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EDA Tech Hubs Planning Document

Mapping out Opportunities in Arkansas

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**Key Factors of the EDA Tech Hubs Program**

* **Resources**
* **Capability**
* **Coordination**
* **Vision**

***Main Idea:*** To be globally competitive in the next decade in technologies and industries of the future and for those industries, companies, and the good jobs they create to start, grow, and remain in the United States.

***Focus:*** To commercialize, ceploy, and domestically manufacture and deliver technologies to increase the speed and effectiveness with which industry and other organizations transition technologies upward from TRL 6 – 9.

**Proposals will be Measured by:**

1. Articulation of the Alignment of the Region’s Existing Assets
2. Potential
3. Overall Strategy with opportunity to become global leader in **core technology area(s)** (below)
4. Specific, Impactful Diversity and Inclusion Strategies that accelerate innovation and growth and increase the equity, accessibility, and diversity of the innovation economy, including through good jobs.
5. Focus on geographic diversity in rural and urban areas

**Key Technology Focus Areas**

* + - Artificial intelligence, machine learning, autonomy, and related advances
		- High performance computing, semiconductors, advanced computer hardware and software
		- Quantum information science and technology
		- Robotics, automation, and advanced manufacturing
		- Natural and anthropogenic disaster prevention or mitigation
		- Advanced communications technology and immersive technology
		- Biotechnology, medical technology, genomics, and synthetic biology
		- Data storage, data management, distributed ledger technologies, cybersecurity, biometrics
		- Advanced energy and industrial efficiency technologies, such as batteries and advanced nuclear technologies, such as batteries and advanced nuclear technologies, including but not limited to for the purposes of electric generation
		- Advanced materials science, including composites 2D materials, other next-generation materials, and related manufacturing technologies

***Arkansas has strong industry sectors including (1) aerospace & defense, (2) food & beverage, (3) metals, (4) timber & forest products, (5) distribution & logistics, and (6) transportation equipment.***

***Questions for you and Arkansas***

1. What do you want to get out of today? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Why do you want your organization to do this (be a part of the Tech Hubs Program) in the first place?

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1. What are yours and your organization’s strengths?

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1. Where (geographically speaking) are you located in Arkansas and what is your reach? (Use map if needed)

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1. What core technology area(s) are currently in your organization’s region that have clear articulable competitive advantages?

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1. What gives the technology and your region this competitive advantage? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What is the market opportunity in the identified core technology area?

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1. What opportunities could there be if your region in Arkansas received the Implementation Funding?

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1. What role(s) do you play in helping Arkansas receive this funding?

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1. Who do you want to partner with?

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**Types of Proposals that can be Submitted:**

1. **Strategy Development Grant (funding)**
2. **Designation Grant (no funding)**
3. **Implementation funding (End Goal)**

**Questions to Determine Proposal(s) to be Submitted:**

1. What relevant assets, resources and capacity does our region possess in one or more core technology areas?

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1. What coordination, partnerships, and collaborative members are currently established in the core technology area?

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1. What coordination, partnerships and collaborative members need to be organized and nurtured to in the core technology area(s) to be globally competitive in the next decade?

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1. What activities (physical, capital, policies, etc.) need to take place for our region’s core technology area to be sustainable and globally competitive in the next decade?

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***Main Idea:*** Intended to facilitate a region to prepare to apply for an Implementation Grant or to prepare for future rounds of Designation. Aimed to help the consortium significantly increase local coordination and planning activities to be more competitive in the Designation grants.

***Focus*:** Strategy Development Grants should focus on one or more activities including:

1. Coordination of a locally defined planning processes, across jurisdictions and agencies, relating to developing a comprehensive regional technology strategy;
2. Identification of regional partnerships for developing and implementing a comprehensive regional technology strategy;
3. Implementation or updating of assessments to determine regional needs and capabilities;
4. Development or updating of goals and strategies to implement an existing comprehensive regional plan;
5. Identification or implementation of planning, local zoning, and other changes to code, law, or policy necessary to implement a comprehensive regional technology strategy;
6. Development of plans for promoting broad-based economic growth, creating good paying jobs, assessing job quality, and helping students and workers gain the skills for, secure, and advance in good jobs and careers to develop a qualified workforce related to the consortium’s selected core technology area within a region;
7. Hiring of the coalition’s RIO to lead the overall effort; and
8. Activities necessary to prepare for strategy implementation, which may include workforce development strategies and environmental and engineering documentation, if applicable.

