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2023 AIA Fellowship

Candidate Adele Houghton
Organization Biositu, LLC
Location Houston, Texas
Chapter AIA Texas Society of Architects;

Category of Nomination

Object 6 > Research

Summary Statement

Adele Houghton, international pioneer of a transdisciplinary field called architectural epidemiology, empowers architects to deploy research based co-benefits and leverage design to improve community health and advance climate action — a groundbreaking redefinition of value.

Education

Harvard University T.H. Chan School of Public Health, Boston, MA, 2020-2023, Doctor of Public Health (candidate)

Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, 2010-2013, Master of Public Health

Rice University, Houston, TX, 1999-2003, Master of Architecture

Princeton University, Princeton, NJ, 1995-1999, Bachelor of Arts in Architecture and Urbanism

Licensed in:

Texas

Employment

Biositu, LLC, 2008 - present, 14 years

Green Guide for Health Care, 2005-2008, 3 years

Kirksey, 2003-2005, 2 years



Adele Houghton, AIA

**2023 Fellowship Submission
Object 6: Research**





24 August 2022

RK Stewart, FAIA
Chair, 2023 Jury of Fellows
American Institute of Architects
1735 New York Avenue, NW
Washington, DC 20006

Re: Adele Houghton,
FAIA submission

Dear Chair Stewart:

Adele Houghton, AIA was connecting the dots between the climate crisis, the built environment, and public health long before the rest of us caught on to their inextricable linkages and interdependencies. Uniquely educated and practicing as both architect and public health expert, Adele translates human priorities, evidenced research, and collective action among these diverse professional communities. I am elated to sponsor her for Fellowship in Object 6 - Research.

I met Adele in the summer of 2021 when she joined HKS as a summer fellow, while working on her doctoral degree at the Harvard T.H. Chan School of Public Health. She helped the firm build a framework for identifying and communicating co-benefits for project stakeholders to align project goals, values, and outcomes.

Long before, Adele had garnered credentials and industry recognition in both the then separate worlds of design and public health. She simultaneously pushes and pulls the architecture, design and real estate industries into collective dialogs around social and environmental, responsibility, climate change and public health. As a few examples of her firsts, Adele:

- Ran the first health-centric green building best practice guide in the US, the *Green Guide for Health Care*, which evolved into *LEED for Healthcare*.
- Was one of the first researchers to develop “Environmental Public Health Indicators” that combine neighborhood-scale environmental and population data to guide local climate change policies related to the built environment.
- Was one of the first in the design and green building sector to talk about climate change as an individual and collective public health issue.
- Is first in the design and green building sector to address the “last-mile gap.” Coordinating community plans with individual development projects allow for opportunities to make parcel-scale strategic decisions that amplify into a ripple effects at the community scale.
- Is first in the real estate industry to address the “wrong pocket syndrome” in green and healthy building design. She identified opportunities for developers and their financial backers to generate value during the timeline of the construction loan through actions that allocate environmental, economic and public health benefits to those who need them most.
- Is one of the first architects in the world to achieve a Master of Public Health or Doctor of Public Health degree.

Her novel, evidence-based exploration led Adele to co-create “architectural epidemiology,” a term conveying the importance of a new, transdisciplinary field of research and practice. Clearly and simply, Adele communicates in a way for others to leverage – and act on – this growing body of human and health science research. Time and again, Adele has created, socialized, and promoted practice tools and methodologies to help all architects and designers, and ultimately, society.

Adele’s influence on the built environment outside of the design, construction and real estate industries extends well beyond the scope of a single project or firm. Because of her pioneering work, I passionately recommend Adele Houghton, AIA for elevation to Fellowship. The AIA’s recognition of her contributions to research and the profession would give Adele even greater credibility and standing in those environs, where she continues to represent architects and design thinkers as systemic and holistic problem solvers.

Sincerely,

Julie Hiromoto FAIA, Living Future Accredited, WELL AP, LEED AP BD+C
Principal | Director of Integration



Adele Houghton, international pioneer of a transdisciplinary field called architectural epidemiology, empowers architects to deploy research based co-benefits and leverage design to improve community health and advance climate action – a groundbreaking redefinition of value.



Empowering Architects to Leverage Environmental Sustainability to Advance Public Health



Prioritizing People and Place in Design

Adele advises the design and construction industry and real estate sector on how to prioritize green and healthy building design and operations decisions using a site assessment methodology drawn from public health that considers both environmental exposures and community health needs.



Introducing Public Health to Design

From 2005 through 2008, Adele ran the Green Guide for Health Care (GGHC), the first best-practices toolkit in the United States to take a health-centric approach to green building design and operations and the official pilot for LEED for Healthcare. Adele later acted as lead author for the LEED for Healthcare reference guide supplement and served for seven years as one of a handful of LEED Faculty across the globe.



Introducing Design to Public Health

Adele has been a recognized leader in the public health field since 2008, introducing building design and operations as a key factor in addressing the health effects of climate change, including through a fellowship with the U.S. Centers for Disease Control and Prevention and both volunteer and research projects for national public health associations.



Coining a Term – and a New Field of Research and Practice – Called Architectural Epidemiology

Adele is co-authoring a book, *Architectural Epidemiology* (2023, Johns Hopkins University Press), which calls for launching a new, transdisciplinary subfield straddling design, real estate, and public health.

Building-scale design and operations decisions can influence the impact of environmental exposures on population health outcomes – amplifying positive outcomes and minimizing or eliminating negative ones.

The goal of Architectural Epidemiology is to empower architects and other design and real estate professionals to use design decisions as a catalyst for accelerating global progress on climate, health, and equity.

Adele has spent the past fifteen years practicing and compiling the research base underpinning this new field. In addition to completing several proof-of-concept projects, such as the Twin Cities Central Corridor project in 2014, her book includes 25 case studies representing multiple asset types, sizes, clients, and regions in the U.S. as well as internationally. Her research is also increasingly recognized within schools of architecture – both within the United States and globally.



Redefining Value as an Outcome of Community Benefit Design

Adele's approach generates value-added information to the site assessment phase that was not previously available, thus expanding opportunities for value creation for all project stakeholders and ultimately streamlining the public approvals process.

A true systems thinker, Adele's research investigates and bridges the gap between the goals of local climate change and chronic disease policies, on the one hand, and the financial and programmatic priorities of individual building project teams on the other.

Her application of 'health situation analysis' combines the study of site-specific environmental exposures and population health needs to identify design strategies that will have the greatest benefit to the surrounding community. The design and development team, community groups, and local government find shared alignment around common project goals through this process.

Adele is gifted at translating her public health research into practical design and real estate development recommendations that further the client's aspirational vision as evidenced by her 2021 AIA Upjohn Research Initiative Grant work, enhancing the value of design and professional practice.

Candidate Profile



Adele Houghton, AIA, LEED AP BD+C, O+M, ND, MPH, DrPH '23

Adele Birdsall Houghton comes from a family of architects, including two renowned Texas architects from the early 20th century, Birdsall Briscoe and Hal Thomson, and grew up in Briscoe's final project. She fell in love with the field as an undergraduate when a professor presented design as a new way of seeing the world. Through her studies, she began to understand architecture as a creative process that sets the context for how we live as a society – and how society interacts with nature.

She gravitated to green and healthy building design because of their emphasis on using architecture to improve the lives of individuals and communities. However, once out in the field, she realized that most practitioners do not have the tools they need to center their design concept around the specific environmental health needs of the site. That realization inspired her to develop a research-based method called Architectural Epidemiology to help designers, community groups, and regulators connect the dots between neighborhood environmental health needs and evidence-based building design strategies, so that every architecture project has a positive ripple effect on the surrounding community.



Practice Experience

- **Biositu, LLC** (previously Adele Houghton Consulting, LLC)
President | 2008–Present
Houston & Austin, TX
- **Centers for Disease Control and Prevention**
Environmental Public Health Leadership Institute
2008–2014
Fellow | 2008–2009
Mentor | 2009–2011
Consultant | 2012–2014
- **Green Guide for Health Care™**
Project Manager | 2005–2008
Austin, TX
- **Kirksey**
Green Design Specialist | 2003–2005
Houston, TX

Degree Education

- **Harvard University T. H. Chan School of Public Health**
Doctor of Public Health (Dr PH) | 2020–2023

As a Doctor of Public Health candidate at Harvard University, Adele's goal is to build a community of practice within the fields of design, development, and facility management dedicated to using green and healthy building principles as a means toward accelerating action on climate change, community health, and social equity.
- **Johns Hopkins Bloomberg School of Public Health**
Master of Public Health | 2013
- **Rice University**
Master of Architecture | 2003
- **Princeton University**
Bachelor of Art in Architecture and Urbanism |
Certificates in American Studies, Italian, and French |
Summa Cum Laude | 1999

Professional Accreditations

2006 Registered Architect in the State of Texas
Registration number: 19882

2003 LEED® Accredited Professional:
2009 Building Design + Construction
Operations + Maintenance (BD+C)
2011 Neighborhood Development (ND)

Projects introducing public health into design**Projects** introducing design into public health**Green Building Standard and Sustainability-focused Interiors Standards** (2023)*Stanford Health Care*

Executive advisor - Support a multi-disciplinary team of consultants by sharing institutional knowledge, identifying and summarizing comparison green and healthy building guidance documents. Provide guidance around developing the standards, and weaving a health-based approach into all project deliverables.

Priority Green for Community Benefit (2022–2023)*American Institute of Architects
Upjohn Research Initiative*

Pilot program using health situation analysis to leverage big data with the goal of aligning the financial and programmatic needs of real estate developers with local needs and priorities regarding climate change, health, and equity. Project results will be compiled into a framework report with nationwide relevance and uploaded to the AIA website for general use.

Co-Benefit Design: Creating Value Through Community Benefit Design (2021)*HKS, Inc.*

Support global design firm HKS in developing a framework for integrating climate change mitigation, resilience, chronic disease, and social equity considerations into every design.

Urban Land Institute (ULI) Houston Resilience Podcast Co-Host (2021–Present)*ULI Houston (pro bono)*

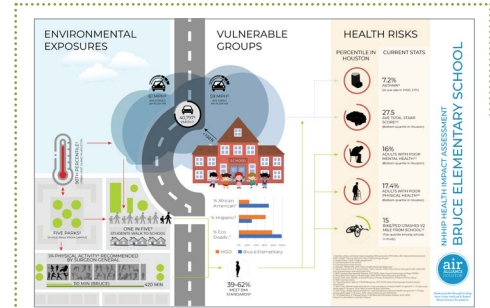
Co-host and subject matter expert for a podcast series designed to raise awareness in the Greater Houston area about the importance of addressing resilience in design and real estate development. The podcast highlights ongoing and future real estate projects in the Houston area that integrate resilience principles. It also educates listeners on the links between resilience topics and public health concerns specific to Houston. And, it connects listeners to technical resources.

APHA Intersectional Conversation on Climate, Health, and Equity (2021–present)*Volunteer effort through the American Public Health Association Intersectional Council Committee on Climate Change and Health*

Effort to elevate climate and health work across APHA sections, spark cross-component conversations to build community within APHA membership, and support cross-component products developed by APHA members.

Architectural Epidemiology (2019–2023)*Johns Hopkins University Press*

Course book introducing a new, transdisciplinary subfield designed to help real estate project teams accelerate progress on community-level climate action and chronic disease goals, particularly among vulnerable groups.

**North Houston Highway Improvement Project Health Impact Assessment**

(2018–2019)

Air Alliance Houston (500 Cities Challenge Grant supported by Urban Institute and Robert Wood Johnson Foundation)

Project manager spearheading: development and implementation of the assessment methodology, conducting a literature review, performing stakeholder engagement, and developing the final report.

Greening APHA Conference (2016–present)*American Public Health Association (pro bono)*

Subject matter expert - Provided recommendations for greening the 2017 APHA conference, communicated greening initiatives, and linked those initiatives to public health. Conceived and implemented the graphic design for three fact sheets that continue to be used annually to educate APHA members about the links between the conference, green building concepts, and public health. Spearheaded social media kits to raise awareness about the initiative in the run up to and during each conference.

Projects introducing public health into design**Projects** introducing design into public health**Develop Metrics Linking Community Planning with Public Health** (2016–2017)*American Planning Association*

Strategic input for toolkit development. Lead author of climate change/emergency management, environmental health, healthy food, and mental health metrics. Presentation development and co-presenter at APA conference.

Develop Climate and Health Environmental Public Health Indicators for Seven-County District in Rural Western Kentucky (2016)*Green River District Health Department*

Identify highest priority climate risks for the District. Develop environmental public health indicators for each risk. Facilitate development of policy applications for the designated indicators. Co-author a peer-reviewed article and co-presenter at conferences.

Urban Land Institute (ULI) Building Healthy Places (BHP) Committee (2015–present)*ULI Houston (pro bono)*

Co-chair and subject matter expert outlining the links between land use / design decisions and local health priorities, blog posts, presentations. Member of the steering committee for the ULI BHP Safe Crossings grant, a project headed by the Harris County Department of Public Health Built Environment Unit with the goal of improving pedestrian and cycling safety in two Houston-area neighborhoods.

The Independent. LEED for New Construction Project (2014–2016)*Aspen Heights via Adaptive & Efficient Design Services, LLC*

Lead sustainability consultant for 50+ story condominium tower in Austin, Texas.

Using Health Data as a Design Tool along the Twin Cities Central Corridor (2014)*Minnesota Pollution Control Agency*

Applied research, group facilitator, development of technical documents applying Health Impact Assessment methodology to the design process.

Environmental Public Health Leadership Institute (EPHLI) Network (2013–2014)*US Centers for Disease Control and Prevention*

Strategic consultant, public health informatics consultant supporting development of interactive website, business plan development, support alumni engagement.

**Association of State and Territorial Health Officials (ASTHO) Climate and Health Program** (2012–2014)*Association of State and Territorial Health Officials (ASTHO)*

Strategic consultant, group facilitator, applied research, development of technical documents supporting state health departments in integrating climate and health work into existing programs.

Integrating Environmental Sustainability and Climate Change into Environmental Public Health Services at the U.S. Indian Health Service (2012–2013)*Bemidji Area Indian Health Service*

Strategic consultant, questionnaire development and analysis, technical support developing peer-reviewed article.

