FOR IMMEDIATE RELEASE
August 17, 2023

Inland Northwest Consortium, Led by Gonzaga University,
Files Tech Hub Application to Create
The American Aerospace Materials Manufacturing Center
A World-Class Testbed for Production, Commercialization, Entrepreneurs

Washington State has been at the forefront of innovation in the aviation and aerospace industry for more than a century, designing and building some of the most advanced and successful commercial and military aircraft, uncrewed aerial systems (UAS) and space exploration vehicles the world has ever seen.

The *future* of aviation and aerospace is the development of advanced composite materials to create aircraft that are lighter and more fuel efficient at reduced cost.

The question is, how will Washington continue to be competitive in this new arena in the face of fierce global competition? The answer: a consortium of like-minded organizations committed to creating the world's most advanced Tech Hub, situated in the Inland Northwest.

This consortium of nearly 50 partners, led by Gonzaga University in partnership with Lakeside Companies, has filed applications with the Economic Development Administration (EDA) for federal designation and Phase 1 funding to create the American Aerospace Materials Manufacturing Center (AAMMC). With the region's world-class aerospace workforce, this innovative Center is designed to meet immediate and next-generation development and production of advanced aerospace materials and reduce American reliance on foreign-produced composites.

"Gonzaga is proud to serve as the lead for the broad-based and incredible consortium that is applying for Tech Hub recognition and funding of this exciting new composite materials manufacturing center," said Thayne McCulloh, president of Gonzaga University. "This represents a dynamic partnership of leaders in industry, research, education, government and workforce, all collaborating to achieve high-rate production goals for the next-generation of aerospace manufacturing."

Consortium members are aligned on the need to enhance American competitiveness and capabilities in composite materials, the market opportunity in the aerospace industry and potential other industries, and the capabilities of the Center's partners and the regional capabilities of the Inland Northwest to meet this need.

Consortium Members -- American Aerospace Materials Manufacturing Center

Aerospace and Industry Leaders

- Advanced Thermoplastics Composites (ATC) Manufacturing
- Avista
- Blue Origin
- Boeing
- Continuous Composites Incorporated (CCI)
- Electroimpact
- Lockheed Martin
- Northwest I-90 Manufacturing Alliance
- Raytheon/Collins
- StanCraft
- Unitech Composites Inc.

Higher Education and Secondary Education

- Gonzaga University
- Coeur d'Alene Public Schools
- Community Colleges of Spokane
- Eastern Washington University
- Elevate North Academy
- Heritage University
- North Idaho College
- Spokane Public Schools
- University of Idaho
- University of Washington
- Washington State University

Venture Development

- Lakeside Companies
- Washington Trust Bank

Workforce Development and Labor

- Coeur d'Alene Economic Development Corporation
- Idaho Workers Development Council
- International Association of Machinists District 751
- Machinists Institute
- Spokane Workforce Council

Government, Tribes, and Economic Development

- City of Coeur d'Alene
- City of Post Falls
- City of Spokane
- Coeur d'Alene Regional Chamber
- Coeur d'Alene Tribe
- Greater Spokane Inc.
- Greater Spokane Valley Chamber of Commerce
- Idaho State Department of Commerce
- Kalispel Tribe of Indians
- Latino Civic Alliance
- S3R3 Solutions
- Spokane County
- Spokane International Airport
- Spokane Tribe of Indians
- Washington State Department of Commerce
- West Plains Chamber of Commerce

In Coordination with

- NASA
- Pacific Northwest National Laboratory
- Additional Defense OEMs

“The industry goals for proving new production capabilities of thermoplastic composites (TPC) for aerospace at the AAMMC will lead to a new domestic supply chain and begin to reverse U.S. reliance on these foreign made materials. Global demand for advanced aerospace composites is growing exponentially and this industry collaboration with our area education and workforce partners will build those capabilities again, right here in the Inland Northwest. This center will not only help us catch up to foreign competition but is critical to America regaining our position as the leading supplier of aerospace components in the world,” said John Hemmingson, CEO of Lakeside Companies.

“We are incredibly proud to be a part of this consortium and application. There is no better location for this Tech Hub than right here in the Spokane-Coeur d’Alene area. We are at the center of the I-90 aerospace corridor, and we have so many great resources including a concentration of existing composites suppliers and leading research universities. We also have some of the fastest growing cities in both Washington and Idaho between Spokane, West Plains, Spokane Valley, Post Falls and Coeur d’Alene. You can tell from all the letters of support and the wide array of organizations that are in the consortium -- we have the talent, the resources and the desire to make the AAMMC Tech Hub successful and we are looking forward to doing just that!”

The Tech Hubs program was authorized as part of the CHIPS and Science Act of 2022. The EDA received $500 million in appropriations to support this program in the FY 2023 Omnibus. Phase 1 of the EDA’s Tech Hub program calls for the designation of more than 20 regions as hubs, awarding approximately $15 million, or some $500,000 per grant. Gonzaga University, through a generous benefactor, has pledged matching funds if its application is successful. Phase 1 includes the hiring of a Regional Innovation Officer (RIO) who will act as chief executive officer for the consortium, reportable to the governing body, and who will work to build a team supporting the Center’s advancement. The RIO will have a strong background in managing a diverse ecosystem of stakeholders, preferably with a background in aerospace engineering, experience in supporting workforce development efforts and knowledge of the region and its stakeholders.

Phase 1 awards are expected in late fall. Phase 2 narrows the grants, awarding five to ten consortia $50-$75 million across multiple component projects.

Together, consortium members will create a legal governing body to oversee the development and selection of Phase 2 implementation activities. This governing body will act on an ongoing basis to set goals, implement actions, budget, and supervise other organizational needs. It is this collaborative and collective effort that will ensure that the AAMMC fulfills its potential.

The Center will combine applied education research, workforce training and advanced production with industry experts, principally located in a 386,000-square-foot repurposed manufacturing facility near Spokane International Airport with room to grow over 50 acres. The Tech Hub’s inclusive framework is designed to expedite the evolution and commercialization of the domestic aerospace supply chain, foster

education, attract robust entrepreneurial interest and drive private sector investments into new companies. The program focuses on increasing the skills of the current workforce, coordinating with regional Tribal nations and workforce leaders, and utilizing best-practices for supporting underrepresented communities in both Washington and Idaho to model the next generation of aerospace jobs.

The former Triumph Composites System facility would house the American Aerospace Materials Manufacturing Center.

“This testbed will result in new domestic supply chains that are able to meet the global high-rate production demands of advanced composite aero structures for both commercial markets and government needs,” McCulloh said in announcing the EDA application.

“Governmental and civic collaboration is unmatched, and the combined exceptional educational resources of our region guarantee our capability to be leaders in this field far into the future. This consortium of world-class partners is proud to create an opportunity that will better our community and the nation for years to come,” McCulloh said.

CONTACT

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August 3, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of the Community Colleges of Spokane (CCS), I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of CCS' commitment to the success of the Center and its consortium.

Founded in 1963, CCS is a dynamic community college district serving approximately 20,000 students a year in eastern Washington. CCS is a vibrant, comprehensive learning community, with educational opportunities for students of all ages and abilities. The mission of CCS is to provide all students an excellent education that transforms their lives and expands their opportunities.

CCS serves the economically challenged urban and suburban area of over 550,000 people in the Spokane metropolitan area. Along with the traditional college campuses of Spokane Community College and Spokane Falls Community College, CCS also delivers a variety of educational programs including workforce development, business and community training, and adult literacy services. In addition to the population in greater Spokane, the district provides educational services to rural communities throughout a 12,302 square-mile region in eastern Washington. This region includes all of Spokane, Stevens, Whitman, Ferry, and Pend Oreille counties, as well as portions of Lincoln County.

CCS students are more diverse than the community. Spokane County has a minority population of about 11%. CCS's minority student enrollment stands at about 29%. There are also increasing numbers of immigrant students with English as their second language, particularly Eastern Europeans, Southeast Asians, and an increasing number of Middle Eastern students. More than one-third of the students are the first-generation in their family to attend college. CCS consistently ranks at the top of the state system of community colleges for the sheer number of need-based assistance.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

CCS will make the following contributions to the Center:

- Prepare the regional workforce for jobs as aerospace composite technicians
- Provide faculty with expertise in aerospace composites to develop meaningful and up-to-date educational and training opportunities for people currently working in the field
- Strengthen the workforce development and educational readiness of the regional workforce
- Create educational pathways from a two-year to four-year degree with partner institutions of higher education
- Promote the significance and growth of the aerospace industry
- Work collaboratively with the Center and all of its partners

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

Kevin Brockbank, Ed.D.
Chancellor

EASTERN WASHINGTON UNIVERSITY

August 3, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Eastern Washington University (EWU), I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of EWU's commitment to the success of the Center and its consortium.

EWU is a comprehensive public, primarily undergraduate university in Cheney, Washington. EWU is the largest university in Spokane County and Washington's second largest university in the extensive rural region east of the Cascade mountains. EWU serves a diverse student population: 39% of EWU students come from a federally recognized minority group, one third of EWU students are first-generation college students, and 77% of students are Pell-eligible. Of particular importance for this project, EWU's College of Science, Technology, Engineering, and Mathematics includes baccalaureate programs in technical fields including Mechanical Engineering, Mechanical Engineering Technology, Manufacturing Technology, Applied Technology, Electrical and Computer Engineering. These programs combined produce approximately 250 graduates per year. Over ¾ of EWU Alumni reside in Washington State, and almost 40% live in Spokane County. As such, EWU is a primary supplier of the workforce needs arising from the Center.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials and advanced manufacturing techniques. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland

Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

EWU will directly support the Tech Hub through its faculty expertise in industrial robotics and automation. EWU's Department of Mechanical Engineering and Technology emphasizes industrial automation, with expertise in most of the systems used in modern advanced manufacturing facilities. EWU faculty already work closely with regional manufacturing companies, providing direct training, workforce development, and consulting expertise in commercial robotics systems (e.g. FANUC, ADEPT, Epson) and the major commercial programmable logic controllers (e.g. Allen Bradley and Siemens). EWU is already collaborating with industry partners to become a regional training center for these systems. EWU will provide the expertise and training for industry partners in the Tech Hub to transition from product development and testing to fully operational production lines at scale. EWU's emphasis on workforce development will also support the Tech Hub by ensuring a stable pool of well-prepared, technically-trained students with strong ties to the region.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application in order to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

David Bowman
Dean, College of Science, Technology, Engineering, an Mathematics
Eastern Washington University

GONZAGA UNIVERSITY

Office of the President

August 13, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Gonzaga University, I write in support of the American Aerospace Materials Manufacturing Center application to the Economic Development Administration (EDA) Regional Technology and Innovation Hub (Tech Hub) Phase 1 application for Hub designation and a strategy development grant. This letter also serves as Gonzaga University's formal commitment to serve as principal applicant and lead consortium member, and to fulfill the obligations and responsibilities of that role as detailed in the Notice of Funding Opportunity (NOFO). Working in partnership with a diverse group of industry, tribal nations, education, government, workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by consortium and institute partners into commercially ready products for use in aerospace manufacturing.

Gonzaga University is an independent, non-profit, comprehensive institution of higher education established in 1887. Gonzaga is honored to serve as principal applicant and lead consortium member as the next chapter in a long history of partnerships and leadership within the region. Throughout the course of its existence, Gonzaga has developed academically excellent programs in response to the contemporary needs of industry and the professions – both in the region and for the nation. The histories of Spokane and Gonzaga have thus unfolded together and Gonzaga has proudly worked alongside our growing region to help it flourish. Throughout time, we have formed durable community partnerships to address pressing issues—race relations, environmental sustainability, and community health among them—to create solutions that would better our city and the lives of people who live here.

We recognize that every university's success is dependent on how well it values, engages, and includes the rich diversity of its community. Diversity, equity, and inclusion are at the core of our mission. To advance these mission-centered commitments, Gonzaga founded the The Center for the Study of Hate in 1998. There are more than a dozen published volumes of the Journal of Hate Studies and The International Conference on Hate Studies has been held at Gonzaga University on multiple occasions. While numerous government and non-governmental organizations are working against hate, the Institute is a nationally known and unique organization for its interdisciplinary academic focus on the causes and effects of hate as well as potential strategies for combating hate. This same intentional and collaborative commitment will guide the continued development of the consortium, the inclusion of underrepresented comuntities in the governance structure and the advancement of the Center's equity priorities.

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Inspiring Excellence

The growing national need for physicians has been carefully documented and all point to the overwhelming need for more doctors and health professionals prepared to serve. The need is especially present in urban centers like Spokane and throughout rural Eastern Washington. The University of Washington School of Medicine and Gonzaga University formed a partnership in 2016 to transform the health, well-being and prosperity of the region through medical education and research. With deep roots, a legacy of delivering top-ranked, world-class education and educating students for lives of leadership and service, the partners leverage their strengths as part of a regional network -- WWAMI (Washington [Seattle & Spokane], Wyoming, Alaska, Montana and Idaho) – to prepare the region's next generation of health care providers. In September, 2022 the UW-GU Health Partnership, in conjunction with McKinstry, Inc., opened a brand-new, ecologically sustainable 88,000 s.f. facility to support the needs of both partner universities. The WWAMI Medical Education Program, including the UW-GU Health Partnership, strives to attain two main goals: to make public medical education accessible to residents throughout the five states, and to encourage graduates to choose careers in primary care and family medicine and ultimately locate their practices in non-metropolitan areas of the northwestern U.S. Many of these areas lack an adequate number of primary care physicians and access to healthcare in general. Additionally, the program encourages talented students, especially minority students, in the WWAMI states to enter the field of medicine.

Gonzaga has been recognized for this work, as well as many other community-oriented programs, by the Carnegie Foundation with the prestigious Classification for Community Engagement. It is this same spirit of partnership and community health that guides our work in the development of this proposal.

Gonzaga University is a comprehensive university offering degrees at the undergraduate, graduate, and doctoral level. The President serves as its Chief Executive Officer and directly supports the Office of Inclusive Excellence (DEI and Title IX), Cultural Affairs, Communications, and Government Relations. The administration is organized under the Office of the President into eight (8) major divisions: Office of the Provost (including Academic Affairs, Student Affairs, Enrollment Management, and Educational Effectiveness); Administration (including Information Technology Services and Physical Plant Services); Athletics; Human Resources, Corporation Counsel; Finance; Mission and Ministry; and University Advancement. Academic Affairs is comprised of the College of Arts and Sciences, and the professional schools of Law, Business Administration, Education, Engineering and Applied Science, Health Sciences, and Leadership Studies. We also have a permanent campus in Florence, Italy which was founded in 1963 and hosts both undergraduate and graduate programs.

Of particular relevance to the present Tech Hub application, the School of Engineering and Applied Science (SEAS) has been an important part of Gonzaga University for almost ninety (90) years. Our degrees and programs train and educate engineers and computer scientists who are ready to impact the world through integrative knowledge, invention, leadership, professional ethics, and a commitment to advancing the greater good. Of our twenty-eight tenured/tenure-track faculty, 25% are women (all tenured) with 71% full tenured professors, which exceeds the national averages reported by the American Society of Engineering Education. This 25% also represents closely the undergraduate female population in SEAS for the past three years. SEAS have created unique opportunities to attract HS females to choose a STEM career after HS. Only in its second implementation, the SSIP program funds one-hundred percent of an immersive 4-day experience

for females from predominantly small, rural, and/or diverse underrepresented student population to hands-on training, industry tours, and interacting with faculty and female professions in computer science and five engineering programs. The early data show that the majority of the participants have chosen to attend a 4-year college progam and a STEM field post HS graduation.

SEAS professional staff and faculty also work closely with the Spokane Community College (SFCC) and specifically, the MESA program, to inform SFCC students about transferring to a BS degree STEM program. For those that do transfer to GU in SEAS, the graduation rate is high due to faculty advising and monitoring for student success. SEAS support multiple student professional engineering/computer science societies and clubs programming as such activities (e.g., national competition, industry-led seminars) create a sense of belonging, high retention, and constructive networking. SEAS provide several opportunity to support faculty research and professional development, and undergraduate student research participation. These include, faculty travel to professional conferences and workshops, stipends to support underrepresented students on faculty research projects, financial support to support student-proposed senior design projects and projects with entrepreneurial emphasis. Working alongside Career Services, SEAS faculty assist its students to apply for internships through its industry network or its Executive Council network and advise its students on graduate studies and other professional school opportunities.

The SEAS partnership with ATC on thermoplastic composites (TPCs) supports the research goal of TPCs as alternatives to titanium and other metals. There are several processing benefits. Bonding metal to metal/metal-alloy has been studied. However, bonding non-metallic surfaces to a high degree of durability requires understanding of key process parameters and assurance verification. A major study underway with SEAS faculty is the potential of durable bonded repair using atmospheric plasma surface prep for TPCs reinforced with carbon fiber. Such high strength TPCs are used in many high temperature applications.

Combining technical education and training with Gonzaga's strong liberal arts education, our rigorous curriculum challenges students to think critically and broadly so as to push the boundaries of modern science and technology. When thoughtfully coupled with hands-on learning, experiential and research experiences (like those to be offered in the American Aerospace Materials Manufacturing Center), students are provided with a preview of the profession with opportunities to design and develop viable and sustainable solutions for real-world engineering problems facing the aerospace industries.

Following is a non-exhaustive list of GU capacities aligned with this institute:

1. Research laboratories: Tribology, Materials Research
2. Center for Engineering Design and Entrepreneurship (CEDE) that supports year-long industry-sponsored senior design capstone projects
3. New computer science labs: Cybersecurity, Advanced computing
4. New instructional lab: Robotics and machine learning systems
5. SEAS summer immersion program (SSIP) that seeks to attract WA state HS women to engineering and computer science careers.

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Expertise – Applied Research & Development (TRL6 to TRL 9)

GU (SEAS) faculty with materials science, materials manufacturing, tribology, data science, machine learning, and mathematical modeling expertise to support system/subsystem model or prototype demonstrations in either the industrial setting or simulated (digital twin) environment that will enable definitions of operational specifications; analysis, assessment and evaluation of quality variables; and design of quality control strategies to meet operational targets.

Expertise - Educational

GU faculty with proven expertise to design appropriate workshop/licensure/bootcamp content to educate students at all levels; diverse technicians, researchers, and practitioners on fundamental and complex engineering, science, computing, and technology topics; and to create new design standards as new manufacturing operations evolve.

Envisioned participation

GU faculty participation will strengthen the applied research and development readiness of the American Aerospace Materials Institute technologies in support of prototype testing and validation and actual system testing under real-world (mission) conditions; promote education and training of the Inland Northwest workforce, with an emphasis on inclusion of diverse and traditionally underrepresented populations; stimulate partnership networks across industry, academia, government, nonprofits, and the community writ large; enable new research developments as a function of the aerospace industry needs; create stable pathways to sustain the region's economic development; and forge new opportunities to promote growth of the region's aerospace enterprise.

As lead consortium member Gonzaga University commits to the following efforts:

- *be the principal applicant for the Phase 1 Strategy Development Grant and Phase 1 Designation;*
- *serve as EDA's main point of contact during the competition and implementation;*
- *serve as the employer of the Regional Innovation Officer (RIO)*
- *serve as the central coordinator of the consortium by leading or otherwise having a significant role in the consortium's governance including efforts to*
    - *recruit new partners from all sectors*
    - *develop Bylaws for the governing structure to include the formation of the Governing Board*
    - *develop an external council of appropriate advisors to provide unbiased input on the Center's progress and guidance on its continued growth*
    - *establishment of assessment and evaluative practices to result in best practices, and*
    - *promote equitable and sustainable economic prosperity across all communities*
- *convene public, private, academic, labor, and civic leaders to facilitate regional cohesiveness in maximizing the region's competitiveness;*
- *establish and maintain communication between the consortium and EDA to enable and accelerate collaboration and support; and*

- *ensure funding and other assistance provided by EDA and any other partners are absorbed effectively within communities.*

As consortium lead member, Gonzaga University is committed to providing match funding to support the cost of Phase 1 activities. The source of this funding is a very generous bequest which was provided to the University through the estate of a longtime supporter and alumnus. Although Gonzaga will remain the lead member, the consortium members will together create and organize a legal governing body to oversee the development and selection of Phase 2 implementation activities. This governing body will act on an ongoing basis to set goals, implementing actions, budget, and other organizational needs. It is this collaborative and collective effort that will ensure that the American Material Manufacturing Center fulfills its potential.

Thank you for this opportunity to write in support of the American Aerospace Materials Manufacturing Center application to the Economic Development Administration (EDA) Regional Technology and Innovation Hub (Tech Hub) Phase 1 application for Hub designation and a strategy development grant. We look forward to your evaluation and are happy to respond to additional requests for information as we anticipate the incredible opportunity this designation and grant will create for our nation.

