

COLLEGE OF ARCHITECTURE
Center for Health Systems & Design
2018 Quinquennial Review – and look forward

Prepared by:

Ray Pentecost, Director
July 7, 2018

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Introduction

In fall 2016, the Center for Health Systems & Design (CHSD) invited a new Director, Dr. Ray Pentecost, FAIA, FACHA to take over for Interim Director Dr. Kirk Hamilton, FAIA, FACHA. Accordingly, in reviewing the last five years of activities for the CHSD, the reader is encouraged to note that the most recent two years are being reviewed from first-hand experience; the balance of the report represents findings collected from individuals who were active in the Center during the years prior to the arrival of the current Director.

Review Criteria

1. Center’s Mission and Connection to Activities in the College of Architecture

The Center for Health Systems & Design (CHSD) operates under the auspices of the Colleges of Architecture and Medicine to promote research, teaching and communication in an interdisciplinary program that focuses on the way design works to protect, develop and restore health.

The CHSD leadership team decided to revise the focus of the CHSD slightly in the fall, 2016 with the arrival of a new Director, Dr. Ray Pentecost, whose interdisciplinary background in architecture and public health included both the design of healthcare facilities and designing for population health. For many years, the CHSD has built and enjoyed a strong reputation in the design of healthcare facilities, but beginning in fall 2016 the focus of the CHSD shifted to a broader population health perspective that included the ways that design, in general, could impact health. Some faculty were already beginning teaching and research activities in these areas, but in fall 2016, the shift became an explicit CHSD priority.

Three areas of impact were identified, including:

2. Design that protects health
3. Design that develops health
4. Design that restores health

Once that distinction was drawn, it quickly became clear that these three domains could apply equally to design in the sense of a specific building type and to a design philosophy that could apply to any building type. Consider the grid below, where the three health design impacts across the top apply to the two design intents on the left side, resulting in six bulleted interior cells that contain a few examples of the kinds of subjects that could be researched and/ or taught in each:

	Design that Protects health	Design that Develops health	Design that Restores health
Design of a Specific Building/ Product Type	<ul style="list-style-type: none"> • Storm/ Bomb shelter • Assistive/ nursing facilities for aging • Escape capsule for mining/ drilling • Space travel vehicle 	<ul style="list-style-type: none"> • School: intellectual • Gym/ spa: physical • Church: spiritual 	<ul style="list-style-type: none"> • Rehabilitation center • Hospital/ healthcare facility • Micro-hospital • Urgent care center • Medical office building
Design Philosophy applied to any Building Type	<ul style="list-style-type: none"> • Life safety/ building/ construction codes • Interior materials • Indoor air quality • Shielding from environmental hazard • Security • Ergonomic design • Micro-climate 	<ul style="list-style-type: none"> • Exceeding design code minimums • Forcing activity into daily routines • Growing food locally • Ensuring clean water • Cafeteria design to influence food choices 	<ul style="list-style-type: none"> • Access to sunlight • Access to staff restoration areas • Access to nature • Access to positive distraction

It quickly becomes apparent that the mission of the CHSD, to teach and do research in these six cell areas, becomes all-inclusive to student and faculty design work. To illustrate the universality of the CHSD mission, the CHSD has begun using as its “slogan” the phrase:

Every Professional, Every Project, Every Practice.

With this mindset, the goal of the CHSD is to touch and influence every student in the College of Architecture with this message:

Every project on which you, as Architects, will work for the entirety of your careers will impact the health of the people who use it. Such far-reaching impact demands accountability, and the CHSD is committed to helping students (and faculty) understand that simple, yet profound truth, and accept that lofty personal and professional ethical responsibility.

The CHSD offers a Certificate in Health Systems & Design to students who sign up for it and meet the requirements for receiving it. Importantly, it is awarded to students who have earned a graduate degree at the time of their graduation. More graduate students in architecture earn the Certificate in Health Systems & Design than any other certificate offered in the College of Architecture. Historically this group of students has been interested primarily in healthcare design, but with the revised, more universally relevant message, the Center is aggressively marketing this Certificate to ALL graduate students in the College of Architecture.

More broadly, the CHSD is marketing the Certificate to all graduate students at TAMU through an established network of professors from every College at TAMU, one from each, known as the Academic Circle. They function, among other roles, as an advocate for the CHSD Certificate to their graduate students who might find the relationship between design and health relevant and interesting as an adjunct to their career paths that are primarily shaped by other disciplines.

2. Center's Impact on Research and/or Creative Activities in the College or at the University over the past 5 years

Information for this section is taken from CVs of the CHSD Executive Leadership Group of Ray Pentecost-Director, Zhipeng Lu-Associate Director, Kirk Hamilton, George Mann, Sarel Lavy, Chanam Lee, Xuemei Zhu, and Susan Rodiek.

RAY PENTECOST, Director of CHSD

AWARDS & RECOGNITION

Pentecost, A. R. III (2017) "Afterword," chapter in *Health and Wellbeing in Interior Architecture*, edited by Dak Kopec, New York, NY, Routledge. Winner: 2018 Interior Design Educators Council (IDEC) annual book award.

2016 *Ronald L. Skaggs and Joseph G. Sprague Chair of Health Facilities Design*

GUEST LECTURES

Design for the Aging and Disabled: Environments that Empower Individuals (2017, April 11). College of Architecture, Texas A&M University.

Questions Demanding Good Answers (2017, March 30). School of Public Health, Texas A&M University.

Population Health: are we ready for the conversation? (2016, September 9). Texas A&M University, College of Architectures, fall lecture series for health architects.

Finding the Way Forward: are we asking the right questions? (2016, February 11). TTU Rawls College of Business, Lubbock, TX.

The Top Ten Lessons I've learned from Evidence-Based Design. (2015, September 1). Texas Tech University, College of Architecture, Lubbock, TX.

Health Perspectives: Where are we, and How did we get here? (2014, January 29). Texas Tech University, College of Architecture, Lubbock, TX.

EXTERNAL GRANTS

Co-Investigator and co-project director with William R. Eide, Jr.: **Learning from mistakes: The role deficiency reports play in the design of better health care facilities**, an assessment of design deficiencies in Texas healthcare facilities. (2017) \$15,000 contract from William R. Eide, Jr. with support from J. Armand Burgun Fellowship fund from the AIA Academy of Architecture for Health Foundation.

EDITORIAL AND REVIEW BOARDS

2017 **Peer Review Committee, 2018 American Institute of Architects Convention**

Reviewed abstracts, helped choose programs for presentations in New York.

2015 **Programme Committee, Inaugural European Healthcare Design Conference**

Reviewed abstracts, helped choose abstracts for presentations in London.

2014 **Organizing Committee, the 11th World Congress on Design and Health**

Offered early planning advice in advance of the 2015 meeting in Hong Kong.

2014 **Scientific Advisory Committee, the 10th World Congress on Design and Health**

Reviewed abstracts, helped choose abstracts for presentations in Toronto.

2013 **Scientific Advisory Committee, the 9th World Congress on Design and Health**

Reviewed abstracts, helped choose abstracts for presentations in Brisbane.

PEER REVIEWED PUBLICATIONS

Pentecost, A. R. III (2018) "The Practitioner as Researcher," chapter in *Evidence-Based Design for Multiple Building Types*, Hamilton, D. K. and Watkins, D. H., New York: Wiley & Sons, Chinese translation.

OTHER PUBLICATIONS

1. Hamilton, D. Kirk, McKahan, Donald C. and Pentecost, A. Ray (2017, February). ACHA certification stands test of time, *Health Facilities Management*, Vol. 30, No. 2, pp. 37-39.
2. Pentecost, A. R. III, (2013, October). Standpoint: The Salutogenic organization, *World Health Design: Architecture, Culture, Technology*. International Academy for Design and Health, Stockholm, Vol. 6, No. 2, pp. 13.
3. Pentecost, A. R. III (2013, April). Standpoint: So What?, *World Health Design: Architecture, Culture, Technology*. International Academy for Design and Health, Stockholm, Vol. 6, No. 2, pp. 15.
4. Pentecost, A. R. III (2013, March). Net Works: AIA, NIBS Build a Solid BRIK Portal, *Inform Magazine*, Virginia Society of the American Institute of Architects, No. 2, pp. 10-11.

PRESENTATIONS

International

1. Information Technology: Forever Changing Healthcare...and healthcare design. (2018, May 20). Invited presentation, China Hospital Construction Congress & Exhibition, Wuhan, China.
2. Learning from mistakes: The role deficiency reports could play in the design of better health care facilities. (2018, May 20). Invited presentation, China Hospital Construction Congress & Exhibition, Wuhan, China.
3. Co-Presenter with Mike Wood, One-on-One with Senior Leadership: Are we asking the right questions? (2017, October 19). International Facility Management Association Worldwide Workplace Event, Houston, TX.
4. United States Health Architecture: You can't steer a car that isn't moving. (2017, September 27). Invited presentation and panel discussion, UIA-PHG session, Australasian College of Health Service

Management – Australian Health Design Council Asia-Pacific Health Leadership #2017 Congress, Sydney, Australia.

5. United States Healthcare Futures: Winds of change are shaping strategy. (2017, September 27). Invited Keynote address, Australasian College of Health Service Management – Australian Health Design Council Asia-Pacific Health Leadership #2017 Congress, Sydney, Australia.
6. Three Dimensions of Health Design (2017, May 25). School of Architecture, Curtin University, Perth, Australia.
7. Questions that will shape the future of healthcare in the United States (2017, May 21). China Hospital Construction Congress & Exhibition, Wuhan, China.
8. Design for Health: clarifying the mission (2017, May 20). China Hospital Construction Congress & Exhibition, Wuhan, China.
9. Three Dimensions of Health Design (2017, May 18). School of Architecture, Huazhong University of Science & Technology, Wuhan, China.
10. Establishing a Research Agenda (2014, July 12). Keynote presentation for the World Congress on Design and Health, International Academy for Design and Health, Toronto.
11. Salutogenic Design: A Tool for Health Promotion, An Opportunity for Planners (2013, November 13). Design and Health Middle East, International Academy for Design and Health, Doha, Qatar.
12. Architecture for Health: moving beyond what we know (focusing on the “so what” of discovery (2013, September 27). International Union of Architects, Public Health Group, Toronto.
13. A Perfect Storm: The Economic Challenge and the Salutogenic Response (2013, July 11) World Congress on Design and Health, International Academy for Design and Health, Brisbane.
14. Salutogenic Design as a tool for Health Promotion (2013, March 14). Design and Health Asia Pacific 2013, International Academy for Design and Health, Singapore.

National

15. Telemedicine: How Virtual Connectivity and Care are Reshaping Architectural Programming. (2018, June 7). Webinar for the Center for Health Design, Concord, CA.
16. Co-Presenter with William Persefield and Rodney Hill, Disruptive Technologies: A Transformation of Healthcare Delivery and Design. (2017, November 13) Healthcare Design, 2017, Orlando, FL.
17. Co-Presenter with Rodney Hill and William Persefield, Telemedicine: How Virtual Connectivity and Care Are Reshaping Architectural Programming. (2017, November 12). Healthcare Design 2017, Orlando, FL.
18. Co-Presenter with Bill Hercules, The American College of Healthcare Architects: how certification offers opportunities for collaboration (2017, August 4). National meeting of the Board of the

American Society for Healthcare Engineering, Indianapolis, IN.

19. Co-Presenter with Malcolm, C. and Persefield, W., The Evolving Health System: having the conversation is challenging. (2016, November 15). Healthcare Design 2016, The Center for Health Design, Houston, TX.
20. The Center for Health Systems & Design: Framing our next steps. (2016, November 15). Healthcare Design 2016, The Center for Health Design, Houston, TX.
21. Co-Presenter with Wood, M. and Kent, J., One-on-One with Senior Leadership. (2016, November 13). Healthcare Design 2016, The Center for Health Design, Houston, TX.
22. Co-Presenter with Hamilton, D. Kirk, Research for Practice: How to Increase Your Competitive Edge. (2016, May 21). National Convention of the American Institute of Architects, Philadelphia, PA.
23. Creating a Legacy for 2040. (2015, March 17). American Society of Healthcare Engineering and American Institute of Architects, International Conference on Planning Design and Construction. San Antonio, TX.
24. Ten Trends Impacting the Future of Healthcare Design. (2015, March 12). Innovations at the Intersections, Healthcare Symposium 2015, The CBRE Institute, Phoenix, AZ.
25. Virtual Patient Experiences: The Dominant Opportunity in a Transforming Market (2014, May 20). Cleveland Clinic Patient Experience Summit, Cleveland, OH.
26. How 10 Forces are Continuing to Change Healthcare Design (2013, July 22) American Society for Healthcare Engineering annual meeting, Atlanta, GA.
27. VIDEO: Design and Health, Town Hall session with Richard Jackson, MD and Frederick Bell, FAIA (2013, June 21) National Convention of the American Institute of Architects, Denver, CO.
28. For the Design Community: A Perfect Storm with Opportunities (2013, June 20). National Convention of the American Institute of Architects, Denver, CO.
29. VIDEO: BRIK – the web portal for building research (2013, June 20) Town Hall session, National Convention of the American Institute of Architects, Denver, CO.

State/ Regional

30. Information Technologies: Disrupting Healthcare Delivery...and Design. (2018, February 9). AIA Seattle Healthcare Design Group, Seattle, WA.
31. Finding the Way Forward: are we asking the right questions? (2015, October 12). AHCA Design and Construction of Healing Environments, Orlando, FL.
32. Healthcare Trends: are we asking the right questions? (2015, August 6). 9th Annual Healthcare Design and Construction Symposium, Vanderbilt University, Nashville, TN.

33. How 10 Forces are Continuing to Change Healthcare Design (2014, September 24). NYC: Hospital and Medical Facilities Summit, IFMA Health Care Institute and the Corporate Realty, Design and Management Institute, New York, NY.
34. How 10 Forces are Continuing to Change Healthcare Design (2014, June 13). New Prescriptions for Transforming Healthcare, IFMA Health Care Institute and the Corporate Realty, Design and Management Institute, Raleigh, N.C.
35. How 10 Forces are Continuing to Change Healthcare Design (2014, June 12). New Prescriptions for Transforming Healthcare, IFMA Health Care Institute and the Corporate Realty, Design and Management Institute, Washington, D.C.
36. Architecture for Health: the Architect as a health professional (2013, September 26). Texas Regional Event, American College of Healthcare Architects, San Antonio, TX.
37. Salutogenic Design: let's consider health rather than disease (2013, February 5). AIA New York.

Local

38. Designing for Health: clarifying the mission (2017, August 17). Committee on Architecture for Health, Austin, TX.
39. Designing for Health: clarifying the mission (2017, August 17). Committee on Architecture for Health, San Antonio, TX.
40. Designing for Health: the work of the CHSD (2017, July 28). Committee on Architecture for Health, Houston, TX.
41. The Top Ten Lessons from the Early Practice of Evidence-Based Design. (2013, February 12). Tidewater Chapter, Construction Specifications Institute, Norfolk, VA.
42. Lessons from the Early Years of Evidence-Based Design. (2013, February 6). Workshop for the New York City Chapter, American Institute of Architects, New York, NY.
43. Salutogenic Design: let's consider health rather than disease. (2013, February 5). New York City Chapter, American Institute of Architects, New York, NY.

INTERVIEWS AND CRITIQUES

1. Ferenc, Jeff (2017, April). Building on a legacy of healthcare design, *Health Facilities Management*, Vol. 30, No. 4, pp. 10-11.

PROFESSIONAL SPECIAL EVENTS

- 2015 Facilitator, **Research Summit**, American Institute of Architects, Oakland, CA
- 2013 Facilitator, **Research Summit**, American Institute of Architects, Detroit, MI

NOTABLE PROJECTS

2014-2015 **Independent Review Panel on Military Medical Construction Standards (IRP)**, Washington, DC

Chair of the Panel

This Panel was appointed by the Secretary of Defense to review military health facility construction activity in light of the world class characteristics recommended by the Defense Health Board and codified in the Military Construction Authorization Act for Fiscal Year 2009.

2013 **DOD Criteria Management: Innovations Webinar Series**

Facilitator

This project sought to identify and showcase the major forces that will be shaping medicine, and in particular military medicine, in the future. Special consideration was given to the emergence of health promotion and the use of innovative technologies as being potentially transformative in the military healthcare system. Sponsored by the Defense Health Headquarters (DHHQ), TRICARE Management Activity (TMA) Portfolio Planning and Management Division (PPMD) and managed by the National Institute of Building Sciences (NIBS), Falls Church, VA.

ZHIPENG LU, Associate Director of CHSD

AWARDS/GRANTS (selected)

Outstanding Alumni graduated in the past 15 years. School of Architecture, Southeast University, Nanjing, China, 2016

INVITED LECTURES (selected)

Healthcare Design: Theories, Evolutions and Its Future. At the Master of Hospital Administration Seminar course at National Yang-Ming University, Taipei, Taiwan, 2015.

Conduct Research at Healthcare Facilities. At the editorial office of the China Hospital Architecture & Equipment Magazine, 2015

Focus Group Method for Health Facility and Environment Research. At Evidence-Based Design Boot Camp held by the Center for Health Systems & Design, Texas A&M University, 2014.

Sketching and Diagramming on Site. In Dr. Yang Liu's undergraduate seminar COSC 175 – Construction Graphics. Texas A&M University, 2013.

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STUDENT COMPETITION & DESIGN CHARRETTE

Student Team Advisor

Second Place, 2017 Houston AIA SES Student Competition, Houston, Texas.

First Place, 2016 Houston AIA SES Student Competition, Houston, Texas.

Student Design Charrette, 2016 Healthcare Design Conference, Houston, Texas.

