



HEADWATERS TECH HUB

SMART PHOTONIC SENSING

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missoula current



TESTER, UNIVERSITY HUB PROGRAM FOR

MC Missoula Current | Published: February 21, 2023

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GOVERNMENT & POLITICS ENVIRONMENT EDUCATION ECONOMY LIVING COMMENTARY ELECTION 2024

ECONOMY GOVERNMENT & POLITICS

Montana's Headwaters Tech Hub gets \$41M grant from feds

Tester says Montana can lead nation in tech innovation

BY: BLAIR MILLER - JULY 2, 2024 5:49 AM



President Joe Biden announces the designation of 31 new regional tech hubs across the state aimed at advancing U.S. technology, including one in Montana. (Screenshot via White House)

The U.S. Department of Commerce and Montana's U.S. senators announced Tuesday that a **technology consortium** known as the Headwaters Tech Hub will receive a \$41 million grant to help build out jobs within the optical and laser technologies field in four regions of Montana.

TECH HUBS



MONTANA **MTFP** FREE PRESS

Administration portions of Montana a hub focused on ensing ogy

Commerce Dept., the Montana tech hub was nationally out of 198 applications.



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Two Big Questions:



1. What exactly is a “Tech Hub”??



2. What can you expect from the Headwaters Tech Hub?



RESEARCH

The case for growth centers: How to spread tech innovation across America

Robert D. Atkinson, Mark Muro, and Jacob Whiton
December 9, 2019



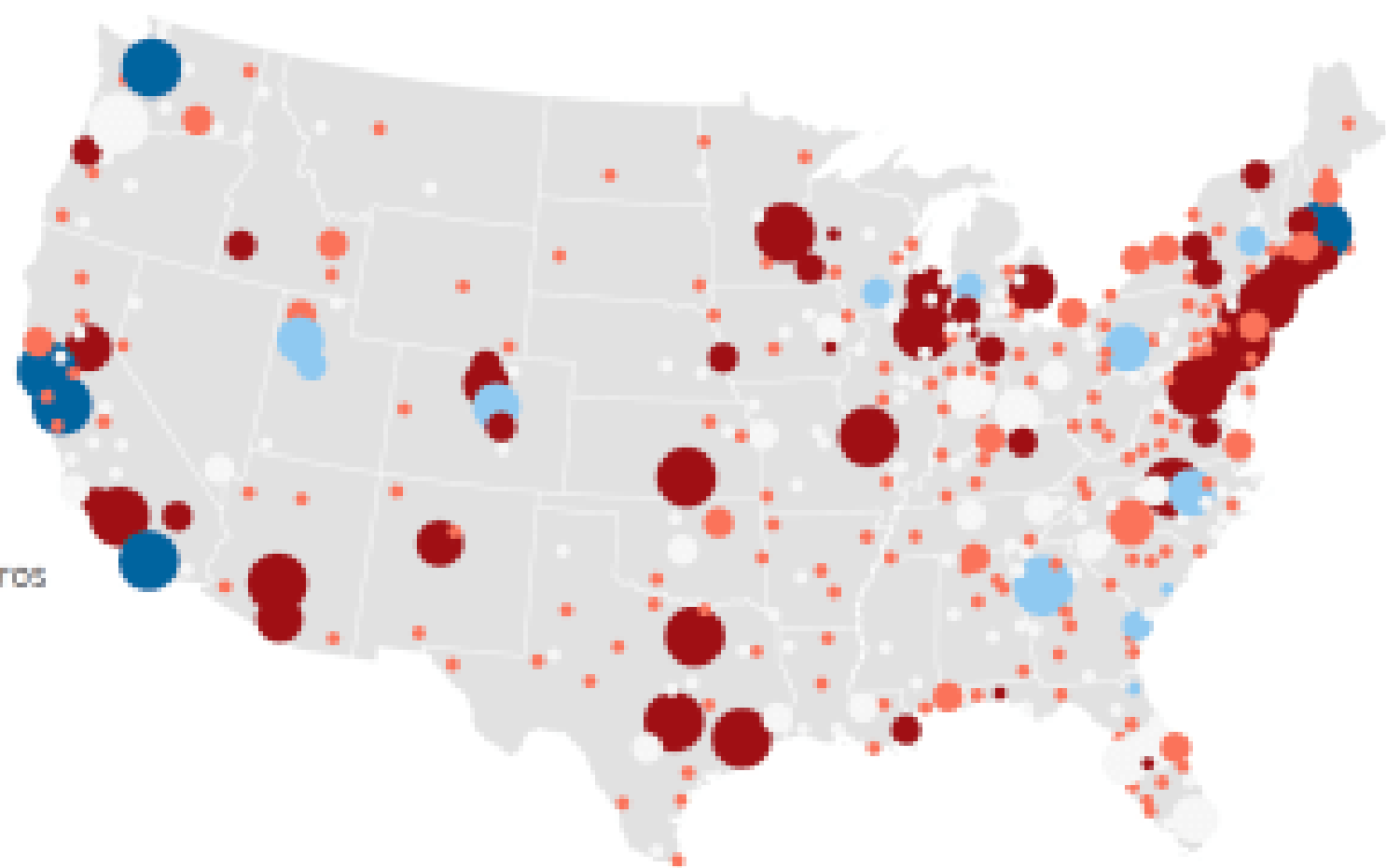
Metros by change in share of total innovation sector jobs

