

# AI in Manufacturing Faces a Reality Check

(But Doesn't Disappear)

**Trend** – Manufacturers are turning to AI because they are under pressure to work faster and smarter. Labor costs are rising, supply chains are less reliable, and competition is increasing around the world. At the same time, new AI tools are becoming cheaper and easier to use, especially for fixing problems before machines break and improving product quality. Many factories are also struggling to find and keep skilled workers, so AI is being used to support people, not replace them. However, older equipment and outdated systems are slowing down how quickly AI can be used in real factory settings. •

**What's Driving the Change** – Manufacturers are being pushed toward AI by rising labor costs, persistent skilled-worker shortages, global competition, and supply chain instability that demand greater efficiency and resilience. At the same time, AI tools are becoming more affordable and capable—particularly in predictive maintenance and quality control—making practical applications more attractive. However, legacy systems, weak data infrastructure, and overhyped expectations are tempering adoption and forcing companies to focus on readiness and implementation rather than experimentation alone. The direction of change is increasing and is expected to unfold over the next 5–10 years (Horizon 2). •

**Why It Matters** – Manufacturing is a backbone of regional and national economies. If AI adoption stalls, productivity gains may fall short and competitiveness could decline. But when done right, AI can support workers, reduce downtime, and make factories safer and more resilient. The future of manufacturing will depend less on flashy technology and more on practical implementation—training people, modernizing systems, and setting realistic expectations for what AI can actually deliver. •



## PROVOCATIVE QUESTION

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If AI can't succeed without clean data, skilled workers, and modern systems, is the real challenge in manufacturing technology—or readiness for change?

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**AI automation in manufacturing takes longer and is more complicated** than anticipated. Many estimates of automation and AI work replacement analyze work as separable processes. This paper studies work as complement processes and discovered that such a world is very different in terms of unintended consequences stemming from the efforts.

Source: [www.nber.org/system/files/working\\_papers/w34639/w34639.pdf](http://www.nber.org/system/files/working_papers/w34639/w34639.pdf)

**This Bank Fired Workers and Replaced Them With AI. It Now Says That Was a Huge Mistake.**

Turns out, artificial intelligence may not always be as adept as some companies hope. MIT study 95% of all AI pilot programs have had no measurable impact on P&L.

Source: [https://www.inc.com/chris-morris/this-bank-fired-workers-and-replaced-them-with-ai-it-now-says-that-was-a-huge-mistake/91230597?utm\\_source=newsletters&utm\\_medium=email&utm\\_campaign=INC+-Top+Tech+Newsletter.2025-08-26+-8800&leadId=790020&mkt\\_tok=NjEwLUxFRS04NzIAAAGchT9upBLEUwsEEZxRc1aZDPT8n7uBjm9Cpvn0Q\\_nuBtBmRzN2ixQnnp3WVEJfnOVtISBDg9ks3nhBksq5cJoDjfYA3qibHp\\_gHeUU6pgkVw](https://www.inc.com/chris-morris/this-bank-fired-workers-and-replaced-them-with-ai-it-now-says-that-was-a-huge-mistake/91230597?utm_source=newsletters&utm_medium=email&utm_campaign=INC+-Top+Tech+Newsletter.2025-08-26+-8800&leadId=790020&mkt_tok=NjEwLUxFRS04NzIAAAGchT9upBLEUwsEEZxRc1aZDPT8n7uBjm9Cpvn0Q_nuBtBmRzN2ixQnnp3WVEJfnOVtISBDg9ks3nhBksq5cJoDjfYA3qibHp_gHeUU6pgkVw)

# Artificial Inspiration

**Trend** – Artificial intelligence is moving beyond automation into creativity. AI systems are now helping generate new product ideas, designs, and solutions, shortening the path from imagination to market. In regions like Northeast Wisconsin, this shift could reshape manufacturing, innovation, and economic competitiveness. •

**What's Driving the Change** – Advances in computing power and cloud access have made sophisticated AI tools affordable for small and mid-sized organizations. At the same time, AI is being combined with robotics, IoT, and advanced manufacturing, allowing ideas to move quickly from digital models to physical products. The direction of change is increasing and volatile and is expected to unfold over the next 5–10 years (Horizon 2). •

**Why It Matters** – AI-driven creativity can boost productivity, reduce waste, and help businesses innovate faster. However, it also raises questions about ownership, ethics, workforce readiness, and regulation. Communities must balance speed and responsibility as AI becomes a core driver of innovation. •



## PROVOCATIVE QUESTION

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If AI starts generating new product ideas faster than Midwest businesses and policymakers can adapt, how can Wisconsin remain both competitive and ethical in its innovation economy?

