CHANG LIU

Email: chang.liu@accessh.org ACCESS Health International

Tel: (65) 9736-5908

Address: 8 Ridgewood Close #15-10, Singapore, 276698

Work Experience

Dec, 2014- ACCESS Health International

Singapore and China

present

Managing Director, Singapore, Hong Kong, and Mainland China

Expanded Singapore office and established three offices in Greater China region. Manages a team of over 20 staff across four locations.

Develop social impactful projects and educational programs in healthcare and long term care innovation. Conduct public and private sector engagement in promoting health policy and practice innovation and reform. Build up platform for information exchange within and across

different regions.

July, 2013- **Duke-NUS Graduate Medical School**

Singapore, Singapore

June, 2016

Research Assistant Professor

Program in Health Services & Systems Research

Research Fields: Health Insurance Policy, Long-Term Care and Elder Care in the United States and Asia, Incentives and Provider Behavior, Decision Analysis and Cost-Effectiveness Analysis

Education

2009-2013 Alpert Medical School, Brown University

Providence, RI

Ph.D. in Health Services Research, May 2013

• GPA: 4.0/4.0

2006-2009 Guanghua School of Management, Peking University

Beijing, China

M.A. in Finance, June 2009

• GPA: 3.54/4.0, GPA for core courses: 3.70/4.0 Ranked: 3/63

2008 European Business School (EBS)

Oestrich, Germany

Exchange semester

• GPA: 4.0/4.0

2002-2006 Institute for Advanced Study (IAS), Wuhan University

Wuhan, China

B.A.(Honors) in Economics, June 2006 **B.S.** (Honors) in Mathematics, June 2006

• GPA: 3.97/4.0 (Overall) Ranked: 1/89

Honors and Awards

Westlake Summer Youth Forum on Health Policy and Systems Sciences Travel Fellowship,

China Medical Board

2012 Rand Summer Institute Fellowship, Rand Corporation

2010-2012 Brown University International Affairs Travel Fund, Brown University

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2011-2012	Division of Biology and Medicine Conference Travel Award, Brown University
2011	First Runner-up Award for Poster Competition, Brown University Public Health Research Day
2010	Brown University Spatial Structures in the Social Sciences (S4) Student Fellow, Brown
	University
2009-2011	Graduate School Fellowship, Brown University
2009	Bratislava Workshop on Institutional Analysis Fellowship, Ronald Coase Institute
2009	Excellent Graduate Dissertation Award, Peking University
2008	As the first Chinese student, awarded the eXebs Friedrich J. Schoening International Scholarship
	supported by DAAD (the highest honor for international students, 6/100), and was named as eXebs Fellow, European Business School (EBS)
2006	Excellent Graduate Student Award, Excellent Graduate Dissertation Award, Wuhan University
2006	Excellent Prize in contest of Economics, Institute for Advanced Study (IAS)
2004	Fu-ren Dong Scholarship, Fu-ren Dong Foundation
2002-2006	First Class Scholarships and the title of "Excellent Student" in consecutive years, Wuhan Universit
2001	Second Prize in China Creative Thinking Competition, China Central Television (CCTV)

Working Papers

Submitted:

- <u>Liu C</u>, Mor V, Kazis LE, Zaslavsky AM, Ayanian JZ, Trivedi AN, The Effect of Adding Medicare Part D
 Gap Coverage of Generic Medications on Drug Spending among Medicare Advantage Enrollees.
 Submitted.
- 2. <u>Liu C</u>, Intrator O, A Cost-Identification Analysis of the Implications of State Medicaid Nursing Home Bed-Hold Reimbursement Policies to Both Medicaid and Medicare. Submitted.
- 3. Tian Y, <u>Liu C</u>, Matchar DB, Eom K, Chan A, Understanding the Social Determinants of Uptake of Community-Based Long-term Care Services using Classification and Regression Tree (CART) Analysis. Submitted.