Climate and Health Resilience Decision Support Tool (2012–2013)*Practicum in support of Public Health Informatics Certificate*

Online decision support tool integrated into the U.S. Green Building Council's GBIG (www.gbig.org) web portal. Helps GBIG users assess the vulnerability of a site to climatic events such as heat waves and floods. Encourages project teams to prioritize green building strategies that have been shown to reduce the risk of negative health outcomes following exposure to extreme heat and / or flooding events.

Projects introducing public health into design**Projects** introducing design into public health**Greening Hospital General Purchasing Organization Technical Specifications**

(2012–2013)

Practice Greenhealth

Develop sustainability requirements for purchasing specifications for hospital general purchasing organizations in the U.S. Topics were wide-ranging, including: lighting, drywall, plumbing, carpet, roofing, cabinetry, boilers, ceiling tiles, furniture, building equipment, etc.

**Sustainability Roadmap for Hospitals** (2012)*American Hospital Association (AHA) via Mazzetti*

Develop energy efficiency strategies for hospital operations and maintenance. Incorporated into the AHA Sustainability Roadmap for Hospitals.

<http://www.sustainabilityroadmap.org>

Prevalence of Green Building Strategies Reducing Localized Climate Change Vulnerabilities (2011–2013)*Capstone project in support of MPH candidacy at Johns Hopkins*

Structured literature review assessing the evidence of links between specific green building strategies and positive health outcomes following exposure to two climatic events: extreme heat and flooding. Analysis demonstrating that green building projects do not currently prioritize design strategies based on localized vulnerability to climatic events.

Funded through the Lipitz Policy Award, Johns Hopkins Bloomberg School of Public Health

Designing Healthy & Sustainable Schools Online Course (2011)*Softchalk Training*

Online, asynchronous course about how to design K-12 school buildings and operations to be supportive of occupant health and academic achievement.

Greater Texas Foundation. LEED for New Construction 2009 Certified Gold (2010–2012)*Greater Texas Foundation via Furman + Keil Architects*

Lead sustainability consultant for the non-profit's new headquarters in Bryan, Texas.

Austin / Central Texas Climate Change Environmental Public Health Indicators Pilot Project (2008–2011)*Austin / Travis County Department of Health and Human Services; Austin Climate Protection Program*

Develop a five-step methodology to incorporate environmental public health indicators into climate protection work in Austin, TX. Help establish strong interdepartmental cooperation between City departments.

Funded through the U.S. Centers for Disease Control and Prevention Climate Change Program; National Association of County and City Health Officials; fellow project under Environmental Public Health Leadership Institute through the U.S. Centers for Disease Control and Prevention Environmental Health Services Branch.

Defining Our Local Public Health Roles in Environmental Sustainability and Climate Change (2010)*Summit County, OH Health District; Cuyahoga County, OH Board of Health*

Facilitate interdisciplinary environmental sustainability workshop in Northeast Ohio following Health Impact Assessment methodology. Gap analysis and action plan for greater public health involvement in local climate change and sustainability policies and programs.

Projects introducing public health into design**Projects** introducing design into public health**Integrate Climate and Health into 2009 Hazard Mitigation Plan for Austin, TX**

(2009–2010)

Austin / Travis County Department of Health and Human Services; Austin Office of Sustainability (previously Austin Climate Protection Program)

Member of stakeholder group guiding the 2009 revision to the Hazard Mitigation Plan for “Disaster Ready Austin: Building a Safe, Secure, and Sustainable Community.” Edit the plan to reflect the results of research on the health effects of climate change and the climatic events that are projected to increase in frequency and / or severity in Central Texas. Provide text for new proposed mitigation actions aimed at enhancing climate change preparedness and reducing population vulnerability to climatic events.

LEED for Healthcare Reference Guide Supplement (2010)

U.S. Green Building Council

Lead author and project manager. Content expert for LEED Online submittals.

Stanford University Medical Center LEED New Construction Project (2009–2019)

Stanford University Medical Center via Mazzetti

Lead sustainability consultant for the new adult hospital in Palo Alto, CA.

Green Guide for Health Care 2009 Revised Operations section and Strategic Visioning Process (2008–2009)

Green Guide for Health Care

Project manager coordinating an extensive network of volunteer subject matter experts to revise the Green Guide for Health Care’s Operations section and develop a coherent strategic future vision.

U.S. Green Building Council Faculty and Subject Matter Expert (2007–2014)

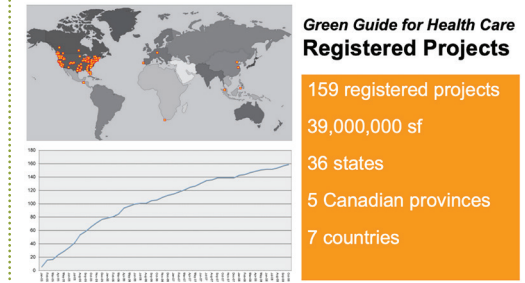
U.S. Green Building Council and local USGBC chapters

100, 200, and 300 level in-person workshops and online courses. Topics: Introduction to Green Building; Building Design & Construction; Operations & Maintenance; Healthcare.

Project Manager and Pilot Project (2005–2008)

Green Guide for Health Care

Provided technical support to over 150 Green Guide for Health Care registered projects from 2005–08, many of which were cross-registered with LEED. Developed monthly webinar series, invited speakers, and acted as moderator.



*“The trait I most appreciated about working with **Adele Houghton** was the honesty and transparency in her process. Our client was mired in politics, so it was important for our team to be forthright and to shine a light on the path forward. I really came to appreciate that even more later in the project. By asking people to document and quantify our goals early, the team had to either commit or admit that it was not a priority. **Adele** may consider this to be a normal part of the process, but I found it an incredible way to finally move forward with a squirrely design process. **Adele** is also a highly efficient, focused, and organized person, one with no equal among my colleagues.”*

~ Candace Taira, RA
Rafael Viñoly Architects

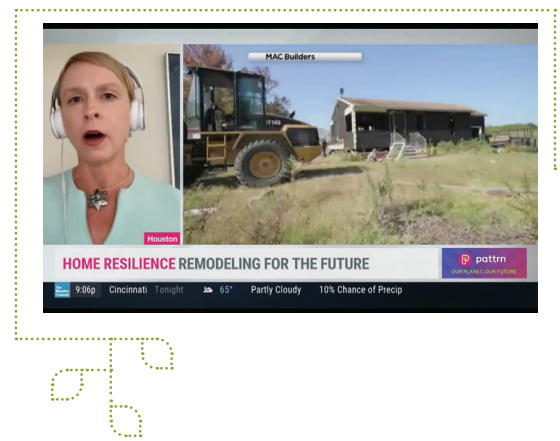
Speaking Engagements introducing public health into design

Speaking Engagements introducing design into public health

- 09/2022 **Home Resilience: Remodeling for the Future**
Interviewee.
The Weather Channel, pattn Program.
- 08/2022 **Centering Climate, Health, and Equity Can Generate New Value Streams for both Communities and Real Estate Teams**
Presenter.
I-LinCP Lonestar Sustainability Forum.
- 07/2022 **ULI Health Leadership Network: Climate & Health Podcast**
Moderator and presenter.
- 06/2022 **The Future of Architectural Education: Public Health as a Method to Advance Climate Action Through Design**
Presenter and panelist.
Royal Architectural Institute of Canada
Virtual Conference on Architecture
- 06/2022 **Leveraging Real Estate to Optimize Human Capital**
Presenter and Panelist.
Center for Active Design webinar.
Available at: <https://www.youtube.com/watch?v=v2h1LXhUhBA&t=7s>.
- 06/2022 **Design the Future Podcast, Episode 65**
Guest.
Available at: <https://www.designthefuturepodcast.com/episodes/adele-houghton>.

- 05/2022 **Co-Benefits of Leveraging the Built Environment to Protect People Living with Disabilities from the Negative Health Effects of Climate Change**
Presenter.
University of Texas Health Science Center at Houston Grand Rounds
- 04/2022 **Context Matters: People + Place Leads to Regenerative Design**
Presenter.
Happold Foundation City Conversations: What is Regenerative Design?
Available at: <https://www.youtube.com/watch?v=YtUB-TkaNu4>.
- 03/2022 **Holistic Approaches to Climate Change and Health: Exploring the Case for Optimizing Co-Benefits in Real Estate**
Moderator and Presenter.
ULI Building Healthy Places Webinar.
Available at: <https://knowledge.uli.org/en/webinars/2022/holistic-approaches-to-climate-change-and-health>
- 03/2022 **Architectural Epidemiology: Introducing a Transdisciplinary Field of Study & Practice Using Real Estate as a Mechanism for Epidemiological Interventions on Climate Change & Chronic Disease**
ARCC-EAAE 2022 Annual Meeting

- 02/2022 **Design for Equity**
Guest on Architecting Clubhouse Podcast.
Available at: <https://www.dropbox.com/s/uov8pzaxpz2osqp/Clubhouse%202022.02.07.mp3?dl=0>.
- 10/2021 **Architectural Epidemiology: A New Method for Leveraging Building Design and Operations to Influence Community Health Outcomes**
Co-Presenter: Carlos Castillo-Salgado.
American Public Health Annual Meeting
- 10/2021 **The Role of Building Design in Reducing the Risk of Human Exposure to Air Pollution: Systematic Review of the Literature**
Co-Presenters: Carlos Castillo-Salgado, Bakeyah Nelson, Corey Williams.
American Public Health Annual Meeting
- 10/2021 **Western Hills Viaduct Project: Community Health Considerations**
AIA Cincinnati



Speaking Engagements introducing public health into design

Speaking Engagements introducing design into public health

- 08/2021 **Learning from COVID: Green Building and Equity Through the Lens of “Co-Benefits”**
Gulf Coast Green
- 06/2021 **Learning from COVID: Green Building Through the Lens of “Co-Benefits”**
USGBC Live
- 05/2021 **Learning from COVID: A Public Health Approach to Green and Healthy Building**
Austin Energy Green Building Seminar
- 04/2021 **Vulnerability²: The Amplifying Effect of Climate Change on Public Health Challenges in Rural Western Kentucky**
Sierra Club – Equity and Policy in Public Health Impacts of Climate Change
Available at: <https://youtu.be/coDcJDbMnHY>
- 10/2019 **Resilience – Creating a Pathway to a Stronger & Safe Community (Missouri City, TX)**
Panelist.
Leadership Now Symposium.
- 09/2018 **Role of One Health Practitioners in Protecting Humans and Animals from the Health Effects of Climate Change (Houston, TX)**
Harris County Public Health One Health Conference.



- 02/2018 **Environmental and Health Data in Context: A Designer’s Guide. Community Leadership through Design. (Cincinnati, OH)**
Cincinnati AIA Vision.
- 11/2017 **Developing a Local Environmental Public Health Tracking Program for Climate Change in Rural Western Kentucky: Assessment, Baseline Indicator Development, and Impact on Existing Policies and Programs (Atlanta, GA)**
Co-presenters: Clayton Horton, Jessica Austin, and Abby Beerman.
American Public Health Annual Meeting.
- 11/2017 **Vulnerability²: The Amplifying Effect of Climate Change on Children’s Environmental Health Issues in Rural Kentucky (Bowling Green, KY)**
Kentucky Children’s Environmental Health Summit.
- 10/2017 **When a Broad Brushstroke Doesn’t Work: Using Small Scale Datasets to Solve Big Scale Problems (Salt Lake City, UT)**
Keynote presentation.
Utah Sustainability Summit.
- 05/2017 **Applying Health-Based Planning Metrics to Building Design (New York, NY)**
American Planning Association National Planning Conference.
- 06/2018 **Applying LEED to Protect Communities from the Health Effects of Climate Change (Anaheim, CA)**
National Environmental Health Association Annual Education Conference.
- 06/2018 **Communicating Across Disciplines: Using Evidence to Frame Climate Change as both an Environmental and a Health Issue (Anaheim, CA)**
NEHA AEC.
- 04/2018 **Using the NCA to Develop a Local Environmental Public Health Tracking Program for Climate Change in Rural Western Kentucky (Washington, DC)**
The Medical Society Consortium on Climate & Health.

Speaking Engagements introducing public health into design

Speaking Engagements introducing design into public health

- 03/2017 **6 Ways to Use Place-Based Health Data to Prioritize Green Building Strategies (Houston, TX)**
Gulf Coast Green.
- 05/2016 **Urban Planning’s Role in Universal Health Care (Houston, TX)**
NextCity Vanguard Conference.
- 11/2014 **Integrating Health and Wellness into Design (Houston, TX)**
Gulf Coast Bioneers.
- 11/2014 **Five Ways Population Health Data Can Add Value To Health Care Design (San Diego, CA)**
Healthcare Design Conference and Expo.
- 11/2014 **Toolkits for Building Capacity at Local Public Health Departments Around Climate Change and Human Health (New Orleans, LA)**
Co-presenter: Dr. Paul English.
American Public Health Association Annual Meeting.
Available at: <https://apha.confex.com/apha/142am/webprogram/Paper296536.html>
- 10/2014 **5 Ways Health Data Analysis Can Add Value to Green Design (New Orleans, LA)**
Greenbuild.
Available at: <http://www.usgbc.org/education/sessions/greenbuild-international-conference-and-expo-2014/5-ways-health-data-analysis-can>

- 09/2014 **5 Ways Health Data Can Add Value to Green Design (Chicago, IL)**
BUILDINGChicago/Greening the Heartland.
Available at: https://ww2.aievolution.com/gth1401/files/content/events/1860/1530_Houghton_0131.pdf
- 06/2014 **Leveraging Health Data to Enhance Place-Based Resilience in Green Building Designs (Chicago, IL)**
AIA National Convention 2014
- 06/2014 **Climate Change Environmental Public Health Indicators: Guidance for Local Health Departments (Nashville, TN)**
Co-presenters: Dr. Paul English, Dr. Vjollca Berisha.
Council of State and Territorial Epidemiologists (CSTE) 2014 Annual Conference.



