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**WORKFORCE INNOVATION IN REGIONAL ECONOMIC DEVELOPMENT (WIRED)
CALIFORNIA INNOVATION CORRIDOR (CIC)
QUARTERLY NARRATIVE PROGRESS REPORT**

SECTION I: GENERAL GRANT INFORMATION

A. Grant Information

Grantee's Name: California Employment Development Department (EDD)

Subgrantee's Name: California Space Authority, Inc. (CSA)

Name of the Project: California Innovation Corridor

AGREEMENT #: WR-15399-0660

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Contact Persons:

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B. Summary of General Grant Activities

Quarter Two of 2007 saw “integration” as a main focus. Inter-project integration, integration of specific projects or integration of the California Innovation Corridor WIRED initiative overall with ongoing State or statewide efforts are important first steps for sustainability. This quarter’s integration activity was as diverse as it was significant, showing how transformative the Corridor initiative is becoming:

Grant program lead California Space Authority (CSA) spearheaded an effort to ensure alignment and integration of the California Innovation Corridor (CIC) WIRED projects it calls “Sustainability Projects”* by hosting an initial “Sustainability Project integration” webinar. Webinar was held to orient new Sustainability Project contractors to overarching CIC WIRED goals, as well as to initiate dialogue among Sustainability partners and contractors regarding the alignment and integration of their various products and deliverables, e.g. the Innovation Driven Economic Development Model, the WIB Toolkit and the STEMCAP. Key outcomes of the webinar were: 1) the pledge to share early versions of WIRED products with other Sustainability partners enabling better coordination of Corridor-wide findings; and 2) support for the idea that the Innovation Driven Economic Development Model would be the overarching umbrella under which all the WIRED products would reside. Partners also indicated desire to work together as their projects progressed, with a follow-up telecon scheduled for August 21, 2007.

Project integration activity can also be seen in the scheduling of the next Partner meeting to piggyback onto the California Workforce Association (CWA) “Meeting of the Minds” symposium in Monterey (MMM) in September. CWA serves as the voice of the California Workforce Investment Boards (WIB) and coordinates the “Learning Collaboratory” for the WIBS as the lead WIRED partner for Project 3.14.

By scheduling the Partner meeting to coincide with the Meeting of the Minds, and recruiting an industry panel for the closing MMM session, CSA and CWA hope to encourage attendance of more WIRED Partners at the MMM symposium, ensure WIB participation in the Partner meeting, and foster greater understanding of industry and WIB joint opportunities to build a robust 21st Century workforce. The draft of the WIB Toolkit is scheduled for unveiling at the MMM event.

There is no “learning collaboratory” for economic developers as part of the Corridor WIRED funded initiative, but CSA coordinated a WIRED panel for the California Local Economic Development (CALED) conference, showcasing the WIRED initiatives including the Economic Development Innovation Model in Project 1.1, the Innovation Asset Inventory in Project 1.3, the CA Tech 100 in Project 1.4, and other aspects of the Corridor WIRED initiative of special interest to economic developers. Plans are developing to partner with CALED to include updates and lessons learned from the Corridor WIRED projects in next year’s annual conference as well as the possibility of incorporating this information into future CALED economic development curriculum for economic development practitioners.

Integration with California State efforts also figured in this quarter. Project 1.2 (21st Century Worker Profiles) and 3.1 (Workforce Analysis) each integrate work of the California Employment Development Department’s (EDD’s) Labor Market Information Division (LMID), engaging LMID in the design of the projects, determination of data needs and resources, and local follow-through. (See project progress p. 5 & 10). The State LMID was engaged as a full partner, providing staff assigned directly to each region resulting in relationship building and resultant broader impact of the WIRED project. For some WIBs and economic development entities, this was an important introduction to LMID as a statewide resource. For others, it provided further experience in how to better articulate data needs and utilize LMID.

The Bay Area Economic Forum/Bay Area Science and Innovation Consortium (BAEF/BASIC) took steps to identify linkages and possible integration of the 21st Century Worker Profiles project with the California Trade & Investment Study, as well as Assemblywoman’s Caballero’s workforce initiative.

It should be mentioned that the contractor engaged to develop the Innovation Driven Economic Development Model was also engaged in the State’s “Regional Economies” Initiative, with synergies among the two efforts being identified as a key benefit to California’s moving forward in the 21st Century. Preliminary discussions with the California Labor Agency were initiated regarding the possibility of integrating the Innovation Driven Economic Development Model within the State economic strategy.

No discussion of integration would be complete without mention of the development of the CIC WIRED initiative metrics matrix, which attempts to

integrate the entire CIC WIRED initiative by articulating expected outcomes, outputs, ongoing transformation, as well as customers (WIBs, industry, economic development, etc.) served, and linkages among all 25 projects.