**Designation**

***Only applicants Designated at the conclusion of Phase 1 of the Competition will be permitted to apply for Implementation Grants under the Tech Hubs Phase 2 NOFO***.

***Main Idea***: EDA recognizes the assets, resources, and capabilities, including that the region is in a position where an investment over the next five years can catalyze their emergence over the next decade as a self-sustainable, globally competitive region in a particular technological area(s).

***Focus:*** For consortiums to be considered designation, the region must demonstrate

1. ***Technology-based potential of the region for global competitiveness***
2. ***Private sector participation***
3. ***Regional coordination and partnerships***
4. ***Equity and Diversity***
5. ***Composition and capacity of the regional workforce***
6. ***Innovative “lab to market” approaches***
7. ***Impact on economic and national security of the entire United States***

***Implementation Funding (End Goal)***

***Main Idea:*** Aimed to increase regional capacity across the following four broad categories **(1)** Workforce Development, **(2)** Business and Entrepreneur Development, **(3)** Technology Maturation, and **(4)** Infrastructure to meet the individual needs of a particular region and to become a sustainable, globally competitive Tech hub in the region’s core technology area(s). Workforce development needs to be in line with the Department of Commerce’s workforce good practices including placement into good jobs (including union jobs) and incorporate worker input into design and delivery.

***Focus:*** To be recognized by EDA and awarded**Implementation Funding,** activities need to enable our regional R&D assets to catalyze the emergence of the core technology area to become ***self-sustainable and globally economically competitive*** over the next decade. Such an investment might be highly targeted within several interrelated projects that will leverage existing technical expertise to accelerate both the regional economy and American competitiveness. This could include (but not limited to) programs that **(1)** help transition technology to the market, **(2)** physical, capital, and programmatic support for startups in the core technology area, **(3)** workforce development and workforce training programs, **(4)** policy change and realignment to support activities.

***Let’s Dig In for Designation***

The following pages outline considerations for designation. In your breakout session with your region, work through each consideration as a group.

Suggestions for successful collaboration and identifying keys areas in our region

* Enlist a narrator and a scribe
* Utilize giant sticky notes
* Review maps of Arkansas
* Discuss each question openly as a group
* Be creative, innovative, and intentional with answers

After deep discussions are had with your group in each area’s requirement for designation, the group will develop a plan to coordinate efforts to make the core technology area globally competitive in the next decade.

1. **Technology-based potential of the region for global competitiveness**

***Main Idea:*** To enable US leadership in technology and innovation sectors critical to national and economic security and to be globally competitive in a core technology area in the next decade*.*

***Focus:***To be globally competitive in core technology area, regions must demonstrate **(1)** Potential to advance development, deployment, and domestic manufacturing of the core technology and **(2)** sustainability of the consortium*.*

***Questions:***

1. What is the nature and magnitude of the existing core technology area’s economic opportunity?
	* **Data:** What reasonable, data-based, and justified forecasts of the future size of the global market that could illustrate the regions global competitiveness in the core technology area?
	* **Market Share**: What is the region’s future share of the market in the core technology area?
	* **Workforce:** What existing and potential related jobs can be grown in the core technology area?
2. What are existing assets, resources, and capabilities of the region that can be nurtured to become globally competitive in the core technology area?
	* I**ndustry:** What relevant companies and their commitments to specific actions and approaches that support the region’s growth
	* **Federal, State and Local Development**: What programs and investment from other relevant Federal programs will complement and amplify its impact and not be duplicative? Including:
		+ National Science Foundation’s (NSF’s) Regional Innovation Engines,
		+ Department of Energy programs,
		+ U.S. Department of Agriculture Rural Development program
		+ Education and training programs from the Departments of Education and Labor
		+ National Institute of Standards and Technology programs
	* **Research and Development:** What are demonstrated significant existing market-relevant scientific capacity in the core technology area?
3. ***Technology-based potential of the region for global competitiveness answers:***
4. **Private sector participation**

***Main Idea:*** To showclear, prominent, and strong private sector participation, in core technology area.

***Focus:*** To demonstrate the role of private sector in the core technology area, consortiums must illustrate (1) engagement with the private sector to commercialize new technologies and improve the resiliency and sustainability of domestic supply chains in sectors to national security and economic competitiveness, and (2) demonstrate partnerships with sources of private investment in support of private sector activity.

