



THE BERTRAND INSTITUTE

THE PUBLIC LEADERSHIP CASE

Where Workforce Need, Student Potential, and Texas Leadership Meet

**Preparing young people to build, operate, secure, and responsibly govern the
systems shaping America's future.**

Developed from BI-FS-001, The Origin of The Bertrand Institute,
and BI-PV-001, The Texas Leadership Initiative

**PREPARED FOR PUBLIC OFFICIALS, EDUCATION LEADERS,
EMPLOYERS, PHILANTHROPY, AND PROSPECTIVE PARTNERS**

Jordan Bertrand & Noemi Valdez, Co-Founders

PUBLICATION PURPOSE

A Public Document for Leadership Discussion

The full founding story, connected to a disciplined Texas pilot strategy.

This publication brings together the complete narrative foundation of The Bertrand Institute and the public leadership case presented in The Texas Leadership Initiative. It is intended to help leaders understand not only what is proposed, but why the work began, whom it seeks to serve, and what a responsible first step would require.

PUBLIC POSTURE

Lead with the story. Support it with a credible plan. Invite leaders to improve it before asking them to endorse it.

Status and boundaries

- The Bertrand Institute is a developing educational and policy initiative of the proposed Bertrand Foundation.
- The grades 6–12 model and Texas pilot are proposals for discussion, co-design, validation, and measured implementation.
- This document does not claim accreditation, government approval, corporate endorsement, school adoption, nonprofit tax recognition, or an operating campus.
- The intended role is collaborative: respect what Texas educators and workforce partners have built, add capacity where change is creating opportunity, and measure what works before scaling.

Publication note

The founding narrative reflects the personal experiences and recollections of Jordan Bertrand and Noemi Valdez. References to a major U.S. oil and gas company, contractors, clients, schools, educators, or industry activity provide background only. No endorsement, sponsorship, partnership, diagnosis, clinical claim, or institutional position by any referenced organization or person is stated or implied.

SOURCE NARRATIVE

BI-FS-001 - The Origin of The Bertrand Institute, Revised Edition.

SOURCE POLICY

BI-PV-001 - The Texas Leadership Initiative, First Edition.

PUBLIC PURPOSE

Feedback, coalition-building, and identification of one credible pilot partnership.

IMMEDIATE REQUEST

Critique, introductions, technical perspective, and participation in responsible co-design.

THE FOUNDING STORY | 1

Where Three Realities Met

The Bertrand Institute began where three realities met: industry urgently needs people who can build, power, cool, connect, maintain, and protect the infrastructure behind artificial intelligence; many capable young people need a more active, meaningful way to discover what they can do; and human understanding, judgment, and governance must advance alongside increasingly capable AI.

FOUNDING PREMISE

When students are trusted with meaningful work, they can discover purpose and pride while developing the skills needed to build the future.

The proposition in one sentence

America should introduce students earlier to meaningful, hands-on learning about AI and critical infrastructure so more young people can discover their abilities, develop pride in their work, and gain the understanding needed to help govern the systems they will inherit.

Why the story matters publicly

A workforce report can establish need, and a curriculum framework can describe a solution. The founding story connects those pieces to a human purpose. It explains why the Institute joins technical preparation, student belonging, and responsible leadership rather than treating them as separate concerns.

BUILD

Understand and create the energy, electrical, cooling, communications, industrial, and digital systems modern life requires.

PROTECT

Practice safety, cybersecurity, reliability, verification, privacy, and responsible human oversight.

LEAD

Develop judgment, teamwork, service, communication, ethics, and accountability for decisions that affect others.

THE FOUNDING STORY | 2

The Industry Perspective

The workforce reality behind the mission.

The idea for The Bertrand Institute did not begin in a conference room or as a theoretical education proposal. It developed from what Jordan Bertrand observed while working in industry.

While working with a major U.S. oil and gas company, Jordan joined the ACE Team and became involved with portions of AI-related development supporting operations in the Gulf of America. That experience introduced him to the networking, infrastructure, energy, and service systems required to support artificial intelligence.

It changed the way he understood AI.

AI is not powered by software alone. Every AI system and data center depends upon electricity, cooling, networks, controls, construction, maintenance, energy production, and a highly capable technical workforce. Behind every advanced digital system is physical infrastructure built and maintained by electricians, HVAC technicians, instrumentation specialists, network professionals, engineers, operators, and skilled craftspeople.

One contractor told Jordan that data-center clients had requested approximately 200 electricians from the company. At the same time, the contractor could not provide even five electricians requested for oil and gas operations.

That conversation revealed that energy companies, data centers, manufacturers, construction projects, and other critical industries were competing for the same limited workforce. It also showed that the growth of AI would increase demand not only for programmers and computer scientists, but for the people who build, power, cool, maintain, and protect the physical systems that make AI possible.