Sincerely yours,

Thayne M. McCulloh, D.Phil.
President

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Heritage University
Office of the President

August 10, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW, Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

I am writing on behalf of Heritage University to express our strong support for the American Aerospace Materials Technology Center's application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also signifies Heritage University's commitment to the success of the Center and its consortium.

Heritage University, based in the heart of Washington State and rooted in the homeland of the Yakama Nation, embraces transformational student-centered education that cultivates leadership and a commitment to the promotion of a more just society. A private nonprofit liberal arts university Heritage is one of only two universities in the nation that is designated as both a Hispanic Serving Institution and a Native American Serving Non-Tribal Institution. With an undergraduate population that is more than 70% Hispanic and more than 10% Native American, this Center’s potential to develop a high-tech sector workforce that is more inclusive of people of color cannot be overlooked. We strongly support initiatives that will propel greater diversity in this critical workforce sector and society.

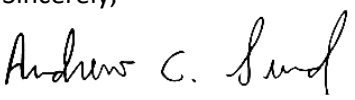
The American Aerospace Materials Technology Center's pursuit of advancing thermoplastic composite materials for aviation resonates profoundly with our institutional aspirations. The collaboration among consortium members, which encompasses leading institutions and industry partners in this sector, is a testament to the cooperative spirit that drives innovation and economic progress. We are impressed by the comprehensive approach taken by the consortium, involving workforce development, labor, and economic development partners, which collectively ensures the seamless translation of research into commercially viable products.

Heritage University is committed to contributing substantively to the Center's initiatives as a dedicated supporter of education, innovation, and economic development. Our engagement includes bringing participating faculty and students to collaborate with industry leaders in thermoplastic composite materials production. Heritage will develop professionals to enter this important field and bring dynamism to the economy of central and eastern Washington.

We firmly believe that the American Aerospace Materials Technology Center's Phase 1 application holds immense promise and aligns seamlessly with our shared goals. I urge your consideration and support of this application to enable the advancement of critical technologies and to empower the greater Spokane region to make strides in global technological deployment.

Thank you for your dedication to fostering innovation and economic growth.

Sincerely,



Andrew Sund, PhD
President
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August 7, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

North Idaho College is pleased to support the American Aerospace Materials Manufacturing Center's grant application to the Economic Development Administration's Regional Technology and Innovation Hubs Phase 1 application for hub designation and a strategy development grant.

This letter also serves as evidence of North Idaho College's commitment to the success of the American Aerospace Materials Manufacturing Center and its consortium.

Founded in 1933, North Idaho College (NIC) is a comprehensive two-year public institution of higher education located in Coeur d'Alene, Idaho. Coeur d'Alene lies within Kootenai County, which is home to 165,000 citizens. The larger city of Spokane, Washington, is just 34 miles west. The greater Spokane-Coeur d'Alene metropolitan area, with a population of 734,000+, is the economic and cultural center of the U.S. Inland Northwest. NIC serves over 9,000 credit and non-credit students each year and offers more than 80 academic degree and career and technical education certificate programs. NIC plays a vital role in the region's economic development by preparing competent, trained employees for area businesses, industries, and governmental agencies.

Currently, northern Idaho is home to more than three dozen aerospace companies. This diverse array of small and mid-size businesses employs more than 2,500 people who are involved in the production and service of aircraft. These aerospace businesses span aircraft operations, maintenance, parts manufacturing, and aircraft assembly. In the

past decade, NIC has been a committed partner in regional efforts to expand aerospace manufacturing education and training efforts and is poised to support the American Aerospace Materials Technology Center initiative.

NIC will remain engaged as a regional partner to enhance advanced manufacturing education and training offerings needed to support the region's workforce needs. NIC currently offers several educational pathways to support the Center's goals and include advanced manufacturing skills training, cybersecurity and information systems security education, and pre-engineering.

North Idaho College looks forward to collaborating as a consortium member to further advance aerospace and advanced manufacturing education and training and create a pipeline of skilled workers to promote growth of the region's aerospace enterprise.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application to enable the greater Spokane region to advance the development and global deployment of these critical technologies.

Sincerely,

Nick Swayne, Ph.D.
President
North Idaho College

August 4, 2023

University of Idaho

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The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of the University of Idaho, I write in support of the American Aerospace Materials Institute's ("the Institute's") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of the University of Idaho's commitment to the success of the Institute and its consortium.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Institute is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Hub's efforts will also strengthen our national security and domestic supply chains.

Having read the application and participated in collaborative planning discussions with the Institute's key partners, the University of Idaho stands ready to fully execute the roles and responsibilities assigned to us as a consortium member. Specifically, the University of Idaho College of Engineering is committed to the success of the Institute by bringing to bear our relevant expertise, capabilities, resources and engagement as outline below.

We will provide extensive education and training support to students and engineers in the Institute's region through our comprehensive offerings, and specifically in the areas of supply chain management, aerospace materials, advanced manufacturing methods, computational modeling, cybersecurity and entrepreneurship. Our students earn undergraduate and graduate degrees in related fields of Engineering Management, Industrial Technology, Mechanical Engineering, Computer Science, and Cybersecurity. We provide degrees in the Inland Northwest through our University of Idaho Coeur d'Alene campus, main campus in Moscow, Idaho, as well as online offerings for certificates and degrees. We offer certificates in Robotics, Data Science, and Aerospace (to be established in Spring 2024). Our sophisticated platform for remote learning serves practicing engineers throughout our region (and globally), enabling working professionals to complete their MS or Ph.D. degrees, obtain specialty certificates, or expand their expertise with new advanced knowledge and skills in areas important to the success of the Institute. For over 40 years, University of Idaho College of Engineering has been delivering long-distance education via the Engineering Outreach program, in service to industry's workforce development needs. We deliver courses to support the Institute's workforce training needs such as:

(a) Advanced materials and manufacturing: Advanced Computer-Aided Design, Solid Modeling, Simulation and Manufacturing Capstone, Advanced Mechanics of Materials, Mechanics in Design and Manufacturing, Principles of Lean Manufacturing, Aircraft Design (to be established Spring 2024), Aerospace Materials (to be established Spring 2024)
(b) Automation for aerospace: Robotics Engineering Systems, PLC Programming, Machine Vision, Machine Learning and AI
(c) Courses with relevance to national security topics: Cybersecurity Architectures and Management, Network Defense, Operating System Defense, Cybersecurity as a Profession, Digital Forensics, Software Vulnerability Analysis

The University of Idaho's Entrepreneurship program engages students across the university to move their innovative ideas from the classroom into the marketplace. These hands-on experiences provide opportunities for professional networking, developing partnerships and cultivating real world skills. Students speak with potential employers about their experience collaborating with multiple entrepreneurs on a project touching all aspects of business. The program touts a track record of success with teams consistently winning competitions across the state and region, launching new business such as NADIS, a cybersecurity safety company helping businesses verify users with access privileges.

As Idaho's flagship university, our applied research capabilities are vast. The University of Idaho will provide access to several key laboratories that support and strengthen the Institute. Our faculty researchers and their students bring expertise in:

(a) supply chain management,
(b) materials testing and materials characterization,
(c) pyroprocessing,
(d) computational modeling and simulation of aerospace materials and manufacturing processes,

(e) materials testing and characterization at room and elevated temperatures relevant to aerospace conditions,
(f) development of automated manufacturing methods, and
(g) development of security systems for manufacturing and aerospace.

Our advanced solid modeling research group create digital models and tools for manufacturing processes and analysis of the durability of composite materials. We possess extensive computational capabilities and expertise both in 3D modeling using industry-leading software such as SOLIDWORKS, SolidCAM and Mastercam. The University of Idaho owns and manages the supercomputer FALCON, currently hosted at the Idaho National Lab (INL) in the Collaborative Computing Center (C3). Falcon was ranked 97th on the list of the world's fastest supercomputers. It was upgraded in 2017 and can now perform one quadrillion calculations per second. Falcon represents an order of magnitude increase in computing power for researchers at Idaho public universities. We feature software for advanced engineering simulations, such as ABAQUS, and ANSYS, which are widely used in industries for design and analysis. We also focus on automated manufacturing by including robotics, machine vision, and machine learning in our educational and research activities. Our Center for Intelligent Industrial Robotics (CIIR) features two robotics labs with extensive capabilities in programming logic controllers (PLC) and collaborative robots (Cobots) used for advanced manufacturing. We also conduct materials testing lab focused durability tests under steady and fluctuating loads relevant to the aerospace industry. This testing lab is complemented by other facilities in our college related to materials characterization techniques. Our computer science faculty and students provide research support on communications security, cybercrime investigations, cyber defense incident response and other cybersecurity related topics to manufacturing and aerospace.

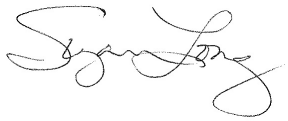
Finally, as Idaho's land grant university, our mission demands we engage in work that positively impacts the lives of the region's citizens by enhancing the area's scientific, economic, social, legal and cultural assets. In that way, the Institute's goals directly align with our university's mission. Industry outreach and economic development is core to the University of Idaho. The university's total economic impact is $1.1 billion, 1% of Idaho's GDP (*source: EMSI study). We not only drive economic development through research efforts, but also through targeted workforce development plans. The National Academy of Engineering ranked our college in the Top 7 in the Nation for "infusing real-world experiences into engineering education" through our undergraduate Senior Capstone Design Program, ensuring the graduates are work ready. 92% of our engineering and computer science students graduate with a job because we prioritize embedded work experiences and hands-on practical learning. The majority of students complete internships or cooperative education (co-op) experiences. A unique program in our region, co-op is an educational model in which students alternate semesters of academic study with terms of full-time (paid) employment in positions related to their academic and/or career goals. A participant can do 1-2 co-ops for two separate semesters plus summers, gaining up to a year of career experience before graduating. Additionally, the University of Idaho houses the Idaho NASA Space Grant Consortium, which provides significant funding for students engaged in internships and fellowships in the aerospace sector.

Our focus on meeting workforce needs extends to our nationally-recognized Engineering Diversity, Inclusion and Outreach Initiative. The American Society for Engineering Education named our college as Idaho's only Exemplary status bronze level institution for our diversity plan and programs. Through this initiative we have increased the number of students from populations underrepresented in engineering (women, people of color, first-generation students, etc.) and we partner with industry to develop our students' professional skills in areas of inclusive leadership, communication, teamwork, diversity acumen, and sustainability.

In summary, the University of Idaho's capabilities in educating students, conducting applied research, developing emerging technologies, propelling economic development and tech transfer, and engaging in workforce development strengthen the Institute and help position it for success. We commit fully to working with the other partners to bring to fruition the Institute's goals and desired impact for the region.

Thank you for your consideration of the American Aerospace Materials Institute's Phase 1 application. I urge your full support of the application in order to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,



SUZANNA LONG, PhD, PE, CPEM, F.ASEM, F.IISE
Dean of Engineering

UNIVERSITY of WASHINGTON

ADVANCED COMPOSITES CENTER

August 04, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of University of Washington Advanced Composites Center (ACC), I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of the UW ACC commitment to the success of the Center and its consortium.

The UW Advanced Composites Center (ACC) which I represent as the Director provides a robust ecosystem for research and innovation in the field of advanced composite manufacturing. The goal of the center is to advance the use of Artificial Intelligence and Digital Engineering in the manufacturing of large composite structures. Areas of research include Automated Fiber Placement (AFP) of thermoset and thermoplastic composites, Additive Manufacturing of continuous fiber composites, robotic inspection of composite materials, thermoforming, Vacuum Resin Transfer Molding, smart design and tooling, advanced qualification/certification methodologies for 3D printed composites. Sustainability is also at the core of the ACC with several projects focused on repurposing and recycling of composite materials. Finally, one of the core missions of the ACC is education. The center is at the forefront of educating the next generation workforce on the smart use of data and automation in composite manufacturing and qualification. I firmly believe that the ACC mission and the goals of the proposed Tech Hub are perfectly aligned.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

Marco Salviato, Ph.D., Associate professor
311D Guggenheim Hall, Box 352400, Seattle, WA 98195-2400
Tel 206.543.2170, Fax 206.543.0217, salviato@aa.washington.edu

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

The UW Advanced Composites Center (ACC) is committed to the success of the proposed consortium and will support it via a multifaceted strategy. The ACC will bring its world class expertise in Artificial Intelligence and Digital Engineering, also leveraging ongoing collaborations with the NSF-funded AI Institute at UW. The ACC will provide resources and guidance on the development of digital tools and computational simulations to enable high-rate manufacturing of thermoplastic composites. It will also lead the efforts on the development of Automated Fiber Placement and Additive Manufacturing technologies for aerospace applications leveraging the state-of-the-art robotic systems already available at the center. Finally, the ACC will provide its resources and expertise for the development of workshops and classes to train the next generation workforce on the use of these new technologies.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I firmly believe that the US must retake the leadership in composites manufacturing which it lost to Europe several years ago. Considering the unique aerospace ecosystem in Washington State and the greater Spokane region, and the outstanding and diverse team participating in this effort, I wish to provide my strongest support.
Should you need more information, please do not hesitate to contact me.

Sincerely,

Marco Salviato, PhD
Associate Professor
Director of the Advanced Composites Center
Director of the FAA Center of Excellence for Advanced Materials in Transport Aircraft Structure
University of Washington
Seattle, 98195 WA

August 9, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Washington State University (WSU), I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. WSU has read the application and are committed to executing its roles, responsibilities, or commitments related to the Center and its consortium led by Gonzaga University.

WSU is a top public research university dedicated to improving lives, solving large-scale societal problems, unlocking possibilities for students, and serving the public good. As Washington's land-grant university, WSU has 6 campuses, 11 academic colleges, extension offices in all 39 Washington counties, and 4 research and extension centers that serve the public and enrich the vitality of the region and the nation. WSU can offer the workforce of the future over 200 undergraduate fields of study and nearly 150 graduate and professional degree programs that extend access and practical, inclusive educational outcomes to a diverse set of students.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in the aerospace industry, including lightweight alloys, bio-composites, ceramic matrix composites, and thermoplastic composite materials that will form core components of the next generation of transport platforms in the aerospace industry. However, the U.S. lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the EDA Tech Hubs program will be a key component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing composite materials. Working together with a diverse group of workforce development, labor, and economic development partners, the Center will drive innovation and economic growth in advanced materials, rapidly transitioning research conducted by Center partners into reliable products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

WSU's expertise in fundamental physical mechanisms driving high-value manufacturing processes improves the resolution, accuracy, and versatility of these processes through design and integration of smart systems. WSU is also actively involved in the Washington State Joint Center for Aerospace Technology Innovation (JCATI), encouraging collaboration between universities and industry to conduct research, provide hands-on student opportunities in aerospace, and to identify future research and technology needs.

WSU has expertise in clean and composite materials from Applied Sciences Laboratory enabling the development of advanced composite materials, to a new research center focused on the accelerated discovery, design, and development of ceramic materials in extreme environments. Specifically, WSU researchers have developed an important invention to effectively recycle fiber composites and are utilizing multi-scale modeling to understand how materials from nano- to macro-scale will behave in applications such as aircraft and predict deformation and even failure mechanisms in composites.

The Composites Science and Engineering Center and the Composite Materials and Engineering Center at WSU not only enable cutting edge research and development on polymers and composites, but are also part of a suite of vibrant, and extensive education and training opportunities for the future workforce in the aerospace industry, as illustrated by the online Masters in Engineering and Technology Management program aligned with Boeing's strategic areas and approved by the Learning Together Program. WSU will also leverage its participation in the Joint Center for Deployment and Research in Earth Abundant Materials (JCDREAM), which serves to help develop the workforce required in advanced materials and manufacturing science and technology, to support next-generation transportation technologies.

WSU confirms support of the American Aerospace Materials Manufacturing Center and plans to participate in the following ways:

- Provide strategic direction for the American Aerospace Materials Manufacturing Center as a consortium member.
- Participate in strategy formation for the American Aerospace Materials Manufacturing Center and its consortium.
- Help identify workforce skill requirements, and skill gaps.
- Provide direction on advanced manufacturing and related degree and certificate programs.
- Help identify gaps and opportunities to improve the sustainability and resiliency of composite materials and their supply chains.
- Engage other relevant stakeholders and departments at WSU to participate in the project as necessary and relevant, for example to discuss degree or certification programs.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. WSU looks forward to being part of the American Aerospace Materials Technology Center to advance the deployment of advanced composite materials and development of the future diverse workforce in the U.S. aerospace industry and beyond.

Sincerely,

Dr. Christopher J. Keane
Vice President for Research, WSU System
Vice Chancellor for Research, WSU Pullman
Professor of Physics

CC: Glynda Becker-Fenter, Assistant Vice President for Federal Engagement and Advocacy
Kim Christen, Associate Vice Chancellor for Research Advancement and Partnerships
Jonathan Male, Assistant Vice Chancellor for Research, Director, Office for National Laboratory Partnerships
Chris Mulick, Interim Vice President for External Affairs and Government Relations
Alex Pietsch, Executive Director, Office of Corporate Engagement
Mary Rezac, Dean, Voiland College of Engineering and Architecture

Office of the Mayor
James Hammond

August 9, 2023

City of Coeur d'Alene IDAHO

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

RE: AMERICAN AEROSPACE MATERIAL MANUFACTURING CENTER APPLICATION

Dear Assistant Secretary Castillo:

It is my understanding that the American Aerospace Materials Manufacturing Center (AAMMC) has submitted their application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hub Program. The AAMMC represents a unique opportunity for our City to contribute to the advancement of aerospace technology and foster innovation in material handling.

The City of Coeur d'Alene, Idaho, is one of the fastest growing cities in the Inland Northwest, located on Lake Coeur d'Alene approximately 40 minutes from Spokane. This large influx of new citizens need economic opportunities which include high-quality jobs. The area needs continued innovation to help support our current and growing population. Aerospace is one of the top sectors which supports our city. In addition, the annual 1-90 Aerospace Conference is held in Coeur d'Alene each year.

Boeing, ATC Manufacturing, Unitech, and Continuous Composites are among the companies who employ citizens of Coeur d'Alene in the aerospace sector. The City is strategically positioned to support the goals of the AAMMC, has a rich history of embracing innovation, and firmly believe our local economy would be provided significant benefits with AAMMC's continued success.

The AAMMC represents a great opportunity to continue to strengthen and develop aerospace as a key part of our economy. It also supports our work with the Idaho Department of Commerce and other surrounding cities to build a vibrant economy. We believe the AAMMC will provide additional pathways to careers in aerospace, create high-quality jobs, and bring new opportunities to the area as technologies and capabilities emerge from the research and development efforts of the AAMMC.

The City of Coeur d'Alene will continue to support AAMMC by providing incentives to businesses looking to locate here and prioritizing the permitting process for qualifying endeavors. The AAMMC's continued growth will undoubtedly lead to valuable partnerships between local businesses, educational institutions, and research organizations, fostering an environment of collaboration that would propel advancements in aerospace material manufacturing.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's application. The Coeur d'Alene/Spokane region is eager for the opportunity to build upon this investment, strengthen the aerospace sector, and enable the development of the critical technologies the center will support.

If you have any questions or need anything else, please do not hesitate to contact me.

Sincerely,

Woody McEvers,
Mayor, Pro Tem

CITY OF POST FALLS

Office of the Mayor

August 8, 2023

To: EDA Administrator

From: Mayor Ronald Jacobson
City of Post Falls
408 N Spokane St.
Post Falls, ID 83854

To Whom it May Concern

On behalf of the City of Post Falls, I am writing in support of the American Aerospace Materials Manufacturing Center application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hub Program.

The City of Post Falls is one of the fastest growing cities in the Northwest. We are known for our recreational opportunities and business friendly regulations. Our City leaders believe in responsible management of our resources while providing high quality services. One of the main focuses of the City is to support a vibrant economy with diverse businesses and high-quality jobs for residents.

AAMMC will help support the city's continued economic growth in many ways. It can help establish a stable and continuous array of training opportunities through collaboration with employers, higher education institutions, training partners, and community-based cohorts. Cooperation with such a wide range of industries creates specialized locally accessible training that will align with industry needs and is responsive to shifts in the marketplace.

The City of Post Falls fully endorses AAMMC's approach and believes that the Center will help grow and fully support the Aerospace sector. Currently, the City works with CDA EDC and the Idaho Department of Commerce to support Aerospace attraction and expansion in our area. Annually, the I-90 Aerospace conference is held in Coeur d' Alene and supports this endeavor.

