

CURRICULUM VITAE

NAME

Chia-Ling Kuo

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DEPARTMENT OF PRIMARY APPOINTMENT

Department of Population Health Sciences

ACADEMIC APPOINTMENT

- University of Connecticut Health, Farmington, CT, USA
 - 2020-present, Associate Professor, Department of Public Health Sciences, University of Connecticut Health
 - 2013-2020, Assistant Professor, Department of Public Health Sciences, University of Connecticut Health
 - 2013-present, Senior Biostatistician, Connecticut Convergence Institute for Translation in Regenerative Engineering, University of Connecticut Health
 - 2018-present, Research Affiliate, UConn Center on Aging, University of Connecticut Health
 - 2014-present, Assistant Professor, Institute for Systems Genomics, University of Connecticut

PROFESSIONAL EXPERIENCE

- National Institute of Environmental Health Sciences, Research Triangle Park, NC, USA
 - 2010-2013, Research Fellow in Statistical Genetics, Biostatistics Branch
- Institute of Statistical Science, Academia Sinica, Taipei City, Taiwan
 - 2003-2004, Research Student in Statistics
 - 2004-2005, Research Assistant in Statistics

EDUCATIONAL BACKGROUND

- The University of Pittsburgh, Pittsburgh, PA, USA
 - 2005-2010, PhD in Biostatistics and Statistical Genetics
- National Taiwan University, Taipei City, Taiwan
 - 2001-2003, MS in Biostatistics
- National Chengchi University, Taipei City, Taiwan
 - 1997-2001, BBA in Statistics

OTHER PROFESSIONAL ACCOMPLISHMENTS

- 2017-present, Statistical Reviewer, Journal of Racial and Ethnic Health Disparities
- 2014-present, Accredited Professional Statistician™ awarded by American Statistical Association

MEDIA COVERAGE

- May 26, 2020 Dementia gene raises risk of severe COVID-19

PRINT AND ORAL SCHOLARSHIP

*corresponding author

Peer reviewed journal articles

1. Hardy CC, Al-Naggar IM, **Kuo CL**, Kuchel GA, Smith PP. Aging Changes in Bladder HCN are Associated with Increasing Heterogeneity of Adrenergic/Mucosal Influence on Detrusor Control in the Mouse. *J Gerontol A Biol Sci Med Sci*. 2021. (Accepted)
2. **Kuo CL***, Pilling LC, Atkins JC, Masoli J, Delgado J, Tignanelli C, Kuchel G, Melzer D, Beckman KB, Levine ME*. Biological Aging Predicts Vulnerability to COVID-19 Severity in UK Biobank Participants. *J Gerontol A Biol Sci Med Sci*. 2021. (Accepted)
3. Huynh C, Godoy L, **Kuo CL**, Smeds M, Amankwah KS. Examining the development of operative autonomy in vascular surgery training and when trainees and program directors agree and disagree. *Ann Vasc Surg*. 2021. (Accepted)
4. Simoneau T, Hollenbach JP, Langton CR, **Kuo CL**, Cloutier MM. Smoking cessation and counseling: A mixed methods study of pediatricians and parents. *PLoS One*. 2021 Feb 9;16(2):e0246231. doi: 10.1371/journal.pone.0246231. PMID: 33561136.
5. Bidra AS, Persenaire M, **Kuo CL**. The Influence of Age and Facial Expression (Eye Open/Closed) On Maxillary Dental and Gingival Display. *J Prosthodont*. 2021 Feb 8. doi: 10.1111/jopr.13344. Epub ahead of print. PMID: 33554431.
6. Arqub SA, Gandhi V, Iverson MG, Ahmed M, **Kuo CL**, Mu J, Dutra E, Uribe F. The effect of the local administration of biological substances on the rate of orthodontic tooth movement: a systematic review of human studies. *Prog Orthod*. 2021 Feb 1;22(1):5. doi: 10.1186/s40510-021-00349-5. PMID: 33523325; PMCID: PMC7851211.
7. Jones G, Trajanoska K, Santanasto AJ, Stringa N, **Kuo CL**, Atkins JL, Lewis JR, Duong T, Hong S, Biggs ML, Luan J, Sarnowski C, Lunetta KL, Tanaka T, Wojczynski MK, Cvejkus R, Nethander M, Ghasemi S, Yang J, Zillikens MC, Walter S, Sicinski K, Kague E, Ackert-Bicknell CL, Arking DE, Windham BG, Boerwinkle E, Grove ML, Graff M, Spira D, Demuth I, van der Velde N, de Groot LCPGM, Psaty BM, Odden MC, Fohner AE, Langenberg C, Wareham NJ, Bandinelli S, van Schoor NM, Huisman M, Tan Q, Zmuda J, Mellström D, Karlsson M, Bennett DA, Buchman AS, De Jager PL, Uitterlinden AG, Völker U, Kocher T, Teumer A, Rodríguez-Mañas L, García FJ, Carnicero JA, Herd P, Bertram L, Ohlsson C, Murabito JM, Melzer D, Kuchel GA, Ferrucci L, Karasik D, Rivadeneira F, Kiel DP, Pilling LC. Genome-wide meta-analysis of muscle weakness identifies 15 susceptibility loci in older men and women. *Nat Commun*. 2021 Jan 28;12(1):654. doi: 10.1038/s41467-021-20918-w. PMID: 33510174; PMCID: PMC7844411.
8. Atkins JL, Pilling LC, Heales CJ, Savage S, **Kuo CL**, Kuchel GA, Steffens DC, Melzer D. Hemochromatosis Mutations, Brain Iron Imaging, and Dementia in the UK Biobank Cohort. *J Alzheimers Dis*. 2021;79(3):1203-1211. doi: 10.3233/JAD-201080. PMID: 33427739.
9. Mehta S, Wang D, **Kuo CL**, Mu J, Vich ML, Allareddy V, Tadinada A, Yadav S. Long-term effects of mini-screw-assisted rapid palatal expansion on airway. *Angle Orthod*. 2020 Dec 14. doi: 10.2319/062520-586.1. Epub ahead of print. PMID: 33315060.
10. Atkins JL, Pilling LC, Masoli JAH, **Kuo CL**, Shearman JD, Adams PC, Melzer D. Association of Hemochromatosis HFE p.C282Y Homozygosity With Hepatic Malignancy. *JAMA*. 2020 Nov 24;324(20):2048-2057. doi: 10.1001/jama.2020.21566. PMID: 33231665; PMCID: PMC7686863.
11. Mehta S, Dresner R, Gandhi V, Chen PJ, Allareddy V, **Kuo CL**, Mu J, Yadav S. Effect of positional errors on the accuracy of cervical vertebrae maturation assessment using