***Note: EDA encourages two or more firms in the consortium’s selected core technology to participate as direct members of the consortium.***

***Requirement:*** The application must include written documentation from each firm in the consortium, evidencing that each firm has read the application and is committed to executing its role in the consortium, including any specific commitments (*e.g.*, funding, hiring). As with all letters of support, EDA puts a premium on quality over quantity.

***Questions:***

1. How is (or could)private capital meet the needs of technologies and companies at various stages in their development and maturity in the core technology area.
	* **Beneficiaries:** What areas demonstratecommitment to and ability to benefit from the region’s strategy and EDA’s investments including
		+ Startups
		+ Existing firms in the cluster
		+ Other firms in the supply chain
		+ Small and medium sized employee-owned businesses and cooperatives
		+ Venture and financial institutions.
	* **Partnership:** How can the private sector become an important partner and show commitment to
		+ Funding
		+ Investments
		+ Hiring
		+ Good labor and business practices
		+ Community ties
2. **Private sector participation answers**
3. **Regional Coordination and Partnerships**

***Main Idea:*** To become globally competitive, there must be strong alignment and a shared strategic vision amongst all consortium members.

***Focus:*** To demonstrate regional coordination and partnerships consortiums must illustrate **(1)** organization of activities of regional partners and **(2)** alignment of education institutions activities with core technology.

***Questions***

1. What ways can the sum of the consortium members be greater than its individual parts?
2. Where are gaps in partnership across the state including but not limited to academia, industry, and work force development?
3. What are relevant regional institutions and assets in Arkansas?
4. Describe a clear collaboration model.
5. What qualities are in strong leadership and who in Arkansas demonstrate leadership in the sectors so that partnerships can take root?
6. History of working together in the past and achieving concrete successes.
7. **Regional Coordination and Partnership Answers**
8. **Equity and Diversity**

***Main Idea:*** Toshow clearly how the consortium and other partners and stakeholders will actively engage underserved communities in planning and how benefits from the tech hub will be shared equitably.

***Focus:*** To demonstrate how the consortium places high value in reaching underserved and disadvantaged communities it must be illustrated by **(1)** creating new economic opportunities for economically disadvantaged and underrepresented populations, **(2)** partnerships with community colleges, HBCUs, MSIs, Tribal Colleges and Universities) **(3)** STEM opportunities **(4)** support of local and regional businesses through procurement **(5)** ensure that growth produces opportunities across the region and for economically disadvantaged, minority, underrepresented and rural populations **(6)** consider affordable housing availability and primary and secondary education.

***Questions:***

1. How can the consortium including all partners and stakeholders increase the number of high paying jobs and high-quality domestic jobs (including union jobs)?
2. What ways can barriers to good jobs (particularly without a college degree who are from underserved communities) be removed? What community colleges and trade schools need to be included?
3. What new economic opportunities for minority businesses and socially and economically disadvantaged individual owned businesses can be harvested from this consortium?
4. How can the state build and retain wealth in the region?
5. What are current evidence driven equity and inclusion initiatives in the state **including** those that effectively support underrepresented innovators and those that focus on a core technology area?
6. **Equity and Diversity Answers**
7. **Composition and capacity of the regional workforce**

***Main Idea:*** The region needs to demonstrate R&D advantage in core technology area + workforce and workforce development systems to scale technology to be globally competitive in the next decade.

***Focus*:** To demonstrate composition and capacity of the regional workforce consortiums must illustrate the region’s **(1)** potential to advance development, deployment, and domestic manufacturing of technologies critical to national security and economic competitiveness, **(2)** likelihood of positive regional economic effect, including increasing the number of high wage domestic jobs, **(3)** workforce development and skills acquisition.

***Questions***

1. What is the current regional workforce most relevant to the core technology area?
2. What are opportunities for workers with relevant skills but without 4-year college degrees within the core technology area?
3. What strategies to retain both US and foreign-born students as entrepreneurs and workers in our region in the core technology area?
4. How will the region grow and evolve its STEM workforce in of itself and underserved communities to continue to meet the needs of companies and research institutions in the core technology area (and its supply and value chains)? Either with existing or new workforce development capacity.
5. How will workforce development programs and organizations representing workers, including labor organizations, collaborate within the consortium and region to increase job quality and the quantity of good jobs in the core technology area?
6. What labor organizations, labor federations, or organizations representing workers can directly participate in this consortium?
7. **Composition and capacity of regional workforce answers**
8. **Innovative “Lab to Market” Approaches**

***Main Idea:*** To become a Tech Hub consortium must demonstrate successful translating science into market opportunities.