The City will continue to provide economic development support. We provide incentives to businesses looking to locate in our city and a "fast track" permitting process for companies who qualify for Idaho incentives. We will also promote AAMMC, include it in our economic development outreach, and coordinate with business recruitment and retention efforts.

This list of activities is provided as an example. As an ongoing project, we understand that additional ideas for participation may arise. The City of Post Falls is committed to expanding our commitment to this initiative in response to emerging needs. We will participate in all related meetings, advisory boards, and other activities as appropriate to advance the vision of AAMMC.

Thank you for your consideration of the American Aerospace Material Manufacturing Center's application. The investments made through this grant will help to ensure that more of Idaho and Washington's residents enter high-skill manufacturing jobs in response to industry demand from this vital sector. I urge your full support of the application in order to enable the Inland Northwest to advance the development and global deployment of this critical technology.

Sincerely,

Ronald Jacobson
Mayor
City of Post Falls

Mayor Nadine Woodward

August 14, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of The City of Spokane, I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of the City of Spokane's commitment to the success of the Center and its consortium.

Spokane is a regional employment and services hub across parts of Washington, Idaho, and Montana as the largest city between Seattle and Minneapolis. The City organization employs approximately 2,400 people and is a leading regional partner and convenor of talent in economic development, higher education, workforce development, logistics, and many other relevant considerations. The region is sought-after for its affordability, ease of livability, four-season recreational options, robust neighborhood and parks system, close relationship with Fairchild Air Force Base, and advanced healthcare resources and services.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, labor, and economic development

partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

The City of Spokane fully supports the American Aerospace Materials Technology Center's Regional Technology Hub. The City's Planning Department and Development Service Center will engage the Center to support and streamline land use and building permits and inspections. Our economic development personnel will identify infrastructure funding and incentives and our IT department will identify the options for utilizing our City's broadband and fiber conduit to connect with the key Tech Hub location(s).

The City is proud to be partnered with dozens of others representing the public and private sector. Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application to advance the development in the greater Spokane region and the global deployment of this critical technology.

Sincerely,

Nadine Woodward
Mayor of Spokane

COEUR D'ALENE TRIBE
CHIEF J. ALLAN CHAIRMAN
P.O. BOX 408
PLUMMER, IDAHO 83851
(208) 686-5803 • Fax (208) 686-8813
email: chairman@cdatribe-nsn.gov

August 14, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW, Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

I am writing on behalf of the Coeur d'Alene Tribe to express support for the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as tangible evidence of the Tribe's commitment to the success of the Center and its consortium.

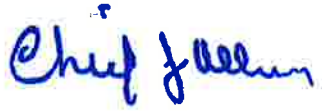
The Coeur d'Alene Tribe has been a leader in economic development, job training, as well as a big supporter of the Coeur d'Alene Regional Chamber. The greater Inland Northwest region currently holds a prominent position as a national leader in advanced materials for aviation, including cutting-edge thermoplastic composite materials that are integral to the next generation of commercial and defense aircraft. However, there is a notable disparity between the United States and the European Union in the development of these pivotal technologies. To cement U.S. leadership and global competitiveness in this critical sector, a synchronized effort and substantial investment are imperative. The Tech Hubs program, of which the Center seeks to be an integral part, is poised to play a central role in achieving this objective.

The Center is unequivocally prepared to lead these transformative efforts. The consortium boasts key players from leading institutions and industry partners who are at the forefront of developing and manufacturing thermoplastic composite materials. Through collaborative endeavors with a diverse array of workforce development, labor, and economic development partners, the consortium is poised to drive innovation and stimulate economic growth in advanced materials. This translates research conducted by our esteemed Institute partners into practical, commercially viable products for integration into aerospace manufacturing processes. Beyond these achievements, the Center's local efforts will contribute to bolstering our national security and fortifying domestic supply chains by manufacturing these crucial materials right here in the Inland Northwest.

I am also pleased to highlight the Center's commitment to extending its impact to rural areas and underserved communities surrounding the I-90 corridor, which connects Spokane and North Idaho. This deliberate expansion will foster regional economic equity while concurrently enhancing the skill set of our entry-level labor force, a segment that faces challenges in achieving sustainable livelihoods.

The Coeur d'Alene Tribe supports the proposal and is confident in the consortium's ability to effectively compete in the global aerospace market. We share a steadfast commitment to inclusivity, seeking innovative pathways to provide our rural and underserved communities with access to emerging job markets and essential training. We respectfully request your careful consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. This center has the potential to be a true game-changer for families and businesses in our community, generating exceptional employment opportunities that open the doors to limitless possibilities. Thank you for your time, consideration, and ongoing dedication to advancing our region's economic prosperity and technological innovation.

Sincerely,



Chief J. Allan, Chairman
Coeur d'Alene Tribe

August 8, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
U.S. Department of Commerce
1401 Constitution Avenue, NW Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo,

As the lead economic development agency for the State of Idaho, the primary mission of the Idaho Department of Commerce is to foster a business-friendly environment, to aid in job creation, support existing companies, and strengthen communities. Through its programs and relationships to entrepreneurs, businesses, communities across Idaho, and our public research universities, Idaho Commerce seeks partners that help accomplish our mission and grow Idaho's economy. Please accept this letter in support of the American Aerospace Materials Manufacturing Center application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant.

The Inland Northwest, connecting Eastern Washington and Northern Idaho, is a national leader in advanced materials used in aviation, however the United States (U.S.) currently lags significantly behind the European Union in the development of next generation technologies for commercial and defense aircrafts. An EDA Regional Technology and Innovation Hub grant would accelerate U.S. leadership and global competitiveness in these critical technologies. Idaho Commerce understands the criticality that this grant addresses and commits to be a partner in developing this regional and technology hub.

The American Aerospace Materials Manufacturing Center is supported by consortium members who are leading industry partners and institutions, who are currently developing and manufacturing thermoplastic composite materials, but not at the size and rate of global competitors. Working in partnerships with NASA and our regional universities, the consortium will drive innovation and economic growth in advanced materials, translating research into commercially ready products for use in aerospace manufacturing. By developing higher production rates of larger aerospace parts in the Inland Northwest, the American Aerospace Materials Manufacturing Center will strengthen American national security and repatriate domestic supply chains for American companies such as Boeing, Northrup Grumman, Lockheed Martin, and Raytheon.

Currently, Northern Idaho is home to more than three dozen aerospace companies with more landing in the region every year. This diverse array of small and mid-size businesses employs more than 2,500 people who are involved in the production and service of aircrafts. Idaho's aerospace businesses span across aircraft operations, maintenance, parts manufacturing, and aircraft assembly.

Idaho's manufacturers employ nearly 6% of the state's total workforce and contribute more than $9.7 billion of Idaho's GDP. Advanced manufacturing is differentiated by the use of highly technological, cutting-edge processes, and the employment of skilled, comparatively high-wage jobs. The advanced manufacturing sector in Idaho is growing rapidly and expanding to encompass more industries and occupations.

Idaho offers direct access to the I-90 and I-15 corridors, along with 25 direct flights from Boise, allowing easy access for companies like Boeing to work with their 37 Idaho business partners. Idaho's close proximity to Boeing production facilities and operations strategically positions our State to play an increased role in the company's extensive supply and value chains.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. The Idaho Department of Commerce urges your approval of this Tech Hub designation so they may apply quickly for Phase 2 and advance the development and global deployment of these critical technologies.

Please contact me if you have any questions or need additional information.

Sincerely,

Tom Kealey, Director
Idaho Department of Commerce
700 West State Street
Boise, ID 83702
208-334-2470

KALISPEL
TRIBAL ECONOMIC AUTHORITY

August 10, 2023

From: Brandon Haugen
Executive Director of Real Estate
Kalispel Tribal Economic Authority
Airway Heights, Washington 99001

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of the Kalispel Tribal Economic Authority (KTEA), an instrumentality of the Kalispel Tribe of Indians, a federally recognized Indian tribe, I am writing in support of the American Aerospace Materials Manufacturing Center (AAMMC) application to the Economic Development Administration's (EDA) Regional Technology an Innovation Hub Program.

The Kalispel Tribe is a recognized sovereign nation, located in Washington State. Our land and our ancestors mean everything to us. They have always sustained us, and today, in new ways, they will continue to sustain us into the future. Tribal enterprises provide living wage jobs to over 2,000 people and contribute millions back to the local economy. Our success in business has allowed us to expand our land base and create ample housing opportunities and meaningful employment for Tribal Members and community members alike.

We support the AAMMC center for several reasons. First, the site of the proposed hub is in a key business district for Spokane and is a location that we would like to see have a long-term use that supports the local economy. The center also taps into one of the top industries in our region, aerospace, and would provide economic benefits, new career opportunities, and new investment opportunities for the tribe. The proposed center is also close to our Northern Quest Resort and Casino and other businesses and would foreseeably attract more people and business to the immediate area.

Our tribe has a strong education system and a highly productive citizenship. The Center will offer additional resources we can tap into including high school technical education opportunities, apprenticeships, and post-secondary and advanced training. We are excited about the number of educational opportunities and institutions involved in this project and the opportunities it can bring to our area and tribe members.

The Kalispel Tribe of Indians are also proud owners of many regional businesses. As active members of the consortium and hub, we will also be looking forward to business connections and opportunities for new enterprises. The Center brings together many of the key players in our region and will produce technologies and research that we believe will create meaningful commercial opportunities that we can evaluate and participate in.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's application. We believe Spokane is the right location for this type of investment and we are fully committed to supporting its success in any way we can.

Sincerely,

Brandon Haugen
Executive Director of Real Estate
Kalispel Tribal Economic Authority

Spokane County
OFFICE OF COUNTY COMMISSIONERS
Chris Jordan, District 1 | Amber Waldref, District 2 | Josh Kerns, District 3 |
Mary L. Kuney, District 4 | Al French, District 5

August 9, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Spokane County, we write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of Spokane County's commitment to the success of the Center and its consortium.

Spokane County is in the State of Washington. As of the 2020 Census, its population was 539,339 making it the fourth-most populous county in the state. Spokane County is part of the Spokane – Spokane Valley metropolitan statistical area, which is also part of the greater Spokane – Coeur d'Alene combined statistical area that includes nearby Kootenai County, Idaho.

The greater Spokane region is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Center partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. We urge your full support of the application in order to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
OF SPOKANE COUNTY, WASHINGTON

Mary L. Kuney, Chair

Josh Kerns, Vice-Chair

Al French, Commissioner

Amber Waldref, Commissioner

Chris Jordan, Commissioner

Spokane Tribe of Indians

P.O. Box 100 • Wellpinit, WA 99040 • (509) 458-6500 • Fax (509) 458-6575

August 10, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of the Spokane Tribe of Indians, I am writing in support of the American Aerospace Materials Manufacturing Center (AAMMC) application to the Economic Development Administration's (EDA) Regional Technology an Innovation Hub Program.

The Spokane Tribe of Indians is one of 574 recognized tribal governments within the United States, headquartered in Wellpinit, Washington and represents approximately 2,900 current members living in Washington. Our vision is to achieve true sovereignty by attaining self-sufficiency. We work to preserve and enhance our traditional values by living and teaching the inherent principles of respect, honor, and integrity as embodied in our language and lifeways. We develop strong leadership through education, accountability, experience, and positive reinforcement.

The Spokane Tribe believes the Center will provide additional education and employment opportunities for tribe members in the Spokane region, as well as investment opportunities for the tribe. By offering an array of additional pathways into the aerospace industry including high school career technical education, pre-apprentice and apprenticeships, post-secondary training, and advanced training, the center offers more pathways for our members into an industry that is one of the largest employers in the region.

The Center will also create additional opportunities for The Spokane Tribe of Indians by attracting new businesses and developing new investment opportunities as technologies emerge. This is vital for the Spokane area, and one of our main interests is the opportunity to economically develop tribal interests and the region at large. Having a major technology center that ties into a leading sector in the Pacific Northwest will increase these opportunities for us and the community at large.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's application. We believe Spokane is the right location for this type of investment and we are fully committed to supporting its success in any way we can.

Sincerely,

Gregory Abrahamson
Spokane Tribe of Indians Chairman

STATE OF WASHINGTON
DEPARTMENT OF COMMERCE
1011 Plum Street SE • PO Box 42525 • Olympia, Washington 98504-2525 • 360-725-4000
www.commerce.wa.gov

August 11, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of the Washington State Department of Commerce (Commerce), I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of Commerce's commitment to serve as a consortia member.

As the state's economic development agency, Commerce focuses on strengthening our key industries, expanding international trade, helping small businesses grow, providing access to funding, and supporting the work of our local economic development partners in all 39 Washington state counties. Additionally, Commerce leads the Innovation Cluster Accelerator Program (ICAP), supporting development of industry-led consortia to accelerate innovation and economic development in their respective industries in alignment with the Regional Tech Hub Program.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, labor, education, government, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by the Center's partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our

national security and domestic supply chains as well as bolster existing labor and industry aerospace innovations in the Puget Sound region.

Commerce is committed to providing support to the Center through strategic guidance and technical assistance available through our Innovation Cluster Accelerator program as well as expertise offered by our Industry Sector Leads representing the Aerospace and Advanced Manufacturing and Workforce Sectors and our Special Assistant for Federal Policy.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application in order to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

Michael Fong
Director
Washington State Department of Commerce

August 10, 2023
To: EDA Administrator
From: Jacob Bonwell
Chief Executive Officer
Advanced Thermoplastic Composites
1224 N Lean St.
Post Falls, Idaho, 83854

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

Advanced Thermoplastic Composites Manufacturing ("ATC") is an active member of the American Aerospace Materials Manufacturing Center ("AAMMC") consortium that seeks an immediate Hub designation and planning grant. ATC has also partnered with Gonzaga University seeking support for U.S. economic leadership and national security in aerospace end-markets.
We have also partnered to raise awareness in Congress that the country does not have the large-scale thermoplastic manufacturing capability necessary to compete globally. In recent legislation, the U.S. Senate has recognized the national security imperative of driving domestic advancements in thermoplastic composites for use in aerospace and took two key steps that align with the goals of the proposed Tech Hub:

(1) The Senate-approved National Defense Authorization Act (NDAA) requires the Department of Defense to detail to Congress "current plans and initiatives to support thermoplastic composites research, development, and manufacturing," while noting NASA's support and underscoring that increased use of thermoplastic composites may "reduce costs, help meet efficiency objectives, and decrease dependence on some foreign sources of certain critical minerals such as titanium."

(2) The Senate Appropriations Committee-approved Defense Appropriations Bill provides $7.5 million for the Air Force's RDT&E-Manufacturing Technology Program to expand thermoplastic composites and alternatives to critical minerals, which would support ATC and the installation of a large press.

ATC is committed to advancing composites manufacturing and retaining American manufacturing jobs by providing low-cost solutions for lean thermoplastic composite part production at our purpose-built facility in Post Falls, Idaho. We currently support a workforce of 85 employees in the Post Falls area and have been pioneering materials and high-rate manufacturing techniques since 2004. ATC is one of the few remaining independent thermoplastic composite suppliers, and maintains ISO 9001:2015, AS9100D and NADCAP certifications. We focus on providing high performance aerospace composite parts while bending the cost curve through rapid forming, high volumes, and lean manufacturing principles. We have supplied more than 800,000 parts per year and as one of the few American owned suppliers for thermoplastic composites and we are uniquely positioned to speak to the importance of further developing domestic capabilities in this sector.

Images of ATC's Lean Thermoplastic Composites Manufacturing Facility

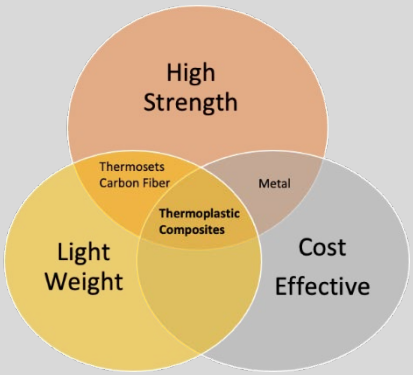
As NASA has highlighted with their HiCAM program, we must speed up the development of affordable, high-rate composite manufacturing technologies to both meet the production needs of Boeing and other U.S. aircraft manufacturers to have any hope of achieving the goals for the US Aviation Climate Action Plan and Net Zero 2050 Goal. Composites in general are key to this effort, because they reduce weight and fuel consumption. However, the challenge with traditional thermoset composites is that they are slow to manufacture, which makes them expensive to produce. In contrast, thermoplastic composites can be manufactured in 20-30% of the time it takes to make the same parts out of other composites which makes a significant difference in both costs and production rates.

Importantly, thermoplastic composites (TPC's) are also recyclable; another unique property compared to thermoset composites. Most thermoset composites, when formed into a shape the epoxy then goes through an irreversible curing reaction. whereas TPC's can be reshaped repeatedly and retain their integrity, reducing waste. In addition, they require far less energy inputs because they do not require cold storage or demand special HVAC systems during manufacturing. TPC parts can be assembled using welding processes giving considerable reduction in cost and weight compared to conventional techniques, although production use of TPC welded assemblies is at an early stage of implementation. They are also more compatible with automated manufacturing

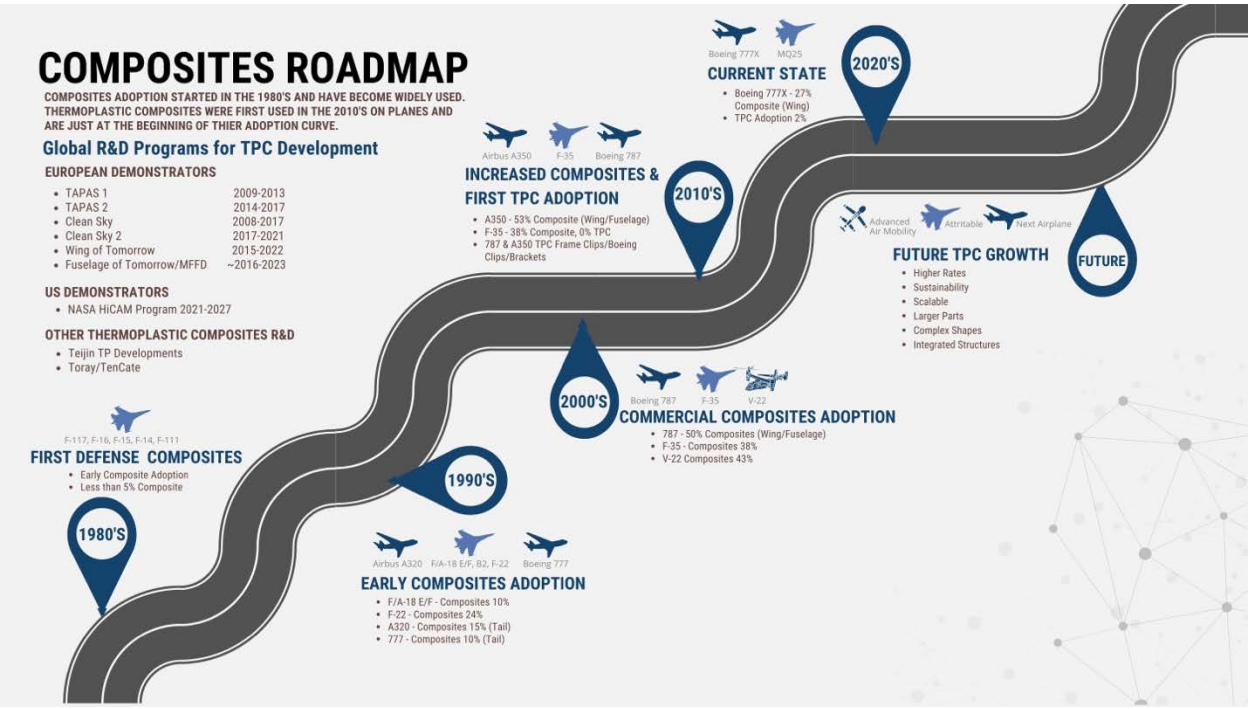
equipment and require less tooling and machinery, further reducing their overall environmental impact. In short, a sustainable aviation future is built in large part by thermoplastic composites, and we are at the beginning of a major adoption curve.