PRESS INTERVIEW

Interviewed at the American Institute of Architects (AIA) Headquarter, Washington D.C. *Design & Health: Impacts of Walkable Community on Residents' Physical Activity and Health.* 2014.

Video access: <http://www.youtube.com/watch?v=MHVJ30xaRww&feature=youtu.be>

Interviewed by the China Hospital Architecture & Equipment Magazine, at the China Hospital Build Exhibition & Congress, World Expo Center, Dalian, China. 2015.

FUNDED RESEARCH

Principal Investigator. *Developing Hospital Space Programming Tools.* Funded by China National Institute of Hospital Administration (\$110,000). 2015-2018.

Co-Principal Investigator. *Evaluating Health Impacts of Walkable Communities: Best Practices and a Toolkit for Future Design and Research.* With Xuemei Zhu (PI). Funded by American Institute of Architects (\$20,000), 07/01/2012-06/30/2014

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Co-investigator. *Urban General Hospital Design for Security: Case Studies in Beijing, China.* With Xiaosai Hao (PI). Funded by the China National Natural Science Foundation (\$27,500). 2017-2019.

Co- Investigator. *Physical Activity Impacts of a Planned Activity-Friendly Community: The What, Where, When and Why of Environmental Approaches to Obesity Prevention.* With Marcia Ory (PI). Funded by National Institute of Health (\$2.68 Million). 2015-2020

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Co-Investigator. *Does an Activity-Friendly Community Improve Children's Physical Activity? Where, When, and How?* With Xuemei Zhu (PI). Funded by Johns Hopkins University Global Center for Childhood Obesity (\$30,000), 07/01/2012-6/30/2014

Project Manager. *Small Town Walkability: Measuring the Effects of the Built Environment*. With Dr. Mark Doescher (PI, University of Washington) and Dr. Chanam Lee (Co-PI, Texas A&M University). Funded by National Institute of Health (\$1,000,000), 07/10/2010-06/30/2013.

UNFUNDED RESEARCH

Principal Investigator. *Hospital Post-Occupancy Evaluation: the Application of Building Information Modeling*. 2012-2015.

Principal Investigator. *Comparing Hospital Designs in China and U.S.* 2011-2016.

PEER-REVIEWED JOURNAL PAPERS

Lu, Z., Rodiek, S., Shepley, M., & Tassinari, L. (2015). Environmental influences on indoor walking behaviours of assisted living residents. *Building Research & Information*, 43 (5), 602-615.

Impact factor: 1.32 (2014).

Zhu, X., Yu, C., Lee, C., **Lu, Z.** & Mann, G. (2014). A Retrospective Study on Changes in Residents' Physical Activities, Social Interactions, and Neighborhood Cohesion after Moving to a Walkable Community. *Preventive Medicine*, 69, S93-S97.

Number of citations: 4. Impact factor: 3.07 (2014).

Zhu, X., **Lu, Z.**, Yu, C., Lee, C. & Mann, G. (2013). Walkable communities: Impacts on residents' physical and social health. *World Health Design*, 7, 68-75.

Number of citations: 2.

Hu, S., Zhou, Y. & **Lu, Z.** (2013). Vertical transportation in large-scale hospital. *Urbanism and Architecture*, 5, 31-34. (In Chinese).

COMMISSIONED PAPERS

Lu, Z. (2016). Trends of Healthcare Design in the USA (in Chinese). *China Healthcare Design*. 37 (12), 84-86.

Lu, Z. (2013). Senior facility design and planning. *Chinese Hospital Architecture and Equipment*. 8, 29-32. (In Chinese). Republished in 2013 China Hospital Build Conference Proceeding.

CONFERENCE PRESENTATIONS

Lu, Z. (2017). A Reflection of the 2017 UIA-PHG International Competition. Presented at the UIA-PHG Seminar, London, UK.

Lu, Z. (2017). Architectural Programming for Healthcare Facilities: An Evidence-Based Approach. Presented at China Hospital Construction Congress & Exhibition, Wuhan, China.

Lu, Z., Zhu, X, Lee, C., Ory, M., Griffin, G., Towne, S., Kellstedt, D., Xu, M., & Lee, S. (2017). Mueller: Development of a Sustainable and Walkable Community. Presented at AIA Design + Health Research Consortium Meeting. Detroit, Michigan.

Lu, Z., Mann, G. & Lee, C. (2016). Health for Human, Animal, Environment and Economy: Implement the One Health Concept in an Interdisciplinary Design Studio. Presented at the 2016 ACSA/ASPPH Fall Conference, Honolulu, Hawaii.

Zhu, X., Lu, Z., Yu, C. & Lee, C. (2016). Who benefits the most from walkable communities? Results from a quasi-natural experimental study. Presented at the 2016 ACSA/ASPPH Fall Conference, Honolulu, Hawaii.

Lu, Z. (2016). A Paradigm Shift: From Healthcare to One Health, at the 9th Annual Architecture + health Educators Summit, Chicago.

Lu, Z. (2016). Health Design Theories and Evidence-Based Design Research, at the 2016 China Hospital Build Congress & Exhibition, Hefei, China.

Lu, Z. & Hill, R. (2015). Future smart health facilities: Influences of advancement of Technology and Medicine, at the Future Smart Hospital Symposium 2040, Taipei, Taiwan.

Lu, Z. & Zhu, X. (2015). *Impacts of a walkable community on residents' physical and social health*, at the TAMU First Look Colloquium, 2015 Healthcare Design Conference, Washington DC.

Lu, Z. & Mann, G. J. (2014). *Architecture for health: The Nigeria project at Texas A&M*, at the XXV International 9 Union of Architects World Congress, Durban, South Africa.

Lu, Z., Zhu, X., Lee, C., Yu, C. & Mann, G. J. (2014). *Walkable communities: Impacts on residents' physical and social health*, at AIA Design & Health Summit, AIA Headquarter, Washington D.C.

Lu, Z., Wachter, H. P., Zhou, Y. & Mann, G. (2013). *13-hour differences: Lessons learned from the China-U.S. joint healthcare design studios*, at the UIA/PHG Annual Healthcare Forum, Toronto, Canada.

Lu, Z. (2013) *Assess Walkability of the Assisted Living Environment*, at the 67th Gerontological Society of America Scientific Meeting, New Orleans, Louisiana.

Zhu, X., Lee, C., **Lu, Z.** & Mann, G. (2013). *Evaluating health impacts of walkable communities: Best practices and a toolkit for future design and research*, at the Design & Health World Congress and Exhibition, Brisbane, Australia. (Oral presentation, with published abstract)

Lu, Z. (2013). *A Comparison of China and U.S. Hospital Design*, at the Healthcare and Senior Facility Design Symposium, Southeast University, Nanjing, China.

Lu, Z. (2013). *Senior Facility Design and Planning*, at the 2013 China Hospital Build Conference, Nanjing, China.

D. KIRK HAMILTON, PhD, FAIA, FACHA, EDAC

Publications & Presentations 2017

AWARDS

2016 ChangeMaker Award, Center for Health Design (Lifetime Achievement & founding of HERD journal)

BOOKS AUTHORED, CO-AUTHORED, OR EDITED

Hamilton, DK & S Lavy, eds. (2017). *Area Calculation Method for Health Care*. Chicago, IL: AHA Press.

Hamilton, DK & DH Watkins. (2017). *Evidence-Based Design for Multiple Building Types*. (Chinese Translation from Wiley & Sons) Beijing: China Architecture & Building Press.

EDITORIALS (not peer reviewed):

Hamilton, DK (2017). "A Decade of HERD," *Health Environments Research & Design*, 10(5)

Hamilton, DK (2017). "Evidence, Best Practice, & Intuition," *Health Environments Research & Design*, 10(4)

Hamilton, DK. (2017). "If A then B, Design Intent and Measurement," *Health Environments Research & Design*, 10(3), 61-65.

Hamilton, DK. (2017). "ICU Safety and Straight Corridors," *Health Environments Research & Design*, 10(2), 101-103.

REFEREED PUBLICATIONS

Journals

Hamilton, DK, Swoboda, S, Lee, J-T, & Anderson, D. (2017). "Decentralization: The Corridor is the Problem, Not the Charting Alcove." *Critical Care Nursing Quarterly*

Gharaveis, A, **Hamilton, DK & Pati, D. (2017, in press). "The Impact of Environmental Design on Teamwork and Communication in Healthcare Facilities – A systematic Literature Review." *Health Environments Research & Design*, 11(1).**

Invited Commentary

Hamilton, DK. (2017). "Foreword." Guest editorial, *Critical Care Nursing Quarterly*

UNFUNDED RESEARCH

Principal Investigator for a Dissertation Study for Arizona State University entitled **Navigating the Patient Room: Critical Care Nurses' Interaction with the Designed Physical Environment** at Johns Hopkins, Baltimore, MD, University Medical Center of Princeton at Plainsboro, NJ, and MedStar's Washington Hospital Center, Washington, DC.

PROFESSIONAL PUBLICATIONS, NOT REFEREED

Hamilton, DK, AR Pentecost & D McKahan. (2017). ACHA evolves with the healthcare design profession, *Health Facilities Management*, 30(2).

Hamilton, DK. (2016). Owner organization for successful project outcomes. Washington, DC: National Institute of Building Sciences.

INVITED PRESENTATIONS

National

Co-presenter with Amy Kircher, M.Arch, "Area Calculation: Are You using the Best Information?" ASHE Planning Design & Construction conference, Orlando, FL, March 2017

Regional

Co-presenter with Ray Pentecost & Zhipeng Lu, "CHSD & Health Design Resources," AIA Houston, San Antonio, & Austin, TX, August 2017

SUSAN RODIEK, PhD

How you are associated with the Center	TOTAL Research Funding received in 2017	What part, if any, was influenced by being a part of the CONSORTIUM	# of PUBLICATIONS, CITATIONS, URLs	Any SIGNIFICANT FINDINGS & ACCOMPLISHMENTS	# OF EVENTS in which you participated (SEMINARS, CONFERENCES, AIA EVENTS, FIRM events COMMUNITY events
<p>Faculty Fellow</p>	<p>\$2,400 funding for faculty research (Northern AZ Univ.)</p> <p>PLUS:</p> <p>\$19,000 funding for student research</p> <p>(PI Architects, Furate Corporation, Rominiac Fellowships)</p>	<p>Not sure how to answer this; as any influence was indirect, not directly related. However, the funding might have been somewhat less likely without being part of the consortium.</p>	<p>Five (5) papers published in 2017, in well-established, scholarly, peer-reviewed journals.</p> <p>Forty-seven (47) citations in 2017, according to ResearchGate.</p> <p>Not sure what they are asking re # of URL's.</p>	<p>Thirty-one (31) weeks was the Most-Read Author in the Department of Architecture, according to ResearchGate.</p> <p>Developed and published an innovative Weighting strategy for a validated environmental assessment tool; these are extremely rare, even though acknowledged to be very useful to design practitioners.</p>	<p>One (1) major conference: Healthcare Design, in Orlando, FL.</p> <p>PLUS:</p> <p>Two (2) national conference research papers presented by doctoral students on research conducted jointly with me.</p>

XUEMEI ZHU, PhD

HONORS/AWARDS (SELECTED)

- 2015 **Inaugural Cohort, AIA Foundation Design and Health Research Consortium (2014-2017).** Texas A&M team leader with Professor Kirk Hamilton.
- 2013 **Interdisciplinary Teaching Funding,** Action 2015: Education First Initiative, Texas A&M University. Received \$15,000 together with Drs. Neuman and Li to develop an interdisciplinary service-learning project.

RESEARCH

AWARDED GRANT PROPOSALS

- 2015-2020 **Principal Investigator**-Physical Activity Impacts of a Planned Activity-Friendly Community: The What, Where, When and Why of Environmental Approaches to Obesity Prevention National Institutes of Health (NIH). \$2,684,000.
- This case-control, longitudinal study examines the short- and long-term impacts of moving into a walkable community on residents' levels of physical activity and health (Parallel PIs: Lee & Ory; Co-I: Hammond, Goldberg, Lightfoot, Jones-Mckyer, Sang, Samuel, Lu).
- 2016-2017 **Senior Project Personnel**-Assessing the Impact of Public Transit on Physical Activity: A Natural Experimental Study in El Paso, Texas. Texas A&M University. \$50,000.
- This study is to examine the causal impact of a new transit system on nearby residents' physical activity. We are building a multidisciplinary team (urban planning, transportation, public health, architecture, and statistics) to pursue NIH funding in two phases.
(PI: Lee, Co-PI: Li, Ory)
- 2016-2017 **Co-Principal Investigator** -Reinventing Public Transportation Programs to Fight Obesity Epidemic: A Pilot Study in El Paso, Texas. Division of Research funds the PESCA Grant Program, Texas A&M University. \$25,000.
- This study is a pilot study that examines diverse recruitment and data collection strategies in the El Paso area for a longer-term project focusing on the impacts of public transit and community design on residents' transit use and physical activity.
(PI: Li, Co-PI: Lee, Ory, Wang)
- 2012-2014 **Principal Investigator** *Does an Activity-Friendly Community Improve Children's Physical Activity? Where, When, and How?* Johns Hopkins University Global Center for Childhood Obesity. \$30,000. 10% of submitted proposals funded.
- This study examines health impacts of moving into a walkable community among children and adolescents, in terms of the change in levels of physical activity. (Co-PI: Lee)
- 2011-2013 **Principal Investigator**-Can Policy and Environmental Interventions Increase Active School Transportation and Children's Physical Activity? Robert Wood Johnson Foundation Active Living Research Program. \$50,000. 16% of submitted proposals funded.

This project assesses the impact of multiple environmental and policy interventions on promoting walking to school. Results were used to propose evidence-based recommendations for future interventions. (Co-PI: Lee)

- 2011– **Co-Principal Investigator**-Perceived and Actual Economic Values of Activity-Friendly
2013 Environments: Willingness-to-Pay and Willingness-to-Use. Robert Wood Johnson Foundation Active Living Research Program. \$100,000. 16% of submitted proposals funded.

This study is to evaluate economic values of living near activity-friendly resources and away from activity-hostile facilities, using visually simulated images to facilitate the evaluation process. (PI: Lee, Co-PI: Saginor)

- 2011– **Co-Principal Investigator**-Federal Safe Routes to School Program: Multi-State Evaluation and
2013 National Evaluation Framework. Robert Wood Johnson Foundation Active Living Research Program. \$300,000. 16% of submitted proposals funded. Total budget for TAMU subcontract: \$60,000.

This 5-state collaborative research conducts systematic and comparative evaluations of Safe Routes to School programs. (PI: McDonald; CO-PI: Lee, Steiner, & Zhang)

CONSULTATIONS

- 2015– **Principal Investigator**
2017 **A case for Innovative School Design: An Post-Occupancy Evaluation and Research Project**
Stantec Architecture. \$7,182.

This study examines the impact of school building and furniture design on students' and teachers' perceptions of indoor environmental quality, their usage of spaces and facilities, and more importantly, levels of student engagement in classrooms.

PUBLICATIONS (Note: * denotes students as co-authors.)

PEER-REVIEWED JOURNAL ARTICLES

- 2017 Qiu L* & **Zhu X**. Impacts of Housing and community environment on children's independent mobility: a systematic literature review and design suggestions. *The New ARCH*,4(2):50-61.
- 2017 Lee C, Yoon J & **Zhu X**. From Sedentary to Active School Commute: Multi-level factors associated with travel mode shifts. *Preventive Medicine*, 95(S):S28-S36. Journal's impact factor: 2.893.
- 2016 Yu C* & **Zhu X**. From Attitude to Action: What Shapes Attitude toward Walking to/from School and How Does It Influence Actual Behaviors? *Preventive Medicine*, 90(2016):72-78. Journal's impact factor: 2.893.
- 2016 Yu C* & **Zhu X**. (2016) Planning for Safe Schools: Impacts of school siting and surrounding environments on traffic safety. *Journal of Planning Education & Research*, 36(4):476-486. doi: 10.1177/0739456X15616460 Journal's impact factor: 1.051. **Journal's ranking:** 19/39 in "Urban Studies" category; 23/55 in "Planning & Development" category

- 2015 Yu C* & **Zhu X**. Impacts of residential self-selection and built environments on children's walking-to-school behaviors. *Environment and Behavior*, 47(3): 268-287. Journal's impact factor: 1.282. **Journal's ranking:** 48/126 in "Psychology, Multidisciplinary" category.
- 2014 McDonald NC, Steiner R, Lee C, Smith TR, **Zhu X** & Yang Y. Impact of the Safe Routes to School Program on Walking and Bicycling. *Journal of the American Planning Association*. 80(2):153-167. doi: 10.1080/01944363.2014.956654. Journal's impact factor: 2.04. Citations: 6
- 2014 **Zhu X**, Yu C,* Lee C, Lu Z & Mann G. A Retrospective Study on Changes in Residents' Physical Activities, Social Interactions, and Neighborhood Cohesion after Moving to a Walkable Community. *Preventive Medicine*, 69(2014):S93-S97. Journal's impact factor: 2.932. Citations: 4
- 2014 Song Y*, **Zhu X** & Shepley M. The Design Trend of Neonatal Intensive Care Units in the United States: Survey Results and Design Considerations. *Urbanism and Architecture*, 2014(9), 38-40. (In Chinese.)
- 2013 **Zhu X**, Lu Z, Yu C,* Lee C & Mann G. Walkable communities: Impacts on residents' physical and social health. *World Health Design*, 2013(7), 68-75. Citations: 2
- 2013 Lee C, **Zhu X**, Yoon J* & Varni J. Beyond distance: Children's School Travel Mode Choice. *Annals of Behavioral Medicine*, 45(S1), 55-67. Citations: 16 Journal's impact factor: 3.169. Journal's ranking: 10/101 in "Psychology, Multidisciplinary" category.
- 2013 **Zhu X**, Ulrich R & Bai X.* Design for patient safety: Relationships between hospital environment and hospital-acquired infections. *Urbanism and Architecture*, 2013(5), 22-24. (In Chinese)
- 2013 Song Y* & **Zhu X**. Neonatal intensive care unit design: The trend in the United States and its implications for China. *Urbanism and Architecture*, 2013(6), 16-19. (In Chinese)
- 2013 Ma D, Zhou Y & Zhu X. Balance between intension and dispersion: A multi-core and modular design approach for large-scale hospitals. *Urbanism and Architecture*, 2013(5), 31-34. (In Chinese)

PEER-REVIEWED FULL ARTICLES PUBLISHED IN CONFERENCE PROCEEDINGS AND PRESENTED AT CONFERENCES

- 2017 Qiu L* & **Zhu X**. Impacts of Housing and community environment on children's independent mobility: a systematic literature review and design suggestions. Presented at and in proceedings of *The 4th International S.ARCH. Conference*. Hong Kong, China.
- 2016 Wang M, Mei W., & **Zhu X**. Quality of Life by Design: Study of Space Usage and Improvement of Spatial Arrangement for Affordable Housing in Harbin, China. Presented at and in proceedings of the *10th International Conference of the European Association for Architectural Education (EAAE) and the Architectural Research Centers Consortium (ARCC)*, Lisbon, Portugal. June.
- 2014 **Zhu X**, Lu Z, Lee C, Mann G & Yu C*. Impacting health: The impact of walkable community design on the health of Mueller, Texas residents. In proceedings of the *AIA Design & Health Summit*. Washington, DC: The American Institute of Architects (AIA).