THE FOUNDING STORY | 3

The Student Perspective

The conversation that made the mission human.

The workforce need explained what America must prepare for. A conversation with Noemi Valdez, co-founder of The Bertrand Institute, helped define whom the Institute must be prepared to reach.

Noemi shared her experience working with young people who were frequently described by the problems they caused at school. Some struggled to sustain attention, remain seated, or comply with the expectations of a traditional classroom. Their behavior could make it easy for adults to see disruption before seeing the person.

Her perspective changed when she took time to listen. By lending an ear to a student and seeking to understand what was happening beneath the behavior, she saw a different young person emerge. Compassion did not mean lowering expectations. It meant establishing enough trust for the student to feel heard, regain a sense of dignity, and begin responding differently.

A student who appears disengaged may not lack intelligence or potential. The student may not yet have encountered work that feels relevant, active, and worth owning.

Students with attention challenges or different learning needs may struggle when learning is experienced primarily as sitting at a desk, absorbing material, and preparing for a distant college pathway. Some may become intensely engaged when they can build, troubleshoot, test, create, work with a team, and see the result of their effort.

Completing a circuit, diagnosing a cooling problem, programming a control, assembling a system, or presenting a team solution can turn an abstract lesson into visible accomplishment. That accomplishment can become pride; pride can strengthen belonging; and belonging can give a student a reason to want to return to school.

The Institute is not intended to diagnose students, replace special-education services, or suggest that one model will work for everyone. It seeks to expand the ways students can encounter rigorous learning and demonstrate capability while working alongside educators, families, counselors, and existing support systems.

THE FOUNDING STORY | 4

From Observation to Institution

One Institute, three founding insights.

Jordan Bertrand's industry experience revealed a widening need for electricians, HVAC technicians, controls specialists, network professionals, engineers, operators, and responsible AI leaders. Noemi Valdez's student-centered experience revealed how many capable young people could be reached through trust, relevance, active participation, and the opportunity to produce something they can see and value.

A third concern gave the mission greater urgency: artificial intelligence is advancing faster than many educational, workforce, and public institutions can adapt. Increasingly capable systems will influence major industries and critical infrastructure.

Why wait until students are preparing to graduate before introducing them to the systems and opportunities shaping their future?

The Institute proposes to introduce students in grades 6–12 to the complete system: energy, electrical infrastructure, HVAC, engineering, networking, skilled trades, aerospace, artificial intelligence, leadership, safety, and public responsibility.

The goal is not to direct every student toward the same career or diminish college preparation. It is to broaden preparation by connecting academic knowledge with technical practice, career awareness, leadership, and visible accomplishment.

ENERGY

Generation, distribution, reliability, and the systems that power modern life.

INFRASTRUCTURE

Electrical, HVAC, controls, construction, networks, operations, and maintenance.

AI & DIGITAL SYSTEMS

Responsible AI, data, automation, cybersecurity, and accountable human judgment.

LEADERSHIP

Safety, ethics, communication, teamwork, service, and public responsibility.

THE FOUNDING STORY | 5

The Governance Imperative

Human capability must advance with artificial intelligence.

Humanity cannot answer accelerating AI by attempting to compete with machines through speed alone. The enduring human advantage must come from understanding, adaptability, ethical judgment, leadership, and the ability to see how complex systems affect people and society.

That understanding cannot begin with AI as an isolated software subject. Students should learn how energy, electrical systems, data centers, communications, HVAC, manufacturing, transportation, cybersecurity, and public policy work together to support, secure, and govern it.

Beginning earlier allows knowledge to develop progressively, giving future technicians, engineers, educators, policymakers, and civic leaders the foundation to question AI outputs, recognize when systems exceed their intended purpose, establish responsible boundaries, and preserve meaningful human oversight.

We cannot govern systems we do not understand, and we cannot wait until adulthood to begin building that understanding.

The Institute therefore seeks to prepare students for more than jobs created by artificial intelligence. It seeks to help prepare a generation capable of building, operating, securing, governing, and, when necessary, restraining the systems that will increasingly shape society.

ASK

Define the purpose, permitted use, limits, and people affected.

DECIDE

Identify the accountable human and document the rationale.

VERIFY

Check sources, data, calculations, assumptions, and physical consequences.

IMPROVE

Capture errors, revise the process, and share what was learned.

THE FOUNDING STORY | 6

An Invitation to Leaders

The Institute is inviting leaders to help shape a disciplined, measurable response.