Share of innovation sector jobs change, 2005-17

- 0.4% - 2.0%
- 0.0% - 0.4%
- 0.0%
- 0.1% - 0.0%
- 0.7% - -0.1%

Innovation sector jobs, 2005

- Top 5% of metros
- Next 5%
- Next 15%
- Bottom 75%



Source: Brookings and ITIF analysis of Emsi data



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National Vision for Tech Hubs:

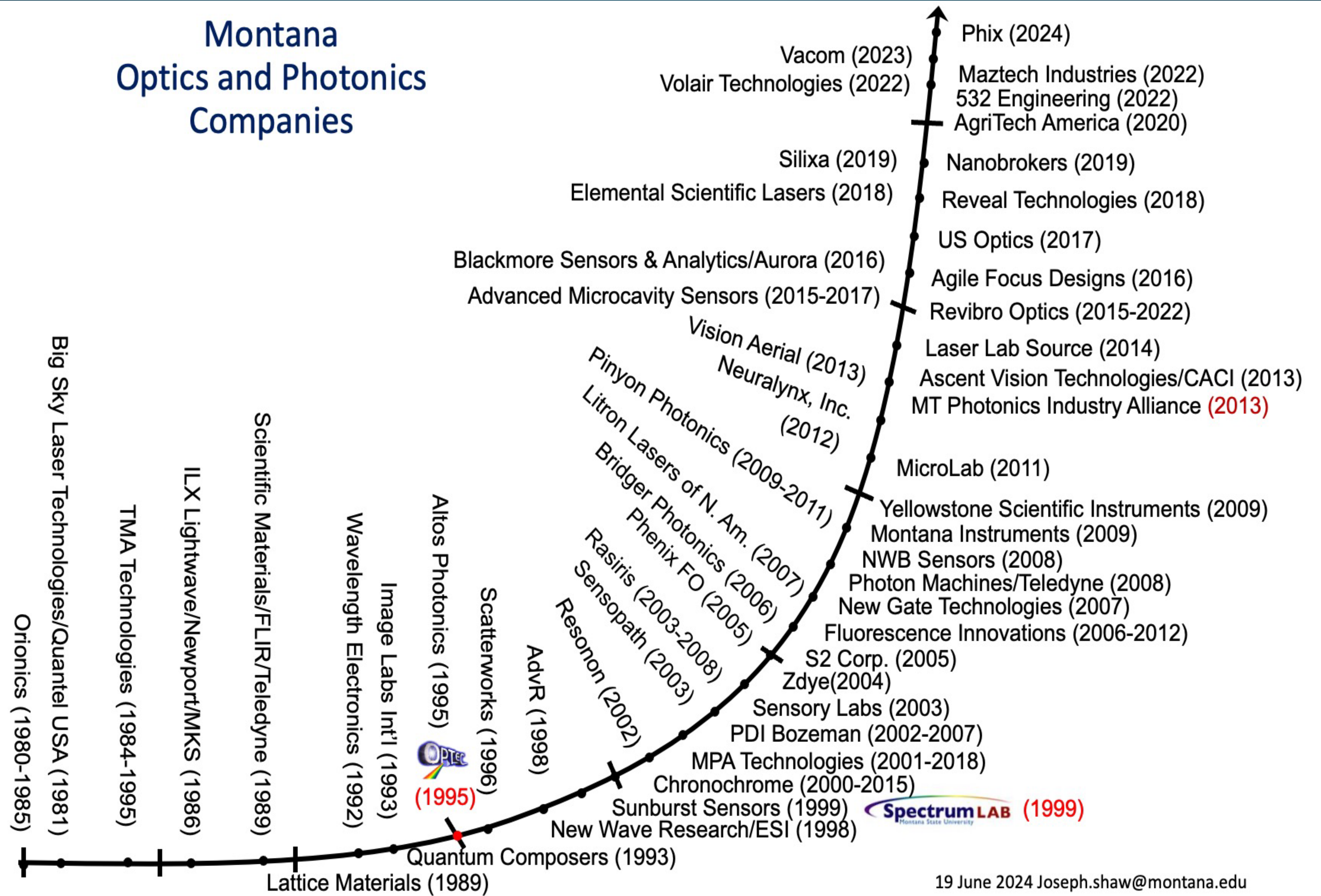


1. Target regions that are already on a strong technology trajectory and focused on an industry aligned with national and economic security.
2. Make a strong catalytic federal investment.
3. Focus on technology that is near ready for production at scale.
4. Build tech ecosystem capacity, not just tech deployment but workforce and business development in parallel.
5. Establish Tech Hubs to benefit rural in addition to urban hubs.