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**World's first patent applications filed for inventions generated solely by artificial intelligence,** University of Surrey.

Source: <https://www.surrey.ac.uk/news/world-first-patent-applications-filed-inventions-generated-solely-artificial-intelligence>

**AI automation is coming for white-collar jobs.** And it is coming fast. 39% of workers will need to change their core skills by 2030.

Source: <https://www.mauldineconomics.com/global-macro-update/ai-and-automation-are-you-ready#share>

**Microsoft picks UW-Madison, TiletownTech to deploy new AI to speed up scientific research.**

The UW and TiletownTech partnership is one of two Microsoft chose to put its advanced AI platform to use to speed up scientific discoveries. "We've got a new model for doing science and it's landing in Wisconsin and I think that's awesome," Zander said.

Source: <https://www.greenbaypressgazette.com/story/money/companies/2025/10/30/uw-madison-microsoft-tiletowntech-partner-to-speed-up-research/86964353007/>

# Arts and Technology

**Trend** – Technology is reshaping how people create, experience, and access the arts. Digital tools, immersive media, and hybrid physical-digital spaces are making arts experiences more interactive, inclusive, and connected to wellbeing, learning, and community life. What was once limited to galleries or stages is increasingly embedded in everyday places such as schools, healthcare settings, and public spaces. •

**What's Driving the Change** – Advances in immersive media, AI, and digital creation tools are lowering barriers to participation while expanding creative possibilities. At the same time, communities are seeking arts experiences that support mental health, education, and social connection. New funding models and cross-sector partnerships are enabling arts organizations to experiment with hybrid and technology-enabled formats. The direction of change is increasing and is expected to unfold over the next 10–15 years (Horizon 3). •

**Why It Matters** – A tech-integrated arts ecosystem can broaden access, strengthen community bonds, and create new creative jobs. However, it also raises concerns about equity, cost, and the role of human creativity. Leaders must balance innovation with inclusion to ensure these experiences benefit many, not just a few. •



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**Unclear copyright rules for AI-assisted works are reshaping creative practice.** Uncertainty around authorship and ownership of AI-generated or AI-assisted art is prompting artists and institutions to rethink how creative labor is defined and protected.

Source: Authorship and Ownership Issues Raised by AI-Generated Works (2025)

**Calls are growing for transparency and attribution in AI-enabled art.** Creators and policymakers are increasingly advocating for disclosure, labeling, and traceability standards to protect cultural integrity and creators' rights.

Source: Ethical Challenges of GenAI in the Creative Industries (SSRN, 2025)

**Legal debates over AI and copyright are influencing education and policy.** Ongoing court cases and policy discussions are pushing arts educators and institutions to reconsider how credit, ownership, and responsibility are taught and governed.

Source: Copyright and Artificial Intelligence, U.S. Copyright Office

# Bio Manufactured Proteins

**Trend** – Protein production is beginning to change. Instead of relying only on animals, new technologies are using biology and fermentation to create dairy and meat proteins in controlled facilities. In Northeast Wisconsin, this shift matters because food production is deeply tied to local jobs, land use, and identity. While lab-grown meat still faces high costs and public skepticism, bio manufactured dairy proteins are quietly entering everyday foods as ingredients, making adoption uneven but steady. •

**What's Driving the Change** – Advances in fermentation, cell biology, and bioreactors are making it easier to create proteins without raising animals. Investors are putting far more money into lab-based dairy than lab-grown meat because dairy proteins can be blended into foods without changing how they look or taste. At the same time, climate concerns, water use, and land pressures are pushing food companies to explore alternatives. Younger consumers are also more open to sustainably produced proteins, especially when they are affordable and familiar. The direction of change is increasing and is expected to unfold over the next 5-10 years (Horizon 2). •

**Why It Matters** – This trend could reshape agriculture and food jobs in the region. Bio manufactured dairy may complement traditional farming, while lab-grown meat could challenge existing meat processing roles. Communities may face tension between innovation and tradition, especially in a state known for dairy and meat production. The opportunity lies in finding ways to blend new technology with local strengths rather than replacing them outright. •



## PROVOCATIVE QUESTION

As bio-manufactured dairy becomes more common and lab-grown meat remains controversial, how might Northeast Wisconsin protect its agricultural identity while adapting to new ways of producing protein – and what role will cows play in the future?

