**Alison Suhsun Liu**

CU Anschutz Medical Campus

1675 North Aurora Ct, Aurora CO 80045

Office: 720 848 5076 | Fax: 720 848 5099 | Email: suhsun.liu@cuanschutz.edu

**Qualification Summary**

* Academic training in epidemiology
* Current research interest: evidence synthesis in ophthalmology, dry eye epidemiology
* Research expertise: study design, statistical inference, evidence synthesis
* Computation proficiency: Stata and R

**Education**

* Johns Hopkins University, Baltimore MD (2009 - 2012)

PhD, Infectious Disease Epidemiology

* Johns Hopkins University, Baltimore MD (2008 - 2009)

Post-doctoral fellowship, HIV Epidemiology

* Johns Hopkins University, Baltimore MD (2007 - 2008)

MPH, Adolescent Health

* National Taiwan University, Taipei, Taiwan (1993 - 2000)

Medicine

**Professional Experiences**

JAMA Network Open (2020 – current)

Contract statistical reviewer

National Yang Ming University, Taipei, Taiwan (2018 – current)

Adjunct assistant professor

Far Eastern Memorial Hospital, New Taipei City, Taiwan (2018 – 2020)

Attending physician

Chang Gung University, Taoyuan, Taiwan (2013 – 2018)

Assistant professor

Chang Gung Memorial Hospital, Taoyuan, Taiwan (2012 –2013)

Attending physician

**Teaching Experiences**

National Yang Ming University, Taipei, Taiwan (2018 – current)

Adjunct assistant professor

- Infectious Disease Epidemiology, 2-credit, English, Spring Term

Chang Gung Memorial Hospital, Taoyuan, Taiwan (2012 – 2016)
Clinical assistant professor
- Introductory- and Advanced-Level Research Methods; Evidence-based Medicine/ Public Health, non-credit CME, Chinese, monthly seminar

Johns Hopkins Bloomberg School of Public Health, Baltimore MD (2008 – 2010)

Student teaching assistant

- Diagnostic, prediction, and screening methods in clinical research (5-credit)

- Systematic review and meta-analysis (5-credit)
- Data analysis workshops (in Stata) I & II (4-credit)
- Applied Epidemiology I (4-credit)

- Principle of Epidemiology (5-credit)

**Research Awards**

**Extramural (R21-equivalent grant award)**

* Ministry of Science and Technology, Taiwan (2018 – 2019)

**Project:** Changes in (predicted) microbial functions during treatment in psoriasis patients; role: Principal investigator

* Ministry of Science and Technology, Taiwan (2016 –2018)

**Project:** T cell repertoire before and after biologics treatment in psoriasis patients; role: Principal investigator

* Ministry of Science and Technology, Taiwan (2015 –2016)

**Project:** Risk for staphylococcal colonization on skin lesions before and after biologics treatment in psoriasis patients; role: Principal investigator

* Ministry of Science and Technology, Taiwan (2013 –2015)

**Project:** Risk for staphylococcal colonization on skin lesions before and after biologics treatment in psoriasis patients; role: Principal investigator

**Intramural**

* Far Eastern Memorial Hospital, New Taipei City, Taiwan (2020)

**Project:** Validation of Chinese Eppendorf Itch Questionnaire in non-dermatological patients in the outpatient setting; role: Co-investigator

* Chang Gung Memorial Hospital, Taoyuan, Taiwan (2016 –2018)

**Project:** The rebuilt skin microbiome during wound healing in burn patients; role: Principal investigator

* Chang Gung Memorial Hospital, Taoyuan, Taiwan (2015 –2016)

**Project:** The skin innate immune responses and skin microbiome in psoriasis patients under systemic treatment; role: Principal investigator

* Chang Gung Memorial Hospital, Taoyuan, Taiwan (2013 –2015)

**Project:** Menstrual cycle and nasal carriage of Staphylococcus aureus in healthy carriers; role: Principal investigator

**Peer Review Activities**

* Annals of Internal Medicine
* Ophthalmology
* JAMA Ophthalmology
* Computational and Structural Biotechnology Journal
* American Journal of Epidemiology
* American Journal of Public Health
* Journal of Epidemiology and Community Health
* Others: AIDS Care, BMJ Sexual & Reproductive Health, Complementary Therapies in Medicine, Dermatologica Sinica, Journal of Medical Microbiology, Journal of Women’s Health, PLOS One, Sexually Transmitted Infections, Trials, Frontiers in Medicine, Journal of European Association of Dermatology and Venereology