- 06/2014 **Linking Health at Home and School (Houston, TX)**
Gulf Coast Green
- 05/2014 **Leveraging Place-Based Health Data to Enhance Green Building Designs (Saint Paul, MN)**
Keynote presentation.
IMPACT Conference.
Available at: <https://www.youtube.com/watch?v=HkJFoC-Q5XU&t=14s>
- 05/2014 **A Human Centered Approach to Increased Efficiency + Health at Home and at School (Nashville, TN)**
Co-presenter: Rives Taylor.
2014 National Healthy Homes Conference.
Available at: http://www.healthyhomesconference.org/presentations/4-V_A%20Human%20Centered%20Approach_Houghton.pdf
- 04/2014 **Leveraging Health Data to Enhance Place-Based Resilience in Green Building Designs (Washington, DC)**
AIA Design & Health Summit: Value of Design.
- 12/2013 **Leveraging Health Data to Enhance Place-Based Resilience in Green Building Designs (San Antonio, TX)**
2013 Clean Air Through Energy Efficiency (CATEE) Conference.

Speaking Engagements introducing public health into design

Speaking Engagements introducing design into public health

11/2013 **Building Resilience, One Development at a Time (Boston, MA)**
 Presentation on “Coast is Clear: Don’t Be So Sure!” panel.
 2013 American Public Health Association Annual Meeting.
 Abstract available at: <https://apha.confex.com/apha/141am/webprogramadapt/Paper293505.html>.

10/2013 **Using Vulnerability Maps to Inform Design (Austin, TX)**
 Climate Resilience & Adaptation Strategies: A Capital Area Symposium.

09/2013 **Using HIAs as a Green Building Design Tool to Enhance Resilience to Climate Change (Washington, DC)**
 2013 National Health Impact Assessment Meeting



07/2013 **Building Capacity at Local Public Health Departments Around Climate Change and Human Health (Washington, DC)**
 2013 National Environmental Health Association Annual Conference.
 Abstract available at: <http://e.neha2013aec.zerista.com/event/member/72540>

05/2013 **Quantifying Resilience: Influences, Impacts, and Improvement (Seattle, WA)**
 2013 Living Futures Unconference and Government Confluence Conference.

04/2013 **Increasing Sustainable Developments, Modernizations / Retrofits, and Sustainable Communities (San Antonio, TX)**
 Co-presenter: San Antonio Housing Authority.
 2013 Texas NAHRO (National Association of Housing and Redevelopment Officials) Conference.

03/2013 **Community Resource for Health, Wellness, and Resilience: The Business Case for a New Model of Care (Austin, TX)**
 AIA Austin Academy of Architecture for Health.

10/2012 **Using Health Impact Assessments as a Green Building Design Tool to Reduce Localized Vulnerability to Climate Change (San Francisco, CA)**
 2012 American Public Health Association Annual Meeting (poster presentation).
 Abstract available at: <https://apha.confex.com/apha/140am/webprogram/Paper269608.html>

09/2012 **The Sustainable Healthcare Mission: Patients, Planet, Profit (Austin, TX)**
 U.S. Green Building Council Central Texas Balcones Chapter, 2012 Annual Lecture

08/2012 **How to Approach Efficiency and Health as Complementary, not Competitive Priorities (San Antonio, TX)**
 U.S. Department of Housing and Urban Development San Antonio Field Office, 2012 Public Housing Authority Energy Conference

05/2012 **PRACT 250: Integrative Process: Closing the Gaps Between Design, Construction, Operations & Maintenance (Online)**
 U.S. Green Building Council webinar.
 Listen to archive at: <http://usgbc.peachnewmedia.com/store/seminar/seminar.php?seminar=9956>

Speaking Engagements introducing public health into design

Speaking Engagements introducing design into public health

2012 **Leveraging LEED Design & Construction for Optimal Operations & Maintenance (Online)**
Co-developer and faculty.
400 Level Mastery ten-week online course. Approved for 40 GBCI LEED Specific CE Hours. 40 AIA/HSW/SD LUs.

10/2011 **Using Health Impact Assessments as a Tool for Designing Climate Change Resilience into Green Building and Planning Projects in Alaska (Anchorage, AK)**
2011 AIA Alaska Annual Conference.

10/2011 **John Snow’s Legacy: the Next Generation of Sustainable Water Solutions (Austin, TX)**
SXSW Eco Conference.



07/2011 **Success Against All Odds: Launching a Local Climate Change & Health Program in an Era of Budget Cuts (Hartford, CT)**
Co-Presenter.
2011 National Association of County and City Health Officials Annual Conference.

05/2011 **Using Built Infrastructure to Prepare for the Impacts of a Changing Climate (Houston, TX)**
Gulf Coast Green.

2011 **Designing Green Schools that Advance Public Health (online)**
Developer.
Two-part interactive online course developed for American Clearinghouse on Educational Facilities under grant from U.S. Department of Education. Links: Part 1; Part 2.

10/2010 **City of Austin’s Climate Change Tracking System (Austin, TX)**
2010 Texas GIS Forum.

10/2010 **Designing Green Schools that Advance Public Health (Austin, TX)**
USGBC Central Texas 2010 Green Schools Symposium.

06/2010 **Central Texas Climate Change Environmental Public Health Indicators Tracking Tool Incorporating Vulnerability Assessments (San Antonio, TX)**
Co-presenter.
2010 National Energy and Utility Affordability Conference.

05/2010 **Energy, Environment and Public Health: Making the Connection (Columbus, OH)**
Keynote address. Ohio Public Health Combined Conference.

09/2009 **Sustainability Needs & Standards in Healthcare Environments: Impact on the Office Furniture & Interiors Industry (Austin, TX)**
Office Furniture Dealers Association Dealer Strategies Conference.

05/2009 **Interior Design in Schools for Health & Academic Achievement (San Antonio, TX)**
USGBC Central Texas 2009 Green Schools Symposium.

01/2009 **Interior Design for Health and Productivity (Austin, TX)**
Austin Energy Green Building Program Seminar.

2005–07 **Preview to LEED® for Healthcare Workshop**
Developed and annually revised the 4-hour training module and co-presented at Greenbuild 2005, 2006, 2007.

11/2006 **A Global Context for Healthy, Healing Environments (Monterrey, Mexico)**
Mexico Green Building Council’s First Annual Conference



AMERICAN INSTITUTE OF ARCHITECTS

AIA Houston Gulf Coast Green Symposium

Website: <https://aiah-gulfcoastgreen.org/>
 2005, Speaker Chair
 2006, Conference Vice-Chair
 2008, Conference Chair
 2010, Publicity, Press & Media

AIA Houston Michael Meyers Design Competition (2004)

Website: <https://aiahouston.org/v/site-home/Michael-G-Meyers-Design-Competition/3k/>
 Committee to mentor middle school students for a Design Competition

Tour de Houston (2004)

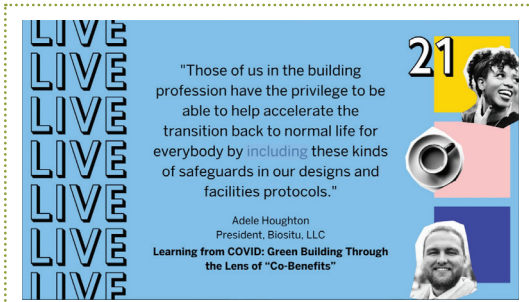
Website: <https://www.houstontx.gov/tourdehouston/>
 Volunteer for AIA Houston group participating in this annual bike tour of Houston

AIA National Design and Health Summit: Value of Design (2014)

AIA Design & Health Summit: Value of Design
 Report: <https://www.aia.org/resources/8716-setting-the-context-designing-healthy-communi:31>
 Video interview: <https://www.youtube.com/watch?v=gy99tYF7NDA&t=3s>

AIA Cincinnati VISION Leadership Program (2018)

Website: <https://aiacincinnati.org/programs/vision>
 Delivered Workshop for VISION fellows and the community: Environmental and Health Data in Context: A Designer’s Guide
 Delivered Leadership workshop for VISION fellows: Community Leadership through Design



American Planning Association

Health Impact Assessment Toolkit Advisory Committee. (2016–2017)

Adele brought technical considerations down to the parcel scale so that planning metrics designed to advance positive health outcomes could be integrated into building design and operations:

- Develop Metrics Linking Community Planning with Public Health

- Strategic input for toolkit development

- Lead author of climate change/emergency management, environmental health, healthy food, and mental health metrics

- Presentation development and co-presenter at APA conference

<https://planning-org-uploaded-media.s3.amazonaws.com/document/Metrics-Planning-Healthy-Communities.pdf>

American Public Health Association

Governing Council, Environmental Health Section Representative. (2015–2017)

Environment Section. (2008–present)

Intersectional Council Committee on Climate Change and Health. (2008–present)

Council of State and Territorial Epidemiologists

State Environmental Health Indicators Collaborative Climate Change Indicators Workgroup. (2008–2014)

National Association of County and City Health Officials

Environmental Public Health Performance Standards Workgroup. (2010–2011)

Urban Land Institute

Advisory Council, Building Healthy Places Fellowship Program. (2017–2019)

Co-Chair, Building Healthy Places Committee, Houston Regional Council. (2016–2021)

Resilience Committee, Houston Regional Council. (2021–present)

Urban Land Institute (ULI) Houston Resilience Podcast Co-Host. (2021-present)

U.S. Climate and Health Alliance

U.S. Environmental Protection Agency

Building Healthy Hospitals Technical Advisory Group. (2006)

U.S. Green Building Council (USGBC)

Texas Gulf Coast Chapter. (Board member, 2014–2016)

South Central Region Regionalization Task Force. (2008)

Biositu, LLC has been a member of USGBC National since 2008

LEED Accredited Professional. (2003)

Personal Honors, Awards, and Recognition

- 2022–23 **Harvard New World Social Innovation Fellow**
Harvard Social Innovation and Change Initiative at the Harvard Kennedy School Center for Public Leadership
- 2022 **Harvard Climate Internship Fellow**
Harvard University Office of the Vice Provost for Climate and Sustainability, Harvard Kennedy School Office of the Dean, Harvard Kennedy School Mossavar-Rahmani Center for Business and Government
- 2020–23 **Harvard T.H. Chan School of Public Health Center for Climate, Health, and the Global Environment (C-CHANGE)**
Student Ambassador
<https://www.hsph.harvard.edu/c-change/get-involved/harvard-c-change-student-ambassadors/>
- 2016 **NEXT CITY Vanguard Fellow**
- 2013 **Delta Omega Honor Society Alpha Chapter**
Johns Hopkins University
- 2008 **20 Who Are Making a Difference**
Healthcare Design magazine
“Adele Houghton’s leadership on the *Green Guide for Health Care* took the “greening healthcare” landscape and broke it down into digestible credits so greening can be continuously improved over time. The self-certifying toolkit leads hospitals through a step-by-step approach to continuous environmental quality improvement initiatives.”
- 2007–14 **USGBC Faculty**

- 2005 **1st Place Award Best Newsletter**
SMPS Houston
kirkseyGREEN Design Strategies
- 2001 **Certificado Superior de la Lengua Española**
Camera de Comercio, Alcalá de Henares, Spain
- 2001 **Intern at the United Nations Secretariat**
- 2001 **Mary Ellen Hale Lovett Traveling Fellowship for Talented Graduate Students in Architecture**
Rice University
- 1999 **William Feay Shellman Travel Prize**
for Excellence in Drawing and Drafting
Princeton University
- 1999 **Grace May Tilton Award**
for the Excellence of a Thesis on the Arts in America
Princeton University
- 1999 **Gamma Kappa Alpha, the National Italian Honor Society**
Princeton University

Scholarly Citations

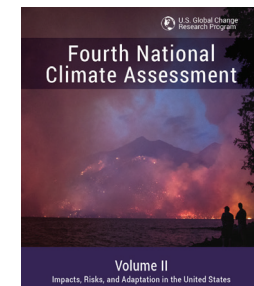
For research-focused professionals it is a great honor to be cited within scholarly journals in one’s chosen field of study and/or expertise. Since 2011, Adele has been cited **113** times based on her unique perspective. Particularly significant citations include:

Carter, L., A. Terando, K. Dow, K. Hiers, K.E. Kunkel, A. Lascurain, D. Marcy, M. Osland, and P. Schramm, 2018: Southeast. *In Impacts, Risks, and Adaptation in the United States: **Fourth National Climate Assessment, Volume II*** [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 743–808. doi: 10.7930/NCA4.2018.CH1

Di Napoli, C., McGushin, A., Romanello, M. et al. Tracking the impacts of climate change on human health via indicators: lessons from the **Lancet Countdown**. *BMC Public Health* 22, 663 (2022). <https://doi.org/10.1186/s12889-022-13055-6>

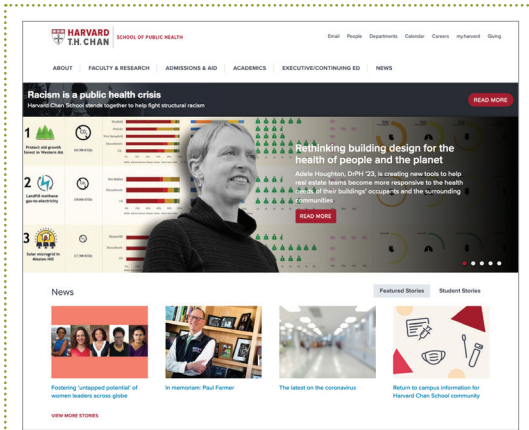
ResearchGate states that Adele’s research influence is: **Higher than 69%** of all ResearchGate members

Higher than 84% of researchers in Architectural Engineering



Publications introducing public health into design

Publications introducing design into public health



2023 **Estimating the Relative Benefit to Local Climate and Chronic Disease Policies of Targeting Green and Healthy Building Strategies to Address Neighborhood Social Vulnerability.**

To be published in ARCC-EAAE 2023 International Conference: The Research-Design Interface.

2022 **The Gap in Capacity Building on Climate, Health, and Equity in Built Environment Post-secondary Education: A Mixed-Methods Review.**

To be published (2022) in *Frontiers in Public Health Research Topic "Climate and Health Education: Defining the Needs of Society in a Changing Climate."*

2022 **Bridging the Gaps between Public Health and Architecture: A Research Agenda for Architectural Epidemiology.**

To be published in 2022 AIA/ACSA *Intersections Research Conference: Resilient Futures*. In press.

Fall/2022 **“Architectural Epidemiology” contribution to The Pandemic Effect, edited by Blaine Brownell**

Co-Author: Carlos Castillo-Salgado.

Available at: <https://bit.ly/3xS7I5Z>

7/2022 **Architectural Epidemiology: Introducing a Transdisciplinary Field of Study and Practice Using Real Estate as a Mechanism for Epidemiological Interventions on Climate Change & Chronic Disease**

Co-Author: Carlos Castillo-Salgado.