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**FDA Completes First Pre-Market Consultation for Human Food Made Using Animal Cell Culture Technology.** Before Entering the U.S. Market, the Food Must Meet Other Federal Requirements. Living cells from chickens grown in a controlled environment to make cultured animal cell food.

Source: <https://www.fda.gov/food/cfsan-constituent-updates/fda-completes-first-pre-market-consultation-human-food-made-using-animal-cell-culture-technology>

**Faux Meat and Dairy Startups Consume Nearly Half of Record \$13B VC Investment into Foodtech.**

Of the \$12.8 billion venture investment in foodtech globally in 2021, nearly half went to companies creating alternatives to traditionally produced meat, seafood and dairy products.

Source: <https://news.crunchbase.com/news/food-tech-summit-fake-meat-dairy-vc-startups-investment>

# Creative Equity Economy

**Trend** – Arts, culture, and creative work are becoming core economic assets, not side projects. Communities are investing in creative industries to drive local identity, attract talent, and create new jobs. At the same time, there is growing focus on who benefits from creative growth and whether opportunities are shared equitably. •

**What's Driving the Change** – Demographic shifts and cultural diversity are expanding demand for creative expression. Digital platforms make it easier for artists and creators to produce, distribute, and monetize work. Cities and regions are also linking arts, placemaking, and workforce development to economic strategy. The direction of change is increasing and is expected to unfold over the next 10-15 years (Horizon 3). •

**Why It Matters** – When creative economies grow inclusively, they strengthen belonging, preserve cultural memory, and open pathways to new careers. When equity is ignored, investment can concentrate benefits, erase local voices, and deepen social divides. •



## PROVOCATIVE QUESTION

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How can arts and culture serve as a unifying force that recognizes difference, not as division, but as creative strength, so that diverse voices, traditions, and ways of creating are valued, visible, and economically supported as part of a shared community story?

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**Arts and culture drive large-scale economic activity and employment.** The nonprofit arts and culture sector generates over \$150 billion annually, supports millions of jobs, and contributes significant tax revenue, underscoring its role as an economic engine in communities nationwide.

Source: *Arts & Economic Prosperity 6, Americans for the Arts*

**Creative and cultural production represents a major share of the U.S. economy.** Arts and cultural production accounts for more than \$1 trillion in economic activity, highlighting the sector's scale and its growing importance to national economic performance.

Source: *Arts & Cultural Production Satellite Account, U.S. Bureau of Economic Analysis*

**Arts and culture are a significant economic driver in Greater Green Bay and Brown County.** In the Greater Green Bay area, arts and culture organizations generated over \$23 million in organizational impact and nearly \$13 million in audience spending, for total industry expenditures exceeding \$36 million. Creative industry jobs in Brown County number 6,741, with approximately \$1.2 billion in creative industry sales. Nearly half (46%) of occupations in Brown County are connected to the creative industries, highlighting the sector's scale, flexibility, and economic significance for the region.

Source: *Creative Vitality Index; SparkGGB! A Strategic Assessment of Greater Green Bay's Creative Sector (December 19, 2022)*

## Decline of Healthcare Access

**Trend** – Access to quality health care is becoming harder for many people. Rising costs, workforce shortages, and uneven insurance coverage are widening gaps in care. Without meaningful policy and system changes, these barriers are expected to persist—and likely worsen—over the next decade. •

**What's Driving the Change** – Healthcare costs continue to rise faster than wages, leaving many households vulnerable to medical debt. At the same time, a shortage of doctors, nurses, and support staff is increasing wait times and limiting access. Social and structural factors—like housing, transportation, education, and language—also shape who gets care and who does not. Political gridlock and slow system reform make progress uneven. The direction of change is decreasing and is expected to unfold over the next 5-10 years (Horizon 2). •

**Why It Matters** – Limited access to care affects life expectancy, productivity, and economic stability. The U.S. already trails other industrialized countries in health outcomes, and these gaps could grow. Improving access could strengthen communities, reduce long-term costs, and add trillions to the economy through a healthier workforce. •