- What workforce capabilities will AI infrastructure require over the next ten to twenty years?
- How can students encounter those systems early without narrowing their future choices?
- How can hands-on, project-based pathways improve engagement while maintaining rigorous academic expectations?
- How can educators better recognize ability in students whose attention or behavior may conceal their potential?
- How should schools, employers, colleges, universities, apprenticeship programs, and public leaders share responsibility?
- What can be tested through one bounded Texas pilot before any broader expansion is considered?
- How do we ensure that technical capability develops alongside safety, ethics, service, and accountable leadership?
- How do we develop the human understanding needed to govern AI before its capabilities outpace institutional readiness?

THE REQUEST

Informed feedback, introductions to the right leaders, and participation in designing one credible pilot partnership.

The following pages translate this invitation into a public Texas leadership case and a practical first step.

THE TEXAS LEADERSHIP CASE | 1

Why Texas Is the Right Place to Lead

Legacy strengths and emerging systems meet at operational scale.

Texas sits at the intersection of energy security, grid expansion, advanced manufacturing, ports and logistics, aerospace, defense, digital infrastructure, artificial intelligence, construction, agriculture, and fast-growing communities. Each depends on people who can work safely across traditional occupational boundaries.

The case for leadership is not that Texas must invent every component of workforce education. Texas already has extensive Career and Technical Education programs, colleges, universities, workforce boards, employers, military installations, and nonprofit partners. The opportunity is to connect those assets around a clearer grades 6–12 progression and a shared language of infrastructure, technology, safety, and leadership.

PUBLICATION PRINCIPLE

Respect what Texas educators have built. Add capacity where change is creating new opportunity. Measure what works before scaling.

- Build on regional strengths rather than impose a single statewide industry identity.
- Use visible local assets - ports, plants, bases, hospitals, utilities, farms, fabrication shops, and data facilities - as learning context.
- Preserve student mobility by teaching transferable concepts alongside occupational skills.
- Treat skilled trades, engineering, technology, academic preparation, and leadership as mutually reinforcing paths.

Texas can demonstrate how a state honors established industries while preparing students for systems that are becoming more digital, automated, and interconnected.

THE TEXAS LEADERSHIP CASE | 2

The Grades 6–12 Model

Explore, build foundations, specialize, and lead.

GRADES 6–8 | DISCOVERY

Infrastructure awareness, safety mindset, tools, measurement, teamwork, broad career exposure, and age-appropriate systems projects.

GRADES 9–10 | FOUNDATIONS

Common technical foundations across energy, the built environment, data, networks, controls, AI literacy, and systems thinking.

GRADES 11–12 | PATHWAY DEPTH

Deeper technical study, work-based learning, leadership, credentials where appropriate, and a community-connected capstone.

TRANSITION | MULTIPLE FUTURES

Employment, apprenticeship, community college, university, military service, entrepreneurship, or public leadership.

Five integrated domains

- Infrastructure systems: power, water, transportation, communications, logistics, reliability, and maintenance.
- Energy and the built environment: generation, electrical, HVAC, controls, construction, and environmental responsibility.
- AI and digital systems: data, networks, cybersecurity, automation, verification, privacy, and accountable use.
- Aerospace and advanced systems: flight, robotics, manufacturing, materials, mission planning, and emerging technology.
- Leadership and service: safety, ethics, teamwork, communication, project management, civics, and public responsibility.

INSTRUCTIONAL DESIGN

Integration happens through authentic problems: students learn the parts while seeing how the whole system works.

THE TEXAS LEADERSHIP CASE | 3

Meaningful Work, Safe Practice, Earned Recognition

Rigor becomes visible when students can demonstrate what they know.

Hands-on learning makes systems memorable, but authenticity must be matched with age-appropriate controls. Early grades can use low-voltage trainers, transparent models, robotics kits, sensor boards, and supervised demonstrations. Advanced students progress only with qualified instructors, procedures, protective equipment, and appropriate facilities.

LEARNING SEQUENCE

Explain. Simulate. Demonstrate. Practice. Verify. Reflect.

Capstones that serve real communities

A culminating project should address a real but bounded problem supplied by a school, community organization, public agency, or employer. Final presentations should identify the problem, stakeholders, system map, evidence, design, tests, AI use, risks, limitations, and recommended next steps. No proprietary or security-sensitive data should be used, and student work should not be represented as ready for operational deployment.

Progression and the Bertrand Shield

EXPLORER

Middle-school discovery, safe participation, curiosity, teamwork, and foundational awareness.

BUILDER

Common technical and leadership competencies demonstrated through projects and evidence.

PROTECTOR

Deeper pathway capability, reliability, safety, cybersecurity, verification, and service.

LEADER

Integrated senior capstone, public defense, reflection, transition plan, and responsibility.

The Bertrand Shield is reserved as a culminating graduation honor. It represents readiness to build, protect, and lead - and the responsibility that accompanies knowledge.

A Measurable First Pilot

Begin with feasibility, launch only when ready, and publish what is learned.