In *Proceedings of the ARCC-EAAE 2022 International Conference, Resilient City: Physical, Social, and Economic Perspectives*. 2022: 41-48

Available at: <https://bit.ly/3DNRJd8>

10/2021 **“Soft Infrastructure” Is Crucial for a Post-Carbon World**

Common\Edge.

Available at: <https://bit.ly/3UFCx7E>

10/2021 **Unlocking the Value Proposition of ESG in Design**

Student Perspectives, the Harvard T.H. Chan School of Public Health DrPH blog site.

Available at: <https://bit.ly/3fkUFDR>

9/2021 **Promoting Health and Creating Value through Co-Benefit Design**

Co-Authors: Upali Nanda and Rand Ekman.

Building Design + Construction.

Available at: <https://bit.ly/3LL4ibe>

“Adele is in this for the long haul. She is dedicated to the slow work of shifting the practice of architecture and construction to better align with the stark reality of climate change, all in the face of well-funded interests that are thriving within the current outdated real estate development culture. Adele sees the obstacles with clear eyes and is deeply dedicated to pushing forward to a better built world.”

~ Fawn Phelps, Director of Leadership Development

Office of Educational Programs | Harvard T. H. Chan School of Public Health

<https://www.hsph.harvard.edu/news/features/adele-houghton-architectural-epidemiology/>

Publications introducing public health into design

Publications introducing design into public health

6/2021 **“Co-Benefits” as a Lens Through Which COVID-19 Building Upgrades Can Advance Environmental Sustainability, Climate Mitigation and Adaptation, and Social Equity**

Harvard Public Health Review. Vol 29.
Available at: <https://bit.ly/3fkfXBm>

4/2021 **This Earth Day, Let’s #RemodelforResilience**
ecoAmerica Climate for Health blog.

Available at: <https://bit.ly/3BJcQm>

4/2021 **Bring the Outside In – An Approach to Accelerating Climate Action through Design**

Connection. 19(01):34-35.
Available at: <https://bit.ly/3dFzKej>

1/2020 **Analysis of Correlations Between Neighborhood-level Vulnerability to Climate Change and Protective Green Building Design Strategies: A Spatial and Ecological Analysis**

Co-Author: Carlos Castillo-Salgado.
Building and Environment. 168:106523.
Available at: <https://bit.ly/3r9INat>

2/2019 **Associations Between Green Building Design Strategies and Community Health Resilience to Extreme Heat Events: A Systematic Review of the Evidence**

Co-Author: Carlos Castillo-Salgado.
International Journal of Environmental Research and Public Health. 16(4):663.
Available at: <https://bit.ly/3r7oQ3T>

12/2017 **Green Builders Can Use ‘Big Data’ to Make Design Decisions**

Building Design + Construction.
Available at: <https://bit.ly/3dFcxxy>

11/2017 **Health Co-Benefits of Green Building Design Strategies and Community Resilience to Urban Flooding: A Systematic Review of the Evidence**

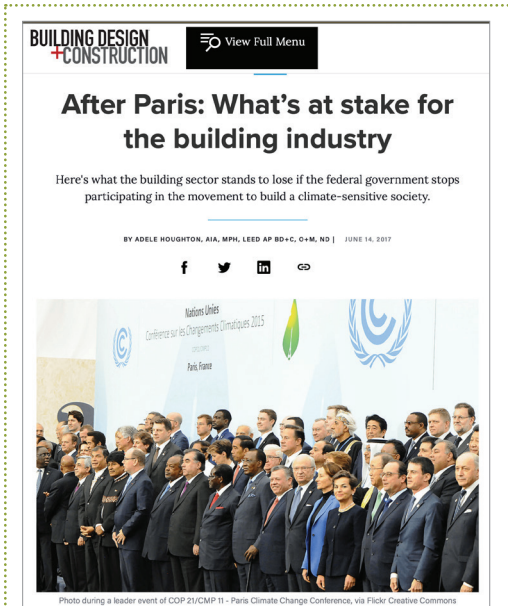
Co-Author: Carlos Castillo-Salgado.
International Journal of Environmental Research and Public Health. 14(12):1519.
Available at: <https://bit.ly/3C8jifN>

11/2017 **How the Public Health Community is Leading on Climate Change**

Co-Author: Denise Patel.
Medium. COP23 Voices.
Available at: <https://bit.ly/3StllAA>

10/2017 **Building Healthy Places Local Spotlight: Urban Infill and Brownfields in Houston**

ULI Houston Blog.
Available at: <https://bit.ly/3RgjON8>



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8/2017 **BHP Houston in Action: Springwoods Village**
 ULI Houston Blog.
 Available at: <https://bit.ly/3fjGVew>

6/2017 **After Paris: What's at Stake for the Building Industry**
Building Design + Construction, June 14, 2017.
 Available at: <https://bit.ly/3SuouQC>

6/2017 **Is a Healthy Development a Better Investment? Using HIAs to Quantify Health Benefits**
 Co-Author: Ellen Schwaller.
 ULI Houston Blog.
 Available at: <https://bit.ly/3r7mTEU>

5/2017 **Metrics for Planning Healthy Communities**
 Technical consultant.
 American Planning Association. May 2017.
 Available at: <https://bit.ly/2tSaCXh>

4/2017 **BHP Local Spotlight: Cycling in Houston**
 Co-Author: Ellen Schwaller.
 ULI Houston Blog.
 Available at: <https://bit.ly/3r7mORC>

3/2017 **An Approach to Developing Local Climate Change Environmental Public Health Indicators in a Rural District**
 Lead Author. Co-Authors: Jessica Austin, Abby Berman, Clayton Horton.
Journal of Environmental and Public Health.
 Available at: <https://bit.ly/3C8OUSw>

9/2016 **Climate and Health Addendum to 2015 Green River Community Health Assessment**
 Lead Author.
 Green River District Health Department.
 Available at: <https://bit.ly/3dFA78H>

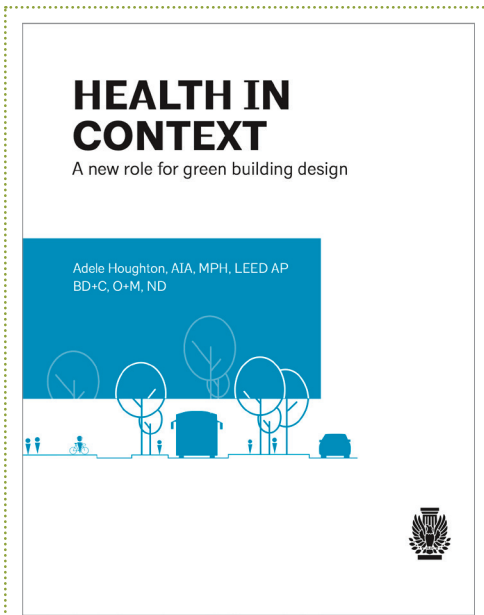
1/2016 **Assessing Climate Change and Health Vulnerability at the Local Level: Travis County, Texas**
 Co-Author. Lead Author: Natasha Prudent. Co-Author: George Luber.
Disasters journal.
 Available at: <https://bit.ly/3SpZiuM>

2015– **ULI Houston BHP Blog Posts**
 Blog series outlining the specific community health priorities in Houston that are influenced by architectural design and land use decisions.
 Available at: <https://bit.ly/3S5YsU1>

10/2015 **COP21 SERIES: Designers Should Be Health Advocates at the Paris Negotiations**
Health and Human Rights Journal blog, October 23, 2015.
 Available at: <https://bit.ly/3xTqzOh>

Publications introducing public health into design

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9/2015 **Climate Change: An Opportunity for Healthcare Design**
Healthcare Design blog, September 15, 2015.
 Available at: <https://bit.ly/3BCGlxO>

10/2014 **Debunking the 5 Myths of Health Data and Sustainable Design**
Building Design + Construction, October 13, 2014.
 Available at: <https://bit.ly/3LGopUT>

9/2014 **An Approach to Developing Local Climate Change Environmental Public Health Indicators, Vulnerability Assessments, and Projections of Future Impacts**
 Lead author. Co-author: Paul English.
Journal of Environmental and Public Health, 2014(2014): Article ID 132057, 7 pages.
 Available at: <https://bit.ly/3dHC8Bb>

6/2014 **Central Corridor Workshop: Using Health Data as a Design Tool**
 Lead author for Minnesota Pollution Control Agency.
 Available at: <https://bit.ly/3dHC9VL>

6/2014 **Extreme Weather and Climate Readiness: Toolkit for State and Territorial Health Departments**
 Lead author for Association of State and Territorial Health Officials Climate Change Collaborative.
 Available at: <https://bit.ly/3xU3z1E>

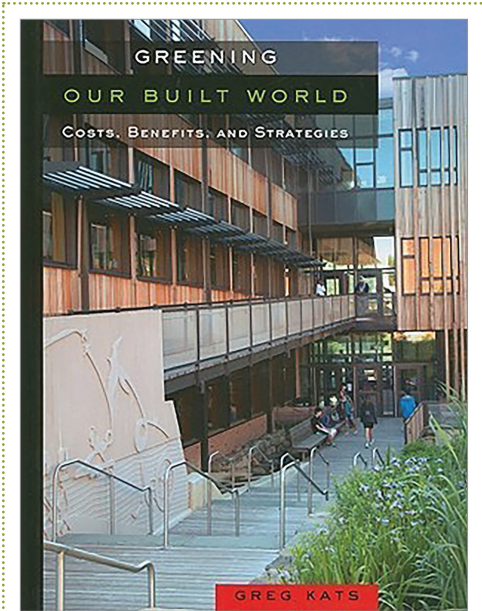
4/2014 **Health in Context: A New Role for Green Building Design**
 Lead author.
 Article summarizing a presentation developed for the conference, “The Value of Design: Design & Health” hosted by the American Institute of Architects Foundation, the American Institute of Architects, and the Association of Collegiate Schools of Architecture.
 Available at: <https://bit.ly/3xR1lQA>

9/2013 **Developing Climate Change Environmental Public Health Indicators: Guidance for Local Health Departments**
 Lead author for Council of State and Territorial Epidemiologists (CSTE) State Environmental Health Indicators Collaborative Climate Change Subcommittee.
 Available at: <https://bit.ly/3r6XvPt>

3/2013 **Integrating Environmental Sustainability and Climate Change into Environmental Public Health Services in the Bemidji Area Indian Health Service**
 Technical consultant. Authors: Megan Arndt, Diana Kuklinski.
The IHS Primary Care Provider, 38(3): 39-42.
 Available at: <https://bit.ly/3C9voFC>

Publications introducing public health into design

Publications introducing design into public health



4/2012 **Climate Change-Related Vulnerabilities and Local Environmental Public Health Tracking through GEMSS: a web-based visualization tool**

Lead author. Co-authors: Natasha Prudent, James E. Scott, Richard Wade, George Luber.

Applied Geography, 33(2012): 36-44.

Abstract available at: <https://bit.ly/3xQZ9IW>

4/2012 **Public Health and Climate Change: A Guide for Increasing the Capacity of Local Public Health Departments**

Co-author and co-released in collaboration with The Resource Innovation Group.

Available for download: <https://bit.ly/3E9TjGz>

3-5/2011 **Health Impact Assessments: A Tool for Designing Climate Change Resilience into Green Building and Planning Projects**

Journal of Green Building, 6(2): 66-87.

Abstract available at: <https://bit.ly/3StSFHC>

8-11/2009 **Healthcare chapter in Greening Our Built World: Costs, Benefits, and Strategies by Greg Kats**

Co-authored with Gail Vittori and Robin Guenther. Study of 13 LEED-certified healthcare projects exploring first cost premiums and lifecycle benefits associated with the design, construction, and operation of a high performance, healthy building in comparison to conventional practices.

5-9/2009 **Demystifying First-Cost Green Building Premiums in Healthcare**

Lead author. Co-authors: Gail Vittori and Robin Guenther.

Health Environments Research & Design (HERD) Journal, 2(4): 10-44.

Abstract available at: <https://bit.ly/3RhzakY>

4/2009 **Addressing Climate Change and Local Public Health: The Austin Climate Protection Program and the CDC Working Group on Climate Change Collaboration**

Lead author. Co-authors: Natasha Prudent, Jake Stewart, Sascha Petersen, and Rachel Thompson.

Journal of Environmental Health, 71(8): 18-19.

Available for download: <https://bit.ly/3UDZXXF>

1/2007 **Green Guide for Health Care: Building Momentum toward High Performance Environments**

Co-authored with Gail Vittori.

Hospital Engineering & Facilities Management 2007, official report of the International Federation of Hospital Engineering (IFHE).

Exhibits List

Exhibit #1 | Research Theme:
Leveraging Public Health Research to Green the Healthcare Industry

Exhibit #2 | Research Theme:
Applying Public Health Assessments to the Design Process

Exhibit #3 | Research Theme:
Operationalizing Research on Climate and Health

Exhibit #4 | Research Theme:
Connecting the Design and Public Health Fields

Exhibit #5 | Research Theme:
Popularizing Co-Benefit Design

Exhibit #6 | Research Theme:
Advancing Architectural Education (Professional and Master’s Level)

Exhibit #7 | Research Theme:
Expanding the Value Proposition of Community Benefit Design

Exhibit #8 | Research Theme:
Introducing a New Subfield Called Architectural Epidemiology

Glossary of Terms

Epidemiology: The study of the occurrence and distribution of health-related events, states, and processes in specified populations including the determinants influencing such processes and the application of this knowledge to control relevant health problems.*

Environmental Public Health Indicators: Data that provide information about a population’s health status with respect to environmental factors.**

Health Impact Assessment (HIA): An analysis, evaluation, and assessment of the consequences and implications for public health of specific social or environmental interventions or processes.*

Situation Analysis: Study of a situation that may require improvement. This begins with a definition of the problem and an assessment or measurement of its extent, severity, causes, and impacts upon the community; it is followed by appraisal of interactions between the system and its environment and evaluations of performance.*

Public Health: A system of professions and scientific disciplines, social organizations and institutions, values, and actions that take care daily of what we breathe, drink, and eat; how we work, move, and live together.*

Transdisciplinarity: Scholarly inquiry that overlooks conventional boundaries among ways of thinking about and solving problems.*

Vulnerable Population: A population at risk of coercion, abuse, exploitation, discrimination, imposition of unjust burdens of risk, infection, disease, or poorer health outcomes by reason of diminished competence or decision-making capacity, lack of power or social standing, fragile health, deprivation, or limited access to basic needs, including public health and medical care.*

* Adapted from Porta M, ed. *A Dictionary of Epidemiology*. 6th Edition. Oxford University Press; 2014.

