



Christine Kee Liu

Assistant Professor of Medicine (Primary Care and Population Health)

Medicine - Primary Care and Population Health

 NIH Biosketch available Online

Bio

BIO

Dr. Liu and her research program are dedicated to improving the lives of older adults with kidney disease. Currently her research focuses on mobility, which is the ability to move safely and reliably from one place to another. In older adults, poor mobility strongly predicts future disability and death. Retaining mobility has been cited by older adults as fundamental to quality to life; yet many older persons with kidney disease, especially those with late stage chronic kidney disease or outright kidney failure, have trouble just walking across the room or transferring to a chair. Dually trained in geriatric medicine and epidemiology, Dr. Liu also has significant expertise in older adult clinical trials, including safety trials of novel agents as well as intervention studies to reduce infections in older populations.

ACADEMIC APPOINTMENTS

- Assistant Professor - University Medical Line, Medicine - Primary Care and Population Health

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Associate Editor, BMC Nephrology (2019 - present)
- Long-Term Care Reopening Workgroup, Executive Office of Health and Human Services, Commonwealth of Massachusetts (2020 - present)

PROFESSIONAL EDUCATION

- Fellow, Boston University School of Medicine , Geriatric Medicine (2011)
- MS, Boston University School of Public Health , Epidemiology (2011)
- Resident, Boston University School of Medicine , Internal Medicine/Primary Care (2008)
- MD, Temple University School of Medicine , Medicine (2005)
- BA, Brown University , Biology (1996)

Publications

PUBLICATIONS

- **Safety, Reactogenicity, and Health-Related Quality of Life After Trivalent Adjuvanted vs Trivalent High-Dose Inactivated Influenza Vaccines in Older Adults: A Randomized Clinical Trial.** *JAMA network open*
Schmader, K. E., Liu, C. K., Harrington, T., Rountree, W., Auerbach, H., Walter, E. B., Barnett, E. D., Schlaudecker, E. P., Todd, C. A., Poniewierski, M., Staat, M. A., Wodi, P., Broder, et al
2021; 4 (1): e2031266
- **COVID-19 Infection Risk Among Hemodialysis Patients in Long-term Care Facilities.** *Kidney medicine*
Liu, C. K., Ghai, S., Waikar, S. S., Weiner, D. E.
2020; 2 (6): 810–11