## PROVOCATIVE QUESTION

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Can our local and national health care systems close the life-expectancy gap with peer countries—and ensure access to care regardless of income, geography, or background?  
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**The U.S. is facing significant and growing shortages of physicians and other health care professionals, especially in primary care and underserved areas.** The Association of American Medical Colleges projects a shortage of up to 86,000 physicians by 2036 if supply/demand imbalances persist, with primary care especially affected—creating barriers to timely care and longer wait times. Source: [https://www.aamc.org/news/press-releases/new-aamc-report-shows-continuing-projected-physician-shortage?utm\\_source=chatgpt.com](https://www.aamc.org/news/press-releases/new-aamc-report-shows-continuing-projected-physician-shortage?utm_source=chatgpt.com)

**Health insurance costs and overall health care expenditures are rising faster than worker incomes,** putting care increasingly out of reach for many Americans and driving delays or avoidance of care. National data show health insurance premiums and total costs have increased much faster than wages over time, squeezing household budgets and making care less affordable. Source: [https://publichealthwatch.org/newsletter/health-insurance-costs-rising-faster-than-workers-wages/?utm\\_source=chatgpt.com](https://publichealthwatch.org/newsletter/health-insurance-costs-rising-faster-than-workers-wages/?utm_source=chatgpt.com)

# The Hidden Workforce

**Trend** – Many people who want to work are being left out of today's workforce. This includes individuals with past incarceration, disabilities, neurodivergence, trauma, or caregiving responsibilities. As worker shortages grow, employers are rethinking who can work and how work is designed. •

**What's Driving the Change** – An aging population and ongoing labor shortages are increasing the demand for skilled workers. At the same time, social and structural barriers prevent many capable people from accessing jobs. Inclusive hiring practices, supportive workplace design, and new technologies are helping employers tap into these hidden talent pools. The direction of change is increasing and is expected to unfold over the next 5-10 years (Horizon 2). •

**Why It Matters** – Unlocking the hidden workforce can strengthen the regional economy, reduce turnover, and lower public costs tied to unemployment and reincarceration. However, progress depends on whether employers invest in inclusive training, accommodations, and adaptive technologies. •



## PROVOCATIVE QUESTION

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Can Northeast Wisconsin meet its workforce needs by redesigning work and removing barriers for people long excluded from employment?  
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“Second Chance” Hiring Is Scaling Nationally. Employers are increasingly hiring people with past incarceration histories to address labor shortages. The national Fair Chance Business Pledge has been signed by hundreds of companies committing to second chance hiring practices. This reflects a structural shift in hiring norms, not just charitable hiring, but strategic workforce expansion.

Source: <https://www.dol.gov/general/jobs/second-chance>

**Neurodiversity Hiring Programs Are Expanding.** Major employers are building formal neurodiversity hiring initiatives to recruit individuals with autism, ADHD, and other cognitive differences for roles in technology, cybersecurity, and analytics. This reframes disability from a compliance issue to a talent advantage — especially in high-skill industries facing shortages.

Source: <https://hbr.org/2017/05/neurodiversity-as-a-competitive-advantage>

**Caregiver-Friendly and Flexible Work Models Are Growing.** Millions of working-age adults are out of the labor force due to caregiving responsibilities. Flexible work, hybrid schedules, job sharing, and returnship programs are expanding to re-engage caregivers. Work itself is being redesigned, not just who is hired, but how jobs are structured.

Source: <https://www.uschamber.com/workforce/understanding-americas-labor-shortage>

# Human-Centered Workplace

**Trend** – Work is no longer just about productivity and hours logged. Across Northeast Wisconsin, organizations are rethinking how work fits into people’s lives. As technology improves and worker expectations shift, employers are focusing more on trust, flexibility, and purpose. This trend reflects a broader move toward workplaces that support both performance and well-being. •

**What’s Driving the Change** – Employees increasingly value flexibility, meaningful work, and psychological safety. At the same time, digital collaboration tools, automation, and AI make it easier for teams to work effectively across locations. Together, these forces are pushing organizations to redesign workplace culture around people, not just processes. The direction of change is increasing and is expected to unfold over the next 5-10 years (Horizon 2). •

**Why It Matters** – Human-centered workplaces can help organizations attract and retain talent, improve engagement, and build long-term resilience. However, not all roles can offer the same flexibility, and leaders must work intentionally to maintain connection, fairness, and accountability. How employers respond will influence workforce stability and regional economic health. •



## PROVOCATIVE QUESTION

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How will Northeast Wisconsin employers balance flexibility, accountability, and belonging as human-centered work becomes a key competitive advantage?