**Peer-reviewed Publications**

***Ophthalmology***

1. Fung THM, Yim TW, Lois N, Wright DM, **Liu SH**, Williamson T. Face-down positioning or posturing after pars plana vitrectomy for macula-involving rhegmatogenous retinal detachments. Cochrane Database of Systematic Reviews 2024. (In press)
2. Kang C, Lin JC, Zhang H, Scott IU, Kalpathy-Cramer J, **Liu SH**, Greenberg PB. Artificial intelligence for diagnosing exudative age‐related macular degeneration. Cochrane Database of Systematic Reviews 2024. (In press)
3. Saldanha IJ, Petris R, Ifantides C, Hauswirth SG, Gregory DG, Qureshi R, McCann P, **Liu SH**, Abraham AG, Li T. Patient barriers and facilitators for making environmental and behavioral modifications for dry eye in the United States. Optometry and Vision Science 2024. (In press)
4. Chen H, McCann P, Lien T, Xiao M, Abraham AG, Gregory DG, Hauswirth SG, Qureshi R, **Liu** **SH**, Saldanha IJ, Li T. Prevalence of dry eye and Meibomian gland dysfunction in Central and South America: a systematic review and meta-analysis. BMC Ophthalmology 2024. (In press)
5. **Liu SH**, Chen YY, Nurmatov U, van Schayck OC, Kuo IC. Antibiotics versus placebo for acute bacterial conjunctivitis: findings from a Cochrane Systematic Review. Am J Ophthalmol. 2024 Jan;257:143-153.
6. Nucci P, **Liu SH**, Villani E. Cochrane corner: interventions for myopia control in children. Eye (Lond). 2023 Dec;37(17):3526-3527.
7. Li T, McCann PM, Wilting S, McNamara S, Gregory DG, Hauswirth SG, Ifantides C, Benning L, Sequeira TA, Qureshi R, **Liu SH**, Clark MA, Saldanha IJ, Abraham AG. Prolonged facemask wearing among hospital workers and dry eye - a mixed-methods study. BMC Ophthalmol. 2023 Oct 19;23(1):420.
8. **Liu SH**, Kuo IC. Topical antibiotics and artificial tears associated with reduced infective-conjunctivitis symptoms. J Pediatr. 2023 Oct;261:113320. doi: 10.1016/j.jpeds.2022.12.021.
9. Sulewski M, Ifantides C, **Liu SH**, Leslie L, Kuo IC. Topical ophthalmic anesthetics for corneal abrasions. Cochrane Database of Systematic Reviews 2023, Issue 8. Art. No.: CD015091. doi: 10.1002/14651858.CD015091.
10. Sullivan DA, da Costa AX, Doll T, Grupcheva CN, Lazreg S, **Liu SH**, McGee SR, Mrthy R, Narang P, Ng A, Nistico S, O’Dell L, Shen J, Harmonization Committee member. TFOS Lifestyle Workshop: Report of the cosmetics subcommittee. Ocular Surface 2023 Jul;29:77-130.
11. Downie LE, Britten-Jones AC, Hogg RE, Jalbert I, Li T, Lingham G, **Liu SH**, Qureshi R, Saldanha IJ, Singh S, Craig JP. TFOS Lifestyle - Evidence quality report: Advancing the evaluation and synthesis of research evidence. Ocular Surface 2023 Apr;28:200-212.
12. Ong ZZ, Sadek Y, Liu X, Qureshi R, **Liu SH**, Li T, Sounderajah V, Ashrafian H, Ting DSW, Said DG, Mehta JS, Burton MJ, Dua HS, Ting DSJ. Diagnostic performance of deep learning in infectious keratitis: a systematic review and meta-analysis protocol. BMJ Open. 2023 May 10;13(5):e065537.
13. Reddy A, **Liu SH**, Brady CJ, Sieving PC, Palestine AG. Corticosteroid implants for chronic non-infectious uveitis. Cochrane Database of Systematic Reviews 2023, Issue 1. Art. No.: CD010469. 10.1002/14651858.CD010469.pub3.
14. Wingert AM, **Liu SH**, Lin JC, Sridhar J. Non-steroidal anti-inflammatory agents for treating cystoid macular oedema following cataract surgery. Cochrane Database of Systematic Reviews 2022, Issue 12. Art. No.: CD004239. doi: 10.1002/14651858.CD004239.pub4.
15. Fung T, Lois N, Wright DM, **Liu SH**, Williamson T. Face-down positioning or posturing after vitrectomy for macula-involving rhegmatogenous retinal detachments (Protocol). Cochrane Database of Systematic Reviews 2022, Issue 12. Art. No.: CD015514. doi: 10.1002/14651858.CD015514.
16. **Liu SH**, Saldanha IJ, Abraham AG, Rittiphairoj T, Hauswirth S, Gregory D, Ifantides C, Li T. Topical corticosteroids for dry eye. Cochrane Database Systematic Review 2022, Issue 10. Art. No.: CD015070. doi: 10.1002/14651858.CD015070.pub2.
17. McCann P, Abraham AG, Mukhopadhyay A, Panagiotopoulou K, Chen H, Rittiphairoj T, Gregory DG, Hauswirth SG, Ifantides C, Qureshi R, **Liu SH**, Saldanha IJ, Li T. Prevalence and Incidence of Dry Eye and Meibomian Gland Dysfunction in the United States: A Systematic Review and Meta-analysis. JAMA Ophthalmol. Dec 1;140(12):1181-1192. doi: 10.1001/jamaophthalmol.2022.4394.
18. **Liu SH**, Hawkins BS, Ren M, Ng SM, Leslie L, Han G, Kuo IC. Topical pharmacologic interventions versus active control, placebo, or no treatment for epidemic keratoconjunctivitis: findings from a Cochrane Systematic Review. Am J Ophthalmol. 2022 Mar 21:S0002-9394(22)00118-0. doi: 10.1016/j.ajo.2022.03.018. Epub ahead of print.
19. Sena DF, Kilian R, **Liu SH**, Rizzo S, Virgili G. Pneumatic retinopexy versus scleral buckle for repairing simple rhegmatogenous retinal detachments. Cochrane Database of Systematic Reviews 2021; 11; Art. No.: CD008350. doi: 10.1002/14651858.CD008350.pub3.