Lastly, the beginning of the development of the vision that the Corridor WIRED initiative might lead to alignment of three major systems – 1) Workforce; 2) Education; and 3) Economic Development – to leverage diminishing resources while supporting the necessary integration to maximize collaboration resulting in heightened competitiveness in the global innovation economy.

Key Products produced or forthcoming from this quarter:

- CIC WIRED partners and California Tech 100 organizers supported production of a State-produced/funded video on California's science and technology innovation, ensuring integration of WIRED objectives with ongoing State promotion of California as a science, technology and innovation global leader.
- BAEF/BASIC will produce an event template based on its Innovation Network Roundtable for use by other WIRED partners. A draft of the recap of important innovation insights and inputs from participating innovators was produced and will be finalized and distributed next quarter.
- Project 1.4 team members are creating templates for use of all CIC WIRED partners in selecting All-Star companies for innovation awards as well as "hot start-ups" and an event template to allow replication of CA Tech 100 as a new model for WIB/ED immersion into the innovation sector, with content for angel investor seminar, entrepreneur boot camp and other sessions also captured.

*Sustainability Projects include: Innovation Driven Economic Development Model (1.1), Innovation Asset Inventory (1.3), WIB Toolkit (1.7), STEMCAP (3.5), Learning Collaboratory (3.14)

Program Administration:

- Forty-one partners were on contract as of June 30, with only one partner contract still in progress due to the unique requirements of military contracts
- Date and concept for fall Partner meeting set
- 30-page draft metrics matrix for all 25 CIC WIRED projects was completed for integration into updated Grant Implementation Plan
- Recommendations for common measures projects were made and are being researched for feasibility
- Work on numerous projects that have been stalled for research or realignment has now begun in earnest: Project 1.2, 3.1, 3.8, 3.13
- Numerous carry-overs of Year One funding into Year Two were executed for partners with contract or Scope of Work delays

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- Hosted a very successful two-day DOL site visit with a fast paced itinerary including visits with five WIBs, observation of training and discussions with both trainees and the trainer, along with meetings with project leads, CSA/CSEWI liaisons, and representatives of the Corridor Leadership Team. Three of the five WIBs visited have subsequently become engaged in the Corridor WIRED project as a result of the visits.

Innovation Support:

- **Project 1.1 (Innovation Driven Economic Development Model)** The BASIC/BAEF Innovation Network Roundtable was held 4/5/07, resulting in key Bay Area innovators helping to develop insight and content for the Innovation Driven Economic Development Model. The event template will become one of the tools in the Economic Development Toolkit. Event identified key commercialization players as: inventor, broker, transformer and financier and concluded: 1) A successful economic model must address the global nature of today's innovation, from workforce to cross-border financing, brokering and taxation; 2) the broker role is emergent and needs better understanding and support; and 3) California's current leadership of global innovation is no guarantee of future success, so attention to innovation support is critical. A step toward sustainability took place when the BASIC Board of Directors adopted two of the four Roundtable recommendations: 1) To immediately launch a 21st Century Workforce project (to be integrated with WIRED Project 1.2); and 2) Closer collaboration among industries, universities and government to benefit science and technology was supported, with BASIC taking on a "broker" role still under discussion. BASIC's role in promotion of globalization deferred to a team discussion linking it with the California Trade & Investment Strategy study. BASIC also engaged a contractor to develop the Innovation Driven Economic Development Model. Doug Henton of Collaborative Economics, who also served as key consultant on the State's Regional Economies project and cluster development work began work in May. Doug's role is pivotal to integrating the work of the Corridor WIRED project into the State's economic strategy, ensuring sustainability of the work accomplished while fostering integration into the State efforts.

Further, the role of California Council on Science and Technology (CCST) was further defined and will include identification for State, regional and local economic development stakeholders sectors where California enjoys innovation advantage and examples of how assets have been exploited to its advantage.

Golden Capital Network has tentatively identified the three venture communities for pilot projects which include 1) Coachella Valley, San Bernardino, and 3) Santa Cruz. Support materials for community and stakeholder recruitment will be provided by Chabin Concepts.

The international component of Project 1.1 included CSA facilitating the International Business Matchmaking program at the International Satellite

and Communications exchange (ISCe) 2007. Twenty-five companies registered online, (16 U.S., 9 international), with three face-to-face meetings, sixteen email introductions facilitated, and one known request for quote resulting. As part of ISCe, CSA also hosted the conference's International Welcome Luncheon, which included representation of the Canadian, Danish, Israeli governments and President of the Asia Pacific Satellite and Communications Council. A matchmaking event was also used to orient California companies to Corridor partner El Camino College's Center for International Trade Development (CITD) resources. One targeted company has since registered for CITD's Aerospace Export Training and Enabler Program, provided by the El Camino program in cooperation with U.S. Department of Commerce's Export Assistance Centers in L.A. and Orange County, CSA, and Corridor partner California Manufacturing Technology Consulting.