- CBCT and lateral cephalograms. *J World Fed Orthod.* 2020 Dec;9(4):146-154. doi: 10.1016/j.ejwf.2020.09.006. Epub 2020 Nov 6. PMID: 33162355.
12. Harris K, Ojima K, Dan C, Upadhyay M, Alshehri A, **Kuo CL**, Mu J, Uribe F, Nanda R (2020). Evaluation of open bite closure using clear aligners: a retrospective study. *Prog Orthod*, 21(1):23.
 13. Mallen JR, Shah MU, Drake R, Kreicher K, Falcone T, Karter N, Schoem S, Grindle C, Wolfe S, **Kuo CL**, Mu J, Lotterman S, Bonaiuto G. Utility of Smartphone Telemedical Consultations for Peritonsillar Abscess Diagnosis and Triage. *JAMA Otolaryngol Head Neck Surg.* 2020 Oct 1;146(10):909-913. doi: 10.1001/jamaoto.2020.1972. PMID: 32816011; PMCID: PMC7441464.
 14. **Kuo CL**, Melzer D. Response to Comment on "ApoE e4e4 Genotype and Mortality With COVID-19 in UK Biobank" by Kuo et al. *J Gerontol A Biol Sci Med Sci.* 2020 Oct 15;75(11):2235-2236. doi: 10.1093/gerona/glaa198. PMID: 32797154; PMCID: PMC7454407.
 15. Atkins JL, Masoli JAH, Delgado J, Pilling LC, **Kuo CL**, Kuchel GA, Melzer D. Preexisting Comorbidities Predicting COVID-19 and Mortality in the UK Biobank Community Cohort. *J Gerontol A Biol Sci Med Sci.* 2020 Oct 15;75(11):2224-2230. doi: 10.1093/gerona/glaa183. PMID: 32687551; PMCID: PMC7454409.
 16. **Kuo CL**, Pilling LC, Atkins JL, Masoli JAH, Delgado J, Kuchel GA, Melzer D. ApoE e4e4 Genotype and Mortality With COVID-19 in UK Biobank. *J Gerontol A Biol Sci Med Sci.* 2020 Sep 16;75(9):1801-1803. doi: 10.1093/gerona/glaa169. PMID: 32623451; PMCID: PMC7337688.
 17. **Kuo CL**, Pilling LC, Atkins JL, Masoli JAH, Delgado J, Kuchel GA, Melzer D. APOE e4 Genotype Predicts Severe COVID-19 in the UK Biobank Community Cohort. *J Gerontol A Biol Sci Med Sci.* 2020 Oct 15;75(11):2231-2232. doi: 10.1093/gerona/glaa131. PMID: 32451547; PMCID: PMC7314139.
 18. **Kuo CL***, Pilling LC, Atkins JL, Kuchel GA, Melzer D (2020). ApoE e2 and aging-related outcomes in 379,000 UK Biobank participants. *Aging (Albany NY)*, 12 (12): 12222-12233.
 19. Reiss S, Chouinard MC, Frias Landa D, Nanda R, Chandhoke T, Sobue T, Allareddy V, **Kuo CL**, Mu J, Uribe F. Biomarkers of orthodontic tooth movement with fixed appliances and vibration appliance therapy: a pilot study. *Eur J Orthod.* 2020 Sep 11;42(4):378-386. doi: 10.1093/ejo/cjaa026. PMID: 32572439.
 20. Huang EI, **Kuo CL**, Lee LW. A 16-Year Study on Incidence and Progression of Diseased Sphenoidal (Onodi) Cell. *Biomed Res Int.* 2020 Jun 5;2020:2410415. doi: 10.1155/2020/2410415. PMID: 32566671; PMCID: PMC7293742.
 21. Gandhi V, Mehta S, Gauthier M, Mu J, **Kuo CL**, Nanda R, Yadav S. Comparison of external apical root resorption with clear aligners and pre-adjusted edgewise appliances in non-extraction cases: a systematic review and meta-analysis. *Eur J Orthod.* 2021 Jan 29;43(1):15-24. doi: 10.1093/ejo/cjaa013. PMID: 32077935; PMCID: PMC7846172.
 22. Khajah A, Tadinada A, Allareddy V, **Kuo CL**, Nanda R, Uribe F. Influence of type of radiograph and levels of experience and training on reproducibility of the cervical vertebral maturation method. *Am J Orthod Dentofacial Orthop.* 2020 Feb;157(2):228-239. doi: 10.1016/j.ajodo.2019.03.025. PMID: 32005475.
 23. Adler AJ, Mittal P, Hagymasi AT, Menoret A, Shen C, Agliano F, Wright KT, Grady JJ, **Kuo CL**, Ballesteros E, Claffey KP, Vella AT. GRK2 enforces androgen receptor

