading research focused on the microtubule motor protein KIF11/Kinesin-5/Eg5, which plays key roles in all mitotic spindle assembly and chromosome segregation activities. Specifically, we have identified KIF11 as a major target of the Abeta peptide and have shown that the detrimental effects of Abeta in mice and cell culture can be reversed by overexpressing this enzyme. I have co-led a team to develop an *in vitro* biochemical assay to identify small molecule drugs that prevent Abeta-mediated inhibition of KIF11 ATPase activity, and we have identified five promising candidates.
- I am a Delegated Co-Investigator for the ongoing NIH-funded Phase II Trial to Evaluate Safety and Efficacy of GM-CSF/Sargramostim in Alzheimer's Disease (SESAD) Clinical Trial.
- Co-Director, Grant Writing in Cancer Biology (Cancer Biology 7690, Spring 2020–present).
- Work with members of the University of Colorado Alzheimer's and Cognition Center and Dept. Neurology to develop and write grant applications, manuscripts, meeting abstracts, and presentations.
- 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).

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/DIP13α and APPL2/DIP13β 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

Sillau SH, Coughlan C, Ahmed MM, Nair K, Araya P, Galbraith MD, Ritchie A, Ching-Jung Wang A, Elos MT, Bettcher BM, Espinosa JM, **Chial HJ**, Epperson N, Boyd TD, Potter H. Blood measure of neuronal death is exponentially higher with age, especially in females, and halted in Alzheimer's disease by GM-CSF treatment. Cell Rep Med. 2025 Dec 19:102525. doi: 10.1016/j.xcrm.2025.102525. Epub ahead of print. PMID: 41421353.

James E, Vielle A, Cusato K, Li H, Lee B, Parween S, Howell A, Johnson NR, **Chial HJ**, Potter H, Vergara MN. Human iPSC-derived retinal organoids develop robust Alzheimer's disease neuropathology. Front Cell Neurosci. 2024 Jan 23;18:1340448. doi: 10.3389/fncel.2024.1340448. eCollection 2024.

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.

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 Aβ-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 Aβ 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

Leading & Teaming in Clinical Translational Science Program
Sept – Nov 2025
Focused on leading effective interdisciplinary and translational scientific teams in clinical and translational research.

Thrive-Up Program in Women's Leadership Training
2024-2025
Selected to participate in this program sponsored by the SOM Dean's office.

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, 2024, 2025, and 2026.
- 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

Philly and Charlie Dake Family Foundation
Role: Co-PI; Potter, Co-PI
Targeting Aneuploidy as a Novel Mechanism for Drug Discovery in Huntington's Disease
07/01/2024 – 06/30/2026
Total Costs: $350,000

1RF1AG078965-01A1 NIA
Role: Co-Investigator; 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; Potter, Huang, Sullivan (Co-PIs)
Neurovascular unit dysfunction in Down syndrome revealed by TBI
07/01/2022-06/30/2027
Total Costs: $2,601,812

NIH 1R01AG071151-01
Role: Co-Investigator; Potter, PI
Phase II trial of GM-CSF/sargramostim in Alzheimer's Disease
02/01/2021-11/30/2026
Total Costs: $7,225,826

NIH 1R21
Role: Co-Investigator; Co-PIs, Potter and Ahmed
Nasal application of GM-CSF for Alzheimer's Disease
04/01/2026- 03/30/2028
Very likely to be funded
Impact Score: 21, Percentile: 5.0 (01/27/26)

COMPLETED SUPPORT

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

1R61AG074859-01 NIA
Role: Co-Investigator; Potter PI
GM-CSF/sargramostim treatment to improve cognition in Down syndrome
09/01/2021-01/31/25
Total Costs: $4,568,981

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

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.
1/1/2018–10/31/2021
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

Hewit 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)
DIP13α and DIP13β 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 DIP13α and DIP13β) 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)
DIP13α and DIP13β 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/DIP13α and APPL2/DIP13β 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

Stefan H. Sillau, Md. Mahiuddin Ahmed, Christina Coughlan, Matthew D. Galbraith, Paula Araya, Kavita V. Nair, Brianne M. Bettcher, **Heidi J. Chial**, Joaquin M. Espinosa, Huntington Potter, PhD. Accelerated Aging in the Down Syndrome Brain Indicated by Plasma Biomarkers Showing Greatly Increased Rates of Age- and Sex-Associated Neurodegeneration (UCH-L1 and NfL) and Astrogliosis (GFAP) and by Neuronal Loss in a Mouse Model of Down Syndrome. Alzheimer's Association International Conference (AAIC) 2025. July 27-31, 2025, Toronto, Canada.

Elos, M. Caneus, J. Ahmed, M., Grissom, P., Johnson, N., Johnson, P., and **Chial, H.J.** Elevated levels of mosaic aneuploidy in the development and progression of Huntington's disease. Society for Neuroscience (SfN) 2024 Annual Meeting, October 5-9, 2024, Chicago, IL.