Work on the CIC Portal on the Connectory continued, with testing of functional improvements, additional non-company innovation asset profile development and the integration of GIS/mapping capabilities all progressing. An automated economic cluster analysis generation tool is being considered to allow Connectory to generate the relevant employment clusters for any California county benchmarked against other counties, the state and the nation. Tool could also allow for cluster analysis of customized regions such as the Corridor.

- **Project 1.2 (21st Century Workforce Profiles)** The standardized language for the Scope of Work (SOW) content has been agreed upon, with final SOW for all partners to be completed in Q3-07. Twenty-first Century job profiles of eight technician-level occupations in Pharmaceutical and medicine manufacturing (NAIC 3254), Semiconductor and electronic component manufacturing (NAIC 3344), Electronic instrument manufacturing (NAIC 3345) and Scientific research and development services (NAIC 5417) are being produced by occupational surveys to be developed, distributed and analyzed by the California Employment Development Department's (EDD's) Labor Market Information Division (LMID). Profiles will be validated by partner-conducted interviews, focus groups, and/or additional surveys within the CIC sub-regions.
- **Project 1.3 (Asset Inventory)** Project 1.3 was completed in Q1-2007. Inventory will be available on a Web portal for the California Innovation Corridor once portal development is achieved (portal development work is being done under Project 1.1) the final report on the project was completed and submitted by project lead BASIC. Profile templates and innovation criteria are complete. The "How to" tool is in development and will reside within the Toolkit.

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- **Project 1.4 (Replicable Training for 40 Innovation-based Entrepreneurial Ventures Demonstration Project)** Project 1.4 team hosted California Tech 100 event on April 24-25, with Secretary Victoria Bradshaw of the California Labor and Workforce Development Agency and Secretary Dale Bonner, Business, Transportation and Housing Agency participating. Further, Mark Mosher and Duane Roth of the Governor's California Commission for Jobs and Economic Growth, presented the California Innovation awards to 15 companies who were selected from 300 nominated companies, of which 75 were recognized as California Innovation "All-Stars" at the event dinner. The project team was led by the San Diego East County EDC, who coordinated numerous panels and workshops, including five sessions featuring government programs. The multi-faceted event featured entrepreneur "boot camp", angel seminar, networking, all-star competition, dinner and a "Ballroom Blitz" showcasing 35 entrepreneurial venture snapshots for angel consideration. Founder and former CEO of AST Safi Qureshey gave a keynote presentation about building a market-leading company in today's global economy; PricewaterhouseCoopers provided data on the state of the private equity market in the CIC. In cooperation with Tech Coast Angels, a seminar was provided for angel investors using the Kauffman Foundation Power of Angels Investing seminar format. As the only WIB partner on the project, San Diego Workforce Partnership coordinated a breakfast meeting with WIB and EDO attendees on 4/25/07 as an orientation to the event, and then a luncheon meeting to discuss WIB/EDO perspectives on the program to that point. The attending WIBs/EDOs concluded: 1) WIBs/EDOs need a the good understanding of long-term direction of economy, 2) they also should understand needs of innovation start-ups and ensure there are training providers to meet entrepreneurial needs, 3) they should not duplicate services of other providers, and 4) they should serve as brokers of services for entrepreneurs. Materials to help WIBs work with entrepreneurs/start-ups is being developed as a follow-up. Next steps for the project include tracking entrepreneurial companies against a set of progress indicators. CSA public relations staff generated significant publicity of this event. A white paper and event template are being produced and will be shared with Project 1.1. Lessons learned are in progress, one of which will be the unexpected difficulty in attracting robust WIB and EDO involvement for the innovation/entrepreneurship immersion experience.
 - **Project 1.5 (Joint University Innovation Model)** Significant progress toward "immersion" of university faculty and students in innovative industry environments was made this quarter. Initial selection of all but one business student of the Stanford University Innovation Team is complete. Agreements with other Stanford innovation-related programs are in place. This will allow considerable leverage of Project 1.5 within Stanford and surrounding community. In cooperation with the resident Anderson

Graduate School of Management, the University of California, Riverside (UCR), team developed the site visit questionnaire. Three site visits of innovative companies were conducted in southern California, with a workshop/seminar on methods and early findings presented as part of UCR's first TechHorizons Conference May 16, 2007. Seventy-five people attended. The key focus of the seminar was the presentation and discussion of various definitions of innovation – all quite different. Consensus: innovation is more than invention, but not limited to good ideas producing goods and/or services, process improvements and innovations. Consensus was reached on the need for emphasis on not only the teaching of tools, but how to use tools to solve problems, both alone and in teams, as part of “teaching” innovation. The senior design project was identified as a means of doing this, if the project itself is designed correctly. Internships, co-op appointments, meaningful student research opportunities on real projects in on-campus labs were also identified as innovation success factors. Additional note: importance of universities remaining open to risk and failure, to encourage innovation and entrepreneurial effort was cited as important. In addition, potential targets for future site visits were identified and companies were encouraged to complete Supplier Survey from Project 2.2.

