WIRED Industry, Education, Workforce and Small Business Panel Recommendations Summary

(Summary recommendations in blue reflect individual recommendations of 2 or more panels.)

	Demand	Supply
RFP Process	1. Reflect different industry needs and composition, i.e. IT's dual role as key industry & enabling technology, and the differing workforce needs of different segments and business sizes of all WIRED industries. 2. Focus on industry, education and workforce partnerships, rather than niche industry issues. 3. Be accessible to, and encourage response from, applicants who do not usually respond to such funding opportunities. 4. Target measurable outcomes.	1. Require programs to be sustainable, replicable, incorporate long-term partnerships, corporate commitment, and parental/community outreach. 2. Require specific stakeholders involvement involved in program planning/implementation (higher ed, K-12, STEM regional compacts and Workforce boards). 3. Require applicants to state the program's policy implications, and how it is innovative and entrepreneurial. 4. Give priority to proposals with significant leverage. 5. Require partnerships with higher ed for any proposal involving high school programming.
Funding	1. Research promising practices for industry-academia interaction nationally. 2. Leverage industry crossover, i.e. shared lab facilities between biofuels and bioscience. 3. Research global data and best practices in IT workforce development. 4. Research utilizing current academic structures and systems to expose and motivate post-docs to explore industry opportunities.	Education: 1. Engage children in STEM topics relevant to their lives and futures. 2. Increase math skills for middle school students to decrease future remediation. 3. Provide K-12 students with the knowledge & skills necessary for post-secondary education. 4. Identify underserved populations & diverse learning needs, and deliver appropriate teaching methods and curriculum. 5. Provide subject specific professional development and ongoing support for teachers. 6. Direct some WIRED funding to a prioritized list of regional strategic investment needs to compete effectively for Federal funds. 7. Create a WIRED Capital Endowment Fund for strategic regional investments. 8. Develop a professional STEM public-awareness campaign. 9. Establish mechanisms for all high-school students to visit higher-ed campuses. Workforce: 1. Only fund projects that leverage existing funding, have a regional approach, and address specific workforce development need of a target industry. 2. Develop training programs within the workforce development system to increase competency and transferability of worker skills required by target industries. 3. Research and develop of career ladders, industry requirements and transferable skills for use by education, business, workforce development and economic development.

Sustainability (networks)	1. Support sustainable initiatives that provide early and continual exposure and experience of STEM and WIRED industries to K-12 students, especially those that involve peer-to-peer and professional mentoring, and outreach programs that encourage local WIRED companies to have a meaningful connection with education and provide long-term financial support and input. 2. Support collaborative programs & initiatives between industry and education that provide direct hands-on learning, and industry exposure and experience. E.g.: • Extending WIRED industry partnership opportunities to business school students; • Improving collaboration between industry & higher education leadership to promote competitive business & industry skills for students; • Establishing industry academic advisory boards, adjunct positions & other teaching assistance; • Improved, and more accessible (to students and industry) internships, research, & other partnerships • Providing research lab access to faculty; • Industry sponsoring education participation at industry events; • Forums for academia, students and industry; 3. The Workforce System can best assist WIRED industries by: • Training incumbent workers, retraining displaced workers, youth programs and outreach, and industry promotion; • Developing a cadre of "education reps"; • Developing strategies that emphasize strategic industry skills (e.g. leadership, personnel, project management). 4. Improve the region's workforce and graduate retention rate via: • More targeted and accessible recruitment programs and connections between incumbant workers, graduates, high school students, & local businesses; • Programs that encourage industry to hire locally. 5. Track STEM students at key transition points, & collect regional data for graduates in WIRED industry-related disciplines annually (including where they find employment), to track the workforce pipeline supply and	Workforce and Small Business: 1. Include participation of WIRED Industry Panel members in the Metro Workforce Board. 2. Focus on curriculum for cluster industries to partner with SBDC's, higher-ed and workforce centers. 3. Work with industry, economic development and community colleges to develop, expand and replicate RRCC Process Technology training program; 4. Develop formal collaboration agreements to support systems that create and sustain multiple career pathways. 5. Conduct research on small business needs and barriers and involve all WIRED partners in distributing results and implementing findings; 6. Create resource materials for target industries to assist start-up companies, transition workers and existing businesses. Education: 7. Be intentional in designing, fostering, managing and promoting examples of effective on-going partnerships (focus on benefits, common language, objectives and outcomes, adequate resources and inclusive membership); 8. Increase meaningful, relevant, engaging, and accessible STEM education by developing, increasing, encouraging and refining: certificate programs, incumbent worker programs, learning plans and career counseling in middle school through post secondary levels for both students and parents; incentives for STEM faculty recruitment and retention; STEM and career relevance in teacher preparation; internships and bridge programs that link learners' education to work experience; strengthened STEM professional development. 9. Build early, and sustained, excitement about STEM subjects and career opportunities. 10. Align education credentials with realistic expectations and work requirements through employer forums between business and higher ed. 11. Increase industry and education partnerships to develop internships, externships and professional development for educators. 12. Collect and disseminate information on STEM skills and industry cluster career opportunities. 13. Develop a State-wide data system to track longitudinal inputs and outputs for students and teachers.