Working Progress:

- 1. Chan A, <u>Liu C</u>, Eom K, Lim YQ, and Matchar DB, Does Use of Community-Based Long-Term Care Services Associate with Improved Caregiver Health Outcomes? Draft under revision.
- 2. <u>Liu C</u>, Mor V, Kazis LE, Zaslavsky AM, Ayanian JZ, Trivedi AN, The Effect of Part D Gap Coverage on Utilization Behavior among Medicare Advantage Enrollees. Draft under revision.
- 4. Trivedi AN, <u>Liu C</u>, Mor V, Zaslavsky AM, Kazis LE, Ayanian JZ, The Effect of Eliminating the Medicare Part D Coverage Gap on Health Outcomes of Diabetes and Cardiovascular Disease. Draft under revision.
- 5. Tian Y, <u>Liu C</u>, Matchar DB, Chan A, Exploring the Determinants of Home and Community Based Long Term Care Services Use in Singapore Using CART Analysis. Draft under revision.
- 6. Zhou K, <u>Liu C</u>, Ngeow J, Matchar DB, and Eng C, Individualizing Cancer Screening Strategies for PTEN Positive Cowden Syndrome Patients by Age and Gender: A Cost-Effectiveness Analysis. Working Paper.
- 7. <u>Liu C</u>, and Zhang SX, Disparity and Variation of Urban Health Insurance Coverage Policies in China. Working Paper.

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Publications

1. Haseltine WA and <u>Liu C</u>, "*Health System in Singapore*", Health Care Systems and Policies, Part of the series Health Services Research, pp 1-14; 18 January 2017.

- 2. Ansah JP, <u>Liu C</u>, and Matchar DB, Projecting the Effects of Long-Term Care Policy on the Labor Market Participation of Primary Informal Family Caregivers of Disabled Older Adults: Insights from a Dynamic Simulation Model. *BMC Geriatrics*; 2016 Mar 23;16:69.
- 3. <u>Liu C</u>, Ngeow J, Zhou K, Frick KD, Matchar DB, and Eng C, A Cost-Effectiveness Framework for Assessing Patients at Genetic Risk: PTEN Testing and Management in Cowden Syndrome as Example. *Journal of Clinical Oncology*; 2015 Aug 10;33(23):2537-44.
- 4. <u>Liu C</u>, Eom K, Matchar DB, Chong WF, and Chan A, Community-Based Long-Term Care Services: If We Build It, Will They Come? *Journal of Aging and Health*; 2016 Mar;28(2):307-23.
- 5. Leung YY, Teo SL, Chua MB, Raman P, <u>Liu C</u>, Chan A, Living Arrangements, Social Networks and Onset or Progression of Pain among Elderly in Singapore. *Geriatrics & Gerontology International*; 2016 Jun;16(6):693-700.
- 6. Wee SL, <u>Liu C</u>, Goh SN, Chong WF, Aravindhan A, and Chan A, Determinants of Community Based Long Term Care Services Use. *Journal of the American Geriatrics Society*; 2014 Sep;62(9):1801-3. doi: 10.1111/jgs.13003.
- 7. <u>Liu C</u>, Feng Z, Mor V, Case-Mix and Quality Indicators in Chinese Elder Care Homes: Are There Differences between Government-owned and Private-sector Facilities? *Journal of the American Geriatrics Society*; 2014, doi: 10.1111/jgs.12647.
- 8. Feng Z, Zhan HJ, Guan X, Feng X, <u>Liu C</u>, Mor V, The Emergence of Institutional Elder Care in Urban China, issues on sustainable development and equity, *Population and Development (Chinese)*; 2012 Dec;18(6): 16-23.
- 9. Feng Z, <u>Liu C</u>, Feng X, Mor V, China Faces Multipronged Policy Challenges in Shaping a Viable Long-Term Care System for a Rapidly Aging Population, *Health Affairs*; 2012 Dec;31(12):2764-73.
- 10. <u>Liu C</u>, Baier R, Gardner R, Trivedi AN, Eligibility for Financial Incentives and Electronic Medical Record Use among Physicians, *Medicine & Health Rhode Island*; 2012 Nov;95(11):358-62.
- 11. Feng Z, Zhan HJ, Feng X, <u>Liu C</u>, Sun M, Mor V, An Industry in the Making: The Emergence of Institutional Elder Care in Urban China. *Journal of the American Geriatrics Society*; 2011 Apr;59(4):738-44.