** U.S. CDC, *National Environmental Public Health Tracking*, 2022.

Available at: <https://ephtracking.cdc.gov/indicatorPages>



Leveraging Public Health Research to Green the Healthcare Industry

“Adele has been a colleague and an inspiration for me for over 15 years. Her dedication to research in public health has been motivated by a need she identified in 2008. Her intense efforts have created an expanded understanding for the architectural and green building industries of the opportunities they have to bring positive change for environmental and community health priorities.”

– Betsy del Monte, FAIA, LEED AP
Architect & Consultant, CameronMacallister
Adjunct Professor, SMU Lyle School of Engineering

Projects Related to this Research Theme:

- *Green Guide for Health Care*
- *LEED for Healthcare Reference Guide Supplement*
- LEED consultant for Stanford University Health Care Adult Hospital
- SUHC Sustainability Guidelines (community health consultant)
- Greening Hospital General Purchasing Organization Technical Specifications
- Sustainability Roadmap for Hospitals (project for the American Hospital Association)
- 20 Who Are Making a Difference in Healthcare
- Recent quotes in *Modern Healthcare* magazine

Challenge

The healthcare sector required a quantifiable, sustainable design toolkit integrating enhanced environmental and health principles and practices into the planning, design, construction, operations, and maintenance of their facilities. The *Green Guide for Health Care* was the first such guide in the U.S.

Nominee’s Role

The *Green Guide* has been updated three times since the launch of Version 1.0 in 2003. Adele joined the *Green Guide* in May 2005 as Pilot Project Coordinator and served as Project Manager. She managed the pilot program, coordinated the publication of the final report for the design pilot with the co-coordinators and 15-person steering committee, and oversaw two revisions to the tool including one major revision to the Operations section.

She was a prominent public facing representative of the initiative, facilitating workshops and webinars, presenting nationally and internationally at conferences, and writing and providing quotes for trade publications like *Building Design + Construction*, *Facilities Management*, and *Healthcare Design Magazine*.



Stanford University Medical Center

Location: **Multiple**

Architecture Firm of Record: **Multiple**

Design Firm: **Multiple**

Completion Date: **Multiple**

Role of Nominee: **Research Consultant, Author, and Nominee Cited in Notable Publications**

Declaration of Responsibility

I have personal knowledge of the nominee’s responsibility for the exhibit listed above.
That responsibility included: *Other: Research Consultant*

Gail Vittori
Co-Director | Center for Maximum Potential Building Systems
Supervisor and Mentor

Challenge

Health Impact Assessments (HIA) assess how a proposed decision will affect the health of a population and whether vulnerable populations are more likely to be impacted or if health impacts are distributed more evenly within the population. Key components of HIA's are:

- Review of available data,
- Research and identification of priority health issues through rapid assessment methods,
- Design of a health action plan with stakeholder consultation,
- Implementation of interventions, and
- Monitoring long-term health impacts.

Projects Related to this Research Theme:

- North Houston Highway Improvement Project, Health Impact Assessment (Texas)
- Using Health Data as a Design Tool Along the Twin Cities Corridor (Minnesota)
- Defining our Local Public Health Roles in Environmental Sustainability and Climate Change (Ohio)
- GBIG Climate and Health Resilience Decision Support Tool (USGBC)
- Health in Context: A New Role for Green Building Design
- Health Impact Assessments: A Tool for Designing Climate Change Resilience into Green Building and Planning Projects

Location: **Multiple**

Architecture Firm of Record: **Multiple**

Design Firm: **Multiple**

Completion Date: **Multiple**

Role of Nominee: **Consultant, Author, and Co-author**

Publications: **See Section 2.3**

GBIG

GBIG Home » Insight Blog » Health & Well-Being, Resilience & Adaptation

Introducing the Climate + Health Resilience Collections on GBIG

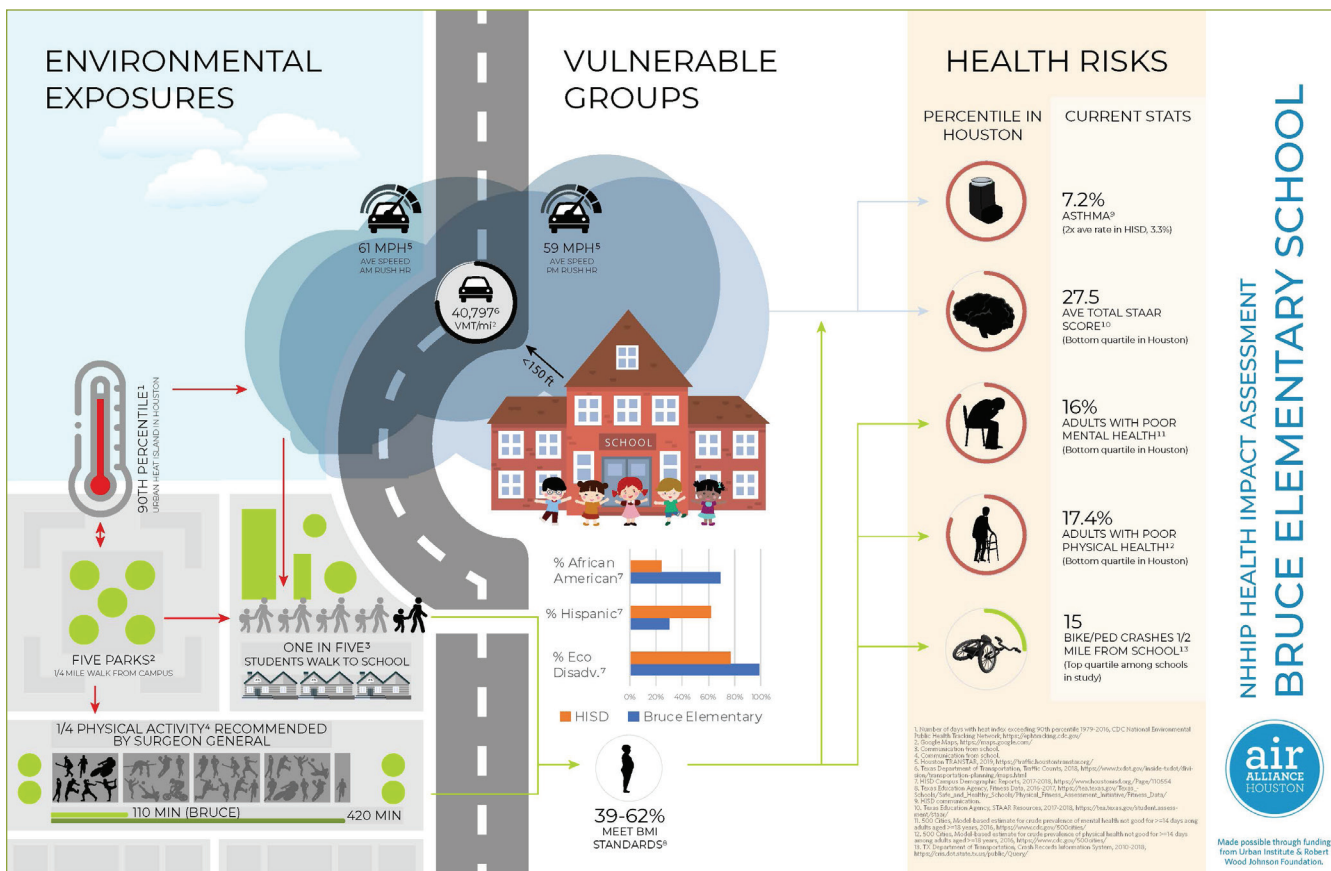
By *Adele Houghton*
Posted September 26, 2013

Number of LEED Certified Projects in Travis County (2001-2012) Overlaid on Austin Heat Vulnerability Index

Declaration of Responsibility

I have personal knowledge of the nominee's responsibility for the exhibit listed above. That responsibility included: *Other: Research Consultant*

Carlos Castillo-Salgado
Professor of Epidemiology, Director of the Global Public Health
Observatory | Johns Hopkins Bloomberg School of Public Health
Professor and Mentor



Nominee's Role

As so few persons were knowledgeable about how to apply HIAs to support the design process, Adele was sought by clients around the country to help them connect the dots between neighborhood environmental health needs and the evidence-based building design strategies that would have the strongest positive ripple effect on the surrounding community – tangibly benefiting individual and community health, environmental sustainability, and social equity.

Results

For each project, Adele's HIA offered specific insights about the health impacts of the projects and whether traditionally-vulnerable populations would be particularly and adversely affected by the construction and realization of the project. This allowed the client, in each circumstance, to make educated decisions about placement, orientation, development, materials, and other factors to reduce the risk of unintentional co-harms and maximize the potential of providing co-benefits to health, wellbeing, social equity, economic development, climate resilience, and reductions in greenhouse gas emissions.

“Adele has been the person I have turned to for expertise on the intersections between health, building and urban design, and environmental factors. She is a unique and energetic leader within the world of public health, bringing her pioneering ideas, depth of knowledge and experience to scientific conferences and membership deliberations of the APHA and other venues. Adele's devotion to public health is evident from her continued pursuit of education and advanced degrees to complement her architectural training.”

- John M. Balbus, M.D., M.P.H.
Interim Director, US Health and Human Services
Office of Climate Change and Health Equity

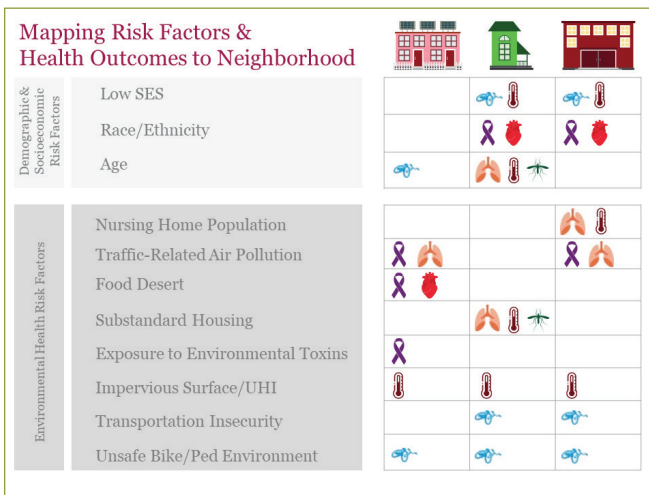
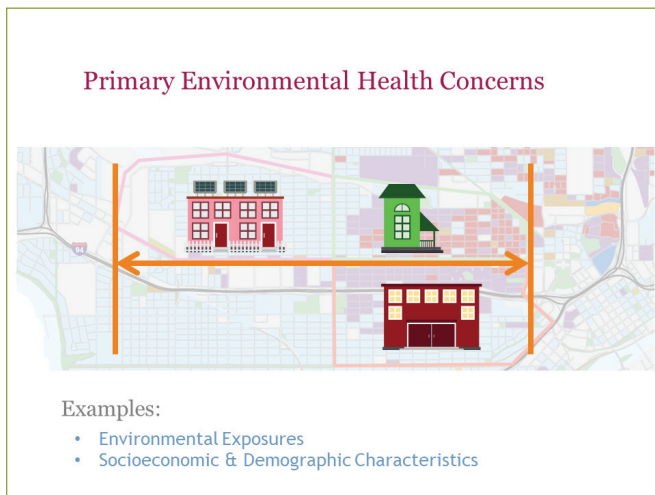


Exhibit #3 | Research Theme:
Operationalizing Research on Climate and Health

Challenge

Professional, governmental, and NGO organizations desperately needed to understand – and be prepared to apply – research on the relationship between climate and health. Few possessed the capacity, resources, or skill to discover best practices and specific applications of the data, research, and outcomes. The challenge: how to best cross-fertilize and translate these learnings across diverse stakeholders.

Nominee’s Role

Adele’s research and reporting allowed these and other national organizations to better understand the direct relationship between climate change and public health, and more specifically how to integrate it into existing policies, programs, and data collection processes. Her work enabled these entities to make informed determinations about their focus, efforts, and actions toward improving overall public health in specific communities.

Projects Related to this Research Theme:

- Climate and Health Program for Association of State and Territorial Health Officials (ASTHO): Extreme Weather and Climate Readiness - Toolkit for State and Territorial Health Departments
- Environmental Public Health Indicators for Council of State and Territorial Epidemiologists (CSTE): Developing Climate Change Environmental Public Health Indicators - Guidance for Local Health Departments
- Public Health and Climate Change: A Guide for Increasing the Capacity of Local Public Health Departments
- Climate and Health Addendum to 2015 Green River Community Health Assessment

Results

Adele’s background in green building rating systems equipped her to identify and adapt existing, validated metrics and methodologies to the needs of local and state health departments. Because Adele works across disciplines, she recognized and leveraged the emerging availability of open data sets from fields outside of public health. She also connected her clients with their counterparts in other fields and assisted both parties in coming to a mutual understanding about how working together could benefit all parties. Those cross-disciplinary connections are some of the most lasting legacies of Adele’s work.