- 2014 Sadatsafavi, H.,* Leveridge, A.,* McCreary, M.,* Slater, J.,* Wit, T.,* Yu, C.,* Zhao, D.,* and **Zhu, X.** A Blueprint for Healthy Communities-Case Study of Mueller Community and Colony Park project in Austin, Texas. ICSI 2014: pp. 388-401. doi: 10.1061/9780784478745.034

OTHER PEER-REVIEWED CONFERENCE PRESENTATIONS (Oral presentation unless noted otherwise)

- 2018 **Zhu X,** Lee C, Ory MG, Xu M, Towne SD Jr, Lu Z, Griffin G, Kellstedt D. (2017). Conducting a Natural Experiment Study on Physical Activity Impacts of an Activity-Friendly Community: Research Protocol and Recruitment Lessons from the Field. Accepted for poster presentation at the *Active Living Research Annual Conference*. February 11-14, 2018. Banff, Canada.
- 2018 **Zhu X,** Yoshikawa A, Qiu L, Lu Z, Lee C, Ory M/ Accepted for oral presentation at the *Active Living Research Annual Conference*. February 11-14, 2018. Banff, Canada.
- 2018 Xu M, Lee C, Towne SD Jr, **Zhu X,** Lee S, Yu C. (2017). Assessing the Economic Resilience of Transit-oriented and Walkable Communities on Housing Values during a Housing Market Downturn. Accepted for oral presentation at the *Active Living Research Annual Conference*. February 11-14, 2018. Banff, Canada.
- 2018 Lee C, Li W, Xu M, Lee S, Garcia EB, Whigham L, Aldrete R, Towne S, Zhu X, Ory M. (2017). Diverse Recruitment Strategies for Testing Innovative Public Transportation Interventions to Fight the Obesity Epidemic: A Pilot Study in El Paso, Texas. Accepted for oral presentation at the *Active Living Research Annual Conference*. February 11-14, 2018. Banff, Canada.
- 2017 Lee J,* Rodiek S, Wong CH, & **Zhu X.** London, UK. Health Springs: An Innovative Wellness and Fall Prevention Approach for Singaporean Elderly in High Rise Housing. Presented at the *European Healthcare Design 2017 Congress & Exhibition (Poster)*.
- 2017 Lee C, Forsyth A, Brown R, **Zhu X,** & Sachs N. Landscape Architecture for Health and Active Living: Toward an Interdisciplinary Initiative. To be presented at the Council of Educators in Landscape Architecture (CELA) Conference, Beijing, China. (Panel)
- 2017 **Zhu X,** Lee C, Ory M, Hefner P, Desjardin D, Adams J, Griffin G, Xu M, Lu Z, Towne S, Kellstedt D, & Lee S. Making of a Walkable Community: Lessons from the Mueller Community in Austin, Texas. Presented at the *2017 Active Living Research Conference*, Clearwater Beach, Florida.
- 2017 **Zhu X,** Yu C, Lee C, & Lu Z. How did It happen? Exploring mechanisms for behavior changes toward active lifestyles after moving into a walkable community. Presented at the *2017 Active Living Research Conference*, Clearwater Beach, Florida.
- 2016 **Zhu X,** Lu Z, Yu C, & Lee C. Who Benefits the Most from Walkable Communities? Results from a Quasi-natural Experimental Study. Presented at the *2016 ACSA/ASPPH Fall Conference*, Honolulu, Hawaii.
- 2016 **Zhu X,** French R, Barrera D, Morgan G, Langer S, Kinney T, Hoyle T. A Case for Innovative Design: Post-Occupancy Evaluation on the Impacts of School and Furniture Design on User

- Satisfaction and Student Engagement. Presented at the *2016 ACSA/ASPPH Fall Conference*, Honolulu, Hawaii.
- 2016 Song, Y. & **Zhu, X.** Expected and unexpected: What we learn about neonatal intensive care unit design through behavioral observations of nurse activities. Presented at 2nd European Healthcare Design 2016 (EHD 2016) Congress & Exhibition. London, UK.
- 2016 Yu, C. & **Zhu, X.** How to shape parental attitude and promote walking to school? Understanding mediating effects of parental attitudes on children's active school commute. Presented at the 2016 Active Living Research Conference, Clearwater Beach, Florida.
- 2016 Lee, C., Yoon, J.* & **Zhu, X.** From sedentary to active school commute: Influences of multi-level factors on travel mode shifts. Presented at the 2016 Active Living Research Conference, Clearwater Beach, Florida.
- 2016 Xu M., Lee, C., **Zhu, X.** & Saginor J. Correlates of active commuting in neighborhoods with and without tax increment financing: Differences and policy implications. Presented at the 2016 Active Living Research (ALR) Annual Conference, Clearwater, FL.
- 2015 **Zhu, X.** Lu Z, Lee C, Yu C,* & Mann G. (2015). Health Impacts of A Walkable Community. Presented at the 2015 Healthcare Design Expo & Conference, Washington, DC. November.
- 2015 **Zhu X.** (2015). Design for Active Living. Presented at the 2015 UIA-Public Health Group Annual Seminar, Dalian, China.
- 2015 Xu, M,* C. Lee, J. Saginor, and **X. Zhu** (2015). The Economic Benefits of Walkable Neighborhoods: the Influence of Walk-friendly Neighborhood Amenities on Residential Sales Price. Presented at the 2015 Active Living Research (ALR) Annual Conference, San Diego, CA. February, 2015.
- 2014 Xu M,* Lee C, Saginor J, & **Zhu X.** Willingness to Pay for Neighborhood Amenities Supportive of Physical Activity. Presented at the Association of Collegiate Schools of Planning 54th Annual Conference. Philadelphia, PA.
- 2014 **Zhu X,** Lu Z, Yu C,* Lee C & Mann, G. Do Walkable Communities Really Work? Health Impacts of Moving into a Walkable Community and Mechanisms for Health Behavior Change. Presented at the *2014 Active Living Research Conference*, San Diego, CA.
- 2014 **Zhu X,** Lee C, Yu C,* & Varni J. Impacts of Objective and Perceived Distance on Walking-to-School Behaviors and Roles of Other Built Environmental Attributes in These Relationships. Presented at the *2014 Active Living Research Conference*, San Diego, CA.
- 2013 **Zhu X,** Lee C, Lu Z & Mann, G. Evaluating health impacts of walkable communities: Best practices and a toolkit for future design and research. Presented at the *Design & Health World Congress and Exhibition*, Brisbane, Australia.
- 2013 McDonald N, Steiner R, Lee C, Zhang Y, **Zhu X** & Smith T. **An evaluation of the effectiveness of the federal Safe Routes to School program using before-and-after data from four states.**

Presented at the 141st American Public Health Association Annual Meeting, Boston, Massachusetts.

NON-PEER-REVIEWED JOURNAL ARTICLE

- 2016 Zhu X & Barrera. A case for innovative design: Post-occupancy evaluation on the impacts of school and furniture design on user satisfaction and student engagement. *Educational Facility Planner*, 49(4), 31-39.

RESEARCH REPORTS

- 2016 Zhu X. Case for Innovative Design: Post-Occupancy Evaluation on the Impacts of School and Furniture Design on User Satisfaction and Student Engagement. Mid-point report, Stantec Architecture.
- 2014 Zhu X, Lee C & Lu Z. *Impacts of A Walkable Community on Residents' Physical Activities*. Final Report, Global Obesity Prevention Center at Johns Hopkins University.
- 2014 Zhu X, Lu Z, Lee C & Mann G. *Evaluating Impacts of a Walkable Community on Residents' Physical and Social Health*. Final Report, American Institute of Architects.
- 2014 McDonald N, Steiner R, Lee C, Zhu X, & Zhang Y. *Federal Safe Routes to School Program: Multi-State Evaluation and National Evaluation Framework*. Final Report, Robert Wood Johnson Foundation.
- 2013 Zhu X & Lee C. *Can Policy and Environmental Interventions Increase Active School Transportation and Children's Physical Activity?* Final Report, Robert Wood Johnson Foundation.
- 2013 Lee C, Zhu X & Saginor J. *Perceived and Actual Economic Values of Activity-Friendly Environments: Willingness-to-Pay and Willingness-to-Use*. Final Report, Robert Wood Johnson Foundation.

PUBLISHED REPORTS OF MY RESEARCH

- 2015 Houston Chronicle. "A&A&M study finds 'walkable' communities improve health". By Erin Mulvaney. Article featuring my research project on the Mueller community in Austin, TX.
<http://blog.chron.com/primeproperty/2015/01/am-study-finds-walkable-communities-improve-health/>
- 2015 Preservation Leadership Forum Blog. "Educational Effort Jumpstarts a Change ... Can We Learn a Lesson?" by Renee Kuhlman. Article citing out team project on the federal Safe Routes to school Program. <http://blog.preservationleadershipforum.org/2015/01/05/safe-routes-to-school/#.VPxtsC713w->
- 2015 The Pump Handle: A Water cooler for the Public Health Crowd. "Study: Building walkable communities can change behavior for the better." by Kim Krisberg. Article featuring my research project on the Mueller community in Austin, TX.
<http://scienceblogs.com/thepumphandle/?s=mueller>

- 2015 KXAN. "Study highlights health impacts of Austin neighborhood". By Rob Scott. News report featuring my research project on the Mueller community in Austin, TX. <http://kxan.com/2015/01/23/study-highlights-health-impacts-of-austin-neighborhood/>
- 2015 Ontario Association of Architects. "Another Walkability Study Proving We Need Walkable Communities". <http://www.oaa.on.ca/news%20--%20events/news/detail/Another-Walkability-Study-Proving-We-Need-Walkable-Communities/1367>
- 2015 Smart Growth online. "Walkable Communities Really Do Work". <http://www.smartgrowth.org/engine/index.php/resources/2015/01/27/walkable-communities-really-do-work>
- 2014 Texas A&M University College of Architecture newsletter.
- 2014 Safe Routes to School National Partnership. <http://saferoutespartnership.org/blog/it%E2%80%99s-official-safe-routes-school-proven-work>
- 2014 BuildingGreen.com. "Walkable Texas Neighborhood Turns Out to Be Walked In". By *Paula Melton*. <http://www2.buildinggreen.com/article/walkable-texas-neighborhood-turns-out-be-walked?share-code=f5c84fd739640cc8f04f45fca0b7a21e>
- 2014 ACSA Newsletter.
- 2013 Architect Magazine. "Health conscious" by O'Connell K, pp. 38-39. Article featuring my project as one of the three winners of the national competition for the 2012 AIA Decade of Design Initiative.
- 2013 AIA Newsletter. "2012 Decade of design university research grants" by Brown T. Article featuring my project as one of the three winners for the 2012 AIA Decade of Design Initiative. <http://www.aia.org/aiaucmp/groups/aia/documents/pdf/aiab097809.pdf>
- 2013 AIA Newsletter. "Livable communities: Evaluating the health benefits" by Brown T. Article featuring my research project. <http://www.aia.org/advocacy/publicpolicy/AIAB097757>

EDITORIAL AND REVIEW SERVICE

- 2016 Journal reviewer, *Preventive Medicine*.
- 2015 Reviewers for grant proposals submitted to the Robert Wood Johnson Foundation Healthy Eating Research.
- 2015 Conference reviewer, 2016 Active Living Research Annual Conference.
- 2013 Reviewer of technical reports, Active Living Research Program, Robert Wood Johnson Foundation.

CONSULTATION SERVICE

- 2016 Technical Expert for Johns Hopkins University Evidence-based Practice Center.
- 2015- Stantec Architecture.
2016

TEACHING-RELATED GRANTS

- 2013 **High-Impact Interdisciplinary Service Learning Experience in Sustainable Transportation and Healthy Cities. Supported by Action 2015: Education First Initiative, Texas A&M University.** Received \$15,000 together with Drs. Neuman and Li to develop an interdisciplinary service-learning community project, which integrates 3 courses from architecture, landscape architecture, and urban planning, to evaluate the social, economic, and environmental outcomes associated with the design of a new transportation hub for South College Station, Texas.

INVITED LECTURES

- 2017 ARCH 458: Global and Ethical Practice
- 2016 LCSE 002-514: One Health Learning Community. Lecture on state of knowledge and practice in design for active living.
- 2015 URPN 370: Health Systems Planning. Lecture on state of knowledge and practice in design for active living.
- 2014 LAND 320: Landscape Design III & ARCH 607: Architectural Design III. Lecture on wayfinding in hospitals.
- 2014 URPN 370: Health Systems Planning. Lecture on Design for Active Living.
- 2013 HLTH 429: Environmental Health. Lecture on design for active living.
- 2013 LAND/PLAN 632: Design and Active Living, Texas A&M University. Lecture on measurement issues in design, planning, and research for active living.

COMMUNITY-SERVICE CLASS PROJECTS (SELECTED)

- Spring, **Transit-oriented Developments for the College Station and Bryan Area.**
2014 Students from 3 courses worked together to develop design proposals for transit-oriented developments for the College Station and Bryan Area, and to estimate their economic, social and environmental impacts.
- Spring, **A blueprint of healthy communities, ARCH 689: Design & Healthy Living.**
2013 Students evaluated health impacts of the Mueller community in Austin, Texas and proposed design guidelines for a new community—Colony Park—in the same city, and gave presentations to City’s planning team.

CHANAM LEE, PhD

HONORS, AWARDS, AND RECOGNITIONS

- 2016 Rural and Environment Paper Award (co-author led by S Lee), American Public Health Association. Environmental predictors of walking among older adults: Neighborhood factors and fall-related injuries among older adults seen by emergency medical service providers.
- 2016 Excellence in Safety Research for Active Living Poster Award, Active Living Research Robert Wood Johnson Foundation and National Center for Injury Prevention and Control(co-author led by S Lee)
- 2015 Advance Scholar, Vice President and Associate Provost for Diversity, Texas A&M University
- 2015 Honorable Mention, American Public Health Association, Rural and Environment Paper Award (co-author led by Ory). Environmental predictors of walking among older adults.
- 2014 Outstanding Mentor Award, Department of Landscape Architecture and Urban Planning, Texas A&M University

RESEARCH AND PROJECT EXPERIENCES

EXTERNAL GRANTS AND RESEARCH PROJECTS

- 2018-2023 ***Principal Investigator***
- National Institute of Health (multi-PI with Drs. Li and Ory), \$2,591,084
 - Fighting Obesity by Reinventing Public Transportation: A Natural Experiment
A natural experimental study to evaluate health and mobility impacts of bus rapid transit; to examine costs and benefits of bus rapid transit implementation; and to explore barriers and facilitators of bus rapid transit use.
- 2015-2020 ***Principal Investigator***
- National Institute of Health (multi-PI with Drs. Zhu and Ory), \$2,684,000
 - Physical Activity Impacts of a Planned Activity-Friendly Community: The What, Where, When and Why of Environmental Approaches to Obesity Prevention
Evaluation of short-term and long-term changes in physical activity and in spatial and temporal patterns of physical activity, after sedentary or insufficiently active individuals move from non-Activity-Friendly Communities (AFC) to an AFC.
- 2012-2017 ***Co-Investigator / Sub-award Principal Investigator***
- National Institute of Health (Mendoza, PI), \$3,108,030 (total) / \$149,774 (sub-award)
 - Evaluation of a Walking School Bus Program: A cluster randomized controlled trial

This study is to evaluate the long-term efficacy of a Walking School Bus program to increase low-income, ethnic minority children's active commuting to school and physical activity.

2015-2016 **Principal Investigator**

- UBRICA, Ltd., \$129,561
- UBRICA ONE: Ustawi Biomedical Research Innovation and Industrial Centers of Africa Medical City in Kenya

This evidence-based master planning project is to explore future development strategies and potential for a 4000-acre site in Nakuru County, Kenya. The Medical City is part of the larger

Ustawi Biomedical Research Innovation and Industrial Centers of Africa (UBRICA) initiative, and UBRICA ONE is its premier project in Kenya.

2017-2018 **Principal Investigator**

- Thompson and Grace, Ltd. (\$58,234)
- Thompson and Grace Medical University planning and design project in Nigeria

This is an evidence-based master planning and site design project to propose proposals for the development of a medical university campus on a ~100-acre property in Akwa Ibom, Nigeria.