- **Project 1.6 (Pilot Project: Alternative, Affordable Launch Options for Student Payloads)** CSA and the Naval Postgraduate School (NPS) continue to work issues surrounding the development of a Cooperative Research and Development Agreement (CRADA) between CSA and the US Navy. Meantime, NPS presented an overview of the 1.6 project at both the Cubesat workshop and Small Payload Rideshare conference, in anticipation of forward progress. The program staff are committed to the project and are only waiting for administrative approvals which appear to be moving forward.
- **Project 1.7 (WIB Toolkit)** The Toolkit draft is scheduled to be presented at the CWA Meeting of the Minds symposium in Monterey (MMM) September 4-6, with panel discussions around the Toolkit being planned. A review panel has been formed, with first meeting of the panel to be July 11. Project lead CA Council on Science and Technology (CCST) has engaged consultant TimeStructures for development of toolkit identified as a priority to develop the Toolkit, with ongoing discussions with project partner CA Workforce Association regarding the integration of the Toolkit into CWA's annual meetings and activities. Agreement was reached to organize the Toolkit to identify successful WIB practices in strategic planning for the development of local workforce policy. Four key roles of WIBs have been identified: 1) convener, 2) workforce intelligence, 3) broker, and 4) community voice. Identification of additional regional economic strategies informing the Toolkit were afforded by CWA's attendance at the “Getting Down to Business: Community Colleges and Business Working Together”, in which CWA presented WIRED and CWA's efforts to transform the local

workforce system for improved investment in training responsive to business demand. CCST and its subcontractor have collected science and industry data on California's competitive position; WIBs, EDOs, and business associations have been contacted to develop Toolkit case studies, and six case studies have been completed. Key elements of the Toolkit have been identified, with sections of the Toolkit on science and the economy already researched and drafted.

Industrial Rejuvenation/Supply Chain Competitiveness

- **Project 2.1 (Characterization of Supply Chain Transformation and Identification of Priority Supplier Training Target Areas)** Project 2.1 was completed Q1-2007 with completion of the development of the Supply Chain Transformation Survey. See distribution/analysis info under 2.2
- **Project 2.2 (Common Learning Outcomes Across the Supply Chain Provider Network)** The Supply Chain Transformation Survey collaboratively developed by the Supply Chain Industry Advisory Group (SCIAG) and other industry representatives in cooperation with 2.2 partners Antelope Valley College, CMTC, CSA, NOVA and other supporters, went online in April, with distribution efforts targeting every level of the supply chain. Email blasts, face to face invitations and direct mailings are all in play, with the revised survey response date being extended to July 31, 2007. A Supplier Resources Web Page is being developed to support survey and research efforts to identify training gaps and resources for an eventual supply chain transformation training matrix and white paper. It will reside on the Innovated California.net website. The Website URL has been shared with all levels of the supply chain through the survey outreach. Preliminary analysis of survey data being received endorses need to develop training and program opportunities to support common smart supplier learning outcomes. Literature review on supply chain transformation is in progress at Antelope Valley College (AVC). AVC and CSA participated in the Space and Aerospace Supplier conference (SAS) hosted by Raytheon, speaking to over 100 aerospace suppliers about the WIRED supplier projects and the survey. An October 24th Supplier Forum venue will be hosted by Raytheon in El Segundo. A draft agenda has been circulated and the Supply Chain Industry Advisory Group is proceeding with the planning. The SCIAG meeting was held on April 27, 2007 at aerospace supplier ACE Clearwater in Torrance CA. The WIRED smart supplier initiative projects, and all related Space enterprise Strategic objectives, were reviewed and prioritized This was regarded by many attendees to be one of the best collaborative industry sessions that they had attended, much of which could be attributed to the Supply Chain Industry Advisory Group participation. The supply chain survey was reviewed and strategies for wide distribution were discussed. In addition, the Scope of Work for the Western Research Application Center (WESRAC) at University of Southern California (USC) was

completed for a computer simulation/case study regarding impact of information flow across a small supply chain. WESRAC has confirmed that aerospace supplier Ace Clearwater will participate as a demonstration project partner. Some supply chain scenarios have been simulated and the results shared with Claremont Graduate University. Further, discussions transpired with the Council on Competitiveness regarding possible teaming opportunity to build a curriculum for the use of computer simulation in Rapid Prototyping.

- **Project 2.3 (Outreach to Suppliers Regarding Training and Funding Resources)** Training has begun for of Space Systems/Loral (SS/L) hires/employees benefiting from funding support of the California Employment Training Panel (ETP), a California Innovation Corridor WIRED in-kind partner. An estimated 1000 incumbent SS/L workers are expected to be trained in satellite production as a result of CSA outreach. Additional outreach activities are planned once the common smart supplier outcomes are identified in project 2.2.

