

## **NSF Regional Innovation Engines Program - Type 1 Concept Outline - Uplift Central Coast California Central Coast Space and Aeronautics Innovation Corridor**

**a. Topic Area:** The [Uplift California Central Coast Coalition](#)—led by three economic development organizations - the [EDC](#), [MBEP](#) and [REACH](#) - along with government, education, workforce, and industry partners—proposes a bold but attainable vision: cultivate a space and aeronautics innovation corridor on the Central Coast of California, building upon regional strengths, bridging centers of industry, creating a steady pipeline of talent, and fueling transformational innovation in future space and mobility capabilities in support of commercial, security and scientific missions. Space and aeronautics has long had a toehold in the Central Coast, anchored by the nation’s premier West Coast space launch facility at [Vandenberg Space Force Base](#) along with 7 additional military installations, 48 airfields and heliports, and supported by 5 highly ranked state universities with world-class engineering and aerospace programs. Maximizing our nation’s innovative potential in this field requires fully leveraging existing assets, and our region has the opportunity to drive forward use-inspired R&D in technologies such as vertical and horizontal space launch, satellite manufacturing, unmanned aerial systems (UAS), advanced air mobility development and manufacturing, and related software and data applications. U.S. leadership in space and aeronautics is key to advance national security, commercial competitiveness, scientific leadership and climate goals.

**b. Region of Service:** Lying between Los Angeles and San Francisco, the greater Central Coast region is home to 2+ million people across the 6 counties of Ventura, Santa Barbara, San Luis Obispo, Monterey, Santa Cruz and San Benito, an area larger than 10 states. The Central Coast possesses a unique array of regional assets with the potential to advance an ecosystem that supports the future growth of space and aeronautics research, innovation and commercialization. A small sample of our key assets and partners includes:

### **Military Partnerships:**

- [Cal Poly](#) and the [Air Force Research Laboratory](#) partnered to develop labs to test subsonic Vertical Take-Off and Landing (VTOL) technologies to advance various collaborative activities through arrangements with Space Operations Command and U.S. Strategic Command.
- The [Naval Postgraduate School's NavalX Central Coast Tech Bridge](#) offers Joint Interagency Field Experimentation (JIFX) at 3 installations in Ventura, SLO and Monterey Counties, allowing collaboration on testing technologies, e.g., autonomous drones, geospatial intelligence and cybersecurity.
- [Naval Base Ventura County](#) oversees the world’s largest instrumented sea range, supporting development and operational test of aerial technologies over 36,000 square miles, and collaborates with industry through [NavalX Ventura Tech Bridge](#) at [FATHOMWERX](#) and [Matter Labs](#).
- The [Monterey Bay Defense Alliance](#) (MBDA) fosters partnerships to enhance, grow and protect the national security assets in the Monterey Bay Area.

### **Commercial Spaceports and Airports:**

- REACH, State of California, Santa Barbara County, Space Launch Delta 30, Cal Poly and Deloitte developed an [MOU](#) and [commercial space master plan for VSFB](#), and are driving the creation of a commercial tech park, infrastructure investment and incentives to spur commercial space activity.
- The [Paso Robles airport](#) as well as the Marina Airport are pursuing FAA designation as a horizontal launch spaceport to meet growing demand to get small satellites in low-Earth orbit.
- Multiple small aviation airports host aerospace companies such as Joby Aviation, Zero Avia, ACI Jet testing, manufacturing and maintaining aircraft, drones, and air taxis.

### **Industry Anchors:**

- 100+ aerospace companies operate on the Central Coast, ranging from Fortune 500 companies such as Northrop Grumman, emerging companies such as Relativity Space, Rocket Lab and Firefly Aerospace, and drone/air mobility companies such as AeroVironment and Joby Aviation.