2013-2015 **Principal Investigator**

- Thompson and Grace, Ltd., \$134,033 (\$58,234 for Phase I, \$75,799 for Phase II)
- Thompson and Grace Medical City master planning project in Nigeria

This is an evidence-based master planning project to propose proposals for the development of a world class medical city on a 270-acre property in Akwa Ibom, Nigeria that promotes healing and healthy living, environmental sustainability, productive landscape, and community partnerships.

2012-2014 **Co-Principal Investigator**

- Scott and White Hospital (Forjuoh, PI), \$80,000
- Neighborhood Safety, Physical Activity, and Obesity

This study is to examine the associations among neighborhood safety, physical activity, obesity, and health-related quality of life.

2012-2014 **Co-Principal Investigator.**

- Johns Hopkins University (Zhu, PI), \$30,000
- Does an Activity-Friendly Community Improve Children's Physical Activity?: Where, When, and How?

This study is to examine if and how moving to an activity-friendly community (a) increase children's physical activity, (b) promote positive attitudes and social supports for physical activity, and (c) reduced physical activity disparities among mixed-income residents.

- 2012-2013 **Co- Principal Investigator.**
- American Institute of Architects (Zhu, PI), \$20,000
 - Evaluating Health Impacts of Walkable Communities: Best Practices and a Toolkit for Future Design and Research
- This study is to examine if walkable communities can increase physical activity, and how health impacts of walkable communities can be measured to guide community design and outcome evaluation.
- 2011-2013 **Principal Investigator.**
- Robert Wood Johnson Foundation, \$100,000
 - Perceived and actual economic values of activity-friendly environments: Willingness-to-pay and willingness-to use.
- This study is to evaluate economic values of living near activity-friendly resources and away from activity-hostile facilities, using visually simulated images to facilitate the evaluation process.
- 2011-2013 **Co- Principal Investigator.**
- Robert Wood Johnson Foundation (Zhu, PI), \$50,000
 - Policy Interventions for Green, Healthy and Economic School Transportation: GIS-Based simulation and evaluation of multiple policy interventions.
- This study is to assess multiple policy intervention scenarios using GIS and propose evidence-based recommendations for future interventions.
- 2011-2013 **Co- Principal Investigator.**
- Robert Wood Johnson Foundation (McDonald, PI), \$300,000
 - Federal Safe Routes to School Program: Multi-State evaluation and national evaluation framework.
- This 5-State collaborative research is to conduct systematic and comparative evaluations of SRTS programs.
- 2010-2014 **Co-Investigator / Sub-award Principal Investigator**
- National Institute of Health (Doescher, PI), \$2,000,000 (total) / \$375,966 (sub-award)
 - Rural Town Walkability: Measuring the effect of the built environment.
- This study 3-region collaborative research is to identify built environmental elements that promote walking in small towns. Dr. Lee is the PI for the Texas region portion of the study.
- 2008-2014 **Co-Investigator.**
- The Robert Wood Johnson Foundation (Ory & Hoelscher, Co-PIs), \$2,000,000.
 - Statewide Evaluation of Childhood Obesity Prevention Policies in Texas: Texas Safe Routes to School & Increased Healthy Food Access for WIC Clients (T-COPPE).
- This research is to conduct a statewide evaluation of two key childhood obesity prevention policies in Texas: The Safe Routes To School (SRTS) program; and the Texas Women, Infants and Children Nutrition Program. Dr. Lee is involved in the assessment

of environmental factors and the SRTS program, and in the statistical analysis of the project.

OTHER GRANTS, FELLOWSHIPS AND SCHOLARSHIPS

- 2018 T3-Triads for Transformation, Texas A&M University, \$30,000 (with Drs. Zhu and Moudouni)
- 2016 Program Development Fund, Office of the Vice Present for Research, Texas A&M University, \$50,000 (PI; Drs. Li and Ory, Co-PIs)
Assessing the Impact of Public Transit on Physical Activity: A Natural Experimental Study in El Paso, Texas
- 2015 Texas A&M University PESCA Program, \$25,000 (co-PI)
Reinventing Public Transportation Programs to Fight Obesity Epidemic: A Pilot Study in El Paso, Texas

REFEREED PUBLICATIONS

*denotes student

JOURNAL ARTICLES:

*Kim Y and Lee C (under review). Built and natural environmental correlates of parental safety concerns. *Preventive Medicine*.

*Yu CY, Zhu X, and Lee C (under review). Rates and Severity of Pedestrian Injuries: Income and Ethnic Disparities and Roles of the Built Environment. *Journal of Planning Education and Research*.

Hoelscher D, Dowdy DM, Evans AE, Menendez TE, Nichols D, Wang S, Lee C, *Miao J, and Ory MG (under review). Evaluating Differences in Active Commuting to School and Related Behaviors and Psychosocial Factors based on Safe Routes to School (SRTS) Funding Allocation. *Journal of Health and Transport*.

*Won J and Lee C (under review). An Assessment of the Literature on the Spillover Effects of Foreclosure on Nearby Property Values. *Journal of Housing and the Built Environment*

*Yoon J and Lee C (under review). Neighborhood outdoor play of White and Non-White Hispanic children: Cultural differences and environmental disparities. *Landscape and Urban Planning*

Bardenhagen E, Senes G, Rodiek S, Ferrara C, Nejati A, Fumagalli N, Giornelli A, and Lee C (in press). The Seniors' Outdoor Survey (SOS Tool): Comparing Ratings and Reliability between Italy and the USA. *Landscape Research*.

Sagunor J, Lee C, and Xu M (2018). Analyzing Neighborhood Amenities: Willingness-to-pay among parents of elementary school students. *Real Estate Finance*, Spring 2018:147-157.

*Xu M, *Yu C, Lee C, and Frank L (2018). Single Family Housing Value Resilience of Walkable Versus Unwalkable Neighborhoods during a Market Downturn: Causal Evidence and Policy Implications. *American Journal of Health Promotion*. 0890117118768765.

*Kim YJ, Lee C, *Kim JH (2018). Sidewalk Landscape Structure and Thermal Conditions for Child and Adult Pedestrians. *International Journal of Environmental Research and Public Health*. 15(1):148.

Bardenhagen E, Rodiek S, *Nejati A, & Lee C (2017). The Seniors' Outdoor Survey (SOS Tool): A Proposed Weighting and Scoring Framework to Assess Outdoor Environments in Residential Care Settings. *Journal of Housing for the Elderly*, 1-22. doi: 10.1080/02763893.2017.1393489

*Kim YJ, Lee C, *Lu W, Mendoza JA (2017). Attitudinal, behavioral, and environmental correlates of child and parent self-efficacy in walking to school. *International Journal of Environmental Research and Public Health*. 14(12):1588.

*Lee S, Lee C, Ory M, *Won J, Towne SD, Wang S and Forjuoh S (2017). Fear of Outdoor Falling among Community-Dwelling Middle-Aged and Older Adults: The Role of Neighborhood Environments, *The Gerontologist*.

*Kwon M, Lee C, and Yu X (2017). Exploring the Role of Neighborhood Walkability on Community Currency Activities: A Case Study of the Crooked River Alliance of TimeBanks. *Landscape and Urban Planning*, 167:302-14.

*Kwon M, Lee C, Yu X, and McIntosh W (2017). Community Currency Activities, Community Attachment, and Quality of Life: A Case Study of the Crooked River Alliance of TimeBanks. *Time and Society*. 0961463X17716737.

Forjuoh S, Ory M, *Won J, Towne S, Wang S, and Lee C (2017). Determinants of Walking among Middle-aged and Older Overweight and Obese Adults: Demographic, Health, and Socio-Environmental Factors. *Obesity*.

Adachi-Mejia A, Lee C, *Lee CK, Carlos H, Saelens B, Berke E, and Doescher M (2017). Geographic variation in the relationship between adult body mass index and characteristics of the built environment across small towns in three regions of the United States. *Preventive Medicine*.

*Won J, Lee C and Li W (2017). Are walkable neighborhoods more resilient to the foreclosure spillover effects? *Journal of Planning Education and Research*. 0739456X17702443.

Forjuoh S, Ory M, *Won J, Towne S, Wang S, and Lee C (2017). Determinants of Walking among Middle-aged and Older Overweight and Obese Adults: Socio-demographic, Health, and Built Environmental Factors. *Journal of Obesity*.

*Lee S, Lee C, and Rodiek S (2017). Neighborhood Factors and Fall-Related Injuries among Older Adults Seen by Emergency Medical Service Providers. *International Journal of Environmental Research and Public Health*, 14(2), 163; doi:10.3390/ijerph14020163.

Lee C, *Yoon J, and Zhu X (2017). From Sedentary to Active School Commute: Influences of multi-level factors on travel mode shifts. *Preventive Medicine*.

Forjuoh SN, Lee C, *Won J, Towne SD, Wang S, and Ory MG (2017). Correlates of Receiving a Recommendation for More Physical Activity from a Primary Care Provider. *American Journal of Preventive Medicine*, 52(2), 207-214

*Stewart OT, Carlos HA, Lee C, Berke EM, Hurvitz PM, *Li L, Moudon AV, Doescher MP (2016). Secondary GIS built environment data for health research: guidance for data development. *Journal of Transport & Health*, 3(4), 529-539.

Ory MG, Towne SD, *Won J, Forjuoh SN, Lee C (2016). Social and Environmental predictors of walking among older adults. *BMC Geriatrics*, 16:155.

Salahuddin M, Nehme E, Ranjit N, Kim Y, Oluyomi AO, Dowdy D, Lee C, Ory M and Hoelscher DM (2016). Does Parents' Social Cohesion Influence their Perception of Neighborhood Safety and their Children's Active Commuting to and From School? *Journal of Physical Activity & Health*, 1-27.

Doescher M, Lee C, Saelens BE, *Lee CK, Berke EM, Adachi-Mejia AM, Patterson DG, and Moudon AV (2016) Latino Acculturation and Utilitarian and Recreational Walking among Adults in Small US Towns. *Journal of Immigrant and Minority Health*, 1-9.

Towne SD Jr, *Won J, *Lee S, Ory MG, Forjuoh SN, Wang S, and Lee C (2016). Using Walk Score™ and Neighborhood Perceptions to Assess Walking among Middle-Aged and Older Adults. *Journal of Community Health*, 41(5), 977-988.

Hoelscher DM, Ory MG, Dowdy D, Mao J, Evans AE, Menendez TE, Nichols D, Lee C, Wang S (2016). Effects of Funding Allocation for Safe Routes to School Programs on Active Commuting to School, and Related Behavioral, Knowledge and Psychosocial Outcomes: Results from the Texas Childhood Obesity Prevention Policy Evaluation (T-COPPE). *Environment & Behavior*, 48(1), 210-229,

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*Yoon J, Lee C, and Kim J (2013). Environmental Correlates of Health-related Quality of Life in Hispanic Children. *Council of Educators in Landscape Architecture*, Austin, TX. [abstract and oral presentation by Yoon].

Bardenhagen E, Lee C and Kim J (2013). Using willingness-to-Pay to Measure Perceived Economic Values of Activity-Friendly Environments. *Council of Educators in Landscape Architecture*, Austin, TX. [abstract and oral presentation by Bardenhagen and Lee].

Zhu X, Lee C, Lu Z, and Mann G (2013). Evaluating Health Impacts of Walkable Communities: Best Practices and a Toolkit for Future Design and Research. *World Congress on Design and Health*, Brisbane, Australia. [abstract and oral presentation by Zhu].

Lee C, and *Li L (2013). Demographic, Physical Activity, and Route Characteristics Related to School Transportation: An Exploratory Study. *Robert Wood Johnson Foundation Active Living Research*, San Diego, CA. [abstract and oral presentation].

Lee C, Kim J, *Yoon J, and Olvera N (2013). Environmental Correlates of Obesity and Health-Related Quality of Life in Hispanic Children. *Robert Wood Johnson Foundation Active Living Research*, San Diego, CA. [abstract and poster presentation].

INVITED LECTURES AND PRESENTATIONS

- 2017 Aging Friendly Communities. LKYCIC International Ageing Urbanism Colloquium, Singapore [plenary presentation and panel]
- 2017 Healthy Communities for Healthy Living. Department of Landscape Architecture, Seoul National University, Seoul, Korea
- 2017 Healthy Communities for Healthy Living. Keimyung University, Daegu, Korea.
- 2017 Art and Science of Landscape Architecture. Department of Landscape Architecture, Kyungpook National University, Daegu, Korea
- 2017 Transportation and Health: An interdisciplinary research and policy agenda. Korea Agency for Infrastructure Technology Advancement, Anyang, Gyeonggi-do, Korea
- 2016 Walkability Interventions. America Walks Webinar series [on-line webinar with Sungmin Lee].
- 2016 Design for Healthy and Active Living: Walkable Communities, Health Industry Advisor Council annual colloquium, Center for Health Systems and Design, TAMU [plenary presentation]
- 2016 UBRICA One Master Planning: Sustainable One Health Community. US-Africa Relations Conference, College Station, Texas. [panel presentation]
- 2016 Master Plan of Thompson and Grace Medical City. Sustainable World Class Healthcare Systems for the Health Needs of Africa's Growing 1.5 Billion People. Uyo, Akwa Ibom, Nigeria. [plenary presentation]

- 2015 Healthy and Active Living Communities: Measuring environmental exposures and health outcomes. International Conference on Forest Therapy. Seoul National University, Seoul, South Korea [plenary lecture]
- 2015 Healthy Communities for Healthy Living: Active Living Research in the US. Peking University, Beijing, China [special lecture]
- 2015 Urban Form and Safety for Health and Transportation: Child and Adult Pedestrians. Traffic Safety Conference, Corpus Christi, Texas [conference presentation]
- 2014 Healthy Communities in the US and Beyond: Research, Policies and Practices. Department of Landscape Architecture, Seoul National University, Seoul, Korea [special lecture]
- 2014 Healthy Communities: Research, Policies and Practices. Department of Urban Planning and Engineering, Yonsei University, Seoul, Korea [special lecture]
- 2014 Design Research for Active Living. Department of Public Affairs, Kyungpook National University, Daegu, Korea [special lecture]
- 2014 Design Research for Healthy Communities. Department of Agriculture, Kyungpook National University, Daegu, Korea [special lecture]
- 2013 Design Research for Active Living. College of Architecture Hyde Lecture Speaker, University of Nebraska, Lincoln, NE [plenary presentation]
- 2013 Reed Arena Landscape Redesign: Design Meets Reality. Texas Professional Grounds Management Society Conference, College Station, TX [plenary presentation]
- 2013 Revolution/evolution of active living research: Perspectives from our interdisciplinary grantees, Robert Wood Johnson Foundation Active Living Research Conference, San Diego, CA [conference panel presentation and discussion]

GUEST LECTURES AND OTHER PRESENTATIONS

- 2017 Design for Healthy and Active Living: Walkable Communities. Health Industry Advisory Council. Annual Colloquium. Center for Health Systems and Design. Texas A&M University, College Station, TX.
- 2017 Art and Science of Landscape Architecture, LAND200: Introduction to Landscape Architecture and Urban Planning, College of Architecture, Texas A&M University, College Station, TX. Spring 2017.
- 2017 Design for Healthy and Active Living: Walkable Communities. LAND101: Introduction to Landscape Architecture and Urban Planning, College of Architecture, Texas A&M University, College Station, TX. Fall 2017.
- 2017 Design for Healthy and Active Living. URPN 370: Health Systems Planning, Department of Landscape Architecture and Urban Planning, College of Architecture, Texas A&M University, College Station, TX. Fall 2017.
- 2017 Art and Science of Landscape Architecture. URPN 483: Studio in Urban and Regional Science, Department of Landscape Architecture and Urban Planning, College of Architecture, Texas A&M University, College Station, TX. Fall 2017.
- 2016 Healthy Communities for Healthy Living, URPN 370: Health Systems Planning, College of Architecture, Texas A&M University, College Station, TX. Fall 2016

- 2016 Urban Design for Active Living, URPN 202: Building Better Cities, College of Architecture, Texas A&M University, College Station, TX. Spring 2016
- 2016 Art and Science of Landscape Architecture, LAND200: Introduction to Landscape Architecture and Urban Planning, College of Architecture, Texas A&M University, College Station, TX. Spring 2016
- 2015 Can the Built Environment Promote Active Living and Reduce Obesity? Obesity Prevention and Public Health Strategies, Brazos Valley Obesity Prevention Network, College Station, TX
- 2015 Healthy and Active Living Communities: Spatial assessment strategies, Texas A&M Health Science Center, College Station, TX. Spring 2015
- 2014 Design Research for Active Living, PLAN613 Planning Methods and Techniques, Texas A&M Health Science Center, College Station, TX. Spring 2014
- 2014 Healthy Communities in the US and Beyond: Research, Policies and Practices. Department of Architecture, Seoul National University, Seoul, Korea
- 2014 Design Research for Active Living, HPCH672 Doctoral Seminar, Texas A&M Health Science Center, College Station, TX. Spring 2014
- 2013 Design Research for Active Living 101. Annual Colloquium of the Health Industry Advisory Council, Center for Health Systems and Design, Texas A&M University, College Station, TX [plenary presentation with X Zhu]
- 2013 Design Research for Active Living, HLTH429: Environmental Health, Department of Health and Kinesiology, Texas A&M Health Science Center, College Station, TX. Fall 2013
- 2013 Design Research for Active Living, LAND310/645: Landscape Theory, College of Architecture, Texas A&M University, College Station, TX. Fall 2013
- 2013 Art and Science of Landscape Architecture. LAND200: Introduction to Landscape Architecture Practices, Department of Landscape Architecture and Urban Planning, Texas A&M University, College Station, TX. Fall 2013.
- 2013 Healthy Communities for Healthy Living, URPN 301: Urban and Regional Planning, Department of Landscape Architecture and Urban Planning, Texas A&M University, College Station, TX. Fall 2013
- 2013 Healthy Communities for Healthy Living, URPN 370: Health Systems Planning, Department of Landscape Architecture and Urban Planning, Texas A&M University, College Station, TX. Fall 2013
- 2013 Healthy Communities for Healthy Living, URPN 370 Health Systems Planning, College of Architecture, Texas A&M University, College Station, TX. Spring 2013