Book and Book Chapter

- 1. Haseltine WA and <u>Liu C</u>, "A City for All Ages: Planning for the Future of Health and Eldercare in Singapore", Brookings Institution Press with the National University of Singapore Press (in preparation).
- 2. Glinskaya EE and <u>Liu C</u>, "*Options for Aged Care in China*", the World Bank Group and the Development Research Center of the State Council of China (in preparation).
- 3. Liu C and Haseltine WA, Book Chapter: "The Singaporean Health System, 2016"; 2016 International

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- *Profiles for Health Care Systems*, Thomson S, Osborn R, Squires D (eds.), The Commonwealth Fund Press (in preparation).
- 4. <u>Liu C</u> and Haseltine WA, Book Chapter: "The Singaporean Health System, 2014"; 2014 International *Profiles for Health Care Systems*, Thomson S, Osborn R, Squires D (eds.), The Commonwealth Fund Press (January 23, 2015).
- 5. <u>Liu C</u>, Bhasker E, Haseltine WA, Book Chapter: "Singapore Healthcare Today: Progress Toward Sustainable High Quality Healthcare, 2013-2104"; *Affordable Excellence: The Singapore Healthcare Story*, Brookings Institution Press with the National University of Singapore Press (November 18, 2014).
- 6. Feng Z, Zhan HJ, Feng X, <u>Liu C</u>, Mor V, Book Chapter: "Long-Term Care in China: Reigning in Market Forces through Regulatory Oversight"; *Regulating Long Term Care Quality: An International Comparison*, Mor V, Leone T, and Maresso A (eds.), Cambridge University Press (February 28, 2014).

Governmental Reports

- 1. Ang YH, <u>Liu C</u>, Lim YQ, Khoo J, Wong CH, and Matchar DB, 2014, "*Interim Report for Transitional Care Programme Evaluation Study*", a 5,000 word report to the Ministry of Health, Singapore.
- 2. <u>Liu C</u>, Khoo J, Wong CH, and Matchar DB, 2014, "*Interim Report for "Ageing-In-Place" Programme Evaluation Study*", a 7,000 word report to the Ministry of Health, Singapore.
- 3. <u>Liu C</u>, Feng Z, Du P, Mor V, 2011, "Survey Report to the Ministry: Elder Care Facilities in Nanjing and Tianjin", a 6,000 word governmental report to the China Ministry of Civil Affairs.
- 4. Zhang W, <u>Liu C</u>, Yan L, 2008, "*Evaluation of Privatization of Health Care in Jiangsu Province*", a 30,000 word governmental report to the China Ministry of Health.
- 5. <u>Liu C</u>, and Zhang W, 2007, "*Pharmaceutical Packaging Pricing In China*", a 50,000-word report to the China National Development and Reform Commission on its design of the pharmaceutical packaging pricing policy.

Grants

- 1. Matchar DB (PI), <u>Liu C</u> (co-PI), Chan A (co-I), De Silva D (co-I). A Randomized Controlled Trial to Improve the Uptake of and Adherence to Outpatient Rehabilitation Service among Stroke Patients. Global Asia Institute, NUS Aging Cluster Grant. Amount: SGD 296,000; Duration: 2 years. Awarded; 2014.
- 2. Matchar DB (PI), Wong CH (co-PI), <u>Liu C</u> (co-I), Chan A (co-I). Health and Economic Evaluation of the Aging-In-Place Program in a public hospital in Singapore. Ministry of Health, Singapore. Amount: SGD 470,442; Duration: 3.5 years. Awarded; 2013.

Presentations

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Jun, 2017	Asian Development Bank Aging Asia and The Pacific Conference Manila, Philippines Oral presentation: "Technologies and Innovations for Aging, the Modern Aging Program."
Jun, 2017	AVPN Annual Conference Hosted the "Silver Economy" round table. Bangkok, Thailand
May, 2017	Beijing American Center, American Embassy Oral presentation: "Challenge of Healthcare Services Symposium." Beijing, China
Mar, 2017	Singapore Innovating Health Round Table Two Oral presentation: "The Economics of Aging In Place." Singapore
Nov, 2016	Innovating Care Forum: Elderly and Home Care Oral presentation: "Planning for the Aging Population: Community Based Long-Term Care Services and Care Integration in Singapore."
Sep, 2016	Retirement Living and Senior Care Southeast Asia KL, Malaysia Oral presentation: "Technologies and Innovations for Aging, the Modern Aging Program."
Oct, 2015	CUHK Jockey Club Institute of Ageing Launch Conference Hong Kong Oral presentation: "Modern Aging - An education program and accelerator for entrepreneurs interested in Aging"
May, 2015	Kunshan Forum 2015; Duke Kunshan University Oral presentation: "Impact of Singaporean "Transitional Care" Program on Hospital Utilization – An Interim Analysis."
Apr, 2015	The Chinese University of Hong Kong Oral presentation: "Planning for the Aging Population: Community Based Long-Term Care Services and Care Integration in Singapore."
Jan, 2015	Agency for Integrated Care, Singapore Oral presentation: "A Study to Understand Singaporean's Attitudes Towards LTC Services."
Nov, 2014	The World Bank and National Development and Reform Commission Wuhan, China Oral presentation: "Purchasing Elder Care Services: Key Concepts and Examples."
Nov, 2014	MOH Holdings Healthcare Leadership College Public Lecture Oral presentation: "Using Implementation Science to Effectively Implement Evidence-Based Practices in Singapore."
Nov, 2014	The Gerontological Society of America Annual Scientific Meeting Oral presentation: "A Longitudinal Study of Factors that Influence Use of Long-Term Care Services in Singapore."
June, 2014	AcademyHealth Annual Research Meeting (ARM) Poster presentations: "A Cost-Identification Analysis of the Economic Implications of Medicaid Bed-Hold Policies to Both Medicaid and Medicare"; "Understanding Social Determinants of Community-Based Long-term Care Services Utilization Using Classification and Regression Tree Analysis"; "A Cost-Identification Analysis of the Economic Implications of Medicaid Bed-Hold