- dependence in the prostate and prostate tumors. *Oncogene*. 2020 Mar;39(11):2424-2436. doi: 10.1038/s41388-020-1159-x. Epub 2020 Jan 20. PMID: 31959897; PMCID: PMC7072002.
24. Mallen JR, Chiu J, Marquis H, Ottochian A, Perez E, **Kuo CL**, Otto S, Ryan T, Roberts DS. Quantifying tinnitus suppression in cochlear implantation using tinnitus interval-limited tracking. *Laryngoscope*. 2020 Aug;130(8):2047-2052. doi: 10.1002/lary.28414. Epub 2019 Dec 4. PMID: 31800110.
 25. Wright RA, Bidra AS, **Kuo CL**. An analysis of anterior mandibular anatomy by using cone beam computed tomography: A study of 225 mandibular images. *J Prosthet Dent*. 2020 Apr;123(4):595-601. doi: 10.1016/j.prosdent.2019.06.025. Epub 2019 Oct 4. PMID: 31590979.
 26. **Kuo CL**, Pilling LC, Kuchel GA, Ferrucci L, Melzer D. Telomere length and aging-related outcomes in humans: A Mendelian randomization study in 261,000 older participants. *Aging Cell*. 2019 Dec;18(6):e13017. doi: 10.1111/accel.13017. Epub 2019 Aug 24. PMID: 31444995; PMCID: PMC6826144.
 27. Slauch RW, Bidra AS, Wolfinger GJ, **Kuo CL**. Relationship between Radiographic Misfit and Clinical Outcomes in Immediately Loaded Complete-Arch Fixed Implant-Supported Prostheses in Edentulous Patients. *J Prosthodont*. 2019 Oct;28(8):861-867. doi: 10.1111/jopr.13105. Epub 2019 Aug 29. PMID: 31435989.
 28. **Kuo CL***, Joaquim M, Kuchel GA, Ferrucci L, Harries LW, Pilling LC, Melzer D. The Longevity-Associated SH2B3 (LNK) Genetic Variant: Selected Aging Phenotypes in 379,758 Subjects. *J Gerontol A Biol Sci Med Sci*. 2020 Sep 16;75(9):1656-1662. doi: 10.1093/gerona/glz191. Erratum in: *J Gerontol A Biol Sci Med Sci*. 2020 Sep 16;75(9):1686. PMID: 31428775; PMCID: PMC7749196.
 29. Dahlberg KR, Ferrecchia IA, Dambaska-Williams M, Resler TE, Ross KM, Butler GL, **Kuo CL**, Ryan PT, Weinstein DA. Cornstarch requirements of the adult glycogen storage disease Ia population: A retrospective review. *J Inherit Metab Dis*. 2020 Mar;43(2):269-278. doi: 10.1002/jimd.12160. Epub 2019 Sep 4. PMID: 31415093.
 30. Oncken C, Dornelas EA, **Kuo CL**, Sankey HZ, Kranzler HR, Mead EL, Thurlow MSD. Randomized Trial of Nicotine Inhaler for Pregnant Smokers. *Am J Obstet Gynecol* MFM. 2019 Mar;1(1):10-18. doi: 10.1016/j.ajogmf.2019.03.006. Epub 2019 Mar 27. PMID: 31380506; PMCID: PMC6677278.
 31. Simoneau T, Langton CR, **Kuo CL**, Marrero J, Gherlone N, Cloutier MM, Hollenbach JP. A School Nurse-Led Asthma Program Reduces Absences: Evaluation of Easy Breathing for Schools. *Acad Pediatr*. 2020 Jan-Feb;20(1):73-80. doi: 10.1016/j.acap.2019.07.007. Epub 2019 Jul 28. PMID: 31365880.
 32. Pilling LC, Tamosauskaite J, Jones G, Wood AR, Jones L, **Kuo CL**, Kuchel GA, Ferrucci L, Melzer D. Common conditions associated with hereditary haemochromatosis genetic variants: cohort study in UK Biobank. *BMJ*. 2019 Jan 16;364:k5222. doi: 10.1136/bmj.k5222. Erratum in: *BMJ*. 2019 Oct 23;367:l6157. PMID: 30651232; PMCID: PMC6334179.
 33. Kositsawat J, **Kuo CL (co-first author)**, Barry LC, Melzer D, Bandinelli S, Ferrucci L, Wu R, Kuchel GA. Interaction Between Vitamin D and Interleukin 6 on Slow Gait Speed: 6-Year Follow-up Data of Older Adults From InCHIANTI. *J Gerontol A Biol Sci Med Sci*. 2020 May 22;75(6):1161-1166. doi: 10.1093/gerona/glz165. PMID: 31282535; PMCID: PMC7243581.