#### **Entrepreneurial Programming:**

- [Matter Labs](#) is a think-tank, startup studio, and consulting firm specializing in emerging tech.
- The [Inclusive Innovation Hub \(iHub<sup>2</sup>\) program](#) is developing an equitable, inclusive, and diverse, service and resource startup ecosystem for high-tech, high impact entrepreneurial and small businesses.
- [Cal Poly CIE](#) recently launched an incubator to support/scale space and aeronautics startups.
- The Monterey Bay Drone, Automation and Robotics Technology [\(DART\) initiative](#) harnesses public-private collaboration for new venture formation and job growth.
- [AirSpace Integration](#) is a private UAS-focused incubator and test range housed at the Monterey Bay Academy Airport in La Selva Beach.

#### **Education Anchors:**

- The [UCSC CITRIS Initiative](#) for [Drone Education and Research \(CIDER\)](#) offers educational training and research support for the development and use of drone technology across disciplines and sectors.
- [Cal Poly San Luis Obispo](#) is ranked among the top 10 nationally for master's-level engineering degrees overall and is ranked No. 2 in the nation for aerospace/aeronautical engineering.
- [UCSB's](#) leading engineering and science programs hold \$6-9 million in annual NASA-sponsored research projects for areas such as mapping, sensors and climate/ocean sciences.
- A partnership with [CSUMB](#) and [UCSC](#), [MBEST Research Park](#) is a university-owned 400+ acre parcel planned as a tech park to support university-connected R&D, innovative companies.
- [Cuesta College](#) and [ACI Jet](#) partnered to support a new aviation technical training program to foster a highly skilled aviation maintenance workforce on the Central Coast.
- [iINNOVATE](#) is a K12 program in SLO County School that provides a 21st century learn-by-doing project model that links into high school career technical education (CTE) pathways for aeronautics.

**c. Purpose and Vision of the Proposed Engine:** Our region has an unprecedented mix of assets with the potential to significantly elevate our nation's space and aeronautics competitiveness. Funding from NSF will allow the region to connect our unprecedented mix of assets strategically for the first time. This proposal seeks to develop a Space and Aeronautics Alliance that will bring together the anchor partnerships from 8 military institutions, 2 UC's, 3 CSU's, and 15 Community Colleges combined with the backbone of employers to actively collaborate on a skills and R&D roadmap that levels supply of talent with the demand and pace of industry growth and mobilizes the innovation capacity of our institutions towards these critical commercial and federal users through rigorous, regional cross sector collaboration. Our competitive advantage is the continuing expansion of a high-impact and fast-evolving industry sector, world-class academic institutions and vital military installations. But this cannot develop into a thriving regional innovation ecosystem without NSF's support. Across every facet of the industry we continue to hear that the struggle for qualified talent is a choke point for innovation and growth. Strategic investments in high-impact workforce development programs and the regional architecture to mobilize public-private research collaboration across organizational boundaries is key to powering space and aeronautics innovation and opening doors of opportunity for underserved populations in the region. The NSF Engines Type 1 Grant will advance industry-identified requirements for workforce development, offering equitable pathways into the growing sector, enabling existing space and aerospace businesses to expand, and bolstering job creation at all skill levels.

**d. Regional Importance and Impact:** The Uplift Central Coast partnership came together in 2021 with a multi-faceted initiative to cultivate the Central Coast's space + aeronautics ecosystem, marking the region's first-ever cross-sector 6-county effort. The Uplift Coalition is the lead applicant for California's Community Economic Resilience Fund, which links our region together with funding to support equitable and sustainable economic planning to develop industries that create high-quality, broadly accessible jobs. We anticipate that NSF funding would build upon this comprehensive regional planning focused on accelerating the implementation of an industry ecosystem ripe for advancement. The region is bound by significant challenges, such as jobs concentrated in low-wage agriculture, service and hospitality sectors, with households that have struggled to keep up with the region's high cost of living and crushing housing burden, as well as unique opportunities and assets that if fostered will offer equitable new pathways into future-oriented STEM related fields. Many of our state's most underserved communities are adjacent to these critical assets but do not benefit due to the absence of an enabling ecosystem with pathways to opportunity. Diversification of the region's economy away from low-wage jobs and into STEM-related opportunities in the space and aeronautics industry is critical to our regional success and national competitiveness.