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Policies to Both Medicaid and Medicare". **ESSEC Business School Asia-Pacific** May, 2014 Singapore Oral presentation: "How Insurance Policy Changes Impact Patients' and Providers' Behavior and Health Care Costs?" May, 2014 **Fudan University** Shanghai, China Oral presentation: "Planning for the Ageing Population in Singapore." **Singapore Health Economics Association Conference** Apr, 2014 Singapore Oral presentation: "A Longitudinal Study of Caregivers' Perception of Long-Term-Care Services and Services Use in Singapore." Feb, 2014 **ACCESS Health International Annual Meeting** Goa, India Oral presentation: "A City for All Ages: Planning for the Future of Health and Eldercare in Singapore." Dec, 2013 **Southwestern University of Finance and Economics** Chengdu, China Oral presentation: "How Insurance Policy Changes Impact Patients' and Providers' Behavior and Health Care Costs?" Nov. 2013 The Gerontological Society of America Annual Scientific Meeting New Orleans, LA Poster presentation: "A Longitudinal Study of Factors that Influence Use of Long Term Care Services in Singapore: Wave 1 Results." **Providence VA Medical Center** Feb, 2013 Providence, RI Oral presentation: "A Cost-Identification Analysis of the Economic Implications of Medicaid Bed-Hold Policies to Both Medicaid and Medicare." Dec, 2012 **Duke-NUS Graduate Medical School** Singapore Oral presentation: "The Impact of Insurance Policy Changes on Patients' and Providers' Behavior and Cost of Care – Experience from US Medicare Drug Policy and Medicaid Nursing Home Policy." AcademyHealth Annual Research Meeting (ARM) Jun, 2012 Orlando, FL Poster presentation: "Effect of Adding Medicare Part D Gap Coverage for Generic Medications on Drug Spending among Medicare Advantage Enrollees." **Harvard US-China Health Summit** Sep, 2011 Boston, MA Poster presentation: "Building Beds, Building Equity: Disparities in Access to Public and Private Elder Care Facilities in China." AcademyHealth Annual Research Meeting (ARM) Jun, 2011 Seattle, WA Poster presentation: "Elder Care Institutions in China: Do Government Owned Facilities Provide Better Quality?" Public Health Research Day, Brown University Apr, 2011 Providence, RI Poster presentation: "The Association between Ownership Type and Quality of Care in the Emerging Institutional Elder Care System in China." **AcademyHealth Annual Research Meeting (ARM)** Jun, 2010 Boston, MA

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CURRICULUM VITAE Chang Liu Poster presentation: "Association between Physician Specialty and Health Information Technology Use: A Statewide Survey." Brown University Spatial Structures in the Social Sciences (S4) GIS Jan, 2010 Providence, RI Institute Oral presentation: "Using GIS to Identify Shortage Areas of Primary Care Physician and Spatial Disparities to Primary Care in Rhode Island." May, 2009 **Bratislava Workshop on Institutional Analysis** Bratislava, Slovakia Oral presentation: "The Effectiveness of Public Spending on People's Health Conditions in China: A Comparison between the Direct and the Indirect Approach." **Additional Training** Jan, 2014 **Society for Medical Decision Making Asia-Pacific Conference** Singapore Attend a short course on system dynamics modeling: "Introduction to System Dynamics for Health Care Services". Aug, 2012 Westlake Youth Forum on Health Policy and Systems Sciences Hangzhou, China Invited to give commentary and to review the progress of ongoing China Medical Board (CMB) granted projects. Jul, 2012 **RAND Summer Institute (RSI)** Santa Monica, CA Attended two annual conferences sponsored by the National Institute on Aging that address critical issues facing our aging population: the Mini-Medical School for Social Scientists and the Demography, Economics, Psychology, and Epidemiology of Aging Conference.