***Health service research***

1. Ng CY, Huang YH, Tzeng IS, **Liu SH**, Chang YC. Changes in metabolic parameters in psoriasis patients treated with interleukin-12/23 blockade (ustekinumab). Dematologica Sinica 2020;38:166-71. doi: 10.4103/ds.ds\_27\_20.
2. Kuo G, Chen SW, Huang JY, Wu CY, Fu CM, Chang CH, **Liu SH**, Chan YH, Wu IW, Yang HY.\* Short-term heart rate variability as a predictor of long-term survival in patients with chronic hemodialysis: A prospective cohort study. J Formos Med Assoc. 2018 Dec; 117(12):1058-1064. doi: 10.1016/j.jfma.2018.09.006.
3. **Liu SH**, Yu HY, Chang YC, Hui RCY, Huang YC, Huang YH.\* Host characteristics and dynamics of colonizing Staphylococcus aureus in patients with moderate-to-severe psoriasis before and after treatment: A prospective cohort study. JAAD 2019 Aug; 81(2): 605-607. doi: 10.1016/j.jaad.2018.05.031. Epub 2018 May 25.
4. **Liu SH**, Huang YC, Chen LY, Yu SC, Yu SY, Chuang HS.\* The skin microbiome of burn wounds in the subacute postburn phase. Wound Repair & Regeneration. 2018 Mar;26(2):182-191. doi: 10.1111/wrr.12632.
5. Tsao YC, Gu PW, **Liu SH**, Tzeng IS, Luo JC.\* Nickel exposure and plasma levels of biomarkers for assessing oxidative stress in nickel electroplating workers. Biomarkers. 2017;22(5):455-60.
6. Tsao YC, **Liu SH**, Tzeng IS, Hsieh TH, Chen JY, Luo JCJ.\* Do sanitary ceramic workers have a worse presentation of chest radiographs or pulmonary function tests than other ceramic workers? JFMA. 2017 Mar;116(3):139-144. doi:10.1016/j.jfma.2016.10.017
7. Tzeng IS, **Liu SH**, Chen KC\*, Chen JC.\* Predicting Emergency Department Visit Rates from Septicemia Using an Age-Period-Cohort Model. Medicine (Baltimore). 2016 Dec;95(50):e5598.
8. Chen KF, **Liu SH**, Li CH, Wu CC, Chau CH, Tzeng IS, Hsieh YH, Blaney GN, Liu ZY, Han ST\*, Chan YL.\* Development and validation of a parsimonious pragmatic CHARM score to predict mortality in patients with suspected sepsis. AJEM. 2016 Nov 3. pii: S0735-6757(16)30801-4. doi: 10.1016/j.ajem.2016.10.075.
9. Tzeng IS, **Liu SH**, Chen KF, Wu CC, Chen JC.\* Impact of Performance Grading on Annual Numbers of Acute Myocardial Infarction Associated Emergency Department Visits in Taiwan: Results of Segmented Regression Analysis. Medicine. 2016 Oct;95(42):e4937.
10. Wu CY, Yang HY, Yao TJ, **Liu SH**, Huang JL.\* Serum IL-18 as Biomarker in Predicting Long-term Renal Outcome among Pediatric-onset Systemic Lupus Erythematosus Patients. Medicine. 2016 Oct;95(40):e5037
11. **Liu SH**, Chen KF, Chen CJ, Lin YH, Huang YC.\* Intermittent nasal carriage with Staphylococcus aureus within a menstrual cycle: Results from a prospective cohort of healthy carriers. Medicine. 2016 June;95(26):e4040. doi: 10.1097/MD.0000000000004040
12. Hsu CY, **Liu SH**, Chao CH, Chan YL, Chen LM, Chen KF.\* Blood Transfusions within the First 24 Hours of Hospitalization Did Not Impact Mortality Among Patients with Severe Sepsis. Medicine. 2016 Jan;95(4):e2601. doi: 10.1097/MD.0000000000002601
13. Yang HY, Hung CC, **Liu SH**, Guo YG, Ko YC, Huang CT, Chou LF, Tian YC, Chang MY, Hsu HH, Lin MY, Hwang SJ, Yang CW.\* Overlooked Risk for Chronic Kidney Disease after Leptospiral Infection: A Population-based Survey and Epidemiological Cohort Evidence. PLOS NegTropDis. 2015 Oct 9;9(10); e0004105 doi: 10.1371/journal.pntd.0004105
14. Hsiao CY, Yang HY,\* Chang CH, Lin HL, Wu CY, Hsiao MC, Hung PH, **Liu SH**, Yen TH, Chen YC, Wu TC. Risk factors for Development of septic shock in Patients with Urinary Tract Infection. BioMed Res Int. vol. 2015, Article ID 717094, 7 pages, 2015. doi:10.1155/2015/717094
15. Ng CY, Yang YW, **Liu SH**, Lu JFR, Yang LC, Yang CH, Huang YH\*. SF-36 healthy survey on psoriasis quality-of-life: A study of 414 Taiwanese patients. J Dermatol. Feb;42(2):159-65. Epub online 13 JAN 2015, DOI: 10.1111/1346-8138.12748