Space Systems/Loral has been in business since 1957, with its first three communications satellites build in 1960. It has manufactured more than 220 satellites, delivering in excess of 1,200 years of on-orbit service. Because of the years of service of each satellite, the company must offer continuous support services to its current customers in addition to developing new technologies and applications for its products. To achieve its goals, the company will train its incumbent workers and new hires in manufacturing skills, business skills, and advanced technology skills. The trainees will receive between 24 and 200 hours of classroom/laboratory training and computer-based training. The manufacturing training will improve technical skills resulting in process improvement, cycle time reduction, cost saving, and minimization of waste. Business training will cross train employees in various functions, best practices for product development, product reliability and will foster compliance with product and process qualifications. The advanced technology training focus will be the Pro/Engineering CAD (Wildfire) software for engineers, software crucial to mechanical design and modeling of satellites.

- **Project 2.4 (Manufacturing Technologist Certificate)** Developed and distributed 100 surveys at the WESTEC conference to assess industry interest in the Manufacturing Technologist Certification program. Forty-eight surveys were returned, with results indicating aerospace manufacturing sector does need an industry-recognized certification for a manufacturing generalist. Five meetings were held with the Society of Manufacturing Engineers (SME) regarding potential collaboration and contract finalization. Meeting between El Camino College and South Bay WIB was held to determine timeline for the South Bay WIB involvement in recruitment. El Camino College Board of Trustees approved agreement with SME. SME will survey industry focus groups and develop a body of knowledge to inform the WIRED 2.4 manufacturing technologist certification.

El Camino College representatives attended the ACT WorkKeys Conference in New Orleans to determine applicability of the WorkKeys assessment for Applied Technology as a pre-assessment tool for the certification program being developed for this project. The tool was accepted for assessing entering certification candidates. Project 2.4 status was provided at the California Community College statewide Centers for Applied Competitive Technologies (CACTs) Director's meeting and also at the SB70 conference in Sacramento. Two local high schools were approached for articulation agreements on Project Lead the Way, with the certification program introduced.

Talent Development

- **Project 3.1 (Workforce Analysis on 100 Key Entities)** Project 3.1 funded economic development, WIB and EDD's LMID (in-kind partner) have, through consensus, created an innovative partnership. For each partner area, LMID will provide staffing patterns (existing and projected employment) for that area's three "top" industries, with "top" being determined through analysis of nine consensus-based criteria, e.g. a location quotient of 1.3 or greater. LMID will also provide company data and contacts, with EDO and WIB partners then arranging quantitative and qualitative interviews with key industry corporation executives, sometimes accompanied by LMID. A list of agreed upon questions by the project team and LMID will be developed to ensure consist use of the same tool. The purpose is to provide unified economic development/WIB support for industry staffing needs, both near and mid-term.
- **Project 3.2 (Space Employer/University Consortium)** Project 3.2 SOW was completed, with the CSA Consortium to seek out existing university programs and student groups, existing industry programs to help students find the technical resources and support needed for student space access opportunities. The Consortium will provide student groups and university programs with access to existing industry contacts for pursuit of potential project partnerships, career seminars, field trips and other career development support. CSA addressed Consortium efforts with attendance at a United States Research Association (USRA) meeting on student payload launches, the CubeSat Workshop and the Small Payload Rideshare conference.
- **Project 3.3 (Space-Related University Internship Program)** Stanford and Garvey Spacecraft identified student payload placement opportunities on the P-8A vehicle. A model of the P-8A bulkhead has been made to facilitate development of CubeSat and CanSat launchers. Stanford and unfunded partner California State University San Jose students are engaged, with all materials on hand. A joint Stanford/Seoul National University for Korea project-related workshop was held in June to evaluate electronic system needs for student payloads. Stanford Space & Systems Development Lab created a high altitude balloon program for collaborative science research with NASA Ames Research Center. This program

provides an opportunity for elementary school students to experience flying experiments in a PearlSat (ping-pong ball cut open with student-determined payload inside) A “string” of these “pearls” is attached to the balloon. (See Project 3.10, p.12) California State University Long Beach (CSULB) students are well into integration of P-8 vehicle, with installation and testing of the regulated helium pressurization and propellant feed systems completed. Successful horizontal engine testing in May enabled the student team to move on to a path finding vertical static fire test in June with the full vehicle. Preparations are underway for first flight in late summer/early fall. Students are being mentored not only on hardware experience, but with significant exposure to procurement practices and policies, all of which provide the experiential training that is extremely valuable for future career opportunities.