STUDIO SERVICE AND PROFESSIONAL PROJECTS (Selected)

Multigenerational Retirement Village Master Plan, Kitakyushu, Japan [Community service project carried out as an interdisciplinary studio with a junior ARCH studio, co-led with Rodiek S, and as three MLA students' final professional project, role: studio instructor, internship supervisor, and academic advisor]

RELLIS Campus Pedestrian Space Designs, College Station, TX, 2016 [Community service project carried out as a BLA studio, role: studio instructor, project lead]

North Lufkin Community Master Plan, Lufkin, TX, 2016-2017. [Professional service project carried out through Texas Target Communities program, as a BLA studio, and two MLA students' final professional project, role: studio instructor, internship supervisor, and academic advisor]

UBRICA Biomedical Industrial City Master Plan for UBRICA, Nakuru, Kenya, 2015-2016. [Professional service project carried out as a MLA studio and a BLA studio, and two MLA students' final professional project, role: PI, internship supervisor, and academic advisor]

Medical City Master Plan for Thomson and Grace Investments, Abak Lga, Nigeria, 2013-2015. [Professional service project carried out as three MLA students' final professional project, role: PI, internship supervisor, and academic advisor]

Reed Arena Redesign Plan for Texas A&M University Athletics Department in collaboration with SSC Service Solutions, College Station, TX, 2013. [Senior studio project to propose landscape improvements around the arena, role: instructor]

Colony Park Master Plan for the City of Austin Neighborhood Housing and Community Development Department, Austin, TX, 2013. [Senior studio project to propose a model mixed-use, mixed-income master-planned community that features productive landscape, role: instructor]

GEORGE MANN, Professor

PRESENTATIONS:

Mann, G.J. & Aitani, K. et al (2016, Dec., & 2017, April). *"Research & Design of a New Student Health Center for Texas A&M University"* to Dr. Martha Dannenberg, Executive Director and Jim Fish Associate Director, Texas A&M Student Health Center, College Station, Texas

Mann, G.J., & Lu, Y, (2016, Dec.). *"The Peking University General Hospital in Shenzhen, China"*, Texas A&M University, College Station, Texas

Mann, G.J., et al, (2017, Jan.) *"The Design of a College of Architecture Float for the New York Thanksgiving Day Parade, and other celebrations"*, Texas A&M University, College Station, Texas

Mann, G.J., Lu, Z., & Lee, C. et al (2017, March) *"Designing Community Health Clinics, Retail Stores and A Biomedical City for Kenya, An Interdisciplinary Approach from Texas A&M University "* to ASHE International PDC Summit, Orlando, Florida

Mann, G.J., et al (2016, April) *"The Health Facilitator"*, A Collaboration between THR - Texas Health Resources and HKS Architects Inc. presented at HKS, in Dallas.

Mann, G. J. & Lu, Z. (2017, June). *"Recent Research & Design Projects at Texas A&M University"*, to UIA PHG Annual Meeting, in conjunction with European Healthcare Design, Visioning the Future: Designing for Change in People Centered Health Systems, Royal College of Physicians, London, UK.

Mann, G.J., & Lu, Z. (2017, July) *"Recent Research & Design Projects at Texas A&M University"* to Health Architecture Educator's Summit Meeting, in conjunction with AIA AAH Academy of Architecture for Health, Leadership Summit, Chicago

JOURNAL ARTICLES

First Issue, (2016, July 1) *"George J. Mann, The Architect, Professor of Health Design, College of Architecture, Texas A&M University, USA"*, Urbanism & Health Magazine, Fourth Saudi Meeting for Planning and Designing Hospitals, 2016, April 5- 7, 2016

EXHIBITIONS

Mann, G. J., Pengyu Liao, Haowei Cheng, Hao Zhang, Xinran Liu,

Jointing Liu, Dongqi Zhu, and Yuchao Liu, (2017, April) *Research & Design of 7 Different Student Health Centers for Texas A&M University, presented at the Texas A&M Student Health Center*

POSTERS

Mann, G.J., Rollfing, P. (Fall 2016) *"Architecture for Health" Visiting Lecture Series*

Mann, G. J., Rollfing, P, (Spring 2017) *"Architecture for Health" Visiting Lecture Series*

Mann, G.J., Rollfing, P. (2014, February) *" Design of a Texas A&M Float for the New York Thanksgiving Day Parade and other events"*

Mann, G.J., Rollfing, P. (2014, April) *"Texas A&M University Student Health Center Poster"*

SUNDRY WORKS

Mann, G.J., et al, (2016, Fall), "Population Health", Architecture for Health Visiting Lecture Series, Texas A&M University

<http://one.arch.tamu.edu/news/2016/9/7/lecturers-populations/http://one.arch.tamu.edu/news/2016/9/7/acknowledgements-health/>

Mann, G.J., Lu, Z., et al (2017, Spring) "Texas 2025: Toward Improved Health & Health Facility Design", "Architecture for Health" Visiting Lecture Series, Texas A&M University

<http://one.arch.tamu.edu/news/2017/2/14/designers-discuss-healthcare-challenges/>

<http://one.arch.tamu.edu/news/2017/2/14/acknowledgments-spring-2017-health/>

Mann, G.J., Lu, Z. et al (2017, Fall) "Improving health & health facilities design for the population of the United States: Merging technology with architecture for health toward prevention, early diagnosis and treatment of disease", Fall 2017 "Architecture for Health" Visiting Lecture Series, Texas A&M University

<https://one.arch.tamu.edu/news/2017/8/31/technologys-healthcare-fall-lecture-series/>

<https://one.arch.tamu.edu/news/2017/8/31/acknowledgements-fall-2016-architecture-health-lectures/>

Mann, G.J., (Summer 2017) Consultant to Division of Architecture and Environmental Design, Tyler School of Art, Temple University Philadelphia, Pa., *To establish a joint "Architecture for Health" Program with the School of Public Health, Temple University.*

International:

Mann, G.J., (2016, Nov.) *Hosted visit of Danish Delegation - 31 Health Facility Architects, (in conjunction with the annual Outstanding Alumni Formal Dinner)*

Mann, G.J., (2017, Jan.) *Hosted visit of Norwegian Delegation Researching Health Facilities Design*

Activities Supporting Multidisciplinary Collaboration: (Indicate teaching in multidisciplinary courses, including courses with prefixes outside the Department)

Texas A&M School of Public Health - College of Architecture Multidisciplinary Collaborative Course

Mann, G.J., Lu, Z., Kash B., (2017, Aug.) PPHM 681, Arch 681, Arch 481, "Fall 2017 Architecture for Health" Visiting Lecture Series together with Center for Health Organization Transformation (CHOT), Texas A&M Health Science Center School of Public Health, Bitu A. Kash, PhD, MBA, FACHE | Director, NSF Center for Health Organization Transformation (CHOT) www.chotnsf.org

Video:

Mann, G.J., Dusek, L. (2016, Fall) *Mahama Refugee Camp, Rwanda*
<https://www.youtube.com/watch?v=AwYStIEVBsl>
<http://www.bing.com/videos/search?q=Lindsey+Dusek+Mahama+Refugee+Camp+&FORM=HDRSC3>

SAREL LAVY, PhD

AWARDS/HONORS

2018, Research and Scholarly Activity Award, Department of Construction Science, Texas A&M University. Awarded based on the “research and scholarly activity performance for the previous year.” Amount awarded: \$1,500.

2017, Construction Management Track, Best Paper Award for the paper “The future of facility management in the face of rapidly changing technology”, Lavy, S., Singh, N., Choi, K.C., and Justin, A., the 2017 International Conference on Maintenance and Rehabilitation of Constructed Infrastructure Facilities (MAIREINFRA), Seoul, South Korea, July 19-21, 2017.

2016-2019, The James C. Smith Construction Industry Advisory Council (CIAC) Professorship in Construction Science.

2017, Research and Scholarly Activity Award, Department of Construction Science, Texas A&M University. Awarded based on the “research and scholarly activity performance for the previous year.” Amount awarded: \$2,442.

2016, Research and Scholarly Activity Award, Department of Construction Science, Texas A&M University. Awarded based on the “research and scholarly activity performance for the previous year.” Amount awarded: \$3,305.

2015, Research Excellence Award, Department of Construction Science, Texas A&M University. “The award is given to a faculty member who has demonstrated excellence in scholarship and research.”

2014, Research Excellence Award, Department of Construction Science, Texas A&M University.

PUBLICATIONS ****Student names are italicized throughout this entire section**

Books/Monographs (1 published) Hamilton, D. K. and Lavy, S. (2017), Area Calculation Method for Health Care, the American Society for Healthcare Engineering (ASHE), Catalog Number 055590.

Chapters in books (2 published)

Lavy, S., and Dixit, M. K. (2014), “Industry-specific needs”, in International Facility Management, Editors: Roper, K. O., and Borello, L., Blackwell-Wiley Publications, 141-166, ISBN: 978-0-470-67400-0. Shohet, I. M., and Lavy, S.

(2010), “Hard facilities and performance management in hospitals”, in Improving Healthcare through Built Environment Infrastructure, Editors: Kagioglou, M., and Tzortzopoulos, P., Wiley-Blackwell Publications, 229-248, ISBN: 978-1-4051-5865-7.

Refereed papers in peer-reviewed journals

Rincon, J., Lavy, S., and Fernandez-Solis, J. L. (2017), “A strategic approach to target capital investment on facility assets: Literature review”, Journal of Facility Management Education and Research, 1(1), 30-39. The Journal of Facility Management Education and Research provides researchers and industry professionals a medium to present relevant research related to the education and practice of facility management. The Journal publishes peer-reviewed papers, case studies, technical notes, and other items of interest to the field of facility management. All papers in this journal are subject to blind review by at least two reviewers.

Shohet, I. M., and Lavy, S. (2017), "Facility maintenance and management: A health care case study", *International Journal of Strategic Property Management*, 21(2), 170-182. The *International Journal of Strategic Property Management* is a peer-reviewed, interdisciplinary journal which publishes original research papers and provides a forum for discussion and debate relating to areas of strategic property management, such as asset management, facilities management, property policy, budgeting and financial controls, risk management, and real estate valuation and investment. All papers in this journal are subject to blind review by at least two reviewers.

Lavy, S., and Nixon, J. L. (2017), "Applications, enrollment, attendance, and student performance in rebuilt school facilities: A case study", *International Journal of Construction Education and Research*, 13(2), 125-141. The *International Journal of Construction Education and Research* is an international refereed journal that publishes original works that address cutting edge issues related to construction around the globe. The Journal recognizes scholarly work in the areas of construction education and construction research by preserving and disseminating research (both quantitative and qualitative) and other original manuscripts that contribute to the understanding of issues and topics associated with construction education and the construction industry. All papers in this journal are subject to blind review by at least three reviewers.

Dixit, M. K., Culp, C. H., Fernandez-Solis, J. L., and Lavy, S. (2016), "Reducing carbon footprint of facilities using a facility management approach", *Facilities*, 34(3/4), 247-259. *Facilities* covers the multidisciplinary topics of people, property and process management expertise which underpin successful organizational functions in the workplace. The journal offers discussion of key issues in facility management to help managers, architects and other interested parties maximize building space resources. The journal became one of CIB's encouraged journals. All papers in this journal are subject to blind review by at least two reviewers. The acceptance rate in this journal is approximately 46%.

Wao, J. O., Ries, R., Flood, I., Lavy, S., and Mehmet, E. O. (2016), "Relationship between admission GRE scores and graduation GPA scores of Construction Management graduate students", *ASC International Journal of Construction Education and Research*, 12(1), 37-53.

Choi, K., Lee, H. W., Mao, Z., Lavy, S., and Ryoo, B. Y. (2016), "Environmental, economic, and social implications of highway concrete rehabilitation alternatives", *ASCE Journal of Construction Engineering and Management*, 142(2), DOI: [http://dx.doi.org/10.1061/\(ASCE\)CO.1943-7862.0001063](http://dx.doi.org/10.1061/(ASCE)CO.1943-7862.0001063). The *Journal of Construction Engineering and Management* publishes quality papers that aim to advance the science of construction engineering, harmonize construction practices with design theories, and further education and research in construction engineering and management. Topics include, but are not limited to, the following: construction material handling, equipment, production planning, specifications, scheduling, estimating, cost control, quality control, labor productivity, inspection, contract administration, construction management, computer applications, and environmental concerns.

Lavy, S., and Saxena, N. (2015), "Quantifying the effect of using BIM and COBie for facility management on work order processing times: A case study", *International Journal of Facility Management*, 6(1), Retrieved November 2, 2015, from: <http://ijfm.net/index.php/ijfm/article/view/133>. The *International Journal of Facility Management* is an open source, Internet accessible journal devoted to the science, technology, and practice of facility management. Through research and practice papers, the journal enables the sharing of new theories, research, thoughts, experiences and concepts for building and workplace strategy, design, management, operations, use and disposition. All papers in this journal are subject to blind review by at least two reviewers.

Lavy, S., Kiss, C. W., and Fernandez-Solis, J. L. (2015), "Linking design and energy performance in U.S. military hospitals", *Architectural Engineering and Design Management*, 11(1), 41-64. *Architectural Engineering and Design Management* discusses the integration of design and construction, and provides a multidisciplinary collaborative format for dissemination of research between the different professions involved in building design and construction. The journal was launched in 2005, and covers topics associated with, but not limited to integration of building design and construction, architectural technology, sustainable design and construction, and education and architectural engineering. The journal became one of CIB's encouraged journals. All papers in this journal are subject to blind review by at least two reviewers.

Lavy, S., Garcia, J. A., Scinto, P., and Dixit, M. K. (2014), "KPIs for facility performance assessment: Simulation of core indicators", *Construction Management and Economics*, 32(12), 1183-1204. *Construction Management and Economics* is a leading international refereed journal that publishes original research concerning the management and economics of building and civil engineering, while also including the management of built facilities. All papers in this journal are subject to blind review by four reviewers. The average acceptance rate in this journal is 48%.

Lavy, S., and Jawadekar, S. (2014), "A case study of using BIM and COBie for facility management", *International Journal of Facility Management*, 5(2), Retrieved December 19, 2014, from: <http://www.ijfm.net/index.php/ijfm/article/view/110/114>.

Lavy, S., Garcia, J. A., and Dixit, M. K. (2014), "KPIs for facility's performance assessment, Part I: Identification and categorization of core indicators", *Facilities*, 32(5/6), 256-274.

Lavy, S., Garcia, J. A., and Dixit, M. K. (2014), "KPIs for facility's performance assessment, Part II: Identification of variables and deriving expressions for core indicators", *Facilities*, 32(5/6), 275-294.

Dixit, M., Culp, C., Lavy, S., and Fernandez-Solis, J. (2014), "Recurrent embodied energy and its relationship with service life and life cycle energy: A review paper", *Facilities*, 32(3/4), 160-181.

Fernandez-Solis, J. L., Porwal, V., Lavy, S., Shafaat, A., Rybkowski, Z. K., Son, K., and Lagoo, N. (2013), "Survey of motivations, benefits and implementation challenges of Last Planner System users", *ASCE Journal of Construction Engineering and Management*, 139(4), 354-360.

Refereed papers in peer-reviewed conference proceedings

Dharela, A., and Lavy, S., (2017), "How technology is transforming user experience? A literature review", the International Facility Management Association (IFMA) World Workplace 2017 – Academic and Research (A&R) Track, Houston, TX, October 18-20, 2017.

Wheeler, D., and Lavy, S., (2017), "Can facility assets be used to create added-value for a firm through strategic alignment? A literature review", the International Facility Management Association (IFMA) World Workplace 2017 – Academic and Research (A&R) Track, Houston, TX, October 18-20, 2017.

Lavy, S., and Dixit, M., (2017), "Key Performance Indicators for facility performance assessment: Measuring core indicators using Building Information Modeling", the International Research Conference 2017, University of Salford, Salford, United Kingdom, September 11-12, 2017.

Lavy, S., Singh, N., Choi, K., and Justin, A., (2017), "The future of facility management in the face of rapidly changing technology", 2017 International Conferences of Maintenance and Rehabilitation of Constructed

Infrastructure Facilities (2017 MAIREINFRA), International Society for Maintenance and Rehabilitation of Transportation Infrastructures (iSMARTi), Seoul, South Korea, July 19-21, 2017.

Lavy, S., Nixon, J., and Samant, S. (2016), "An analysis of student performance measures in newly constructed schools", CIB World Building Congress 2016, Tampere, Finland, May 30-June 3, 2016, Vol. I, pp. 361-371.

Shi, Y., Du, J., Lavy, S., and Zhao, D. (2016), "A multiuser shared virtual environment for facility management", ASCE International Conference on Sustainable Design, Engineering and Construction, Tempe, AZ, May 18-20, 2016, pp. 120-127.

Lavy, S., Eustace, G. N., and Smith S. S. (2016), "Challenges faced in developing an undergraduate Minor in Facility Management: A case study", Associated Schools of Facility Management (ASFM) Inaugural Meeting, Sustainable Facility Management for the Future, Provo, UT, April 13, 2016.