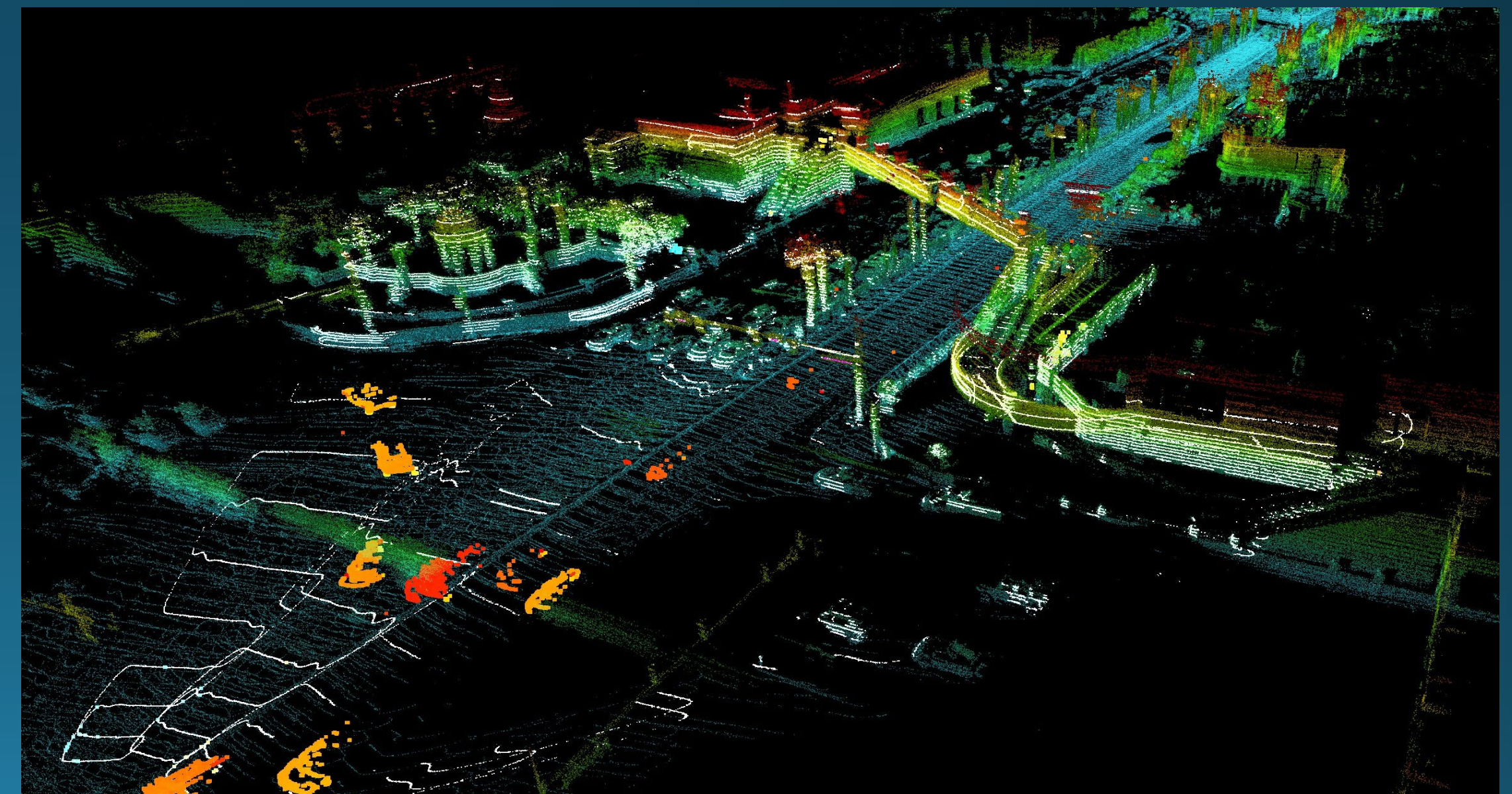
Montana Optics and Photonics Companies





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The Headwaters Tech Hub Vision:

- To be a global leader in advanced smart photonic sensing systems and their deployment into industry sectors critical to U.S. national and economic security.
- Build vibrant complementary tech clusters across the region and state, focused on application sectors of strength across our geography
 - (e.g., manufacturing supply chain, natural resources & conservation; precision agriculture, national security, energy, transportation)
- Access for all Montanans to good paying jobs within the statewide ecosystem
- Nested focus: begin in designated geography with intentional efforts to extend statewide and beyond
- Outcomes grounded in Montana's sense of community
- Intentional inclusivity of tribal and rural communities in all of our efforts