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**Workers Prioritize Flexibility as a Baseline Expectation (Not a Perk)** Flexible work arrangements, including hybrid schedules and autonomy over when and where work happens, are now fundamental expectations for a large portion of the workforce, and employers that don't adapt risk losing talent.  
Source: *Workplace Culture 2025: Why Flexibility Defines the Future of Work* — Inmar Inc. (2025)  
<https://www.inmar.com/blog/insights/enterprise/workplace-culture-2025-why-flexibility-defines-future-work>

**Psychological Safety and Meaning at Work Drive Motivation and Innovation.** Employees who feel they can speak up, take risks, and find purpose in their work are significantly more motivated and engaged, making psychological safety and meaningful work strategic drivers of performance.  
Source: *Global Workforce Hopes and Fears Survey 2025* — PwC  
<https://www.pwc.com/jg/en/publications/hopes-and-fears.html>

**Corporate Culture Is Evolving Toward Values Alignment and Belonging.** Jobseekers increasingly choose employers whose values match their own, and will leave or refuse work roles when organizational values, community, and belonging are absent. This represents a shift toward culture as a competitive advantage.  
Source: *5 Workplace Culture Trends That Will Shape 2026* — Forbes (2025)  
<https://www.forbes.com/sites/janicegassam/2025/11/16/5-trends-that-will-shape-workplace-culture-in-2026/>

## Shifting Sentiment Toward Home Ownership

**Trend** – Attitudes toward owning a home are changing. Homeownership is no longer viewed as an automatic life goal, especially among younger generations. Instead, renting, shared equity, and other flexible housing paths are gaining legitimacy. Rising housing costs, lifestyle priorities, and economic uncertainty are reshaping what “home” means and how people choose to live. •

**What’s Driving the Change** – Several forces are converging to drive this shift. Housing costs increasingly exceed affordable income thresholds, while high interest rates and debt delay traditional milestones like marriage and family formation. At the same time, preferences are shifting from owning assets to accessing experiences. Higher-end rentals, build-to-rent communities, and flexible living arrangements now appeal to middle- and upper-income households seeking mobility, convenience, and lower maintenance. The direction of change is increasing and is expected to unfold over the next 5-10 years (Horizon 2) with a high impact and high likelihood. •

**Why It Matters** – Housing is foundational to economic stability, community cohesion, and individual well-being. As ownership rates change, regions may see less neighborhood stability, greater mobility, and new pressures on housing supply. However, this shift also opens opportunities to rethink housing design, tenure models, and policy—creating pathways that better align with real-life needs across different life stages. •



## PROVOCATIVE QUESTION

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How can we manage our regional housing stock to maintain balance and affordability between now and 2040?

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**A 2025 Census-based analysis shows the Midwest had the highest regional homeownership rate (~69.5%), but younger age groups see continued declines in ownership rates**, with under-35s at just 36.4% homeownership — the lowest among demographic cohorts.

Source: U.S. Homeownership Rate Stayed Flat — But the Heartland Outpaced the Rest (Jul 28, 2025)

**Renting is Becoming a Lifestyle Choice, not a Temporary Stage.** Higher-end rental developments, build-to-rent single-family communities, and amenity-rich apartments are attracting middle- and upper-income households. These housing options emphasize flexibility, mobility, convenience, and reduced maintenance—aligning with experience-focused and career-mobile lifestyles.

This suggests renting is increasingly a deliberate choice rather than a transitional necessity.

Source: <https://www.pewresearch.org/social-trends/2022/04/07/a-growing-share-of-americans-say-homeownership-is-out-of-reach/>

# Zoning Reform in Small to Mid-size Cities

**Trend** – Zoning rules shape what kinds of homes can be built and where people can live. Across small and mid-size cities, housing shortages, rising costs, and changing household needs are pushing communities to rethink outdated zoning and land-use regulations. Many local codes were written for a different era and no longer match how people live, work, and age today. •

**What's Driving the Change** – Households are getting smaller, more people rent longer, and seniors want to age in place. At the same time, workers and employers are looking for walkable, mixed-use communities with housing close to jobs and services. These pressures are encouraging cities to allow more flexible housing types such as duplexes, fourplexes, accessory dwelling units (ADUs), and small-scale multifamily development. The direction of change is increasing and is expected to unfold over the next 5-10 years (Horizon 2). •

**Why It Matters** – Zoning reform can help expand housing choice, support workforce needs, and strengthen local economies. However, change can be slow and controversial. Communities must balance neighborhood concerns with the growing need for attainable housing, while also recognizing that zoning reform alone does not guarantee new construction. •



## PROVOCATIVE QUESTION

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How can our region overcome regulatory barriers to housing development between now and 2040?