Lavy, S., and Saxena, N. (2015), "Work order processing time – does BIM make a difference...?", the 14th International Conference of the International Building Performance Simulation Association (IBPSA), Hyderabad, India, December 7-9, 2015, pp. 565-572.

Lavy, S., and Saxena, N. (2015), "Quantifying the effect of using BIM and COBie for facility management on work order processing times: A case study", International Facility Management Association (IFMA) World Workplace 2015 – Academic and Research (A&R) Track, Denver, CO, October 7-9, 2015.

Wao, J., Ries, R., Flood, I., Lavy, S., and Mehmet, O. (2015), "Investigating the predictive ability of admission GRE scores on graduation GPA scores of domestic and international students in Construction Management graduate school programs", The 51st Annual International Conference of the Associated Schools of Construction, College Station, TX, April 22-25, 2015.

Lavy, S., and Jawadekar, S. (2014), "A case study of using BIM and COBie for facility management", Proceedings of the International Facility Management Association (IFMA) World Workplace 2014 – Academic and Research (A&R) Track, New Orleans, LA, September 17-20, 2014, pp. 62-76.

Lavy, S., Garcia, J. A., and Dixit, M. K. (2014), "Key performance indicators for a holistic facility performance assessment", Proceedings of the Joint CIB W070, W111 & W118 Conference on Using Facilities in an Open World – Creating Value for All Stakeholders, Copenhagen, Denmark, May 21-23, 2014, pp. 12-23.

Dixit, M. K., Culp, C. H., Fernandez-Solis, J. L., and Lavy, S. (2014), "A facility management approach to reducing energy and Carbon footprint of built facilities", Proceedings of the Joint CIB W070, W111 & W118 Conference on Using Facilities in an Open World – Creating Value for All Stakeholders, Copenhagen, Denmark, May 21-23, 2014, pp. 217-228.

Lavy, S., Garcia, J. A., and Dixit, M. K. (2013), "Identifying, categorizing and quantifying KPIs for facility's performance assessment", Centennial Conferences of the American Society of Civil Engineers (ASCE), Texas Section, Corpus Christi, TX, March 21-22, 2013.

Song, T., Ryoo, B. Y., and Lavy, S. (2018), "Creating OWL-language knowledge map using text mining", accepted for publication and presentation at the US-Korea Conference on Science, Technology, and Entrepreneurship 2018, St. John's University, Queens, NY, August 1-4, 2018.

Lavy, S., Deliwala, M., and Henry, R. (2019), "Designing the modern workplace to inspire the current workforce: A literature review", submitted for possible publication and presentation at the CIB World Building Congress 2019, The Hong Kong Polytechnic University, Hong Kong, China, June 17-21, 2019.

Invited presentations

Lavy, S., (2018), "Facility management: Why is looking at projects from a whole life perspective so crucial in the healthcare industry?", World HealthCare Summit 2018, Allied Academies, Orlando, FL, March 26-27, 2018.

Lavy, S., (2017), "Facility management: Looking at projects from a different (whole life) perspective", Korean Institute of Construction Engineering Management (KICEM) and the Korean-American Construction Engineering and Project Management Association (KACEPMA), Seoul, South Korea, July 18, 2017.

Lavy, S., (2016), "Facility management programs at Texas A&M University", Texas BOMA Board of Directors, Austin, TX, November 18, 2016.

Lavy, S., (2016), "Facility management programs at Texas A&M University", IFMA Dallas Fort-Worth Chapter, Dallas, TX, November 10, 2016.

Lavy, S., (2016), "Facility management programs at Texas A&M University", IFMA Houston Chapter, Houston, TX, August 11, 2016.

Lavy, S., (2016), "Facility management programs at Texas A&M University", IFMA Austin Chapter, Austin, TX, May 12, 2016.

Lavy, S., (2016), "Facility management programs at Texas A&M University", TAPPA 2016 Educational Conference & Business Partner Fair, College Station, TX, April 17-19, 2016.

Lavy, S., (2013), "Facility management: Academic programs at Texas A&M University", TAPPA 2013 Educational Conference & Business Partner Fair, South Padre Island, TX, April 13-16, 2013.

Other peer-reviewed conference presentations (abstract only) (1 presented)

Lavy, S., and Hussain, M. (2009), "Green is good facility management", Texas College and University Facilities Conference, San Marcos, TX, January 7-9, 2009.

Non-refereed papers

Hamilton, D. K., and Lavy, S. (2018), "Calculating health care spaces: Methodology provides much-needed standardization to the process", Health Facility Management Magazine, January/February 2018.

RESEARCH AND TEACHING GRANTS AND DONATIONS

Research grants and gifts accepted

2015 – Lavy, S., "The use of Building Information Modeling (BIM) for analyzing work order processing times", \$12,000 from Broaddus & Associates, TAMU account #444031, Role: Principal Investigator. The

grant provided support for one graduate student for the summer 2015 semester. My responsibilities include reviewing student performance, writing the final report, and other administrative issues as needed.

2013-2018 – Lavy, S., “Enhance Facility Performance Metrics (FPM) that support decision making for primary education (K-12) facilities management”, \$249,338 from Alpha Facilities Solutions, TAMU account #510557, Role: Principal Investigator. My responsibilities include conducting the work, managing data collections, writing periodical reports, and other administrative issues as needed. 2012

Table of Totals by Faculty

Faculty	Books	Chapters	Online Blogs/ Articles	Press Coverage	Peer-reviewed publications	Non-peer reviewed	Unfunded Research	Funded Research	# of Events participated in	Conference presentations
Pentecost, Ray	1					4		\$25,000	21	29
Lu, Zhipeng			1	2	6	2	2	\$3,867,500	9	20
Hamilton, Kirk	2		5		2	6	1		9	2
Rodiek, Susan								\$31,400	5	3
Zhu, Xuemei			19		133	1		\$3,336,182	7	7
Lee, Chanam		2	2		53	8		\$14,139,716	12	78
Mann, George			9	1		4		\$20,000	27	7
Lavy, Sarel	1	2			59	1		\$268,585	5	9
TOTALS	3	4	35	1	247	20	3	\$21,688,383	65	106

3. Center’s Impact on Teaching Activities in the College and at the University over the Past 5 Years.

The tables below contain information about the courses taught by the CHSD executive leadership team during the past five years. The first table is cumulative for all professors and all years; subsequent tables reflect individual teaching loads.

Center’s Impact on Teaching Activities (Cumulative of all professors, all years)

	ARCH	LAND	ENDS	CARC	COSC
2013A*	17	4	3	1	
2013C	19	3	4	1	
2014A	20	2	3	1	
2014C	13			1	
2015A	20	5		1	
2015C	10	1			
2016A	7	3			
2016C	5	3			
2017A	19				
2017C	9	1			
2018A	7	3			3
	146	25	10	5	3
Total classes taught by Leadership group	189				

* “A” following a year denotes the Spring semester. “C” following a year denotes the Fall semester.

NOTE: Professor Mardelle Shepley left Texas A&M University in 2014.

Susan Rodiek				
2013A		ARCH	206	200
		ARCH	693	642
2013C		ARCH	205	903
		ARCH	685	614
		ARCH	691	614
2014A		ARCH	693	642
		ARCH	691	635
		ARCH	685	608
		ARCH	206	503
2014C		ARCH	685	614
		ARCH	691	614
		ARCH	693	601
2015A		ARCH	685	608
		ARCH	691	635
		ARCH	693	642
		ARCH	206	503
2016A		ARCH	206	502
2017A		ARCH	206	503
		ARCH	691	635
		ARCH	685	608
George Mann				
2013A		ARCH	406	504
		ARCH	491	553
		ARCH	681	601
		ARCH	693	632
		ENDS	481	501
2013C		ARCH	607	603
		ARCH	491	530
		ARCH	681	601
		ARCH	685	612
		ARCH	693	602
		ENDS	481	500
2014A		ENDS	481	501
		ARCH	681	601
		ARCH	685	614
		ARCH	693	632

		ARCH	406	504
		ARCH	685	613
2014C		ARCH	481	500
		ARCH	681	601
		ARCH	685	612
2015A		ARCH	481	500
		ARCH	681	601
		ARCH	406	504
		ARCH	685	613
		ARCH	693	658
		ARCH	693	632
2015C		ARCH	481	500
		ARCH	681	601
		ARCH	607	602
2016A		ARCH	406	504
		ARCH	481	500
2016C		ARCH	481	500
		ARCH	681	601
2017A		ARCH	406	504
			481	500
			685	613
2017C		ARCH	481	500
		ARCH	681	601
		ARCH	405	500
2018A		ARCH	481	500
		ARCH	681	601
		ARCH	406	504
Mardelle Shepley				
2013A		ARCH	660	600
		ARCH	691	647
		ARCH	693	647
2013C		ARCH	605	602
		ARCH	660	600
		ARCH	685	615
		ARCH	691	607
2014A		ARCH	691	667
		ARCH	691	647
		ARCH	660	600

2014C			ARCH	660	600
			ARCH	685	615
			ARCH	691	607
Kirk Hamilton					
2013A			ARCH	674	600
			ARCH	689	603
			ARCH	693	624
2013C			ARCH	674	600
			ARCH	605	604
			ARCH	678	600
			ARCH	685	608
			ARCH	691	613
2014A			ARCH	685	657
			ARCH	678	600
			ARCH	674	600
			ARCH	406	501
2014C			ARCH	678	600
			ARCH	685	608
			ARCH	691	613
2015A			ARCH	678	600
			ARCH	685	657
			ARCH	674	600
			ARCH	693	624
2015C			ARCH	605	603
			ARCH	605	603
			ARCH	605	603
2016A			ARCH	674	600
2016C			ARCH	605	603
			ARCH	674	600
2017A			ARCH	674	601
			ARCH	674	600
			ARCH	685	657
			ARCH	691	625
2017C			ARCH	605	603
			ARCH	605	603
			ARCH	605	603
2018A			ARCH	674	600

Xuemei Zhu					
013A			ARCH	212	200
			ARCH	212	500
			ARCH	689	602
			ARCH	691	657
			ARCH	693	657
2013C			ARCH	212	500
			ARCH	675	600
			ARCH	685	620
			ARCH	691	611
2014A			ARCH	693	657
			ARCH	691	657
			ARCH	673	600
			ARCH	212	500
2014C			ARCH	685	620
			ARCH	691	611
2015A			ARCH	212	500
			ARCH	675	600
			ARCH	693	657
			ARCH	691	657
2015C			ARCH	212	500
			ARCH	675	600
2016C			ARCH	212	500
			ARCH	675	600
2017A			ARCH	691	657
			ARCH	675	600
			ARCH	212	500
2017C			ARCH	212	500
			ARCH	675	600
2018A			ARCH	212	500
Zhipeng Lu					
2013A			ENDS	116	200
			ENDS	116	504
2013C			ENDS	115	201
			ENDS	115	504
			ENDS	115	505
2014A			ENDS	116	503

		ENDS	116	504
2014C		ARCH	205	902
		ARCH	216	501
2015A		ARCH	206	502
		ARCH	216	501
2015C		ARCH	205	905
2016A		ARCH	206	500
		ARCH	675	600
2016C		ARCH	205	902
2017A		ARCH	206	505
2017C		ARCH	205	905
2018A		ARCH	606	603
		ARCH	675	600
Jim Varni				
2013A		CARC	602	600
2013C		CARC	601	600
2014A		CARC	602	600
2014C		CARC	601	600
2015A		CARC	602	600
Chanam Lee				
2013A		LAND	321	502
		LAND	632	600
		LAND	691	613
		LAND	693	613
2013C		LAND	601	600
		LAND	691	613
		LAND	693	613

2014A		LAND	691	613
		LAND	693	613
2015A		LAND	200	500
		LAND	602	600
		LAND	691	613
		LAND	693	613
		LAND	601	600
2015C		LAND	421	501
2016A		LAND	421	502
		LAND	211	501
		LAND	412	502
2016C		LAND	412	501
		LAND	693	613
		LAND	691	613
2017C		LAND	601	600
2018A		LAND	101	500
		LAND	412	501
		LAND	412	502
Ray Pentecost				
2017A		ARCH	606	604
2017C		ARCH	607	600
2018A		ARCH	608	601
Sarel Lavy				
2018A		COSC	333	500
		COSC	450	500
		COSC	670	600

4. **Center’s Impact on Service Activities in the College and at the University over the Past 5 Years, documented via one or more of the following:**

Select special recognitions to members of the CHSD Executive Leadership team are noted here.

- | | |
|---------------|--|
| Ray Pentecost | <p>Pentecost, A. R. III (2017) “Afterword,” chapter in <i>Health and Wellbeing in Interior Architecture</i>, edited by Dak Kopec, New York, NY, Routledge. <u>Winner: 2018 Interior Design Educators Council (IDEC) annual book award.</u></p> <p>2016 Named to hold the Ronald L. Skaggs and Joseph G. Sprague Chair of Health Facilities Design</p> <p>2017 President, American College of Healthcare Architects</p> <p>Ferenc, Jeff (2017, April). Building on a legacy of healthcare design (interview of Ray Pentecost), <i>Health Facilities Management</i>, Vol. 30, No. 4, pp. 10-11.</p> <p>2015 Inaugural Cohort, AIA Foundation Design and Health Research Consortium (2014). Texas Tech team leader with Professor Theresa Byrd.</p> <p>Independent Review Panel on Military Medical Construction Standards (IRP), Washington, DC 2014-2015
<i>Chair of the Panel, appointed by the Secretary of Defense</i>
This Panel was appointed by the Secretary of Defense to review military health facility construction activity in light of the world class characteristics recommended by the Defense Health Board and codified in the Military Construction Authorization Act for Fiscal Year 2009.</p> <p>2011-2014 President, International Academy for Design & Health</p> |
| Zhipeng Lu | <p>Outstanding Alumni graduated in the past 15 years. School of Architecture, Southeast University, Nanjing, China, 2016</p> <p>Student Team Advisor
Second Place, 2017 Houston AIA SES Student Competition, Houston, Texas.</p> <p>First Place, 2016 Houston AIA SES Student Competition, Houston, Texas.
Student Design Charrette, 2016 Healthcare Design Conference, Houston, Texas.</p> |
| Kirk Hamilton | <p>Completed PhD studies in Nursing at Arizona State University.</p> <p>2016 ChangeMaker Award, Center for Health Design (Lifetime Achievement & founding of HERD journal)</p> |

Hamilton, DK & S Lavy, eds. (2017). *Area Calculation Method for Health Care*. Chicago, IL: AHA Press.

Hamilton, DK & DH Watkins. (2017). *Evidence-Based Design for Multiple Building Types*. (Chinese Translation from Wiley & Sons) Beijing: China Architecture & Building Press.

Hamilton, DK (2017). "A Decade of HERD," *Health Environments Research & Design*, 10(5)

Susan Rodiek **Thirty-one (31) weeks** was the Most-Read Author in the Department of Architecture, according to ResearchGate.

Developed and published an innovative Weighting strategy for a validated environmental assessment tool; these are extremely rare, even though acknowledged to be very useful to design practitioners.

Xuemei Zhu 2015 Inaugural Cohort, AIA Foundation Design and Health Research Consortium (2014-2017). Texas A&M team leader with Professor Kirk Hamilton.

2013 Interdisciplinary Teaching Funding. Action 2015: Education First Initiative, Texas A&M University. Received \$15,000 Together with Drs. Neuman and Li to develop an interdisciplinary service-learning project.

Chanam Lee 2016 Rural and Environment Paper Award (co-author led by S Lee), American Public Health Association. Environmental predictors of walking among older adults: Neighborhood factors and fall-related injuries among older adults seen by emergency medical service providers.

2016 Excellence in Safety Research for Active Living Poster Award, Active Living Research
Robert Wood Johnson Foundation and National Center for Injury Prevention and Control (co-author led by S Lee)

2015 Advance Scholar, Vice President and Associate Provost for Diversity, Texas A&M University

2015 Honorable Mention, American Public Health Association, Rural and Environment Paper Award (co-author led by Ory). Environmental predictors of walking among older adults.

2014 Outstanding Mentor Award, Department of Landscape Architecture and Urban Planning, Texas A&M University

George Mann	<p>2014 Lifetime Leadership Award, Union of International Architects – Public Health Group (UIA-PHG).</p> <p>2014 President, Union of International Architects – Public Health Group (UIA-PHG).</p>
Sarel Lavy	<p>2018, Research and Scholarly Activity Award, Department of Construction Science, Texas A&M University. Awarded based on the “research and scholarly activity performance for the previous year.” Amount awarded: \$1,500.</p> <p>2017, Construction Management Track, Best Paper Award for the paper “The future of facility management in the face of rapidly changing technology”, Lavy, S., Singh, N., Choi, K.C., and Justin, A., the 2017 International Conference on Maintenance and Rehabilitation of Constructed Infrastructure Facilities (MAIREINFRA), Seoul, South Korea, July 19-21, 2017.</p> <p>2016-2019, The James C. Smith Construction Industry Advisory Council (CIAC) Professorship in Construction Science.</p> <p>2017, Research and Scholarly Activity Award, Department of Construction Science, Texas A&M University. Awarded based on the “research and scholarly activity performance for the previous year.” Amount awarded: \$2,442.</p> <p>2016, Research and Scholarly Activity Award, Department of Construction Science, Texas A&M University. Awarded based on the “research and scholarly activity performance for the previous year.” Amount awarded: \$3,305.</p> <p>2015, Research Excellence Award, Department of Construction Science, Texas A&M University. “The award is given to a faculty member who has demonstrated excellence in scholarship and research.”</p> <p>2014, Research Excellence Award, Department of Construction Science, Texas A&M University.</p>

5. List of Center Fellows and Affiliates

This listing of the Center's Fellows was updated 6/27/2018. At this point the list of Faculty Fellows totaled 85, but an additional 65 have been identified for inclusion in this group. There are six University Fellows listed here, but an additional 3 have been identified for inclusion. The CHSD also has 17 Professional Fellows, with 3 additional individuals identified to be added to the roster. There are also 10 retired TAMU faculty who were CHSD Faculty Fellows.