Thermoplastic Composites Are:

- ✓Tougher: High damage tolerance, plus corrosion, flame and fatigue resistance
- ✓Lighter: Higher strength-to-weight which means much improved fuel economy/higher payloads
- ✓Cost Effective: Can be manufactured much faster than thermosets which reduces part costs and enables high rates
- ✓Sustainable: Materials and parts may be recycled. Can also use materials containing recycled carbon fiber



As a key Boeing supplier, we work closely with one of the largest airplane OEM's in the world and have developed the technology map shown below with their team to articulate where we are and where we need to be to meet the growing need for parts made from thermoplastic composites. There is increasing interest in the use of TPCs in defense applications due to the reasons already described, and because production rates of TPC components can be ramped quickly when needed. In short, thermoplastic composites are beginning to see commercial use in larger structures and are becoming common on commercial airliners and military aircraft around the world. However, it has taken 40 years to get here, and Europe's Clean Sky 2 project and other European developments for sustainable airframes are ahead of us, and we need to develop domestic capabilities for larger parts and primary aircraft structures.



The idea of using thermoplastic composites for aircraft and other high-performance applications has been around for a long time. When thermoplastic composites were first introduced, most manufacturers found them difficult to work with because they required high processing temperatures and the existing manufacturing techniques were designed around metals or thermosets. Today, domestic production capabilities are limited by machinery size and mass production techniques; both things we think the Center will be crucial in accelerating the overall adoption of thermoplastic composites for us and other industry partners on the application.

The AAMM Center is vital because it addresses three challenges we face today:

1. The pandemic caused supply chain compression and vertical integration within the industry where many TPC material suppliers and parts manufacturers were bought and consolidated by foreign entities. We believe it is critical to not just retain domestic capabilities for TPC manufacturing, but quickly catch up and surpass E.U. and Asian advancements as we face uncertain political futures.
2. Demand for aircraft parts has come roaring back and we are facing one of the largest demand pipelines we have ever seen. We also believe that this will only exponentially increase as pressure from the Clean Air Act and Net Zero 50 increases on industry. For ATC and all our industry consortium partners to meet that demand, we need to accelerate overall testing, rollout, and adoption of automated and high-rate manufacturing processes to expand thermoplastic component envelopes. This requires both capital investment and

further R&D development of processes and component envelopes through all TRL/MRL (Technology Readiness Level/Manufacturing Readiness Level) stages before they can be used in our production facility.

3. Skilled labor is an increasing challenge for all manufacturers and will continue to become more prevalent as demand for TPC's increases. ATC Manufacturing's mitigation plan to currently combat these challenges includes an in-house internship program, and temporary hires from a local staffing agency which are trained in-house prior to being offered full-time roles as they gain the appropriate skills needed. The AAMM Center would provide a better, more inclusive pipeline of skilled talent that would allow us to bypass the training periods and develop a more robust work force from the plant floor through the R&D and quality divisions. The region already has many great educational partners through whom we currently source talent via our internship program and research partnerships, but a coordinated training ground for all skill levels of employees would hasten our ability to lead the global marketplace and secure our supply chains.

The US aerospace industry will have to address these challenges with or without a technology hub, but the hub designation would position the country to have domestic suppliers for a more sustainable future much more quickly and efficiently. ATC Manufacturing views the hub as one way to ensure we remain competitive as a thermoplastic composite parts supplier for the aerospace sector and eventually other industries as TPC adoption expands. We maintain the highest OEM quality standards, including AS9100, NADCAP, and ISO9001, which means we are qualified to manufacture parts for almost any industry.

The future of the aerospace industry as it pursues zero-emissions, hinges on the expanded use of thermoplastic composites. US leadership and self-sufficiency is a national security imperative and ATC Manufacturing is proud to be a part of this consortium which is ready to hit the ground running with a Tech Hub designation and build the next generation of aircraft.

Sincerely -

Jacob Bonwell
Chief Executive Officer
ATC Manufacturing

MEGAN MITCHELL

VP, Government Relations
21218 76th Ave S
Kent, WA 98032

August 11, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo,

I am writing on behalf of Blue Origin in support of the American Aerospace Materials Manufacturing Center ("AAMMC") application for the 2023 Regional Technology an Innovation Hub Program.

Blue Origin was founded with a vision of millions of people living and working in space for the benefit of Earth. Blue Origin envisions a time when people can tap into the limitless resources of space and enable the movement of damaging industries into space to preserve Earth, humanity's blue origin. Today, Blue Origin is working to create that future by developing reusable launch vehicles and in-space systems that are safe, low cost, and serve the needs of all civil, commercial, and national security customers.

Blue Origin's efforts include flying astronauts to space on New Shepard, producing reusable liquid rocket engines, developing our New Glenn orbital launch vehicle, returning to the surface of the Moon, and developing next generation space capabilities. These endeavors will add new chapters to the history of spaceflight and move all of humanity closer to our founding vision.

As the aerospace sector continues to diversify, the availability and maturity of materials technology can drive new opportunities. The AAMMC is well positioned to generate a pipeline of advanced materials to support new capabilities and manufacturing methods that are tested, proven, and brought to market. Companies like Blue Origin can evaluate how they fit into the future of the space industry.

Blue Origin is supportive of this center, its research efforts, and its role in providing workforce and economic development for the region. A collaborative approach that marries inputs from a variety of potential end-users and suppliers, along with universities and other programs is a strength of the AAMMC effort. This can generate innovations not previously expected and create a strong knowledge center from which the region and its wide base of aerospace industry members can build. As part of the consortium, we look forward to contributing our knowledge and expertise where cross-collaboration can improve outcomes.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application.

Sincerely,

/s/ Megan Mitchell

MEGAN MITCHELL

VP, Government Relations
Blue Origin, LLC

The Boeing Company
P.O. Box 3707
Seattle, WA 98124-2207

August 15, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development Administration (EDA)
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

The Boeing Company has been asked to join the proposed American Aerospace Materials Technology Center ("the Center") as a founding, consortium member. This Center, focused on advanced thermoplastic composites, would be located in the Pacific Northwest, Spokane Washington, on a currently vacated manufacturing site. Boeing has read the proposals to the EDA for this Center (a proposal for the Tech Hub Designation and the other for the Strategy Development Grant), and expresses its strong endorsement of the Center as outlined and its placement in Spokane Washington. We are joined in this initiative by the following leading US aerospace manufacturers:

US Commercial, Defense and Space Aerospace Companies

Boeing	Lockheed Martin (LM Aero)
Raytheon (Collins)	Blue Origin
Space Northwest	Other Defense OEMs

The global competitive position of the United States in advanced, carbon fiber materials, specifically thermoplastic composites, is at a critical stage of development. The infrastructure required to demonstrate scale is significantly limited in the US when compared to global competitors. The Center will overcome this competitive gap.

Boeing's chief competitor in commercial aerospace, Airbus, receives significant funding in support of carbon composite research, and this has positioned European suppliers to acquire the equipment and skillset for developmental work that strengthens their prospects for future production work. Boeing is participating in NASA's Hi-Rate Composite Aircraft Manufacturing ("HiCAM") project on thermoplastic composites, and emphasizes HiCAM's focus on maturing lower technical capabilities (TRL < 5) than envisioned for the Center. The Center is the next logical step to mature the technology and transition for market application.

Boeing has outlined for the Center its technology roadmap and related equipment to reach certified application. It has also described a region-wide strategy to leverage this core technology, matured by the Center, to build the capability and capacity of part manufacturers, existing and new, for future airplane programs. For the first 10-15 years of the Center, Boeing anticipates a lab-to-market path of maturing TP technologies to TRL 9, leveraging the Center as national test-bed to harden technology during the initial low production rates of new airplane programs, and transitioning high rate production to regional and national suppliers.

Fundamental to this are the partnerships outlined in the proposals. The Center will create an environment of collaboration for Boeing and leading universities such as University of Washington and Gonzaga University to advance research and train engineering talent. Consortium members such as the Greater Spokane Inc. for economic development and Eastern Washington University, a soon to be designated Hispanic Serving Institution, will help align strategies to build a highly-skilled, diverse workforce. Also, critical to advancing the global capability of the US, the Center offers a platform for establishing a network of entrepreneurship and capital funding of regional and national suppliers.

The potential impact of the proposed Center could dramatically improve U.S. self-reliance and global competitiveness through:

- Improved feasibility of future commercial airplane programs with step-improvements in producibility, rates of production and reduced carbon emissions,
- Advances in strategic sectors of and by US industry, specifically critical materials (thermoplastic composites) and machinery including machine learning and systems automation,
- Increased employment in high paying aerospace jobs across the spectrum of skills,
- Enhanced US national security

Without the proposed Center, the global competitive position of the US for high rate aerospace applications is at profound risk. With the Tech Hub designation and award of the grant, Boeing anticipates and commits to active support and guidance of the Center, utilization of its resources for program certification and continued development of a vibrant and robust US supply chain.

Sincerely,

Tia Benson Tolle, Ph.D.
Director, Technology & Sustainability

Eric Sager
Chief Engineer, Structures

BCA Product Development
tia.h.bensontolle@boeing.com

BCA Product Development
eric.a.sager@boeing.com

_____
Tony Guiliano
Supply Chain Strategy
BCA Product Development
tony.p.guiliano@boeing.com

** This Boeing Letter of Interest is non-binding and does not constitute a contract, or agreement, nor does it obligate Boeing to perform any actions mentioned herein.*

Continuous Composites

Phone (888) 508-1085
Email info@cf3d.com
Address 215 E. Lakeside Avenue
Coeur d'Alene, ID 83814

August 9, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo,

Thank you for the opportunity to share our support and enthusiasm for creating an Aerospace Technology Hub in the Pacific Northwest region. Our company, Continuous Composites Inc. (CCI) was founded in 2015 in Coeur d'Alene, Idaho. We have grown to 44 full-time employees, most of whom all live and work in the proposed Tech Hub region (27 in ID, 15 in WA, and 2 US remote). CCI's core technology (CF3D®) is an automated, robotic, continuous fiber composite additive manufacturing machine that utilizes in-house developed thermoset resins. The technology allows defense and civil customers to create advanced lightweight structures for applications ranging from hypersonic vehicles to energy turbines, all while minimizing material waste compared to traditional processes. This technology is complimentary to the other supporting composite/aerospace members of this Tech Hub proposal, and we look forward to collaborating closer with them as a result of this Hub.

The proposed Aerospace Technology Hub represents a significant opportunity for our rural region to further develop an exciting new sector for advanced aerospace composite manufacturing (currently healthcare and hospitality are leading sectors). The continued growth of member companies and the new startups and inclusive opportunities certain to be born from the Hub will be enabled by this exciting blend of academia, industry, and government.

CCI is proud to be among the Northwest regional composite/aerospace companies in support of the Aerospace Technology Hub. We look ahead with great optimism to the workforce development, technology collaboration, STEM educational opportunities, and adjacent socio-economic benefits it will bring to our rural region. Thank you, Assistant Secretary Castillo, for your consideration.

Kind regards,

Tyler Alvarado
CEO

10 August 2023

From: Erin Stansbury
Vice President
Electroimpact, Inc.
4413 Chennault Beach Rd
Mukilteo, WA 98275
(425) 348-8090

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

I am writing on behalf of Electroimpact in support of the American Aerospace Materials Manufacturing Center (AAMMC) application for the 2023 Regional Technology an Innovation Hub Program.

Electroimpact is a highly experienced aerospace automation company and a world leader in design and manufacturing of aerospace tooling and automation. Our company is the world leader in automated composite manufacturing processes. Additionally, our wide range of products include complete turn-key automated assembly lines, riveting machines and tools for wing and fuselage assembly, advanced fiber placement machines, robotic assembly systems, and spacecraft handling equipment. Our company was designed by the founder as a haven for engineers, with vertical responsibility for all work from concept to customer acceptance with minimal bureaucracy and barriers to success.

As a key developer of automated processes, tooling, and machinery for aerospace composites, the AAMMC would accelerate the development of innovative approaches and help us work with others in the aerospace supply chain to scale-up composites manufacturing faster. We could share the financial burden of developing these advanced approaches while contributing our vast knowledge of plant floor operations and proven automation techniques. We believe the AAMMC will bring great opportunities for this industry via cross-collaboration, especially because so much of the U.S. composites supply chain is based in this area.

In addition, the creation of the AAMMC will attract and retain more composites manufacturers to this area, which would only increase our customer base. There has not been an equivalent in the US to the successful European collaboration that has been leader in many of the advancements in composites manufacturing so far; this center would logically expect similar benefits when created.

Electroimpact is prepared to support the center by contributing our vast knowledge of composites, tooling, machinery, and automation as well as R&D projects with resources or direct funding. We think the relationships built will be invaluable to us, as will the advancements made. We already work closely with several other consortium members, but the advantage of a shared knowledge environment will be very beneficial.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's application. Electroimpact is looking forward to the many positives the AAMMC will bring to the US aerospace supply chain as we move into a composites-centric future.

Sincerely,

Erin Stansbury

Erin Stansbury
Vice President
Electroimpact, Inc.

Lockheed Martin Aeronautics Company
P.O. Box 748
Fort Worth, TX 76101-0748

LOCKHEED MARTIN

8 August 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Subject: Letter of Support for the American Aerospace Materials Technology Center's application for an Innovation Hub Phase 1

Dear Assistant Secretary Castillo:

On behalf of Lockheed Martin, I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of Lockheed Martin's commitment to the success of the Center and its consortium.

As an industry leader in the development of composite aircraft structures, Lockheed Martin has directed extensive research towards advances in high performance materials and processes that offer improvements in performance and cost. We have a high level of interest in the development of thermoplastic materials and processes that could apply to our next generation aircraft.

Lockheed Martin works with a number of innovative composite manufacturers in Washington and Idaho and recognizes the region as a national leader in advanced materials used in aviation, including thermoplastic composite materials that we expect to form core components on next generation defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these materials and technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated efforts and investments, of which the Tech Hubs program is an excellent example.

Lockheed Martin sees the other interested consortium members as leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials within the U.S. Working together with such a diverse consortium group, we anticipate the Center to drive innovation and economic growth in advanced materials, and translate research conducted by the Institute's partners into commercially ready products for use in aerospace manufacturing. The Center's efforts should also strengthen our national security and domestic supply chains.

Lockheed Martin's ongoing investments in, and development of, thermoplastic composites includes our participation in the NASA sponsored Hi-Rate Composite Aircraft Manufacturing program (HiCAM). We view the Center's potential to scale-up the production capability of thermoplastic composite materials as highly complementary to the HiCAM program goals. As a contributor to the Center's efforts Lockheed Martin expects to engage with other partners in the maturation of thermoplastic materials and processes, committing our engineering expertise to identifying and pursuing applications for thermoplastic composites on our next generation aircraft programs. We offer unsurpassed experience in the application of new materials on high performance military aircraft programs and will apply that experience to providing structural designs, qualification of materials and processes, manufacturing development, and production

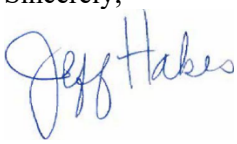
Lockheed Martin Aeronautics Company
P.O. Box 748
Fort Worth, TX 76101-0748

LOCKHEED MARTIN

sustainment for that purpose. Furthermore, Lockheed Martin has read the Center's application and, upon our commitment to consortium will be committed to executing its roles, responsibilities related to our participation in the hub.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of their application in order to advance the development and global deployment of this critical technology.

Sincerely,



Jeff Hakes
Director, Revolutionary, Air Vehicle, Emerging Concepts, and Technologies
Lockheed Martin Aeronautics

August 01, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of the Northwest I-90 Manufacturing Alliance (NIMA), I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of NIMA's commitment to the success of the Center and its consortium.

NIMA is a non-profit industry group, based out of Spokane, Washington. Over the last 10 years (formerly known as the Inland Northwest Aerospace Consortium), we have worked to develop the aerospace and advanced manufacturing supply chain located in Eastern Washington, Idaho, and Western Montana. Our annual conference has developed into one of the marquee events in the Northwest for these sectors, and we additionally provide ongoing education and collaboration around manufacturing best practices and workforce. We also collaborate with many of the regional EDOs in helping with recruiting manufacturing companies to our region to support economic growth.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

We would also note that the center will provide workforce development opportunities to rural areas and communities that surround the I-90 corridor that connects Spokane and north Idaho. This will drive regional economic equity in these underserved areas, as well as up-skilling our entry-level labor force population that currently struggles to make a viable living.

NIMA leadership and our members are committed to supporting this innovation hub- we will leverage our deep network of manufacturing members and partner organizations to contribute time, staffing and other resources to ensure the success of this critical infrastructure for our region. We have board support to remain a key stakeholder/partner with the rest of the tech hub team and will actively campaign to recruit resources from our member network that can assure long-term viability of this effort.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application in order to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

Mark Norton

Chair, NIMA
Nimalliance.org

Collins Aerospace
An RTX Business

10 Aug 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Rohr Inc., part of Collins Aerospace, a business unit of Raytheon Technologies ("Collins"), acting through its Aerostructures business unit, I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant.

Collins Aerospace has a significant legacy in providing composite structures for US transport and military aircraft. Collins is now five years into a journey to adopt thermoplastic composite materials and processes into their aircraft structures. This next-generation material is more durable than current aircraft composites and requires much shorter manufacturing time – enabling the high-rate manufacturing required for future aircraft. The advancements that need to occur across the industry and in the certification approach (FAA) to leverage the full benefits of this material, are significant. While we are allocating substantial resources into this development, there is much that can be done at a national level to accelerate U.S. competitiveness.

The U.S. as a whole currently lags the European Union in the development of the thermoplastic composite technology. Advancing U.S. leadership and global competitiveness in these critical technologies will require significant effort and investment, of which the Tech Hubs program will be a core component. NASA Hi-Rate Composite Aircraft Manufacturing (HiCAM) Project was a great start, but through that program we have seen first-hand the gaps that exist in our ability to increase manufacturing readiness by not having access to adequate facilities or equipment that support the novel manufacturing approaches being developed for thermoplastic composites.

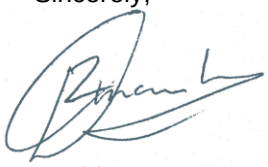
In speaking with our potential partners, the Center is prepared to lead these efforts. The consortium members represent leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, which will increase competition and translate research conducted by Institute partners into the foundation for commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, and with participation from across the US, the Center's efforts will also strengthen our national security and domestic supply chains.

As a potential member of the Center, Collins would actively participate with the other industry partners on foundational manufacturing research and related tasks to help develop industry standards, reduce safety concerns and enact regulation standards in the field of thermoplastic composites. Based on its expertise with the processes, Collins can help guide the Center and

help lay the foundation to scaling and industrializing thermoplastic composites for high rate, large structures that will enable lighter and more efficient future aircraft.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I request and encourage your support of the application to advance the development and commercialization of this critical technology.

Sincerely,



David Manten
Director, Thermoplastic Composites
Collins Aerospace

To Whom It May Concern,

I am writing to express my support for the American Aerospace Materials Manufacturing Center's request for a grant. I believe that this center would be a valuable asset to our community and to Stancraft Companies.

The American Aerospace Materials Manufacturing Center would provide a much-needed resource for aerospace and other manufacturing focused industries. The center would offer training and education in advanced manufacturing techniques, as well as research and development in new materials and processes. This would help to ensure that our community continues to develop and become a more significant player in the industry.

In addition, the center would create jobs and stimulate economic growth. The center would attract new businesses and investment to our community, and it would provide training and employment opportunities for our residents.

I urge you to support the American Aerospace Materials Manufacturing Center's request for a grant. This center would be a valuable asset to our community and to Stancraft Companies.

Sincerely,

Robb Bloem

President, Stancraft Companies

UNITECH COMPOSITES
The Standard In Execution

August 9, 2023

From: Simon Shackelton
Vice President of Business Development
Unitech Composites
10413 N. Aero Drive
Hayden, ID 83835-0370

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

I am writing on behalf of Unitech Composites, a wholly owned subsidiary of APEX Space & Defense Systems, in support of the American Aerospace Materials Manufacturing Center (AAMMC) application for the 2023 Regional Technology an Innovation Hub Program.

Unitech Composites aims to be a preeminent supplier of composite components for the defense and aerospace markets. We are based in Hayden, Idaho and focused on composite design, manufacturing and tooling for the defense, naval and aerospace markets. Our integrated solutions encompass all facets from concept, product design, tooling design and prototype development through low and high-rate production.

As a premier supplier of advanced aerospace composite products using state of the art materials, the AAMMC would be of key importance to our ability to develop and bring to market new materials and products. Having the ability to advance new manufacturing techniques, test and validate new materials, and develop high-rate manufacturing for composites at the scale the center is proposing would significantly increase our ability to compete and improve our market offerings.

The adoption rate of composites on both commercial and defense aircraft over the last three decades has only accelerated. Composites are becoming the go-to material for everything from the smallest clips to the largest primary structures of airplanes. We expect every part of the aircraft to be made from composites in the not-so-distant future. In addition, new markets such as unmanned aerial vehicles and drones are further driving the demand for composites. Added to the aerospace industries commitments to reduce emissions and be Net Zero by 2050, the demand for composites will only increase.