34. Oncken C, Mead EL, Dornelas EA, **Kuo CL**, Sankey HZ, Kranzler HR, Thurlow S. Opioid Use and Rate of Nicotine Metabolism Among Pregnant Smokers. *Nicotine Tob Res.* 2020 May 26;22(6):1046-1050. doi: 10.1093/ntr/ntz073. PMID: 31063550; PMCID: PMC7249922.
35. Hollenbach JP, **Kuo CL**, Mu J, Gerrard M, Gherlone N, Sylvester F, Ojukwu M, Cloutier MM. Hair cortisol, perceived stress, and social support in mother-child dyads living in an urban neighborhood. *Stress.* 2019 Nov;22(6):632-639. doi: 10.1080/10253890.2019.1604667. Epub 2019 Apr 23. PMID: 31010377.
36. Jones G, Pilling LC, **Kuo CL**, Kuchel G, Ferrucci L, Melzer D. Sarcopenia and Variation in the Human Leukocyte Antigen Complex. *J Gerontol A Biol Sci Med Sci.* 2020 Jan 20;75(2):301-308. doi: 10.1093/gerona/glz042. PMID: 30772894; PMCID: PMC7176057.
37. Tamosauskaite J, Atkins JL, Pilling LC, **Kuo CL**, Kuchel GA, Ferrucci L, Melzer D. Hereditary Hemochromatosis Associations with Frailty, Sarcopenia and Chronic Pain: Evidence from 200,975 Older UK Biobank Participants. *J Gerontol A Biol Sci Med Sci.* 2019 Feb 15;74(3):337-342. doi: 10.1093/gerona/gly270. PMID: 30657865; PMCID: PMC6376086.
38. Riccardi A, Aspir T, Shen L, **Kuo CL**, Brown TC, Korah R, Murtha TD, Bellizzi J, Parham K, Carling T, Costa-Guda J, Arnold A. Analysis of Activating GCM2 Sequence Variants in Sporadic Parathyroid Adenomas. *J Clin Endocrinol Metab.* 2019 Jun 1;104(6):1948-1952. doi: 10.1210/jc.2018-02517. PMID: 30624640.
39. Balakumaran K, Patil A, Marsh S, Ingrassia J, **Kuo CL**, Jacoby DL, Arora S, Soucier R. Evaluation of a guideline directed medical therapy titration program in patients with heart failure with reduced ejection fraction. *Int J Cardiol Heart Vasc.* 2018 Nov 8;22:1-5. doi: 10.1016/j.ijcha.2018.10.003. PMID: 30480083; PMCID: PMC6240631.
40. Frallicciardi A, Lotterman S, Ledford M, Prenovitz I, Meter RV, **Kuo CL**, Nowicki T, Fuller R. Training for Failure: A Simulation Program for Emergency Medicine Residents to Improve Communication Skills in Service Recovery. *AEM Educ Train.* 2018 Jul 26;2(4):277-287. doi: 10.1002/aet2.10116. PMID: 30386837; PMCID: PMC6194038.
41. Moy BT, Forouhar F, **Kuo CL**, Devers TJ. Endoscopic Features of Mucous Cap Polyps: A Way to Predict Serrated Polyps. *Clin Endosc.* 2018 Jul;51(4):368-374. doi: 10.5946/ce.2017.155. Epub 2018 Apr 27. PMID: 29699379; PMCID: PMC6078921.
42. **Kuo CL***, Duan Y, Grady J. Unconditional or Conditional Logistic Regression Model for Age-Matched Case-Control Data? *Front Public Health.* 2018 Mar 2;6:57. doi: 10.3389/fpubh.2018.00057. PMID: 29552553; PMCID: PMC5840200.
43. Zhou W, Liu Z, Song L, **Kuo CL**, Shafer DM. Clinical Factors Affecting the Accuracy of Guided Implant Surgery-A Systematic Review and Meta-analysis. *J Evid Based Dent Pract.* 2018 Mar;18(1):28-40. doi: 10.1016/j.jebdp.2017.07.007. Epub 2017 Jul 22. PMID: 29478680.
44. Schwartz MA, Naples JG, **Kuo CL**, Falcone TE. Opioid Prescribing Patterns among Otolaryngologists. *Otolaryngol Head Neck Surg.* 2018 May;158(5):854-859. doi: 10.1177/0194599818757959. Epub 2018 Feb 20. PMID: 29460670.
45. Chhibber A, Agarwal S, Yadav S, **Kuo CL**, Upadhyay M. Which orthodontic appliance is best for oral hygiene? A randomized clinical trial. *Am J Orthod Dentofacial Orthop.* 2018 Feb;153(2):175-183. doi: 10.1016/j.ajodo.2017.10.009. PMID: 29407494.

46. Curry EJ, Ke K, Chorsi MT, Wrobel KS, Miller AN 3rd, Patel A, Kim I, Feng J, Yue L, Wu Q, **Kuo CL**, Lo KW, Laurencin CT, Ilies H, Purohit PK, Nguyen TD. Biodegradable Piezoelectric Force Sensor. *Proc Natl Acad Sci U S A*. 2018 Jan 30;115(5):909-914. doi: 10.1073/pnas.1710874115. Epub 2018 Jan 16. PMID: 29339509; PMCID: PMC5798324.
47. Pilling LC, **Kuo CL**, Sicinski K, Tamosauskaite J, Kuchel GA, Harries LW, Herd P, Wallace R, Ferrucci L, Melzer D. Human longevity: 25 genetic loci associated in 389,166 UK biobank participants. *Aging (Albany NY)*. 2017 Dec 6;9(12):2504-2520. doi: 10.18632/aging.101334. PMID: 29227965; PMCID: PMC5764389.
48. Huang EI, **Kuo CL**, Chou YT, Lin YC, Huang SY. Modified Z-palatoplasty with one-layer closure in one-stage multilevel surgery for severe obstructive sleep apnea. *Auris Nasus Larynx*. 2018 Aug;45(4):791-795. doi: 10.1016/j.anl.2017.10.002. Epub 2017 Nov 6. PMID: 29102064.
49. Townsel C, Keller R, **Kuo CL**, Campbell WA, Hussain N. Racial/Ethnic Disparities in Morbidity and Mortality for Preterm Neonates Admitted to a Tertiary Neonatal Intensive Care Unit. *J Racial Ethn Health Disparities*. 2018 Aug;5(4):867-874. doi: 10.1007/s40615-017-0433-2. Epub 2017 Oct 25. PMID: 29071590.
50. Pilling LC, Atkins JL, Duff MO, Beaumont RN, Jones SE, Tyrrell J, **Kuo CL**, Ruth KS, Tuke MA, Yaghootkar H, Wood AR, Murray A, Weedon MN, Harries LW, Kuchel GA, Ferrucci L, Frayling TM, Melzer D. Red blood cell distribution width: Genetic evidence for aging pathways in 116,666 volunteers. *PLoS One*. 2017 Sep 28;12(9):e0185083. doi: 10.1371/journal.pone.0185083. PMID: 28957414; PMCID: PMC5619771.
51. Cloutier MM, Wiley JF, **Kuo CL**, Cornelius T, Wang Z, Gorin AA. Outcomes of an early childhood obesity prevention program in a low-income community: a pilot, randomized trial. *Pediatr Obes*. 2018 Nov;13(11):677-685. doi: 10.1111/ijpo.12458. Epub 2018 Aug 28. PMID: 30156058.
52. Ifegwu OC, Awale G, Kan HM, Rajpura K, O'Neill E, **Kuo CL**, Lo KW (2018). Bone regenerative engineering using a protein kinase a-specific cyclic AMP analogue administered for short term. *Regen Eng Transl Med* 4 (4): 206-215.
53. Vsevolozhskaya OA, **Kuo CL**, Ruiz G, Diatchenko L, Zaykin DV. The more you test, the more you find: The smallest P-values become increasingly enriched with real findings as more tests are conducted. *Genet Epidemiol*. 2017 Dec;41(8):726-743. doi: 10.1002/gepi.22064. Epub 2017 Sep 14. PMID: 28913944; PMCID: PMC7080647.
54. Lyapis A, Ulrich A, LaMonica R, **Kuo CL**, Kaye L, Luciano D. Does the Difference in Fascial Closure Technique Affect Postoperative Pain? *J Minim Invasive Gynecol*. 2017 Nov-Dec;24(7):1190-1194. doi: 10.1016/j.jmig.2017.07.020. Epub 2017 Jul 27. PMID: 28757438.
55. Dambaska M, Labrador EB, **Kuo CL**, Weinstein DA. Prevention of complications in glycogen storage disease type Ia with optimization of metabolic control. *Pediatr Diabetes*. 2017 Aug;18(5):327-331. doi: 10.1111/pedi.12540. Epub 2017 Jun 1. PMID: 28568353.
56. Bidra AS, Nguyen V, Manzotti A, **Kuo CL**. Differences in Lip Support with and without Labial Flanges in a Maxillary Edentulous Population - Part 3: Unblinded and Discriminatory Subjective Analysis. *J Prosthodont*. 2018 Jan;27(1):22-28. doi: 10.1111/jopr.12635. Epub 2017 May 31. PMID: 28561382.