Active Faculty	College	Email	Phone	APPT
Ray Pentecost, Director	ARCH	rpentecost@tamu.edu	845-7877	
Scott Lillibridge	AGRI	lillibridge@sph.tamhsc.edu	979-458-8220	11/2017
Zhipeng Lu, Assoc. Director	ARCH	zlu@arch.tamu.edu	845-6183	5/2011
Kirk Hamilton	ARCH	khamilton@tamu.edu	862-6606	Charter memb
Chanam Lee	ARCH	Chanam@tamu.edu	845-7056	Charter memb
George Mann	ARCH	gmann@archone.tamu.edu	845-7856	Charter memb
Susan Rodiek	ARCH	rodiek@tamu.edu	862-2234	Charter memb
Sarel Lavy	ARCH	slavy@arch.tamu.edu	845-0632	11/2005
Elton Abbott	ARCH	eabbott@arkitex.com	458-1137	2005
Ahmed K. Ali	ARCH	ahali@tamu.edu	845-7698	10/2016
Eric Bardenhagen	ARCH	bardenhagen@tamu.edu	458-3414	4/2014
Liliana Beltran	ARCH	lbeltran@archone.tamu.edu	845-6545	3/2009
Geoffrey Booth	ARCH	gbooth@archmail.tamu.edu	845-7883	11/2010
Robert Brown	ARCH	rbrown@arch.tamu.edu	458-3192	10/2016
John Bryant	ARCH	jbryant@arch.tamu.edu	458-1058	2005
Charles Culp	ARCH	cculp@tamu.edu	458-3600	9/2007
Bruce Dvorak	ARCH	bdvorak@arch.tamu.edu	458-0628	4/2014

Rodney Hill	ARCH	rhill@arch.tamu.edu	845-7058	8/2012
Chang-Shan Huang	ARCH	cshuang@archmail.tamu.edu	845-7873	2005
Kenneth Hurst	ARCH	khurst5775@gmail.com	214-228-1052	2/2/18
Dawn Jourdan	ARCH	dawnjourdan@tamu.edu	458-4121	10/2017
Dongyan Li	ARCH	dli@arch.tamu.edu	862-1211	4/2018
Wei Li	ARCH	wli@tamu.edu	845-2608	8/2015
Forster Ndubisi	ARCH	fndubisi@arch.tamu.edu	845-1019	4/2014
Galen Newman	ARCH	gnewman@arch.tamu.edu	862-4320	4/2014
Michael O'Brien	ARCH	mobrien@arch.tamu.edu	845-6719	6/2015
Jon Rodiek	ARCH	j-rodiek@tamu.edu	845-7059	5/2010
Zofia Rybkowski	ARCH	zofiarybkowski@gmail.com	510-684-5729	5/2009
Jinsil Seo	ARCH	hwaryoung@tamu.edu	845-7875	3/2013
Lou Tassinary	ARCH	lou@archone.tamu.edu	847-9351	2005
Ward Wells	ARCH	ward@archone.tamu.edu	847-2787	2005
Xuemei Zhu	ARCH	xuemeizhu@tamu.edu	201-0641	2006
Frank Ashley	Bush School	fashley@tamu.edu	862-3469	10/2017
Lawrence Wolinsky	Dentistry	wolinsky@tamu.edu	214-828-8300	10/2017
James Abbey	Mays Bus	jamesdabbey@tamu.edu	862-6515	10/2017
Arvin Mahajan	Mays Bus	mahajan@tamu.edu	845-4876	10/2017
Jon Stauffer	Mays Bus	jonstauffer@tamu.edu	979-458-1765	10/2017
Mark Avnet	ENGN	avnet@tamu.edu	458-2339	12/2013
Thomas K. Ferris	ENGN	tferris@tamu.edu	845-5049	5/2011
John Hurtado	ENGN	jehurtado@tamu.edu	979-845-1659	4/2018
Farzan Sasangohar	ENGN	sasangohar@tamu.edu	458-2337	10/2016

Mark Weichold	ENGN	m-weichold@tamu.edu	979-845-7203	3/2017
Ranjita Misra	Ed & Hum Dev	misra@tamu.edu	845-8726	6/2010
Richard Kreider	Ed & Hum Dev	rbkreider@tamu.edu	979-845-1333	3/2017
James Batteas	Science	batteas@tamu.edu	979-458-2965	10/2017
Debbie Thomas	GeoScience	dthomas@tamu.edu	979-845-3651	11/2017
Mark Benden	SPH	mbenden@sph.tamhsc.edu	979-436-9334	3/2017
Bitu Kash	SPH	bakash@sph.tamhsc.edu	436-9462	3/2015
James Burdine	SPH	JNBurdine@srph.tamhsc.edu	862-2419	4/2014
Jay Maddock	SPH	maddock@tamhsc.edu	979-436-9322	1/2017
Marcia Ory	SPH	mory@tamhsc.edu	845-2387	4/2006
Preeti Zanwar	SPH	zanwar@sph.tamhsc.edu	281-704-1325	11/2017
Brett Trusko	SPH	brett.trusko@gmail.com	925-858-0905	12/2013
Timothy Mulvaney	LAW	tmulvaney@tamu.edu	817-212-3968	10/2017
Gabriel Eckstein	LAW	gabrieleckstein@tamu.edu	817-212-3912	10/2017
Daniel Howard	LibArts	dannhoward@tamu.edu	862-4508	3/2015
Leroy Dorsey	LibArts	l-dorsey@tamu.edu	845-5500	3/2018
Norma Arizpe	LibArts	n-arizpe@tamu.edu	979-845-4639	3/2018
Joshua Hicks	LibArts	joshua.hicks@tamu.edu	979-845-2097	3/2018
Allison Hopkins	LibArts	hopkins@tamu.edu	979-862-9179	3/2018
Emily Rauscher	LibArts	erauscher@tamu.edu	812-630-1813	3/2018
Richard Street	LibArts	r-street@tamu.edu	979-845-0209	3/2018
Lu Tang	LibArts	ltang@tamu.edu	979-845-5500	3/2018
John McDermott	LibArts	mcdermott@tamu.edu	979-845-1856	3/2018

Kristi Sweet	LibArts	k-sweet@philosophy.tamu.edu	979-845-2247	3/2018
Gerianne Alexander	LibArts	galexander@tamu.edu	979-845-8541	3/2018
Mary Meagher	LibArts	m-meagher@tamu.edu	979-845-2564	3/2018
Sherecce Fields	LibArts	safields@tamu.edu	979-845-3774	3/2018
Steven Smith	LibArts	stevesmith@tamu.edu	979-845-2509	3/2018
Vani Mathur	LibArts	vmathur@tamu.edu	979-845-2383	3/2018
William McIntosh	LibArts	w-mcintosh@neo.tamu.edu	979-845-5133	3/2018
Hart Blanton	LibArts	hblanton@gmail.com	860-933-9106	3/2018
Jennifer Lueck	LibArts	jlueck@tamu.edu	979-845-5500	3/2018
Jason Lindo	LibArts	jlindo@tamu.edu	979-446-3969	3/2018
Patti Watson	Medicine	pkwatsonmd@tamu.edu	979-436-0526	10/2017
Jodie Gary	Nursing	jcgary@tamu.edu	979-436-0144	10/2017
Nora Montalvo-Liendo	Nursing	nliendo@tamu.edu	956-668-6345	10/2017
Daniel Sheridan	Nursing	dsheridan@tamhsc.edu	979-436-0177	3/2016
Sharon Wilkerson	Nursing	swilkerson44@tamu.edu	979-436-0111	10/2017
Regina Bentley	Nursing	bentley@tamhsc.edu	979-436-0112	2/2010
Ivan Rusyn	VetMed	irusyn@cvm.tamu.edu	458-9866	10/2017
Christine Foster	Libraries	cfoster@medlib.tamu.edu	979-845-0988	10/2017
Catherine Pepper	Libraries	cpepper@library.tamu.edu	817-395-2446	5/2018
Mansoor Khan	Pharmacy	mkhan@pharmacy.tamhsc.edu	979-436-0562	11/2017
Patrick Louchouart	Galveston	loup@tamu.edu	409-740-4409	11/2017

Faculty Outside University				
Mardelle Shepley	OUTSIDE/ FACULTY	mms449@cornell.edu	607-2558-8758	Charter member
Minyoung Seo Cerruti	OUTSIDE/ FACULTY	myseo2@gmail.com	208-858-2024	3/2010
Ruzica Bozovic-Stamenovic	OUTSIDE/ FACULTY	akiruzica@nus.edu.sg	65-651-63520	5/2011
Naomi Sachs	OUTSIDE/ FACULTY	nsachs@cornell.edu	845-264-2026	5/2006
Ming-Han Li	ARCH	minghan@msu.edu	845-7571	5/2014
Roger Ulrich	OUTSIDE/ FACULTY	roger.s.ulrich@gmail.com		Charter member
Professional				
Debra Harris (architect)		debra@rad-consultants.com	512-529-9355	12/2008
Diana Anderson		diana.anderson@dochitect.com	347-931-0145	3/2015
Ekanem, U. Smart		uwemedimbuk@yahoo.com		4/2014
Emmanuel Umoh		eumoh@msn.com		Not active
Jean Njoroge		jean.njoroge@yahoo.com		9/2013
Macharia Waruingi		macharia@kdnc.org	952-454-3483	Not active
Tammy Thompson		tthompson@patientcenterreddesign.org		1/2014
Warren Kerr		W.Kerr@hamessharley.com.au	61893810200	12/2013
Wynn Huey-Wen Yien		hwyiin@gmail.com		2016
Ron Skaggs HKS Inc		rskaggs@hksinc.com	214-969-5599	10/2017
Craig Beale HKS Inc		jsprague@hksinc.com	214-969-5599	10/2017
Joe Sprague HKS Inc		cbeale@hksinc.com	214-969-5599	10/2017
William Eide		Bill.00.eide@gmail.com		10/2017

Harold Adams		hlajla@comcast.net	410-608-8600	10/2017
Philip Tobey / Smith Group JJR		Philip.Tobey@smithgroup.com		10/2017
Rex Miller MindSHIFT		rex@rexmiller.com	214-498-3055	11/2017
Michael Wood		mwood1494@outlook.com	720-633-3705	7/2018

Retired Former Faculty Fellows				
Paul K. Carlton(HSC)	HSC	carlton@tamhsc.edu	458-7246	
Nancy Dickey (HSC)	HSC	arnold@tamhsc.edu	458-7205	
Jody Naderi (LAUP)	LAUP	jrnaderi@archone.tamu.edu	458-0103	
Don Sweeney (PLAN)	PLAN	dsweeney@archone.tamu.edu	845-7888	
Suzanne Yandow (HSC)	HSC	smyandow@yahoo.com	862-2013	
Sherry Bame	ARCH	sbame@tamu.edu	979-255-0861	
James Varni	ARCH/CoM	jvarni@archone.tamu.edu	862-1095	
Lesley Tomaszewski	HSC	lesleyt@tamu.edu	422-0736	
Michael Duffy	Ed & Hum Dev	m-duffy@tamu.edu	845-1848	
Judith Warren	SPH/HSC	jl-warren@tamu.edu	458-4224	
University		84		
Other Universities		6		
Professional		10		
Former/Retired		10		
TOTAL		117		

6. Center Goals and Aspirations for the Next 5 Years

In five years the Center for Health Systems & Design will be 39 years old, having been founded in 1984 as a joint initiative between the College of Architecture and the College of Medicine. It enjoys great momentum and a strong reputation, both domestically and abroad. Past successes form a solid foundation for its future.

The design community is fragmented and somewhat confused as to whether design and health come together in the design of healthcare facilities or in the design of healthy communities/buildings. The new framework for the CHSD incorporates both, building an explicit connection between the disciplines of architecture and public health. The CHSD aspirational goal is to focus on being:

The authoritative source for understanding the impact of design on health

Strategically, the CHSD has the following overarching goals:

Content: Continue to develop the programmatic strength that comes from an interdisciplinary view of the teaching, research and service in this field. This aligns with the explicit priorities of the university, and positions the College of Architecture to reach across TAMU, and other universities, for interdisciplinary opportunities for research, teaching and service.

Continuity: Position the CHSD for continued growth, with access to the financial, spatial, and human resources required for that growth. Failure to ensure the continued operation of the CHSD at a high level of excellence diminishes the reputation of the College of Architecture and severely limits the ways in which the College can participate in multi-year/ longer term opportunities research, teaching and service.

Connection: Serve as the premier bridge between the Academy and Practice both in the field of designing for health and in the use of research/ evidence in design. The risk of poor connectivity is potential irrelevance of program content and methods, and lack of favor among design students seeking high quality preparation for professional careers.

In furtherance of the above primary goals for the CHSD, the following tactical initiatives are under development or in the early phases of implementation in the area of Content.

1. The Academic Circle

With the broader mission of the CHSD looking at the impact of design on health, it was possible to draw connections between architecture and the other disciplines in TAMU. In 2017 the Academic Circle was created by inviting the Dean of each of the 18 Colleges in TAMU to provide an individual to serve on this capacity. Every College elected to participate. The Circle meets once each semester to discuss progress and opportunities for this interdisciplinary forum to grow and operate effectively.

Responsibilities of the members of the Circle include:

- a) Recommend electives for architecture students and others from other colleges

These serve to underwrite students specializing in any of the six design for health areas in the program matrix in section one of this report without requiring the hiring of new faculty to address all of those areas of interest. A first draft of a book of electives from the other TAMU Colleges is being assembled to help students search for meaningful study opportunities outside the College of Architecture.

GOAL: Create a robust electives directory of courses from every College across TAMU, annually updated and actively used by architecture students to study design for health for the start of the 2020 academic year.

- b) Recommend Faculty Fellows for the CHSD

These faculty perform in the capacity noted in item a) above as teachers of possible elective courses for architecture students, and expand the possibilities for faculty participants on graduate student thesis/ final project committees. The Certificate in Health Systems & Design requires that a CHSD Faculty Fellow be on the students final study committee.

GOAL: Grow the involvement of non-architecture faculty on architecture final study committees to 25% of the committee membership by the start of the 2023 academic year.

- c) Advocate the CHSD Certificate in Health Systems & Design to non-architecture students

Because of the broader mission of the CHSD looking at all aspects of design for health, students from other Colleges may be interested in getting the Certificate in Health Systems & Design. Examples include students in Agriculture studying the impact of locally grown food in urban design, students in Veterinary studies looking at telemedicine possibilities for remote health tracking, and engineering students looking at improving fire and mechanical engineering guidelines for better health and safety. Advocacy for non-architecture students in this regard is vital.

GOAL: Have at least one student from each of the TAMU Colleges pursuing the CHSD Certificate by the start of the 2023 academic year.

- d) Bring one multi-disciplinary research idea @ year to the Academic Circle

This conversation serves to increase the awareness of interdisciplinary research possibilities involving the College of Architecture with what might be viewed as unlikely or historically underutilized College research partnerships. The goal is to

identify a small number of projects each year for further development into research proposals.

GOAL: Submit at least one significant research proposal with a multi-college interdisciplinary team each academic year, beginning with the 2019

2. The Fellows program of the CHSD

Fellows of the CHSD are named to a renewable three-year term for the purpose of adding expertise and breadth of content to the CHSD. Fellows fall into three categories:

- (1) Faculty Fellows: Invited from among the professors at TAMU.
- (2) University Fellows: Invited from other universities to build what is viewed as an important academic linkage either with that individual, or that university, or both.
- (3) Professional Fellows: Invited from practice because their work is relevant to the work of the CHSD.

As has been mentioned above in item 1(b) these individuals provide great breadth and depth of expertise to the CHSD program without requiring the hiring of additional faculty for the College of Architecture. At this writing there are approximately 150 faculty, 9 University, and 20 Professional Fellows either already named or on a list of individuals to be processed and invited to this prestigious position for a total of 179 CHSD Fellows.

Importantly, however, these do not diminish the importance of having an adequate core CHSD faculty to teach required courses, conduct meaningful research, and oversee the operation/ management of the CHSD itself.

GOAL: Continue to grow the roster of CHSD Fellows by inviting all appropriate individuals who are able and willing to contribute to the work of the Center.

3. Dual degree program with the University of Western Australia (UWA), Perth

After several years of conversation and planning, an agreement was signed in May, 2017, between TAMU College of Architecture and UWA School of Public Health to formally begin developing the particulars for a dual Masters degree program: March and MPH. The program is envisioned to operate as a “cohort” program, blending teaching experiences in short (approximately 10 day) face-to-face intensives and online courses over the course of approximately a two year period.

The degree program was originally conceived as an answer to three issues.

- (1) The need for more multi-disciplinary professionals bridging the design communities and the health/ wellness communities.

- (2) The need to provide advanced degree programming in these areas to design professionals who could not leave their jobs for several years in order to pursue an on-campus degree program.
- (3) The desire to grow the design for health program at a College of Architecture that is somewhat space constrained and which desires to offer graduate study opportunities in multiple building types, not just healthcare.

GOAL: Submit the paperwork on the program to Texas officials this fall for consideration/ approval next spring, begin marketing/ recruiting for the program in fall 2019, and accept the first students into the program for the fall of the 2020 academic year.

4. Friday Lecture Series

The Friday lecture series is a very popular one-hour transcript credit event that offers interdisciplinary content in areas of health design and population health. Students come from different academic disciplines across TAMU, and the variety of speakers provides wide-ranging content. The 2017-2018 academic year began a new tradition of holding the presentations in the KAMU television studio with high quality professional recording. The one-hour sessions are then closed captioned by the station and posted online for public viewing. The plan is to continue to capture the presentations and consider ways to use them as online content for TAMU degree/ CHSD certification programs, for bundling and packaging for redistribution, and after translation for possible international distribution and sales.