Location: **Multiple**

Architecture Firm of Record: **Multiple**

Design Firm: **Multiple**

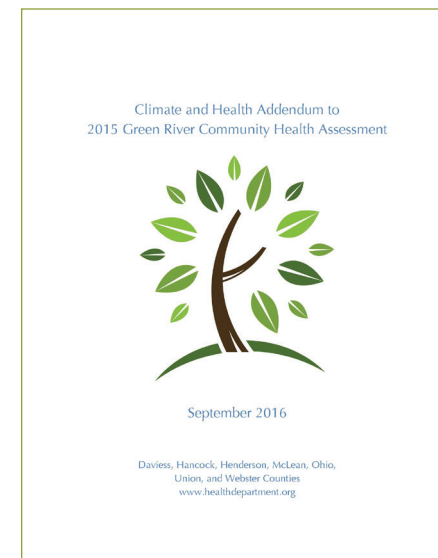
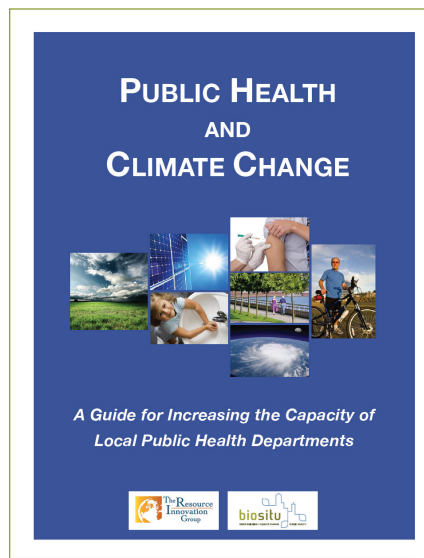
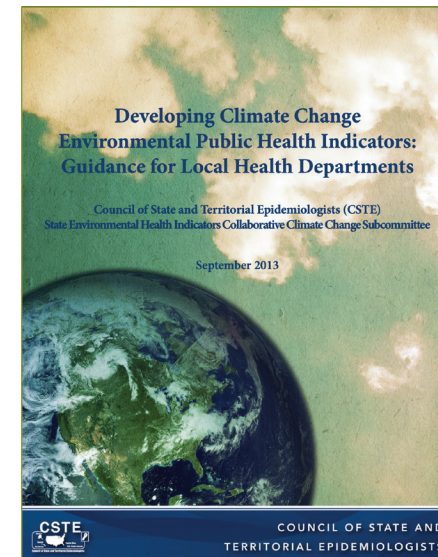
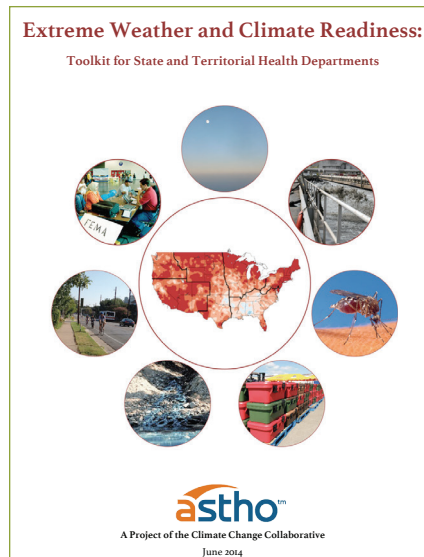
Completion Date: **Multiple**

Role of Nominee: **Consultant, Author, and Co-author**

Publications: **See Section 2.3**

Declaration of Responsibility

I have personal knowledge of the nominee’s responsibility for the exhibit listed above. That responsibility included: *Other: Research Consultant*



Challenge

Buildings and land use design set the context for community health. At their best, they protect individuals and the community from harm and make healthy choices (like physical activity and fresh, healthy food) the default. At their worst, they can expose occupants to toxic chemicals, erect barriers to living a healthy lifestyle, and trap occupants inside a hot, structurally unstable, and/or flooded structure during climatic events.

The close link between buildings, land use, and community health was recognized by the medical doctors, engineers, and building professionals who joined forces in the 19th century to found the modern field of public health. Their achievements include the sanitation movement, which separated potable water supply from wastewater and virtually eradicated waterborne disease from industrialized countries, and the origins of the modern building code with its emphasis on protecting the health, safety, and welfare of building occupants.

Unfortunately, since the mid-twentieth century, the design and public health professions have parted ways – to the detriment of both sides.

Location: **Multiple**

Architecture Firm of Record: **Multiple**

Design Firm: **Multiple**

Completion Date: **Multiple**

Role of Nominee: **Research Consultant and Author**

Publications: **See Section 2.3**



Adele appearing on The Weather Channel **patrn** Program discussing resilience. September 1, 2022

Declaration of Responsibility

I have personal knowledge of the nominee's responsibility for the exhibit listed above.
That responsibility included: *Other: Research Consultant*

Carlos Castillo-Salgado
Professor of Epidemiology, Director of the Global Public Health Observatory |
Johns Hopkins Bloomberg School of Public Health
Professor and Mentor



Nominee’s Role

Adele has leveraged her leadership position in both the architecture/green building and public health fields to actively work towards returning their relationship to the early collaboration around sanitation and life safety that has saved so many millions of lives. She has worked both pro bono and as a consultant to introduce public health frameworks and methods to the design fields. And, she has introduced to public health organizations the role that the built environment can play in advancing public health efforts to address climate change, chronic disease, mental health, and (more recently) the spread of COVID-19.

Results

The framework documents, fact sheets, articles, blog posts, and presentations that Adele has authored and co-authored across AIA, APA, APHA, Harvard, ULI, and USGBC (among others) have begun to bring the idea that design and public health are inextricably linked into the mainstream.

Projects Related to this Research Theme:

- AIA Design for Health Summit
- American Planning Association (APA): Develop Metrics Linking Community Planning with Public Health
- American Public Health Association (APHA): Greening the APHA Conference Intersectional Conversation on Climate, Health, and Equity
- Harvard C-CHANGE Student Ambassador
- Urban Land Institute (ULI): Building Healthy Places and Resilience Advisor and Subject Matter Expert
- U.S. Green Building Council (USGBC): Climate and Health Resilience Collection at Green Building Information Gateway (GBIG)

“Adele Houghton embodies dedication and innovation in architectural thinking and practice. I’ve been a climate-health professional for over 20 years, and a colleague of Adele’s for ten of those years. I can attest to her dedication to bring scientific rigor to the way architectural design responds to the health risks posed by climate change. Adele is steadfast and persistent in raising the topic of buildings (not just community planning) as part of the solution to climate change.

Adele deftly shares her creativity and unique ability to draw people into transdisciplinary conversations, as evidenced by her instrumental contributions in establishing the new field of Architectural Epidemiology. As a professional, she’s a catalyst who makes things happen. As a collaborator, she helps diverse teams of people develop pathways to projects that inspire new thinking, inside and outside the field of planning and building. Adele has a unique ability to develop projects that yield results far greater than the sum of their parts, and have lasting, sustained impact.”

~ Kim Knowlton, DrPH
Senior Scientist and Science Center Deputy Director, NRDC

Original Article Title

“Co-Benefits” as a Lens Through Which COVID-19 Building Upgrades Can Advance Environmental Sustainability, Climate Change Mitigation and Adaptation, and Social Equity

<https://hphr.org/29-article-houghton/>



Co-Benefit Design: Starting the Conversation
Creating Value Through Community Benefit Design

Commercial/Mixed-Use Projects

Baseline Value Proposition	LEED/Net Zero	Climate Resilience	Chronic Disease/Mental Health
<p>Local Government</p> <p>We need to keep our development costs down, because we are stewards of public funds.</p> <p>Metric: Construction cost / sq. ft.</p>	<p>A low carbon building will demonstrate that the local government is making progress on meeting the Paris Climate Agreement, which is important to voters. It is also a way to demonstrate action on climate change and equity, which will help the community receive federal grants.</p> <p>Metric: Tons CO₂ equivalent</p>	<p>A resilient building will help local government seek FEMA funding by showing that previous funding was well spent. Developments that help reduce air emissions assist in avoiding fines for exceeding Clean Air regulations. Clean air also helps attract companies and new residents.</p> <p>Metric: ROI FEMA projects; NAAQS attainment status</p>	<p>A building that reduces exposure to poor indoor air quality & promotes healthy behavior helps demonstrate that local government is a responsible steward of the public's money by acting on the results of the community health needs assessment.</p> <p>Metric: Improvement on health KPIs</p>
<p>Developer</p> <p>We need to shorten the development timeline and control construction costs as much as possible. We are on board with any design idea that will maximize property appreciation and expected operating income.</p> <p>Metric: Property value per pro forma</p>	<p>A low carbon building will help your company meet its corporate ESG goals (particularly SDG 7).</p> <p>Metric: Tons CO₂ equivalent</p>	<p>A resilient building lowers the risk of structural collapse or other liabilities occurring during an extreme weather event. It is also an opportunity to negotiate a PPP whereby the city pays for the resilient infrastructure.</p> <p>Metric: Legal risk; De-leverage some construction costs</p>	<p>Health-promoting buildings can command higher rents in many markets. They can also help build a good relationship with the local community.</p> <p>Metric: Reduce length of construction loan by leasing up faster</p>
<p>Operator</p> <p>We are always looking for strategies that help us meet our contractual obligations to tenants with minimum expenditures on staffing and operational costs.</p> <p>Metric: Operating budget</p>	<p>A low carbon building can directly benefit your bottom line by reducing operating costs.</p> <p>Metric: Operating budget</p>	<p>A resilient building lowers the risk of operational costs during utility outages and capital expenditures caused by weather damage. It can also result in lower insurance rates (directly benefiting the operational pro forma).</p> <p>Metric: Reduce risk; Increase property value via lowered insurance rates</p>	<p>Health-promoting buildings can command higher rents in many markets. They can also help build a good relationship with the local community.</p> <p>Metric: Rental rate per sq. ft.</p>
<p>End User</p> <p>We want to rent/purchase a space that meets our functional needs, operates efficiently, and reflects our company values. We need to stay within our budget, but we may pay a little extra for the perfect property.</p> <p>Metric: Operating/capital expenditure budget</p>	<p>A low carbon building can reduce operating costs and help your company meet its ESG goals (particularly SDG 7). Building management systems can increase transparency, so that staff feel engaged in energy efficiency, IAQ, and other green building strategies.</p> <p>Metric: Tons CO₂ equivalent; Energy/water use portal</p>	<p>Resilient design increases the safety of building occupants during and after climatic events. It reduces the risk of disrupting operations. And, it reduces the risk of structural and water damage caused by natural disasters.</p> <p>Metric: Reduce risk of insurance claims</p>	<p>People are more likely to spend time and be more productive in buildings where they feel protected from disease and the environment promotes behavior that makes them feel good.</p> <p>Metric: Absenteeism; Productivity</p>

biositu | HKS

Challenge

Green and healthy building design practitioners have long faced the challenge that their efforts are often viewed as superfluous by clients, financial institutions, and others on the development team. As a result, they are often vulnerable to being removed from the project during the value engineering process.

“Adele is a truly original thinker and innovator. She has a deep commitment to ensuring that all buildings benefit the environment and communities in smart, site specific ways. Her work at the intersection of design and health is cutting edge and industry leading and is forging new pathways for the field.”

~ Rachel MacCleery
Co-Executive Director
ULI Randall Lewis Center for Sustainability in Real Estate

Location: **Multiple**

Architecture Firm of Record: **N/A**

Design Firm: **N/A**

Completion Date: **Ongoing**

Role of Nominee: **Author, Consultant, Presenter**

Publications: **See Section 2.3**

Declaration of Responsibility

I have personal knowledge of the nominee’s responsibility for the exhibit listed above. That responsibility included: *Other: Research Consultant*

Upali Nanda, PhD, Assoc. AIA, EDAC, ACHE
Global Practice Director, Research Principal | HKS, Inc.
Client and Collaborator

Role

Adele recognized the office re-entry conversation during the COVID-19 pandemic as an opportunity to: a) demonstrate that green and healthy design strategies are, in fact, central to creating a building that will function safely over the course of its useful life; and, b) propose an alternative to the line-item approach to value engineering that often removes the elements of a design that will be most valuable over the long-term to cover short-term budget shortfalls.

Result

Adele’s “Co-Benefits” article (<https://hphr.org/29-article-houghton/>), published in the peer-reviewed *HPHR Journal* (formerly *Harvard Public Health Review*), had an immediate and long-term impact on the profession. Adele has been invited to present her ideas about the value of using co-benefit design to make triple bottom line and environmental, social, governance (ESG) decisions at numerous regional and national conferences and webinars. The article has been referenced by Common\Edge magazine, international design firm HKS, Inc., and the Urban Land Institute, among others.

Mentions

- 2022 **Greening Buildings for Healthier People: Optimizing Climate Mitigation, Resilience, and Health co-Benefits in Real Estate**
Urban Land Institute (ULI) Resilience Report
Available at: https://knowledge.uli.org/-/media/files/research-reports/2022/uli_report_greeningbuildingsforhealthierpeople.pdf
Related Webinar: <https://americas.uli.org/events/detail/3DC871EB-01F2-4E33-AE17-9EB746536270/>
- 2021 **How a Small Set of Strategies Can Benefit the Greatest Number of Outcomes**
Martin C. Pedersen. Common\Edge
<https://commonedge.org/how-a-small-set-of-strategies-can-benefit-the-greatest-number-of-outcomes/>

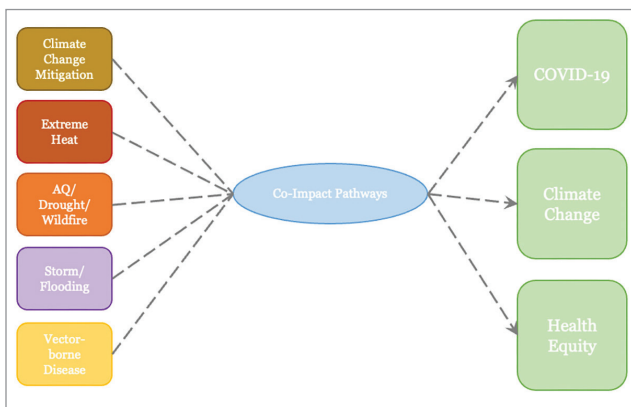


Consulting Project

- 2021 **Co-Benefit Design: Creating Value Through Community Benefit Design**
HKS, Inc.
Support global design firm HKS in developing a framework for integrating climate change mitigation, resilience, chronic disease, and social equity considerations into every design.