	impact of WIRED activities graduate retention.	
System Transformation	1. Create a new, or utilize an existing, third party agency or cooperative (representing industry, education and the workforce system) to: • Broker and facilitate connection, interaction and value generation between industry and workforce supply sources; • Act as a clearing house for STEM & industry-related programs, internship opportunities, initiatives, funds and other activities that support WIRED's goals. 2. Expose teachers to WIRED industries to motivate them to bring industry into the classroom through: paid externships, company tours, site visits, real-world applications of STEM curricula and awareness of available industry-generated training and education materials. 3. Incorporate STEM industry career classes and outreach activities (e.g. company tours and site visits) into regular curriculum and after-school activities. 4. Develop improved Technology Transfer programs. 5. Research and support policy/practice changes that can positively affect interaction between education/workforce and industry. For example, make industry interaction a recognized and valuable part of tenure assessment for business and technical faculty at all levels of post secondary education.	Workforce: 1. Increase target industry businesses' use of the region's workforce development system. 2. Increase use and replication of existing models that support multiple career pathways to employment in target industries. Education: 1. Implement periodic meetings that bring together stakeholders from all WIRED partners. 2. Coordinate work groups (representing all WIRED partners) to tackle specific assignments (e.g.: recruitment, STEM outreach, career ladders). 3. Hold a WIRED Summit, possibly leveraging/partnering with existing forums (National High School Alliance, COMSTEC etc). 4. Learn lessons from JumpStart grant recipients.
Communication	1. Develop a strategic regional communication plan targeted at students, parents, educators, industry and public leadership that: • Articulates and promotes accurate perceptions of WIRED industries and the many career opportunities within them (utilizing web-based information tools); • Increases graduate and incumbent worker retention by promoting Colorado locally and nationally as a "hub" for WIRED industries & a place to live, learn and work ("Hire Colorado") • Communicates the interconnectivity & transferable skills between WIRED industries; • Promotes greater awareness of the region's programmatic excellence in education; • Informs regional leadership/public officials of the significance of WIRED industries to the regional economy.	1. Create a centralized database and improved methods for communicating school-to-career opportunities and the adequate preparation required for success. 2. Inform families of STEM work and its education requirements.

Policy and Practice	1. Address the problem of inadequate state education funding by working to improve funding at all levels of the system. 2. Support initiatives that promote a more rigorous K-12 STEM skills education, standardize graduation criteria, technology education standards and availability, and promote inclusion of WIRED industry & STEM skills in the CSAP test. 3. Provide incentives to: • Higher education institutions for retaining graduates in Colorado; • Promote contact and interaction between academics and industry; • Encourage individuals from industry to go into academia. 4. K-12 education need not be industry specific, but focused on basic skill development & activities to motivate and develop industry awareness & scientific interest in students. 5. Provide a level playing field of language, methodologies, operational styles etc for interaction and dialogue between industry, the workforce system and education. 6. Diversity issues should focus on the benefits of diversity as an underdeveloped source of talent. WIRED activities and initiatives targeted at girls, women and minorities should incorporate a strong element of teamwork. 7. Support development of a framework for the region's students to begin the security clearance process while still at school. 8. Encourage the region's higher education institutions to include a compulsory internship requirement for certain WIRED industry related programs, so that each student graduates with hands-on industry experience.	Workforce: 1. Integrate WIRED vision, mission and strategy in all education, economic and workforce development policy and planning guidelines for a coordinated effort that shares funding leverage and responsibility for skilled workforce development in target industries. 2. Align local workforce development, economic development and educational funding streams to increase training and work opportunities in target industries Education: 1. Create a transparent, accessible, seamless P-20 system through: articulated outcomes-based education, curriculum reform, post-secondary education readiness, career-readiness and flexible scheduling. 2. Leverage and inform existing opportunities for change (i.e. governor's P-20 Council, school districts, education boards, CCHE etc). 3. Establish a vehicle for business input into public policies. 4. Advocate policies that support STEM. 5. Work through the P-20 Council to: a. Align the visions of the education and workforce systems; b. Align or coordinate education governance in a P-20 approach; c. Estimate new and ongoing costs of establishing and operating an aligned P-20 system; d. Create a seamless data system across P-12 and higher education; e. Ensure K-12 classrooms are equipped to prepare students for post-secondary education.