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**In Benzonia, Michigan, the Village updated its zoning to permit duplexes, fourplexes, ADUs and other housing types by right**—illustrating voluntary code reform to support housing and economic development.

Source: Benzonia overhauls zoning to allow more housing options (Record Patriot)

**Madison, Wisconsin's Common Council approved zoning changes designed to encourage "missing middle" housing** in response to high demand and affordability pressures.

Source: Madison approves zoning overhaul for missing middle housing (WPR)

**A recent article shows small cities in Northwest Arkansas confronting growth and housing affordability by streamlining zoning, allowing ADUs without permits, and reducing local restrictions**—a signal that smaller cities outside core Midwest metros are taking similar approaches.

Source: Small cities tackle growth with zoning changes (Axios)

# Intelligent and Integrated Robotics

**Trend** – Robotics is moving beyond isolated, single-task machines toward intelligent, interconnected systems that can adapt in real time and collaborate with humans. Advances in AI, sensors, and connectivity are enabling robots to work safely alongside people and operate across more complex environments. •

**What's Driving the Change** – Rapid advances in artificial intelligence, declining hardware costs, and persistent labor shortages are accelerating adoption. Manufacturers and logistics providers are seeking flexible automation that supports customization, resilience, and productivity. Digital twins and simulation tools are also lowering the risk and cost of deployment, making advanced robotics more accessible. The direction of change is increasing and is expected to unfold over the next 5-10 years (Horizon 2). •

**Why It Matters** – Intelligent robotics could significantly boost productivity, strengthen supply chains, and create new business models. At the same time, the transition raises concerns about workforce displacement, skills gaps, safety, and ethics. The long-term impact will depend on how well organizations balance automation with human-centered design and upskilling. •



## PROVOCATIVE QUESTION

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How can regions harness intelligent robotics to enhance productivity and resilience while ensuring workers remain central to the future of work?

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**America's Manufacturing Resurgence Will Be Powered by Collaborative Robots.** Once a luxury reserved for big manufacturers, smaller, smarter, more flexible and less expensive “cobots”, collaborative robots, are bringing automation to every fabricator, no matter the size.

Source: [https://www.wsj.com/business/americas-manufacturing-resurgence-will-be-powered-by-these-robots-78d1d7f6?st=VbzcZr&reflink=desktopwebshare\\_permalink](https://www.wsj.com/business/americas-manufacturing-resurgence-will-be-powered-by-these-robots-78d1d7f6?st=VbzcZr&reflink=desktopwebshare_permalink)

**Diligent Robotics deploys latest generation of its Moxi platform, mobile manipulation robots in hospitals.** Representing one of the largest deployed fleets of NVIDIA-powered mobile manipulators in healthcare, Moxi currently operates in over 25 hospitals across the U.S.

Source: [https://www.therobotreport.com/diligent-robotics-moxi-2-0-mobile-manipulator-built-for-ai/?spMailingID=176723&puid=4342472&E=4342472&utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=176723](https://www.therobotreport.com/diligent-robotics-moxi-2-0-mobile-manipulator-built-for-ai/?spMailingID=176723&puid=4342472&E=4342472&utm_source=newsletter&utm_medium=email&utm_campaign=176723)

**Analysts predict next major stock trend is humanoid robotics.** Humanoid robot demonstrations are becoming increasingly impressive, actual robot costs are dropping, and Nvidia unveils its latest breakthrough: GR00T N1, the “World's First Open Humanoid Robot Foundation Model

Source: <https://www.nasdaq.com/articles/next-major-tech-stock-trend-humanoid-robotics>

# Inequality and Education

**Trend** – Mounting inequality is upending education. Northeast Wisconsin districts are grappling with poverty, trauma, and achievement disparities in a rapidly changing economy. Educators are on the frontlines, adjusting to meet increasingly complex student needs, and the availability of sustainable funding for interventions is unclear. •

**What's Driving the Change** – Rising child poverty rates and widening income inequality are increasing disparities, leaving many children with unmet educational and mental health needs. Schools are increasingly expected to provide basic necessities and expanded support services, placing growing strain on staff, contributing to burnout, and stretching already limited resources. The direction of change is increasing but turbulent, and it is expected to unfold over the next 5–10 years (Horizon 2). •

**Why It Matters** – Widening opportunity gaps threaten individual achievement and the community's future. Local schools are at the center of addressing inequities to ensure students from all backgrounds receive quality education and support. How political and economic uncertainty makes securing the necessary resources and funding for impactful interventions result in jobs, innovation and regional economy. •



## PROVOCATIVE QUESTION

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How can public schools effectively bridge opportunity gaps in a time of rising inequality, economic uncertainty, and strained resources?