57. Oncken C, Ricci KA, **Kuo CL**, Dornelas E, Kranzler HR, Sankey HZ. Correlates of Electronic Cigarettes Use Before and During Pregnancy. *Nicotine Tob Res.* 2017 May 1;19(5):585-590. doi: 10.1093/ntr/ntw225. PMID: 28403454; PMCID: PMC5896457.
58. Carpinello OJ, Casson PR, **Kuo CL**, Raj RS, Sills ES, Jones CA. Cost Implications for Subsequent Perinatal Outcomes After IVF Stratified by Number of Embryos Transferred: A Five Year Analysis of Vermont Data. *Appl Health Econ Health Policy.* 2016 Jun;14(3):387-95. doi: 10.1007/s40258-016-0237-2. PMID: 26969653.
59. Bidra AS, Farrell K, Burnham D, Dhingra A, Taylor TD, **Kuo CL**. Prospective cohort pilot study of 2-visit CAD/CAM monolithic complete dentures and implant-retained overdentures: Clinical and patient-centered outcomes. *J Prosthet Dent.* 2016 May;115(5):578-586.e1. doi: 10.1016/j.prosdent.2015.10.023. Epub 2016 Jan 13. PMID: 26794695.
60. Gohil SV, **Kuo CL**, Adams DJ, Maye P, Rowe DW, Nair LS. Evaluation of the donor cell contribution in rhBMP-2 mediated bone formation with chitosan thermogels using fluorescent protein reporter mice. *J Biomed Mater Res A.* 2016 Apr;104(4):928-41. doi: 10.1002/jbm.a.35634. Epub 2016 Jan 13. Erratum in: *J Biomed Mater Res A.* 2016 Jun;104(6):1571. PMID: 26703977.
61. Hoag JR and **Kuo CL***. Ranking question designs and analysis methods. *J Med Stat Inform.* 2016; 4:6. <http://dx.doi.org/10.7243/2053-7662-4-6>
62. Naples JG, Spiro J, Tessema B, Kuwada C, **Kuo CL**, Brown SM. Neck recurrence and mortality in esthesioneuroblastoma: Implications for management of the N0 neck. *Laryngoscope.* 2016 Jun;126(6):1373-9. doi: 10.1002/lary.25803. Epub 2015 Nov 26. PMID: 26607219.
63. **Kuo CL**, Vsevolozhskaya OA, Zaykin DV. Assessing the Probability that a Finding Is Genuine for Large-Scale Genetic Association Studies. *PLoS One.* 2015 May 8;10(5):e0124107. doi: 10.1371/journal.pone.0124107. PMID: 25955023; PMCID: PMC4425705.
64. **Kuo CL**, Zaykin D. The ranking probability approach and its usage in design and analysis of large-scale studies. *PLoS One.* 2013 Dec 20;8(12):e83079. doi: 10.1371/journal.pone.0083079. Erratum in: *PLoS One.* 2014;9(1). doi:10.1371/annotation/6bc48309-0280-4066-b937-e88debd1579c. PMID: 24376639; PMCID: PMC3869737.
65. McKay GJ, Patterson CC, Chakravarthy U, Dasari S, Klaver CC, Vingerling JR, Ho L, de Jong PT, Fletcher AE, Young IS, Seland JH, Rahu M, Soubrane G, Tomazzoli L, Topouzis F, Vioque J, Hingorani AD, Sofat R, Dean M, Sawitzke J, Seddon JM, Peter I, Webster AR, Moore AT, Yates JR, Cipriani V, Fritsche LG, Weber BH, Keilhauer CN, Lotery AJ, Ennis S, Klein ML, Francis PJ, Stambolian D, Orlin A, Gorin MB, Weeks DE, **Kuo CL**, Swaroop A, Othman M, Kanda A, Chen W, Abecasis GR, Wright AF, Hayward C, Baird PN, Guymer RH, Attia J, Thakkeinstian A, Silvestri G. Evidence of association of APOE with age-related macular degeneration: a pooled analysis of 15 studies. *Hum Mutat.* 2011 Dec;32(12):1407-16. doi: 10.1002/humu.21577. Epub 2011 Sep 12. PMID: 21882290; PMCID: PMC3217135.
66. **Kuo CL**, Zaykin DV. Novel rank-based approaches for discovery and replication in genome-wide association studies. *Genetics.* 2011 Sep;189(1):329-40. doi: 10.1534/genetics.111.130542. Epub 2011 Jul 29. Erratum in: *Genetics.* 2011 Oct;189(2):681. PMID: 21705758; PMCID: PMC3176128.