Related Articles

- 10/2021 **Unlocking the Value Proposition of ESG in Design**
Co-authors: Upali Nanda and Rand Ekman | *Building Design + Construction*
Available at: <https://www.bdcnetwork.com/unlocking-value-proposition-esg-design-o>
- 09/2021 **Promoting Health and Creating Value through Co-Benefit Design**
Student Perspectives | Harvard T.H. Chan School of Public Health DrPH blog site
Available at: <https://www.hsph.harvard.edu/drph/2021/09/17/promoting-health-and-creating-value-through-co-benefit-design/>



Co-Benefit Design Framework

Presentations

06/2022 **Leveraging Real Estate to Optimize Human Capital**
Presenter and Panelist
 Center for Active Design webinar
 Available at: <https://www.youtube.com/watch?v=v2h1LXhUhBA&t=7s>

08/2021 **Learning from COVID: Green Building and Equity Through the Lens of “Co-Benefits”**
Featured Presenter
 Gulf Coast Green

05/2022 **Co-Benefits of Leveraging the Built Environment to Protect People Living with Disabilities from the Negative Health Effects of Climate Change**
Featured Presenter
 University of Texas Health Science Center at Houston Grand Rounds

06/2021 **Learning from COVID: Green Building Through the Lens of “Co-Benefits”**
Featured Presenter
 USGBC Live

03/2022 **Holistic Approaches to Climate Change and Health: Exploring the Case for Optimizing Co-Benefits in Real Estate**
Moderator and Presenter. ULI Building Healthy Places Webinar.
 Available at: <https://bit.ly/3BBT1Fm>

05/2021 **Learning from COVID: A Public Health Approach to Green and Healthy Building**
Featured Presenter
 Austin Energy Green Building Seminar

Air Pollution Analysis of 3 Potential GHG Offset Projects



Air Quality Metrics to Inform Harvard University’s Climate Action Plan

Challenge

Over the past 20 years, the architectural community has become increasingly aware of building design's contribution to global greenhouse gas emissions, the injury and death toll during extreme weather events, our increasingly sedentary lifestyle which contributes to the obesity epidemic, the mental health toll of social isolation, and (more recently) the COVID-19 pandemic. While an increasing number of courses in architecture schools teach students about climate change and population health in the abstract, Adele's research has found that they rarely link the two topics together. And, very few, if any, equip students with the technical skills they will need to apply these abstract concepts to the specific needs of a design project after graduation. Similarly, professional continuing education continues to treat climate change and population health as abstract topics, rather than training professionals to tailor their design to benefit a specific site and population.

Role

Adele has emerged as a leader in educating both the design fields and public health practitioners on the importance of considering both people and place in the design of built environment interventions.

Result

Several recent invitations offer a particularly impactful opportunity to move the needle, demonstrating that both fields (architecture and public health) are ready to embrace transdisciplinary approaches to design and research -- particularly on the topics of climate change, community health, and social equity.

Projects Related to this Research Theme:

- **The Gap in Capacity Building on Climate, Health, and Equity in Built Environment Post-secondary Education: A Mixed-Methods Review**
Article in Peer-reviewed Journal | 11/2022
 "Climate and Health Education: Defining the Needs of Society in a Changing Climate" for *Frontiers in Public Health* | Public Health Education and Promotion Section
- **Bridging the Gaps between Public Health and Architecture: A Research Agenda for Architectural Epidemiology**
Presentation and Article in Peer-reviewed Journal | 10/2022
 "Resilient Futures" for AIA/ACSA Intersections Research Conference
- **The Future of Architectural Education: Public Health as a Method to Advance Climate Action Through Design**
Presenter and panelist | 06/2022
 "Virtual Conference on Architecture" for Royal Architectural Institute of Canada



Location: **Multiple**

Architecture Firm of Record: **N/A**

Design Firm: **N/A**

Completion Date: **Ongoing**

Role of Nominee: **Presenter, Lecturer, Faculty**

Publications: **See Section 2.3**

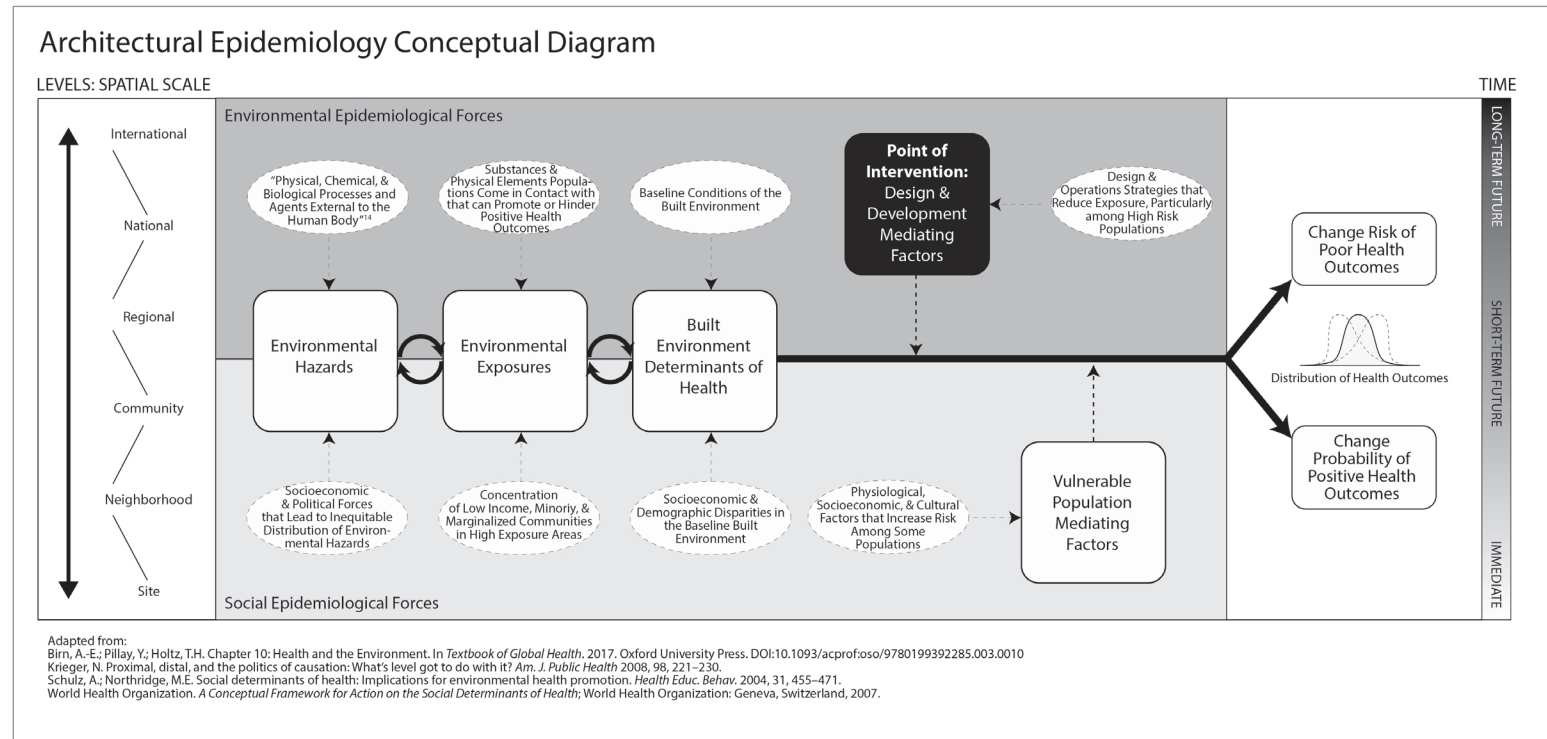
Declaration of Responsibility

I have personal knowledge of the nominee's responsibility for the exhibit listed above.
 That responsibility included: *Other: Research Consultant*

Carlos Castillo-Salgado
 Professor of Epidemiology, Director of the Global Public Health Observatory |
 Johns Hopkins Bloomberg School of Public Health
Professor and Mentor

Additional Related Speaking and Training:

- Designing Healthy & Sustainable Schools Online Course (2011)
 - Softchalk Training | Online, asynchronous course about how to design K-12 school buildings and operations to be supportive of occupant health and academic achievement.
- ULI BHP blog series
- Teaching fellow at Harvard T.H. Chan School of Public Health and Harvard Graduate School of Design (2021-2023)
 - Teaching Fellow: Developing & Delivering Purposeful Learning for the Public Health Workforce (DrPH215), Health and Buildings (SCI6361), Innovation & Entrepreneurship (HPM 557).
- Guest lecturer in Planning Healthier Communities Course at Texas A&M
- Architectural Research Centers Consortium – European Association for Architectural Education 2022 Conference and journal issue RESILIENT CITY: Physical, Social, and Economic Perspectives
 - Architectural Epidemiology: Introducing a Transdisciplinary Field of Study and Practice Using Real Estate as a Mechanism for Epidemiological Interventions on Climate Change & Chronic Disease
 - Gap Analysis of Public Health Methods and Education on the Links between Climate, Health, and Architectural Design
 - Urban Transitions conference (2018, Barcelona)



Challenge

Every real estate project – whether new construction or renovation – changes the environmental, economic, and social conditions of the surrounding neighborhood for better or worse. In recognition of this fact, local government, green and healthy building best practice guides, and impact investors are increasingly calling on designers and developers to demonstrate how their proposed project will benefit the surrounding community.

Meanwhile, these same institutions take a one-size-fits-all approach to regulations, building certification, and ESG investing. The result has been a growing gap between the aspirational goals that communities set to address climate, health, and equity through design and the absence of incentives on the ground.

AIA Join Renew Login

About Career Architect Resources Community Advocacy Equity, Diversity & Inclusion Sustainability Contracts

AIA Upjohn Research Initiative

The AIA Upjohn Research Initiative supports applied research projects that enhance the value of design and professional practice knowledge. The program funds up to six research grants of \$15,000 to \$30,000 annually for projects completed within an 18-month period. This section lists recent recipients and jury panelists.

View published [Upjohn-funded research](#).

2021	2020	2019	2018	2017
2016	2015	2014	2013	2012
2011				

2021

Priority Green for Community Benefit: A Framework for Tailoring Entitlement Benefits to Neighborhood-specific Priorities Around Climate Change Mitigation, Adaptation, and Equity

Principal Investigator: Adele Houghton, AIA (Biositu)

Local permitting pathways may be more effective levers for mitigating and adapting to climate change, addressing chronic disease, and improving equity if they are tailored to neighborhood-level environmental and human health needs. Generated through a series of charettes, this research project will develop a Priority Green framework that architects can use with local officials to show how building and site design that is responsive to neighborhood environmental exposures, community health risk factors, and the social determinants of health can measurably contribute to advancing their community's climate action plan and other local public health priorities.

Call for Entries

Submit by September 1 >

Upjohn Research Articles

Grant recipients featured in *Architect Magazine*

[The Value of Environmental Care >](#)

[Mixed Innovation >](#)

[Indexing Sustainability >](#)

[Buildings That Teach >](#)

[Biology by Design >](#)

[A Rededication to Craft >](#)

Location: **Multiple**
Architecture Firm of Record: **N/A (AIA)**
Design Firm: **N/A**
Completion Date: **Ongoing**
Role of Nominee: **Principal Investigator**
Publications: **See Section 2.3**

Declaration of Responsibility

I have personal knowledge of the nominee's responsibility for the exhibit listed above.
That responsibility included: *Other: Research Consultant*

Caroline Shannon, AIA
Strategist | Gensler
Colleague and Peer-reviewer

Expanding the Value Proposition of Community Benefit Design

Role

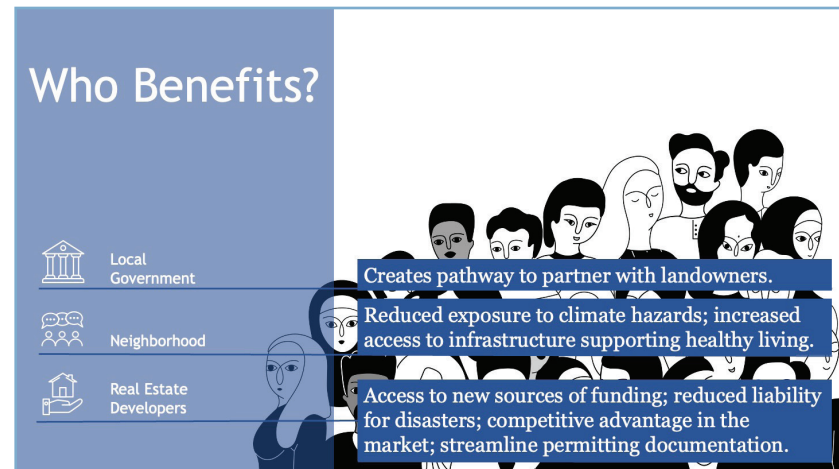
Using system dynamics research methods, Adele came to the conclusion that it was possible to overcome the forces within the current real estate development process that stand in the way of individual project teams using community benefit design as a mechanism for generating value for their financial backers. She has written and presented on opportunities to change the public approvals process so that design teams can demonstrate and quantify the extent to which their design benefits the surrounding community. In 2021, she received an AIA Upjohn Research grant to run a proof of concept with a group of early stage real estate development projects across the country to test her hypothesis that community benefit design — approached correctly — could generate value for all participating stakeholder groups.

Result

The new value proposition Adele has proposed — which expands the definition of value beyond the property line but retains the developer’s time horizon for generating value within the schedule of the construction loan — has the potential to influence local green building requirements and public approvals processes nationwide, so that they begin to require neighborhood-specific evidence of the community benefit generated by potential projects. It also offers a pathway for environmental, social, governance (ESG) impact investors to tie the social benefit results from their capital investments to the neighborhoods that will be impacted by the projects in their portfolio — a potentially transformational change.

Projects Related to this Research Theme:

- ❑ AIA Upjohn Research Grant, “Priority Green for Community Benefit”
- ❑ Center for Active Design subject matter expert and presenter
- ❑ Urban Land Institute subject matter expert and presenter
- ❑ Harvard Graduate School of Design course “Developing for Social Impact”: guest speaker and critic
- ❑ Article in Common\Edge, “Soft Infrastructure” Is Crucial for a Post-Carbon World
- ❑ Consulting project for HKS, Inc.: Co-Benefit Design: Creating Value Through Community Benefit Design



“Through her innovative work, Adele has set the stage to bring together developers, community members, and local government to consider climate, health, and equity through shared value creation. Adele personifies the transdisciplinary social entrepreneur we need to confront complex public health challenges such as climate change.”

– Richard B. Siegrist Jr., MBA, MS, CPA
Faculty Director, DrPH Program

Harvard T.H. Chan School of Public Health
Chair of the Board of Trustees, UMass Memorial Health Care

Challenge

Over the past two decades, architects have taken on an ever-expanding range of challenges, including climate change, community health, and social equity. As the number of questions a design is expected to address continues to expand, so too does the number of datasets available to describe each new topic. The profession has arguably reached a point where performing a data-driven site assessment has begun to feel like drinking from a fire hydrant. At the same time, the information available about the role of design in addressing all three of these challenges (climate, health, and equity) has remained frustratingly generic and difficult to use to prioritize design decisions.

