

Grown in Arkansas

*The research behind how Arkansas feeds,
makes, moves, powers and cares for people*



Arkansas Science and Technology Plan, 2027-2032

31 October 2026

For adoption by the Jurisdictional Steering Committee, to take effect by 31 May 2027

About this plan

The Arkansas Research Alliance (ARA) prepared this plan for the Jurisdictional Steering Committee, which adopts it; ARA does not vote. Its commitments, owners and dates are proposals until the committee adopts the plan and each named partner accepts its role. Appendix C lists the decisions still to make, and Appendix D the public facts and source checks behind the plan. Baseline figures become final in December 2026.

Two rules govern the numbers. Publication counts are verified Arkansas counts for 2021–2025 with false institutional tags removed; the plan does not turn them into national shares or rankings. Federal agencies count grant dollars differently (multi-year estimates at NSF, annual awards at NIH, cumulative obligations at USDA, DoD, DOT and DOE), so funding is reported by agency and never added across agencies.¹ Industry and research statistics show where Arkansas has scale and expertise; they do not show that an employer has agreed to a test or that the plan has produced an outcome.²

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The full set of aggregate data files behind the plan's evidence (ARA, October 2026).
talent.arresearchhub.com ↗
2. Checked public-data context, exact source scopes and original-file reconciliations; research and industry populations remain separate.
talent.arresearchhub.com ↗

The plan at a glance

Arkansas’s research is concentrated in the fields its economy runs on, led by health, crops and food, and it hosts a national power–electronics facility in Fayetteville.

NSF funding has not kept pace with that work, and six awards that hold up shared research facilities end within nine months of each other in 2027–28. This plan concentrates on ARA’s seven growth areas, carries those facilities across the gap, and builds new research expertise around the state’s steel mills and lithium brines.

● The strength

24,743

Peer-reviewed articles and reviews from Arkansas institutions in 2021–2025 after removing false affiliation tags, led by health, crops and food¹

● The gap

0.35%

Arkansas’s share of NSF research funding in FY2021–2025, below its share of US academic research spending (Figure 3)²

● The cliff

6

Major federal awards supporting shared facilities and research cores that end between April 2027 and January 2028^{3,4,5}

Six bets, one chain from field to clinic



Three foundations under all six

AI/ML, data analytics and cybersecurity

Shared methods and secure data practices across all seven growth areas

Materials and shared facilities

Steel and critical-minerals missions; practical facility access across campuses, with clear service terms

People statewide

Multi-campus research teams and technician pathways built with partners

Sources 5

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Prologue

What Arkansas does with what it has

Rice farmers around Stuttgart used to burn their hulls. In 1961 J.B. Hunt worked out how to sell them to Arkansas's poultry companies as litter, and started a company in Stuttgart to do it. In 1969 the company bought five tractors and seven trailers as a sideline. The sideline is now J.B. Hunt Transport, headquartered in Lowell, one of the largest trucking and logistics companies in North America.¹

In 1997 a power-electronics company was founded in Fayetteville and grew in the university's research park with the help of University of Arkansas engineering graduates. Cree bought it in 2015. The buyer, now called Wolfspeed, reported in its 2026 annual report that the Fayetteville site still researches and builds power modules.²

Arkansas research keeps that habit of working with what is close at hand. Its animal and plant science sits beside the state's poultry houses and rice fields, and its power-electronics engineering beside a power-module plant.^{3,4}

The next test lies in the steel mills of Mississippi County, which AEDC identifies as the country's largest steel-producing county, and in the Smackover brines of South Arkansas, where proposed lithium projects would join an established brine-processing economy. A-State is building a steel-research center.^{5,6,7} For both industries the question is how much of the knowledge, skilled work and supplier business they create can grow in Arkansas.

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6. A-State Secures \$2.1 Million Federal Award for AI-Driven Steel Research (2026-10-14). A-State reports a \$2.1 million NIST award for CAMSM under Drew Fleming, with Yeonsang Hwang, Rajesh Sharma and Mohammadreza Daroonparvar. Planned resources are GPU computing, a Gleeble 3800 thermomechanical simulator and Thermo-Calc libraries supporting materials design and processing research. The release does not verify commissioning, operating funds, external-user terms or an accepted mill research agreement. This FY2026 announcement falls outside the plan's historical FY2021–2025 award cohort and must remain separately labeled. Accessed 2026-10-30. astate.edu
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Part one

I

Where Arkansas stands

Research strengths, NSF funding and the services expiring awards support

In 1980 the National Science Foundation picked five states that won too little of its money and offered them help to compete for more, through what it now calls EPSCoR, the Established Program to Stimulate Competitive Research.¹ Arkansas was one of them, with Maine, Montana, South Carolina and West Virginia.^{2,3} It still qualifies today.

The record that follows describes a state whose research is strongest where its economy is, held in a few campuses and firms, short of NSF funding even relative to its own research spending, and about to lose six awards that hold up shared facilities.

Strong where the economy is strong

24,743

articles and reviews linked to Arkansas institutions in 2021–2025 after affiliation review⁴

1.21%

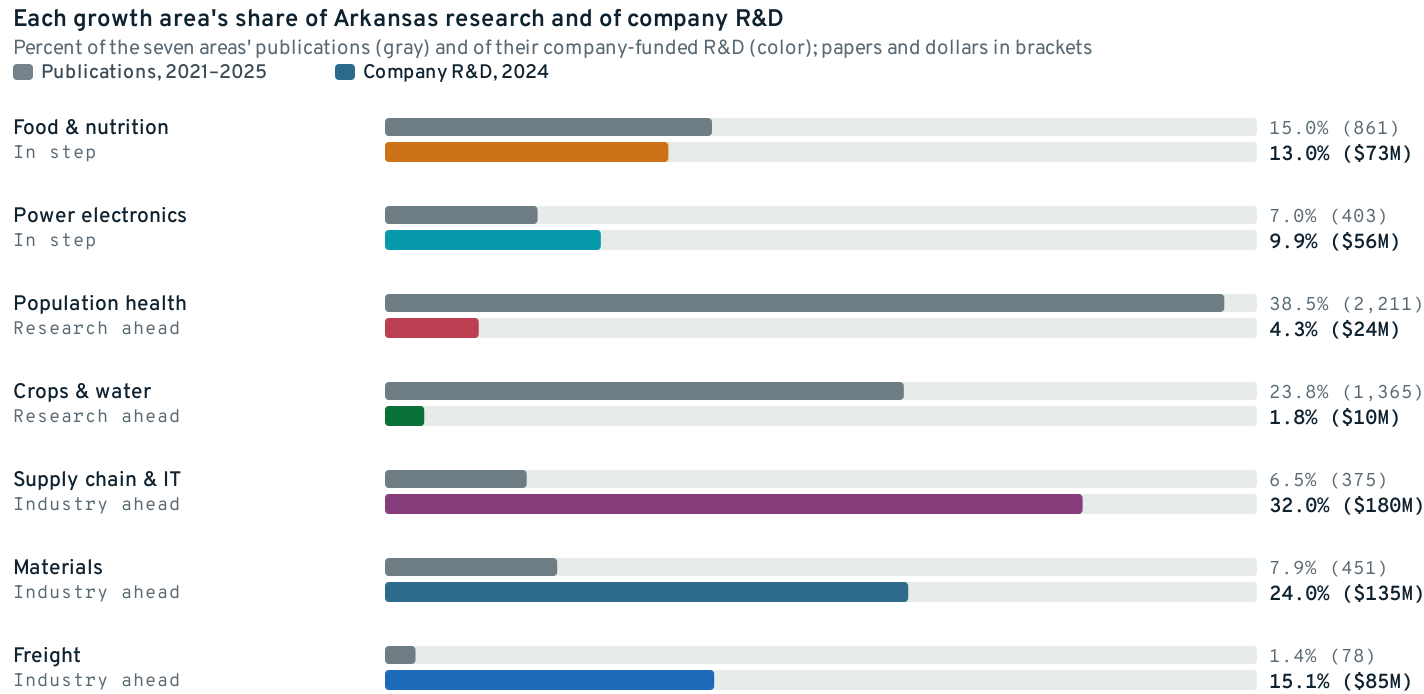
of all US food-manufacturing R&D is performed in Arkansas, about 13 times the state's overall share of company R&D⁵

Agriculture and the industries built on it, from poultry processing to forest products, support about 13% of Arkansas jobs, including indirect employment.⁶ Health, crop, animal and food science lead the state's publication record.⁴ Company research follows the same line, most of all in food.⁷ Figure 1 sets each growth area's share of Arkansas publications beside its share of company R&D. Food and power electronics are in step. Health and crops lead in research, while information technology, materials and freight lead in industry.⁸

Figure 1

Research and industry line up in food and power; elsewhere one leads the other

Each growth area's share of the seven areas' audited 2021–2025 Arkansas publications, beside its share of their 2024 company-funded business R&D (NCSES BERD).



Shares are of the seven areas' totals: 5,744 publications and \$563M of Arkansas's \$633M company-funded R&D. 'In step' means the two shares are within a factor of 1.5. BERD files each company's R&D under its main industry, so precision-agriculture R&D done by software, equipment or food companies is counted in those industries; the crops bar covers only farm implements and agricultural chemicals. The information bar includes \$73M of data hosting. The audited publication cohort holds 24,743 Arkansas articles and reviews after removing 126 misattributed or unresolved records.

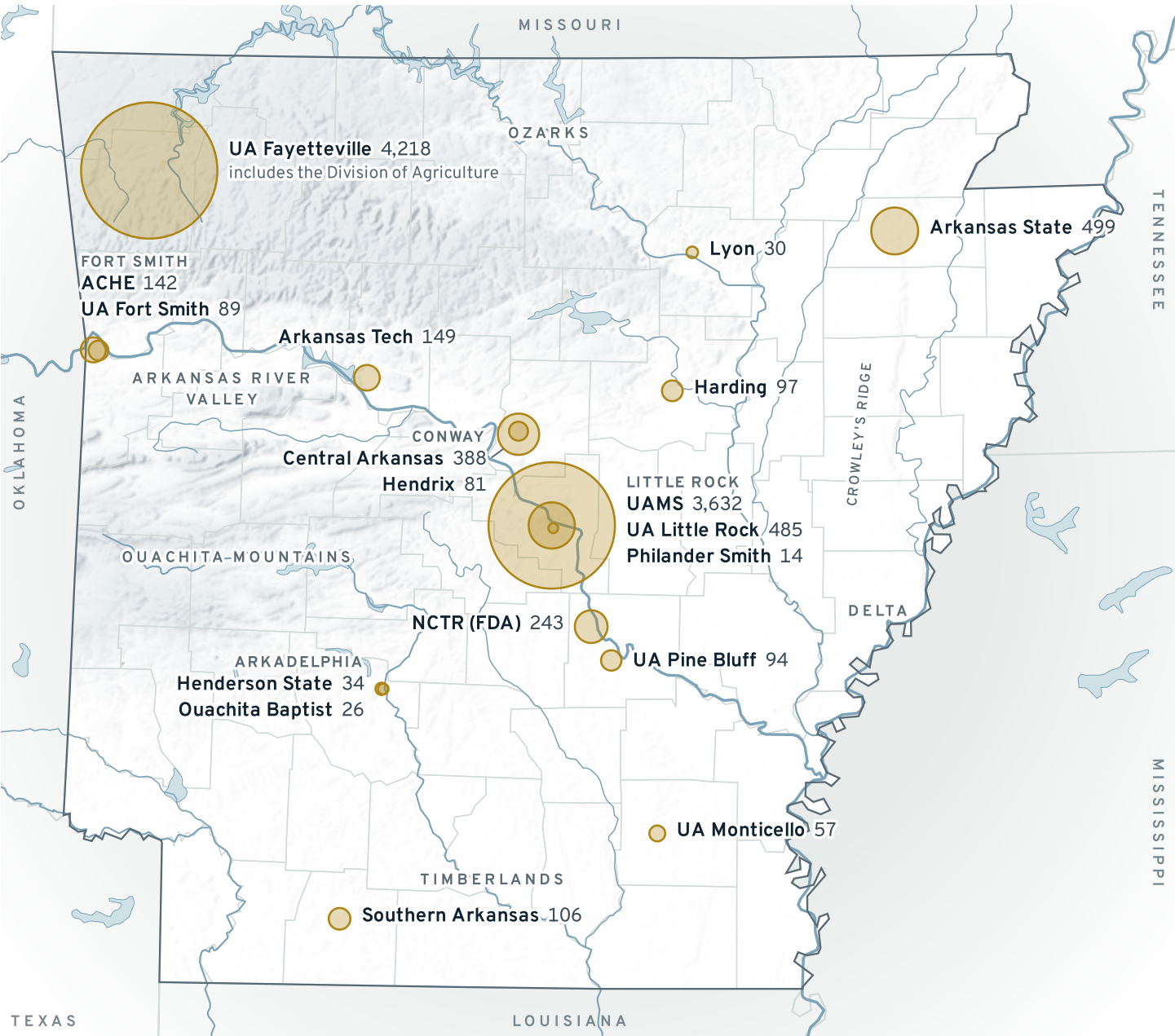
How the shares and fit labels are computed (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-review-edits/cc6d1683128c-review-edits-notes.html#figure-1>)

Source Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-review-edits/cc6d1683128c-review-edits-notes.html#figure-1>)

Figure 2

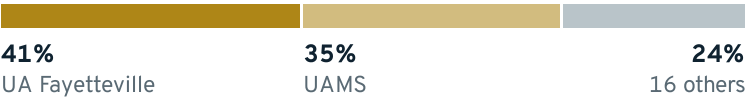
Where Arkansas’s research workforce is concentrated

Current researcher records across 18 Arkansas campuses and research centers (10,384 records, 11 October 2026 extract).

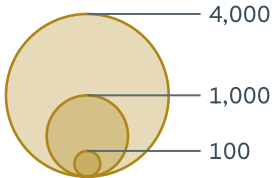


3 in 4

researchers in the database are at UA Fayetteville or UAMS



RESEARCHER RECORDS



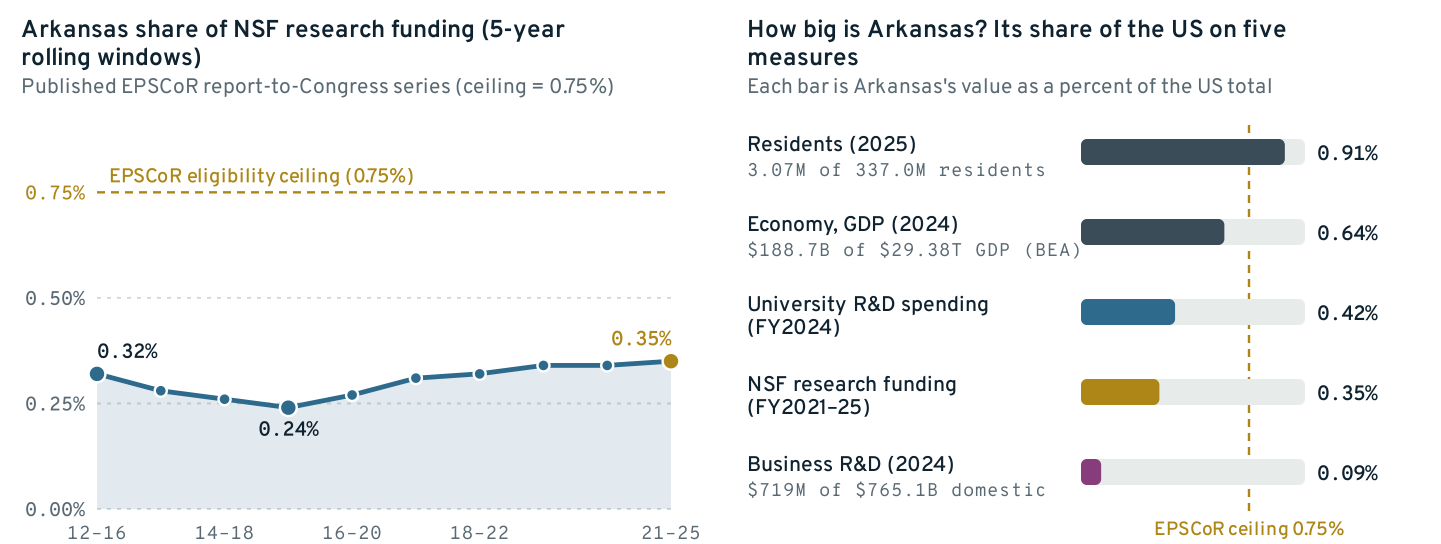
Campuses in the same city share a centre.

Source Statewide researcher database, extract of 11 October 2026: active records marked confirmed or probable and not tagged Formerly Arkansas, by primary institution. These are database records, not a census, and two-year colleges are not in the database. Locations: OpenAlex; NCTR at its Jefferson campus (OpenStreetMap). Counties: US Census (us-atlas 3.0.1). Rivers and lakes: Natural Earth. Relief: AWS Terrain Tiles. Frozen profile counts are not the corrected work-affiliation cohort or verified present staffing. Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8d439a187259-figure-sources.html>)

The NSF gap

Figure 3 —
Arkansas’s share of national NSF research awards

Left: Arkansas’s share of NSF research funding over ten five-year windows. Right: Arkansas’s share of the US on five measures, from residents to business R&D.



Read the right panel top to bottom. Arkansas has 0.91% of US residents and 0.64% of US GDP. Its universities perform 0.42% of US academic R&D, and it wins 0.35% of NSF research funding, so NSF funding trails even the state's own research spending. Business R&D, at 0.09%, is the lowest share. The NSF share is the official five-year EPSCoR series reported to Congress, excluding EPSCoR's own awards; a state remains EPSCoR-eligible at or below 0.75%.

Source Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8df5e250ab61-source-geography-notes.html>)

Arkansas received about 0.35% of NSF research funding in FY2021–2025, under NSF’s published EPSCoR measure, which excludes EPSCoR’s own awards.^{9,10} The state’s universities account for 0.42% of US academic research spending.¹¹ Arkansas therefore wins less from NSF than its own research volume would suggest. Part of

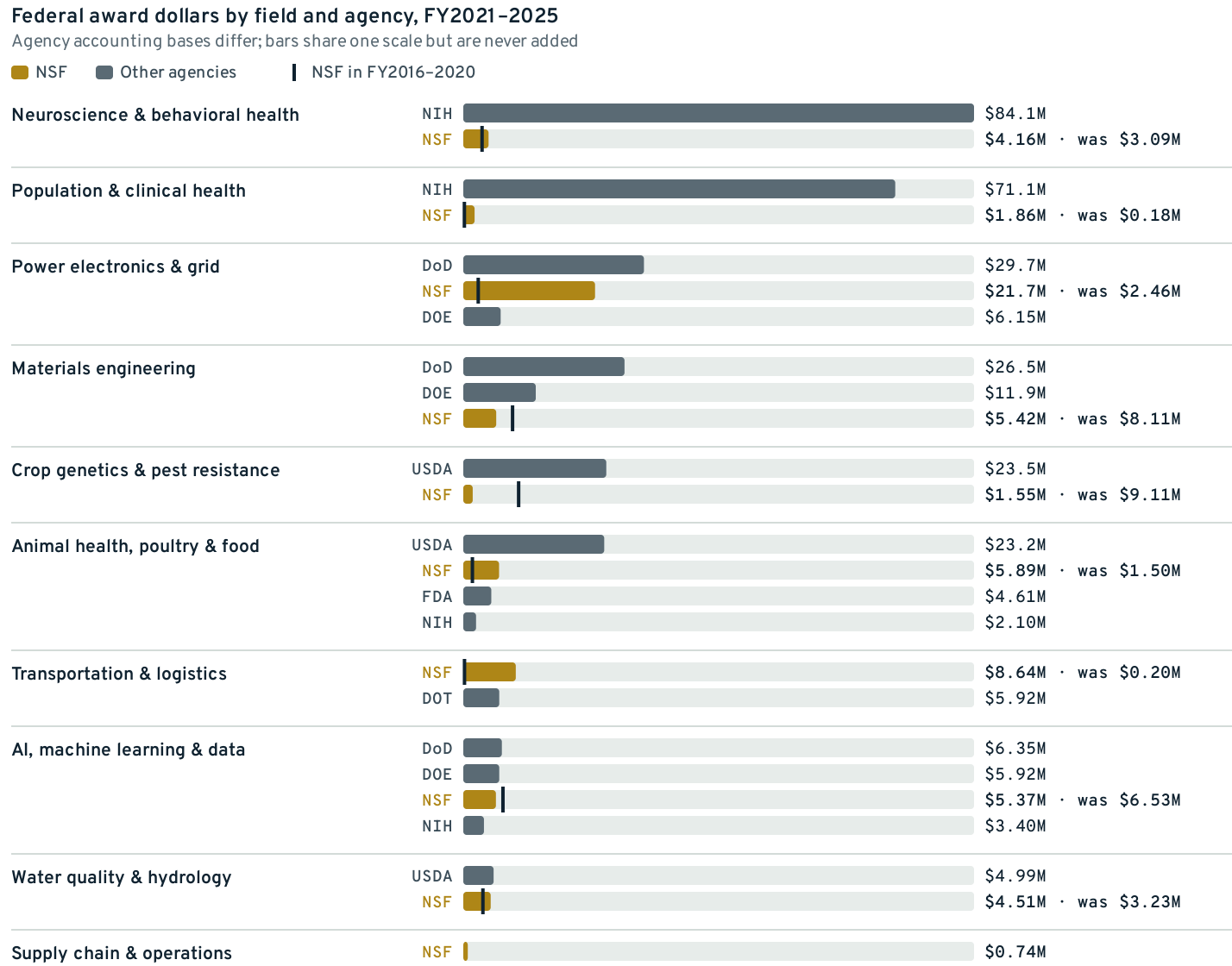
the reason is field mix: much of Arkansas's research is in agriculture and health, which USDA and NIH fund more than NSF does (Figure 4). The rest depends on how many NSF proposals Arkansas researchers submit and how often they win, and the state has no cross-campus count of them yet.

Starting in 2027, the state EPSCoR office will work with campus research offices to compile proposal counts, requested dollars, review outcomes and funding rates by field and program, then direct proposal support to where it can raise win rates.¹²

Figure 4

NSF is one funder among several in most Arkansas research fields

FY2021–2025 federal awards to Arkansas by research field and agency. Each NSF bar carries a tick at its FY2016–2020 value.



Agencies count dollars differently: NSF reports estimated multi-year totals at award start, NIH fiscal-year parent-record amounts, and USDA, DoD, DOE, DOT and FDA cumulative obligations. Read the pattern across a row, but do not add the bars. Each row shows NSF and up to three other agencies with at least \$1M. USDA's \$35.9M in formula capacity grants is statewide and is not assigned to a field. NSF crop awards fell from \$9.11M in FY2016–2020 to \$1.55M.

Agency funding panels and NSF crop sensitivity notes (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html>)

Source Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html>)

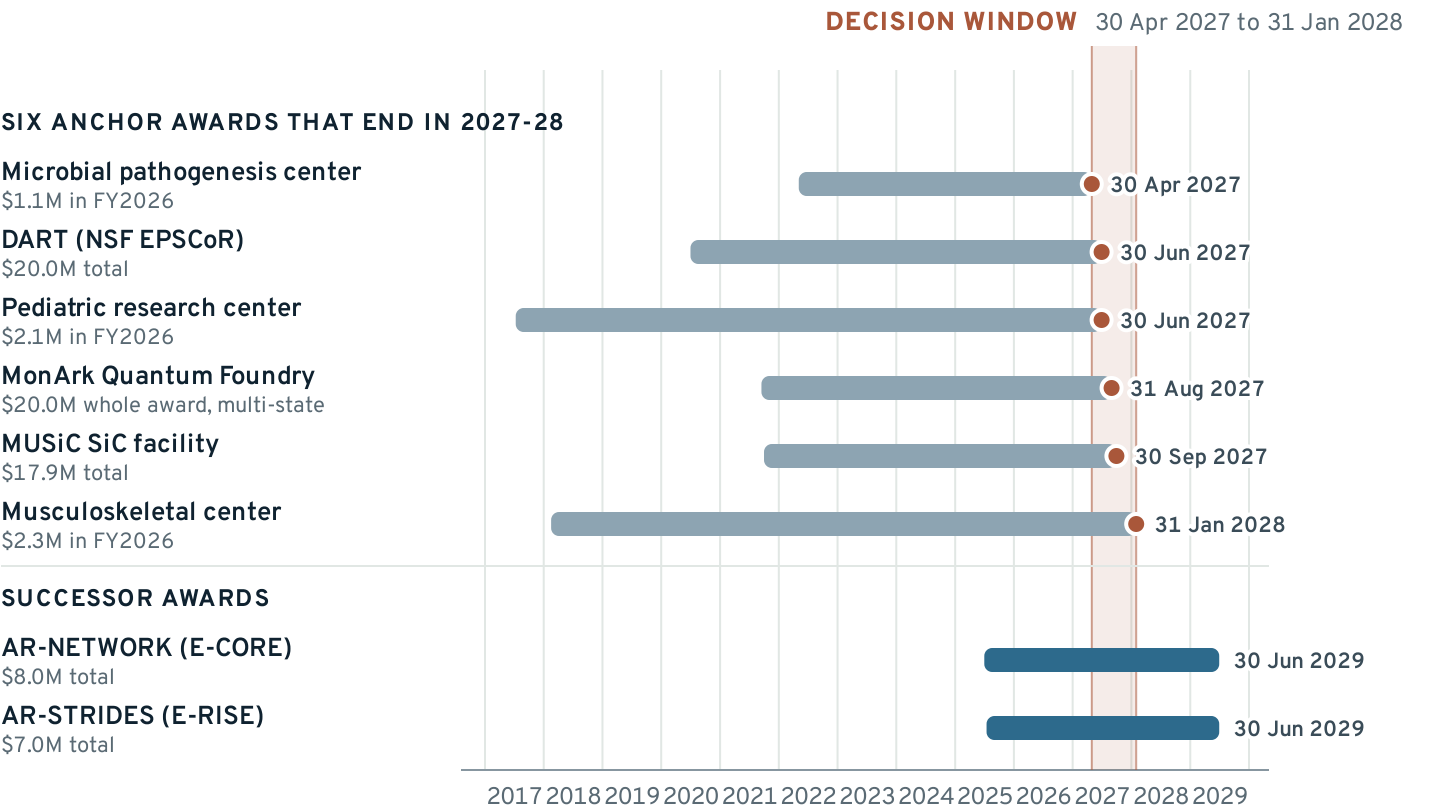
Award records already show one warning sign. Classified NSF crop awards fell from about \$9.1 million in FY2016–2020 to \$1.6 million in FY2021–2025, and still fell 30% after removing three borderline titles and the largest earlier rice grant.^{13,14,12}

Six awards end between April 2027 and January 2028

Figure 5 —
Six major federal awards reach their scheduled end dates between April 2027 and January 2028

Scheduled end dates alongside active successor awards; an end date marks a continuity decision point, not an automatic shortfall.

Verify annual funding schedules, staff, equipment access and services carried into successors. Whole-award totals cover different periods and do not establish an annual shortfall; renewal and extension status must be confirmed.



CONTINUITY EVIDENCE STILL NEEDED

Verify annual funding schedules, staff, equipment access and services carried into successors. Whole-award totals cover different periods and do not establish an annual shortfall; renewal and extension status must be confirmed.