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**Rising Child Poverty and Economic Instability.** After pandemic-era relief programs expired, child poverty rates rose sharply. Economic instability—especially for families with hourly or unstable work—has increased food insecurity, housing instability, and unmet health needs. These factors directly affect student attendance, readiness to learn, and academic performance. Schools in regions like Northeast Wisconsin are increasingly compensating for economic gaps by providing meals, supplies, counseling, and social services.

Source: U.S. Census Bureau – Supplemental Poverty Measure and Child Poverty Data

<https://www.census.gov/topics/income-poverty/poverty.html>

**Widening Academic Achievement Gaps Post-Pandemic.** National assessment data show widening gaps in math and reading scores between higher- and lower-income students. Learning loss has been more severe among students experiencing poverty and trauma, reinforcing long-term inequities in educational attainment.

Source: National Center for Education Statistics – NAEP (Nation’s Report Card) Results

<https://www.nationsreportcard.gov>

# Energy- It's Electric!

**Trend** – Energy systems are shifting rapidly as electricity becomes the backbone of transportation, industry, and digital infrastructure. Advances in renewables, batteries, microgrids, and next-generation nuclear technologies are reshaping how power is produced, stored, and delivered. This transformation is redefining energy resilience, affordability, and security for the next decade. •

**What's Driving the Change** – Electric vehicles, data centers, and electrified industry are driving unprecedented demand for electricity. At the same time, breakthroughs in batteries, small modular reactors (SMRs), and distributed energy systems are enabling more resilient, localized power solutions. Policy shifts and investment incentives continue to accelerate experimentation and deployment. The direction of change is increasing and is expected to unfold over the next 5-10 years (Horizon 2). •

**Why It Matters** – This transition creates opportunities for cleaner, more reliable energy and local control—but also introduces risks such as grid strain, cost volatility, and uneven access. Communities and regions that invest early in resilient energy systems may gain long-term economic and strategic advantages. •



## PROVOCATIVE QUESTION

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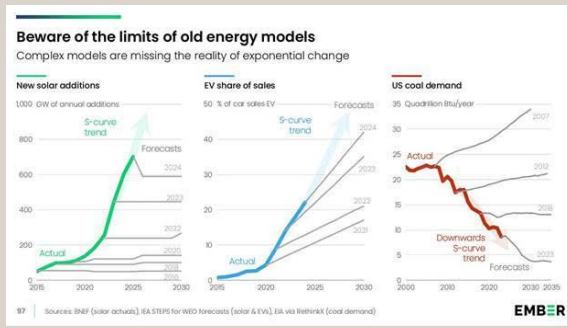
As electrification accelerates, how will regions balance energy reliability, affordability, and equity while transitioning to cleaner, more decentralized power systems?

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**The future is electric.** Coal is shrinking. By 2045, natural gas will be used as LNG primarily for high performance supersonic aviation, shipping, and industrial heat. Batteries are seemingly everywhere. Within the next five years, market power between utilities and datacenters will flip, with DCs becoming the preferred load growth power generation partner.

Source: <https://caseyhandmer.wordpress.com/2025/12/08/energy-predictions-2025/?blogid=155118685&blogsub=confirming#subscribe-blog>



Source: [https://justtwothings.substack.com/p/2-december-2025-electricity-patterns?utm\\_source=substack&publication\\_id=248178&post\\_id=180449716&utm\\_medium=email&utm\\_content=share&utm\\_campaign=email-share&triggerShare=true&isFreemail=true&r=9qipz&triedRedirect=true](https://justtwothings.substack.com/p/2-december-2025-electricity-patterns?utm_source=substack&publication_id=248178&post_id=180449716&utm_medium=email&utm_content=share&utm_campaign=email-share&triggerShare=true&isFreemail=true&r=9qipz&triedRedirect=true)

## Growth of Creative Learning Hubs

**Trend** – Learning is increasingly taking place across a network of schools, libraries, museums, arts organizations, and community spaces that support creativity, language development, wellbeing, and future-ready skills. Yet access to arts education remains uneven and often fragile, limiting the ability of these settings to consistently cultivate and translate core creative skills into measurable educational outcomes and pathways beyond the classroom. •