UNITECH COMPOSITES
The Standard In Execution

But with increased demand comes increased competition. Europe is far ahead of the U.S. in developing dedicated R&D centers for advanced aerospace materials, especially with their Clean Sky programs. We strongly feel that if the U.S is to compete in composites, we need more investment in the development of composite manufacturing technologies, like the proposed AAMMC effort.

We also see the center as a terrific way to share what are currently siloed efforts of individual composites suppliers around techniques, processes, and development efforts. Through this cross-collaboration we can accelerate our learnings and quickly bring improvement across the industry. Unitech is prepared to fully support the center and the aerospace hub. We will gladly contribute to research and development projects and provide engineering, manufacturing and quality expertise to the effort.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's application. Unitech considers this effort to be of high importance for our industry's future and for the development of domestic capabilities in the composite arena.

Sincerely,

DocuSigned by:
Simon J Shackelton

Simon Shackelton
Vice President of Business Development
Unitech Composites Inc. | Apex Space and Defense

CdA EDC
COEUR D'ALENE AREA
ECONOMIC DEVELOPMENT CORPORATION
3731 N. Ramsey Rd., Suite 110B ~ Coeur d'Alene, ID 83815 ~

August 10, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development Dept. of Commerce
1401 Constitution Avenue NW, Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of the Coeur d'Alene Area Economic Development Corporation (CdAEDC), I am writing in support of the American Aerospace Materials Manufacturing Center (AAMMC) application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hub Program.

CdAEDC/Jobs Plus, Inc. is the economic development organization for Kootenai County, representing all the cities within Kootenai County, as well as providing economic development assistance to rural communities throughout North Idaho. Our vision is a thriving economy and strong employment base in the region; and our mission is to collaboratively advance job growth and prosperity by fostering industry diversification, advancing the workforce, and engaging in finding solutions for current community challenges.

For many years, we have remained dedicated to advancing region-wide job growth and economic prosperity. The large influx of newcomers and current residents need economic opportunities, jobs, and innovation to support the current and growing population. Aerospace is one of the top sectors that supports our region. Boeing, ATC Manufacturing, Unitech, and Continuous Composites and more all employ residents of Kootenai County and beyond in the aerospace sector. In addition, the I-90 Aerospace Conference & Expo, co-sponsored by eastern WA and North Idaho partners, is held annually at the Coeur d'Alene Resort, bringing regional manufacturers and resource providers together annually.

The Center (AAMMC) represents a terrific opportunity to continue to strengthen and develop aerospace as a key part of our economy and support our work with the Idaho Department of Commerce, surrounding cities and counties, cross-border partners in eastern WA, and other local and regional partners to build a strong regional economy. AAMMC will provide additional pathways to careers in aerospace and manufacturing, creating jobs as existing employers grow and new businesses settle in the region; as well as bring new opportunities to the area as technologies and capabilities emerge from the research and development efforts of the Center.

CdAEDC/Jobs Plus will include the Center in our economic development outreach efforts, as well as promote the Center in any way we can. We are committed to this effort and plan to participate in all appropriate activities related to its development.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's application. The Coeur d'Alene/Spokane region is eager for the opportunity to build upon this investment, strengthen the aerospace sector, and enable the development of the critical technologies the center will support.

On behalf of the board of directors and staff of CdAEDC/Jobs Plus, I respectfully submit this letter of support. Please do not hesitate to contact me if you need additional information.

Sincerely,

Gynii A Gilliam, President & CEO
Coeur d' Alene Area Economic Development Corporation/Jobs Plus
Email: gynii@cdaedc.org; Website: www.cdaedc.org
Office: (208) 667-4753; Cell: (208) 756-7889

August 1, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW, Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Greater Spokane Inc. (GSI), I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of GSI's commitment to the success of the Center and its consortium and our role as the economic development organization in the consortia.

GSI creates the place where organizations come together to advocate for the region, drive strategic economic growth, and champion a talented workforce. This work requires collaboration with numerous partners. We work with community leaders, businesses, the education community, legislators and elected officials, economic development organizations, non-profits, and others to implement economic development strategies and move forward initiatives that transform our economy. The American Aerospace Materials Technology Center is one of those transformative initiatives.

In 2022, the Spokane region launched THRIVE Spokane, an EDA-approved Comprehensive Economic Development Strategy (CEDS) that represents a collective vision for equitable and sustainable economic prosperity across Spokane County. The purpose of THRIVE Spokane was to align economic development efforts and guide practitioners and partners in the implementation of programs that support business and economic growth over a five-year period. There are several goals identified in THRIVE Spokane that support the Tech Hub program:

(1.1.1) Engage business associations to inform the workforce system of emerging hiring trends, to address skill and opportunity shortages, and **prepare workers for high-growth, high-demand jobs of the future.**
As we seek to attract and recruit employers within our target sectors, we want to ensure that we are bringing in high-growth, high-demand jobs. Manufacturing jobs in the United States have increased by over 300,000 in the past five years. Advanced manufacturing jobs typically require a highly skilled workforce. Attracting these jobs can stimulate investments in education and workforce development programs, enhancing the skill level and adaptability of the local workforce.

(1.2.1) Identify opportunities to nearshore or localize suppliers to **shorten supply chains and reduce risk.**
Advanced manufacturing jobs located closer to consumer markets can help reduce transportation costs and lead times. By producing goods in close proximity to the end market, supply chains can be shortened, and products can be delivered faster. This localization reduces the dependence on complex global supply chains, making the production process more resilient to disruptions caused be geopolitical conflicts and natural disasters.

(2.3.3) Set a goal of **attracting a major anchor institution** to support target sectors.
The Spokane region has identified Advanced Manufacturing and Aerospace as target sectors due to their growth potential and alignment with the region's economic development strategy. Attracting a major anchor institution

in these sectors will help support the growth and development of the industries. This can attract additional investment and contribute to the overall economic vitality of the region.

GSI will utilize the Spokane Inclusive Business Catalyst (SIBC) program in furtherance of equity goals around the Tech Hub proposal. The SIBC is a business accelerator targeted at underrepresented communities, the idea of which was generated through Thrive Spokane. It utilizes partnerships with trusted broker who already are working in underrepresented communities to identify businesses, develop curriculum and execute a program that help these businesses accelerate their growth. The program includes a business grant that is specifically targeted at eliminating impediments to growth and connecting businesses to new growth opportunities, such as .

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

GSI is fully committed to supporting the Center in every possible way. We will actively leverage our existing network of businesses, educational institutions, and government agencies to facilitate partnerships between the Center and key industry stakeholders. We will work closely with the Center to help implement tailored workforce development programs that address the industry's specific needs. We will actively promote the Center's achievements through various channels, highlighting its significance, potential benefits, and opportunities to attract attention from investors, industry experts, and potential collaborators. We are committed to sharing our expertise in economic development, business strategy, and project management with the Center to ensure effective and efficient operations and maximize its impact.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application in order to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

Gary Ballew, CEcD
VP of Economic Development
Greater Spokane Inc.

S3R3 SOLUTIONS

7106 W Will D Alton Lane, Suite 103A, Spokane, WA 99224

August 9, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of S3R3 Solutions, I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of S3R3 Solutions commitment to the success of the Center and its consortium.

S3R3 Solutions is a Public Development Authority that was created by the City of Spokane and Spokane County while including the Spokane International Airport. It is 9251 acres located 5 miles from downtown Spokane in Eastern Washington. It has highway and rail access, and Spokane International Airport is within its boundaries. S3R3 Solutions envisions the West Plains/Airport area as a globally recognized innovation zone, complete with advanced manufacturing and aerospace industry clusters. S3R3 solutions mission is a client-centered enterprise that marshals the resources of public and private service providers to recruit new and existing businesses into the West Plains/Airport area and drives economic prosperity through the creation of jobs. The 386,000 sq ft repurposed manufacturing facility with room to grow on its 50-acre site that is being proposed to house the American Aerospace Materials Institute is within S3R3 Solutions boundaries.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted

by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

S3R3 Solutions is deeply committed to providing our partners with certainty, community, and collaboration. Every project. Every time. We can provide resources, create connections, and facilitate a collaborative process to build the right team to accomplish the stated goals. We envision leading the continued investment of several key public and private stakeholders into essential infrastructure improvements that include land and building development, multi-modal transportation systems (railway, roadway, and runway) and utilities.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application in order to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

Al French
Chair
S3R3 Solutions Board

WORKFORCE DEVELOPMENT COUNCIL

514 W. Jefferson Street, Suite 131, Boise, Idaho 83720

Assistant Secretary Castillo
Office of the Assistant Secretary
U.S. Department of Commerce
1401 Constitution Avenue, NW Suite 71014
Washington, DC 20230

Subject: North Idaho American Aerospace Materials Manufacturing; Tech Hub Application

Dear Assistant Secretary Castillo:

On behalf of the Idaho Workforce Development Council (WDC), I am writing in support of the American Aerospace Materials Manufacturing Center (AAMMC) application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hub Program.

The WDC is designated by the Governor of Idaho as the State Workforce Development Board under WIOA and also serves as local board for both of Idaho's local areas. The WDC is comprised of 37 private and public sector committee members, representing Idaho's key industries and geographic diversity, and plays a pivotal role in facilitating workforce training and development initiatives that empower Idaho's businesses to thrive in a rapidly evolving economy. Aerospace is a highly valuable sector for production and employment in our state, with more than three dozen independent aerospace businesses operating or headquartered in North Idaho. With the growing gap between skilled labor and manufacturing needs, the Center is a critical step to providing career paths to fill and spur innovation in aerospace manufacturing.

This effort is closely aligned with the WDC's vision where Idaho's diverse and prepared workforce meets the needs of our unique communities and employers. In support of this project, we plan to contribute our expertise as a workforce development entity in an advisory and collaborative role, participating as a member of the Education and Industry Engagement pillars. This commitment will commence at the time of the award and continue for the duration of the project. We have chosen to pledge this commitment due to our strong support of the Center's ability to provide research and development pathways, grow existing businesses, and enhance the economic diversity and stability of Idaho.

We have read through the application and are committed to executing our respective role, responsibilities, and above commitments related to the project. We are truly excited about the economic and career outcomes that this project can bring to Idaho, and I hope that you'll reach out if you have any questions.

Sincerely,

Wendi Secrist
Executive Director
Idaho Workforce Development Council

ORGANIZED 1935 FIRST IN AEROSPACE
IAM & AW AFL-CIO

AEROSPACE MACHINISTS INDUSTRIAL DISTRICT LODGE 751

9125 - 15TH PLACE SOUTH
SEATTLE, WASHINGTON 98108-5100

FAX NUMBER
EXECUTIVE OFFICE (206) 764-0303
FINANCIAL OFFICE (206) 764-0358
www.iam751.org

SEATTLE (206) 763-1300
RENTON (425) 235-3777
EVERETT (425) 355-8821
AUBURN (253) 833-5590

JON HOLDEN
District President
Directing Business Representative

RICHARD E. JACKSON
District Secretary-Treasurer

August 3, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW, Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of IAM District 751, I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of IAM 751's commitment to the success of the Center and its consortium.

IAM 751 is a labor organization that began representing workers in 1935. We have created long-term relationships with elected officials and workforce development councils across Washington State, supported Community and Technical Colleges for FTE funding, provided the Seattle and King County region with low-income housing, and provided the resources to launch aerospace and advanced manufacturing training for the communities we live in, across the state.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. lags significantly behind the European Union in developing these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners developing and manufacturing thermoplastic composite materials. Working alongside a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

IAM 751 is prepared to support the work of the Center with political and legislative support, dedicated staff to participate in policy creation and development, community-based training capacity, and infrastructure to support building a pipeline of trained workers needed to meet the demands this industry will require in the future.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application to enable the greater Spokane region to advance this critical technology development and global deployment.

Sincerely,

Jon Holden
District President and
Directing Business Representative
IAM&AW District Lodge 751

August 11, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Latino Civic Alliance, I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of Latino Civic Alliance commitment to the success of the Center and its consortium.

For over 16 years, the Latino Civic Alliance (LCA) has been the leading organization advocating for the needs and rights of Latinos in the State of Washington. We fight for civil rights, equity in our education and workforce system, access to health care, environmental justice, economic justice and immigration reform.

We have several programs serving the community and one of them is Building Future Industry Leaders (BFIL) is a statewide pre apprenticeship workforce development program that is part of the Latino Civic Alliance (LCA) , 501c.3 organization and have offices various regions in Washington State. We have successful partnerships with various apprenticeship programs like Machinist Institute, Port of Seattle, Boeing among others that specializes in aerospace manufacturing, and automotive industries, and apprenticeship partners specializing in welding, electrician, plumbing, construction, technology and CDL certification. The BFIL program supports a variety of roles in workforce development, including job training, job creation, placement, and supplementing the current education system to train and inspire our youth to be trained leaders that contribute to our local community. The goal of this program is to bridge the gap, remove barriers and increase available opportunities for marginalized, low income, lack skills, disadvantaged, unemployed and underemployed communities of color.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic

composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

Latino Civic Alliance has the background and experience and our mission and values aligns with this project. Our team is prepared and committed to executing its roles, responsibilities, or commitments related to the hub.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application in order to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

Nina Martinez
Board Chair

MACHINISTS INSTITUTE

July 28, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Machinists Institute (MI), I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of Machinists Institute's commitment to the success of the Center and its consortium.

Machinists Institute, a non-profit, was established by IAMAW District Lodge 751 to build a better future for aerospace, automotive, manufacturing, and machinist workers through high quality recruitment, education, training, and apprenticeship programs. We recognize the opportunity registered apprenticeship offers to support opportunities to achieve career and financial success.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

Machinists Institute is currently investing in space and equipment to operate a training center in Spokane that will provide education and training opportunities across the workforce spectrum and serving several industries, and including skills needed for advanced manufacturing, thermoplastic composits and

aerospace manufacturing. We also have a forty foot mobile training trailer that can be mobilized to provide education and career opportunities to the more rural communities in eastern Washington as well as offer high demand short term training at an employer's job site. These mobile trailers serve to address equity and access to training while simultaneously meeting employer needs. MI is looking forward to participating with the consortium as an education and training provider to ensure the region has access to a highly skilled and diverse talent pool. Machinists Institute has read the application and is committed to executing its roles, responsibilities, or commitments related to the hub.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application in order to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

Shana Peschek
Executive Director, Machinists Institute

SPOKANE
WORKFORCE
COUNCIL

August 01, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

RE: FY 2023 Regional Technology and Innovation Hub Program Phase 1

Dear Assistant Secretary Castillo:

On behalf of the Spokane Workforce Council, I write in support of the American Aerospace Materials Manufacturing Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of the Spokane Workforce Council's commitment to the success of the Center and its consortium.

The Spokane Workforce Council is the state and federally authorized local workforce development board for Spokane County. We are a business-led board, working in concert with local elected officials, whose mission is to elevate local workforce efforts with researched guidance, innovative funding, and strategic partnerships – so that we can identify and fill gaps in our local workforce and cultivate a flourishing regional economy.

We recognize that many members of our community face significant barriers to economic success and we strive to apply an equity lens to our service model to improve outcomes for populations that are disproportionately impacted. We work with a wide range of partners from business, economic development, government, education, labor and community-based organizations to align our efforts and achieve maximum positive impact. We make strategic investments in education and training to ensure a robust talent pipeline that meets the needs of our business community and supports a vibrant economy for the entire Spokane region.

We continue to see demand for well-trained workers in the aerospace and advanced manufacturing sector and believe that creative strategies and new investments are required to meet the current and future demands of companies in our region. AAMMC will help address these needs by working with employers, and educational, training and community-based partners to establish a stable and continuous array of training opportunities aligned with industry need that are responsive to shifts in the marketplace and that are accessible to all residents. We will work to ensure that workers have the support they need to enter and progress along career pathways that lead to higher wages and fulfilling careers.

The Spokane Workforce Council fully endorses AAMMC's approach and believes that the Center will help grow and fully support this sector. Should this Consortium be awarded funding from EDA, we will:

- Engage workforce system partners to expand talent pipelines into manufacturing careers that include
    - High school career technical education students
    - Pre-apprenticeship and apprenticeship training programs
    - Postsecondary training programs
    - Unemployed and underemployed workers, and
    - Other incumbent workers;
- Align workforce system investments to ensure career pathways are clearly articulated and businesses and workers have access to the resources and services they need to obtain the skills and credentials necessary for successfully entering jobs in this sector; and
- Promote AAMMC programs and the Tech Hub initiative to other interested workforce development partners to generate support and collaboration.

This list of activities is not intended to be exhaustive. As an ongoing project, we understand that additional ideas for participation may arise. The Spokane Workforce Council is committed to expanding our commitment to this initiative in response to emerging needs, and will participate in all related meetings, advisory boards, and other activities as appropriate to advance the vision of AAMMC.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. The investments made through this grant will help to ensure that more Washington State residents enter high-skill manufacturing jobs in response to industry demand and grow this vital sector. I urge your full support of the application in order to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

Mark Mattke
Chief Executive Officer
Spokane Workforce Council

August 10, 2023
From: David Weeks
Chief Operations Officer
Lakeside Companies
717 W. Sprague Ave.
Spokane, WA 99201

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

I am writing on behalf of Lakeside Companies in support of the American Aerospace Materials Manufacturing Center (AAMMC) for the 2023 Regional Technology and Innovation Hub Program. Lakeside strongly supports the application for a Hub in the Spokane, WA-Coeur d'Alene, ID MSA (the "Region"), which would significantly increase America's competitiveness in next-generation aerospace materials manufacturing and catalyze the region's expertise to enable and further fortify new domestic supply chains in the global aviation market.

Lakeside has observed the Region grow exponentially the past 25 years and believe the workforce has the capacity and capability to absorb new jobs in advanced manufacturing, including training for every function and skill level. Importantly, much of our perspective originates from owning and operating several businesses across a variety of industries in the Inland Northwest, including Advanced Thermoplastic Composites ("ATC"), which specializes in the use of thermoplastics for aerospace and defense OEMs.

As the application highlights, the Region is uniquely positioned to support aerospace end-markets given its high concentration of existing suppliers. However, as the FAA and other organizations prioritization of Net Zero Emissions continues, more sustainable materials must be developed and scaled in aircraft production. The ability to manufacture next-generation, lightweight aerospace composites at historically high volumes remains critical to meeting the demands of aerospace and defense industries. Lakeside will endeavor to leverage its investor relationships around the country to educate and to generate opportunity for entrepreneurs and existing companies to further advance and to strengthen the domestic aerospace supply chain; that largely begins with the Hub.

Lakeside believes the capability to quickly match and then surpass Europe and Asia in the development of thermoplastic composite materials and processes, including: (i) machine learning; (ii) more accurate and efficient production equipment; and (iii) systems automation,
remains essential to meeting supply chain requirements and is critical to reinforcing the Inland

Northwest's competitive profile as a key supply Region for aerospace. We have extensive relationships with some of the consortium partners and believe they have the profile and expertise to compete globally at the highest levels of advanced aerospace technology. This partnership provides enhanced security to the operators in this rapidly growing region, and simultaneously slows the erosion of existing value to other countries while repatriating supply chain components and participants to the U.S.

In an effort to facilitate and to anchor these initiatives in the Region, Lakeside seeks to provide space at its large commercial facility (1514 South Flint Road, Spokane, WA) to be utilized as AAMMC headquarters. The 386,000 square foot plant sits on a 50-acre site less than one mile from Spokane International Airport and was previously used to manufacture 12,000 thermoplastic SKUs across 10 product families for every Boeing and Airbus platform. Lakeside understands that there will be an industry match, in the Hub Grant and Phase 2 applications, and we are prepared to fulfill those requirements (the "Flint Facility").

The facility already contains physical and electronic security as well as a world-class managed service provide for cyber security; all of which meet the standards required by the Department of Defense and by NASA, ensuring the consortium will collaborate on sustainable flight and HiCAM objectives. Additionally, Avista, a leading sustainable energy provider in the Region and a consortium partner, will advise on reaching net-zero and LEED building sustainability goals. The grant application reflects an intention to formally organize a governing body and employ a leading Regional Innovation Officer to coordinate with industry, academic and other regional stakeholders to ensure this also benefits diverse cohorts of under-represented minority classes, including the Kalispel and Spokane Native American Tribes. The picture below illustrates the breadth of the Flint Facility.