- **Project 3.4 (Systems Engineering Outreach/Training)** Team completed needs assessment, identifying nine categories of systems engineering (SE) skills, and 39 specific topics. Forty-nine potential SE courses with eight different providers have been identified. Individual discussions with three potential additional providers took place: UC Berkeley, UC Irvine, Loyola Marymount University – all agreeing to support the project. Matrix of potential courses was created cross-referencing the 39 SE topics. Website planning for outreach effort has begun. Introductory course objectives and framework has been articulated, with a tentative catalog format developed for listing of the SE coursework. Format features six sections, course matrix mapping courses to SE competencies, a template for individual course descriptions. Team held preliminary discussions with potential SE curriculum students and sponsoring corporations. Three SE focus areas will be considered specializations, with curricular guidance providing core topics as well: management, processes, tools.
- **Project 3.5 (STEM Collaborative Action Plan-STEMCAP)** Development of the STEMCAP moved forward with awarding of the development contract to the Alliance for Regional Collaboration for Heightened Education Success (ARCHES), a consortium of numerous regional collaboratives, each involving elementary, high school, community college, university and community participation. A Steering Committee planning webinar and a Steering Committee breakfast were held, with the breakfast featuring John Garvey, Garvey Spacecraft, describing his WIRED Project 3.3 work with college students and hands-on rocket building. The May 19th STEMCAP Forum and Working Group Session brought together 90 educators, industry and workforce stakeholders, as well as representatives from two national organizations interested in the project: National Assn. of State Universities and Land Grant Colleges (NASULGC) and National Assn. of System Heads (NASH). Speakers for the event included President Warren Baker, California Polytechnic University, San Luis Obispo, who is the lead of the California State University Math and Science Teacher Initiative; Jack O’Connell, Superintendent, California Public Instruction (chief, K-12 education) and Rick Stephens, Senior Vice

President, The Boeing Company. After their presentations, the three participated in a dialogue facilitated by ARCHES executive director Dr. Diane Siri. Four working groups (industry/employers, informal science, K-12, university) considered several topics related to STEMCAP content. Increasing participation and support of the STEMCAP bodes well for the final product, a draft of which is being planned for the January 2008 Steering Committee meeting. ARCHES is currently recruiting an advisory group to help coordinate inputs from several focus groups being approached for targeted stakeholder inputs.

- **Project 3.7 (Retraining of Dislocated/Unemployed Software Specialists/Software Engineering for Aerospace and Defense Applications Certification)** The four-month University of California Santa Cruz Extension certificate program began April 14, 2007 with classes Tuesday/Thursday evenings, Saturdays and occasional Sunday. Fifteen students have thus far enrolled and been retained in the program. Guest speakers have included corporate representatives from Rockwell-Collins and Lockheed Martin. In May and June, two job club meetings were held for participants to discuss job search strategies, identification of jobs for which they were qualified, tailoring their resumes for aerospace/defense, and identifying skills gaps. Most participants also participated in other job-search related workshops offered at the NOVA WIB One-Stop. Through June, five of the seven classes of the certification program have been completed. Two students have already been successfully placed.
- **Project 3.8 (Advisor Outreach/Orientation)** Primary activities this quarter focused on recruitment of new space professionals to assist in identifying schools (universities) and then advisors to target. Promising connection was made at the NASA Ames Next Generation Exploration Conference, where a partnership was forged to move forward in identifying appropriate project participants. AIAA young professionals are also being approached for insight, as is the CSA/CSEWI New Space Professionals Working Group.
- **Project 3.9 (Teacher Certification Assistance Program of Troops to Teachers)** Recruitment of technically-oriented mid-career changers to teach K-12 math and science began in earnest this quarter, after several quarters of organization and development. Outreach to industry partners began in April, with contacts approached being Raytheon, Aerojet, Boeing, Lockheed Martin and others. Goal is identification of 30 contacts/leads in Year Two. Initial counseling has been initiated with two candidates. Interesting data point is that a Raytheon plant on the Central Coast of California is closing, with about seventy engineers seeking new work. CSA was able to refer Troops to an introduction with the HR Director to seek access with other transitioning engineers. CSA's other member companies are also being targeted for recruitment of retirees. The Los Angeles Unified School District has been approached for a meeting to discuss a partnership with the Troops/CSEWI effort and various legislators

have been educated about the initiative, enhancing local community outreach to areas that may be impacted with dislocated technical workers.