- **Translating the Lifestyle Interventions and Independence for Elders Clinical Trial to Older Adults in a Real-World Community-Based Setting.** *The journals of gerontology. Series A, Biological sciences and medical sciences*
Reid, K. F., Laussen, J. n., Bhatia, K. n., Englund, D. A., Kirn, D. R., Price, L. L., Manini, T. M., Liu, C. K., Kowaleski, C. n., Fielding, R. A.
2019; 74 (6): 924–28
- **Muscle strength is increased in mice that are colonized with microbiota from high-functioning older adults.** *Experimental gerontology*
Fielding, R. A., Reeves, A. R., Jasuja, R. n., Liu, C. n., Barrett, B. B., Lustgarten, M. S.
2019; 127: 110722
- **Effect of Losartan and Fish Oil on Plasma IL-6 and Mobility in Older Persons. The ENRGISE Pilot Randomized Clinical Trial.** *The journals of gerontology. Series A, Biological sciences and medical sciences*
Pahor, M. n., Anton, S. D., Beavers, D. P., Cauley, J. A., Fielding, R. A., Kritchevsky, S. B., Leeuwenburgh, C. n., Lewis, K. H., Liu, C. K., Lovato, L. C., Lu, J. n., Manini, T. M., McDermott, et al
2019; 74 (10): 1612–19
- **Progressive Resistance Training Improves Torque Capacity and Strength in Mobility-Limited Older Adults.** *The journals of gerontology. Series A, Biological sciences and medical sciences*
Englund, D. A., Price, L. L., Grosicki, G. J., Iwai, M. n., Kashiwa, M. n., Liu, C. n., Reid, K. F., Fielding, R. A.
2019; 74 (8): 1316–21
- **Effect of 24-month physical activity on cognitive frailty and the role of inflammation: the LIFE randomized clinical trial** *BMC MEDICINE*
Liu, Z., Hsu, F., Trombetti, A., King, A. C., Liu, C. K., Manini, T. M., Fielding, R. A., Pahor, M., Newman, A. B., Kritchevsky, S., Gill, T. M., LIFE Study Investigators
2018; 16
- **A Comparison of Self-report Indices of Major Mobility Disability to Failure on the 400-m Walk Test: The LIFE Study** *JOURNALS OF GERONTOLOGY SERIES A-BIOLOGICAL SCIENCES AND MEDICAL SCIENCES*
Chen, H., Rejeski, W., Gill, T. M., Guralnik, J., King, A. C., Newman, A., Blair, S. N., Conroy, D., Liu, C., Manini, T. M., Pahor, M., Ambrosius, W. T., Miller, et al
2018; 73 (4): 513–18
- **Effect of Physical Activity on Frailty Secondary Analysis of a Randomized Controlled Trial** *ANNALS OF INTERNAL MEDICINE*
Trombetti, A., Hars, M., Hsu, F., Reid, K. F., Church, T. S., Gill, T. M., King, A. C., Liu, C. K., Manini, T. M., McDermott, M. M., Newman, A. B., Rejeski, W., Guralnik, et al
2018; 168 (5): 309+
- **Evidence-based nutritional and pharmacological interventions targeting chronic low-grade inflammation in middle-age and older adults: A systematic review and meta-analysis.** *Ageing research reviews*
Custodero, C. n., Mankowski, R. T., Lee, S. A., Chen, Z. n., Wu, S. n., Manini, T. M., Hincapie Echeverri, J. n., Sabbà, C. n., Beavers, D. P., Cauley, J. A., Espeland, M. A., Fielding, R. A., Kritchevsky, et al
2018; 46: 42–59
- **Exercise's effect on mobility disability in older adults with and without obesity: The LIFE study randomized clinical trial** *OBESITY*
Kritchevsky, S. B., Lovato, L., Handing, E. P., Blair, S., Botosaneanu, A., Guralnik, J. M., Liu, C., King, A., Marsh, A. P., Pahor, M., Rejeski, W., Spring, B., Manini, et al
2017; 25 (7): 1199–1205
- **The Effect of Chronic Kidney Disease on a Physical Activity Intervention: Impact on Physical Function, Adherence, and Safety.** *Journal of clinical nephrology and renal care*
Liu, C. K., Milton, J. n., Hsu, F. C., Beavers, K. M., Yank, V. n., Church, T. n., Shegog, J. D., Kashaf, S. n., Nayfield, S. n., Newman, A. n., Stafford, R. S., Nicklas, B. n., Weiner, et al
2017; 3 (1)
- **Enabling Reduction of Low-grade Inflammation in SENiors Pilot Study: Concept, Rationale, and Design.** *Journal of the American Geriatrics Society*
Manini, T. M., Anton, S. D., Beavers, D. P., Cauley, J. A., Espeland, M. A., Fielding, R. A., Kritchevsky, S. B., Leeuwenburgh, C. n., Lewis, K. H., Liu, C. n., McDermott, M. M., Miller, M. E., Tracy, et al
2017; 65 (9): 1961–68
- **Effect of Structured Physical Activity on Respiratory Outcomes in Sedentary Elderly Adults with Mobility Limitations.** *Journal of the American Geriatrics Society*
Vaz Fragoso, C. A., Beavers, D. P., Anton, S. D., Liu, C. K., McDermott, M. M., Newman, A. B., Pahor, M., Stafford, R. S., Gill, T. M.