Method and supporting table (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8d439a187259-figure-sources.html>)

Source Award records extracted in October 2026; dates and successor status require host confirmation. Verify annual funding schedules, staff, equipment access and services carried into successors. Whole-award totals cover different periods and do not establish an annual shortfall; renewal and extension status must be confirmed. Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8d439a187259-figure-sources.html>)

Between 30 April 2027 and 31 January 2028, six major awards that support shared research capabilities across the state end: DART, the NSF EPSCoR award that funds statewide data-science research and the state EPSCoR office; MUSiC, the national silicon-carbide research and fabrication facility in Fayetteville; the MonArk Quantum Foundry, in which Arkansas is a partner; and three NIH research centers in Little Rock focused on microbial pathogenesis, pediatric research and musculoskeletal disease.^{15,16,17} The three NIH centers alone carried about \$5.5 million in FY2026.¹⁵

Newer awards such as AR-NETWORK and AR-STRIDES cover different work, and both can be renewed: NSF allows an E-CORE award such as AR-NETWORK a renewal of up to four years, and an E-RISE award such as AR-STRIDES up to three.¹ Each host institution identifies the services and staff roles it needs to keep, the funding already committed, and the date by which it will decide how to sustain them.^{16,12}

Why now

Arkansas commits to revising this plan in full every two years. The state's economic development priorities change faster than a five-year plan can follow, and a two-year cycle keeps research aimed at them, with each revision drawing on the latest annual scorecard and federal data. AR-NETWORK, Arkansas's NSF EPSCoR award, builds in the same cycle and treats the state plan as a living document.¹⁸ The plan is to be final by 31 May 2027, more than two years before the 2024 plan's July 2029 end date, so it is in force while host institutions plan for the six awards that end from April 2027 to January 2028 and for the renewals that follow. Its full revisions fall by 31 May 2029 and 31 May 2031.^{19,20,21}

Concentrated in a few campuses and firms

Academic R&D spending in Arkansas rose about 34% in nominal dollars from 2019 to 2024, behind 41% across the 50 states and DC. Nearly all of the increase came from UA Fayetteville and UAMS, and the other consistently tracked institutions spent about the same. UAMS's 2024 figure is a survey estimate; without UAMS, Arkansas's growth was 23.7%.^{22,13}

Businesses performed \$719 million of R&D inside Arkansas in 2024, 0.38% of state GDP against 2.6% nationally.⁷ Companies with 250 or more domestic employees paid for 81% of the company-funded share.⁷

Small-business awards turn over more than they grow. Exactly 32 Arkansas firm identities won federal SBIR/STTR awards in 2015–2019 and 32 in 2020–2024, but only 17 won in both periods. Award dollars rose 87%, and 105% once the five largest recipients in each period are set aside.²³ USDA awards went to Arkansas firms working on aquaculture and poultry health, crop protection, trucking logistics, bioproducts and navigation for blind travelers in rural areas.²⁴

Patents show the same concentration. Inventors in Arkansas appeared on 4,653 US utility patents granted in 2015–2025, and Walmart's patent-holding company holds more than a quarter of those assigned to an organization.^{25,26} Grants rose 8% from 2015–2019 to 2020–2024, but without that one company they fell 6%.²⁷ Growth in Arkansas patents rests on one firm, and the wider base of inventors is patenting less.

Parts III and IV respond by opening shared facilities to regional campuses and smaller employers, requiring multi-campus teams, and testing research directly on partner problems.

Industrial strength can create the next research strength

Some opportunities are larger than their publication record. The audited critical-minerals, lithium and brine topics hold 35 primary-topic papers for 2021–2025, a count that misses many of the chemists, engineers and geoscientists whose work applies.^{28,29} A-State's October 2026 award for steel research and Southern Arkansas University's LiTHIUMLEARNS program are concrete starting points.^{30,31} Public research can help with steel grades and processes that customers can qualify, lithium products that meet a buyer's specification, and testing and technical services supplied by Arkansas firms. Neither is yet an established research concentration.

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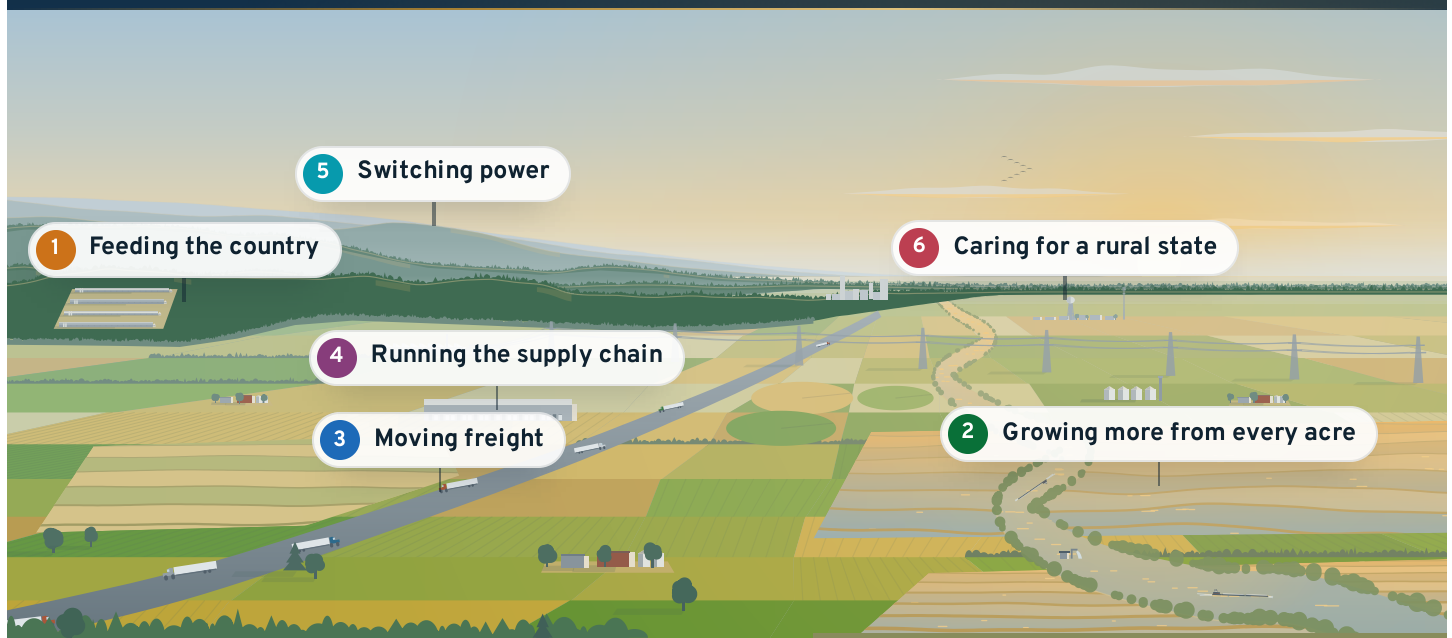
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Arkansas State University Research: Research Centers & Institutes (undated; read 30 October 2026). The university research page lists the Center for Advanced Materials & Steel Manufacturing and describes it as coming soon. Undated page; its wording is consistent with development but cannot resolve the operating status of individual instruments. Use the dated award announcement for precise claims. astate.edu ↩
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Part two

II

What we will be known for

Research applications within ARA's seven growth areas



“

By 2032, Arkansas industries and communities can turn to Arkansas research for tested answers, and the facilities that research needs are open across the state.

The steering committee sets the final vision statement after the 2027 consultation.¹

Build on the seven growth areas

ARA commissioned TEconomy Partners in 2024 to find where university research meets industry growth in Arkansas. The study weighed traded industries, patents, investment and interviews, and named seven growth opportunity areas, each broader than any single academic field. This plan keeps those seven areas and, within each, picks the research application that is ready to deliver.²

ARA growth opportunity area	Proposed delivery application or workstream	What each application needs to start
Population Health Innovations and Clinical Research	Caring for a rural state	A health provider or community partner defines a specific rural care problem to test
Power Electronics, Advanced Packaging, and Grid Management Systems	Switching power	Post-2027 facility access and a partner test case; grid capability assessed separately
Next Generation Transportation and Logistics Systems	Moving freight	A carrier data-sharing agreement and a faculty team large enough to deliver beyond current awards
Materials Engineering Applications	Better steel; more value from lithium and critical minerals; materials across power, health, food and agriculture	Industry problems, specialist teams, usable facilities and separate milestones for each materials mission
Precision Agriculture	Growing more from every acre	Grower priorities and a field-test partner for crop, sensing or irrigation work
Food Production and Integrative Health	Feeding the country	A processor or public research partner commits a problem, data or plant test access
Supply Chain, Retail, and Consumer Analytics	Running the supply chain	Employer research priorities across operations, retail and consumer analytics, plus usable data

The six applications run along a chain from farm and food through freight, supply chains and power to rural health; the order does not rank them. AI/ML, data analytics and cybersecurity serve all seven areas, each use checked against available skills and secure data access before launch.⁵ Materials Engineering Applications is a shared workstream, drawing on a multi-campus community of materials and biomedical researchers.^{6,7}

Different opportunities need different decisions

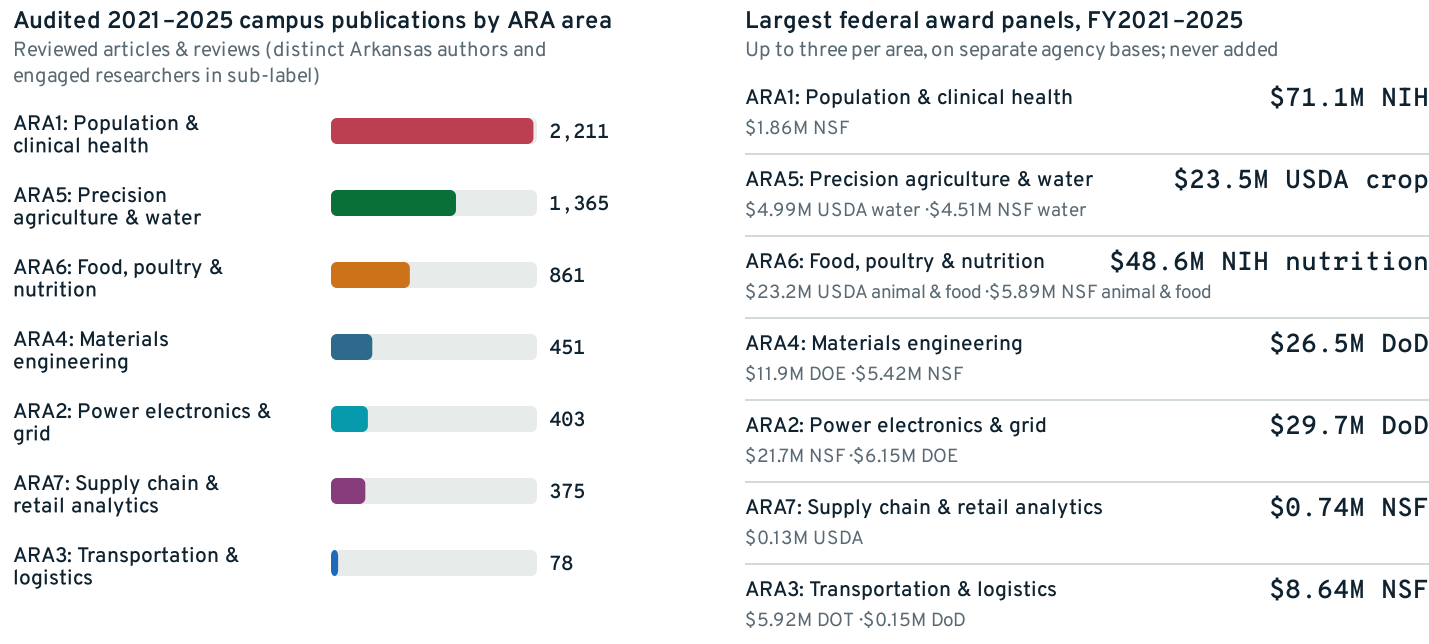
The six applications start from very different baselines, so each needs a different first decision. Food science has deep research volume and industry scale, so its next step is converting single-researcher ties into multi-person industry partnerships. Freight has major federal centers but a small faculty roster, while supply-chain researchers need a structured way to work with proprietary company data. Power electronics needs an operating model to keep its silicon-carbide facility open after September 2027, and health needs rural clinical partners outside Little Rock. Part III sets out the evidence, partner needs and next steps for each.^{8,4}

The six applications came through a written screen of 28 candidates, which tested research output, major federal anchor grants, alignment with state economic sectors and how often peer EPSCoR plans headline a theme. Food, crops, power and supply chains qualify under every single-test change examined; freight and health depend on the federal-anchor test, so their place is the least settled. Steel and lithium did not pass the historical screen and enter through a separate route for building new capability, with a review before each stage. All seven growth areas stay in the plan whatever the screen finds, and Part V gives the rule and its sensitivity tests.^{9,10,11,12}

Figure 6

Academic and federal scale
across the seven growth areas

Audited 2021–2025 publications and the largest FY2021–2025 federal award panels in each area. Figure 1 compares each area with company R&D.



Left panel: audited 2021–2025 Arkansas publications by growth area, with distinct Arkansas authors and engaged researchers in the sub-labels. Right panel: the largest FY2021–2025 federal award panels for each area. Agencies count dollars differently, so panels are not added. USDA's \$35.9M in statewide formula capacity grants is not assigned to an area.

Seven-area portfolio evidence and funding panels (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html>)

Source Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html>)

Figure 7

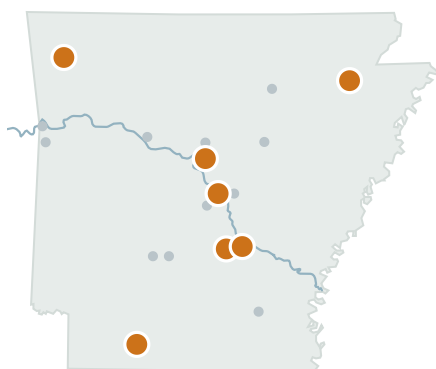
Campus and sector reach across Arkansas's seven growth areas

Engaged researchers and campuses with five or more active researchers per area (11 October 2026 database extract).

Feeding the country

Poultry, animal and food science

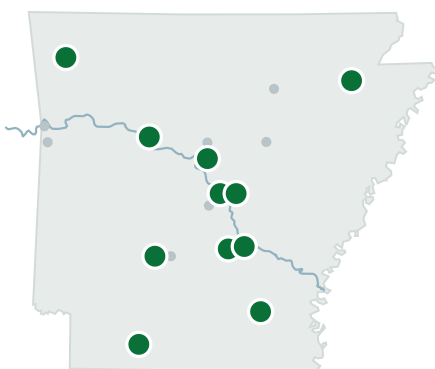
7 institutions with five or more



Growing more from every acre

Crop, plant, insect and weed science, with water

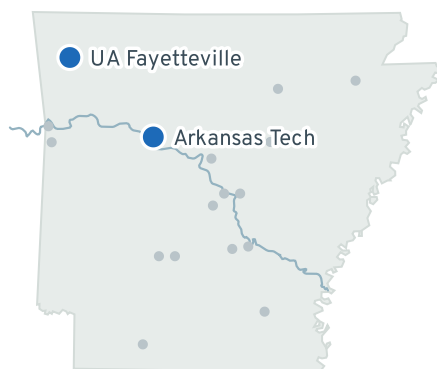
11 institutions with five or more



Moving freight

Transportation and logistics

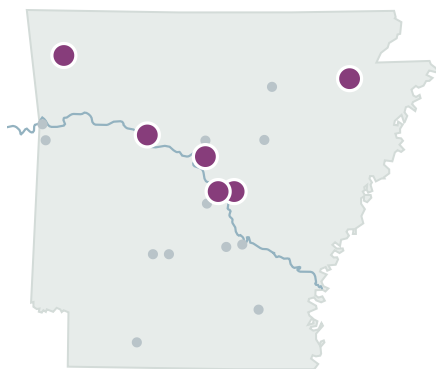
2 institutions with five or more



Running the supply chain

Operations research and information systems

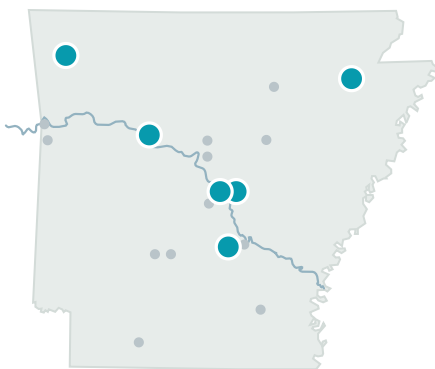
6 institutions with five or more



Switching power

Power electronics and advanced packaging

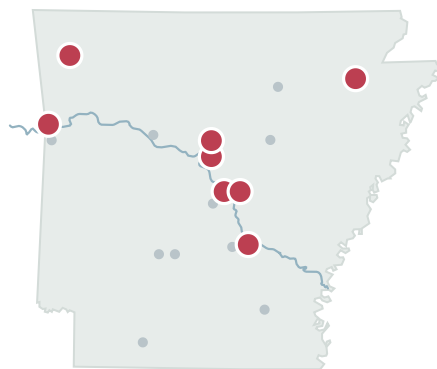
6 institutions with five or more



Caring for a rural state

Population and clinical health

8 institutions with five or more



Method and supporting table (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8d439a187259-figure-sources.html>)

Source Researcher extract, 11 October 2026; versioned delivery definitions. Counts are current database records, not a census. Only institutions with at least five engaged researchers appear. Division of Agriculture is filed under Fayetteville; two-year colleges are not covered. Frozen profile counts are not the corrected work-affiliation cohort or verified present staffing.

Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8d439a187259-figure-sources.html>)

Other topics in development

Some topics are tracked until better measures exist. Quantum and atomic-molecular-optical research, with 98 papers on explicit quantum topics, supports MonArk partner teams until quantum has its own screen. Water research spans 309 papers on water, hydrology and irrigation topics and is developed with agricultural users. Toxicology at the FDA's National Center for Toxicological Research in Jefferson is tracked separately from competitive university grants. ^{13,14,15,3}

Build the expertise the next industries need

Steel and lithium become explicit missions within Materials Engineering Applications. Steel starts from an operating industrial cluster and tests that producers and their customers can run. Lithium starts from a large geological resource and emerging projects, and faces a harder step from trials on representative brine to consistent, qualified chemical products. Both aim to grow research, suppliers and skilled work around these industries in Arkansas, through a competitive route with limited early funding and independent review before any expansion.

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Part three

III

Applications and materials

Feeding the country

Growing more from every acre

Moving freight

Running the supply chain

Switching power

Caring for a rural state

Making more from steel and critical minerals



— Bet 1 of 6

Feeding the country

Poultry, animal and food science

● ARA area 6 ● Established research base ● Main federal sponsor USDA

Arkansas raised about one pound in eight of the nation's broilers in 2025, and food manufacturing supported about 52,000 private jobs, a share of the state's workforce 3.5 times the national average.^{1,2} Companies in the industry paid for and performed \$73 million of their own R&D in Arkansas in 2024.³ The poultry companies, the University of Arkansas poultry center, USDA research units and UAPB's aquaculture center sit close to production.^{4,5,6}

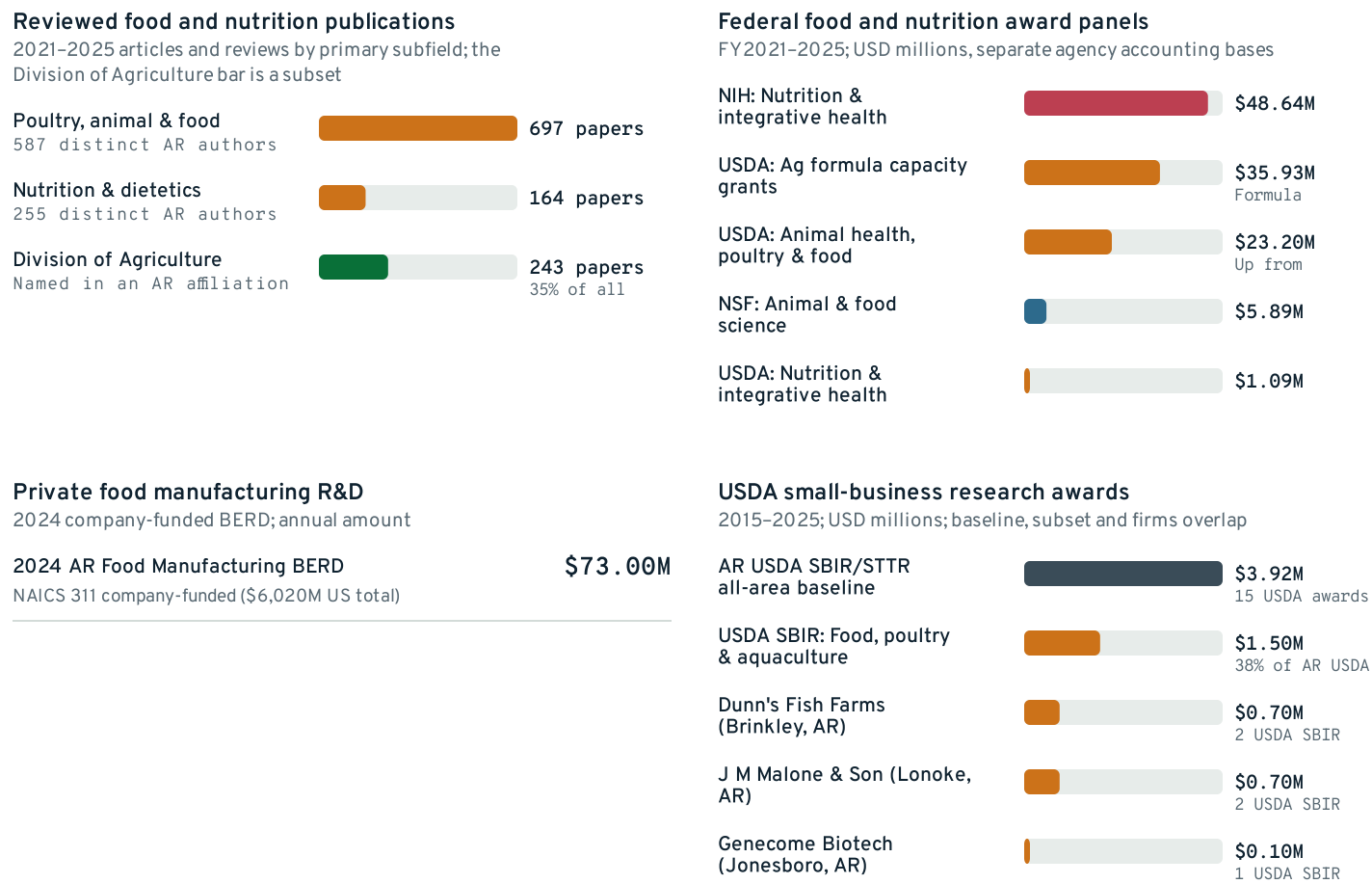
Arkansas institutions published 697 reviewed articles and reviews in food and animal science between 2021 and 2025. At least 243 name the UA System Division of Agriculture, its Agricultural Experiment Station, Cooperative Extension Service, a research and extension center or the Center of Excellence for Poultry Science.^{7,8,9}

USDA is the main federal sponsor. Its cumulative obligations to selected food and animal awards starting in FY2021-2025 reached \$23.2 million. A further \$35.9 million in formula capacity funds is one statewide pool that the Division shares across all of agriculture.¹⁰

Figure 8

Food, poultry and aquaculture: academic depth, USDA awards and a \$73M private R&D base

Audited 2021–2025 publications (including Division of Agriculture links), FY2021–2025 federal award panels, 2024 food-manufacturing BERD and classified USDA SBIR awards.



Publication and federal panels show audited 2021–2025 Arkansas publication counts (with explicit UA System Division of Agriculture affiliation disaggregation) and separate FY2021–2025 federal agency funding panels. Private R&D and small-business panels show 2024 company-funded Food Manufacturing R&D (\$73M, or 1.21% of the US total) and classified USDA SBIR/STTR aquaculture and poultry awards (\$1.50M across 5 awards).