The aerospace sector in the Region has experienced the loss of American jobs overseas as well as foreign-owned companies taking ownership of American manufacturing centers, creating national security concerns surrounding the aerospace supply chain while undermining American competitiveness. This Region has an underutilized reservoir of human capital that can receive the specialized training needed to advance quality of life and to protect America's aerospace and defense interests. The presence of formal education within the populace remains below the national average and reinforces the need for additional pathways, including technical training,

into the workforce. The AAMMC can provide a training conduit and a compelling pipeline of opportunity into careers that provide generational improvements in the standard of living and support economic growth.

Lakeside has worked with regional leaders, including organizations participating in this submission, to determine the optimal use of the Flint Road facility, with the primary focus of supporting job growth, advancing innovation and strengthening the Region's economy. As we evaluated options for the property, it became clear that a Hub designation, including the laboratory-to-market capabilities, and technologies it can bring to market, will also facilitate private capital infusions and long-term investments in new companies and technologies originating from the AAMMC.

The U.S. trails the E.U. in capital investment for Hub-like entities and, specifically, the use of advanced performance materials required for Net Zero 2050. Clean Sky 2 is the largest research program for aviation in Europe, which includes 27 countries, 540 participants and has a $4.0 billion budget, which is expected to generate nearly $9 billion in revenue, equal to nearly 3.5x the initial investment. The program includes thermoplastics and enables the aerospace industry to advance the commercialization of innovations in timelines that are otherwise unachievable. As discussed in the Hub application, the E.U., through Clean Sky 2, has already developed the capability to produce both longer and larger airplane parts from composites, including primary structures, a hallmark achievement. Japan also has a dedicated thermoplastic composites center that has achieved high-rate welding for thermosets and thermoplastics, an important manufacturing steps that's largely performed manually in the U.S. Lakeside believes the AAMMC can rapidly catch-up to the advancements made across the world with strategic investments in specialized equipment, such as large 3,000 ton presses. The size and location of the Flint Facility facilitates regional collaboration to advance R&D and importantly, has the square footage for workforce headcount and the large production processes.

As a productive R&D center, the Hub will attract, retain, and gain additional participation and investment as a natural extension of achieving its mission. Specifically, the Hub will assist with improving existing thermoplastic products and processes while showcasing and streamlining use of the product in new applications. It will cultivate an environment conducive to innovation, collaboration, and investment. Aerospace companies must constantly upgrade existing equipment and deploy new technologies to remain competitive. Participants will become increasingly

incentivized to make capital investments based on what the Hub will help them to achieve, including:

- Providing a roadmap for product development until its launch, offering statistics that enable visibility of the progress and performance of products prior to broad scale manufacturing initiatives
- Recommendations for improving performance and return-on-investment of established products and further expansion of the thermoplastic composite's products into a company's R&D portfolio
- Comprehensive evaluation of the supply chain to determine where and how operating margins can be maximized
- Evaluating technical specifications and determinants of demand for specific product lines in different market scenarios through stress testing and functional analysis
- Product positioning and re-positioning in established and new markets, including strategic planning to devise new functional product models, optimizing technical specifications and assessing comparative functionality

The AAMMC represents a vital effort critical to the future of the Region, including the Pacific Northwest aerospace corridor, and the economic and security interests of the U.S. We would be honored with the opportunity to review the complete Hub application and to fulfill the requirements necessary to make the Hub a successful endeavor for decades to come.

Sincerely,

David Weeks
Chief Operating Officer
Lakeside Companies

Footnotes

The valuation methodology used by Lakeside for in-kind contributions would mirror what's required by Generally Accepted Accounting Principles (GAAP) and ASC 820, which provides a framework and methodology for defining fair value when a company makes an investment. Specifically, ASC 820 defines fair value as the price that would be

received to sell an asset or paid to transfer a liability in an orderly transaction on a specific date or over a defined timeframe. ASC 820 contains a three-level hierarchy of fair value based on the type of inputs available for the relevant contribution or investment:

1. Level One: Inputs are quoted prices in active markets for identical assets or liabilities as of the measurement date that the company has the ability to access;

2. Level Two: Inputs based on quoted prices in markets that are not active or for which all significant inputs are observable, either directly or indirectly; corroborated by observable market data at the measurement date for substantially the full term of the assets or liabilities;

3. Level Three: Inputs are unobservable and significant to the overall fair value measurement.

In this context, observable market data is not: (i) proprietary; (ii) readily available; (iii) regularly distributed; or (iv) available from multiple independent sources. Some inputs derived through extrapolation or interpolation may be corroborated by observable market data and would be considered a Level Two input. The use of only one unobservable input, such as a proprietary model or expert judgment, would result in a Level Three categorization. Lakeside would use a Level Two categorization to value the space at the Flint facility contributed to the Hub.

Washington Trust Bank
Member FDIC

August 10, 2023

From: Jack Heath
President and Chief Operating Officer
Washington Trust Bank
Spokane, WA

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Washington Trust Bank ("WTB"), I am writing in support of the American Aerospace Materials Manufacturing Center ("AAMMC") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hub Program (the "Hub").

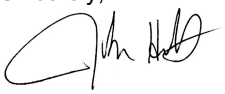
Washington Trust Bank is the oldest and largest privately held commercial bank in the Pacific Northwest, with more than $10 billion in assets and 40 financial centers in Washington, Idaho, and Oregon. Our current CEO, Pete Stanton, represents the fourth generation of this family-operated enterprise, where decisions and policies are based on what is best for our employees, customers, and the broader populace in the Pacific Northwest. We are headquartered in Spokane, WA and serve the Spokane, WA and Coeur d'Alene, ID MSA (the "Region"). WTB's independence and commitment to this Region allows us to plan and accomplish long-term goals while remaining flexible in addressing the immediate needs of our communities.

Our commitment and dedication to the Region is reflected in the unequivocal and enthusiastic support of the AAMMC initiative. The Hub will attract greater development and capital investment to the Region, enhancing its long-term viability across multiple economic and social dimensions. Specifically, aerospace end-markets have a significant footprint across the Region and many of those companies are long-term clients of WTB; we are attenuated to the needs of these organizations and the Hub would partially satisfy many ongoing challenges. Additionally, the R&D efforts and technological sophistication perpetuated by the Hub creates an exciting dynamic that will attract new companies and expand the opportunity-set for existing businesses. Also, further fortification of the I-90 aerospace supply chain, which includes the composite manufacturers, strengths the underlying economic baseline while defending U.S. national security interests.

WTB will support the Hub and its participants with attractive and competitive financing options for qualified borrowers to cover a broad swath of asset-types, including cash flow generation and enterprise value assessments. We will also support local economic development by providing free financial advice to individuals and to businesses, which includes educational seminars for Hub members. As a 120-year-old institution headquartered in this Region, WTB will also facilitate introductions and garner additional resources among members of the broader community.

We appreciate your consideration and want to reiterate that the leading resources in this Region are committed to the success of AAMMC, in all its forms.

Sincerely,



Jack Heath
President and COO
Washington Trust Bank

August 03, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW, Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of the members of the Coeur d'Alene Regional Chamber of Commerce, I am writing to express our wholehearted support for the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as tangible evidence of our chamber's unwavering commitment to the success of the Center and its esteemed consortium.

The Coeur d'Alene Regional Chamber is a nonprofit membership organization situated in the heart of Coeur d'Alene, Idaho. Our core mission is to foster economic prosperity and cultivate a vibrant community in the North Idaho panhandle region. Through a diverse range of programs, events, and dedicated advocacy initiatives, our chamber is dedicated to empowering businesses and individuals, enabling them to not only thrive but also leave a lasting impact. With more than 850 members spanning various industries, sizes, and types, our chamber has become a powerful catalyst for education and workforce development. By forging strategic partnerships with our education sector and skilled trades, we provide opportunities that equip our community with the skills needed for well-paying jobs in our locality. Our unwavering collaborations result in an educated workforce adept at fulfilling the immediate and future employment needs of both existing and prospective companies, thus propelling continuous economic growth.

The greater Inland Northwest region currently holds a prominent position as a national leader in advanced materials for aviation, including cutting-edge thermoplastic composite materials that are integral to the next generation of commercial and defense aircraft. However, there is a notable disparity between the United States and the European Union in the development of these pivotal technologies. To cement U.S. leadership and global competitiveness in this critical sector, a synchronized effort and substantial investment are imperative. The Tech Hubs program, of which the Center seeks to be an integral part, is poised to play a central role in achieving this objective.

The Center is unequivocally prepared to lead these transformative efforts. The consortium boasts key players from leading institutions and industry partners who are at the forefront of developing and manufacturing thermoplastic composite materials. Through collaborative

endeavors with a diverse array of workforce development, labor, and economic development partners, the consortium is poised to drive innovation and stimulate economic growth in advanced materials. This translates research conducted by our esteemed Institute partners into practical, commercially viable products for integration into aerospace manufacturing processes. Beyond these achievements, the Center's local efforts will contribute to bolstering our national security and fortifying domestic supply chains by manufacturing these crucial materials right here in the Inland Northwest.

I am also pleased to highlight the Center's commitment to extending its impact to rural areas and underserved communities surrounding the I-90 corridor, which connects Spokane and North Idaho. This deliberate expansion will foster regional economic equity while concurrently enhancing the skill set of our entry-level labor force, a segment that faces challenges in achieving sustainable livelihoods.

The Coeur d'Alene Regional Chamber wholeheartedly embraces this remarkable proposal and is confident in the consortium's ability to effectively compete in the global aerospace market. We share a steadfast commitment to inclusivity, seeking innovative pathways to provide our rural and underserved communities with access to emerging job markets and essential training. Our chamber stands fully committed to supporting this innovation hub, leveraging our extensive network of members and partner organizations to contribute time, staffing, and other valuable resources to ensure the enduring success of this pivotal infrastructure within our region. We are thrilled to assume a pivotal role as a key stakeholder and partner alongside the broader tech hub team. We will actively champion the recruitment of resources from our network, ensuring the sustained viability of this groundbreaking endeavor. Lastly, we are eager to facilitate meaningful collaboration between local businesses and education leaders, aligning workforce needs with the unparalleled training and education opportunities that the American Aerospace Materials Manufacturing Center (AAMMC) will provide.

In conclusion, I extend my heartfelt gratitude for considering the American Aerospace Materials Manufacturing Center's Phase 1 application. This center has the potential to be a true game-changer for families and businesses in our community, generating exceptional employment opportunities that open the doors to limitless possibilities. I earnestly implore your resolute support for this application, as it holds the key to propelling the greater Inland Northwest region to the forefront of technology development and global deployment.
Thank you for your time, consideration, and ongoing dedication to advancing our region's economic prosperity and technological innovation.

Sincerely,

Linda J. Coppess
President and CEO | Coeur d'Alene Regional Chamber
Email: linda@cdachamber.com | Office: 208.415.0104 | Mobile: 208.651.2302

GREATER SPOKANE VALLEY CHAMBER OF COMMERCE

August 14, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo,

On behalf of the Greater Spokane Valley Chamber of Commerce, I wholeheartedly support of the American Aerospace Materials Technology Center's application to the Economic Development Administration's Regional Technology and Innovation Hubs Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of the Greater Spokane Valley Chamber of Commerce's commitment to the success of the Center and its consortium.

The Greater Spokane Valley Chamber of Commerce was founded on May 25, 1921, in Greenacres by a group of business leaders who saw the need for an organization to represent business interests in the Spokane Valley. The Chamber incorporated as a 501(c)(6) business league, serving businesses and non-profit members throughout the Greater Spokane Valley, including the cities of Spokane Valley, Millwood and Liberty Lake and unincorporated areas of Spokane County

The greater Spokane region, spanning Eastern Washington and North Idaho, stands as a prominent national contender in advanced aviation materials, notably in thermoplastic composite materials crucial for the next generation of commercial and defense aircraft. Nonetheless, the United States trails notably behind the European Union in advancing these technologies. To bolster American prominence and global competitiveness in these pivotal technologies, a synchronized push for progress and investment is imperative. The Tech Hubs program stands out as a pivotal cornerstone to support this endeavor.

The Center is primed to spearhead these crucial advancements. Encompassing leading institutions and industry partners dedicated to the development and production of thermoplastic composite materials, the consortium operates in concert with an array of workforce development, labor, and economic entities. This collaborative synergy will propel innovation and foster economic expansion in advanced materials. By channeling the research insights of Institute partners into practical products fit for aerospace manufacturing, the Center will fortify our national security and domestic supply chains. Its focus on developing and producing these materials in the Inland Northwest amplifies its significance, positioning the region at the heart of this strategic effort.

With a wide sphere of influence and over 600 chamber members, the Spokane Valley Chamber is positioned to be a key convener of the business community. Through advocacy in community initiatives, member programs that deliver topics of relevance, and opportunities to engage businesses, the chamber acts as a rallying force behind economic vitality for the Spokane region.

As part of the chamber's community initiatives, we host the annual *Manufacturing Matters* in October. This event brings together manufacturers throughout the area as a forum to discuss the top issues they are facing, workforce shortage, supply chain disruptions, and government regulations, to name a few.

Our Chamber stands alongside Gonzaga University, ready to champion the Center's goals. We align with Gonzaga's dedication to forging connections between education and industry, molding a skilled workforce for the future. We have assessed the application and are committed to fulfilling our roles, responsibilities, and commitments to ensure the success of Gonzaga University's participation.

I appreciate your dedication to shaping a promising future. I urge your support for Gonzaga University's role in the American Aerospace Materials Technology Center. This partnership has the potential to redefine our region's trajectory and contribute significantly to our nation's progress.

Sincerely,

Lance Beck, President & CEO
Greater Spokane Valley Chamber of Commerce

Spokane International Airport
BUSINESS PARK AND FELTS FIELD

9000 West Airport Drive, Suite 204
Spokane, Washington 99224
(509) 455-6455
spokaneairports.net

August 10, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Spokane International Airport (Airport), I am writing to express our strong support of the American Aerospace Materials Technology Center's (Center) application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 submission for hub designation and a strategy development grant. We are committed to the Center's success and will be an active, participatory member of its consortium.

For the past decade, the Airport has been instrumental in promoting the Spokane Region's aerospace cluster to domestic and international companies who may want to move to the region or add a facility in the Pacific Northwest. The Airport has been successful in informing potential recruitment prospects about the aerospace cluster's capabilities, certifications, affordability, and multi-modal connectivity to key manufacturers such as the Boeing Company.

The Spokane Region, which includes communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft, as well as enable commercial development of Advanced Air Mobility (AAM) and hypersonic vehicle technology. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, research universities, organized labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by the Center partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

The Spokane Region is an aerostructures and aircraft interiors-focused cluster. Lightweight materials, and increasingly composites, are critical to the Aerostructures and Interiors markets. The Airport's efforts to attract greater content scale as well as increase higher levels of assembly scope to the region will potentially add to the number of firms interested in leveraging the Center's research and development, as well as utilizing the workforce development and training component, providing our region with critically needed sustainable family-wage jobs. The Tech Hub will further enhance the Region's value proposition of affordable, capable, and accessible, and will be an additional, important differentiating selling point for the region's aerospace cluster. We look forward to the day we can bring recruitment prospects to such a sophisticated facility that holistically focuses on product development and the corresponding and integral workforce training component. We know from previous conversations that past prospects and recruits have specifically expressed an interest in the Spokane Region's current composites capability – especially thermoplastic composites; the Center's intended focus will only serve to magnify that interest.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application, which will enable the Spokane Region to advance this critical technology's development and global deployment.

Sincerely,

Lawrence J. Krauter

Lawrence J. Krauter, A.A.E, AICP
Chief Executive Officer

WEST PLAINS
Chamber of Commerce

August 9, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of the West Plains Chamber of Commerce, I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of the West Plains Chamber of Commerce commitment to the success of the Center and its consortium.

We believe that for business growth to thrive it relies on the foundation of a healthy community, the West Plains Chamber is committed to making our region a safe and welcoming place to live and work.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

The West Plains Chamber of Commerce is ready to commit to the "Center", support by being a voice for the project, bring awareness to the community, assist in educating the West Plains region businesses and chamber members on the value and long-range return of investment of an Aerospace Materials Manufacturing Center in the heart of our region.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application in order to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

Mark Losh
CEO
mark@westplainschamber.org
(406) 544-0345

August 1, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Coeur d'Alene Public School District #271 (CDA Schools), I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of our district's commitment to the success of the Center and its consortium.

Coeur d'Alene Public Schools serves approximately 10,000 students in 17 schools. We operate on a budget of $83 million with a district graduation rate of 92.0%. Our district offers Advanced Placement (AP) opportunities for all high school students, as well as dual enrollment programs with higher education institutions in our region. The percentage of our high school students who continue on to college and career technical programs exceeds both state and national averages. Furthermore, our students earn more advanced credits compared to other Idaho school districts. The success of our district can be attributed to the continual improvement in the quality of its educational programs. This is made possible by a supportive community, successful business partnerships, a highly-qualified, experienced, and dedicated staff, and active parent and student organizations at every school.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft.

Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component. The Center appears prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

Coeur d'Alene School District commits to aligning itself with the vision of the Center and we have been excited by the joint planning around this venture involving multiple educational and civic organizations. We are excited to promote educational opportunities provided by the Center within our schools and will strive to stimulate partnership networks across industry, schools, government, nonprofits and the community at large.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application in order to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

Mike

Dr. Mike Nelson
Deputy Superintendent
msnelson@cdaschools.org

August 11, 2023

From: Marita Diffenbaugh
Principal
Elevate Academy North
3716 E. Killdeer Ave. Post Falls, Idaho 83854

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Elevate Academy North, I am writing in support of the American Aerospace Materials Manufacturing Center (AAMMC) application to the Economic Development Administration's (EDA) Regional Technology, an Innovation Hub Program.

Elevate Academy North is a new Career Technical school for middle school and high school students that provides hope, opportunity, and community. Our first school year started on August 23, 2022, for students in 6th-10th grades (11th and 12th coming in 2023 and 2024).

The proposed center would be a powerful addition to our local area and would provide an excellent opportunity for students graduating from our school because it adds several additional post-high school training and education opportunities outside of college. Our school is unique in that we focus on more technical and trade-related career paths and even have CNC's and some of the same equipment students would see working in a composite or aircraft manufacturing supplier environment. Knowing that we start the exposure to students in middle school and high school, having an option to continue their development through pre-apprenticeship and apprentice programs would be huge.

We would be excited to work with the Center to develop programming at the middle and high school level and create events/opportunities to help further build the pipeline of students entering these pathways.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's application. Elevate Academy North is in full support of this effort and excited to see it flourish.

Sincerely,
Marita Diffenbaugh
Marita Diffenbaugh
Principal, Elevate Academy North

Superintendent's Office
200 North Bernard Street
Spokane, WA 99201-0282

phone (509) 354-7364
fax (509) 354-5994
www.spokaneschools.org

Spokane Public Schools
excellence for everyone

August 7, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Spokane Public Schools, I write in support of the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of Spokane Public Schools' commitment to the success of the Center and its consortium.

Spokane Public Schools is the largest school district in Spokane County and third largest in the State of Washington, with enrollment of almost 30,000 students in the 2022-2023 school year. Our goal is to prepare all students to successfully complete some form of post-high school education or training: military, technical/trade, 2-year, or 4-year, with a focus on access, opportunity, and dreams.

To see this goal to fruition, we focus on Excellence for Everyone Through Equity. Our focus on equity means that we strive to know each of our students from a whole child perspective to eliminate barriers to their post-secondary training/education access and career pathway aspirations. Earning a post-secondary credential (certificate, degree, industry certification) will be vital for our students to meet the labor needs of the future and earn a livable, family-sustaining wage.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials

in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

Spokane Public Schools is committed to this endeavor and will use structures and resources to ensure students have the information they need to make deliberate goal-setting for their post-high school endeavors alongside creating flexibility within their school schedules in high school to ensure they have access to work-based learning opportunities that this HUB will create. Spokane Public Schools is proud to enter into collaborative partnerships with higher education and industry partners to ensure that our students earn credentials, certifications, and degrees that lead toward a living wage. One example of far stretching partnerships has been with the Spokane Public Library system to run bond projects cohesively to see our students and the public at large with facilities that support exploration and learning. Another innovative and extremely successful partnership has been with the Spokane Transit Authority, offering our students free ridership through their school identification cards which has eliminated numerous access barriers for students to get to school, but also for students to get to work-based learning opportunities like the ones that will exist with the Tech HUB Consortium.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application in order to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

Dr. Adam Swinyard
Superintendent
Spokane Public Schools

Pacific Northwest
NATIONAL LABORATORY

902 Battelle Boulevard
P.O. Box 999, MSIN K1-43
Richland, WA 99352
(509) 375-6915
Jaime.Shimek@pnnl.gov
www.pnnl.gov

OUT-0327-2023

August 10, 2023

Sheba Person-Whitley
Regional Director
U.S. Economic Development Agency
915 Second Avenue
Jackson Federal Building, Room 1890
Seattle, WA 98174

Dear Ms. Pearson-Whitley and the Tech Hub Grant Review Committee:

Pacific Northwest National Laboratory (PNNL) is pleased to support the American Aerospace Materials Manufacturing Center Hub application, led by Gonzaga University and a coalition of industry, government, higher education, and labor organizations based in the greater Spokane, Washington region.