2016; 64 (3): 501-509

- **Biomarkers of oxidative stress are associated with frailty: the Framingham Offspring Study.** *Age (Dordrecht, Netherlands)*
Liu, C. K., Lyass, A. n., Larson, M. G., Massaro, J. M., Wang, N. n., D'Agostino, R. B., Benjamin, E. J., Murabito, J. M.
2016; 38 (1): 1
- **Effect of a Long-Term Physical Activity Intervention on Resting Pulse Rate in Older Persons: Results from the Lifestyle Interventions and Independence for Elders Study.** *Journal of the American Geriatrics Society*
Ó Hartaigh, B. n., Lovato, L. C., Pahor, M. n., Buford, T. W., Dodson, J. A., Forman, D. E., Buman, M. P., Demons, J. L., Santanasto, A. J., Liu, C. n., Miller, M. E., McDermott, M. M., Gill, et al
2016; 64 (12): 2511-16
- **Sedentary time is associated with the metabolic syndrome in older adults with mobility limitations - The LIFE Study** *EXPERIMENTAL GERONTOLOGY*
Mankowski, R. T., Aubertin-Leheudre, M., Beavers, D. P., Botoseneanu, A., Buford, T. W., Church, T., Glynn, N. W., King, A. C., Liu, C., Manini, T. M., Marsh, A. P., McDermott, M., Nocera, et al
2015; 70: 32-36
- **Effect of Structured Physical Activity on Sleep-Wake Behaviors in Sedentary Elderly Adults with Mobility Limitations.** *Journal of the American Geriatrics Society*
Vaz Fragoso, C. A., Miller, M. E., King, A. C., Kritchevsky, S. B., Liu, C. K., Myers, V. H., Nadkarni, N. K., Pahor, M., Spring, B. J., Gill, T. M.
2015; 63 (7): 1381-1390
- **The Vitality, Independence, and Vigor in the Elderly 2 Study (VIVE2): Design and methods.** *Contemporary clinical trials*
Kirm, D. R., Koochek, A. n., Reid, K. F., von Berens, Å. n., Trivison, T. G., Folta, S. n., Scheck, J. n., Nelson, M. n., Liu, C. n., Phillips, E. n., Åberg, A. C., Nydahl, M. n., Gustafsson, et al
2015; 43: 164-71
- **Combined Reduced Forced Expiratory Volume in 1 Second (FEV1) and Peripheral Artery Disease in Sedentary Elders With Functional Limitations** *JOURNAL OF THE AMERICAN MEDICAL DIRECTORS ASSOCIATION*
Fragoso, C. A., Hsu, F., Brinkley, T., Church, T., Liu, C. K., Manini, T., Newman, A. B., Stafford, R. S., McDermott, M. M., Gill, T. M.
2014; 15 (9): 665-670
- **Effect of Structured Physical Activity on Prevention of Major Mobility Disability in Older Adults The LIFE Study Randomized Clinical Trial** *JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*
Pahor, M., Guralnik, J. M., Ambrosius, W. T., Blair, S., Bonds, D. E., Church, T. S., Espeland, M. A., Fielding, R. A., Gill, T. M., Groessl, E. J., King, A. C., Kritchevsky, S. B., Manini, et al
2014; 311 (23): 2387-2396
- **Respiratory Impairment and Dyspnea and Their Associations with Physical Inactivity and Mobility in Sedentary Community-Dwelling Older Persons** *JOURNAL OF THE AMERICAN GERIATRICS SOCIETY*
Fragoso, C. A., Beavers, D. P., Hankinson, J. L., Flynn, G., Berra, K., Kritchevsky, S. B., Liu, C. K., McDermott, M., Manini, T. M., Rejeski, W. J., Gill, T. M.
2014; 62 (4): 622-628
- **The impact of sarcopenia on a physical activity intervention: the Lifestyle Interventions and Independence for Elders Pilot Study (LIFE-P).** *The journal of nutrition, health & aging*
Liu, C. K., Leng, X. n., Hsu, F. C., Kritchevsky, S. B., Ding, J. n., Earnest, C. P., Ferrucci, L. n., Goodpaster, B. H., Guralnik, J. M., Lenchik, L. n., Pahor, M. n., Fielding, R. A.
2014; 18 (1): 59-64
- **Chronic kidney disease defined by cystatin C predicts mobility disability and changes in gait speed: the Framingham Offspring Study.** *The journals of gerontology. Series A, Biological sciences and medical sciences*
Liu, C. K., Lyass, A. n., Massaro, J. M., D'Agostino, R. B., Fox, C. S., Murabito, J. M.
2014; 69 (3): 301-7
- **JC virus binds to primary human glial cells, tonsillar stromal cells, and B-lymphocytes, but not to T lymphocytes.** *Journal of neurovirology*
Wei, G. n., Liu, C. K., Atwood, W. J.
2000; 6 (2): 127-36
- **The human polyomavirus, JCV, does not share receptor specificity with SV40 on human glial cells.** *Journal of neurovirology*
Liu, C. K., Hope, A. P., Atwood, W. J.
1998; 4 (1): 49-58

- **Infection of glial cells by the human polyomavirus JC is mediated by an N-linked glycoprotein containing terminal alpha(2-6)-linked sialic acids.** *Journal of virology*
Liu, C. K., Wei, G. n., Atwood, W. J.
1998; 72 (6): 4643–49