67. McKay GJ, Silvestri G, Chakravarthy U, Dasari S, Fritsche LG, Weber BH, Keilhauer CN, Klein ML, Francis PJ, Klaver CC, Vingerling JR, Ho L, De Jong PT, Dean M, Sawitzke J, Baird PN, Guymer RH, Stambolian D, Orlin A, Seddon JM, Peter I, Wright AF, Hayward C, Lotery AJ, Ennis S, Gorin MB, Weeks DE, **Kuo CL**, Hingorani AD, Sofat R, Cipriani V, Swaroop A, Othman M, Kanda A, Chen W, Abecasis GR, Yates JR, Webster AR, Moore AT, Seland JH, Rahu M, Soubrane G, Tomazzoli L, Topouzis F, Vioque J, Young IS, Fletcher AE, Patterson CC. Variations in apolipoprotein E frequency with age in a pooled analysis of a large group of older people. *Am J Epidemiol*. 2011 Jun 15;173(12):1357-64. doi: 10.1093/aje/kwr015. Epub 2011 Apr 15. PMID: 21498624; PMCID: PMC3145394.
68. **Kuo CL**, Feingold E. What's the best statistic for a simple test of genetic association in a case-control study? *Genet Epidemiol*. 2010 Apr;34(3):246-53. doi: 10.1002/gepi.20455. PMID: 20025064.
69. Bhattacharjee S, **Kuo CL**, Mukhopadhyay N, Brock GN, Weeks DE, Feingold E. Robust score statistics for QTL linkage analysis. *Am J Hum Genet*. 2008 Mar;82(3):567-82. doi: 10.1016/j.ajhg.2007.11.012. Epub 2008 Feb 21. PMID: 18304491; PMCID: PMC2427220.

Under Revision

1. **Kuo CL***, Pilling LC, Liu Z, Atkins JL, Levine M. Genetic associations for two biological age measures point to distinct aging phenotypes. *Aging Cell*. 2021. (preparing second revision).

Book chapters

1. Hoag J.R., **Kuo CL***. (2017) Normal and Non-normal Data Simulations for the Evaluation of Two-Sample Location Tests. In: Chen DG., Chen J. (eds) Monte-Carlo Simulation-Based Statistical Modeling. ICSA Book Series in Statistics. Springer, Singapore. https://doi.org/10.1007/978-981-10-3307-0_3
2. **Kuo, CL**, Diatchenko, L. and Zaykin, D. (2014). Discovering Multilocus Associations with Complex Pain Phenotypes. In Pain Genetics (eds I. Belfer and L. Diatchenko). <https://doi.org/10.1002/9781118398890.ch7>

Oral presentations

Peer reviewed, selected for oral presentation

1. "ApoE2 and aging-related outcomes in 261,000 UK Biobank older adults" in the symposium of "Genetics and Mechanisms of Human Aging and Frailty". **The Gerontological Society of America Annual Scientific Meeting**, Austin, Texas, November, 2019.
2. "Effects of telomere length on frailty and other aging-related traits in humans: genetic evidence in over 261,000 older adults from the UK Biobank" in the symposium of "Genetic Mechanisms in Frailty: Large-Scale Evidence from the Swedish Adoption/Twin Study of Ageing and UK Biobank Cohort". **International Association of Gerontology and Geriatrics European Region Congress**, Gothenburg, Sweden, May, 2019.
3. Dealing with missing data in a multi-item ICU-mortality scale: a comparison of multiple imputation methods. **Conference on Statistical Practice**, New Orleans, Louisiana, February, 2019.

4. Resampling methods for statistical inference on multi-rater kappas. **Conference on Statistical Practice**, Portland, Oregon, February, 2018.
5. Frequency matched case-control data analysis: unconditional or conditional logistic regression model? **Conference on Statistical Practice**, Jacksonville, Florida, February, 2017.

Other peer reviewed oral presentations

1. Matched case-control data analysis: unconditional or conditional logistic regression model? **Joint Statistical Meetings**, Baltimore, Maryland, July, 2017.
2. Ranking question designs and analysis methods. **International Conference on Questionnaire Design, Development, Evaluation, and Testing**, Miami, Florida, November, 2016.
3. Ranking question designs and analysis methods. **Joint Statistical Meetings**, Chicago, Illinois, August, 2016.
4. Detecting joint effects of multiple genetic variants via composite haplotype approach. **Joint Statistical Meetings**, Miami, Florida, August, 2011.
5. What's the best statistic for a simple test of genetic association in a case-control study? **Joint Statistical Meetings**, Denver, Colorado, August, 2008.

Invited oral presentations

1. Embrace big data and start from simple methods. **The University of Texas Health Science Center**, Houston, Texas, September, 2017.
2. Statistics in Medical Research, **Hematology-Oncology Program at the UConn Health**, April, 2016.
3. Assessing the probability that a finding is genuine for large-scale genetic association studies. **New England Statistics Symposium**, Storrs, Connecticut, April, 2015.
4. The more you test, the more you find: massive multiple testing does not promote spurious findings among top hits of association studies. **Jackson Laboratory**, Bar Harbor, Maine, December, 2013.

Poster presentations

1. Genetic predisposition to accelerated biological ages predicted by biochemical markers. **The Gerontological Society of America Annual Scientific Meeting**, Austin, Texas, 2019.
2. ABO gene and aging-related outcomes in over 379,000 European-descent participants of UK Biobank. **The Gerontological Society of America Annual Scientific Meeting**, Austin, Texas, 2019.
3. ApoE2 and aging-related outcomes in 261,000 UK Biobank older adults. **International Association of Gerontology and Geriatrics European Region Congress**, Gothenburg, Sweden, May, 2019.
4. Telomere length genetic variation and aging: a natural experiment in 250,000 older people. **The Gerontological Society of America Annual Scientific Meeting**, Boston, Massachusetts, 2018.
5. Comprehensive evaluation of statistical tests for two-sample location comparison. **Conference on Statistical Practice**, San Diego, California, February, 2016.
6. Plan a large-scale genetic association study for predictive modeling. **Annual Meeting of American Society of Human Genetics**, San Diego, California, October, 2015.