The HTH Innovation Corridor

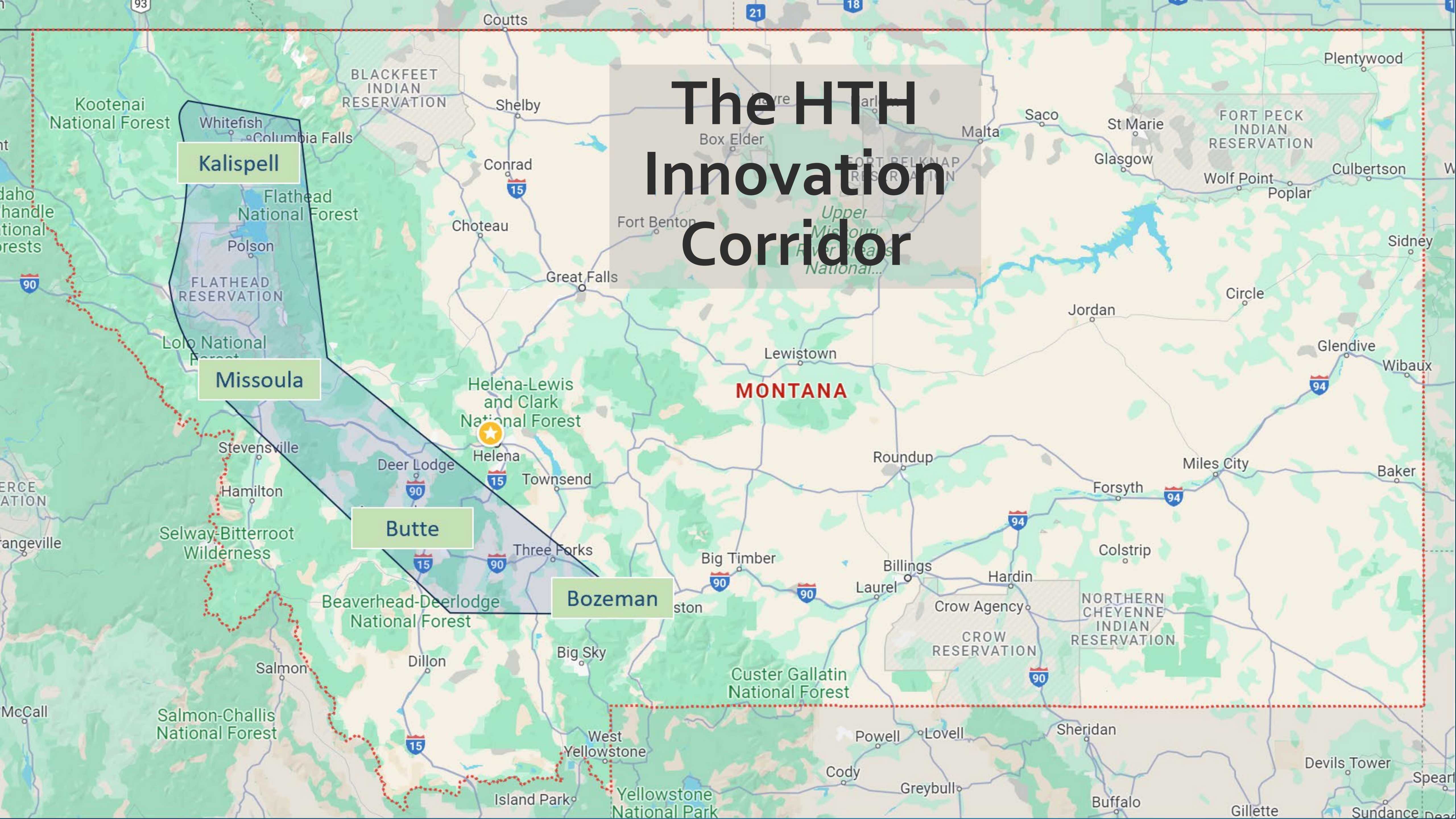
Kalispell

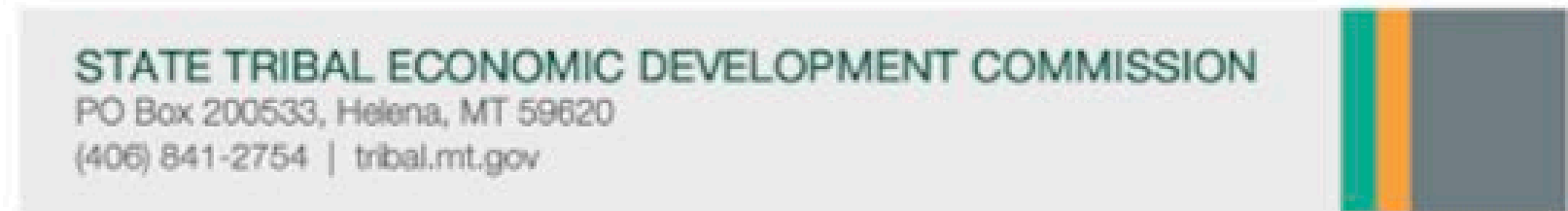
Missoula

Butte

Bozeman

MONTANA







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10

YEARS

\$10

BILLION

1,000

COMPANIES

25,000

JOBS



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The HTH Project Portfolio:



- \$45.9 million in project funding (\$41.3M federal + \$4.6M match)
- Two tech maturation/deployment projects
- Two workforce projects
- Administrative core
- >\$14.5 million in additional leveraged investments