Food and animal publication, funding and industry table (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html>)

Source Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html>)

Industry ties are few and rest on individuals: several earlier co-authorship links depended on a single faculty member. From 2015 to 2025, three Arkansas companies won USDA small-business awards in food, poultry and aquaculture, \$1.50 million in all. J M Malone & Son in Lonoke and Dunn's Fish Farms in Brinkley used theirs for fish production, and Genecome Biotech in Jonesboro for a plant-produced protein against poultry diseases.^{11,12}

The plan pairs a multi-state aquaculture and poultry team bid with sponsored-research agreements at Arkansas food headquarters, and requires at least two active contacts per partnership.^{13,14} Each processor pilot starts from a one-page test brief fixing the product, assay and baseline, and measures the share of eligible tested batches that fail.^{15,16}

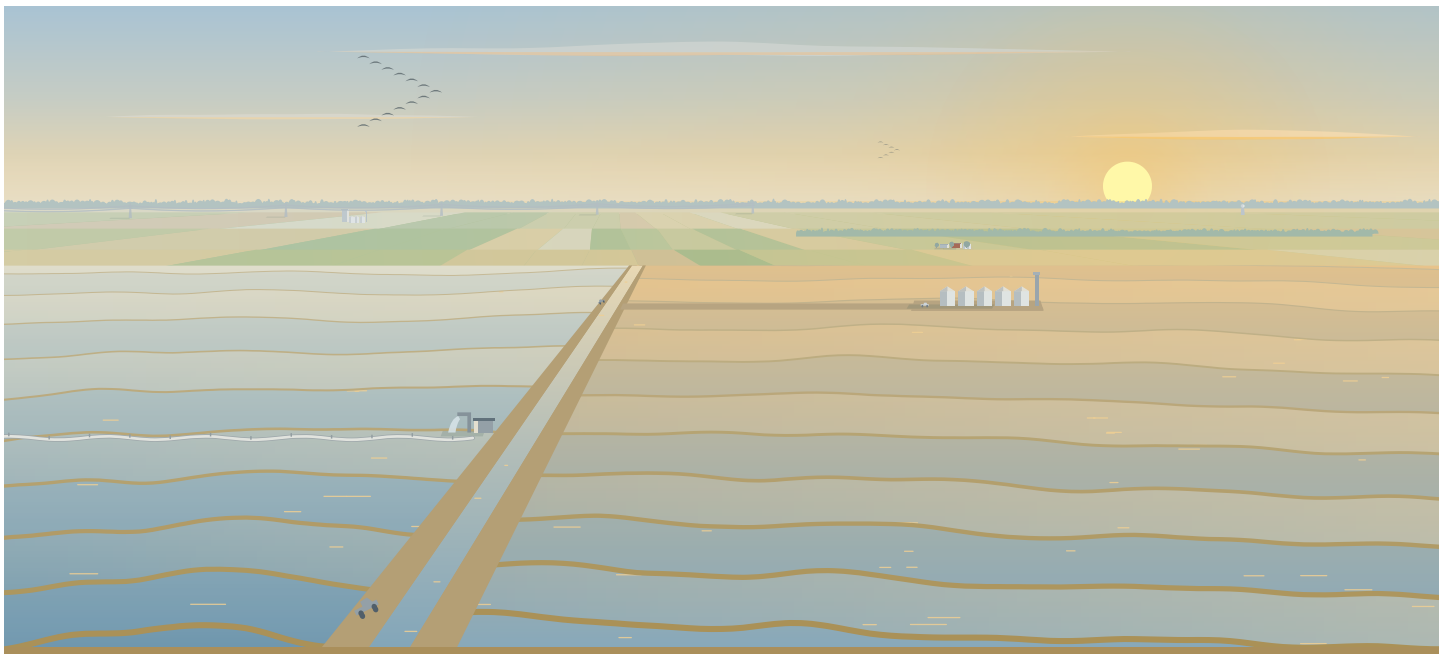
Move	Lead	By when
Partner agreement for a multi-state EPSCoR team bid on aquaculture or poultry health, building on ties with Kansas and Iowa; UAPB co-leads aquaculture	UAPB and University of Arkansas consortium	June 2027
Invite the poultry and food headquarters firms in as sponsored-research partners	Division of Agriculture with the University of Arkansas	2028
Form a cross-campus microbiome team under the team rule, joining animal and food science in Fayetteville with the nutrition center and UAMS in Little Rock	PI consortium with the nutrition center	2028
A standing USDA Agricultural Research Service contact on the steering committee; back UAPB's bids to USDA's 1890 capacity programs	Steering committee; UAPB	December 2027
Identify facility gaps for this application, starting with partner access to the nutrition center, the USDA poultry and aquaculture units and the Pine Bluff center	The April-June 2027 consultation round, with the facility hosts	June 2027

Sources^{17,18}

How we will know

Partner-defined food or aquaculture projects with executed access agreements and active work Baseline Baseline: agreement and project register due June 2027	Partner relationships with two active contacts and a continuity plan Baseline Baseline: recorded with project partners	USDA small-business awards to Arkansas firms, reported as sector context Baseline 15 USDA awards (\$3.92M) identified across 2015-2025, including 5 in food, poultry and aquaculture (\$1.50M across 3 firms); not a spin-out count
Source ¹⁹	Source ¹⁹	Source ¹⁹

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2. BLS QCEW, 2025 annual average, private food manufacturing, NAICS2022 311; private-employment concentration uses the same Arkansas and US universe. talent.arresearchhub.com ↩
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Table 28-A. Companies with domestic R&D paid for and performed by the company, by industry, company size, and state (A-M): 2024. nces.nsf.gov ↩
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— Bet 2 of 6

Growing more from every acre

Crop, plant, insect and weed science, with water

● ARA area 5 ● Strong crop research ● Main federal sponsor USDA

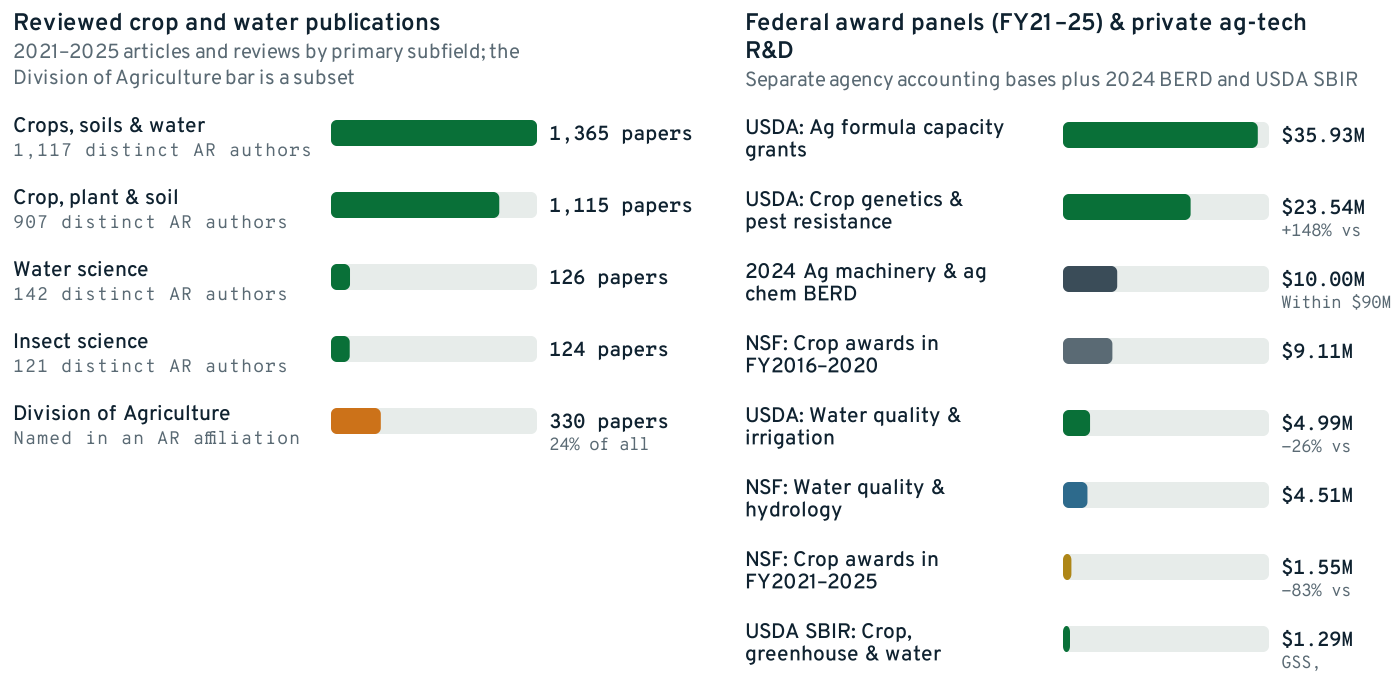
Arkansas grew about 45% of the nation's rice in 2025, and the Delta farms that grow it draw from an alluvial aquifer the state is pumping faster than its estimated sustainable rate.^{1,2} Research on that crop is concentrated in Fayetteville: of 777 crop researcher profiles in the October 2026 database extract, 550 are at UA Fayetteville, where the Division of Agriculture's statewide staff are also filed.^{3,4}

Arkansas institutions published 1,365 reviewed crop and water articles and reviews in 2021-2025, with strengths in weed science, insect-plant interactions and pest management. At least 330 name the Division, its Agricultural Experiment Station, Cooperative Extension Service or a research and extension center such as the Rice Research and Extension Center in Stuttgart.^{5,6,7}

Figure 9

Crops, soils and water: 1,365 reviewed papers,
USDA crop awards up 2.5x and the NSF crop gap

Audited 2021–2025 crop and water publications, Division of Agriculture disaggregation, USDA
competitive and formula panels, and the FY2016–2020 to FY2021–2025 NSF crop shift.



People and campus reach
Researcher profiles; separate from publication counts

Engaged researcher profiles (ARA5) 777 researchers
11 AR institutions with 5+ researchers

The publication panel shows the audited 2021–2025 crop and water base by primary subfield, including 330 works where an Arkansas author names the UA System Division of Agriculture, an Experiment Station, the Extension Service or a research and extension center. The federal panel shows USDA competitive crop obligations rising from \$9.49M to \$23.54M while NSF crop awards fell from \$9.11M to \$1.55M. The USDA formula pool is statewide and shared with food and animal science.

Crop and water publication, funding and SBIR table (https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html)

Source Evidence and definitions (https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html)

Federal crop support has shifted toward USDA. Its competitive crop obligations more than doubled between awards starting in FY2016–2020 and those starting in FY2021–2025. Classified NSF crop awards fell from about \$9.1 million in estimated award value to \$1.6 million. 8,9

USDA small-business awards went to four Arkansas firms working on hydroponics, PFAS treatment on farms, dicamba drift and insect monitoring: GSS Group, CatalyzeH2O, Celludot and SolaRid AR.¹⁰ About 7% of Arkansas farms reported precision-agriculture practices in the 2022 Census of Agriculture, against 12% nationally.¹¹

To rebuild NSF crop funding, the plan organizes an NSF plant-genome and organismal-biology proposal cohort and prepares multi-state successor bids before the current NASA and NSF team awards end in 2027-2028. It also launches a five-partner Delta aquifer team once the partners have chosen a groundwater monitoring site and baseline.^{12,13} On-farm irrigation trials measure water applied per unit of harvested output against an agreed comparison plot.¹⁴

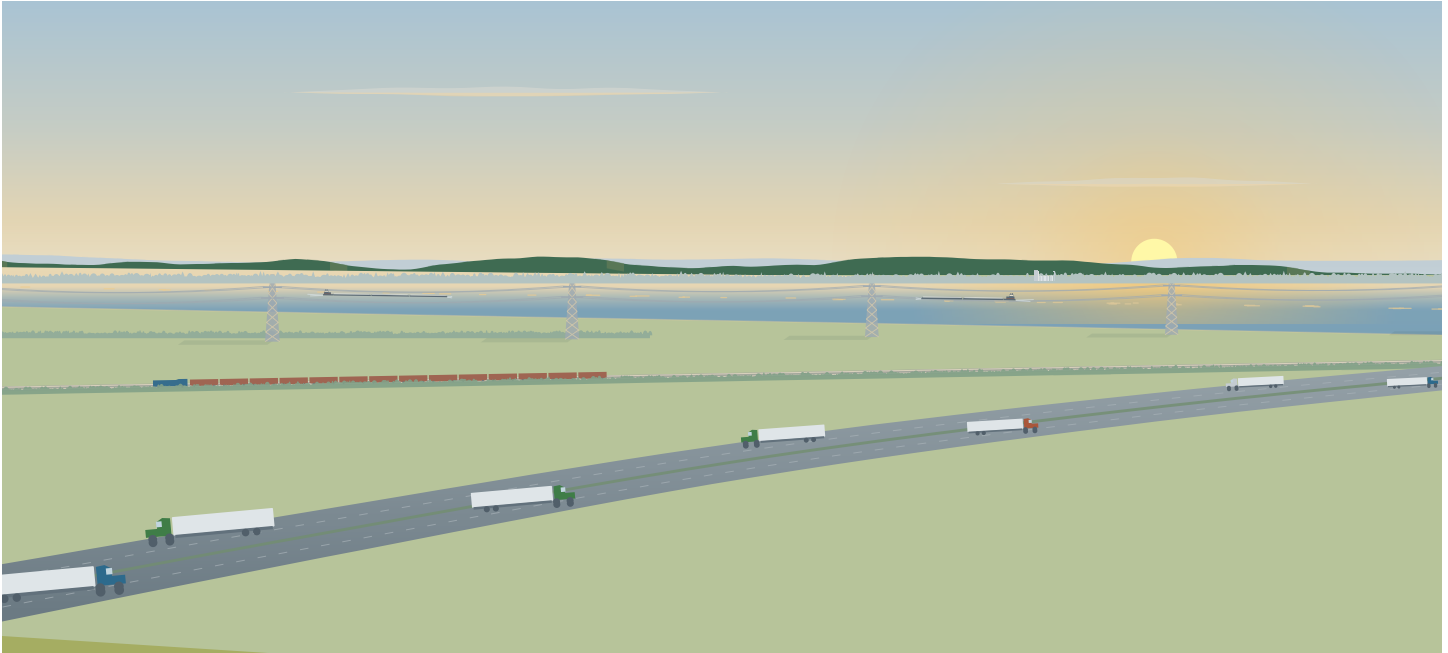
Move	Lead	By when
Run a cohort of NSF plant-genome and organismal-biology proposals to rebuild NSF crop funding	University of Arkansas and Arkansas State	From January 2027
Prepare suitable USDA coordinated and specialty-crop bids, building on capacity-funded research; confirm eligible nonfederal match or an applicable waiver under each solicitation before a bid ¹⁶	Division of Agriculture	2027-2029
Agree partners for the next plant-science team bid, building on ties with Kansas and Nebraska and adding North Dakota and Mississippi. Prepare successor bids through 2027: a NASA EPSCoR award ends July 2027 and the Iowa-led team award ends July 2028	Arkansas State and University of Arkansas	June 2027
A cross-campus research team on the Delta aquifer and flood risk, under the team rule, drawing on Fayetteville, Jonesboro, Monticello, Pine Bluff and the USDA Delta water unit; its first step is to name the groundwater monitoring site it will use	The five partners, convened by the University of Arkansas	2028

Sources^{15,4,12}

How we will know

Supported crop proposals, their review results and resubmissions	Grower or water-user pilots with a baseline, agreed test and completed field observation
Baseline	Baseline
Baseline: submissions and outcomes recorded by program	Baseline: starts once the monitoring site is named
Source ¹³	Source ¹³

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— Bet 3 of 6

Moving freight

Transportation and logistics

● ARA area 3 ● Major awards, a small team ● Main federal sponsors NSF and DOT

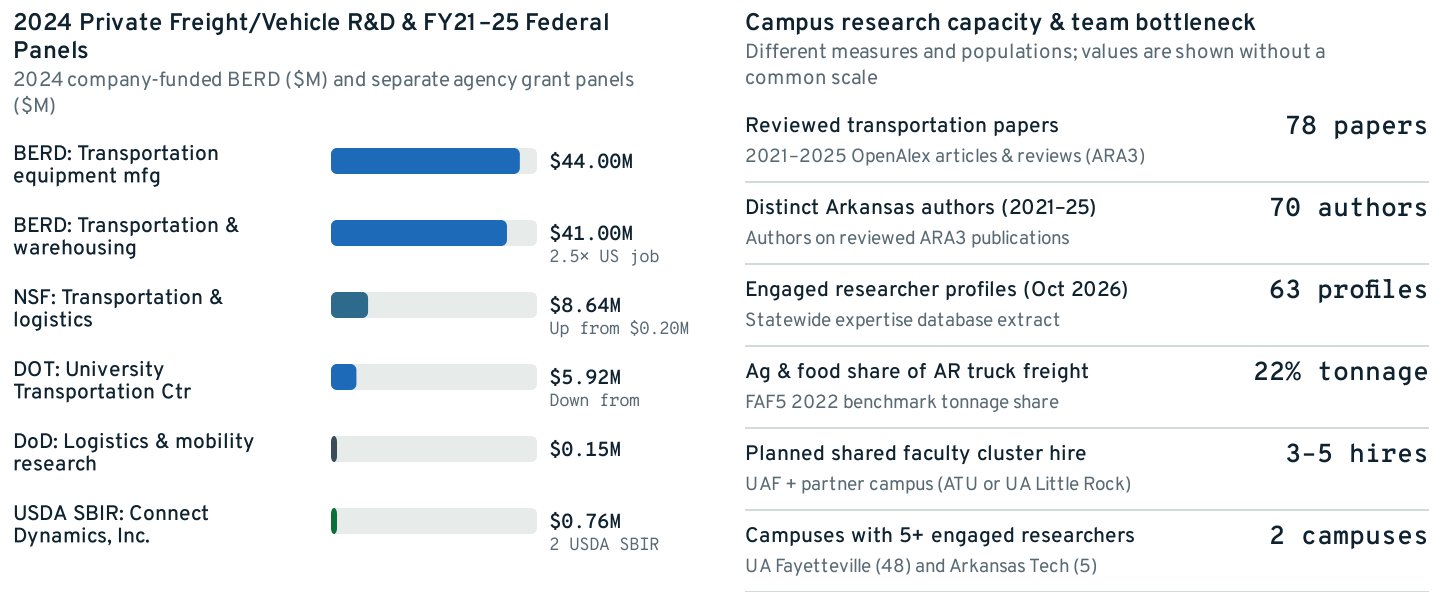
Trucking's share of Arkansas private jobs was roughly 2.5 times the national share in 2025, and J.B. Hunt, ArcBest and Walmart run major freight and distribution networks from the state.^{1,2,3} The university research behind them is small. Arkansas institutions published 78 reviewed transportation articles and reviews in 2021-2025, mostly from a small group of faculty, and the October 2026 profile extract finds only two campuses with five or more engaged researchers.^{4,5}

Federal grants support active work through 2029, led by AR-STRIDES and the DOT university transportation center. For selected awards starting in FY2021-2025, NSF records \$8.64 million in estimated multi-year award totals and DOT \$5.92 million in cumulative obligations, each on its own accounting basis.^{6,7} Bentonville's Connect Dynamics, Inc. won a USDA small-business award to build a relay-trucking platform for small rural fleets.⁸

Figure 10

Freight and corridors: federal award panels and \$85M in private R&D alongside a compact faculty roster

Federal transportation awards on separate accounting bases, alongside 2024 transportation/logistics BERD, campus publications and faculty counts.



The R&D and federal panel shows Arkansas's \$85M private R&D base in transportation equipment and logistics/warehousing (2024 NCSSES BERD) alongside active FY2021–2025 federal grant panels from NSF, DOT, DoD and USDA SBIR (reported on separate bases). The capacity metrics show why expanding the university faculty team is the critical bottleneck: 78 papers and 63 engaged researchers concentrated at two campuses.

Transportation publications, funding panels and BERD table (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html>)

Source Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html>)

Trucking employment fell about 6% between 2022 and 2025, and food and agricultural commodities made up about 22% of truck tonnage with an Arkansas origin or destination in the 2022 benchmark.^{1,9} The plan targets cost and reliability, not expansion. A pilot to cut empty backhauls would track empty miles as a share of eligible miles across a defined fleet and route set, and check that deliveries stay on time.^{1,10}

To build a team large enough to carry the work past AR-STRIDES, which ends in June 2029, the plan combines a shared cluster hire of three to five faculty with a carrier data-sharing agreement and cross-campus work packages.^{5,11,12}

Move	Lead	By when
A cluster hire of three to five researchers, shared between the University of Arkansas and a partner campus such as Arkansas Tech or UA Little Rock	University of Arkansas and a partner campus	2028-2031
A headquarters testbed and data agreement with a named firm, built to outlast both 2029 awards	ARA with industry	June 2028
Cross-campus teams under the team rule, so the AR-STRIDES team outlasts its award	University of Arkansas with partner campuses	2028

Sources^{13,14}

How we will know

Operational-data agreements used by an active freight research project	Partner-campus work packages delivered with a second active contact and documented handover
Baseline	Baseline
Baseline: requires partner consent and usable access	Baseline: recorded before the successor proposal
Source ¹⁵	Source ¹⁵

Freight for the materials industries

Steel and lithium shippers need rail, road and river capacity. ARDOT’s account of the 2024 Lithium Summit describes infrastructure discussions and road-condition baseline work.¹⁶ The freight team takes up their problems once it has an operator’s shipment records and a defined service question.

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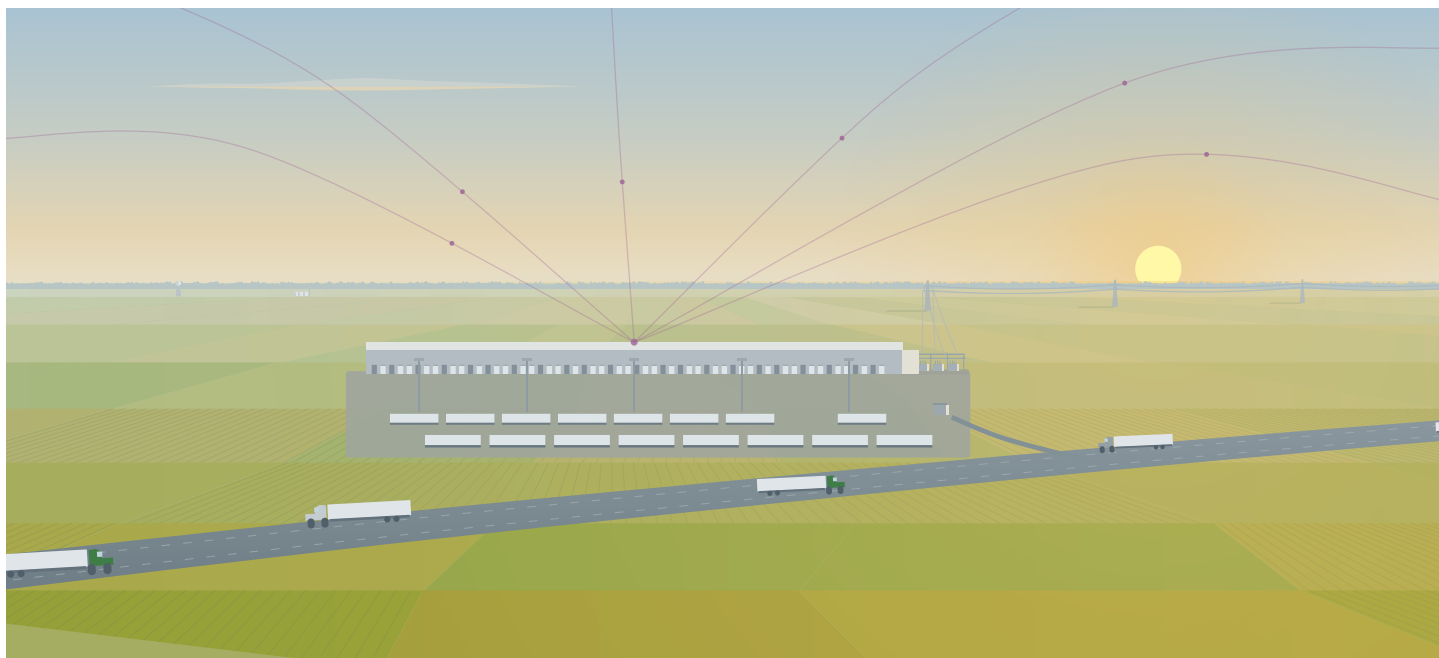
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— Bet 4 of 6

Running the supply chain

Operations research and information systems

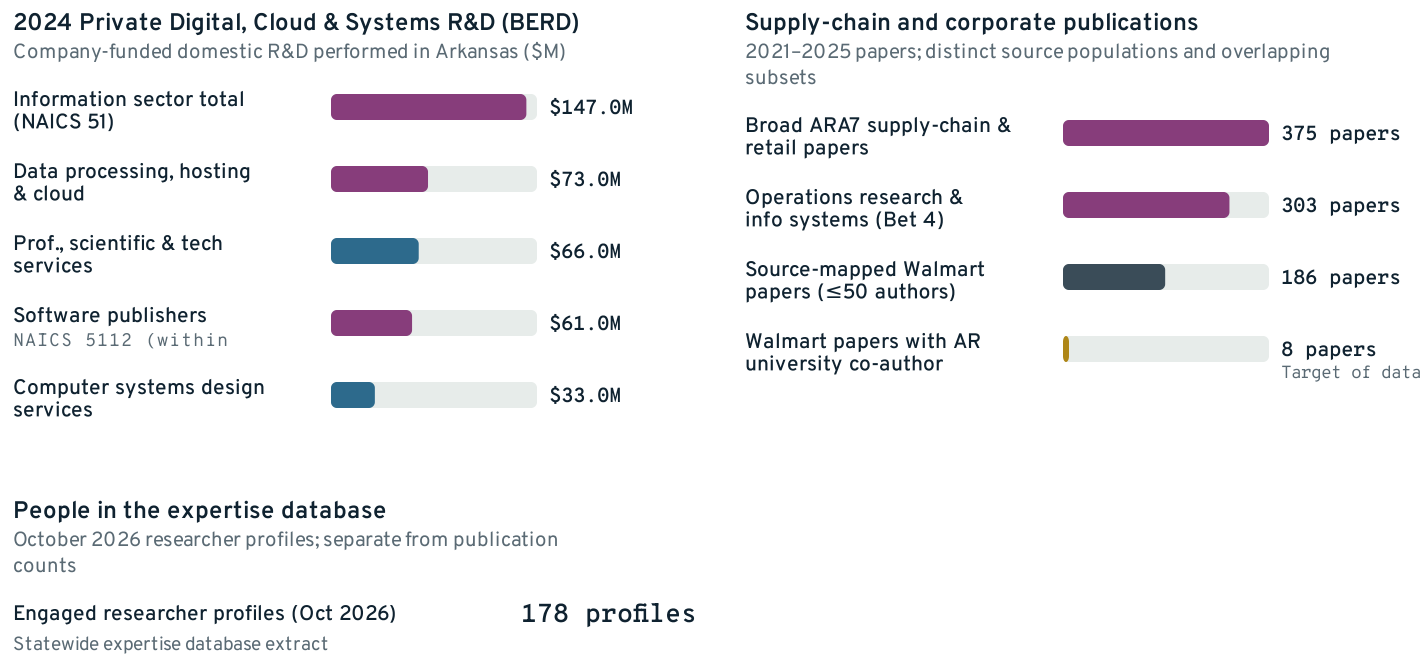
● ARA area 7 ● Research strength ● Most R&D inside private firms

Walmart, ranked the world’s largest retailer by the National Retail Federation in 2026, is headquartered in Bentonville, and the trucking company J.B. Hunt in Lowell.^{1,2} Their daily problems, forecasting, inventory and routing, are the subject of operations research and information systems. Yet of 186 source-mapped Walmart papers from 2021–2025 with at most 50 authors, only eight list an Arkansas university affiliation.^{3,4,5}

Figure 11

Supply-chain and retail analytics: \$180M in corporate digital R&D alongside 303 campus papers

2024 company-funded BERD in Information and Computer Systems Design, alongside 2021–2025 publications and researcher profiles; software is included within Information.



The private R&D panel shows why supply-chain, retail and consumer analytics is a private-led opportunity in Arkansas: companies performed \$147M of self-funded R&D in Information (NAICS 51) and \$33M in Computer Systems Design (NAICS 5415) inside Arkansas in 2024. The publication panel shows the 2021–2025 university publication base (303 narrow OR/IS papers; 375 broad ARA7 papers) and why governed operational data access is the key unlock.

Supply-chain BERD, publication and funding table (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8df5e250ab61-source-geography-notes.html>)

Source Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8df5e250ab61-source-geography-notes.html>)

Federal money has not filled the gap. NSF estimates \$0.744 million in multi-year awards for selected FY2021–2025 starts in the field, almost all of it the first phase of Cultivate IQ, a farm-to-market data platform whose larger second phase is counted under food. USDA obligations are smaller still. ^{6,7,8}

The firms that need this research are in Northwest Arkansas, but the publication record does not show which faculty and companies are ready to work together. The plan’s main action is a data and fellowship partnership with the headquarters firms: doctoral fellows co-funded by industry, paired with governed access to real operational data. The first conversation with a firm starts from a one-page brief. A university forecasting model is backtested against the firm’s own forecast on identical held-out items, locations and dates, with predictions locked

in before outcomes are known. The test reports stockouts, lost sales hidden by stockouts, missing records and operating costs alongside forecast error before anyone agrees to a live ordering trial. No firm has yet agreed to a brief.^{9,10}

Move	Lead	By when
A data partnership with the headquarters firms: secure access to real operational data, paired with doctoral fellowships co-supervised by company and university staff and co-funded by industry	ARA with industry	June 2028
Decide on an operations-research or industry-partnership proposal after checking current program fit and a firm’s willingness to participate	University of Arkansas	First decision 2028
For a first multi-state team, approach South Carolina and Oklahoma in information systems, and New Mexico and North Dakota in operations research	University of Arkansas with partner campuses	2028

Sources^{11,12}

How we will know

Partner-data agreements used in a joint research project Baseline Baseline: set with external scoring Source ⁸	Partner projects completing an agreed operational test, and partners returning for another project Baseline Baseline: test and success condition recorded before work starts Source ⁸	Industry-sponsored research across the broad ARA area Baseline Baseline: proprietary work reported in aggregate Source ¹³
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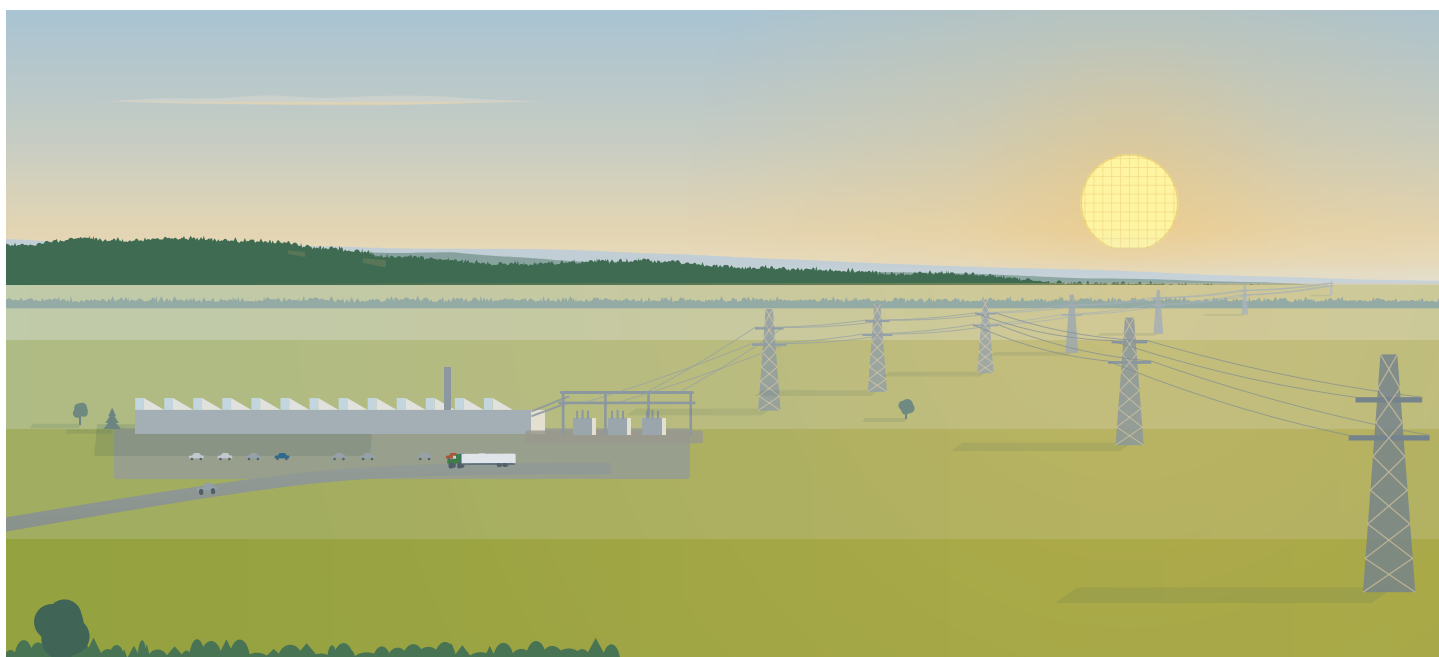
Help suppliers meet industrial specifications

The steel and critical-minerals missions extend the same work to suppliers. For steel, researchers could trace scrap provenance against accepted product. For lithium, they could match qualified reagent, equipment and technical-service suppliers to a processor’s specifications. AEDC (the Arkansas Economic Development Commission) and regional colleges would help identify Arkansas firms able to compete, and a first project would count only supplier spending on work done in Arkansas. These proposals need the same governed data access as the retail work.