We recognize that Gonzaga University and the greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

We believe that the Center is prepared to lead these efforts. The consortium members represent the leading academic institutions, such as Gonzaga and the University of Washington, and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Center partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

PNNL is a U.S. Department of Energy (DOE) national laboratory with over 6,000 employees that is headquartered in Richland, Washington – a vibrant and growing hub for research and development (R&D), manufacturing, and clean energy – and has additional Northwest locations in Seattle, Portland, and the north Olympic Peninsula. PNNL advances scientific discovery, sustainable energy, and national security at a regional, national, and global level and partners with industry to transfer technologies from

the lab to market. More than 20,000 students per year are touched by PNNL's Science, Technology, Engineering, and Math (STEM) education and internship programs.

PNNL has a number of capabilities and missions that intersect with the American Aerospace Materials Technology Center Hub. We are pioneering processes, technologies, and tools to increase the productivity and energy efficiency with key applications in all three of the Center's industry sectors: cleantech, aerospace, and semiconductors. For example:

- PNNL's new Energy Sciences Center's (ESC) state-of-the-art capability in surface science provides tools to understand the interfacial interactions of polymers to fiber surfaces that affect bonding. The ESC's solid-state nuclear magnetic resonance capability is used to understand the formation of crystal structures in polymers that influence their mechanical properties.
- PNNL also maintains a polymer and composites processing lab with traditional processes and the development of new processing methods for thermoplastic composite forming techniques.
- PNNL also maintains a full suite of materials testing, analysis, and characterization capabilities to develop an understanding of processing, structure, and property relationships.
- We are leveraging artificial intelligence and machine learning to improve R&D for advanced manufacturing and to accelerate the testing and validation of new processes or components in advanced manufacturing.

PNNL is already involved in workforce development, materials R&D, and advanced manufacturing in Washington. A Tech Hub designation would supercharge collaborations among groups in the hub region, with members of the hub able to advance innovation in areas of mutual interest and regional strength. If awarded, PNNL would be pleased to participate on the strategic planning committee to identify opportunities where further collaboration could accelerate our mission areas, innovation, and equitable economic development in the Pacific Northwest.

We appreciate your consideration of this application and look forward to participating in this critical work. Please reach out to Melanie Roberts (Melanie.Roberts@pnnl.gov) or the PNNL subject matter expert, Kevin Simmons, Ph.D., Chief Materials Scientist and Team Lead Polymer and Composite Materials in Applied Materials & Manufacturing Group (Kevin.Simmons@pnnl.gov) with any questions.

Sincerely,

Jaime Shimek
Executive Director
Communications and External Engagement

August 10, 2023

From: Robert Santiago
Chairman, The Composites Consortium
315 Sigma Dr
Summerville, SC 29456

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW
Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

I am writing on behalf of The Composites Consortium in support of the American Aerospace Materials Manufacturing Center (AAMMC) application for the 2023 Regional Technology an Innovation Hub Program.

The Composites Consortium (TCC) is an integrated team of more than 20 separate entities, including (traditional and non-traditional) defense contractors, weapons systems prime contractors, composites industry suppliers, small businesses, and academic institutions. TCC is an industry-focused, balanced team of prime contractors for weapons systems, composites industry suppliers and academic institutes. The Consortium is built on a strong foundation of technical excellence, teamwork, data sharing and effective program management. TCC furthers the technology and practice of employing composites in complex structures, systems and components on DoD weapons systems.

We believe a new center for the development of advanced aerospace materials would be a beneficial addition to the United States capabilities and the composites manufacturing landscape. The proposed centers focus on manufacturing technologies and development TRL stages 6-9 is a perfect complement to what TCC are trying to achieve in getting the next generation of composites onto manned and unmanned aircraft, our naval surface fleet and underwater assets. Without proven, tested, and approved high-rate manufacturing methods, we will fall far short of the demand we expect to see for these materials over the next 20-30 years.

The use of composites in aerospace and defense is only growing, along with an urgent need for more research, development and commercialization of composites manufacturing. As a consortium ourselves, we can confidently say the technical exchange of information and the idea sharing between members in a setting such as the AAMMC will benefit all parties and help make tremendous strides in the areas the center is focused on.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's application. The TCC considers this effort to be of high importance for composites manufacturing and for the development of domestic capabilities in the composite arena. I am certain their collect skill and experience will make this program a huge success.

Sincerely,

Robert Santiago

Robert Santiago
Chairman, The Composites Consortium

August 11th, 2023

The Honorable Alejandra Castillo
Assistant Secretary for Economic Development
Department of Commerce
1401 Constitution Avenue NW, Suite 20230
Washington, DC 20230

Dear Assistant Secretary Castillo:

On behalf of Avista, I am pleased to provide this letter of support for the American Aerospace Materials Technology Center's ("the Center") application to the Economic Development Administration's (EDA) Regional Technology and Innovation Hubs (Tech Hubs) Phase 1 application for hub designation and a strategy development grant. This letter also serves as evidence of Avista's commitment to the success of the Center and its consortium.

Avista provides electricity to nearly 406,000 customers and provides natural gas to about 372,000 customers across areas of Eastern Washington, Northern Idaho and Oregon. At Avista, our purpose goes beyond providing the energy that powers the daily lives of our customers. It's about strengthening our communities, region and supporting economic strategies that are flexible, responsive and reflective of the needs of our communities. We are an active partner, ally, and advocate for our customers and communities.

The greater Spokane region, which includes interconnected communities across Eastern Washington and North Idaho, is already a national leader in advanced materials used in aviation, including thermoplastic composite materials that will form core components of the next generation of commercial and defense aircraft. However, the U.S. as a whole lags significantly behind the European Union in the development of these technologies. Advancing U.S. leadership and global competitiveness in these critical technologies will require coordinated effort and investment, of which the Tech Hubs program will be a core component.

The Center is prepared to lead these efforts. The consortium members represent the leading institutions and industry partners that are developing and manufacturing thermoplastic composite materials. Working together with a diverse group of workforce development, Labor, and economic development partners, the consortium will drive innovation and economic growth in advanced materials, translating research conducted by Institute partners into commercially ready products for use in aerospace manufacturing. By developing and building these materials in the Inland Northwest, the Center's efforts will also strengthen our national security and domestic supply chains.

Avista has set an ambitious renewable electric energy goals in 2019—to serve our customers with 100% clean electricity by 2045 and to have a carbon-neutral supply of electricity by 2027. In 2021, we set an aspirational natural gas goal of being carbon neutral by 2045, with a near-term goal of 30% reduction in greenhouse gas emissions by 2030. Avista has always been on the forefront of clean energy and innovation. Founded on clean, renewable hydro power on the banks of the Spokane River, Avista has maintained a generation portfolio that is already more than half renewable, while continuously making investments in new renewable energy, advancing the efficient use of electricity and natural gas, and driving technology innovation that has enabled and will continue to become the platform and gateway to a clean energy future.

In addition to Avista's goals, we have numerous programs and subject matter experts to support our customer's clean energy goals including our energy efficiency, electric transportation, and solar programs. We have already implemented and completed an energy efficiency lighting project at the Triumph building with an energy savings of approximately 375kWh and look forward to exploring additional opportunities. Avista also has a long history of innovation including a lead role in developing the Scott Morris Center for Energy Innovation creating a net-zero shared energy district. Additionally, our Avista Innovation Lab is partnering regionally with public and private entities to establish innovation "energy clusters" to drive thought leadership which could transform the entire industry through National Science Foundation Grant funding opportunity.

We have read the application and are committed to supporting the American Aerospace Materials Manufacturing Center's Phase 1 application.

Thank you for your consideration of the American Aerospace Materials Manufacturing Center's Phase 1 application. I urge your full support of the application to enable the greater Spokane region to advance the development and global deployment of this critical technology.

Sincerely,

X _____

Stacie Maier
Director of Business and Public Affairs
Avista Corporation
1411 E. Mission Ave
Spokane, WA 99220
(509)495-4087
stacie.maier@avistacorp.com

American Aerospace Materials Manufacturing Center – Strategy Development Narrative

The American Aerospace Materials Manufacturing Center ("the Center") is a consortium eager to advance U.S. leadership and national security by meeting both the immediate high-rate production demands of advanced materials and the next-generation market of aerospace composites. The Center's key technology focus area (KTFA) is advanced strategic industries including thermoplastic composite (TPC) materials and processes (KTFA #10), which done at TRL six through nine includes machine learning (KTFA #1), production equipment, and systems automation (KTFA #4). The designation by EDA of the Center as a Tech Hub would accelerate high-rate, domestic production of large composite materials and advance the marketability of new composite technologies. The Center is ready now to secure a Tech Hub designation and seeks a strategy development grant to accelerate the advancement of the Center and implementation activities in line with Phase 2 of the Notice of Funding Opportunity (NOFO).

Consortium Overview

The Center is headquartered in the Spokane metropolitan statistical area (MSA), with consortium members from the Spokane-Spokane Valley-Coeur d'Alene combined statistical area (CSA), and the greater Inland Northwest in Idaho and Washington state. The Spokane-Spokane Valley-Coeur d'Alene CSA is tightly aligned culturally and economically. With Gonzaga University as the lead consortium member, the Center comprises a strong consortium of members at every level of academia, local and state-wide governments, small and medium manufacturers in partnership with global corporations, labor and local workforce organizations, local chambers of commerce, and economic development groups, with the common goal of creating new American supply chains that include good paying jobs at varying levels of skills:

Industry Advanced Thermoplastic Composites Avista Corporation Blue Origin The Boeing Company Continuous Composites Incorporated Electroimpact Northwest I-90 Manufacturing Alliance Unitech Composites Inc.	Institutions of Higher Education Gonzaga University (lead member) Community Colleges of Spokane Eastern Washington University Heritage University North Idaho College University of Idaho University of Washington Washington State University
State and Local Governments Washington State Dept. of Commerce Idaho State Dept. of Commerce City of Spokane City of Coeur d'Alene City of Post Falls Spokane County Spokane International Airport	Economic Development Organizations Greater Spokane Inc. Greater Spokane Valley Chamber of Commerce Coeur d'Alene Chamber of Commerce West Plains Chamber of Commerce S3R3 Solutions

Labor and Workforce Organizations Spokane Workforce Council Intl. Association of Machinists District 751 Machinists Institute	Elementary and Secondary Education Spokane Public Schools Coeur d'Alene Public Schools
Tribal Nations Coeur d'Alene Tribe Kalispel Tribe of Indians Spokane Tribe of Indians	Organizations Focused on Underserved Pop. Latino Civic Alliance

In addition to the above-named consortium members, the Center is supported by NASA, Pacific Northwest National Laboratory, Lockheed Martin, Raytheon, and other defense OEMs.

Although Gonzaga University is the lead applicant for the purposes of this application, the consortium members will create a governing body to oversee the development and selection of Phase 2 implementation activities. This governing body will act on an ongoing basis to set goals, implementing actions, budget, and other organizational needs. As detailed below, the consortium intends to finalize and implement the structure of this governing body within sixty (60) days of receiving a strategy development grant.

Overview of Industry Need, Market Opportunity, and Regional Potential

The Inland Northwest is an ideal location for a Tech Hub of global significance. Our region boasts a world-class aerospace workforce with skills at every level necessary to meet immediate and next-generation domestic development and production needs and reverse the upward trajectory of American reliance on foreign advanced aerospace materials. The Spokane-Spokane Valley-Coeur d'Alene CSA[1] is centered on the I–90 corridor, bridging the city of Spokane, WA with the rapidly developing rural communities of Coeur d'Alene, ID (pop. 56,733)[2] and Post Falls, ID (pop. 44,194)[3]. In the past five years, this CSA has seen a 12% increase in population and job increase of 9.5%, outpacing the national growth rate of 3.8%[4]. Projections reflect another 11.5% increase by 2027[5]. The region is home to 1,500 aerospace-related suppliers and 132,500 workers in aviation and aerospace[6].

The Center will repurpose a former manufacturing plant, less than a mile from Spokane International Airport, into a world-class testbed to house the largest thermoplastic fabrication and automation equipment in the country. This 386,000 sq. ft. facility will enable hands-on training, classroom education, new technology development and validation, scalable manufacturing strategies to increase domestic production of immediate, and next-generation, aerospace enterprise. The physical and cyber security of the Center will meet the standards of global commercial and defense industry leaders, Department of Defense, and NASA.

Advanced thermoplastic composite materials are key enablers to sustainable air travel and global competition in the future of every form of aviation[7]**.** To reduce costs, weight, and fuel consumption, manufacturers agree that the next generation of narrow body commercial aircraft will include high percentages of composite materials in the wings and fuselage[8], requiring unprecedented manufacturing and production requirements to shift to liquid compression molding and thermoplastic composites. Advances in sustainable aviation must reduce climate

impacts.[9] New technology development and validation, and scalable manufacturing strategies are imperative to increase domestic production of immediate, and next-generation, aerospace enterprise. New automation systems with proven viability are essential to meeting the sustainable, next-generation aircraft manufacturing needs of the global marketplace and increase self-reliance on American domestic supply chains.

The immediate priority for the Center is TRL6-TRL9 development in high-rate thermoplastic composite manufacturing, and the expansion of related workforce development programs. Advanced materials have successfully reduced cost and weight in commercial and defense applications, but the U.S. does not have existing capability to meet domestic demands and compete globally for high-rate composite fabrication of larger structures. American capabilities for large thermoplastic composite fabrication are far behind other nations (see Figure 1). Current and planned expansions of large-scale fabrication facilities in Europe and Asia over the next two to four years will increase this gap from U.S. capabilities and suppliers.

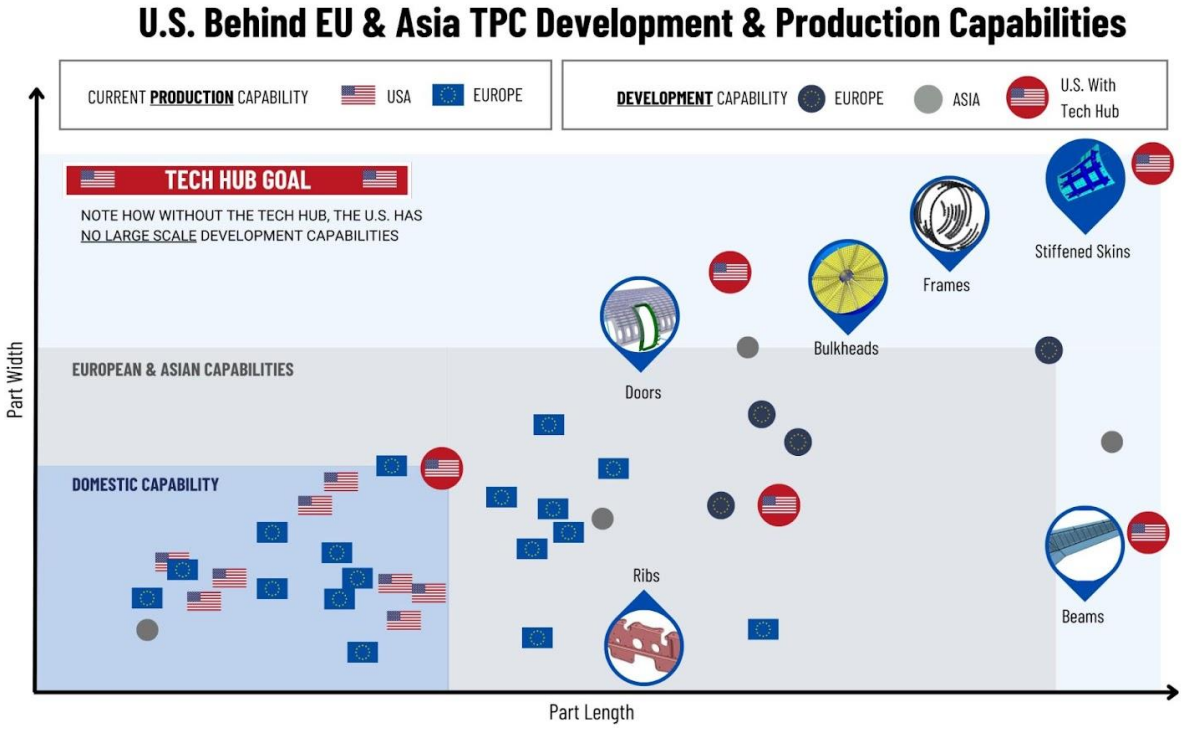


Figure 1: Thermoplastic Composite Stamp Forming Scale Global Landscape, Consortium internal

Over 40,000 single-aisle and widebody airplanes are projected to be delivered by Boeing and its competitors over the next 20 years[10]. This pace reflects 100 new aircraft a month[11], putting intense pressure on the current supply chain, yet presents a new and unique opportunity for American suppliers to catch up to global competitors[12]. The Center will house the advanced equipment to tackle immediate, high-production rates domestically, enable innovation from characterization to validation, assembly to packaging, promote advances in workforce and

education programs, and foster rapid supply chain growth, while attracting buyers, venture investors, and entrepreneurs from around the world. While Boeing is actively developing these advanced materials, the U.S. lacks the infrastructure to demonstrate scalability. The country must seize the opportunity now to increase the American supply base of advanced airframes by a factor of 20x.

Activities to be Funded Through This Grant

In combination with the designation of the Center as a Tech Hub, a strategy development grant would enable the consortium to accelerate the completion of the following activities and meet the program's goal of creating a globally competitive hub. Over the period of performance, the consortium members, led by Gonzaga University as the lead consortium member, will utilize the proposed $400,000 in federal grant funding for the following purposes:

Hiring of Regional Innovation Officer
Total cost: $558,800 *(federal share: $372,719.60)*

The Center's Regional Innovation Officer (RIO) will act as chief executive officer for the consortium, reportable to the governing body, who will work to build a team around them that will support the Center's advancement. The RIO will have a strong background in managing a diverse ecosystem of stakeholders, preferably with a background in aerospace engineering, experience in supporting workforce development efforts that drive equitable, and knowledge of the region and its stakeholders. Federal funding will be used to support the recruitment of the RIO, drawing from a diverse and national candidate pool, beginning the first month following grant award with the intent to hire between months 4 and 6. Funding will also be used towards the salary and benefits of the RIO's first two years of employment.

Accelerate Implementation of the Center's Strategy
Total cost: $24,000 *(federal share: $24,000)*

Consortium members are aligned on the need to enhance American competitiveness and capabilities in composite materials, the market opportunity in the aerospace industry and potential other industries, and the capabilities of the Center's partners and the regional capabilities of the Inland Northwest to meet this need. Efforts to accelerate the implementation actions to be funded under Phase 2 of the Tech Hubs program are ongoing now and will continue in the coming months. This includes strategies and actions to advance research and development efforts to bring larger thermoplastic composite structures from lab to market, smart manufacturing processes to enhance production rates to match industry needs and coordinated workforce strategies.

Upon receiving a strategy development grant award, the Center will utilize federal funding to fund travel, lodging, and per diem for up to 10 representatives from consortium members located outside of the Spokane MSA and needed financial assistance (e.g. non-profit or educational organizations) for two meetings of consortium members to be held in Spokane in the first ninety (90) days following grant award. These meetings will be used to finalize the implementation actions to be funded under Phase 2.

Outreach and Recruitment of Additional Consortium Members
Total cost: $3,280.40 *(federal share: $3,280.40)*

While consortium members have worked to build a diverse membership for the Center, building a regional and coordinated effort requires a continued commitment to incorporate the ideas and capabilities of a broad set of entities across the region. The Center will continuously work to recruit new entities to the consortium, especially entities representing rural, tribal, minority, and other underrepresented populations to ensure the Center's strategy advances equity. Federal funding will be used towards marketing materials and supplies to support outreach efforts.

Additional Activities to be Conducted During Period of Performance
While federal funding will be used to support the above activities, the Center will undertake additional activities during the period of performance that will not receive federal funding but are relevant to the development of the consortium:

Establishment of Consortium Governance Structure: To oversee the development of the comprehensive regional technology strategy, selection of Phase 2 implementation actions, and other needs such as topline goals and budget, the consortium members intend to organize a governing body to oversee the Center within sixty (60) days of grant award. The governing body will include at least one member from each of the five required entity types listed in section A(1)(b)(3) of the NOFO.