Jan, 2010 GIS Institute, Brown University Spatial Structures in the Social Providence, RI Sciences (S4)

- Learned to manage spatial data, conduct geographic analysis, and communicate spatial concepts.
- Obtained skill and knowledge in GIS and spatial analysis.

2009-2010 Teaching Certificate I Program, The Harriet W. Sheridan Center Providence, RI

- Received training by the Harriet W. Sheridan Center for Teaching and Learning.
- Awarded *Teaching Certificate I* after completing a series of teaching seminars and workshops, a departmental microteaching session, and a classroom teaching lecture.
- Fall, 2009 **Responsible Conduct in Research (RCR) Training, Brown University Providence, RI**Completed "the Ethics of Responsible Conduct in Research" training offered by the Division of Biology and Medicine, and received the *Certificate for Responsible Conduct in Research*.

May, 2009 Bratislava Workshop on Institutional Analysis, Ronald Coase Bratislava, Slovakia Institute

The workshop is sponsored by the Ronald Coase Institute and co-sponsored by the University of Economics in Bratislava, Virtual Scientific Laboratories, and the Tatra Banka Foundation.

Teaching Experience

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Lead Lecture, Entrepreneur Programs, New York University Shanghai

"Design Thinking and Aging Innovations", undergraduate, Prof Eliot Gattegno (Winter 2017)

Program Director, ACCESS Health International, Duke-NUS, and NUS Enterprise

"Modern Aging Singapore", open enrollment, www.modernaging.org (Fall 2015; Fall 2016)

Guest Lecturer, Health Services and Systems Research Program, Duke-NUS Graduate Medical School

"Health Services Research PhD Core Course", graduate, Dr. Marcel Bilger (Spring, 2014)

Guest Lecturer, Public Health Programs, Brown University

"Therapy Economics", graduate, Prof. Judith Bentkover (Spring, 2012; Spring, 2013)

• Student Rating: 1.4/5.0, where 1 is best

"Health Care in the United States", undergraduate, Prof. Ira Wilson (Spring, 2011)

• Student Rating: 1.5/5.0, where 1 is best

Guest Lecturer, Economics Department, Tufts University

"Health Economics", undergraduate, Prof. Judith Bentkover (Spring, 2012; Fall, 2012)

Guest Lecturer, Guanghua School of Management, Peking University

"Financial Market Microstructure", master, Prof. Yu-Jane Liu (Spring, 2009)

Teaching Assistant, Grader, Public Health Programs, Brown University

"Health Care in the United States", undergraduate, Prof. Ira Wilson (Spring, 2011)

Teaching Assistant, Grader, Guanghua School of Management, Peking University

"Financial Market Microstructure", master, Prof. Yu-Jane Liu (Spring, 2009)

"Healthcare Industry and Economic Evaluation", full-time MBA, Prof. Lijing Yan (Fall, 2007)

Industry Experience

2007 Part Time Assistant, Monitor Group

Beijing, China

2007 Intern Journalist & Editor, Caijing Magazine

Beijing, China

Caijing Magazine is the leading financial magazine in China. It has an estimated circulation of 220,000 copies per issue.

2006-2007 Intern Financial Analyst, IBM China Research Lab

Beijing, China

Referee Service

- Annals of Internal Medicine
- Health Psychology
- Social Science & Medicine
- Research on Aging

Professional Societies

- AcademyHealth, 2009 Present
- The Gerontological Society of America, 2013 Present
- International Health Economics Association, 2011 Present
- Chinese Economists Society, 2010 Present
- Planning Committee Member of China Health Policy and Management Society (CHPAMS), 2010 Present

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Research Software

Statistical software: STATA, SAS
GIS and spatial analysis: ArcGIS

• Database management: Excel, Access

• Decision Analysis: TreeAge

• Knowledge in C programming, Python, and VBA.

References

William Haseltine Ph.D.

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