***Epidemiology***

1. **SH Liu**, YH Huang, HJ Weng, TF Tsai, HY Yang, LY Chen, YL Chiu, HY Yu, YC Chiu, CY Ng, YC Chang, CYR Hui, YC Huang. Temporal dynamics of skin microbiota and immune correlates in psoriasis patients receiving systemic treatment. Pre-print. https://www.medrxiv.org/content/10.1101/2023.11.27.23298999v1
2. Weng HJ, Huang YH, Tsai TF, **Liu SH**\*. Associations between patient-reported outcomes and characteristics of pruritus in psoriasis patients undergoing biological treatment. Acta Dermatologica. (In review)
3. Chen KF, Feng TW, Wu CC, Yunusa I, **Liu SH**, Yeh CF, Han ST, Mao CY, Harika D, Rothman R, Pekosz A. Diagnostic accuracy of clinical signs and symptoms of COVID-19: A systematic review and meta-analysis to investigate the different estimates in a different stage of the pandemic outbreak. J Glob Health. 2023 Jul 14;13:06026. doi: 10.7189/jogh.13.06026. PMID: 37441773
4. Zheng Q, Jones FK, Leavitt SV, Ung L, Labrique AB, Peters DH, Lee EC, Azman AS, **HIT-COVID Collaboration**. HIT-COVID, a global database tracking public health intervention to COVID-19. Sci Data 7, 286 (2020). doi:10.1038/s41597-020-00610-2
5. Weng HJ, Shih MH, Tsai TF, Song YC, Pan YC, Hu JY, Hui CY, Lee WR, Huang YH,\* **Liu SH**.\* Clinical validation and utility of Chinese Eppendorf Itch Questionnaire in adults with chronic pruritus symptoms. JFMA 2021;120(1):492-500. doi: 10.1016/j.jfma.2020.06.022
6. Yeh CF, Wu CC, **Liu SH**, Chen KF.\* Comparison of the accuracy of neutrophil CD64, procalcitonin, and C-reactive protein for sepsis identification: a systematic review and meta-analysis. Ann Intensive Care. 2019 Jan 8;9(1):5. doi: 10.1186/s13613-018-0479-2
7. Wu CC, Lan HM, Han ST, Chao CH, Yeh CF, **Liu SH**, Li CH, Blaney GN, Liu ZY, Chen KF\*. Comparison of Diagnostic Accuracy in Sepsis between Presepsin, Procalcitonin and C-reactive protein: A Systematic Review and Meta-analysis. Annals Intensive Care. 2017 Sep 6;7(1):91. doi: 10.1186/s13613-017-0316-z.
8. Ng CY, Huang YH, Chu CF, Wu TC, **Liu SH**.\* Risks for Staphylococcus aureus colonization in psoriasis patients: A systematic review and meta-analysis. British J Dermatol. 2017;177(4):967-977. doi: 10.1111/bjd.15366
9. **Liu SH**,\* Tzeng IS, Hsieh TH, Huang YC. Associations between excessive adiposity and seroprevalence of herpes simplex virus type 1 and type 2 among US adults: a population-based age-period-cohort analysis. BMJ Open. 2016 6: doi: 10.1136/bmjopen-2016-012571
10. **Liu SH**,\* Chen HJ, Hsieh TH, Chen JC, Huang YC. Excessive adiposity, metabolic health, and risks for genital human papillomavirus infection in adult women: a population-based cross-sectional study. BMC Obesity. 2015,2:39; doi: 10.1186/s40608-015-0071-3