**What's Driving the Change** – Growth in learning outside traditional school settings is expanding opportunities for creative engagement. Partnerships among schools, libraries, museums, and community organizations are becoming more common as communities seek holistic learning ecosystems. At the same time, pressure on school budgets is constraining arts programming within formal education. There is rising interest in creative approaches to wellbeing and student engagement, alongside growing demand for workforce skills such as creativity, communication, collaboration, and problem-solving. The direction of change is increasing and is expected to unfold over the next 10–15 years (Horizon 3). •

**Why It Matters** – Arts learning builds foundational habits and capacities—including collaboration, disciplined practice, composition and improvisation, observation, experimentation, communication, resilience, and spatial reasoning—that support academic achievement and long-term success. Research shows that sustained arts engagement is linked to stronger performance in math and reading, higher levels of student engagement and confidence, and development of transferable workforce skills. If access to creative learning continues to expand unevenly, opportunity gaps may widen. But if communities intentionally integrate arts and culture into broader learning systems, creative hubs could strengthen educational outcomes, workforce readiness, and community identity. •



## PROVOCATIVE QUESTION

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How can arts and culture be more intentionally integrated so these skills translate into measurable educational outcomes and meaningful opportunities beyond the classroom?  
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## SIGNALS

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**Arts participation is linked to stronger academic performance.** Students with sustained arts engagement demonstrate higher achievement in math and reading, indicating that arts learning supports core academic skills.

Source: *The Arts Count: Arts Education and Student Achievement*, Arts Education Partnership

**Arts learning supports engagement and social-emotional development.** National studies associate consistent arts access with higher student engagement, confidence, and social-emotional skills—key predictors of long-term success.

Source: *Art's Impact on Learners and Learning*, The Wallace Foundation

**Arts education develops transferable workforce skills.** Arts learning builds creativity, collaboration, communication, and adaptability—skills increasingly valued across careers and industries.

Source: *Arts Education Supporting Student Success in School and Beyond*, National Association for Music Education

# Vanishing First Jobs

**Trend** – First jobs are disappearing. Many of the entry-level roles that once helped teens learn how to work—fast food, retail, basic clerical, and warehouse jobs—are being replaced by self-checkout, kiosks, robots, and AI systems. These jobs were often a young person’s first step into responsibility, teamwork, and earning their own money. As they vanish, an important learning stage is being lost. •

**What’s Driving the Change** – Technology is reshaping work. Businesses are using automation and AI to cut costs, reduce staffing, and increase efficiency. Self-order kiosks, automated inventory systems, and AI-powered customer service are becoming normal. At the same time, companies expect new workers to arrive with skills and experience—yet fewer places exist for young people to gain those skills for the first time. The direction of change is increasing and is expected to unfold over the next 5–10 years (Horizon 2). •

**Why It Matters** – First jobs teach more than tasks. They build confidence, communication skills, time management, and accountability. Without these early experiences, young people may struggle to enter the workforce later. This could widen gaps between students who can access internships or networks and those who rely on hourly jobs. Communities and employers may also face future talent shortages if early work pathways disappear. •



## PROVOCATIVE QUESTION

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As first jobs vanish,  
who will create the  
new “first rung”  
that helps young  
people learn how to  
work?

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## SIGNALS

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**Rapid Growth of Automation in Retail and Food Service.** Self-checkout systems, ordering kiosks, warehouse robotics, and AI-powered scheduling tools are increasingly replacing entry-level tasks traditionally performed by teens and first-time workers. Retail and food service, once dominant sources of teen employment, are among the most automated sectors.

Source: McKinsey & Company – Research on automation and jobs

<https://www.mckinsey.com/featured-insights/future-of-work>

**Declining Teen Labor Force Participation.** Teen labor force participation has declined significantly compared to past decades, even during strong labor markets. While some of this reflects increased academic and extracurricular focus, reduced availability of traditional entry-level roles is also a contributing factor.

Source: U.S. Bureau of Labor Statistics – Teen labor force data

<https://www.bls.gov/news.release/youth.nr0.htm>

**Employers Increasingly Expect “Experience” for Entry-Level Roles.** Many “entry-level” job postings now require prior work experience, technical skills, or certifications. Employers are seeking job-ready candidates even for junior roles, shrinking the number of true beginner positions.

Source: Harvard Business School – Research on degree inflation and hiring practices

<https://www.hbs.edu/managing-the-future-of-work/research/Pages/dismissed-by-degrees.aspx>