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— Bet 5 of 6

Switching power

Power electronics and advanced packaging

● ARA area 2 ● Strong device niche ● Main federal sponsors NSF and DoD

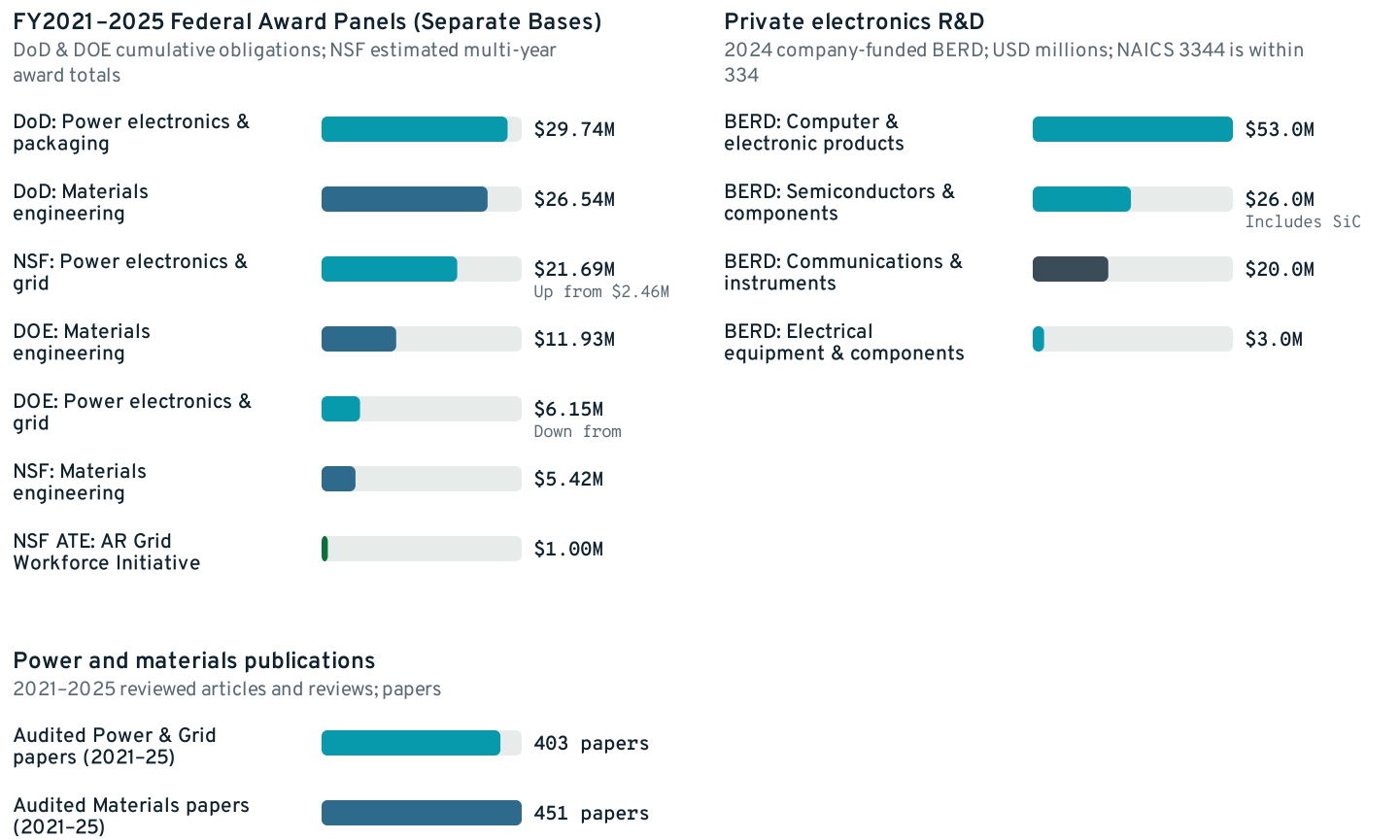
Electric vehicles, data centers and high-voltage grid connections all depend on power converters. Fayetteville has MUSiC, a national silicon-carbide research and fabrication facility, and a power-module site that Wolfspeed reported operating in 2026.^{1,2}

MUSiC's NSF award ends in September 2027, so the near-term decision is its operating model: opening the fabrication lines and technician pathways to partner campuses, two-year colleges and industry. The people who could use them are concentrated, with 268 of 335 engaged researchers at UA Fayetteville. New technician

training, such as UA-Pulaski Technical College’s NSF ATE *Arkansas Grid Workforce Initiative*, gives the pathway something to build on.^{3,4,5}

Figure 12 —
Power electronics and grid: federal award panels and \$56M in electronics and electrical BERD

Separate FY2021–2025 DoD, NSF and DOE award panels alongside 2024 electronics BERD, 2021–2025 campus publications and technician pathways.



The federal award panel displays FY2021–2025 federal award panels in power electronics and materials engineering across DoD, NSF and DOE (reported on separate accounting bases; none represents an annual operating budget for MUSiC). Separate private R&D and publication panels show 2024 private R&D in Computer & Electronic Products (\$53M, including \$26M in NAICS 3344 Semiconductors) alongside audited 2021–2025 campus publications.

Power electronics funding panels, BERD and publication table (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html>)

Source Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html>)

Federal support is substantial. For selected awards starting in FY2021–2025, DoD records \$29.7 million in cumulative obligations and NSF \$21.7 million in estimated multi-year award totals, on different accounting bases.⁶

Grid work comes second. Employment in semiconductor-component and electrical-equipment manufacturing fell from 2022 to 2025 while industrial electricity sales rose about 21%. These are general industry trends; they neither isolate silicon-carbide devices nor show utility demand for grid research.^{7,8} MUSiC facility services and device testing therefore come first, and grid-integration work follows once the shared faculty cluster and test environment are in place.^{9,10} Before testing any device or package, partners agree on the reference design and the electrical, thermal or reliability specification, then track the share of valid tests that meet it, along with invalid runs and facility wait times.¹¹

Move	Lead	By when
Settle a post-2027 operating model for MUSiC, recording services, access terms and users from other institutions and industry	University of Arkansas, the steering committee, defense and industry partners	March 2027
Check current Department of Energy EPSCoR Implementation eligibility and Arkansas award status, then decide whether to bid on power-module packaging, grid integration and wide-bandgap materials	University of Arkansas consortium with UA Little Rock and Arkansas State	31 March 2027
Fellowships, undergraduate research and shared fabrication access at UA Little Rock, Arkansas State, Arkansas Tech and UAPB; invite a two-year college to build a silicon-carbide technician pathway with NSF technician-education funding	AR-NETWORK workforce program with the institutions; a two-year college with the University of Arkansas	First awards 2028; proposal 2027-28
A cluster hire of three or four researchers in grid integration, storage and energy conversion, attached to the power-electronics base and shared with a second campus; for multi-state teams, New Mexico, Idaho and Delaware have matching strengths	University of Arkansas and UA Little Rock	2028-2031
Recruit an industry co-lead from Wolfspeed or a defense-funded spin-out	ARA	December 2027

Sources^{12,13}

How we will know

External MUSiC projects completed, repeat users and access delays Baseline Baseline: host usage-log baseline due June 2027 Source ¹⁰	Continuity of named facility services after the NSF award ends Baseline Baseline: shown by the operating model and handover records Source ¹⁰	Technician-pathway participants completing the agreed next step Baseline Baseline: completion defined with the college partner before launch Source ¹⁰
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Test power questions with the materials industries

Steelmaking and lithium processing are prospective partners for industrial power research: furnace load and power quality on one side, motors, conversion equipment and monitoring on the other. The first step is a problem defined jointly with an operator and utility, using measured loads and agreed electrical limits.

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— Bet 6 of 6

Caring for a rural state

Population and clinical health

● ARA area 1 ● Broad health research base ● Main federal sponsor NIH

More than four in ten Arkansans lived in rural communities in the 2020 Census, and the state’s clinical research sits in one city: 55% of all studies ever listing an Arkansas facility list Little Rock and no other Arkansas city. Site lists do not measure rural access.^{1,2,3}

The researchers are in Little Rock too. UAMS holds 772 of the 1,133 health researchers in the October 2026 profile extract. The plan’s task is to take that expertise to rural clinics and regional campuses.^{4,5}

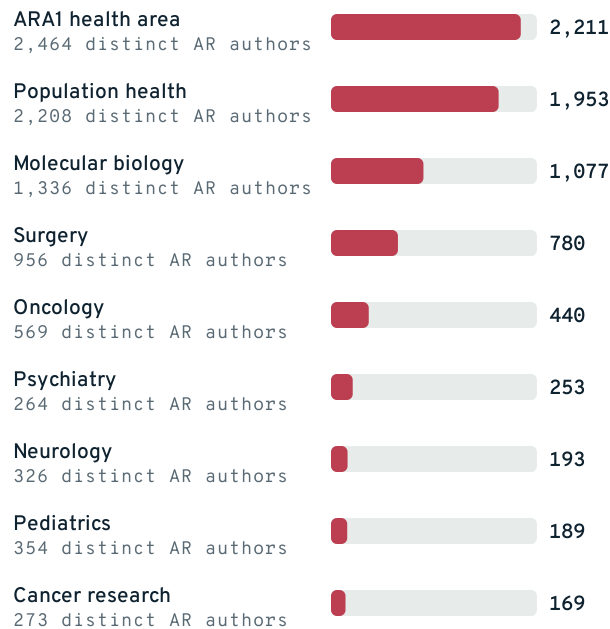
Figure 13 —

Population and clinical health: Arkansas's largest publication cohort and NIH award portfolio

Audited 2021–2025 publications by primary subfield and FY2021–2025 NIH RePORTER panels across six biomedical and clinical domains, alongside FY2026 center anchors and pharmaceutical BERD.

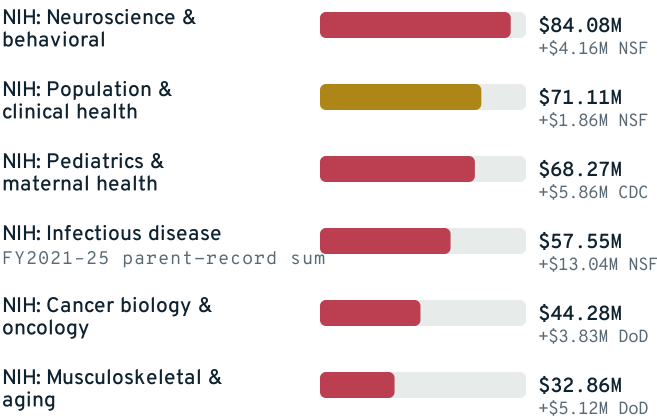
Audited 2021–2025 publications by primary subfield

Whole-counted articles & reviews (distinct Arkansas authors in sub-label); ARA1 includes the population-health and pediatrics bars



NIH biomedical funding panels

FY2021–2025 parent-record amounts; USD millions



Annual private R&D and current center support

Different populations and years; shown without a common bar scale



The publication panel counts audited 2021–2025 Arkansas works by OpenAlex primary subfield, with distinct Arkansas authors on those works. The NIH funding panels use six award domains; publications are reported by the closest primary subfields because the award domains are not a publication classification. Separate panels show FY2026 active center funding (8 COBREs, renewed UAMS CTSA Hub and Arkansas INBRE) and 2024 private Pharmaceutical & Biotech BERD (\$24M). Unpriced VA records remain marked unavailable rather than zero. Across the six NIH award domains, FY2021–2025 parent-record amounts total \$358.10M; neuroscience and behavioral health is the largest.

Health publication, NIH/CDC/NSF/VA funding and center table (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html>)

Source Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/d7850a8b7bf2-funding-methods.html>)

NIH is the main federal sponsor: RePORTER records \$71.1 million in parent-record fiscal-year awards in the population-health grouping during FY2021–2025. The NIH award domains the plan tracks are not a publication classification, so Figure 13 pairs each with its closest publication subfields.⁶

Several multi-year awards anchor the work. The renewed UAMS Translational Research Institute hub of the federal Clinical and Translational Science Awards program runs through June 2031, and the statewide Arkansas INBRE network (IDeA Networks of Biomedical Research Excellence) supports research outside Little Rock. Three of the Little Rock COBRE (Centers of Biomedical Research Excellence) centers face award transitions in 2027–2028.^{7,4,5}

The plan pairs early-2027 continuity plans for the expiring center cores with outreach to UAPB, Arkansas State and UA Little Rock, and with rural delivery pilots designed with community providers. In a rural referral-access test, partners agree up front on the patient group, clinical service and follow-up window, then measure the share of referred patients who complete their visit. They record unknown outcomes and compare similar patients and clinics before claiming wider impact.⁸

Move	Lead	By when
Continuity plans for the research-center cores, and the next-phase applications	UAMS and Arkansas Children’s Research Institute	January 2027 (microbial pathogenesis); before 30 June 2027 (pediatric); June 2027 (musculoskeletal)
Extend health research capacity to UAPB, Arkansas State and UA Little Rock	The statewide NIH network award and the steering committee	2028-2030
Validate a rural or digital mental-health consortium with a provider or community partner, using the existing Fayetteville-Little Rock behavioral-health community; the first step is agreeing the problem and data access with that partner	University of Arkansas and UAMS, with a provider partner	Problem and data-access decision 2027; first proposal 2028
Bids to national health-services and prevention funders, paired with health data science	UAMS with the University of Arkansas	2027-2029
Form cross-campus teams under the team rule joining medical-imaging and computer-vision groups in Fayetteville and Little Rock	UAMS, the University of Arkansas and UA Little Rock	2028

Sources^{9,4}

How we will know

Provider or community projects with agreed problem, access, protocol and adoption decision Baseline Baseline: partner agreements due 2027 Source ⁵	Supported pilots completing a predefined feasibility or implementation test Baseline Baseline: endpoint defined with partners before launch Source ⁵	Research-center services continuing after award transitions Baseline Baseline: service baseline and succession records due with the continuity decisions Source ⁵
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Sources 9

1. U.S. Census Bureau, "State-level 2020 and 2010 Census Urban and Rural Information" (State_Urban_Rural_Pop_2020_2010.xlsx), from the 2020 Census Urban and Rural Classification and Urban Area Criteria; and Census Bureau, "2020 Census Urban Areas Facts" (updated June 2023) for the US total. www2.census.gov ↗
2. ClinicalTrials.gov API v2, Arkansas facility search, snapshot of 26 October 2026: 3,934 of 7,113 studies listing an Arkansas facility list Little Rock and no other Arkansas city. Site lists do not measure rural access or current enrollment. clinicaltrials.gov ↗
3. Source-native freight, electricity, material-producing industry and clinical-location context with distinct populations. talent.arresearchhub.com ↗
4. Selection screen scoring sheet ARA's October 2026 scoring sheet for the 28 candidates on the selection screen. talent.arresearchhub.com ↗
5. Plan action register The plan's register of proposed actions, owners, completion evidence and decision dates (ARA, October 2026). talent.arresearchhub.com ↗
6. Federal funding by agency and accounting basis ARA's October 2026 record of federal research awards, reported separately by agency and accounting basis. talent.arresearchhub.com ↗
7. NIH RePORTER FY2025–2026 records: UAMS Translational Research Institute CTSA Hub renewed (U240D04909 , K12TR004924 , T32TR004918 , \$4.77M/yr through June 2031); ECHO ISPCN Data Coordinating and Operations Center Cycle 1 at UAMS (U240D024957 , active through August 2027) and Cycle 2 awarded to University of Kansas Medical Center (U240D038400 , FY2025) alongside renewed Arkansas ECHO ISPCN Clinical Site at ACHRI (UG10D024945 , \$415.8k/yr through May 2030); 8 active Arkansas COBRE centers (\$14.65M/yr in FY2026), Arkansas INBRE (P20GM103429 , \$4.04M/yr through April 2031), UAF Biomedical Research Facility construction (C060D042704 , \$8.00M), and UAF Shared High-Memory GPU Cluster (S100D040351 , \$348.8k). reporter.nih.gov ↗
8. Proposed operating-measure definitions with population, denominator, comparison and missing-data rules; the committee sets baselines, targets and owners on the dates in Appendix C. talent.arresearchhub.com ↗
9. Arkansas research strengths dossier ARA's October 2026 synthesis of Arkansas research strengths across six evidence lenses. talent.arresearchhub.com ↗

ARA area 4 · Materials and industrial capability

Making more from steel and critical minerals

Better steel, qualified lithium products and more of the skilled work done in Arkansas

Mississippi County, which AEDC describes as the nation's largest steel-producing county, is home to U.S. Steel's Big River works and Nucor's mills at Hickman and Blytheville. Under southern Arkansas, the Smackover brine is estimated by the USGS to hold 5.1–19.0 million metric tons of lithium in place. That is the lithium dissolved in the brine, not a measure of what can be recovered profitably.^{1,2}

The research base is much smaller. Arkansas institutions published 451 materials-engineering papers in 2021–2025, and only about 5% of them joined two Arkansas institutions.^{3,4}

The plan's role is to fill the gaps that companies and their technology vendors are not already covering: independent measurement, open process questions, access for smaller firms and skills that serve several operators. In 2027, partners pick one steel-testing bottleneck to work on, define the lithium process and supplier problems that public research can best address, and compare battery-materials options with a buyer at the table. Larger investments follow only when those tests justify them.

8,900

private primary-metals manufacturing jobs in Arkansas in 2025⁵

10%

employment growth in that industry from 2022 to 2025⁵

Primary-metals manufacturing is a growing industrial anchor.⁶ Arkansas's share of US company-funded R&D in primary metals in 2024 was about 10 times its share of all US company-funded R&D.⁷

Steel: a testing bottleneck first

The mills make flat-rolled and structural steels.⁸ A-State's Center for Advanced Materials and Steel Manufacturing (CAMSM) is the natural home for that work. On 14 October 2026 the university announced a \$2.1 million award from the National Institute of Standards and Technology to CAMSM for computing and simulation equipment. Dedicated steel-research space is planned for the third phase of CREST, a center A-State is developing with ASU-Newport and Arkansas Northeastern College. The plan counts equipment as capacity once it is installed, staffed and open to outside users.^{9,10}

The first project is faster testing: shorten the time from receiving a sample to delivering a report the buyer accepts, once the local method has been shown to match the buyer's own. If that works, A-State can bring producers, fabricators and researchers together on harder questions, such as how scrap chemistry affects a steel grade or whether better prediction can cut rejected material. Partners choose the problem and agree on a baseline. The first public project should solve a problem shared by more than one firm, complement company laboratories and protect company process data.

The University of Arkansas's full-scale steel-connection testing at CEREC could link mill research to structural performance, once access and the right test standard are agreed. Merrill's announced fabrication and coating plant in Osceola adds downstream questions, though it does not yet show operating demand.^{11,12}

Lithium: from resource to a product buyers accept

The opportunity lies in the "missing middle": removing impurities, concentrating the lithium, converting it into battery chemicals and qualifying the product with customers. The proposed South West Arkansas project is designed to take brine all the way to battery-quality lithium carbonate. On 28 September 2026 its developer said the final investment decision was still ahead, with commercial production targeted for 2029.^{13,14}

In April 2026 Standard Lithium reported that its Arkansas demonstration plant had processed a million barrels of Smackover brine. Its joint venture, Smackover Lithium, has signed binding agreements to supply LG Energy Solution and Trafigura once commercial production begins. None of this gives universities use of the plant.¹⁵

Public research takes up what that leaves open. The nearer-term work is independent testing of purification and conversion on representative brine, taken through to a buyer's specification, and a supplier study of which services local firms could qualify to provide. The study starts from needs already identified by LiTHIUMWORKS, the Arkansas Lithium Technology Accelerator (ALTA), the Lithium Regional Innovation Cluster and the operators. ALTA, developed by the University of Arkansas, the Venture Center and Standard Lithium, is the existing channel to operators.^{16,17} South Arkansas's bromine industry, which has worked with brine for more than half a century, may add handling experience.¹⁸

The second piece is a battery-materials feasibility study with a buyer involved. It asks which precursor or cathode-material step could plausibly locate in Arkansas, and compares that with supplying manufacturers elsewhere while keeping testing and process services here.

Southern Arkansas University (SAU) has the LiTHIUMLEARNS program and ExxonMobil-sponsored direct-extraction research, and the University of Arkansas has membrane and separation laboratories. They are not yet a shared pilot line or a complete team.^{19,20,21}

Other critical minerals join the portfolio where the evidence supports them. UA Little Rock’s vanadium cathode research with US Vanadium, and the company’s high-purity vanadium processing in Hot Springs, give Arkansas a foothold in refining and materials performance, though they do not show a new recoverable ore reserve.²²

Gates and shared ground

Both missions can share access arrangements, data governance and analytical standards.

Connection across the plan	Steel question to test	Lithium and critical-minerals question to test
Materials and process science	Chemistry, heat treatment, forming, joining and product life	Selective separation, purification, corrosion and consistent product quality
Power and industrial computing	Furnace load, power quality and process control	Reliable process power, equipment monitoring and control from extraction to conversion
Supply chain and freight	Scrap sourcing, feed quality and qualified downstream suppliers	Reagents, equipment, product traceability and dependable routes to customers
Water and people	Water reuse, residue handling and technicians to run tests	Brine and freshwater balances, reinjection compatibility and chemical-process technicians

They compete through the capability-building route set out in Part V. The plan proposes A-State as convenor for steel, and SAU with University of Arkansas process researchers for lithium, working with AEDC on suppliers and markets; each convenor confirms its role before work starts.

Stage	Evidence needed to move on	Decision date
Scope the problems	Unfunded steel and lithium problem briefs; selection criteria; a gap register separating what companies, vendors and existing public programs already do from the proposed new research	March 2027

Stage	Evidence needed to move on	Decision date
Validate briefs and discovery scope	After consultation: adopt the route and discovery ceiling; confirm operator and customer need, a lead, the access needed for the funded scope, costed operations, partner contributions and data/IP terms	June 2027
Compare battery-materials options	UA process researchers, SAU and ALTA partners invited to prepare a precursor/cathode feasibility brief with a buyer: process options, suitable feed, sample-testing plan, costs, site needs and the Arkansas work involved	September 2027
Authorize a bounded test	Independent feasibility review; agreed technical and environmental baselines; product specification, success measure, spending ceiling and stop conditions	January 2028
Review first results	Steel: a buyer-accepted faster testing method or a comparable production improvement. Lithium: repeat-cycle results with independent quality and resource-use data. Discovery and feasibility: the agreed decision brief	First annual review after launch, March 2029
Expand selectively	Repeat customers or a qualified product, a sustainable operator and evidence that more capacity is worth the cost	2030 review; 2032 outcome assessment

Any field pilot sets out environmental monitoring and corrective actions suited to its scale, with freshwater withdrawal and consumption reported separately.

By June 2027, host institutions confirm which researchers and instruments are available and select a separate cross-campus materials project (Part IV lists the proposed leads).²³

Steel is measured by faster buyer-accepted reports. Lithium is measured by end-to-end recovery with independently measured impurities, uptime, and water and reagent use. Both count Arkansas supplier contracts, repeat users of testing services and retained technical staff, against baselines agreed before each project launches.