Esteban M. Lucero, Tony Brunetti, **Heidi J. Chial**, Huntington Potter, Chris Gignoux. Higher gene expression of dynein heavy chains in the dorsolateral prefrontal cortex predict lower neuropathology burden and better cognitive outcomes in individuals with Alzheimer's disease. American Society for Human Genetics (ASHG) 2024 Annual Meeting, November 5-9, 2024, Denver, CO.

Haq, M.A., Heitmann, C., Wang, C.-J., **Chial, H.J.**, Potter, H., and Ahmed, M. Evaluating the Therapeutic Potential of GM-CSF to Target Behavioral Phenotypes and Brain Pathology in Mouse Models of Autism Spectrum Disorder. Society for Neuroscience (SfN) 2024 Annual Meeting, October 5-9, 2024, Chicago, IL.

Esteban M. Lucero, Tony Brunetti, **Heidi J. Chial**, Huntington Potter, Chris Gignoux. Higher gene expression of dynein heavy chains in the dorsolateral prefrontal cortex predict lower neuropathology burden and better cognitive outcomes in individuals with Alzheimer's disease. Society for Neuroscience (SfN) 2024 Annual Meeting, October 5-9, 2024, Chicago, IL.

Stefan H. Sillau, Christina Coughlan, Md. Mahiuddin Ahmed, Kavita V. Nair, Paula Araya, Matthew D. Galbraith, Brianne M. Bettcher, Joaquin M. Espinosa, **Heidi J. Chial**, Neill Epperson, Timothy D. Boyd, Huntington Potter. Plasma biomarkers of neurodegeneration in the brain (UCH-L1 and NfL) become exponentially higher with age from early childhood, and treatment of Alzheimer's disease participants with granulocyte-macrophage colony-stimulating factor (GM-CSF) lowers age-associated levels of plasma UCH-L1 by six decades. Alzheimer's Association International Conference (AAIC) 2024. July 28-Aug. 1, 2024, Philadelphia, PA.

Esteban M. Lucero, Tony Brunetti, **Heidi J. Chial**, Huntington Potter, Chris Gignoux. Higher gene expression of dynein heavy chains in the dorsolateral prefrontal cortex predict lower neuropathology burden and better cognitive outcomes in individuals with Alzheimer's disease. Alzheimer's Association International Conference (AAIC) 2024. July 28-Aug. 1, 2024, Philadelphia, PA.

Md. Mahiuddin Ahmed, Leila Aghili, Mihret Elos, Athena Ching-Jung Wang, Maham Haq, Timothy D. Boyd, **Heidi J. Chial**, and Huntington Potter. Treatment with Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF) Rescues the Loss of Parvalbumin-Positive Purkinje Cells and Interneurons in the Brains of the Dp16 Mouse Model of Down Syndrome. 5th International Conference of the Trisomy 21 Research Society (T21RS), June 5-8, 2024, Rome, Italy.

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 hIAPPmouse 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 Secora[1], Anne Vielle, Athena Ching-Jung Wang, Patricia Lenhart, Ernesto Salcedo, Noah R. Johnson, Md. Mahuiddin 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 (Aβ, 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 Aβ 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., Valletta, 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 DIP13α/APPL1 and DIP13β/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 DIP13α/APPL1 and DIP13β/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 DIP13α/APPL and DIP13β, 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

- Member, Neurology Department Promotions Committee (January 2025–December 2026). Responsible for reviewing applications for Advanced Practice Providers (APPs) or others being promoted from instructor to senior instructor level.
- Member, Neurology Department Evaluation Committee (DEC) (January 2025–December 2026). Responsible for reviewing of the dossiers for Assistant Professor promotion packages.
- Review Editor, Editorial Board of Genetics of Common and Rare Diseases, a specialty section of Frontiers in Pediatrics and Frontiers in Genetics (2021-present).
- Primary Reviewer for the CCTSI CO-Pilot Grant Program (2022-present).
- Co-Director, Cancer Biology 7690 course, “Grant Writing in Cancer Biology,” for the interdepartmental Cancer Biology Program at CU Anschutz (2020-present).
- Member, Health Outcomes, Access, and Engagement (HAE) Task Force, Dept. Neurology, University of Colorado Anschutz Campus (Sept. 2021-present).
- Primary Reviewer for the CCTSI Huntington’s Disease (HD) Pilot Grant Application Program (2025).
- Speaker, Cancer Biology 2024 Seminar Series, Alternative Careers in Science, 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.

- 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).
- Co-Faculty, Cancer Biology CANB7680 "Hypothesis Development and Experimental Design" course, for the interdepartmental Cancer Biology Program at CU Anschutz (2016-2019).
- 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, 3013.
- 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.

HEALTH OUTCOMES, ACCESS, and ENGAGEMENT

Member, Health Outcomes, Access, and Engagement (HAE) Task Force, Dept. Neurology, University of Colorado Anschutz Campus (Sept. 2021-present)

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

PROFESSIONAL SOCIETIES

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