Workforce Development Implementation: New workforce development activities at facilities across the Inland Northwest will focus on the recruitment of rural, tribal, minority, and other underrepresented individuals. This includes establishing and expanding training programs at K-12 school districts, career and technical education programs, new apprenticeship opportunities to provide on-the-job training alongside classroom instruction, and engineering and materials and science degree programs at institutions of higher education included in the consortium.

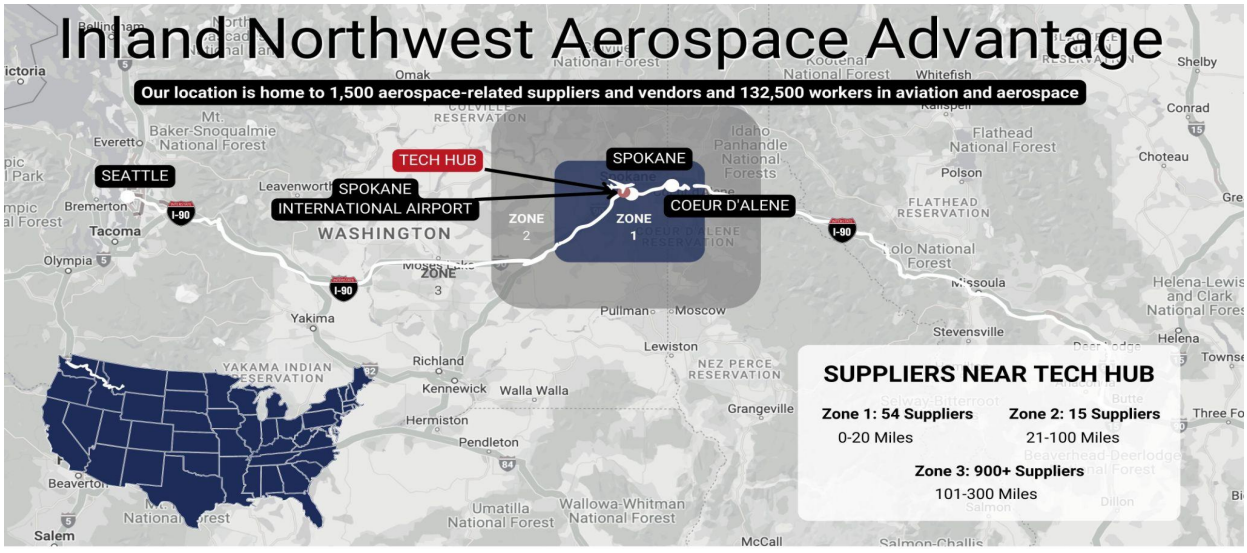
Appendix

[1] “Census Profile: Spokane-Spokane Valley-Coeur d’Alene, WA-ID CSA.” *Census Reporter*, 2021, censusreporter.org/profiles/33000US518-spokane-spokane-valley-coeur-dalene-wa-id-csa/.
[2][3] “Idaho Cities by Population.” *Idaho Demographics*, 2023, www.idaho-demographics.com/cities_by_population.
[4][5] “CdA Economic Development Corporation/Jobs Plus, Inc., Coeur d'Alene, Idaho 83816-1088: Economy Overview Coeur d'Alene, ID.” *Lightcast Q3 2023 Data Set*, 2023.
[6] “Washington State: The Next Big Thing in Aerospace and Aviation.” *Aerospace & Aviation*, 8 June 2023, http://choosewashingtonstate.com/why-washington/our-key-sectors/aerospace/.
[7] “Composites: Airbus Continues to Shape the Future.” *Airbus*, 1 Aug. 2017, www.airbus.com/en/newsroom/news/2017-08-composites-airbus-continues-to-shape-the-future.
[8] Sloan, Jeff. “Composites End Markets: Aerospace (2023).” *Composites World*, 9 Jan. 2023, www.compositesworld.com/articles/composites-end-markets-aerospace-2023.
[9] Banke, Jim. “NextGen Aircraft Design Is Key to Aviation Sustainability.” *NASA*, 15 Apr. 2020, www.nasa.gov/aero/nextgen-aircraft-design-is-key-to-aviation-sustainability.
[10][11] *Commercial Market Outlook 2023–2042*, 2023, www.boeing.com/commercial/market/commercial-market-outlook/index.page.
[12] “Sprouting Growth of Thermoplastic Composites in Aerospace.” *Market Research Firm*, 19 Sept. 2019, https://www.stratviewresearch.com/articles/Sprouting-growth-of-Thermoplastic-Composites-in-Aerospace.

This consortium proposes to immediately advance U.S. leadership and national security through creation of the American Aerospace Materials Manufacturing Center ("the Center") to develop new domestic supply chains to meet the immediate demand for high-rate production of advanced composite aerostructures in defense and commercial markets. The EDA Tech Hub designation will propel our domestic supply base by creating a testbed facility to advance large thermoplastic composite (TPC) aerospace materials like ribs, beams, doors, bulkheads and stiffened skins. This market-disrupting, high-rate production solution maintains the same performance of most advanced composite aerostructures flying today at low production rates. High production of TPC is a key enabler to accelerate the aerospace industry's goal of net-zero carbon emissions by 2050, and presents a unique opportunity to upskill the current workforce, coordinate with Tribal nations and workforce leaders, and utilize the best-practices for supporting underrepresented communities, in both Washington and Idaho, to model the next generation of American aerospace jobs.

These key technology focus areas (KTFA) include advanced and next-generation materials (KTFA #10), which done at TRL six through nine advanced production systems, uses model based engineering, machine learning (KTFA #1) and automation (KTFA #4). Our consortium is ready to begin Phase 2 of the Tech Hub application because failure to develop these technologies in our domestic supply chains is a threat to American access and market share of crucial, sustainable, aerospace and defense systems. Our consortium reflects every level of academia, local, state, tribal governments, small and medium manufacturers, global corporations, labor and regional workforce organizations, local chambers of commerce, and economic development groups, all with the common goal to develop the American supply chain and good -paying jobs at all skill levels in this field of advanced 21st century manufacturing. Confident in the consortium's ability to achieve self-sufficiency within three years and global competitiveness within 10 years, the proposal has the support of Boeing, Lockheed Martin, and Raytheon. More defense OEMs, NASA, and the PNNL national lab, are coordinating with us for Phase 2.

The Inland Northwest is an ideal location for a Tech Hub of global significance. With 1,500 aerospace-related suppliers and 132,500 workers in aviation and aerospace,[1] the region has the world-class workforce needed to meet immediate and next-generation domestic development and production needs to reverse the upward trajectory of American reliance on foreign materials. [2]



The Combined Statistical Area (CSA) of Spokane-Spokane Valley-Coeur d'Alene[3] is centered on the I–90 corridor, bridging Spokane, WA, with the rapidly developing rural communities of Coeur d'Alene, ID (pop. 56,733)[4] and Post Falls, ID (pop. 44,194).[5] In five years, this CSA has seen a 12% population increase and 9.5% job increase, outpacing the national growth of 3.8%.[6] Projections reflect an 11.5% increase by 2027.[7] Together with a group of competent faculty and research scientists and engineers drawn from this region's highly collaborative colleges and universities, the CSA has the educational expertise to expand offerings and develop training programs for every aspect of the testing and production process.

The Center will repurpose a former manufacturing plant, less than a mile from Spokane International Airport, into a world-class "lab to market testbed" that will house the largest TPC fabrication and automation equipment in the U.S. The 386,000 sq. ft. facility will enable hands-on training, classroom education, new technology development and validation, and scalable manufacturing strategies to enable domestic production of immediate and next-generation aerospace enterprise. The Center's physical and cyber security will meet the standards of global commercial and defense industry leaders, the Dept. of Defense, and NASA.

Advanced TPC materials are key enablers to sustainable air travel and future global competitiveness for every form of aviation[8] and many other applications. To reduce costs, weight, and fuel consumption, manufacturers agree that the next generation of narrow body commercial aircraft will have composite wings, and likely a composite fuselage,[9] demanding unprecedented manufacturing and production requirements to shift to liquid compression molding and TPC. These same advances in sustainable aviation will reduce the impact on climate change, according to NASA.[10] Thermoplastics drastically reduce energy usage and capital investment costs of traditional composites. Factory footprints are reduced as less time is spent on-tool from efficient press-based lamination, stamp forming for isothermal tooling, and batch production. Costly factory HVAC systems in layup areas are eliminated as the polymer is not compromised by factory temperature or humidity. Cold storage and logistic challenges associated with uncured thermoset polymers are eliminated because of the dramatic energy reductions offered by polymerization (curing) at the reactor at large scales instead of chemical polymerization applied to every part. TPC uniquely offers 100% recyclability or recoverability by simple mechanical grinding and/or compounding for re-use in non-structural parts (ex. system brackets and commercial interiors) or use in other commodity markets.

In partnership with NASA, the Center will advance game-changing technologies to reduce aviation emissions to meet net-zero carbon emission goals by 2050. As members of NASA's Advanced Composites Consortium,[11] which allows partners to take advantage of each other's expertise, consortium members Boeing, Lockheed, Advanced Thermoplastic Composites Manufacturing, Electroimpact, and other defense OEMs would use the shared physical space to advance the goals of NASA's HiCAM program[12] potentially expanding to include academic partners. Collaboration to develop global, high-rate production demands and lightweighting will also support NASA-Boeing Sustainable Flight Demonstrator Project[13] to advance aerodynamics and fuel efficiency, utilizing a collaborative, physical space for NASA-approved partners. The Center would quickly attract private investment in new companies in the aerospace supply chain. New U.S. innovations and production capabilities would rapidly reduce America's heavy reliance on foreign materials and production, reversing dangerous security and economic trends with sustainable alternatives.

Over 40,000 single-aisle and widebody airplanes are projected to be delivered by Boeing and its competitors over the next 20 years.[14] This pace reflects 100 new aircraft a month,[15] putting intense pressure on the current supply chain, yet presenting a unique opportunity for American suppliers to catch up to global competitors.[16] While Boeing is actively developing these advanced materials, the U.S. lacks the infrastructure to demonstrate scalability. Advanced materials have successfully reduced cost and weight in commercial and defense applications, but the U.S. does not have existing capability to meet domestic demands and compete globally for high-rate composite fabrication of larger structures. New technology development and validation, and scalable manufacturing strategies, are imperative to increase domestic production of immediate, and next-generation, aerospace enterprise. New automation systems with proven viability are essential to meeting the sustainable, next-generation aircraft manufacturing needs of the global marketplace and increase self-reliance on these essential supply chains. American

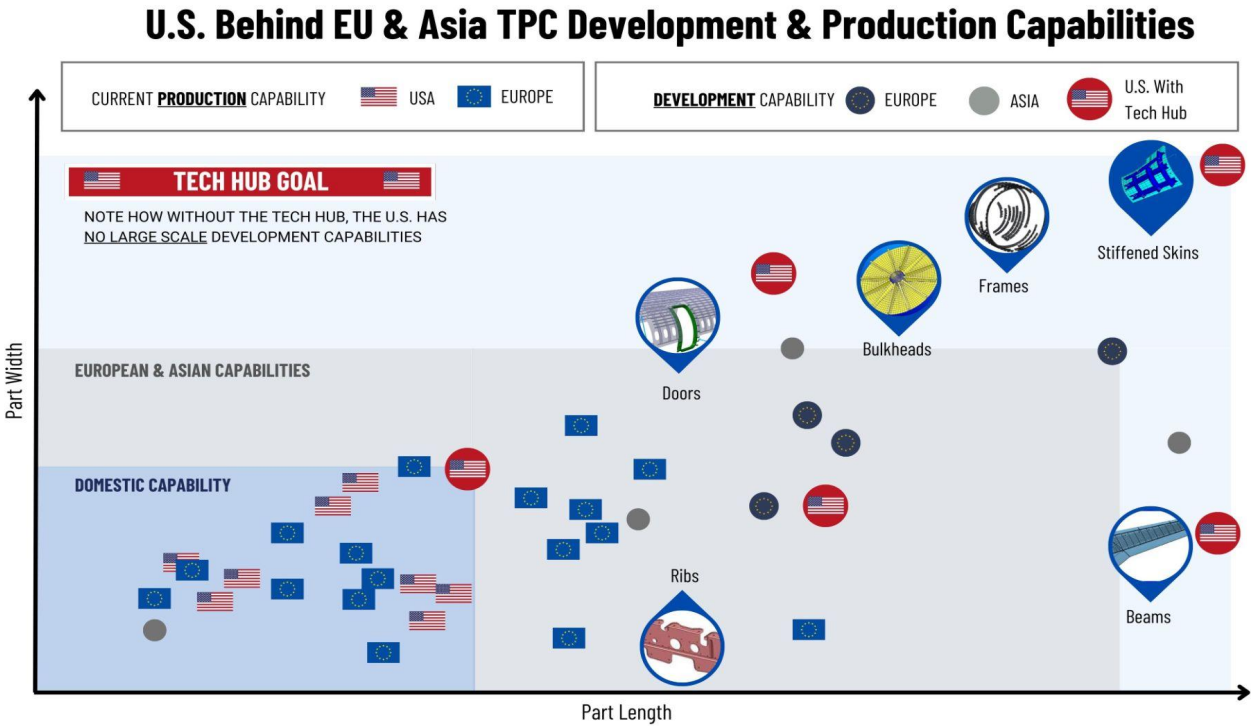


Figure 2: TPC, Stamp Forming Scale Global Landscape, Consortium internal

capabilities for large TPC fabrication are far behind other nations, and expansions of large scale fabrication facilities in Europe and Asia over the next two to four years will only serve to further widen this gap. The Center's advancements will make the U.S. more self-reliant and competitive.

The Center will be a testbed for maturing "lab to market" TPC to TRL nine, transitioning research into the initial low production rates of new programs. High rate production will then be transitioned to suppliers with established TRL/MRL nine facilities. Achieving this production scale will drive market change, potentially expanding domestic capability by a factor of more than 20x. For both economic and national security, the U.S. cannot miss this inflection point. The Center will cultivate new domestic suppliers to meet these high-production rates in the U.S.; enable innovation from characterization to validation, assembly to packaging;

incorporate best-practices in workforce and education programs; and foster rapid supply chain growth by attracting an influx of buyers, venture investors, and entrepreneurs. Coordinating from the outset with our educators, workforce and economic development partners, the Center will incorporate and multiply proven systems of hands-on training, recruitment, and upskilling for our rural and underrepresented communities, supporting new jobs at every skill and experience level.

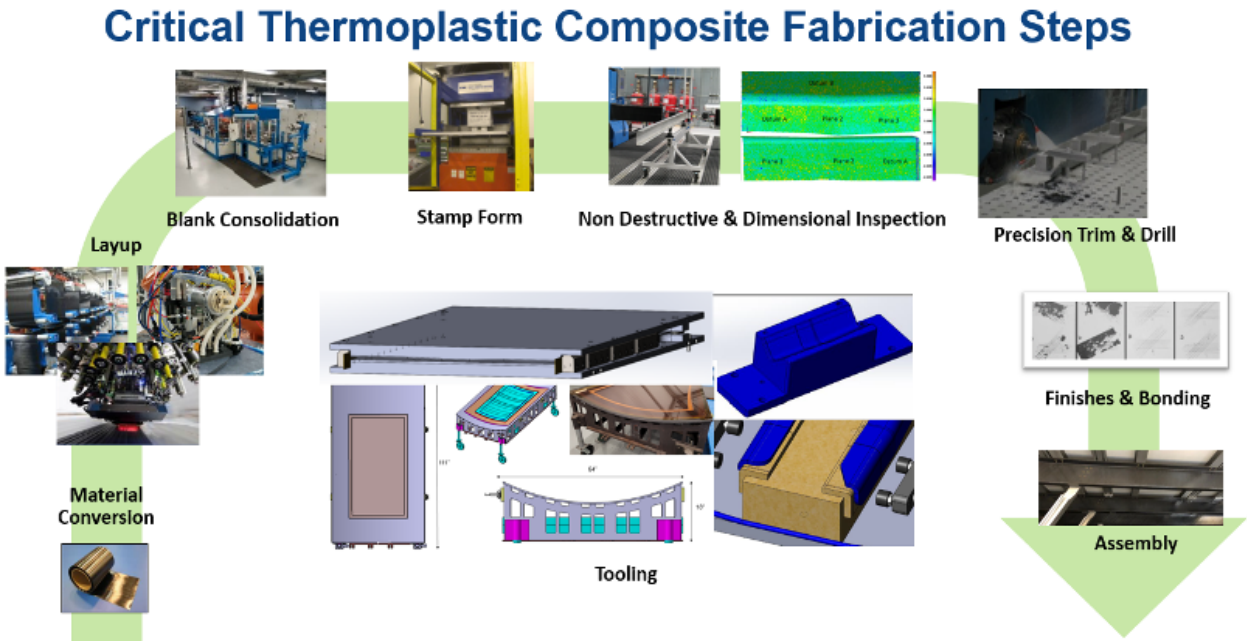


Figure 3: Critical Steps and Contributors to Thermoplastic Composite Fabrication Value Stream, Boeing internal

Current domestic equipment size is sufficient for sub-scale demonstrations of application manufacturing to TRL five, but the Center's goal is developing these essential technologies from TRL six through nine, requiring demonstration of capability at full scale. Each step of the value stream above reflects an opportunity to build new and expanded industry suppliers and workforce at a broad range of skill levels needed to support this new domestic supply chain. Optimized automation and systems integration are essential for achieving high-quality, efficient, and repeatable fabrication at the necessary rate.

Our university partners are leaders in our KTFAs, and each have deep relationships with our industry and workforce partners. Gonzaga University, a leader in applied thermoplastic composite technology research, has announced a new Institute for Informatics and Applied Technology that builds on its long-standing School of Engineering & Applied Science, where students work in related fields of materials science and manufacturing, tribology, finite element analysis modeling, and real-world composite applications (e.g., airplane seating models).[17] The University of Washington leads FAA-supported research into the development of advanced composites, boasts hands-on training in the design of next generation, high performance airplanes, and is building a new research program with an advanced robotic Automated Fiber Placement (AFP) system. The University of Idaho is expanding its robotics and aerospace programs and conducting research with NASA on bacteria-resistant polymers. Eastern Washington University is a leader in smart manufacturing, where students work with industrial robots and structural weight reduction of composite materials. Our workforce partners will

inform the certification and upskill training programs at Spokane Community College and North Idaho College, and K-12 programs in the Coeur d'Alene and Spokane public school systems and Elevate North, to offer technical and early STEM pipeline programs.

The immediate priority for the Center is TRL six through nine development in high-rate TPC manufacturing and adoption of related workforce development programs. Proven best practices of our consortium will guide how the Center attracts new workers and maintains a talented and diverse workforce. The Center will adopt a "hub and spoke" approach focused on rural and tribal accessibility, new pipeline programs with K-12 schools, coordinated industry partnerships with secondary[18] and technical schools to open new apprenticeships,[19] and improved mid-career upskilling to ensure high-wage, high-quality jobs. Consortium members are experienced in meeting the evolving needs of the aerospace workforce such as automation, robotics, artificial intelligence, and sophisticated tooling with the best practices for the region with hands-on mobile training programs and hub-and-spoke models. The Machinists Institute's mobile training units currently offer flexible, in-demand aerospace and manufacturing training on employer job sites and in rural communities to support pre-apprentice and pre-employment training. A current design is led in partnership with the Latino Civic Alliance and can also be used for hand-on STEM K-12 programs and career exploration.

In addition to Boeing, our consortium is in discussion for Phase 2 planning with NASA, Raytheon, Lockheed Martin and other defense OEMs to support the defense and commercial goals of the Center as a direct path to American leadership in maturing technologies to TRL nine, bringing multiple large sized materials to market within the first ten years, attracting investment and expansion of the full domestic supply chain for aerospace. This next generation of lightweight materials is imperative for meeting net-zero carbon emissions by 2050. The Center will accelerate development of the aerospace domestic supply chain by serving as a testbed to harden technologies at initial low production rates of new programs in Tier 1 and Tier 2 supplier work, then transition higher production rates through new domestic suppliers through entrepreneurial interest and private sector investments for companies at a projected 20x growth rate of current capacity. This consortium combines expertise in engineering, advanced materials, and aerospace with the best practices of Tribal, Latino, labor, regional workforce, and academia, to bring U.S. sustainable aero materials production capabilities in line with global competitors, repatriate essential supply chains, and create a bigger, more inclusive American workforce.

Appendix
American Aerospace Materials Manufacturing Center

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