1. Merrill Steel Locates New Steel Manufacturing Facility in Osceola, Arkansas (2025-08-20). AEDC identifies Mississippi County as America's top steel-producing county and announces Merrill's proposed Osceola structural-steel fabrication and coating facility. The company cites proximity to raw steel among its location reasons. The county rank is a state/governor characterization, not an independently reconstructed county-production ranking. The announcement does not verify that Merrill subsequently began production; investment and hiring figures are forecasts. Accessed 2026-10-30. arkansasedc.com ↗
2. Lithium resource in the Smackover Formation brines of southern Arkansas (2024-12-18). USGS estimates 5.1–19.0 million metric tons of in-place lithium; its technical fact sheet explicitly excludes technical and economic recovery feasibility. Regional model and porosity assumptions carry substantial uncertainty; not recoverable reserves or project-specific proof. Full official USGS abstract explicitly confirms the distinction; publication page dated December 18, 2024. usgs.gov ↗
3. Corrected publication record ARA's 28 October 2026 audit of 2021-2025 Arkansas publication records, with false or unresolved affiliations removed. talent.arresearchhub.com Methods for the corrected 2021-2025 Arkansas publication record. talent.arresearchhub.com ARA's check of Walmart-affiliated papers from 2021-2025 that also list an Arkansas university affiliation. talent.arresearchhub.com ↗
4. Collaboration network analysis ARA's October 2026 analysis of co-authorship across Arkansas institutions, 2021-2025. talent.arresearchhub.com ↗
5. Primary-metals employment note Bureau of Labor Statistics QCEW employment in Arkansas primary metals manufacturing, 2025 annual average. talent.arresearchhub.com ↗
6. BLS QCEW, 2025 annual average, private primary metals, NAICS2022 331; same-classification growth from 2022. talent.arresearchhub.com ↗
7. NCSSES, Business Enterprise Research and Development: 2024 (NSF 27-300). Table 13: domestic R&D performed in Arkansas \$719M, of which \$633M paid for by the company and \$86M paid for by others (\$37M federal, imputed; \$49M nonfederal); all-states total \$765,082M. Table 28-A: company-funded domestic R&D by industry, company size and state, in millions; some cells are imputed (i), modeled (e), below \$0.5M (*) or withheld (D). Table 53: 171,000 domestic employees and 5,000 domestic R&D employees in Arkansas. Covers companies with 10 or more domestic employees that performed or funded \$50,000 or more of R&D. State GDP ratios divide by BEA SAGDP2 2024 current-dollar GDP (\$188,650.1 million for Arkansas; \$29,380,991 million for the United States), which BERD does not publish. ncses.nsf.gov Table 28-A. Companies with domestic R&D paid for and performed by the company, by industry, company size, and state (A–M): 2024. ncses.nsf.gov ↗
8. The Next Generation of American Steelmaking is BIG and Well Underway (2025-12-15). U.S. Steel describes completed Big River 2 expansion, combined production capacity of roughly six million tons annually, and existing galvanizing, painting and non-grain-oriented electrical-steel capabilities. It describes ongoing automotive-grade and processing improvements. Capacity is not actual annual output. Non-grain-oriented electrical steel is distinct from grain-oriented transformer steel, and product availability does not establish an Arkansas motor or transformer manufacturing cluster. Accessed 2026-10-30. ussteel.com Nucor 2025 Annual Report (undated; read 30 October 2026). Nucor lists an operating flat-rolled steel facility in Hickman and structural steel in Blytheville; Nucor-Yamato makes wide-flange beams, pilings and high-strength low-alloy structural products. Companywide or combined-mill capacity is not Arkansas plant capacity. Exact publication day was not established in this review. PDF properties table is page 59; structural-mills discussion is page 16. Accessed 2026-10-30. sec.gov ↗
9. A-State Secures \$2.1 Million Federal Award for AI-Driven Steel Research (2026-10-14). A-State reports a \$2.1 million NIST award for CAMSM under Drew Fleming, with Yeonsang Hwang, Rajesh Sharma and Mohammadreza Daroonparvar. Planned resources are GPU computing, a Gleeble 3800 thermomechanical simulator and Thermo-Calc libraries supporting materials design and processing research. The release does not verify commissioning, operating funds, external-user terms or an accepted mill research agreement. This FY2026 announcement falls outside the plan's historical FY2021–2025 award cohort and must remain separately labeled. Accessed 2026-10-30. astate.edu Congress Approves \$10 Million Request by Senator Boozman to Support Center for Advanced Materials and Steel Manufacturing (2024-03-15). A-State announces a \$10 million congressional appropriation toward CAMSM. Planned functions include mechanical-property testing, diffraction and microscopy, computational materials work and AI; the announcement identifies testing-related transport and shipment delays as an industry problem. An appropriation and announced laboratory scope do not establish installed equipment, accreditation, service capacity or accepted industry access. The capital amount is not annual R&D expenditure. Accessed 2026-10-30. astate.edu Arkansas State University Research: Research Centers & Institutes (undated; read 30 October 2026). The university research page lists the Center for Advanced Materials & Steel Manufacturing and describes it as coming soon. Undated page; its wording is consistent with development but cannot resolve the operating status of individual instruments. Use the dated award announcement for precise claims. astate.edu ↗
10. Phase One Underway at CREST Center; Construction Celebration in October (2026-10-13). A-State describes CREST with ASU-Newport and Arkansas Northeastern College. Phase one supports technical workforce education; dedicated CAMSM advanced steel space is planned for phase three. Future space does not establish commissioned research facilities; current activities can precede the later building phase. astate.edu ↗
11. U of A Engineering Researchers Push Steel to Breaking Point in Earthquake Simulation (2025-10-29). UARK reports an AISC full-scale steel connection test at CEREC, led by Gary Prinz. The facility includes metallurgy and materials-testing laboratories. Existing structural-testing competence does not establish open service capacity, accreditation for every product or permission to use a supplier's results for customer certification. The article's test-day description is internally awkward; use the publication date and documented demonstration, not inferred event chronology. Accessed 2026-10-30. news.uark.edu ↗
12. Merrill Steel Locates New Steel Manufacturing Facility in Osceola, Arkansas (2025-08-20). AEDC identifies Mississippi County as America's top steel-producing county and announces Merrill's proposed Osceola structural-steel fabrication and coating facility. The company cites proximity to raw steel among its location reasons. The county rank is a state/governor characterization, not an independently reconstructed county-production ranking. The announcement does not verify that Merrill subsequently began production; investment and hiring figures are forecasts. Accessed 2026-10-30. arkansasedc.com ↗
13. DOE/EA-2304: Final Environmental Assessment (May 2026) (2026-05-13). DOE describes an integrated brine extraction, lithium recovery, carbonate conversion and reinjection project, with nominal proposed output of 22,500 metric tons/year. A final environmental assessment describes the proposal and impacts; it does not establish construction completion or production. energy.gov ↗
14. Smackover Lithium Exceeds Targeted Customer Offtake Volumes for South West Arkansas Project (2026-09-28). Developer reports completed offtake workstream, with debt financing and final investment decision still ahead; targets FID later in 2026 and commercial production in 2029. Trafigura may take up to 4,000 additional tonnes/year at the producer's election. Company forward-looking targets, not guaranteed production. Total possible 20,000 tonnes/year includes optional volume, above 16,000 tonnes/year original base commitments. standardlithium.com ↗

15. Standard Lithium Reaches Major Operational Milestones at Arkansas Demonstration Plant (2026-04-22). Company SEC exhibit reports one million barrels of real-time Smackover brine processed and 15,000 DLE cycles at its Arkansas demonstration plant. Demonstration experience is not commercial carbonate sales or a right for universities to use the plant. [sec.gov](#)
Smackover Lithium Signs Binding Customer Offtake with LG Energy Solution for the South West Arkansas Project (2026-08-31). LG Energy Solution agreement covers 8,000 tonnes/year of battery-quality lithium carbonate for ten years from commercial production. Price and key commercial terms confidential; a buyer relationship does not establish a battery manufacturing plant in Arkansas. [standardlithium.com](#)
Smackover Lithium Exceeds Targeted Customer Offtake Volumes for South West Arkansas Project (2026-09-28). Developer reports completed offtake workstream, with debt financing and final investment decision still ahead; targets FID later in 2026 and commercial production in 2029. Trafigura may take up to 4,000 additional tonnes/year at the producer's election. Company forward-looking targets, not guaranteed production. Total possible 20,000 tonnes/year includes optional volume, above 16,000 tonnes/year original base commitments. [standardlithium.com](#)
Standard Lithium partnerships – Aquatech (undated; read 30 October 2026). Company identifies licensed Li-Pro LSS technology, performance guarantees, regional exclusivity and September 2025 transfer from Koch Technology Solutions to Aquatech. Exclusivity and IP terms limit what public shared research can use; the page grants no open technology access. [standardlithium.com](#) ↩
16. U of A Partners to Accelerate Arkansas Lithium Innovation (2025-10-08). U of A, Venture Center and Standard Lithium developed ALTA; university reports a first cohort and names Erik Pollock and isotope/trace-element laboratory roles. Startup visits and accelerator activity do not establish retained production, signed facility access or commercial success. [news.uark.edu](#)
The Venture Center, Standard Lithium and University of Arkansas Open Applications for 2026 Arkansas Lithium Technology Accelerator (2026-02-17). Program operator describes its partnership with Standard Lithium and U of A, 2025 cohorts, and coverage of processing, materials, recycling, manufacturing and enabling technologies. Program participation is not evidence of an Arkansas factory, commercial sale, local employment or accepted participation in this plan. [venturecenter.co](#) ↩
17. LITHIUMLEARNS and LITHIUMWORKS (undated; read 30 October 2026). Regional program identifies SAU, Venture Center, Apprenticely, SAU Tech, South Arkansas College and UA Hope-Texarkana as partners in education, workforce and supply-chain development. The page does not define each partner's role. [lilearnsliworks.com](#)
SBA Targeted support and services – Lithium Regional Innovation Cluster (undated; read 30 October 2026). SBA directory includes the Lithium Regional Innovation Cluster managed by Startup Junkie Consulting. Directory listing establishes channel existence, not research facility access or confirmed funding for the proposed plan. [sba.gov](#) ↩
18. Magnolia Production & Extraction (undated; read 30 October 2026). Albemarle describes over 55 years of Magnolia bromine/brine operations and DLE piloting begun in 2024. The page shows no Arkansas commercial lithium production; bromine output is not lithium output. [albemarle.com](#) ↩
19. Southern Arkansas University hosts ribbon cutting for LITHIUMLEARNS initiative (2025-09). SAU reports September 9, 2025 opening of LITHIUMLEARNS dedicated space and partnerships with regional education and industry organizations. A workforce space is not by itself an independent pilot plant or evidence of agreed plan responsibilities. [saumag.edu](#) ↩
20. Growing Low Carbon Solutions – 2026 Advancing Climate Solutions (2026-05). ExxonMobil reports battery-grade carbonate production in a Texas pilot using Arkansas brine, an ambition to supply North American carbonate in the first half of the 2030s, and sponsored SAU DLE research with equipment and technical support. Texas pilot is not Arkansas commercial processing. Timelines and impact claims are corporate projections; older 2027/2030 marketing targets are not the current basis. [corporate.exxonmobil.com](#) ↩
21. Membrane Research Laboratory – University of Arkansas, Fayetteville (undated; read 30 October 2026). Laboratory led by Ranil Wickramasinghe and Xianghong Qian studies membrane separations, purification, water treatment and membrane materials. The page does not establish staff time, equipment suitability or access for lithium projects. [membranelab.uark.edu](#)
Critical Materials Separation Lab – University of Arkansas (undated; read 30 October 2026). Chemical engineering group combines molecular modeling, experiments and spectroscopy to study critical-material/rare-earth separations. Does not establish Arkansas rare-earth reserves or a commercial separation line. [cmsep.uark.edu](#)
U of A to Play Vital Role in State's Lithium Economy (2025-12-03). University describes geoscience, supply-chain, materials and separation-science strengths and identifies researchers Christopher Liner, John Shaw, Jamie Hestekin and Xiangbo Meng. The plan cites it for named people and facilities only; current company disclosures and USGS resource definitions supersede its commercial-start and resource wording. [news.uark.edu](#) ↩
22. UA Little Rock Chemistry Professor Awarded ARA Impact Grant to Advance High-Energy Battery Research (2025-07-21). Noureen Siraj received \$34,250 ARA Impact funding for V2O5-PNDC composite cathode research with US Vanadium as industry partner; university describes its battery laboratory. Proof of a specific research connection, not commercial cathode production or buyer qualification. [ualr.edu](#)
VOX10.5 vanadyl oxalate solution product specification (2025-02-11). Dated US Vanadium specification describes high-purity vanadyl oxalate made at its ISO 9001:2015-certified Hot Springs facility and lists impurity limits. Product specification is manufacturer evidence; it does not disclose current output, margins or amount sourced from Arkansas ores. [usvanadium.com](#)
Mineral Commodity Summaries 2026 – Vanadium (2026-02-06). USGS records secondary vanadium production in Arkansas and other states from materials such as residues, spent catalysts and utility ash. Metallurgical uses account for over 90% of domestic reported vanadium consumption in 2025. National figures should not be attributed to Arkansas firms; secondary processing does not imply active local ore mining. [pubs.usgs.gov](#) ↩
23. Plan action register
The plan's register of proposed actions, owners, completion evidence and decision dates (ARA, October 2026). [talent.arresearchhub.com](#) ↩

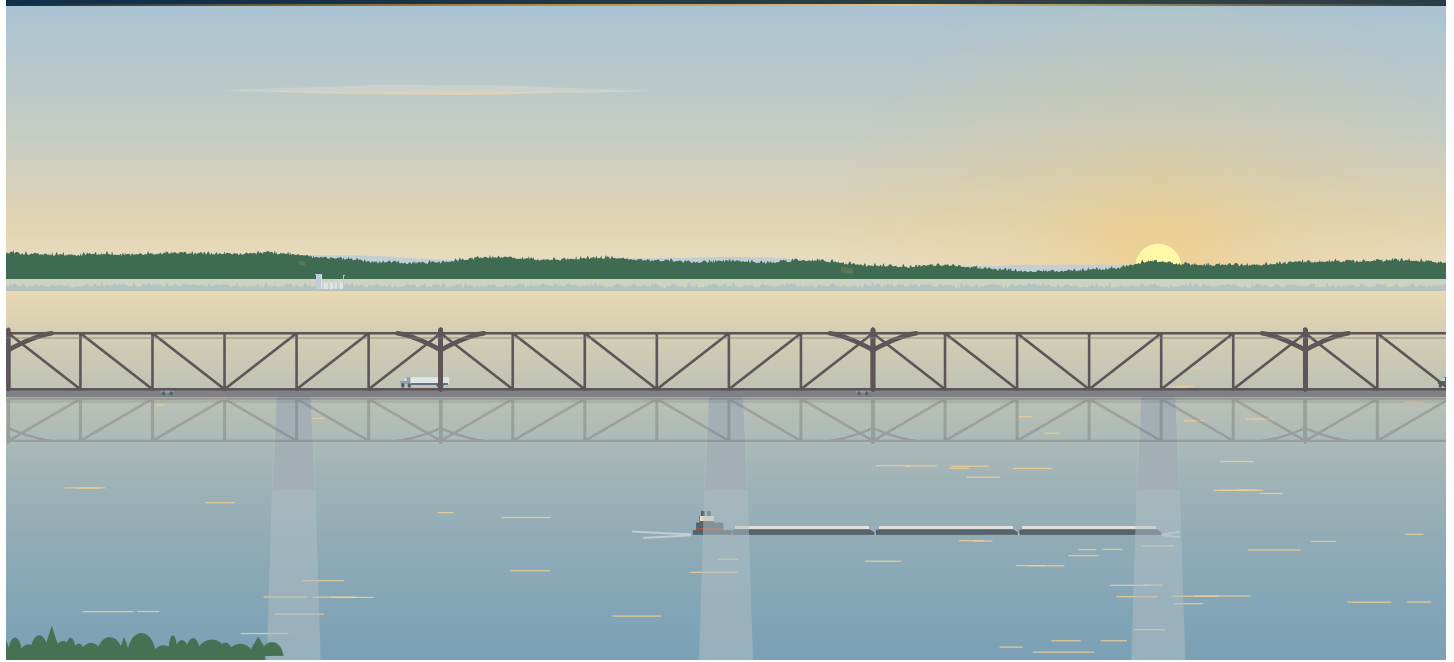
Part four

IV

What holds it up

The bridge across 2027-28

Capabilities across the seven areas



— Part IV

The bridge across 2027-28

Decisions on services and staff before the awards end

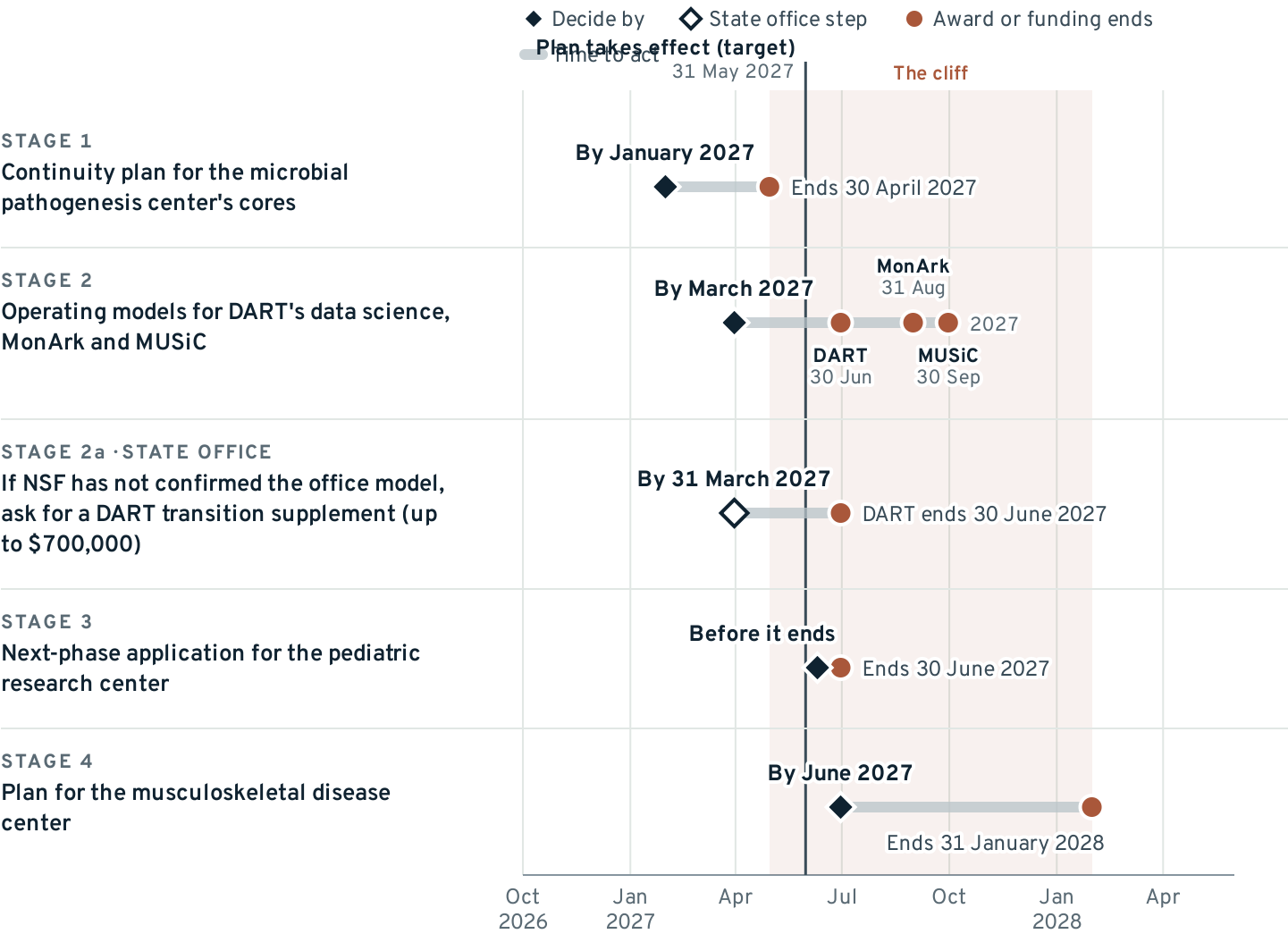
Some awards continue past their end dates: NIH centers can apply for a next phase, as the pediatric center plans to, and NSF EPSCoR's E-CORE and E-RISE awards can be renewed for up to four and three years.¹ For each award, the host institution settles which services continue, who operates them and how they are funded while the award is still running.

The six major awards that support shared research capabilities across the state, described in Part I, end between 30 April 2027 and 31 January 2028. This plan takes effect by 31 May 2027, so it is in force for all but the first of those end dates. An interim action register tracks each host's service plan and the Jurisdictional Steering Committee's (JSC) decision against the deadlines below.²

Figure 14

The continuity calendar: every expiring award paired with its advance decision date

Scheduled award end dates and the six-month advance review window, January 2027 to January 2028.



Method and supporting table (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8d439a187259-figure-sources.html>)

Source the plan decision register and NSF EPSCoR transition-supplement terms (Dear Colleague Letter NSF 24-114); award end dates from NIH RePORTER and NSF award records, October 2026. See the figure sources page for details. [Evidence and definitions \(https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8d439a187259-figure-sources.html\)](https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8d439a187259-figure-sources.html)

Stage	Decision	Decide by
1	Continuity plan for the cores of the microbial pathogenesis center, which ends 30 April 2027	January 2027

Stage	Decision	Decide by
2	Operating models and hand-off plans for DART's data-science work, MonArk and MUSiC	March 2027
2a	If NSF has not confirmed in writing that AR-NETWORK's administrative core may take on the state EPSCoR office's work, AEDC asks NSF for a one-time transition supplement on DART of up to \$700,000 for up to 12 months. The route is open only while DART is in its final year and only if its unliquidated balance is under \$1 million	31 March 2027
3	Next-phase application for the pediatric research center, which ends 30 June 2027	Before 30 June 2027
4	Plan for the musculoskeletal disease center, which ends 31 January 2028	June 2027

Sources ^{3,4,5,3}

The state EPSCoR office prepares each continuity package with the host institutions, and the JSC makes the formal recommendation.

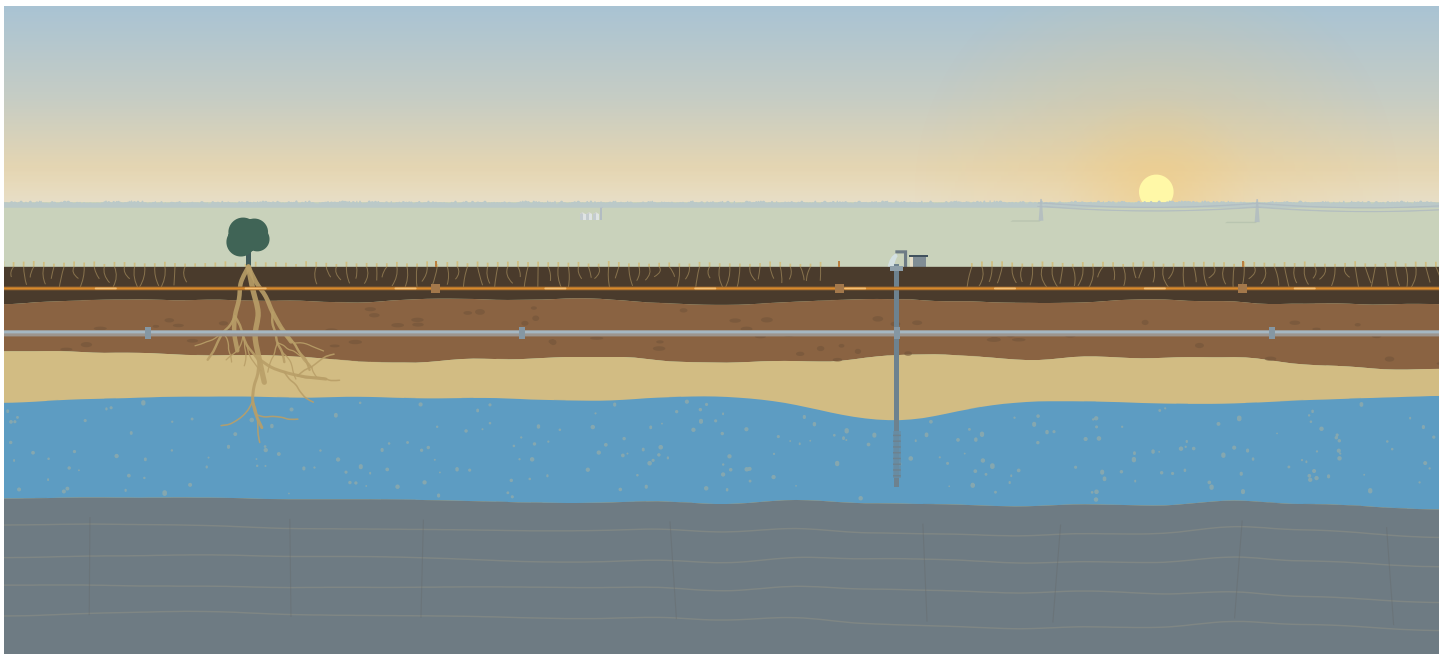
Other awards end in the same window but are not among the six: an NIH minority health research center on 30 June 2027, a multi-state biomanufacturing team award on 31 July 2027, and an industry-university electronics center on 31 August 2027. ^{6,7} Four of the five NSF EPIIC capacity-building awards held by Arkansas institutions also end on 31 August 2027: the two at two-year colleges, NorthWest Arkansas Community College (2432716 , *CREATE*) and North Arkansas College (2433180 , *ADAPT*), and those at Arkansas Tech University (2433152) and the University of Arkansas at Pine Bluff (UAPB) (2433153 , *CAP-M2*). Southern Arkansas University's EPIIC award (2519896 , *SPARK*) runs through 30 September 2028. ^{8,9} The JSC decides at its first meeting whether to add these awards to the bridge schedule.

For every award on the bridge, the register records the decision, essential services, responsible operator, status of successor bids and confirmed funding. Twelve months later, hosts report which services remain open and any interruptions. A submitted grant proposal or a headline award total does not count as proof that a service will continue. ²

Starting steel and lithium

Steel and lithium planning runs on the same 2027 register, with its own decisions and funding. Arkansas State University's steel-equipment award and Southern Arkansas University's lithium activity are starting assets, not a permanent operating budget. ^{10,11} New discovery work does not draw on funds needed to sustain an expiring core, and a capital award is not counted a second time as money for people and services. The JSC decides on operators, funding and a bounded test in January 2028.

1. NSF EPSCoR program rules
ARA's summary of NSF EPSCoR program rules, solicitations and deadlines, October 2026. talent.arresearchhub.com ↗
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Part IV

Capabilities across the seven areas

AI/ML, data analytics and cybersecurity, shared facilities, materials and people statewide

Many of Arkansas's cross-campus research partnerships depend on a single researcher and could vanish when that person moves or retires.^{1,2} Shared capacity lasts longer. Any researcher at an Arkansas public university can run jobs on the state's high-performance computing center in Fayetteville, mostly free of charge, which gives regional and undergraduate campuses a way into projects they could not equip alone.³ The same idea runs through this chapter: analytical methods, specialized instruments and multi-campus teams shared across all seven growth areas.

AI/ML, data analytics and cybersecurity

TEConomy identified Data Science & Machine Learning Applications and Cyber-Physical Systems & Security as enabling capabilities across the entire portfolio, supporting predictive modeling, sensor networks, data provenance, privacy and secure operations.⁴

Analytical methods already appear across Arkansas technical fields: a U.S. Patent and Trademark Office (USPTO) classification model flags AI-related methods in roughly 22–30% of utility patents granted to Arkansas inventors in 2015–2023, depending on the model threshold.⁵ Business use is lower. In pooled Census business surveys from November 2025 to February 2026, about 12% of Arkansas employer businesses reported using AI in any business function, against 18% nationally. The two sources cover different populations.⁶

Most Arkansas businesses not planning to use AI in the next six months said it did not apply to their work. About 22% cited privacy or security concerns, and as many cited not knowing what AI can do; respondents could give more than one reason.¹ The plan helps employers test where analytics fits their operations and secure their data

first, and ties new university AI faculty hires to verified project gaps instead of general hiring targets.

ARA area	Proposed use of AI/ML and data analytics	Cybersecurity and data requirement
Population Health Innovations and Clinical Research	Clinical prediction and evaluation of care delivery	Consented access, privacy and secure clinical data
Power Electronics, Advanced Packaging, and Grid Management Systems	Device diagnostics, predictive maintenance and control	Secure connected controls and test-data integrity
Next Generation Transportation and Logistics Systems	Routing, fleet planning and autonomy evaluation	Secure fleet, vehicle and operational data
Materials Engineering Applications	Property prediction, experimental design and image analysis	Research-data provenance and protection of partner information
Precision Agriculture	Sensing, crop prediction and irrigation decisions	Farm-data permissions and secure field sensors
Food Production and Integrative Health	Food safety, process analytics and traceability	Reliable production records and protected partner data
Supply Chain, Retail, and Consumer Analytics	Demand forecasting, operational decisions and consumer analytics	Commercial-data security and consumer privacy

Sources ^{7,8}

Computer-vision papers already come from several Arkansas campuses, and co-authorship records link computing groups with health researchers. Publication records miss smaller and proprietary collaborations and cannot show who has time to join a project, so each proposed team verifies its methods, data permissions and security controls before work starts. ^{9,10,11}

Materials and shared facilities

Materials Engineering Applications links steel, lithium and critical-minerals processing with power electronics and health. By June 2027, host campuses confirm who in the existing multi-campus materials and biomedical community is available, select a separate cross-area materials project, and confirm access to fabrication,

characterization and biological facilities before any joint application.^{10,12}

Past federal awards and campus facilities have supported applied materials work. A cellulose-nanocrystal patent cites Arkansas's NSF EPSCoR ASSET III award, and a semiconductor patent assigned to the University of Arkansas trustees and Silicon Solar Solutions cites an NSF SBIR grant to the company. Neither is evidence of current licensing or commercial production.¹³

A directory listing does not mean an outside researcher can use the instrument. Hosts of MUSiC, the NIH quantitative-proteomics resource, the high-performance computing center and ARA's Core Facilities Exchange publish clear access terms and log completed external projects, repeat users, wait times and active users by institution type.^{3,12} By March 2027, ARA and NSF confirm whether AR-NETWORK already has a facilities and infrastructure core.