*corresponding author

7. Effect size estimation in the stage of planning a replication study. **Annual Meeting of American Society of Human Genetics**, Boston, Massachusetts, October, 2013.
8. From a large-scale discovery study to a replication study. **Annual Meeting of American Society of Human Genetics**, San Francisco, California, November, 2012.
9. Two-stage multi-locus association analysis - collapsing SNPs with the adjustment for effect directions. **International Congress of Human Genetics**, Montreal, Quebec, October, 2011.
10. Robust score statistics for QTL Linkage Analysis using extended pedigrees. **Annual Meeting of American Society of Human Genetics**, Honolulu, Hawaii, October, 2009.
11. What's the best statistic for a simple test of genetic association in a case-control study? **Annual Meeting of International Genetic Epidemiology Society**, Kahuku, Hawaii, October, 2009.
12. What's the best statistic for a simple test of genetic association in a case-control study? **Annual Meeting of American Society of Human Genetics**, San Diego, California, October, 2007.

GRANTS

ACTIVE

1R21NR018963-01A1 (PI: Kuo) NIH/NINR	09/01/2020-6/30/2022 \$150,000	2.76 cal months
Identifying potentially modifiable exposures to improve telomere health and disease outcomes We propose to use UK Biobank data to delineate modifiable exposures that directly influence or moderate the change in telomere length across the lifespan, and how these influence health and risk of disease. Our findings will be useful to prioritize modifiable exposures for personalized interventions with the ultimate goal of improving telomere health and disease outcomes. Role: Principal Investigator		
3R21AG060018-02S1 (PI: Kuo) NIH/NIA	09/01/2020-06/30/2021 \$45,543 COVID-19 supplement grant	1.92 cal months
Understanding the role of ApoE2 in longevity and age-related diseases and conditions using 500,000 UK Biobank participants Delirium has been found to frequently occur in COVID-19 hospitalized patients and ApoE e4 allele has been associated with delirium and dementia using general population samples. We aim to understand the risk of delirium and dementia posed by COVID-19 for patients with different ApoE genotypes. Our findings are expected to shed light on the biological mechanisms and have important implications for the management of public health and clinical interventions. Role: Principal Investigator		
R21AG060018 (PI: Kuo) NIH/NIA	09/01/2018-06/30/2021 \$101,284 (NCE: 07/01/2020-06/30/2021)	3.24 cal months
Understanding the Role of ApoE2 in Longevity and Age-Related Diseases and Conditions Using 500,000 UK Biobank Participants ApoE2 is associated with reduced dementia incidence and longevity but is also linked to adverse health outcomes. In this study we will use the UK Biobank data, which features a very large sample size (500,000 participants) and rich genetic and phenotypic data, to characterize associations between ApoE2 and age-related health outcomes. We aim to investigate the roles of genetic and environmental		

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factors such as physical activity and biomarkers in the relationships between ApoE2 and age-related health outcomes for potential interventions.

Role: Principal Investigator

R01NS099855 (PI: Pachter) 06/15/2017-04/30/2022 0.60 cal months
NIH/NINDS \$329,641

Regulation of CNS Leukocyte Extravasation

The focus of this study is to use the murine neuroinflammatory model, experimental autoimmune encephalomyelitis, to investigate the appearance, origin and function of a subpopulation of leukocytes bearing tight junction protein claudin-5 (CLN-5) on their surface (CLN-5+ leukocytes). Wildtype mice, as well as two mutant mouse strains – one constitutively expressing eGFP-CLN-5 selectively on endothelial cells, and the other an inducible endothelial cell-specific CLN-5 knockdown, will be used to examine CLN-5+ leukocyte properties in vivo. A CNS microvascular endothelial cell culture model will further be used to evaluate CLN-5+ leukocyte actions during endothelial transmigration in vitro. Specific attention will be played to the role of CNS endothelial-derived extracellular vesicles in mediating these actions.

Role: Co-Investigator

R01AG066679 (PI: Xu) 04/01/2020-03/31/2025 0.24 cal months
NIH/NIA \$277,087

Targeting p21-Positive Senescent Cells In Vivo for Alleviating Metabolic and Physical Dysfunction

The goal of this project is to examine the role of a specific cell population in IR associated with obesity using our novel animal model along with a cutting-edge technology, single cell transcriptomics. This project is likely to provide a deeper understanding of IR and lay the foundation for the drug development to alleviate IR and physical dysfunction.

Role: Co-Investigator

PENDING

3R21NR018963-01A1S1 (PI: Kuo) 07/01/2021-6/30/2022 2.40 cal months
NIH/NINR \$101,568

Identifying Potentially Modifiable Exposure to Improve Telomere Health and Disease Outcomes

This project aims to validate and characterize the relationship between telomere length and Alzheimer's disease or Alzheimer's diseases related dementias (AD/ADRD). We will use genetic and brain imaging data from a large community cohort with brain MRI data on 50,000 participants. Interventions guided by the results of this project on telomere length and brain regions may slow or prevent the onset of AD/ADRD.

Role: Principal Investigator

R21AA027858 (PI: Zhou) 11/01/2020-10/31/2022 0.60 cal months
NIH \$525,000

Community-Guided High Throughput SARS-CoV-2 Testing to Safeguard Hispanics in the COVID-19 Pandemic

The goal of this project is to develop novel family unit based detection of SARS-CoV-2 in underserved Hispanic populations

1P30AR073206-03 (PI: Khan) 07/01/2021-06/30/2026 0.96 cal months
NIH/NIAMS \$500,000

The Musculoskeletal Regenerative Engineering Center

To provide typically disparate expertise under a common platform to encourage highly interdisciplinary research for complex tissue regeneration

*corresponding author

Role: Co-Investigator

Kuchel, Landay, Unutmaz (MPIs) 07/01/2021-06/30/2026 1.8 cal months
 NIH/NIA U19 AG065166-01A1 \$4,540,820

Network Topology of Metabolism, Microbiome and Immune System in Association

Our goal is to define the role of metabolism, both host and microbiota-derived, in immune system aging and whether metabolic modifications can reverse hallmarks of immune aging. We posit that immune, microbiome and metabolome systems are intricately intertwined throughout human lifespan, such that imbalances in one impact biological effects in others. This U19 application will integrate our knowledge of human immunology, aging biology, the microbiome, the metabolome, and epigenetics using a range of human and murine model systems. We hypothesize that immunosenescence is driven by metabolic and microbiome changes during aging that are influenced by epigenetic changes, and that interventions that improve metabolic function will reverse epigenetic and functional hallmarks of immune aging. Our Aims are: 1) To uncover systems-level interactions among immune, microbiome, and metabolic systems for the discovery of novel biomarkers of aging; and 2) To cultivate a highly collaborative multidisciplinary research environment to foster research advances and innovation in aging research.