- **Project 3.10 (The Stanford Model Mentoring Program)** Sherman Oaks elementary school in Campbell, California, had over 300 PearlSats in Stanford's May 11th balloon flight which reached over 90,000 feet.(see interface with Project 3.3, P. 10). Sherman Oaks is a charter school with a significant Latino population. Classes are taught half-day in English, half-day in Spanish. Mr. Alfred Tadros, Director, NASA/Civil and DOD Programs, Space Systems/Loral, is the Sherman Oaks mentor working primarily with fourth grade students. The balloon was launched from a pad near San Jose, recovered near Stockton, for about a 120 mile three-hour flight. Flight status was announced over the school's public address system. The "near space" experiments allowed students to evaluate impact of space and high altitude on various materials and the program is already being seen as a model for elementary school outreach. Balloon flights featuring PearlSat payloads are a significant success story for fostering elementary science interest. Science workshop with fourth and fifth grade students at Sherman Oaks is completed, initial electronics training with high school class at Fremont High School is complete, final spring term experiments using advanced electronics components is complete. Mentors have met with teachers to evaluate initial WIRED efforts and begin planning 2007-08 school year activities.
- **Project 3.11 (Mechatronics and STEM Recruitment Strategies)** Allan Hancock College (AHC) received approval from the College Now! Local high school dual-enrollment initiative to offer Space 102, Intro to Aerospace, Space 104, Quality Management Control & Processes to qualified secondary students effective September, 2007. Santa Barbara County WIB executive director, Western Trade Adjustment Assistance Center and AHC have joined in orienting the Santa Maria Manufacturers Association about their supporting programs, with curriculum development and sharing taking place with both Sierra (community) College and Cal Poly San Luis Obispo.

College of the Canyons has purchased its robotics equipment for its lead high school, finalized the coaches' workshop and handbook for piloting and has scheduled summer workshops for counselors and teachers from five participating middle schools to increase awareness of career pathways in emerging industries. Forty-two students have been recruited into the July 2007 summer robotics camp.

Lancaster University Center conducted three sessions of briefings on engineering and science careers with 60 Challenger middle school students attending, resulting in the school requesting that the briefings be repeated annually.

Cerritos College has attracted sixty-one high school students to enroll in workshops exploring engineering and science fields; 35 students participated in a Technology Expo on surfboard design/construction; STEM careers featured in "Senior Preview Day" attracted over 800

students, 44 high school counselors from five campuses. Three hundred high school advisors and STEM stakeholders attended the Cerritos advisory recognition breakfast, which featured presentations regarding Career Technical Education. See Talent Development under Strategic Partnerships/Relationships in Section IV A (P. 18) for new Cerritos College partnership detail. Nearly 2000 students and 25 school officials were touched by Project 3.11 STEM career outreach this quarter.

Project 3.12 (Educator Launch Conferences) The Astronomy of Ice in the Mesosphere (AIM) K-12 Educator Launch Conference was a huge success. The AIM Pegasus launch and mission went on time and successfully on-orbit. Many of the educators indicated this was the best teacher conference they have ever attended and very thankful for the opportunity!!! All will be back for the next one and guarantee they will bring three more of their colleagues. The PI Dr. Russell and Bob Richards, OSC, LV Director talked with the teachers for 45 minutes each with Q&A session the entire time as they were presenting. At least 100 plus questions answered. The educators went to flight-line and all looked at the Stargazer Aircraft and Pegasus rocket from a distance. Then they met with the NASA chase plane pilot and photographer on-board and were provided a tour of the jet fighter prior to take-off as the chase plane that takes all close up images. We went to NASA Mission Center and watched the launch, including a detailed countdown sequence of all activities. A special treat included an opportunity to meet the lady shooting all the images from the chase plane prior to seeing them. The K-12 workshops at Allan Hancock College, Lompoc Valley Center were first class. All teachers walked away with 100 plus dollars of curriculum, activities, posters, etc.

A draft of "Mission to Planet Earth Systems" curriculum unit sections was completed, with a joint meeting of CSA, SIL, Jet Propulsion Lab (JPL), and the University of California Santa Barbara (UCSB) at the JPL scheduled to review the curriculum section on Earth Satellite Imaging. JPL, UCSB and SIL also will be discussing a potential WIRED Earth Summit conference at JPL and/or UCSB for early 2008. An Independent Product Team (IPT) for earth systems curriculum review and feedback has been formed.

- **Project 3.13 (CA Space Education Center)** The 3.13 SOW and budget have been completed. CSEWI is now in the concept and development phase of the virtual center, including organizing the process of input from collaborators of its featured programs – the NASA Centennial Challenge and the Zero South project, designing a user-friendly, intuitive navigation of the Center's information and determining the physical look of the outreach site that conveys the right message to its target audience, K-16 students, educators and those interested in STEM subjects. The project is also seeking additional support to assist in the computer/Internet-based aspects of the development and production of the virtual Center. CSEWI efforts this quarter included final planning and execution of the NASA Regolith Excavation (Centennial) Challenge innovation event, with

co-sponsor California Space Authority. The Regolith Excavation Challenge ran throughout the day concurrently with the 1st Annual California RoboChallenge that included nearly 40 teams of students K-12 using Lego© Mindstorm® kits. The students were able to observe the excavation machines and their inventors during the excavation challenge, In addition, Apollo 11 astronaut Dr. Buzz Aldrin, Dr. S. Pete Worden, Director of NASA Ames Research Center and Col. Stephen Tanous, USAF, commander of the 30th Space Wing, were featured speakers and were asked many questions by the students. Media attendees included representatives of Central California Coast newspapers, television stations, but also of the New York Times magazine, WIRED magazine and New Scientist. Discovery Channel, plus radio outreach entities such as BBC Science and The Planetary Society also attended.