***Focus:*** To demonstrate successful “lab to market” approaches consortium must demonstrate how the region **(1)** leverages the resources of federally funded research and development, **(2)** supports local and regional businesses through procurement, and **(3)** aligns education institutions’ activities.

***Questions:***

1. What new and/or scaled-up proven existing models (e.g., innovative procurement policies and practices) overcome commercialization barriers and brings technologies and ideas to the market?
2. What technology transfer polices and programs promote global competitiveness (not those that promote pure academic research output) in our region?
3. What resources of our region’s own R&D assets can be levered?
4. What priorities need to be forefront to promote U.S. technology creation and production while establishing U.S. ownership of intellectual property?
5. What are current methods of successfully translating research into local economic opportunities in our region? (e.g. specific programs, policies, incentives and practices)
6. What new or scaled-up programs and polices do the consortium members need to pursue to establish “lab to market” approaches to make our region globally competitive?
7. **Innovative “Lab to Market” Approaches Answers**
8. **Impact on Economic and National Security of the Entire United States**

***Main Idea:*** The Tech Hubs program is designed to bolster regional competitiveness to strengthen U.S. leadership in technologies critical to economic and national security and that will create jobs and domestic production in the U.S.

***Focus:*** To demonstrate impact on economic and national security of the entire U.S. consortium members must illustrate **(1)** critical to national security and economic competitiveness, **(2**) build and retain wealth in the region, **(3)** durability of the consortium’s impacts, and **(4)** enhance economic, environmental, and energy security of the U.S. by promoting domestic innovative clean technologies and advanced manufacturing practices.

***Questions:***

1. What successes in the core technology area have made our region globally competitive and support national priorities? (National priorities include: (1) climate change, (2) supply chain resiliency, (3) accelerating the pace of innovation in critical technologies, (4) and beyond.)
2. What activities are in place to minimize the potential for adverse impacts on the environment and the local community?
3. What strategies are in place to account for current and future weather- and climate-related risks, such as wildfires, droughts, extreme heat and cold, inland and coastal flooding, and the extreme winds produced by tornadoes, hurricanes, and other weather events?
4. What strategies and investments serve our regional economies and U.S. economic and national security that demonstrate the likelihood of positive regional economic effect?
5. How can our region leverage our EPSCoR programs?
6. How can the consortium and all its members and partners provide support for small and rural communities?
7. How can the consortium leverage institutions of higher education that serve populations historically underrepresented in STEM, including Historically Black Colleges and Universities, Tribal Colleges or Universities, and Minority Serving Institution?
8. What ways (if any) does our region or parts of our state’s economy significantly rely on coal, oil, or natural gas production or development?
9. **Impact on Economic and National Security of the Entire United States answers**

After deeply discussing with your group each area’s requirement for designation, what’s the plan to coordinate efforts to make your region and the core technology area(s) globally competitive in the next decade? Use the space below to develop a plan.

**Vision for Impact**

**Whole Group Discussion.**

**Planning the Consortium**

1. Each region will present their plan for designation. During each presentation, consider areas of overlap that could be integrated into a singular consortium. Use the Venn Diagram to help with identification. ***Note: The more overlapped activities are the higher chance for global competitiveness***.
2. After each region has presented, and overlapping activities have been identified, what plan could be implemented for the consortium? **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Lead Consortium Member:** Now that the plan is created, let’s identify the Lead Consortium Member.

**Lead Consortium Requirements:**

* Principal applicant for Phase I Strategy Development Grant and/or Phase I Designation
* **Location**: Must be in a Metropolitan Statistical Area (or Micropolitan Statistical Areas)
* Serves as EDA’s main point of contact during the competition and implementation
* Is the employer of the Regional Innovation Officer or have established relationship with employer
* Serves as the central coordinator of the consortium by leading or otherwise having significant role in the consortium’s governance
* Convenes public, private academia, labor, and civic leaders to facilitate regional cohesiveness in maximizing the region’s competitiveness
* Establishes and maintains communication between consortium and EDA to enable and accelerate collaboration and support
* Ensures funding and other assistance given by EDA and other partners are absorbed effectively within communities

**Question**: Breaking down egos - Based on conversations, collaborations, partners identified, activities for implementation, who would be the best organization to lead the consortium and why?

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