Role: Co-Investigator

Kuchel, Fortinsky (MPIs) 07/01/2021-06/30/2026 2.40 cal months
 NIH/NIA P30 AG067988 \$1,087,134

This proposal seeks to establish the Claude D Pepper Older Americans Independence Center at UConn (UConn OAIC) with the overarching goal of developing clinical strategies for enhancing function and independence in older adults that are more precise, personalized, and effective. Our focus on Precision Gerontology has emerged through the collective experiences and insights of our multidisciplinary team of accomplished investigators in the UConn Center on Aging –all united by a shared commitment to improving the lives of older adults through research, education, and clinical care. Our emphasis on Precision Gerontology has been guided by three principles: 1. A growing heterogeneity or variability over time among individuals involving all aspects of aging that therefore necessitates a multidisciplinary team-based approach to aging research; 2. Increased heterogeneity or variability with aging in older adults' responses to treatment, highlighting the need for better targeting; and 3. Recognition of a need to incorporate these considerations into the design and testing of novel geroscience-guided therapies. These objectives will be achieved by establishing a UConn OAIC through the coordinated activities of a Leadership and Administration Core (LAC), Recruitment and Community Engagement Core (RC1), Data Resource Core (RC2), Biomarker and Preclinical Research Core (RC3), Pilot and Exploratory Studies Core (PESC), and Research Education Component (REC). We will seek to address these goals through the following aims: Aim 1: To develop and refine new approaches to the study and clinical translation of Precision Gerontology. Aim 2: To develop and evaluate new research methods, techniques, and collaborative approaches required to advance the goals of Precision Gerontology. Aim 3: To identify, develop, and learn from experiences of the next generation of researchers poised to become leaders in geriatrics research related to the UConn OAIC focus. Aim 4: To select and support innovative pilot studies that show promise in helping to guide the design, funding.

Role: Co-Investigator

1R21NS122369 (Pachter) 4/1/2021 – 3/31/2023 0.60 cal months
 NIH/NIAID \$150,000

Detailed molecular and structural characterization of the meninges: an approach combining proteomics and Imaging Mass Cytometry

The goal of this project is to characterize the respective proteomes of the brain and spinal meninges, and to visualize their protein landscapes via Imaging Mass Cytometry

*corresponding author

Role: Co-Investigator

PC190701 (PI: Caromile) 09/30/2020-09/23/2023 0.60 cal months
DOD/CDMRP \$209,204

Prostate-Specific Membrane Antigen-Dependent Health Disparities in Prostate Cancer
We hypothesize that: PC-associated SNPs in genes encoding components of the PSMA dependent pathway induce changes in intracellular signaling as well as folate and glutamate levels within the tumor microenvironment to influence PC tumor progression. We will address this hypothesis by: AIM 1: Determining whether a known panel of germline coding SNPs confers increased risk of aggressive PC in AA versus European (EUR) men and the effect of these germline-coding SNPs on clinical metabolites. AIM 2: Comprehensively characterize functional effects of a known panel of germline coding SNPs on crosstalk among PSMA dependent pathways, their effects on PC tumor growth in vivo and mathematically predict potential outcomes.

Role: Co-Investigator

Completed

R01DA036486 (PI: Oncken) 09/30/2013-08/31/2020 (NCE)
NIH/NIDA

Manipulating Tobacco Constituents in Female Menthol Smokers

Role: Co-Investigator

75N95019P00538 (PI: Kuchel) 08/19/2019-08/18/2020
NIH/NIDA

Precision Geroscience: Heterogeneity in the Genetics of Inflammatory Variants and Immunogenic Responses to Exercise and Dietary Restriction with Aging

Role: Co-Investigator

R00AG052604 (PI: Levine) 03/01/2017-05/31/2020
Yale/NIH/NIA

Molecular Mechanisms and Social Constructs: How Genes and Environment Regulate the Rate of Aging

Role: Consultant

4R01HD069314-05 (PI: Oncken) 02/01/2016-01/31/2019
NIH/NICHD

Nicotine Replacement for Smoking Cessation during Pregnancy

Role: Co-Investigator

NIH/NIA/IPA (PI: Kuo, Mentor: Kuchel) 11/06/2017-11/05/2018
NIH/NIA

Genetic Analysis of Inflammatory Variants in Human Aging

Role: Principal Investigator

2P01AI056172 (PI: Puddington) 05/15/13 - 04/30/2018
NIH/NIAID

Modulation of Biodefense Response to Microbial Pathogens

Role: Biostatistician

OTHER PROFESSIONAL ACCOMPLISHMENTS

*corresponding author

- 2017-present, Statistical Reviewer, Journal of Racial and Ethnic Health Disparities
- 2014-present, Accredited Professional Statistician™ awarded by American Statistical Association

TEACHING EXPERIENCES

University of Connecticut Health Center

- 2014-2015, Study Design and Data Analysis of Observational Studies in Epidemiology, Master of Public Health Program, School of Medicine, Instructor/Course Director
- 2016, Questionnaire design and data analysis, Master of Public Health Program, School of Medicine, Instructor/Course Director
- 2015-2016, Human Development and Health (HDH) II: Clinical Epidemiology, School of Medicine, Conference Facilitator
- 2017-2018, Intermediate biostatistics, Master of Public Health Program, School of Medicine, Instructor/Course Director