The proposed first step is a bounded district or regional pilot, co-designed with educators and partners. The purpose is not to prove a predetermined conclusion. It is to determine what produces educational value, what is operationally sustainable, and what must change before any expansion.

Pilot element	Planning assumption	Evidence of progress
Students	100–150 in year one	Enrollment, attendance, retention, student voice
Grade span	Middle-school exposure plus one high-school cohort	Mastery, engagement, pathway persistence
Duration	One academic year after design and preparation	Completed units, labs, capstones, partner participation
Budget	\$285,000–\$725,000 planning range	Transparent costs, donated support, cost per student

RECOMMENDED DECISION

Authorize a design-and-validation phase with one prospective pilot region and a cross-sector advisory group. Do not commit to statewide scale until the pilot produces evidence.

A realistic first cycle spans approximately fifteen months: feasibility and listening; curriculum and safety design; teacher preparation and equipment setup; instruction and mentoring; then capstones, evaluation, and a scale, revise, or stop decision.

THE TEXAS LEADERSHIP CASE | 5

Governance and Safeguards

Credibility depends on clear ownership, educator authority, and planned responses to risk.

EDUCATOR AUTHORITY

Qualified educators remain responsible for instruction. Industry mentors advise and enrich; they do not replace teachers or dictate pedagogy.

HUMAN ACCOUNTABILITY

AI use is disclosed and verified in proportion to consequence. “The AI said so” is never a final justification.

DATA AND PRIVACY

Student information, sensitive operational data, and security-relevant details receive explicit safeguards and escalation rules.

SAFETY GOVERNANCE

District policies govern. No student performs work requiring a license or authorization the student does not hold.

ACCESS AND SUPPORT

Transportation, scheduling, accommodations, equipment, and participation barriers are addressed during design.

TRANSPARENT EVALUATION

The pilot reports encouraging results, costs, limitations, implementation failures, and required changes.

What should be measured

- Systems understanding, technical foundations, and ability to apply knowledge.
- Safety reasoning, documentation, AI verification habits, and ethical judgment.
- Attendance, engagement, belonging, career awareness, and informed next-step planning.
- Teacher workload, partner reliability, equipment use, schedule fit, cost, and equitable access.
- Pathway continuation, credentials, work-based learning, postsecondary transition, apprenticeship, military service, employment, or entrepreneurship where appropriate and lawful to track.

EVIDENCE RULE

A pilot is valuable when it reveals not only what worked, but what must change.

THE LEADERSHIP INVITATION

Help Shape One Credible Texas Pilot

The immediate objective is a coalition strong enough to test the idea responsibly.

The Institute is not asking leaders to accept a finished answer. It is asking them to examine a developed concept, identify weaknesses, connect it to existing Texas strengths, and determine whether one region is ready for disciplined co-design.

THE FIRST ASK

How would you strengthen this for Texas, and who else should be at the table?

Near-term agenda

- Secure 10–20 substantive feedback conversations across education, workforce, industry, postsecondary, philanthropy, and public leadership.
- Recruit 5–9 founding advisory participants who can challenge assumptions and improve the model.
- Identify one or two credible pilot-region candidates without promising selection.
- Complete a curriculum crosswalk, feasibility budget, safety review, and evaluation plan.
- Seek letters of collaboration only after roles, boundaries, costs, and expectations are understood.

Ways a leader can help now

PROVIDE CRITIQUE

Identify conflicts, blind spots, duplication, missing safeguards, and opportunities to build on existing work.

SHARE EVIDENCE

Offer workforce data, regional needs, standards expertise, facilities knowledge, implementation lessons, or evaluation guidance.

MAKE INTRODUCTIONS

Connect the Institute with educators, employers, workforce boards, colleges, universities, apprenticeships, and public agencies.

EXPLORE A PILOT

Participate in a no-obligation feasibility conversation about one bounded, measurable partnership.

No endorsement, funding commitment, public announcement, or formal partnership is requested merely by receiving or discussing this publication.

CLOSING STATEMENT

The Future Must Be Built - and Governed - by Prepared People

The systems shaping America's future will not sustain themselves. They will require people who understand how energy, electrical infrastructure, cooling, networks, controls, manufacturing, cybersecurity, transportation, aerospace, data, and artificial intelligence connect.

They will also require people who can listen, work safely, verify what they are told, recognize the human consequences of technical decisions, serve others, and accept responsibility for the authority their knowledge gives them.

The Bertrand Institute began from a workforce observation, became human through a student-centered insight, and grew into a larger leadership responsibility. Its purpose is to help young people discover that technical skill, academic learning, ethical judgment, and public service belong together.

Build the capability. Protect the systems and people who depend on it. Lead with judgment, service, and accountability.

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An educational and policy initiative of the proposed Bertrand Foundation

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Source publications

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BI-PV-001 - The Texas Leadership Initiative, First Edition