11. Shih MH, Lazo M, **Liu SH**, Bonekamp S, Hernaez R, Clark JM.\* Association between Nonalcoholic Fatty Liver Disease and Serum Uric Acid in the US Population. JFMA 2015;114(4):314-20. Doi: http://dx.doi.org/10.1016/ j.jfma.2012.11.014
12. **Liu SH**, Tseng CY, Lin CC.\* Is neostigmine effective in severe pufferfish-associated tetrodotoxin poisoning? Clin Toxicol 2015 Jan;53(1):13-21. doi:10.3109/15563650.2014.980581
13. Huynh L, Johns B, **Liu SH**, Vedula S, Li T, Puhan MA.\* Cost-effectiveness of recruitment strategies – A systematic review. Clinical Trial. 2014 Oct;11(5):576-83. doi: 10.1177/1740774514540371
14. **Liu SH**, Cummings DAT, Zenilman JM, Gravitt PE,\* Brotman R.\* Characterizing Temporal Dynamics of Human Papillomavirus DNA Detectability Using Short-Interval Sampling. Cancer Epidemiol Biomarkers Prev. 2014 Jan;23(1):200-8. doi:10.1158/1055-9965.EPI-13-0666
15. **Liu SH**, Brotman RM, Zenilman JM, Gravitt PE,\* Cummings DAT,\* Menstrual Cycle and Detectable Human Papillomavirus in Reproductive Women: A Time Series Study. J Infect Disease. 2013 208;1404-1415; doi: 10.1093/infdis/jit337
16. **Liu SH**, Rositch AF, Viscidi RP, Silver MI, Burke AE, Gravitt PE\*. Obesity and Human Papillomavirus Infection in Peri-menopausal Women. J Infect Dis 2013 208: 1071-1080; doi: 10.1093/infdis/jit297
17. Bennett WL,\* **Liu SH**, Yeh J, Nicholson WK, Gunderson EP, Lewis CE, Clark JM. Changes in weight and health behaviors after pregnancies complicated by gestational diabetes mellitus: The CARDIA Study. Obesity. 2013 Jun;21(6):1269-75. doi: 10.1002/oby.20133
18. **Liu SH**, Lazo M, Koteish A, Kao WHL, Shih MH, Bonekamp S, Hernaez R, Clark JM.\* Oral contraceptive pill use is associated with reduced odds of nonalcoholic fatty liver disease in menstruating women: Results from NHANES III. J Gastroenterol. 2013 48(10):1151-59. doi: 10.1007/s00535-012-0715-8
19. Yeh HC,\* Huang ES, Levin P, **Liu SH**, and Brancati FL. Letter to the Editor: Medication Use in Elderly US Adults with Diabetes Mellitus and the Potential Ramifications of Raising the Glycemic Target. J Am Geri S. 2011 Dec;59(12): 2381-3
20. **Liu SH**, Srikrishnan AK, Zelaya CE, Solomon S, Celentano DD, Sherman SG.\* Measuring perceived stigma in female sex workers in Chennai, India. AIDS Care. 2011 May;23(5):619-27
21. Sherman SG, Srikrishnan AK, Rivett KA, **Liu SH**, Solomon S, Celentano DD.\* Acceptability of a Microenterprise Intervention among Female Sex Workers in Chennai, India. AIDS Behav. 2010 Jun;14(3):649-657