GOAL: Define a distribution and revenue model for the Friday lecture series videos by the start of the 2019 academic year.

5. Research

Important to the continuous generation of new information for teaching students and impacting the profession is the funding of research. The table showing research activities for the Center highlights the accomplishments of the CHSD leadership. One of the strategies the CHSD is developing is the establishment of “labs” to spotlight specific research interests, and to use them to recruit interdisciplinary faculty from other TAMU Colleges to participate and to help gather research funding.

Currently the CHSD has an Evidence-based Design Lab, led by Dr. Kirk Hamilton, and a Microclimate Studies Lab, led by Dr. Robert Brown. A Wicked Problems Lab has been in the planning stages for over a year, and plans are to launch that programming in the fall, 2019. There has been some discussion about a lab to study military medicine because some of the CHSD faculty and Fellows have strong experience in that field.

The TAMU School of Medicine has an expressed interest in developing a research program in military medical issues, so further conversation on this point is planned. This would

reinforce the CHSD desire to deepen its relationship with the School of Medicine, since the Center is half owned by the School of Medicine and half by the College of Architecture.

The CHSD will continue to participate in the American Institute of Architects (AIA) Design for Health Research Consortium (DHRC). As one of the inaugural members of this group, now composed of 20 research universities in the U.S., the CHSD values its membership and participation in this forum, which focuses on design's impact on health primarily, and only incidentally on design for healthcare.

GOAL 1: Raise the level of TAMU research funding providing indirect support to the CHSD to \$20 million by the start of the 2023 academic year.

GOAL 2: Raise funding in the CHSD labs to the level of \$1 million by the start of the 2023 academic year.

GOAL 3: Define the possibility of a military medicine lab jointly with the School of Medicine by the start of the 2019 academic year.

In furtherance of the above primary goals for the CHSD, the following tactical initiatives are under development or in the early phases of implementation in the area of Continuity.

6. Financial stability for the Center for Health Systems & Design

The CHSD continues to look for ways to financially support its activities, and has traditionally worked hard to collect adequate support for staff and faculty support. The College of Architecture and the Department of Architecture are helpful with financial support, and their support is much appreciated, but additional financial resources are still needed beyond what is provided.

The CHSD is positioned to receive additional operational financial support in several ways outside the support provided by the College of Architecture and the Department of Architecture:

(1) Sustaining support: The Health Industry Advisory Council (HIAC) is composed of firms/ organizations interested in providing \$5,000 annually to underwrite the work of the Center. Currently there are 11 domestic architecture firms and 3 international Chinese organizations supporting the Center.

GOAL: Grow the membership of HIAC from 14 to 20 by fall 2019.

(2) Episodic support: This takes the form of special financial support for events or projects, and may be a one-time relationship or possibly an ongoing relationship. Examples include sponsoring special events, book projects, and symposia.

GOAL: Build interest and involvement with this kind of support until it represents 25% of

the CHSD revenue by the start of the 2023 academic year.

- (3) Legacy support: This takes the form of underwriting a special initiative that will provide some operational support for the Center. An example includes funding the George Mann Chair, half the proceeds from which are earmarked for supporting the CHSD.

GOAL: Have the George Mann Chair fully pledged by the start of the 2019 academic year.

- (4) Indirect costs: The indirect cost assignments from ongoing research projects by faculty in the CHSD is significant and important to the work of the Center.

GOAL: Raise the level of TAMU research funding providing indirect support to the CHSD to \$20 million by the start of the 2023 academic year.

- (5) Visiting Scholars: Until recently Visiting Scholars to the CHSD paid no fees to do so, but last year the policy changed. Visiting Scholars coming for six months pay \$3,000, and for one year they pay \$5,000. At this writing there are two Visiting Scholars who have paid for 1 year and one scheduled to arrive in the fall 2018, also for one year.

GOAL: Have \$15,000 in annual Visiting Scholar revenue by the close of the 2020-2021 academic year.

The CHSD asked three individuals to serve as advisors to the Center to help with overall business and organizational matters, and they have accepted.

Ron Skaggs, FAIA, FACHA ('65): Former Chairman, HKS, Inc.

Harold Adams, FAIA ('61): Former Chairman, RTKL Associates

Phil Tobey, FAIA, FACHA: Senior Vice President, SmithGroup JJR

7. Demographic stability among the core faculty for the CHSD

After successful, uninterrupted operation for 34 years it is tempting to think of the CHSD as simply continuing without paying special attention to the personnel issue, but that is not the case. The current age distribution of the eight core CHSD faculty leadership is as follows:

80 and over: one

70 and over: two, with one of them retiring very soon

60 and over: one

40's: four, two of whom are a married couple

(Within the married couple one member is tenured, and one is neither tenured nor on tenure track. The tenured faculty member is highly successful winning large research support, and the latter is particularly valuable to the CHSD in developing programming and financial opportunities in China.)

The clear message is that change in the personnel roster for the CHSD is imminent, potentially highly disruptive, and planning for that change is essential for the continued effective operation of the Center. The mean age of the CHSD core leadership faculty needs to be lowered.

Also, the retiring faculty member had a strong research history, so the impact on the CHSD is potentially two-fold: fewer faculty to advise students in the health specialty, and a lower profile on funded research.

GOAL 1: Replace the retiring faculty member immediately to 1) maintain adequate faculty support for the large number of students who come to the TAMU graduate architecture program seeking special studies in health and 2) grow the research portfolio for the CHSD.

GOAL 2: Add two new tenure track faculty positions for the CHSD for younger faculty who can begin staffing the planned growth for the Center.

In furtherance of the above primary goals for the CHSD, the following tactical initiatives are under development or in the early phases of implementation in the area of Connectivity.

8. The bridge between the Academy and Practice

The Health Industry Advisory Council (HIAC) was formed in 2003 to provide financial support for the CHSD when design firms joined at \$5,000 per year, and to provide guidance/ advice from industry in shaping CHSD programming. The current membership is architecture firms, but the desire is to expand membership into other sectors, such as engineering, manufacturing, and even construction.

GOAL 1: As mentioned above, to grow the HIAC membership to 20 by the fall 2019.

GOAL 2: Diversify the membership of HIAC by adding 1 firm each from engineering, manufacturing and construction by fall 2019.

A new industry group is planned for the CHSD: The Community Health Advocates and Innovators (CHAI). It will be composed of leadership from the largest health systems in the United States. The invitation for them to join will be about their participation in shaping a research and special events agenda with the Center leadership.

Formation of this group follows the familiar model of "bring a baseball to the sand lot, and the neighborhood kids will come out to play." If the CHSD can assemble this group of health industry leaders, more members of the design, engineering, manufacturing and construction industries will want to participate in the activities of the Center just to gain access to the

industry's health system leaders. Accordingly, there is no plan to charge any fee for them to be a member of CHAI.

The name for the group was chosen to amplify the reality that if change is going to occur in our health system, including the transition from an emphasis on medicine to one of health and wellness, the health systems will have to be centrally involved in making that happen. The CHSD will be inviting their voice to the conversation with industry, and with the other academic disciplines at TAMU.

GOAL: Have the first 10 members of the CHAI group enlisted by fall 2019, and have that group grow to 20 by fall 2020.

The CHSD has embarked on an experiment designed both to further the connection between the academy and practice, and to be a catalyst for change in helping the profession learn how to incorporate research into practice. The Center has purchased access to a proprietary online research database that offers high quality research abstracts and tools to subscribers. At the same time the CHSD has outlined a stepped program for easing practitioners into the use of research in their practices:

Level 1: Ask the CHSD for research help on a design question, and have the CHSD staff or student workers search this subscribed database for results. Practitioners are given the results at no charge, and CHSD staff and students get good practice looking at design issues in the research literature and start a research conversation with a practitioner.

Level 2: Help the practitioner incorporate research into his/ her design model, including establishing design hypotheses and metrics for evaluating design success. This level would be under a contract with the CHSD.

Level 3: Engage with the practitioner in research on the project, following through on the design hypothesis by collecting data, analyzing the data, and establishing findings based on the data. Again, this level of engagement would be by contract with the CHSD.

GOAL 1: Have 50% of the HIAC firms engaged with Level 1 activity by the start of the 2021 academic year.

GOAL 2: Have 20% of the HIAC firms engaged with Level 2 activity by the start of the 2021 academic year.

GOAL 3: Have 10% of the HIAC firms engaged with Level 3 activity by the start of the 2021 academic year.

9. The Wicked Problems Lab

The Wicked Problems Lab is a partnership between the CHSD and Rex Miller's organization MindShift. It represents a forum for the study of particularly challenging problems that cannot be solved and must instead be managed. It is an opportunity for industry and the

Academy to join forces to study the most challenging issues in the industry.

The MindShift model calls for a series of “summit” meetings during a one or two-year period to consider a wicked problem, with carefully selected participants working through a well-researched agenda, after which a book is written about the investigation of the wicked problem. These working meetings are ideal opportunities for academy and practice to interact in a multi-disciplinary way to consider these complex issues from multiple perspectives. The CHAI and HIAC membership organizations will be given an opportunity to participate in the events, and also an opportunity to sponsor them. Joining them will be members of the academy from TAMU (CHSD Fellows and members of the Academic Circle), creating a powerful multi-disciplinary bridging event.

Rex has agreed to modify the timeline to accomplish the series of meetings during the academic year with a book to be written during the summer following the mini-summits. The goal is to have the full cycle of mini-summits and book writing completed in approximately one academic year.

GOAL: Have the first full cycle of wicked problem mini-summits to begin during the 2019-2020 academic year.

10. College of Architecture students

The student community at TAMU, and in particular those at the College of Architecture, are a primary driver for the connectivity efforts of the CHSD. One of the main motivations of HIAC firms is getting preferred access to the graduate students for recruiting into internship and employment opportunities. HIAC firm representatives are often on campus helping with studio reviews, giving presentations to classes, attending HIAC meetings, or attending career days. Students are advised to take full advantage of those encounters and conversations to forge important relationships.

The CHSD provides faculty leadership for architecture students interested in design for health who are organized into the Student Health Environments Association (SHEA). SHEA exists to organize student gatherings on campus around food, speakers or important announcements, or travel to nearby cities to visit firms noted for their design for health practices. This connectivity between students and firms is highly popular with both the firms and students.

The CHSD also underwrites a number of students to travel to the major health conferences during the academic year, most notably the American Society for Healthcare Engineering PDC conference in the spring and the Center for Health Design HCD conference in the fall. In any given academic year, the CHSD subsidizes roughly 25 students to participate in national conferences at a cost of approximately \$25,000.

The CHSD offers a Certificate in Health Systems & Design for students who meet the requirements to earn it. Historically more graduating students have earned this certificate than any other certificate offered in the College of Architecture, but the students have generally been mainly interested in healthcare design. As the focus of the CHSD moves

beyond healthcare to include the broader mission of understanding the way design impacts health, the CHSD hopes to involve more of its graduate students in its certificate program.

The CHSD is offering something new for students this fall. On August 25-26, just prior to the start of classes, the CHSD will offer for the first time a student workshop to present some of the important concepts that should shape a graduate study experience oriented around the impact of design on health. Topics will include, for example, demographics and projections of disease, comparing international health systems, terminology of health design, and technology in contemporary practice. Content will be introductory and broad, offering an overview perspective. The current plan is to offer a similar workshop, with different content, to students just prior to the start of the spring semester. After the second workshop, the program will be evaluated and a determination will be made on continuing to offer the workshop in coming years.

GOAL 1: Find dependable, sustainable support of 10 students for full scholarships, or 20 students for half scholarships, to attend both the PDC and HCD conferences every year by the start of the 2019-2020 academic year.

GOAL 2: Grow the SHEA to include a majority of the graduate architecture students as members by the start of the 2019-2020 academic year.

GOAL 3: Grow the involvement of undergraduate architecture students in SHEA to where 10% of the SHEA students are undergraduates by the start of the 2020-2021 academic year.

GOAL 4: Grow the visibility of SHEA across the TAMU campus so that graduate and undergraduate students from other colleges can comprise 5% of the SHEA membership by the start of the 2021-2022 academic year.

GOAL 5: Increase the number of graduating architecture students earning the Certificate in Health Systems & Design to 75% of the class by the close of the 2022-2023 academic year.

Two initiatives warrant general mention in a general review of CHSD activities.

The **FIRST** is referred to as a “Pilot” project with the TAMU library sciences division. In a meeting with the library sciences representative to the Academic Circle, the activities of the CHSD came under review. The review included the Academic Circle activities in general, the growth of the Faculty Fellows program to over 150 individuals (enlisted and being invited), the development of the HIAC program, the Wicked Problems Lab, the TAMU priority of interdisciplinary research, and a variety of other issues. Other issues relate to the acquisition of research funding, the publicity of the accomplishments of the CHSD, the use of research to change what happens in practice, and the use of social media to link the academy with practice.

The result of that conversation was the “Pilot” project mentioned above. The size and high activity levels of the CHSD components made it an attractive platform for experimenting with this ultra-high level of integration of information technology tools and social media vehicles. As of this writing, the pilot is not well-defined, but the vision is to integrate a great variety of the tools available to the

library sciences team to enhance the scholarship activities of faculty, further the TAMU interdisciplinary studies agenda, and connect the academy with practice, all in ways and to a degree previously unknown at TAMU. One of the more attractive aspects of being involved in this Pilot is the opportunity to offer the HIAC member firms a value unavailable anywhere else.

GOAL: Have the Pilot defined and operational at a basic level not later than the start of the 2019-2020 academic year.

The **SECOND** initiative is one of the uppermost priorities of the CHSD, its website, which in recent years has lost much of its currency, accuracy, and freshness. It is also not especially robust in terms of its technical capabilities compared to similar online resources. The Center is committed to updating this asset, which is capable of showcasing all of the exciting activities of the CHSD, but which is not currently doing so.

GOAL: Rework the CHSD website, achieving both currency and accuracy of content, as well as robust technical capabilities, by the end of the fall 2018 academic semester.

The CHSD is on an upward trajectory, with high energy among the faculty, staff, HIAC firms, and students over the initiatives that are being launched. There is a growing awareness of CHSD activities, such as the Academic Circle and the library sciences Pilot, across the TAMU campus in all Colleges, and among campus leadership, especially in the research arena. Building on a 34-year history of Center success in health design, and even more remarkably the astounding 52-year history of George Mann teaching health design, the core faculty of the CHSD are committed to continuing the tradition of TAMU CHSD international leadership in the field of designing for health.

**Center for Health Systems & Design
Executive Leadership Team**

Director

A. Ray Pentecost III, DrPH, FAIA, FACHA, LEED AP
Ronald L. Skaggs & Joseph G. Sprague Chair of Health Facilities Design
Director, Center for Health Systems & Design
College of Architecture, Texas A&M University
O: (979) 845-7877
M: (757) 754-1291

Associate Director

Zhipeng Lu, PH.D, LEED AP BD+C
Associate Director, Center for Health Systems & Design
Senior Lecturer, Department of Architecture
Texas A&M University
3137 TAMU,
College Station, TX 77843-3137
Phone: 979-845-6183(O)

Members

D. Kirk Hamilton, PhD, FAIA, FACHA, EDAC
Julie & Craig Beale Endowed Professor of Health Facility Design
Fellow, Center for Health Systems & Design
College of Architecture, Texas A&M University
Founding Co-Editor, *Health Environments Research & Design*

Susan Rodiek, Ph.D., NCARB, EDAC
Associate Professor, Department of Architecture
Faculty Fellow, Center for Health Systems & Design
Texas A&M University, MS 3137
College Station, TX 77843-3137
(979) 823-2020
rodiek@tamu.edu www.accesstonature.org

Chanam Lee, PhD
Professor of Landscape Architecture and Urban Planning
Design Research for Active Living
Center for Health Systems and Design
107C Scoates Hall
Texas A&M University
College Station, TX 77843-3137
979-845-7056(T) 979-862-1784(F)
<http://research.arch.tamu.edu/activeliving>

Xuemei Zhu, Ph.D.

Associate Professor
Fellow, Center for Health Systems & Design
Department of Architecture
Texas A&M University
College Station, TX 77843-3137
979-845-3780 (T); 979-862-2735 (F)
xzhu@arch.tamu.edu
<http://research.arch.tamu.edu/activeliving/>

Sarel Lavy, PhD - Associate Professor, M.ASCE

Associate Department Head
Holder of the James C. Smith Construction Industry Advisory Council (CIAC) Professorship in
Construction Science
Co-Editor, Facilities
Fellow of the CRS Center for Leadership and Management in the Design and Construction
Industry, the Center for Health Systems and Design, and the Center for Heritage Conservation
Department of Construction Science, College of Architecture
Texas A&M University
College Station, TX 77843-3137
Tel: 979.845.0632
Fax: 979.862.1572
Email address: slavy@arch.tamu.edu
Website: <http://faculty.arch.tamu.edu/slavy>

George J. Mann, Architect, AIA

The Ronald L. Skaggs, FAIA Endowed Professor of Health Facilities Design
College of Architecture, Texas A&M University College Station, Texas 77843, USA
tel [979 845 7856](tel:9798457856) cell [979 229 5914](tel:9792295914) email: mannji885@gmail.com
First Holder of the Skaggs - Sprague Endowed Chair of Health Facilities Design;
Former Director of the **UIA PHG** - International Union of Architects /Public Health Group
Co - Founder, and Former President of **GUPHA** (Global University Programs in Healthcare
Architecture)
Founder & Advisory Board Chairman, **The RPD** (Resource Planning & Development) **Group**