People statewide

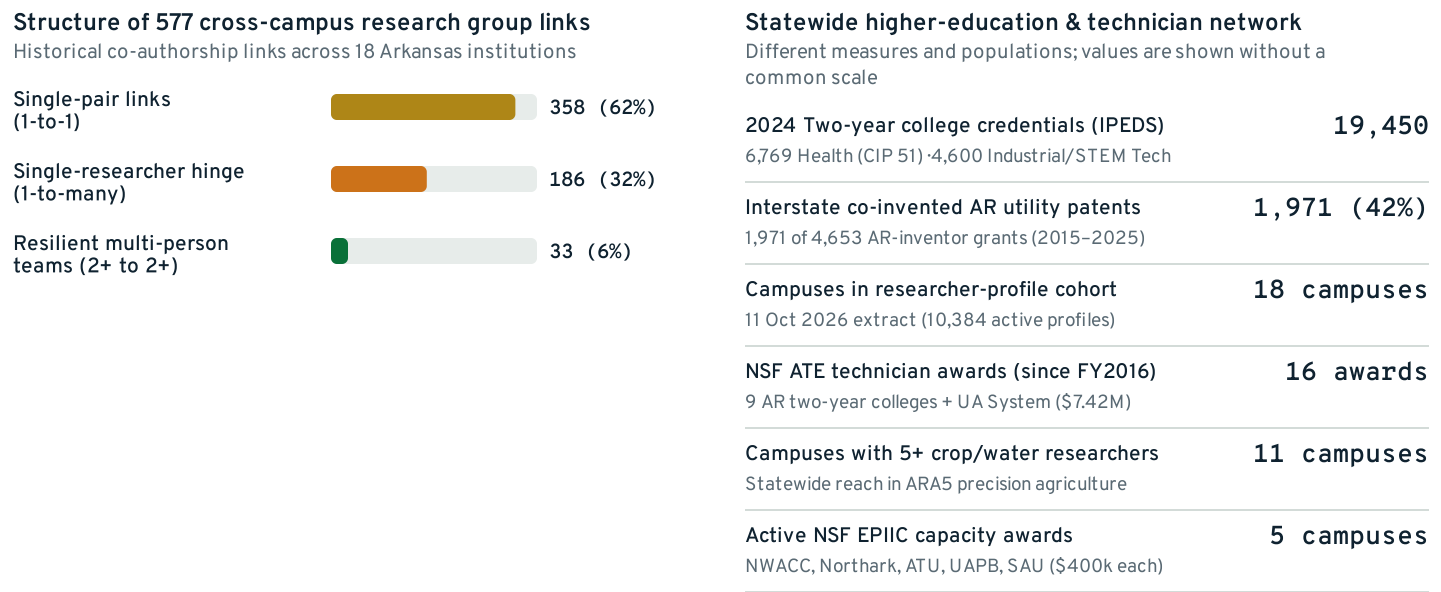
Research capacity across Arkansas depends on every tier of higher education. The University of Arkansas at Pine Bluff (UAPB) anchors aquaculture and takes part across the new EPSCoR awards; regional universities contribute to agriculture, computing, materials and engineering; and Philander Smith, Arkansas Baptist and Shorter College are named outreach partners.¹⁴

Two-year colleges build the technician pathways. Arkansas two-year colleges and the UA System have received 16 NSF Advanced Technological Education (ATE) awards since FY2016. In the 2024 federal Integrated Postsecondary Education Data System (IPEDS) completions file, Arkansas two-year colleges awarded 19,450 sub-baccalaureate and associate credentials, including Health Professions and technical fields led by industrial maintenance, precision production and transportation. Black River Technical College, ASU-Newport and ASU-Beebe awarded the most technical credentials.^{15,16,17} Degree counts alone do not prove unmet employer demand, so campuses and college partners review existing computing, engineering and technician programs before launching new courses or faculty hires.¹

Figure 15

Multi-institution research ties and statewide campus participation

Cross-institutional collaboration structure across 577 historical research ties, paired with statewide campus, two-year college ATE/IPEDS and EPIIC capacity networks.



Move	Lead	By when
Validate an applied AI/ML, analytics and cybersecurity capability map for every growth area, including data access and a delivery lead	Partner campuses with ARA; an industry or public user confirms the map	March 2027
A cross-campus AI-in-agriculture team with a field partner and an agreed test	Division of Agriculture, Arkansas State, Southern Arkansas, UAPB and campus computing groups	2028
Two or three applied-AI hires shared with food and health, subject to a verified capability gap	University of Arkansas, UA Little Rock and UAMS	2028-2031
Confirm who in the existing materials and biomedical community is available, and select a cross-area pilot	Arkansas State, University of Arkansas, UA Little Rock and UAMS	June 2027
Continuity plans for two-year capacity work and DART's data-science services	Participating colleges; state EPSCoR office and committee	June 2027; DART decision March 2027
At least one verified technician pathway in every application, starting with silicon carbide	Steering committee with two-year colleges	From 2028
A successor decision on the edge-AI team with Alabama and North Dakota	University of Arkansas and UA Little Rock consortium	Before March 2028
First facility usage-log export and agreed access measures	Facility hosts with the state EPSCoR office	June 2027

Sources ^{12,17,18,19}

Specialist teams for steel and lithium

The first capability map for the two materials missions identifies available metallurgists and process engineers, analytical chemists, separation and corrosion researchers, reservoir and water specialists, controls engineers and technicians. It separates current staff, funded recruitment, outside partners and missing skills. Arkansas State University's planned steel tools, Southern Arkansas University's lithium work and University of Arkansas separation research are complementary starting points, and the map records their access and availability.^{20,21,22} Where a needed specialty is absent, a time-limited external research partner may serve better than an instrument without an operator.

Regional colleges help define paid work-based pathways with steel producers in the northeast and chemical processors in the south. Enrollment counts as an input; the outcomes measured are completion of an agreed technical task, employment and continued participation in Arkansas. New hires and facilities follow a validated gap and a funded operating plan. Each shared-service agreement names the operator, technician support, sample acceptance, charges, turnaround time and arrangements for smaller firms.

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Part five

V

How it works

How we chose

Who decides

How we will know

— Part V

How we chose

The selection rule and how it was tested

Six applications made the list, and they did not all get there the same way. The plan takes the seven growth areas TEConomy Partners identified for ARA as fixed, and tests which narrower research applications inside them are ready to deliver. Twenty-eight candidates, including subtopics, alternative field definitions and shared capabilities, faced four tests: research output (T1), major federal anchor grants (T2), provisional alignment with state economic sectors (T3), and how often peer EPSCoR plans headline the theme (T4).^{1,2,3}

Figure 16 —

How 28 candidates fared against the four screening tests

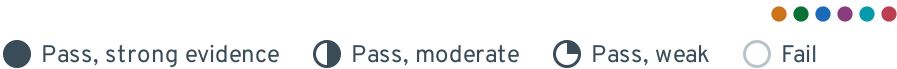
Historical four-test screen, shown before publication-based cells are rescored; final application choices await updated benchmarks and independent scoring.

28 applications and strands scored

20 pass at least two tests

12 under the original screen

6 under the full proposed rule



Tests: 1 output · 2 anchors · 3 alignment · 4 peer-plan mentions

CANDIDATE	1	2	3	4	RESULT if moved
THE SIX BETS, WITH THEIR STRANDS (13)					
Poultry, animal and food science	●	◐	●	○	Tier A holds
Crops, water and climate	●	●	●	◐	Tier A holds
Insect and weed science	◐	○	●	◐	Tier A holds
Transportation and logistics	◑	◐	●	○	Tier B conditional
Supply chain (operations research, information systems)	●	○	●	◐	Tier A holds
Power electronics and packaging	◐	◑	◐	●	Tier A holds
Converter and SiC/GaN chip topics	◐	◑	◐	●	Tier A holds
Population and clinical health	◐	●	○	○	Tier B conditional
Population and public health	◐	●	○	○	Tier B conditional
Pediatric and perinatal health	◐	●	○	○	Tier B conditional

Oncology					Tier B conditional
Implementation science and telehealth					Out near miss
Radiology and imaging					Out near miss

OTHER APPLICATIONS AND STRANDS: WEAKER EVIDENCE (7)

Advanced materials (broad)					Out stays out
Ferroelectric, quantum and 2D materials					Out near miss
Water and climate, stand-alone Thin on its own; folded into the crops bet					Out near miss
Quantum No output measure yet; its anchor ends August 2027					Out near miss
Biomanufacturing One anchor award, ending July 2027					Out stays out
Timber and forest products					Out stays out
Infectious disease and AMR					Out stays out

DID NOT PASS TWO TESTS (5)

Toxicology and regulatory science Strongest citation record, but its federal lab's in-house money is not a competitive anchor					Out near miss
Critical minerals and lithium Market pull only; 11 papers in 2020-25					Out near miss
Musculoskeletal and aging					Out near miss
Aerospace and defense					Out near miss
Energy generation					Out stays out

PLATFORMS, SCORED FOR THE RECORD (3)

AI/ML, data analytics and cybersecurity					Platform conditional
Research infrastructure and computing					Platform stays out
Research workforce and statewide reach					Platform conditional

Historical five-gate diagnostic screen across 38 candidate domains. Under the two-supported-pass rule, 18 domains cleared the screen and 20 did not; audited 2021–2025 Arkansas publication counts are shown in the data drawer, and no unmeasured quantum stress case passes.

Selection screen sensitivity and audited candidate counts (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/f0affa38a9a1-source-audit-notes.html#selection-and-measurement>)

Source Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/f0affa38a9a1-source-audit-notes.html#selection-and-measurement>)

Passing any two tests admitted twelve candidates. Requiring at least two of those passes to rest on strong or moderate evidence left six.^{4,5} Food, crops, power and supply chain qualify under every single-test change examined. Freight drops out if federal anchors or economic alignment is removed; health drops out without federal anchors or if three passes are required.^{6,5,7} Steel and lithium did not pass the screen and follow a separate route with a review before each stage, described below.

The Jurisdictional Steering Committee (JSC) adopts the selection rule in January 2027. An independent scorer outside ARA rescores every candidate against updated publication benchmarks in February 2027, and the JSC decides the application set in March 2027; the six are the working set until that vote.⁸

What the screen can and cannot say

A crosswalk accounts for all 35 opportunities in the background strengths dossier, showing which were scored directly, grouped with a topic, or kept unscored.⁹

A local company headquarters or an AEDC sector label does not show that an employer wants a specific research project, and a theme few peer plans headline gives Arkansas no competitive edge. A Tier A or B grade describes only how a candidate scored on the screen..⁵

The federal-anchor test and the evidence-quality tie-breaker were added after early data had been seen. The plan therefore dates and freezes the rule before scoring, publishes the full sensitivity grid and logs every rule change. Dropping the peer-plan test leaves all six eligible, while dropping both T3 and T4 leaves only food, crops and health.^{10,8} Before the JSC funds any project, its proponents name the business or public-service partner whose problem it solves, document the team's skills and the facility, material or data access the scope needs, assign responsibilities and define a measurable outcome. An operational pilot also needs the relevant plant-data or field-test agreements.

A competitive route for steel and lithium

A screen of past output finds established strengths; it cannot choose the next one to build. Neither steel nor critical minerals passed it, and Appendix A reports their cells, thresholds and sensitivity results unchanged. Both enter a separate capability-building route within the seven-area framework.

Before inviting proposals, the JSC publishes the route's criteria, budget ceiling and independent review process, and opens the route to other emerging applications on the same terms. The JSC adopts the route in June 2027. An early discovery award requires documented industrial-customer or public-user need, relevant adjacent science, a specific capability gap, access to the material or data the limited scope needs, and a documented research increment beyond existing company, vendor, accelerator and publicly funded cluster work. Pilot authorization adds accessible samples or data, named technical staff and facility operators, a costed operating plan and partner contribution, agreed data and IP terms, a measurable technical milestone and a review-or-stop date. Each award delivers a public benefit such as a reusable nonconfidential method, fair shared-service access, supplier capability or a verified training pathway, and agreements protect trade secrets while preventing a single partner from controlling publicly supported access.

Discovery, pilot and expansion funding are separate decisions, and discovery funding alone leads to no building or permanent cluster hire. An independent technical and market review compares feasible proposals on incremental Arkansas public benefit, full lifecycle cost and likelihood of delivery, including the next-best use of

scarce funding, such as sustaining an existing service, and recommends advance, revise or stop. The JSC publishes funded, reserve and deferred choices with reasons. A failed test can still inform a decision but does not justify continued spending without a new case.

Sources 10

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Part V

Who decides

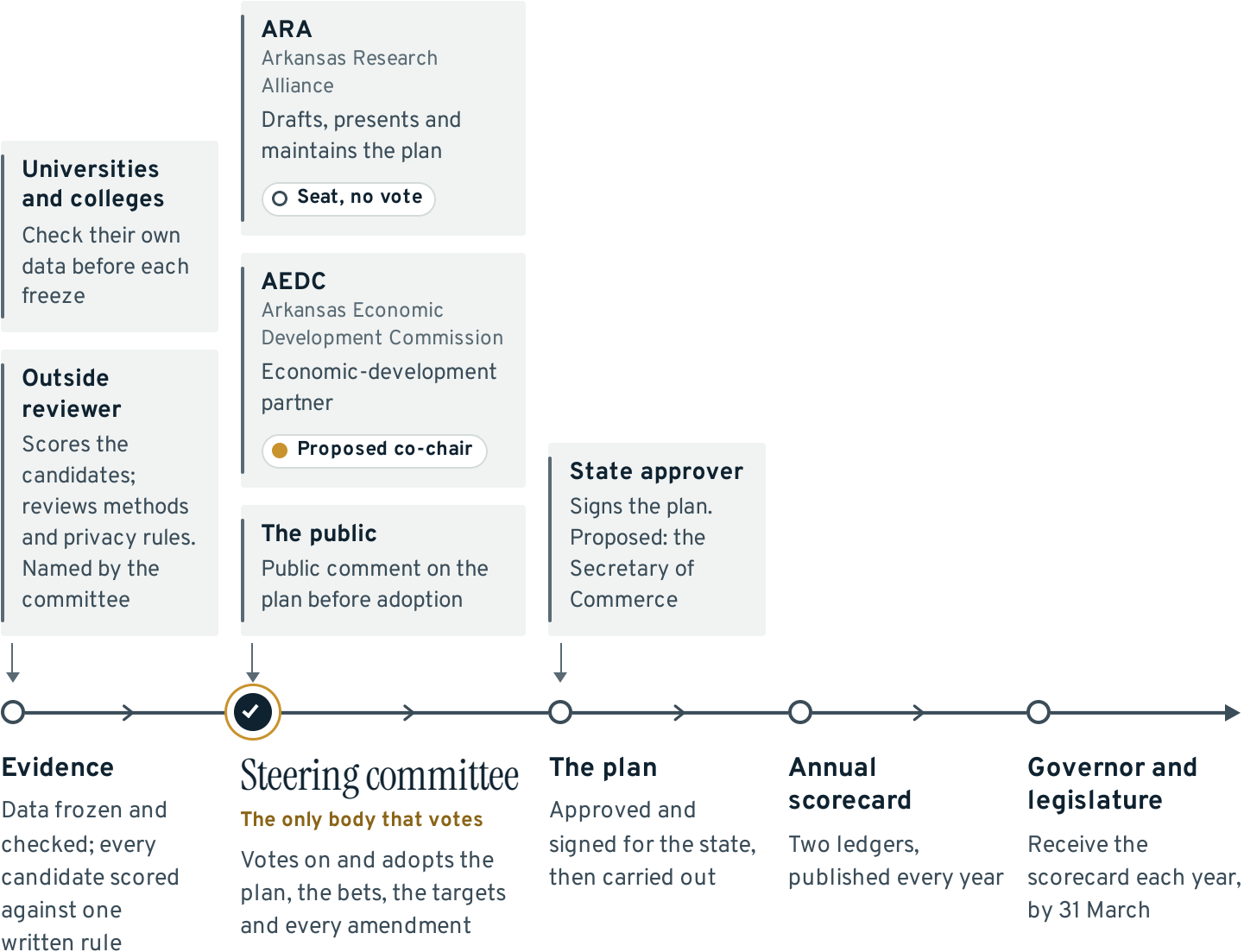
Representation, voting rights and conflicts of interest

The committee that submitted Arkansas's 2024 plan had nine voting members, the Arkansas Research Alliance (ARA) and eight universities. Industry, two-year colleges and state agencies held no vote.¹ Employers, rural communities and regional colleges that help carry out this plan need a vote in its decisions.

Figure 17

Clear lines of authority: the steering committee votes, while staff and partners draft and review

Proposed roles from evidence gathering through the annual scorecard, for adoption in the committee’s bylaws.



Method and supporting table (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8d439a187259-figure-sources.html>)

Source Roles as proposed for the committee's by-laws, which the committee adopts. [Evidence and definitions](https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8d439a187259-figure-sources.html) (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/8d439a187259-figure-sources.html>)

Who	Does	Does not
Jurisdictional Steering Committee	Adopts the plan, the bets, the targets and every amendment; the only body that votes on them. Expected to be the reconstituted Science Advisory Committee, so the state has one committee for its EPSCoR awards and its plan	
Arkansas Research Alliance	Prepares, presents and maintains the plan through the administrative core of its AR-NETWORK award; holds a standing seat	Vote on adoption, the bets or amendments
AEDC	Co-owns the economic and market sections; confirms the target sectors the market test uses; proposed as co-chair or vice-chair with sign-off on the bets	
A state official	Approves and signs the plan. Proposed: the Secretary of Commerce, who approved the 2024 plan ²	Appear on any EPSCoR project roster; checked against every roster before signing
An outside reviewer, named by the committee	Scores the candidates and reviews the methods and the privacy rules	Get chosen by ARA
Universities and colleges	Check their own data before each freeze; confirm proposed delivery owners and usable capacity	

Committee membership

The plan proposes by-laws for the Jurisdictional Steering Committee (JSC), to be posted by 31 January 2027, that reserve at least one-third of voting seats for leaders outside academia. Two-year colleges hold at least two seats (or one through their state association), and every tier of higher education, from research universities to regional campuses and HBCUs, is represented, with a named alternate for each member. Principal investigators on active state EPSCoR awards serve without a vote.³ The JSC publishes its roster, voting breakdown by sector and meeting minutes.

Conflicts of interest

ARA staffs the planning process and may also lead EPSCoR proposals, including the renewal of AR-NETWORK. Whenever a decision would fund, staff or select ARA, AR-NETWORK or an ARA-led bid, ARA may provide facts on request but does not write the recommendation or attend the vote. The rule covers the 2027–2028 bridge decisions and the formation of cross-campus teams, and the minutes record ARA’s absence.

Voting members recuse themselves only when a vote directly selects or funds their specific proposal or team, and their alternate votes on general matters. Institutions and companies seeking project funding disclose their interests and recuse from decisions on their own proposals. The JSC publishes the frozen selection rule and its date, the independent scorer’s name, the evidence workshop record and the adoption vote. If the JSC offers an opt-in service to help match researchers into proposal teams, it is voluntary and run by an independent operator outside ARA and any proposing institution.

Sponsors for steel and lithium

The JSC publishes capability-building criteria before problem scoping, which itself commits no funds, and adopts the route and its funding ceiling after consultation. Funded project selection requires conflict-of-interest and independent-review rules in force. AEDC is asked to validate the steel and lithium market cases with operators, downstream buyers and potential suppliers, while university hosts confirm technical leadership and operating capacity. Northeast and South Arkansas employers, regional colleges and affected communities inform the briefs. No role named here is a commitment until the organization accepts it. An independent reviewer assesses feasibility and the case for public investment.

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Part V

How we will know

Measuring progress and reviewing decisions from 2027

Arkansas’s 2024 plan set five broad strategies without numeric targets, making it hard to tell what worked and what stalled.¹ This plan keeps two ledgers: one for the statewide research environment and one for what the plan’s own projects deliver.

Two ledgers

Audited baselines for publications, NSF share, HERD academic R&D, BERD business R&D, SBIR/STTR and patents, paired with dated commitment milestones through 2032.

- **Proposed format**

1 Context

Tracks Arkansas's research economy · Not attributed to the plan alone

Measure	Baseline	Interpretation
Audited Arkansas publications	24,743 papers 2021–2025	Arkansas counts only; national specialization and citation ratios are not reported
NSF research funding share	0.35% (FY2021–25) 2012–16 → 2021–25	Up from 0.24% trough in FY2015–19; program win-rate diagnosis begins 2027
Academic R&D spending (HERD)	\$492.1M (0.42% of US) FY2019–FY2024	Growth concentrated at UAF and UAMS; FY2025 HERD release due Nov 2026
Business R&D performed (BERD)	\$719M (\$633M co.-funded) CY2024 by firm size	Led by information (\$147M), machinery (\$90M), freight (\$85M) and food (\$73M); 5,000 AR R&D workers
Federal small-business R&D (SBIR/STTR)	\$16.38M (32 AR firms) 2015–19 vs. 2020–24	Includes 15 classified USDA awards (\$3.92M across 10 firms in 2015–25)
Applied invention (utility patents)	4,653 / 1,303 grants 2015–19 vs. 2020–24	Top assignee ID on 28% of org-assigned grants; 252 AR assignee orgs

2 Commitments

Conditions agreed before launch

Measure	Baseline	Milestone	Owner	Status
Dated actions with evidence and next decision	Not yet measured Interim register from January 2027	Agree milestones	Committee	<div><div></div>Scheduled</div>
Host-verified enabling capability across all seven areas AI/ML, analytics, cybersecurity and usable access	Not yet validated Proposed map available	Review March 2027	Campus and partner leads	<div><div></div>Not measured</div>

Materials community and shared application validated	Not yet validated Existing network evidence	Review June 2027	Community hosts	 Not measured
One proposed operational measure from each application				
● Feeding the country Partner projects using executed data or test access	Not yet measured Project register required	Agree before launch	Food and aquaculture hosts	 Not measured
● Growing more from every acre Supported proposals reviewed; field tests completed	Not yet measured Project register required	Agree before launch	Crop and field partners	 Not measured
● Moving freight Operational test delivered by agreed campus roles	Not yet measured Project register required	Agree before launch	Freight research hosts	 Not measured
● Running the supply chain Joint project using permitted partner data	Not yet measured Project register required	Agree before launch	Research and industry leads	 Not measured
● Switching power External facility projects completed and services continued	Not yet measured Project register required	Agree before launch	MUSiC and partner hosts	 Not measured
● Caring for a rural state Provider/community pilot completes its agreed test	Not yet measured Project register required	Agree before launch	Research and provider leads	 Not measured
Pending and not measured are real draft states, not invented progress. Interim decisions are recorded from January 2027; first full scorecard proposed for March 2028. Targets for new activities use feasible milestones, not an unavailable historical trend.				

Scorecard context baselines and commitment ledger rules (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/f0affa38a9a1-source-audit-notes.html#methods-and-coverage>)

Source Evidence and definitions (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/f0affa38a9a1-source-audit-notes.html#methods-and-coverage>)

The first ledger tracks the context the plan works in: verified institution-linked publications (24,743 papers in 2021–2025), agency-specific federal grant panels, academic R&D spending (HERD), business R&D (\$719 million in the 2024 BERD survey), federal small-business awards under SBIR/STTR, including USDA awards, STEM employment, two-year and four-year credentials, and utility patents with Arkansas inventors or assignees.^{2,3} Patents are reported with inventor geography and assignee concentration so that volume is not mistaken for broad business adoption.^{4,5} These indicators show how Arkansas’s research economy is moving; they cannot show that an action in this plan caused the change. The [patent extension notes](https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/f20322320194-patent-extension-notes.html) (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/f20322320194-patent-extension-notes.html>) and [source-audit notes](https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/f0affa38a9a1-source-audit-notes.html) (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/f0affa38a9a1-source-audit-notes.html>) document the exact counting rules and boundaries behind each series.⁶

The second ledger tracks the plan’s direct work: active partner agreements, completed field and plant tests, shared facility projects, supported grant submissions, and students completing technician or research steps. Every entry needs an owner who has accepted the role, a verified baseline, a due date, documented evidence and a

decision point. Until a baseline is collected, the scorecard reports “not yet measured”, which counts as neither zero activity nor a completed milestone.⁷

How we will know

Partner agreements used by active supported projects Baseline Counted from the April–June 2027 consultation round, which confirms each problem, access and responsible contacts Source ⁷	Completed external facility projects, repeat users and access delays Baseline Usage-log baseline due June 2027 Source ⁷	Supported submissions, review outcomes and resubmissions by institution type Baseline Program and proposal register begins 2027 Source ⁷
Students completing a supported research or technician-pathway step Baseline Each new program fixes its completion definition and baseline before launch Source ⁷	Actions with a decision and supporting evidence recorded by the due date Baseline Interim register opens January 2027 Source ⁷	

Before any application pilot begins, partners agree on one primary operating measure and fix its population, period, baseline, numerator, denominator, comparison group and missing-data rules before results are seen.⁸ Seven area evidence cards and two one-page partner discussion briefs, for food processing and supply-chain forecasting, open the 2027 consultations; neither is a signed partner project.^{9,10}

Steel and lithium measures

Each steel and lithium mission has one agreed primary endpoint, with supporting measures that guard against a misleading success claim.

Mission	Primary endpoint to agree before launch	Evidence reported alongside it
Better steel	Service test: time from valid sample receipt to a buyer-accepted report. Production test: share of comparable output accepted to the agreed specification	Service: method equivalence, queue, retests and full cost. Production: input chemistry, rejected mass, throughput and energy per saleable tonne; customer use

Mission	Primary endpoint to agree before launch	Evidence reported alongside it
Qualified lithium product	Share of all initiated test or production runs yielding product that meets the agreed buyer specification; customer acceptance reported separately	Elemental-lithium recovery and material balance, impurity profile, repeat-cycle uptime, freshwater withdrawal and consumption, and reagent/energy use per unit of conforming product
Battery-materials feasibility	Independent decision brief comparing specified precursor/cathode routes, with buyer requirements and an appropriate sample-evaluation plan	Feed and technology rights, credible costs, site needs, alternatives and prospective Arkansas work; advance, revise or stop decision
Arkansas suppliers and skills	Verified local supplier work and sustained technical capability attributable to supported projects	Qualified suppliers and repeat purchases; expenditure for work performed in Arkansas; retained researchers and technicians; completed work-based pathways

Discovery and feasibility work are judged on a predeclared decision deliverable and need not claim a qualified commercial product. Every rate states its numerator and denominator. End-to-end lithium recovery is elemental lithium in final conforming product divided by elemental lithium entering the declared process boundary; extraction-stage capture is reported separately. Run and assay-validity rules are frozen before testing, and reports cover all initiated, completed, failed and assay-invalid runs. Valid-assay conformance appears beside the all-initiated-run result, and invalid assays stay out of the success numerator until resolved. Field pilots report departures from agreed environmental baselines and corrective actions, including reservoir and reinjection performance where relevant. Independent assays and customer documents separate a technically successful sample from a qualified commercial product. Project activity and wider industrial investment are reported separately, and no research award is credited with an entire plant or job announcement. The Jurisdictional Steering Committee (JSC) sets each mission's specification, baseline and stop conditions in January 2028, when it decides whether the brief is ready for a bounded pilot. No supplier contract or operator role exists yet.

