Interconnectedness in Action: Lessons from Austin's Environmental and Economic Evolution

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In *My First Summer in the Sierra*, naturalist John Muir writes, "When we try to pick out anything by itself, we find it hitched to everything else in the universe."[1] He describes the feeling of unity humans experience in nature. However, unknowingly, he also shares a broader truth uncovered by anyone willing to engage with complex systems, problems, and solutions. Medical students unravel interrelatedness when following the breadcrumbs of diabetes to chronic kidney disease, up to the parathyroid, and out to the osteoporotic hip fracture. Occupational health physicians embody Muir when piecing together the workplace conditions culminating in a factory employee's carpal tunnel diagnosis. Beyond medicine, the citizens of Texas' fourth largest city have tugged on the strings of community and uncovered connectedness between economics, environmentalism, and social justice. Their history and response to competing interests teaches other cities to use community organizing when shaping a municipality reflective of its inhabitants. It also reminds medical professionals that the path toward healthier communities and workplaces involves reengaging with the intersectional, system-level complexity that makes both the public sector and medicine extraordinary.

In the mid-1950s, the Austin Chamber of Commerce strategically selected electronics as the desired industry for growing Austin's economy.[2] Electronics and technology were broadly believed to be clean, acceptable to residents, and attractive to recent University of Texas (UT) graduates.[2] In the subsequent decades, rapid industrial expansion was envisioned by the Chamber and supported by volunteers who donated funds or met with corporate representatives.[2] The Chamber reshaped city zoning ordinances to build East Austin, an area historically segregated as residence for low-income and people of color, into the center of industrialization, and companies like Motorola quickly began to call this area home.[2,3] Backyards of East Austinites were transformed by the smoke stacks of industrial construction impacting their air, water, and soil quality. As early as the mid-1960s these impacts spread broadly through Austin's waterways and environmentalists saw the consequences of

tech production. They began challenging misconceptions of the electronics industry as clean, and a decades-long tension ensued.

Just as volunteers made the Chamber's vision of an electronics economy possible, groups of involved citizens were the foundation of local conservation. This model for other urban centers is exemplified in initiatives like the Town Lake Beautification Plan which pushed for the preservation of Town Lake (now Lady Bird Lake) when developers wanted to create an amusement park with the space.[4] Two Austinites, a parks director and a local philanthropist, led the charge.[4] They shared their visions of a green city and mobilized a vast social network. Fortunately, their circle included not just the overwhelming numbers of Austinites who would flood City Council meetings but also Lady Bird Johnson who contributed clout and funding.[4] These efforts led to Lady Bird Lake as it looks today, consisting of public shoreline trails and park space. It also provided momentum to an engaged environmental community.

Throughout the 1970s, environmental activists leveraged legal action, petitions, and massive City Council meeting turnouts to protect other areas of Austin like the Edwards Aquifer and its surface discharge point, Barton Creek. These efforts culminated in the purchase of land along Barton Creek for the public sector. However, tensions between economic growth and environmental conservation persisted, and decades later the future of the Barton Creek watershed was again called into question. In 1990, developers proposed a 4,000-acre planned unit development (PUD) in the area, and in response, the Austin City Council meeting received over 1,000 public requests to speak.[4,5] That forum is still remembered as an all-night gathering that shaped Austin's environmental discourse, and it serves as a reminder of the power of community organizing for other cities.

Environmentalism and economic expansion found compromise in 1997 when newly elected mayor, Kirk Watson, developed Austin's Smart Growth Initiative (SGI) to balance conservation with the tech economy.[6] SGI's development zoning reduced environmental impacts on the land

surrounding Barton Springs, redirecting growth to the central business district. Foresight in urban planning paired with $100 million in financial investments for the tech industry allowed the two interests to coexist.[6] The intentions behind SGI demonstrate how competing priorities can be managed effectively by plans that start with community organizing and take shape through local leadership in touch with its base. Yet, this is an incomplete picture of conflicting interests without considering contemporary Austin and the unintended consequences of smart growth.

Since the start of SGI, downtown and East Austin have experienced massive gentrification and displacement, as financial investments by Austin's government into tech have drawn educated and affluent individuals to the city. With the influx, median single-family home prices rose 106 percent in the early 2000s and thousands of Austinites were priced out of the opportunity to benefit from the economic growth of their neighborhoods.[6] Housing affordability disproportionately impacted Black and Latino communities which were the only racial groups to decline in population in Austin during that time.[6] The central business district and East Austin were the initial targets of the 1960s industrial development and victim to its direct environmental consequences.[3] Now, individuals historically confined to this area are being priced out of it.

A large portion of what led to the displacement of East Austinites is the city's electoral history. Since its founding and until 2012, Austin conducted City Council elections through at-large voting, in contrast to district-based voting. By the early 2000s, it was the only metropolitan city using a majority-vote rather than smaller units of representation to elect City Council members.[6] This led to the exclusion of minority groups from conversations shaping Austin as a green and prosperous city. In "Who Takes Ownership of the City?" Rick Cole critiques the modern public sector for procedures that lead to disengagement of its base. He describes, "propping up these inherited structures takes precedence over the bold innovation needed to meet today's needs."[7] When any community

procrastinates critical reevaluation of its systems, it is to the detriment of environmental, economic, and social longevity.