Projects Related to this Research Theme:

- ❑ Architectural Epidemiology, course book in press with Johns Hopkins University Press
- ❑ Bridging the Gaps between Public Health and Architecture: A Research Agenda for Architectural Epidemiology.
To be published in 2022 AIA/ACSA Intersections Research Conference: Resilient Futures. In press.
- ❑ Architectural Epidemiology: Introducing a Transdisciplinary Field of Study and Practice Using Real Estate as a Mechanism for Epidemiological Interventions on Climate Change & Chronic Disease
Co-Author: Carlos Castillo-Salgado. In Proceedings of the ARCC-EAAE 2022 International Conference, Resilient City: Physical, Social, and Economic Perspectives. 2022: 41-48. Available at: <https://bit.ly/3DNRJd8>

Location: **Multiple**

Architecture Firm of Record: **N/A**

Design Firm: **N/A**

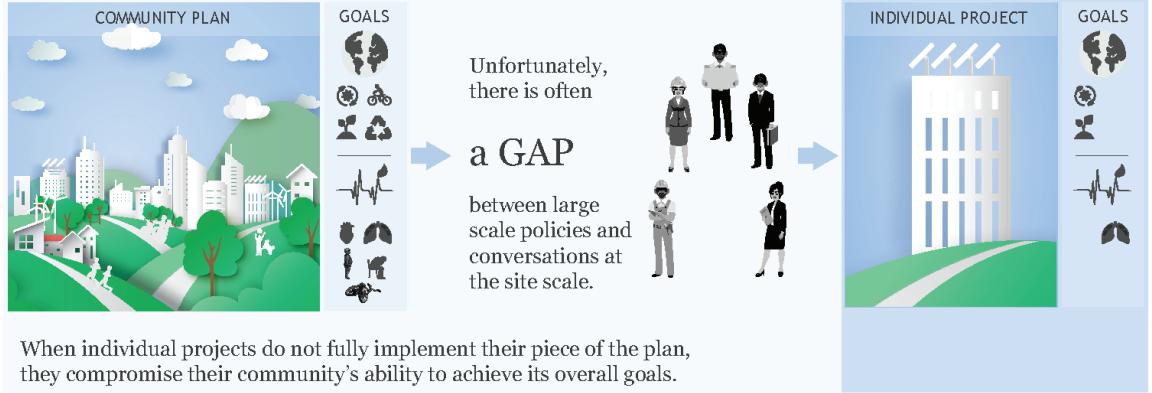
Completion Date: **Fall 2022**

Role of Nominee: **Author**

Publications: **See Section 2.3**

Small Scale Decisions Can Make or Break the Achievement of Large Scale Goals

There is growing interest in bringing a health-based approach to the design and operations of the built environment.



When individual projects do not fully implement their piece of the plan, they compromise their community's ability to achieve its overall goals.

ARCHITECTURAL EPIDEMIOLOGY

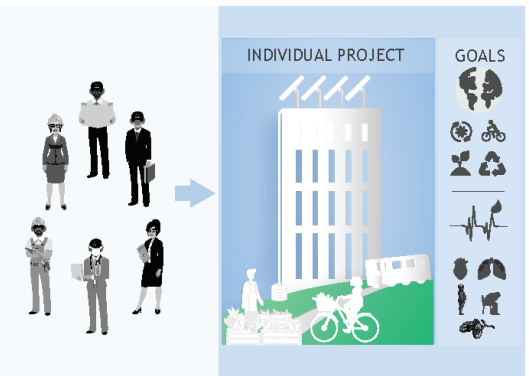
addresses that gap by assessing site-specific environmental health needs as part of the project due diligence process.

The process starts with two simple questions:

1. Who will this building serve?
2. What are the health concerns of that population?

Design interventions flow from a science-based and data-driven analysis of the links between (a) environmental exposures, (b) population demographics, and (c) evidence-based design interventions with the potential to reduce the risk of negative health outcomes.

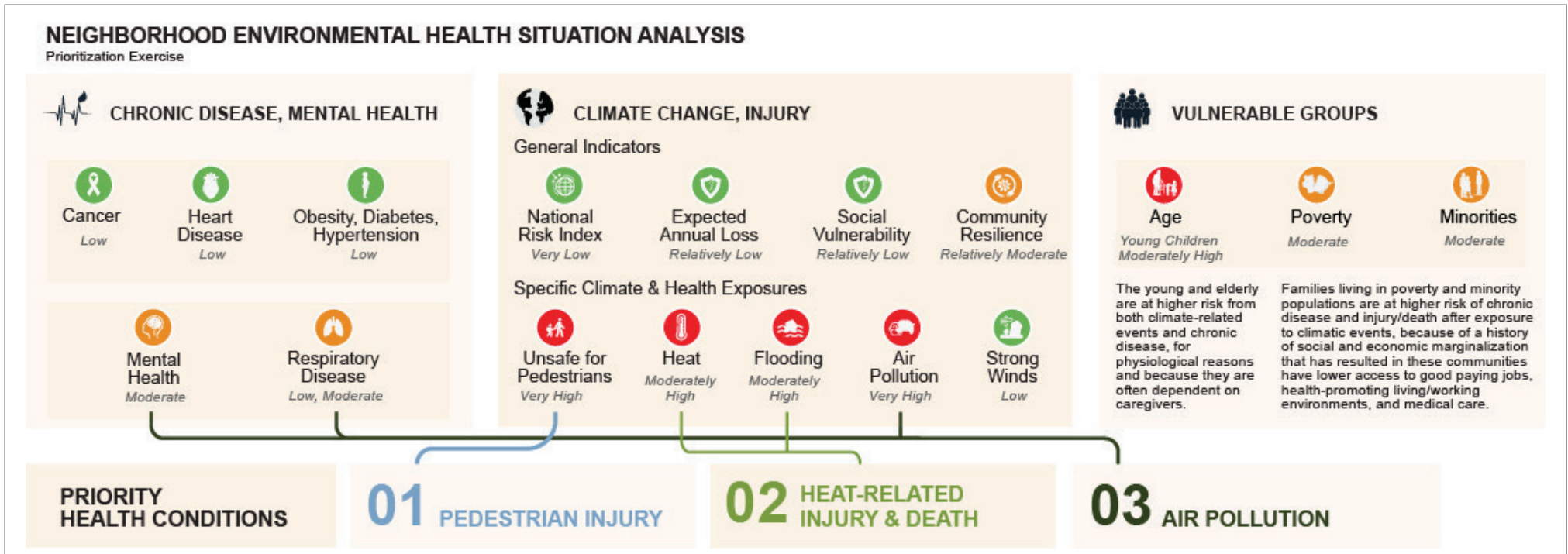
This approach allows the project to advance community level health and climate change goals alongside project-specific priorities, such as return on investment and risk reduction.



Declaration of Responsibility

I have personal knowledge of the nominee's responsibility for the exhibit listed above. That responsibility included: *Other: Research Consultant*

Carlos Castillo-Salgado
Professor of Epidemiology, Director of the Global Public Health Observatory |
Johns Hopkins Bloomberg School of Public Health
Professor and Mentor



Using Architectural Epidemiology to Identify a Small Set of Priority Health Conditions for the Building Project

“Architectural Epidemiology is a practical field guide designed to help real estate teams, local government, and community groups bridge the property boundary, so that each project design creates a ripple effect on its surroundings that lead to tangible benefits to the daily lives of building occupants, their neighbors, and the community as a whole.”

- From Architectural Epidemiology website
<https://www.architecturepidemiology.org/>

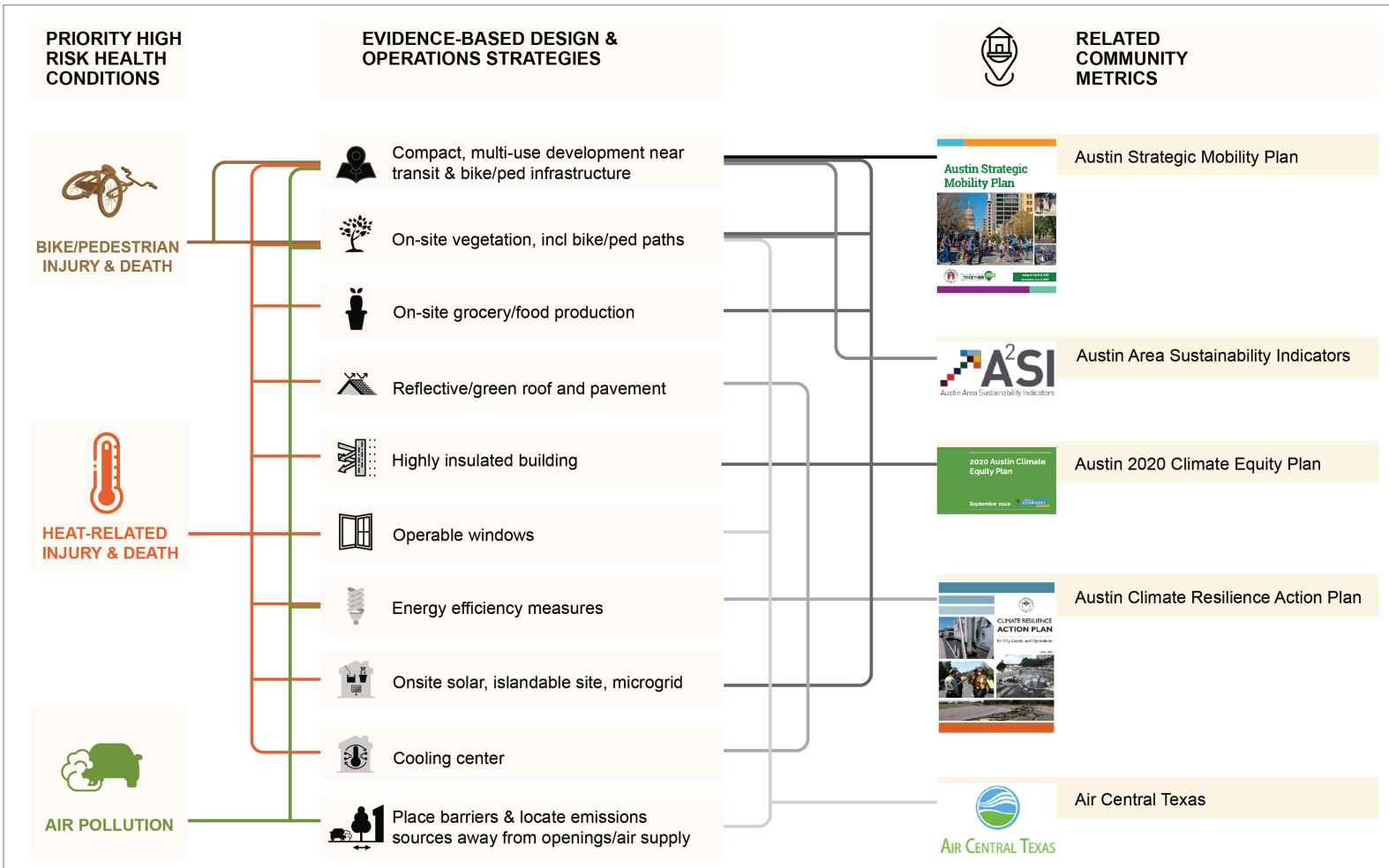
Nominee’s Role

Adele and her co-author, Dr. Carlos Castillo-Salgado at Johns Hopkins Bloomberg School of Public Health, are on the cusp of releasing a book called *Architectural Epidemiology* through Johns Hopkins University Press that is designed to help design and real estate professionals apply environmental public health knowledge and neighborhood-scale datasets to the unique needs of a specific project in a specific location. They propose launching a new, transdisciplinary subfield called Architectural Epidemiology alongside the book, which would both educate students and professionals on how to apply the methods in the book to their projects as well as setting a research agenda for further investigations into the links between design and population health outcomes.

Results

Adele has interviewed over 50 architects, real estate developers, and green and healthy building consultants over the past three years. She has also presented the methods deployed by Architectural Epidemiology, such as health situation analysis and health impact assessment, at numerous conferences. Practitioners in the field, professors, and students across multiple disciplines have overwhelmingly agreed that this new approach is needed in order for the built environment to transform from its current status as one of the major contributors to societal ills and into one of the primary forces behind their resolution.

Introducing a New Subfield Called *Architectural Epidemiology*



“Architectural Epidemiology will catalyze global progress on climate change and chronic disease by helping green and healthy building projects reflect community needs.”

~ Vision from candidate Adele Houghton as stated on the Architectural Epidemiology website

Using Architectural Epidemiology to Connect the Dots Between Priority Health Conditions, Evidence-based Strategies, and Related Community Metrics

“One of the most important insights of the COVID-19 pandemic is that architects and public health experts must work more closely together to ensure a healthy built environment. Adele Houghton is a leader in the critical effort to integrate these two realms. Her inventive work on architectural epidemiology—the title of her forthcoming book—shows how a health-centered design process is necessary for the design of resilient communities.”

~ Blaine Brownell, FAIA
 Director and Professor, School of Architecture University of North Carolina at Charlotte
 Editor, *The Pandemic Effect* (2022)

Sponsor

Julie Hiromoto, FAIA, Living Future Accredited, WELL AP, LEED AP

Director of Integration, Principal
HKS, Inc.

Dallas, TX

Professional Colleague

References

Rives Taylor, FAIA, LEED Fellow

Global Design Resilience Co-Leader, Principal
Gensler

Houston, TX

Professor, Mentor, Volunteer Together

Gail Vittori, LEED Fellow

Co-Director
Center for Maximum Potential Building Systems

Austin, TX

Previous Supervisor, Mentor

Brian Malarkey, FAIA, LEED AP

Executive Vice President, Director of Interior
Architecture
Kirksey

Houston, TX

Previous Supervisor, Mentor

Angela Mazzi, FAIA, FACHA, EDAC

Principal
GBBN

Cincinnati, OH

Professional Colleague

Carlos Castillo-Salgado, MD, JD, MPH, DRPH

Professor of Epidemiology, Director of the Global
Public Health Observatory
Johns Hopkins Bloomberg School of Public Health

Baltimore, MD

Professor, Mentor, Co-Author

Liz York, FAIA

Acting Director, Design Services and Support
U.S. Centers for Disease Control and Prevention

Atlanta, GA

Professional Colleague

Kira Gould, Hon. AIA

Principal
Kira Gould CONNECT

Oakland, CA

Professional Colleague