Targets and review

Where an indicator has a consistent historical series, the scorecard shows its recent trend and peer benchmark. For a new activity, such as a technician pathway or facility usage log, partners set a milestone and completion rule before launch, since there is no trend to extend. The JSC sets every target by 1 April 2027, with a responsible owner, a denominator, an interim check in 2029 and a 2032 endpoint.^{7,11}

Each spring, the annual review asks whether partners still need each application's work, whether the team has the people and facilities to deliver it, and whether the agreed operating conditions are met. An application that falls short in two comparable reviews goes on watch unless the JSC publishes a specific reason to continue. Broad ARA growth areas are not dropped merely because a single grant expires or overlapping publication windows shift.^{7,12}

How numbers are reported

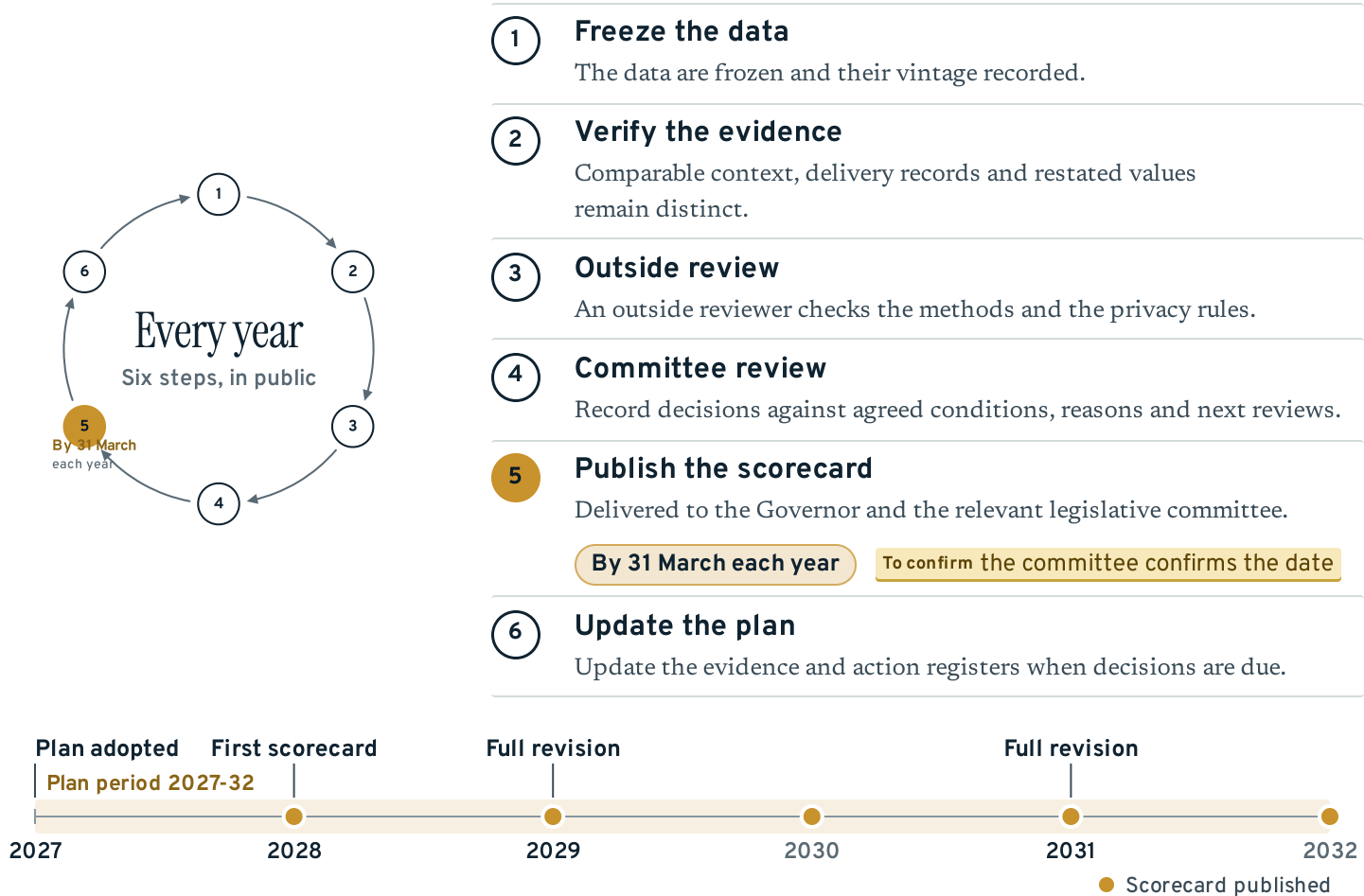
Every number in the scorecard states who and what it covers. Member institutions review their records before each data freeze, and original figures remain visible alongside any restated series. Known data boundaries stay explicit: the legacy researcher-profile extract omits two-year colleges and files Division of Agriculture scientists under UA Fayetteville, while IPEDS credential data cover two-year institutions separately. Broad ARA growth areas, narrower delivery applications and subfield signals each keep their own definitions.^{13,14}

No researcher is ranked or scored, and people are named only where a cited public source names them. Cell counts below five are suppressed, opt-outs are honored at build time, and any team-matching records remain internal, opt-in and independent of proposing organizations.¹⁵

The annual cycle

Figure 19 —
The annual review cycle from initial project register to spring scorecard

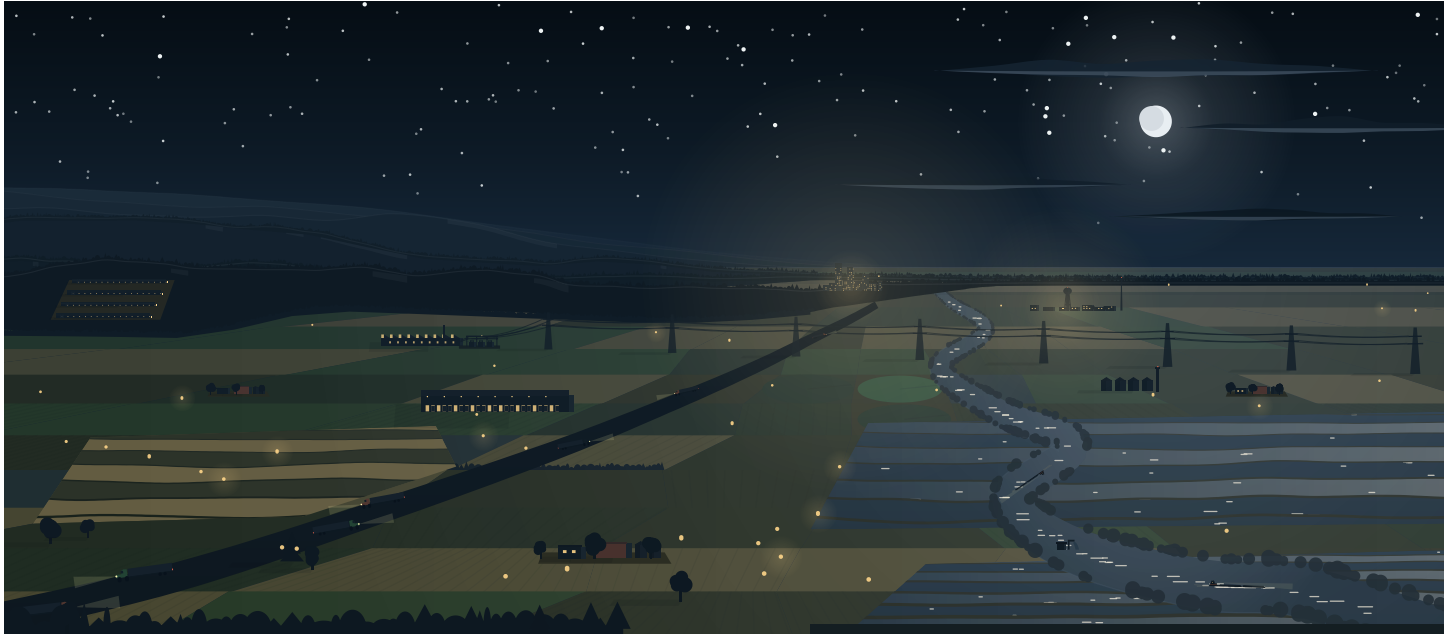
Decision recording begins in 2027, leading to the first full spring scorecard proposed for March 2028.



Review calendar change (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-review-edits/cc6d1683128c-review-edits-notes.html#cycle>)

Source Current action register and the proposed review calendar; interim monitoring begins before adoption. [Evidence and definitions \(https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-review-edits/cc6d1683128c-review-edits-notes.html#cycle\)](https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-review-edits/cc6d1683128c-review-edits-notes.html#cycle)

The interim register opens in January 2027 to track the 2027–2028 bridge decisions and consultation milestones as they fall due. After the plan takes effect by 31 May 2027, the first full annual scorecard is proposed for 31 March 2028, with the JSC confirming the date by March 2027. The plan is then fully revised every two years, by 31 May 2029 and 31 May 2031, so that its priorities keep pace with the state’s economic development strategy. When a deadline is missed, the register records why and what decision comes next without waiting for the spring report.^{7,15}



Sources 15

1. Arkansas EPSCoR jurisdiction record
ARA's October 2026 record of Arkansas's EPSCoR awards, 2024 plan and approver. talent.arresearchhub.com ↩
2. NCSES, Business Enterprise Research and Development: 2024 (NSF 27-300). Table 13: domestic R&D performed in Arkansas \$719M, of which \$633M paid for by the company and \$86M paid for by others (\$37M federal, imputed; \$49M nonfederal); all-states total \$765,082M. Table 28-A: company-funded domestic R&D by industry, company size and state, in millions; some cells are imputed (i), modeled (e), below \$0.5M (*) or withheld (D). Table 53: 171,000 domestic employees and 5,000 domestic R&D employees in Arkansas. Covers companies with 10 or more domestic employees that performed or funded \$50,000 or more of R&D. State GDP ratios divide by BEA SAGDP2 2024 current-dollar GDP (\$188,650.1 million for Arkansas; \$29,380,991 million for the United States), which BERD does not publish. nces.nsf.gov Table 28-A. Companies with domestic R&D paid for and performed by the company, by industry, company size, and state (A–M): 2024. nces.nsf.gov ↩
3. SBIR.gov national bulk award file (`award_data.csv`, 2015–2025): 15 Arkansas USDA SBIR/STTR awards totaling \$3,919,337 across 10 Arkansas small businesses, classified by project title, abstract, and research area (5 in Feed/Food & Aquaculture \$1.50M; 5 in Grow/Crops & Water \$1.29M; 2 in Move/Logistics \$756.5k; 2 in Materials/Bioproductions \$274.9k; 1 in assistive rural travel technology for blind travelers \$100.0k). sbir.gov ↩
4. USPTO utility document events with Arkansas inventors, 2015–2025; explicit application linkage; not invention families or commercial outcomes. talent.arresearchhub.com ↩
5. 4,653 local-inventor grants; organization information on 4,033; source-ID concentration and assignee-address coverage; no corporate-family or headquarters inference. talent.arresearchhub.com ↩
6. Cross-source population, dollar-basis and vintage boundaries; 20-family coverage and report integration record. talent.arresearchhub.com ↩
7. Plan action register
The plan's register of proposed actions, owners, completion evidence and decision dates (ARA, October 2026). talent.arresearchhub.com ↩
8. Proposed operating-measure definitions with population, denominator, comparison and missing-data rules; the committee sets baselines, targets and owners on the dates in Appendix C. talent.arresearchhub.com ↩
9. Bounded analytical review of 21 primary patent abstracts and first independent claims; screening counts remain provisional. talent.arresearchhub.com ↩
10. User-shareable questions and data requests; no responses, access agreements or partner acceptance received. talent.arresearchhub.com ↩
11. Decision calendar record
The October 2026 edition of the plan's decision calendar (ARA). talent.arresearchhub.com ↩

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|---|---|--|--|
| <p>12. Candidate screening record
The October 2026 edition of the plan's candidates and scores appendix (ARA). talent.arresearchhub.com ↗</p> | <p>13. Growth area and application definitions
ARA's register defining the seven growth areas, six applications and the research fields used to measure them (October 2026). talent.arresearchhub.com ↗</p> | <p>14. Plan evidence summary by area
ARA's compiled evidence by area and application, October 2026. talent.arresearchhub.com ↗</p> | <p>15. Plan decision register
The plan's outline and decision register, with decisions and dates (ARA, October 2026). talent.arresearchhub.com ↗</p> |
|---|---|--|--|

Candidates and scores

The screening evidence dates from 12 October 2026, and the selection rule and sensitivity checks from 25 October 2026. The publication-based cells use counts taken before known false affiliations were removed (Appendix B). All seven ARA growth areas stay in the plan. The committee adopts the selection rule in March 2027, an independent reviewer scores the candidates against updated publication benchmarks in July 2027, and the committee decides the applications in October 2027.^{1,2,3}

A.1 Seven sectors, six delivery bets

The plan is organized around the seven growth opportunity areas identified by TEconomy Partners for ARA, with six applications testing where research can be put to practical use inside them. A broad growth area stays in the strategy even when evidence on a narrower subtopic is incomplete. AI/ML, data analytics and cybersecurity serve as enabling capabilities across all seven areas rather than competing as separate applications.^{4,5}

ARA growth opportunity area	Delivery focus and disposition
Population Health Innovations and Clinical Research	Health, with separately identified population, perinatal, oncology and other strands
Power Electronics, Advanced Packaging, and Grid Management Systems	Narrow power and packaging work; grid capability assessed separately
Next Generation Transportation and Logistics Systems	Freight; conditional on anchors, economic alignment and validated readiness
Materials Engineering Applications	Retained broad sector; steel and lithium/critical-minerals missions proposed through the separate capability-building route, alongside links to power and other applications
Precision Agriculture	Crops, with precision, water and insect/weed strands kept distinguishable
Food Production and Integrative Health	Food and animal science, retaining integrative-health links
Supply Chain, Retail, and Consumer Analytics	OR and information-systems delivery focus; broader retail and consumer analytics remain in the strategic sector

Sources^{6,5}

A.2 The screening rule

Under the rule, a candidate must pass at least two enabled tests, with at least two of those passes supported by strong or moderate evidence. Tier A requires three or more strong or moderate passes; Tier B meets the rule with two. The grades summarize the screening table alone and do not by themselves establish scientific quality, employer demand or team readiness. Narrow subtopics and alternative field definitions may pass the screen without becoming separate headline bets, and cross-cutting foundations are counted separately.²

Test	Pass condition	Interpretation
T1 Output	Specialization index at least 1.0, or specialization rank at most 10 among peers above the size floor	Output quantity and specialization; citation quality and momentum are reported separately
T2 Federal anchors	One active center-scale anchor or three active anchor awards at the evidence date	Competitive-award inventory, with expiry risk; not a complete measure of usable facilities or intramural science

Test	Pass condition	Interpretation
T3 Alignment, provisional	A direct AEDC-sector match; the Technology & Innovation catch-all also requires a recorded industry/SBIR asset	Economic/strategic alignment; company presence is not validated project demand
T4 Peer positioning	No more than three peer plans code the assigned theme as a headline	Coding and theme-granularity dependent context; not proof of competitive advantage

Sources¹

In the historical screen, strong T1 evidence required a specialization index of at least 1.2, a peer rank of seven or better, and at least 300 publications (with smaller or borderline fields flagged). T2 evidence is rated stronger when underlying grants have longer remaining terms. T3 checks documented sector links and assets rather than signed customer commitments, and broad theme definitions receive lower weight on T4. Full rules, source cells and alternative field mappings are recorded in the selection rule specification.^{1,2}

An optional fifth test (T5, institutional breadth) is used only in sensitivity checks: it requires at least three Arkansas institutions with five or more engaged researchers, or a cross-institution co-authorship share at or above the state median (with unmeasured fields marked **U** rather than counted as passes). Because publication rosters are an indirect proxy for staffing, partners confirm who is available to do the work.¹

A.3 All 28 candidate rows

In the table below, **Y** denotes pass, **N** denotes fail, and **(s)**, **(m)** and **(w)** indicate strong, moderate and weak evidence. Every final eligibility result applies the evidence-quality rule requiring at least two passes on strong or moderate evidence. Scenario counts show how often each candidate qualifies across the tested parameter grid (including alternative output definitions); they are sensitivity counts, not probabilities.^{7,8}

ID	Candidate	T1-T4 (strength)	Raw passes	Supported passes	Final result	Scenario count
P1	Poultry, Animal Science, Food Safety & Aquaculture	Y(s) Y(m) Y(s) N(s)	3	3	A	264/288
P2	Power Electronics, Advanced Packaging & Grid (subfield 2208)	Y(m) Y(w) Y(m) Y(s)	4	3	A	192/192
P2-T	P2 topic-level variant: converters, SiC/GaN devices, packaging	Y(m) Y(w) Y(m) Y(s)	4	3	A	192/192
P3	Agriculture, Water & Climate Resilience (crop & plant science base)	Y(s) Y(s) Y(s) Y(m)	4	4	A	276/288
P3-IW	P3 variant: insect & weed science strand	Y(m) N(m) Y(s) Y(m)	3	3	A	176/192
P4a	Transportation & Logistics	Y(w) Y(m) Y(s) N(s)	3	2	B	36/96
P4b	Supply Chain, Retail & Consumer Analytics (as OR / MIS)	Y(s) N(m) Y(s) Y(m)	3	3	A	256/288
P5	Population Health (ARA area 1, proxy; all health anchors)	Y(m) Y(s) N(m) N(s)	2	2	B	48/96
P5-POP	P5 strand: population & public health	Y(m) Y(s) N(m) N(s)	2	2	B	48/96
P5-PERI	P5 strand: pediatric, perinatal & maternal health	Y(m) Y(s) N(m) N(w)	2	2	B	96/192
P5-IMPL	P5 strand: implementation science & telehealth	Y(m) N(m) N(m) N(w)	1	1	not headline	24/96

ID	Candidate	T1-T4 (strength)	Raw passes	Supported passes	Final result	Scenario count
P5-ONC	P5 strand: oncology	Y(m) Y(m) N(m) N(w)	2	2	B	72/192
P5-RAD	P5 strand: radiology & imaging	Y(m) N(m) N(m) N(w)	1	1	not headline	24/96
P6	Advanced Materials (broad, ARA area 4 = OpenAlex field 25)	N(m) Y(w) Y(w) N(s)	2	0	not headline	0/192
P6-FQ	P6 variant: ferroelectric, quantum-structure & 2D materials niche	Y(m) Y(w) N(m) N(w)	2	1	not headline	36/192
P7	Critical Minerals, Lithium & Metals Processing	N(s) N(m) Y(s) N(m)	1	1	not headline	32/192
X-WATER	Stand-alone water / climate resilience	Y(w) Y(s) N(m) N(s)	2	1	not headline	18/96
X-QUANT	Quantum (stand-alone)	U(w) Y(w) N(m) Y(m)	2	1	not headline	48/192
X-ENERGY	Energy generation (grid, storage, conversion)	N(m) N(m) N(m) N(s)	0	0	not headline	0/96
X-BIOMFG	Biomanufacturing & bioprocessing	Y(m) Y(w) Y(w) N(s)	3	1	not headline	0/192
X-AERO	Aerospace & defense	N(s) N(m) Y(s) N(s)	1	1	not headline	24/96
X-TIMBER	Timber & forest bioeconomy	Y(w) N(m) Y(m) N(w)	2	1	not headline	0/96
X-TOX	Toxicology & regulatory science (NCTR- anchored)	Y(m) N(m) N(m) N(w)	1	1	not headline	72/288
W-INFECT	Infectious disease, microbiology & AMR	Y(w) Y(w) N(m) N(w)	2	0	not headline	0/96
W-MSK	Musculoskeletal, muscle biology & aging	N(s) Y(m) N(m) N(w)	1	1	not headline	60/192
H1	AI, ML, cybersecurity and data analytics - enabling capabilities	N(s) Y(s) Y(m) N(s)	2	2	Foundation	108/192
H2	Research infrastructure & CI access - platform	U(w) Y(m) N(m) N(w)	1	1	Foundation	0/96
H3	Research workforce & statewide reach - platform	Y(m) Y(s) N(m) N(s)	2	2	Foundation	72/192

A.4 Sensitivity of the screen

The historical sensitivity grid tests 96 parameter combinations per output definition, varying specialization index thresholds (**1.0** vs. **1.2**), peer rank cutoffs (**7** vs. **10**), peer-plan headline caps (**2** , **3** or **5**), required passes (**2** vs. **3**), federal anchors (**T2** on/off) and institutional breadth (**T5** off/on) while keeping **T3** and **T4** active, plus separate checks that drop **T3** or **T4** individually. Denominators vary across candidates because some topics were tested across multiple publication definitions.^{2,9}

ID	Eligible baseline	No T2	No T3 alignment	No T4 context	Need 3	+T5	Classification
P1	Y	Y	Y	Y	Y	Y	robust in
P2	Y	Y	Y	Y	Y	Y	robust in
P2-T	Y	Y	Y	Y	Y	Y	robust in
P3	Y	Y	Y	Y	Y	Y	robust in
P3-IW	Y	Y	Y	Y	Y	Y	robust in

ID	Eligible baseline	No T2	No T3 alignment	No T4 context	Need 3	+T5	Classification
P4a	Y	N	N	Y	Y	Y	in, fragile
P4b	Y	Y	Y	Y	Y	Y	robust in
P5	Y	N	Y	Y	N	Y	in, fragile
P5-POP	Y	N	Y	Y	N	Y	in, fragile
P5-PERI	Y	N	Y	Y	N	Y	in, fragile
P5-IMPL	N	N	N	N	N	Y	out, near miss
P5-ONC	Y	N	Y	Y	N	Y	in, fragile
P5-RAD	N	N	N	N	N	Y	out, near miss
P6	N	N	N	N	N	N	robust out
P6-FQ	N	N	N	N	N	Y	out, near miss
P7	N	N	N	N	N	N	out, near miss
X-WATER	N	N	N	N	N	Y	out, near miss
X-QUANT	N	N	N	N	N	N	out, near miss
X-ENERGY	N	N	N	N	N	N	robust out
X-BIOMFG	N	N	N	N	N	N	robust out
X-AERO	N	N	N	N	N	Y	out, near miss
X-TIMBER	N	N	N	N	N	N	robust out
X-TOX	N	N	N	N	N	Y	out, near miss
W-INFECT	N	N	N	N	N	N	robust out
W-MSK	N	N	N	N	N	Y	out, near miss
H1	Y	N	N	Y	N	Y	in, fragile
H2	N	N	N	N	N	N	robust out
H3	Y	N	Y	Y	N	Y	in, fragile

Four of the six applications (food, power, crops and supply chain) remain eligible under every single-test change. Freight loses a required supported pass if either **T2** or **T3** is dropped; health drops out without **T2** or when three passes are required. Removing **T4** leaves all six applications eligible (shifting power and supply chain from Tier A to Tier B), while removing **T3** leaves freight ineligible and only crops in Tier A.⁸

Removing pairs of tests at the same time provides an additional stress test of the baseline rule:

Tests removed together	Delivery applications passing the historical case
Economic alignment and peer-plan context (T3, T4)	Food, crops and health
Federal anchors and peer-plan context (T2, T4)	Food, power, crops and supply chain
Federal anchors and economic alignment (T2, T3)	Power, crops and supply chain

These stress cases show how each test shapes the portfolio. They are not probabilities, a replacement rule or grounds to drop any of the seven ARA growth areas.¹⁰ Every final column above applies the evidence-quality tie-breaker; without it, freight looks more resilient and some weak-only candidates pass. The underlying scores are in the selection sensitivity data.¹

A.5 Evidence each application needs before a project launches

Passing the four-test screen places an application on the shortlist without authorizing spending. Before a project launches, proponents confirm technical readiness and a committed partner by naming the business or public-service

user, the problem to be solved, the data or test-site access provided, the skills and facilities required, each campus’s role, a responsible lead, and how the outcome will be measured.²

Where a proposal aims to build new research capability, it must identify the existing work it builds on, a realistic technical milestone, and a clear review-or-stop gate. Capabilities inside federal laboratories and corporate R&D sites can inform that review even when they are not counted as competitive university grants under T2 . Neither proximity nor past co-authorship substitutes for a partner’s agreement to participate.²

Evidence question	Why it changes the next decision
Freight: are the people, operational access and problem owner in place?	Anchor and alignment passes cannot resolve the thin, concentrated research base
Supply chain: what problem, data and adopter will a partner commit?	Low joint publication or federal award counts do not measure private collaboration or demand
Crops: which strands have scientific influence and an adoption pathway?	Large output does not establish quality or practical use across every strand
Power/materials: which narrow capability and facility access can be sustained?	Device topics, broad EE, grid and broad materials measure different scopes
Health: which public-service outcomes and delivery partners define success?	AEDC-sector coverage does not measure health need or service demand
Food: which animal, food and integrative-health capabilities support the proposed project?	Related award and output definitions must not be treated as interchangeable

Sources^{11,2}

A.6 Complete opportunity crosswalk and safeguards

The opportunity crosswalk accounts for all 35 topics in the background research dossier. It records whether each topic was scored directly, combined into a broader application (such as digital agriculture, food/microbiome health, computational toxicology, bio-nano-materials, additive manufacturing or radiation/space health), or kept without a separate score.¹²

Before external scoring begins, the steering committee adopts and freezes the selection rule and its sensitivity grid, logs any modifications, and appoints an independent reviewer to verify field definitions, evidence and the peer-plan theme coding. Annual reviews then track whether active applications deliver results. None of the seven broad ARA growth areas is removed merely because an individual grant expires or a screening cell shifts.^{13,2}

A.7 Steel and critical minerals

The P6 and P7 rows remain the historical record of the four-test screen. Steel and lithium/critical minerals receive problem-development missions within Materials through the capability-building route described in Part V. The missions are a choice to build future capability; they neither revise P7’s result nor add a headline application. The critical-minerals bundle’s 35 audited primary-topic papers does not count every relevant separation, chemistry, materials or engineering researcher. A new capability inventory and an independent feasibility review test what can be assembled. Comparable emerging proposals are eligible under the same published criteria and spending limits.