Austin's response to the aftermath of SGI in East Austin is a lesson to other cities on reacting to unintended consequences of exclusionary systems. People Organized in Defense of Earth and Her Resources (PODER) is an organization in Austin whose mission is "redefining environmental issues as social and economic justice issues."[3] PODER advocated for an intersectional view of Austin's economic and environmental history including formal analysis of displacement and gentrification by a task force at UT. These findings became The Uprooted Project which also provides recommendations for preventing displacement.[8] As such, community-based programs have been implemented in one East Austin neighborhood, Guadalupe, wherein residents have access to rent-restricted units and benefit from a preference policy for families with historical ties to the neighborhood.[8] As of 2020, Texas was one of only three states to prohibit mandatory inclusionary zoning (IZ), or the requirement that new construction include housing for a variety of income levels.[3,9] Austin's elected representatives continue to lobby for state laws mandating IZ.[10] A community is shaped by its past but is defined by its response.

Like Austinites, medical professionals must also reflect on Cole's challenge to reimagine inherited structures in a time when Americans have the highest chronic disease burden in the world. Cole prompts, "If we were looking to eliminate waste, would we construct elaborate sewage systems and provide weekly collection of garbage?"[7] Similarly, Dr. James Elsey writes in the American College of Surgeons' latest issue, "Healthcare scholars, when asked if they were to design a new system from scratch, all seemingly agree that it would look nothing like our current model."[11] It is time for healers to rekindle the curiosity that draws system-thinkers to medicine initially and begin questioning how healthcare today has outgrown its dogmas and delivery.

Shaping healthier communities starts with an examination of how health is contextualized in medical education today. Students can earn an honors designation on their transcript in 'Anatomy' while 'Medicine and Society' remains a pass/fail course. This does not incentivize learners to dedicate sufficient time to seeing health beyond body systems and instead within societal ones. It teaches that the breadcrumbs of secondary osteoporosis can be traced to chronic conditions like diabetes but not how learners can follow the trail further still toward broader problems like housing affordability, food insecurity, occupational exposures, and medication costs. To address the root causes of illness, students need foundational, formal training on how social, environmental, and economic context contributes to health status. They need to be comfortable talking to people about this and identifying resources within their community that address pervasive problems.

In clinical practice, an outdated reimbursement system prioritizes procedures over prevention such that hospitals as financial institutions depend on the perpetual sickness of their population. Elsey again summarizes, "Our system lacks an emphasis on primary and preventive care. We strain under a dysfunctional payment system… it has fallen prey to the detrimental policies of the medical industrial complex and corporatized care."[11] Healthcare professionals can shape healthier communities by advocating for policy reform that improves affordability and accessibility. Health begins with dignifying it as a human right, not a commodity.

Healthcare employees need to rethink workplace well-being by first acknowledging that medical indoctrination often paradoxically involves sacrificing individual health. Fluorescent, windowless workrooms divorce staff from their circadian rhythms. Hospital housekeepers encounter increased biological exposure in the workplace yet are compensated at an average of $10 an hour for incurring this risk.[12,13] The scientific community has established a correlation between both increased medical errors and post-shift car accidents with sleep deprivation, yet the Accreditation Council for

Graduate Medical Education continues to allow 24-hour shifts in residency programs today.[14] Improving population health starts by changing the medical system to allow its staff to model it.

The city of Austin prescribes an effective regimen for reimagining and restructuring. First, Austinites teach healthcare leaders to look to small, local opportunities. Perhaps as 1,000 concerned citizens spoke at their City Council meeting to protect Barton Creek, so could any number of healthcare workers when their state legislators hold open forum committee meetings regarding healthcare laws. Just as UT's Uprooted study informed changes in the Guadalupe neighborhood, peer-reviewed science on fatigue must guide healthcare administration on safe staffing practices and duty hours. Medical students can serve on academic advisory councils and help rethink classrooms for future physicians, like the two Austinites who first envisioned recreation at Lady Bird Lake. The Lady-Bird-Johnsons of the medical community can provide resources to organizations spearheading healthcare reform. They can fund lobbyists in Washington D.C. Lastly and most importantly, like PODER, medical professionals interested in improving the health of their workplaces and communities can start by seeing these connected to one another, in their historical context and always within the bigger picture.

Cole concludes his plea to individuals rethinking urbanization, "The answer to 'who owns the city?' lies with who takes ownership of the whole city, not just our part of it."[7] His insight is reminiscent of John Muir who already knew that the person who has the most is the one who sees their connection to everything else, in their city and well outside of it. Austin continues in pursuit of this interconnectedness and demonstrates effective tools for other communities and healthcare professionals to do the same.

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