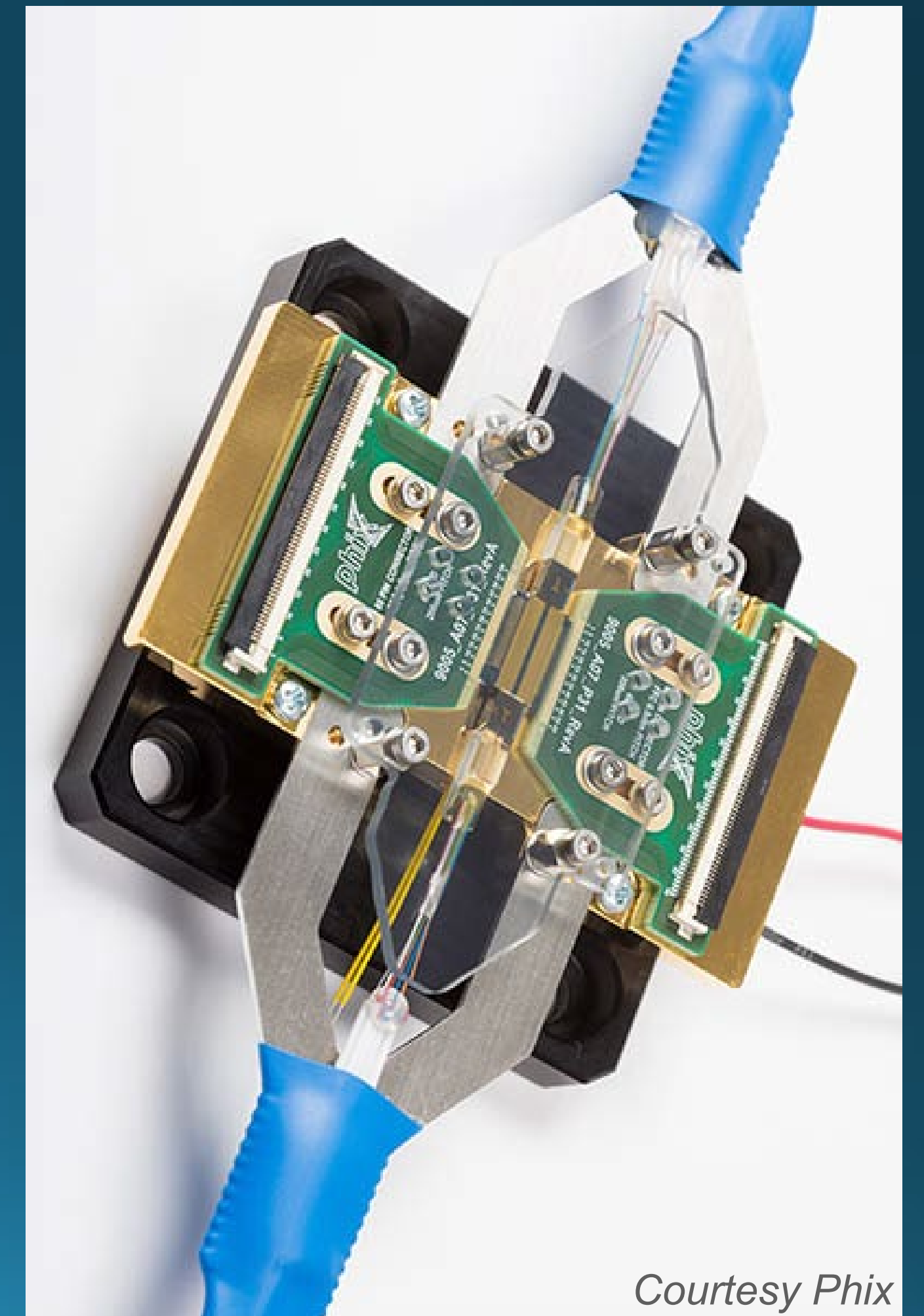


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Advancing Technology through Device Scalability

- Establishes an Integrated Photonic Ecosystem (IPE) anchored in Bozeman.
- Focused on reducing Size, Weight and Power requirements (SWaP) to reduce cost and accelerate adoption.
- Vision is to streamline nearly all stages of the integrated photonics development pipeline within our region, from prototyping to component integration at scale.
- Led by Montana Photonics & Quantum Alliance (MPQA), in partnership with Phix, MSU, and Shadow Ridge Analytics



Courtesy Phix



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Courtesy Joe Shaw

Advanced Testbeds for Tech Evaluation and Demonstration

- Field-based technology evaluation and demonstration for smart photonics sensors and autonomous capabilities.
- Testbeds focus areas will be Rugged Terrain, Precision Agriculture, and On/Off Highway operations.
- Led by the University of Montana and Accelerate MT, in partnership with Montana Tech, MSU, Grand Farm, the MT Department of Transportation, and numerous industry partners.



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Advancing Tribal STEM Pathways

- Connects Tribal Colleges to Hub-related career education and STEM workforce needs, providing hands-on, place-based learning.
- Includes teacher training, opportunities for underserved secondary school students, and establishment of new STEM curricula and certification programs.
- Intent is to serve as a model that can be expanded to meet needs for underserved Tribal and rural students across the broader region
- Led by Salish Kootenai College.



Courtesy SKC



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University-Based Training and Ecosystem Support

- Establishes a photonics sensor training and testing laboratory at Montana State University.
- Adapts testing technologies for use in coordination with Testbeds and Integrated Photonics Ecosystem projects.
- Intended as stepping stone toward establishing an undergraduate photonics engineering degree program at MSU



Courtesy Joe Shaw



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Coordination and Leadership: the HTH Office

- Provides bold leadership to advance an ambitious shared innovation agenda and strategy for the HTH region among diverse stakeholders.
- Catalyzes regional cohesion, promotes inclusion of Tribal and rural populations, and amplifies HTH global competitiveness.
- Guides progress across all component projects, facilitates collaboration, and maximizes the Hub's collective impact.
- Established under the purview of Accelerate MT



Courtesy Jason Yager



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HTH Office Core Competencies

- Strategy and Visioning
- Network & Partnership Building
- Policy Development and Advisory Capacity
- Convening
- Communications & Visibility
- Sustainable Funding
- Data Collection / Evaluation / Reporting
- Portfolio Project Oversight & Coordination



Courtesy Paul Gladen

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QUESTIONS?