Sources 13

1. Selection screen method

ARA’s October 2026 description of the selection screen’s tests, thresholds and results. [talent.arresearchhub.com](#) ↗
2. Selection rule specification

ARA’s specification of the selection rule and its tested alternatives, October 2026. [talent.arresearchhub.com](#) ↗

3. Corrected publication record
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12. Opportunity-to-candidate crosswalk
ARA's October 2026 table tracing all 35 research opportunities to the scored candidates. talent.arresearchhub.com ↩
13. Plan decision register
The plan's outline and decision register, with decisions and dates (ARA, October 2026). talent.arresearchhub.com ↩

Appendix B

Methods and sources

B.1 Sources and vintages

Source	What it supplies	Vintage
OpenAlex	Publication counts, fields, topics, citation percentiles	Queried 11 October 2026 ¹
Frozen institution sets	Up to 100 institution IDs for each of 25 states, 2,450 unique organization IDs; PR, GU and VI use separate country-code filters	Built 11 October 2026 ¹
NSF budget requests (EPSCoR reports to Congress)	Published NSF funding shares and totals by jurisdiction	FY2026 and FY2027 requests ²
NSF Award API	Award dates, amounts, partners	11 October 2026 ³
NIH RePORTER	IDEA awards and end dates	Retrieved October 2026 ⁴
USAspending and agency award records	Federal awards by area, FY2016-2025	11 October 2026 ⁵
Arkansas Acts and DFA budget manuals	State appropriations	Acts 608 (2025) and 129 (2026) ²
Arkansas Research Expertise Database	Researchers engaged per area	Masked extract, 11 October 2026: 10,384 current researchers ⁵
Collaboration cross-section	Teamwork across institutions	2021-2025 works ledger, cross-checked against a network snapshot of 30 June 2026 ⁵
The 27 peer plans and Arkansas's 2024 plan	Headline themes and priority-setting methods	Coded with AI assistance in 2026; not independently verified ⁶
USPTO Open Data Portal	Utility grants, pregrant publications, explicit application links, inventor/assignee geography and historical AI predictions	Acquired 27 October 2026; grant/pregrant release through December 2025; AI overlay through 2023 ^{7,8}
NCSes BERD 2024 (nsf27300) and HERD FY2019-2024	Domestic business R&D performed in Arkansas by funding source, company size, R&D employment and NAICS industry; academic R&D spending by campus	BERD 2024 released 29 October 2026; HERD through FY2024 ^{9,10}
SBIR.gov, NIH RePORTER FY2025-2026, NSF Award Search and IPEDS 2024	Classified Arkansas USDA SBIR/STTR awards (2015-2025), renewed CTSA/INBRE/COBRE/ECHO records, NSF EPIIC and ATE awards, and 2024 two-year college technical completions	Verified October 2026 ^{11,12,13}
TEconomy Partners	Seven growth opportunity areas, research and industry evidence, and cross-cutting competencies	August 2024; source-reported findings kept distinct from current measurements ¹⁴

Source	What it supplies	Vintage
Plan evidence registers	Separate definitions for broad sectors, delivery applications and topic signals; actions, demand and enabling capabilities	25 October 2026; proposed actions and unverified claims are marked ^{15,16,17,18,19}

The 2025 baselines were frozen provisionally on 11 October 2026, and the final freeze is 31 December 2026.¹

B.2 Counting rules

Term	Rule
Works	Articles and reviews, whole-counted within the declared institution-linked cohort; exact definitions and known erroneous-affiliation exclusions are published
Arkansas	Organizational affiliation under the reviewed set and source lineage, not proof that every experiment occurred in Arkansas
Periods	Corrected recent counts use 2021–2025. Historical publication growth and national ratios and ranks are not reported; no compatible restated cohorts exist
Lag	Recent OpenAlex counts remain provisional and may be back-filled; original and restated values retain their input vintages
Ranks	Historical bands remain in audit material; they are not treated as current validated positions
Money	Source, period, currency basis and missing-value rules are explicit. Estimated multi-year award totals, annual award amounts and cumulative obligations are separate panels and are never summed

B.3 Six kinds of research evidence

The plan’s evidence base organizes research evidence into six lenses, labeled A through F:

Evidence	Measure	Definition
A Output and quality	Specialization index	The area’s share of Arkansas output divided by its share of US output; 1.0 means the same share as the US
A Output and quality	Quality ratio	Arkansas’s share of top-10%-cited works divided by the US share for the defined area and period. A ratio above or below 1 is descriptive; evidence of a difference requires the interval and its assumptions. The historical intervals treat the US rate as fixed and exclude classification uncertainty and multiple-comparison adjustment ¹⁶
B Momentum	Historical relative growth, not reported because no compatible restated series exists	The original Lens B divides Arkansas’s area growth by US area growth, comparing it with the state’s all-field relative uplift of 1.109. Historical peer-position growth instead normalizes each area’s change to its jurisdiction’s total output. Its six-year recent window differs from the five-year lens-B window, so each value is reported with its formula and window ^{20,21}
C Funding	Source-specific award observations	Historical classified records retain source, fiscal-window and dollar bases. Mixed-source totals, sponsor shares and funding/publication capture are not reported, and no recoverable-dollar gap is inferred
D People	Engaged researchers	Current researchers meeting the topic-mapping rule; institutions with five or more; early-career composition against the state average. Composition cannot establish an entry or retention trend; h-index thresholds describe publication histories, not verified delivery roles
E Teaming	Cross-institution share	Share of works with authors at more than one Arkansas institution; balanced multi-institution communities; EPSCoR ties to other jurisdictions
F Assets	Inventory	Centers, core facilities, national resources, small-business research firms and industry sites

Sources⁵

In the background synthesis, a research area is classed as established only when at least three independent lenses agree (excluding growth, and counting funding and assets once when they refer to the same grant).⁵

Employer and community demand are assessed separately. TEconomy’s analysis of traded industries, patents, investment and interviews underpins the seven-area framework, supplemented by current industry employment and AEDC sector links. For any specific project, however, a business, health provider or community partner must define the problem, agree on a test protocol and provide access to data or test sites; local employment, sector labels and past co-authorship do not substitute for that agreement.^{14,18} Similarly, the AI/ML, analytics and cybersecurity capability map distinguishes documented uses from proposed ones and requires teams to verify technical fit and secure data access rather than relying on publication counts.¹⁹

The historical peer comparison, kept as historical background, grouped 28 EPSCoR jurisdictions into five classes based on output size, specialization, growth, citation quality and peer-plan theme counts:

- Lead: top five on specialization, with an index of at least 1.0 and citation quality at or above the US rate.
- Compete: top ten on size or growth, with a quality ratio of at least 0.90.
- Partner: mid-ranking, with an existing tie to a leading peer on the same theme.
- Niche: a specialization rank of 10 or better or a quality rank of 5 or better, without meeting the lead, compete or partner tests.
- No base: fewer than 30 works.²² Of the 59 rows, 23 change class under the lenient or strict variants.²² They were assigned with AI assistance, are not independently verified and serve only as historical background. The plan reports no current national rank bands, because no compatible restated cohort exists.

B.4 Privacy and suppression

- No individual researcher is named, ranked or scored.
- Counts under five print as “fewer than five” or “<5” and are never silently dropped.
- Network figures need at least three institutions.
- Researchers who opt out of the database are excluded at build time.
- Small regions and institution types merge into a pre-declared “other” row.
- The plan does not infer who has left the state.
- Team-level data is opt-in and never published.

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B.5 Limits

Limit	Detail
Division of Agriculture	In the October 2026 extract, 383 current researcher records carry the Division link, 370 of them with UA Fayetteville as their primary institution. ²⁴ In the 2021–2025 OpenAlex publication record, an Arkansas author’s affiliation names the Division of Agriculture, an Agricultural Experiment Station, the Cooperative Extension Service, a research and extension center or the Center of Excellence for Poultry Science on 330 of 1,365 crop, soil, insect and water papers and 243 of 697 animal and food papers; a full split in the researcher-profile database is scheduled for March 2027 ²⁵
Other filing	In OpenAlex, works by the Arkansas Colleges of Health Education resolve to the University of Arkansas-Fort Smith by city. ²⁶ Some organizations, such as UAMS, appear under several institution identifiers, which can overstate breadth ⁵

Limit	Detail
Coverage	The legacy profile extract has no two-year-college coverage; the retained 2024 IPEDS completions file (19,450 two-year credentials, including 4,600 in industrial/STEM technician pathways and 6,769 in health) and 16 NSF ATE awards (\$7.42 million) capture two-year institutions separately. ¹³ Intramural federal laboratory money remains separate from the competitive-award lens. The national SBIR/STTR archive includes 15 Arkansas USDA awards (\$3.92 million in 2015–2025) classified across food/aquaculture (\$1.50 million), crop/water (\$1.29 million), logistics (\$756.5 thousand), bioproducts (\$274.9 thousand) and assistive rural travel technology (\$100 thousand) ^{11,23}
Classifier error	Approximate classification accuracy is not a dollar-weighted error bound. An 85% accuracy estimate cannot justify a ±15% interval on area totals, which need checks on large awards, label changes and boundary sensitivity, with audited assignments kept distinct from unreviewed ones ¹⁶
Area definitions	Legacy proxies missed relevant health, crop and consumer-analytics fields. The current registry separates seven broad ARA sectors, six delivery applications and narrow topic signals. The updated mappings are analyst proposals that have not been independently validated; legacy values are retained for sensitivity, not presented as current sector totals. ^{15,16} Small-area ratios remain sensitive to few papers
Recent years	OpenAlex counts for 2025 are not final; recent years are back-filled
Networks	Collaboration figures are a dated cross-section and cannot show a trend. Older snapshots are incomplete: 68% of 2010 Arkansas authors are missing ⁵
Plan quality and outcomes	In 2024–2026, plan quality showed no detectable link with winning NSF E-RISE and E-CORE awards (rank correlation 0.03, 28 jurisdictions); a modest effect could be missed ²⁷
AI assistance	AI tools coded the peer plans' themes, proposed area classifications and helped write text. A person checks each AI-produced classification in March 2027 before the committee relies on it (Appendix C)

B.6 Operational evidence and attribution

The action register tracks proposed commitments through to delivery. No role or baseline is treated as settled until the named owner accepts it and the baseline is measured. A partner agreement counts as active only when a project team has usable access to the agreed data, equipment or test site; shared facility metrics separate completed projects from repeat use and queue delays; proposal tracking records submissions, review scores, resubmissions and awards by program and campus type; and workforce measures fix completion definitions in advance using enrolled participants as the denominator.¹⁷

The demand register pairs TEconomy's sector evidence with the specific partner problem, data/facility access, decision gate and deadline needed for each application, while the capability map tracks technical and security requirements for AI/ML and analytics.^{18,19}

Within each agency funding panel, every grant record is assigned once, even when an award such as Cultivate IQ spans food, supply chains and AI, and panels with unreported dollar amounts remain marked unavailable rather than zero.¹⁶ For expiring center awards, continuity decisions require concrete service lists, operator assignments and budget commitments rather than grant expiration dates or replacement applications alone.¹⁷

B.7 Checked industry context and operating measures

Industry employment figures report annual-average covered private jobs under NAICS 2022 definitions, with employment concentration calculated as $(\text{Arkansas industry private jobs} / \text{Arkansas total private jobs})$ divided by $(\text{US industry private jobs} / \text{US total private jobs})$ (distinct from all-ownership location quotients). Industry employment, researcher profiles and degree completions cover different populations and are always reported separately.^{28,29}

The NCSSES Business Enterprise Research and Development (BERD) Survey for calendar year 2024 ([nsf27300](#)), released 29 October 2026, supplies Arkansas domestic business R&D totals (\$719 million, including \$633 million company-funded and \$86 million paid for by others), R&D headcount (5,000 domestic R&D workers across 171,000 employees at R&D-performing firms), company-size concentration and NAICS industry breakdowns. HERD FY2025 is scheduled for release on 24 November 2026.^{9,30}

B.8 Patent observations and their limits

The 2015–2025 USPTO utility-patent window contains 4,653 granted patents and 6,025 published patent applications naming at least one Arkansas inventor, representing 7,288 distinct applications across 5,592 continuation/division filing groups (or 5,097 under the broadest relationship rule). Patent documents, applications and continuation groups are distinct administrative units rather than counts of independent inventions or commercialized products.^{7,31}

Inventor residences and assignee addresses reflect what was printed on each patent document. Fractional counts weight each patent by its share of Arkansas-based inventors (keeping unknown locations in the denominator), while organization concentration is measured among the 4,033 grants naming an organizational assignee. Because a single corporation can appear under multiple source IDs, raw assignee IDs do not count distinct companies.³²

Cooperative Patent Classification (CPC) crosswalks to the seven growth areas are provisional and overlapping (for example, agricultural codes include plant-variety patents, and semiconductor reclassification shifts power-electronics ratios between issue-time and current codes, moving narrow power’s domestic share ratio from 1.01 at issue to 0.69 under current classifications). To check what code screens catch and miss in practice, analysts reviewed 21 patent abstracts and independent claims across the seven areas (two boundary cases and one hash-selected narrow patent per area) and then expanded the review to 90 primary documents (84 stratified random selections and seven purposeful omission challenges). Those reviews surfaced concrete boundary examples, such as general crop varieties and routine business software inside broad screens, and relevant soil sensors or functional polymers outside narrow prefixes. They have not had blind external domain review.^{33,8,34,31}

A separate mature filing cohort tracks 6,406 Arkansas-inventor pregrant publications with US filing dates in 2005–2019, while citation influence is measured across 2,631 grants issued in 2015–2020 using three- and five-year forward citation windows normalized against all US utility grants in the same grant year and primary CPC subclass.

Government-interest statements and patent assignments provide concrete historical examples of federal research support (such as ASSET III and NSF SBIR citations), without implying active licenses or commercial revenue.^{35,36} Full denominators, cohort definitions and tables are preserved in the [extension notes and supporting tables](#) (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/720322320194-patent-extension-notes.html>).

B.9 Additional source checks

The [source-audit notes](#) (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-31-evidence-trace/f0affa38a9a1-source-audit-notes.html>) document the cross-source audit behind the plan: HERD campus-level spending concentration and UAMS’s 2024 survey imputation; SBIR firm-identity persistence (17 returning and 15 new identities in 2020–2024); Census ABS 2021–2023 survey windows; Capital Scan 2025 edition restatements; Census of Agriculture precision-farming versus irrigation denominators; multi-response AI adoption barriers; Freight Analysis Framework agricultural tonnage shares; and ClinicalTrials.gov site geography.³⁷

B.10 Corrections and evidence access

Known false institutional affiliations are excluded from the 2021–2025 Arkansas publication counts (24,743 retained of 24,869 source records; 126 removed or quarantined). National specialization, citation and historical growth ratios are not reported (see B.2).³⁸ Federal award records are reported in 213 separate source, agency and accounting-basis panels rather than summed across incompatible bases, with 148 unpriced VA records kept as unavailable rather than zero.³⁹

Every source citation in the illustrated plan and the text edition resolves to an accessible evidence page showing the underlying aggregate table or source excerpt, selector, vintage, SHA-256 hash and scope limits, including the seven-area research matrix CSV, where unavailable national ratios appear blank alongside explicit status columns.^{40,38}

B.11 Steel, lithium and critical-minerals evidence

The materials missions use dated primary university, company, state-agency, federal-agency and technical sources checked through 30 October 2026. The materials evidence supplement (<https://talent.arresearchhub.com/st-plan-2/assets/2026-10-30-finished-report/c8875d30d45b-materials-opportunity-evidence.html>) retains the source register, project-status distinctions, value-chain choices and research gaps. Company plans establish what a company reported at a stated date, not an independently guaranteed commissioning date, cost or output. Environmental review is not final investment decision or proof of production. Where a company has updated a schedule, the plan uses the most recent update in place of an older schedule.

The county steel designation is attributed to AEDC; the plan does not construct a county production ranking or infer tonnage from capacity. The USGS Smackover estimate covers in-place elemental lithium across a region, not economically recoverable reserves at a project site, product output or a conversion to lithium-carbonate-equivalent. Broad primary-metals employment, broad materials publication totals and the narrow critical-minerals topic bundle remain separate populations. Neither the plan's charts nor the historical screening matrix measures readiness for these missions.

Capability and economic claims are separated into operating assets, funded or announced developments, and proposals in this plan. Process diagrams describe stages to investigate, not a forecast that every stage will locate in Arkansas. The capability-building criteria, gates, convenors and measures are the plan's recommendations; no external partner or domain reviewer has yet responded to them.

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Appendix C

Decision calendar

The Jurisdictional Steering Committee (JSC), or the body named in each row, makes the decisions below by the dates shown. Each row gives the plan’s recommended option, which the JSC may revise. ARA staffs the committee and holds no vote. Where ARA has a potential conflict of interest, AEDC or the independent reviewer brings the recommendation to the committee.¹

C.1 Eligibility and state-office decisions for 2026-27

These decisions keep Arkansas eligible for federal EPSCoR competitions and keep state-office functions running.

Decision	Who decides	Recommended option	By when
Is the reconstituted Science Advisory Committee the single steering committee for AR-NETWORK and the plan?	Science Advisory Committee, with ARA and AEDC	Yes: one committee, reconstituted under new by-laws	31 Dec 2026
Who runs state-office functions after 30 June 2027?	JSC; NSF confirms in writing. ARA is an interested party	AR-NETWORK, once NSF confirms in writing. Fallback: a DCL 24-114 supplement if NSF has not answered by 31 March 2027	31 Dec 2026
Should AEDC request the DCL 24-114 transition supplement on DART (up to \$700,000 for up to 12 months)?	AEDC	Hold in reserve, and file by 31 March 2027 if NSF has not confirmed the office model in writing. File while DART is in its final year, once its unliquidated balance is shown to be under \$1,000,000	31 Dec 2026 (decision); 31 Mar 2027 (latest filing)
Which target sectors does AEDC confirm for the market test?	AEDC	A confirmed list, recording the decision for every sector	31 Dec 2026
How does Arkansas bridge the six anchor awards ending between 30 April 2027 and 31 January 2028?	JSC recommends	A staged bridge of continuity decisions: the microbial pathogenesis COBRE by January 2027; DART, MonArk and MUSiC by March 2027; the P20GM121293 application before 30 June 2027; a P20GM125503 plan by June 2027	Jan 2027 (first stage)
What are the JSC’s by-laws, roster and conflict screen?	JSC	By-laws with seats, alternates and narrow recusal; at least one-third non-academic voting seats; ARA non-voting	31 Jan 2027
How is the 2024 plan made usable for the 2027 EPSCoR rounds?	Commerce or AEDC, with the Science Advisory Committee	Dated approval by a non-participant, because the 2024 plan’s exact approval date is not on record; roster and by-laws posted; committee staffing handover named	31 May 2027

Sources^{1,2}

C.2 The selection rule

The JSC adopts the selection rule by January 2027, choosing among these options:

Decision	Options	Recommended option
What rule screens narrower headline research opportunities?	At least two enabled passes and two passes on strong/moderate evidence; raw two-of-four as historical sensitivity; three passes	Apply the evidence-quality condition consistently to baseline and variants, within the seven-area framework
Add test 5, capacity to deliver?	Adopt as worded; adopt with both parts required; sensitivity only	Sensitivity only, since as worded it passes 21 of 28 candidates. Require both parts if a capacity test is wanted
Adopt the delivery review and watch rule?	Review verified demand, capability and operational conditions; two comparable failures prompt watch or a published reason to continue. Broad ARA sectors remain the framework	Adopt; no automatic sector removal from an expired award or overlapping publication windows
Which thresholds go in the sensitivity table?	Index 1.0 or 1.2; rank 7 or 10; two, three or five plans; two or three tests; with and without T2	Print all variants in Appendix A

Decision	Options	Recommended option
Adopt the evidence-quality condition proposed after a trial run of the screen?	A consistent requirement for two passes on strong or moderate evidence; committee choice at the workshop; revise the cap	Record that the condition was added after results were seen; adopt it before outside scoring and retain the raw-rule results for audit
Must the output test be passed?	Yes; no, any 2 of 4	No default. Quantum can pass some historical raw-screen cases without measured output, but fails the current evidence-quality screen in every listed unmeasured case; measured alternatives are assessed separately ³
Do intramural federal laboratories count as anchors?	Yes; no, awards only	No default. The answer decides toxicology and changes the anchor evidence for food, crops and timber

Sources¹

C.3 Later decisions

Decision	Who decides	By when
Name the outside methods and privacy reviewer. ARA does not choose its own scorer	JSC	Jan 2027
Consultation with businesses, providers, communities and workforce partners who have problems for research to address across all seven areas. Recommended: at least 100 interviews, 25% industry and 15% two-year colleges, HBCUs or primarily undergraduate institutions; document what each proposed project is needed for and what access partners can offer	JSC	Jan 2027
Seats: at least one-third non-academic voting seats, two-year college seats, alternates, narrow recusal	JSC, in the by-laws	Jan 2027
AEDC's role: co-chair or vice-chair, and sign-off on the priority set	JSC, in the by-laws	Jan 2027
Whether to offer an opt-in team-matching service, run by an independent party outside ARA	JSC	Sep 2027
Six delivery applications within the seven ARA areas, the materials workstream and enabling capabilities, each with a business, provider or community partner who agrees to define the problem and a lead who agrees to run it; vision wording; whether "grid" stays in the power-electronics title or is labeled a build target; center-continuity treatment	JSC, with AEDC sign-off	Mar 2027
A provider or community pathway for the health application, using TEconomy's health evidence and a defined rural problem	JSC, with health providers and community representatives	Mar 2027
Approver for the new plan, checked against every EPSCoR project roster. Proposed: the Secretary of Commerce	Commerce	Mar 2027
Title, period, effective date and length	JSC	Mar 2027
Annual scorecard date and recipients. Recommended: 31 March, to the Governor and the relevant legislative committee	JSC	Mar 2027
Durable instrument establishing the JSC	Commerce or AEDC	May 2027
Operational targets with accepted owners; use trends for comparable established series and feasible milestones for new activities	JSC	1 Apr 2027
Fallback owner if AR-NETWORK is not renewed	JSC. ARA is an interested party	Jan 2028
Whether ARA Impact Grants follow the plan's list. They are ARA's own funds, which the plan cannot bind	ARA board	May 2027

Sources¹

C.4 Calendar through adoption and renewal

When	Milestone
30 Nov 2026	Proposed selection rule and its variants fixed; written questions to NSF
31 Dec 2026	One committee named; office model decided, subject to NSF's written confirmation; AEDC sector list
Jan 2027	By-laws and roster posted; JSC adopts the selection rule; first continuity decision; interim action register opens; outside reviewer named; consultation plan agreed
Jan-Feb 2027	Consultation round 1, including UAPB, a two-year campus and Fort Smith, to establish who needs each problem solved, access to data or test sites, proposed project leads and facility gaps for the food priority
Feb 2027	Independent human check of the peer-plan and area classifications; external scoring and sensitivity table
Mar 2027	JSC evidence workshop; JSC decides the priority set and the vision; bridge decisions for DART, MonArk and MUSIC
1 Apr 2027	JSC sets targets; 45-day public comment opens
May 2027	Adoption vote; dated approval of the 2024 plan kept as a fallback
By 31 May 2027	Approver signs; plan takes effect
20 Jul and 10 Aug 2027	E-CORE and E-RISE deadlines for the 2027 round ⁴
31 Mar 2028	First annual scorecard (proposed)
30 Jun 2028	AR-NETWORK renewal submission planned; E-CORE renewals run up to four years ⁴

Sources¹

C.5 Decisions for steel and critical-minerals capability

Decision	What the decision rests on	By when
Establish the capability-building route across the seven areas	Criteria for unfunded scoping in March, adopted after consultation, with conflict rules, independent review, a discovery ceiling and separate pilot and expansion gates	June 2027
Validate separate steel and lithium briefs	March scoping followed by operator and downstream-user validation, a map of existing programs, proposed convenors and any additional public-research contribution	June 2027
Review a buyer-backed precursor/cathode feasibility brief	UA process researchers with SAU, ALTA and buyer participation proposed; compare routes, feed rights, evaluation, costs, site needs and Arkansas work before a manufacturing decision	September 2027
Decide whether each brief is ready for a bounded pilot	Confirmed team and access, costed operations, partner contribution, data/IP terms, specification, baseline and stop conditions	January 2028

These decisions do not change the screening results in Appendix A. No role, appropriation or company commitment has been accepted for them.

Sources 4			
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Each public fact below was checked against a primary source; the chapter source notes link every other citation. Where the check reads “Verified in part,” the plan states only the confirmed portion. Roman numerals (I – V) in the “Used in” column refer to the parts of the plan.

The peer-plan theme counts, and the area and peer-position classes built on them, were coded with the help of AI tools; a person checks them in February 2027 before the committee relies on them (Appendices B and C).

Fact as the plan states it	Used in	Source check
J.B. Hunt began in 1961 in Stuttgart selling rice hulls as poultry litter; trucking began in 1969 with five tractors and seven trailers; headquartered in Lowell	Prologue	Verified ¹
A power-electronics company founded in 1997 and grown in the University of Arkansas research park by the university’s engineering graduates; Cree bought it in 2015; Wolfspeed’s Fayetteville site still researches and builds power modules as of its 2026 annual report	Prologue; III, power	Verified in part: ² the acquisition, the renaming and the site’s status are confirmed; the founding history is more involved than “founded by University of Arkansas engineers,” so the plan does not say that
Walmart is the world’s largest retailer, headquartered in Bentonville	III, freight and supply chain	Verified ³ (NRF Top 50 Global Retailers 2026; it is the second-largest company by revenue on the 2026 Fortune Global 500, so the plan does not call it the largest company)
Arkansas is the third-largest broiler-producing state, raising about one pound in eight of the nation’s broilers; broilers are the biggest line in its farm income	III, feeding	Verified ⁴
Tyson Foods and George’s are headquartered in Springdale, Cobb-Vantress and Simmons in Siloam Springs, and Riceland in Stuttgart	III, feeding	Verified ^{5,6}
The Arkansas Children’s Nutrition Center is one of six USDA human nutrition centers and studies how diet shapes mothers’ and children’s health	III, feeding	Verified ⁷
The University of Arkansas at Pine Bluff runs the state’s aquaculture and fisheries center	III, feeding	Verified ⁸ (Arkansas leads in baitfish, not in aquaculture overall, so the plan claims no aquaculture rank)
Arkansas grew about 45% of the nation’s rice in 2025, more than any other state	III, growing	Verified ⁹
Arkansas farms irrigate from an aquifer the state is pumping faster than the estimated sustainable rate	III, growing	Verified in part: ¹⁰ the plan uses the state’s own wording; no source supports calling it “one of the most heavily used aquifers in the country,” so the plan does not
No state has a bigger share of its private jobs in trucking than Arkansas: about 2.8% in 2025 against 1.1% nationally; J.B. Hunt is in Lowell and ArcBest in Fort Smith	III, freight	Verified in part: ¹¹ the shares, the rank and the two headquarters are confirmed; the plan does not cite Walmart’s private fleet
More than four in ten Arkansans (44.5%) lived in places the 2020 Census counts as rural, more than twice the national share	II; III, caring	Verified; ¹² no trend is stated because the 2020 definition changed
Agriculture and the industries built on it support about 13% of Arkansas jobs, counting indirect effects	I	Verified ¹³ (Division of Agriculture estimate for 2024, including processing, forest products and indirect and induced jobs)
Arkansas was one of the five states in EPSCoR’s first cohort in 1980, with Maine, Montana, South Carolina and West Virginia	I	Verified ¹⁴

1. Encyclopedia of Arkansas (Central Arkansas Library System), "J. B. Hunt Transport Services, Inc.," last updated 12 May 2025. encyclopediaofarkansas.net Encyclopedia of Arkansas, "Johnnie Bryan (J. B.) Hunt", last updated 28 May 2026. encyclopediaofarkansas.net J.B. Hunt Transport Services, "The Story of J.B. Hunt" (company careers site). careers.jbhunt.com J.B. Hunt, Form 10-K for FY2025, filed 24 Feb 2026 (SEC EDGAR, accession 0001437749-26-005294); SEC EDGAR company record (business address Lowell, AR). J.B. Hunt Q4/full-year 2025 earnings release, 15 Jan 2026 (jbhunt.com/newsroom/BusinessWire). ↵
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