- **Project 3.14 (WIB Learning Collaboratory)** CWA has incorporated WIRED objectives into numerous annual activities, in addition to its required deliverables, which all focus on business services and expanding talent development. The annual spring conference entitled “Talent Show” featured highlights showing what the workforce system is doing to build a talent base for employers, plus plenaries on the skills crisis, the relationship of the WIBs and colleges, sectoral investments in response to business demand, an overview of the WIRED initiative and more. The CWA quarterly meeting focused on alternative resources for supporting talent development, with reports/discussion with Community College League of California and Bureau of Apprenticeship Standards. Drafting of monographs on Regionalism and Competitive Workforce Advantage are under development, with plans underway on anticipated uses and roll-out.

Discussions took place with the State Employment Development Department (EDD) and the California State WIB on service integration, with the transformational aspect being the movement of the service model to a skill-based system, with a more overt commitment to value-added services in preparing all workers as job candidates. CWA, EDD and the California State WIB have initiated a workgroup to determine how the Trade Adjustment Assistance (TAA) program can be more integrated with the One-Stop Career Center system, thereby enabling TAA training support for workers in response to business demand and opportunity. This initiative is an example of the need for a systems alignment approach.

A Memo of Understanding between CWA and the California Community College Association of Occupational Educators to increase mutual understanding and enhance and leverage WIB and Occupational Education programs statewide. CWA staff also helped better position WIBs and One-Stops for opportunities through California’s Career Technical Education initiative by participating as a Resource Specialist in the joint California Department of Education and California Community College effort to develop California’s Perkins Plan for Career Technical

Education. A Policy Recommendations white paper supporting WIRED objectives was developed.

C. Status Update on Strategic Partnership Activities

Early in the Corridor WIRED initiative, industry was beginning to ramp up. However, it is obvious now that industry will be driving much of the effort. Advisory groups of industry, industry interviews, industry mentors, industry reviewers, industry liaisons and dozens of other strategic partnership roles for industry are being identified and exploited as the initiative moves forward. (See project updates beginning on page two for detail within projects.)

As an example, BAEF/BASIC was able to engage Hewlett Packard (HP) in coordinating the program and logistics for the Innovation Roundtable, with a core team of three HP executives, two BASIC representatives and an HP consultant tackling the effort. HP's contacts with other innovation-oriented companies to recruit for presenters and Roundtable participants were invaluable.

D. Status Update on Leveraged Resources

The leveraged resources reported by partners for Q2, 2007 totaled \$325, 479.54. CSA in-kind is estimated at \$101,395.37, for a total quarterly leverage of \$426,874.91. The State is working on providing a comprehensive amount for in-kind staff time and expenses over and above the administrative costs for this project, which will be included in the next quarterly report.

SECTION II: REGIONAL METRICS

WIRED Performance Measures and Results

Overall Program Administration

A CIC WIRED Metrics Task Force comprised of Tom Hooper from DOL/ETA, Liz Clingman from EDD, and Victoria Conner of Strategic Vitality LLC representing CSA and its WIRED partners, produced a draft metrics document for partner feedback and eventual inclusion into the updated Grant Implementation Plan. Metrics document was reviewed by Program Manager Judy Turner and is currently under review by partners, scheduled for completion by July 31, 2007. As part of that document, seven projects were recommended by a State team to be included as "common measures" projects.

Discussion of Results

Innovation Support

- A minimum of 20 innovation asset profiles (R&D/innovation companies, military installations, federal labs or universities) per partner was established for Project 1.3 Asset Inventory partners. Project goal was 150 asset profiles.

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- This goal was met, and profiles will be uploaded when CIC Portal is up and operational. The portal design document is completed.
- Development of templates for asset inventory profile templates for federal labs/military installations, universities, industry are complete.
 - Innovation Roundtable and Entrepreneur/Angel event (CA Tech 100) were both held, with product development and event templates in progress.

Industrial Rejuvenation

- Supplier survey has been completed (2.1) and distributed (2.2)
- Training of the estimated 1000 satellite production workers has begun (Space Systems/Loral) (2.3)
- The Supply Chain Industry Advisory Group participated in a meeting with 45 suppliers on April 27, 2007, and discussing the WIRED smart supplier initiative projects and strategies for distribution of the supplier survey.

Talent Development

- Development of balloon launch program, student payload flight is completed, with 500 students participating
- Recruitment of one elementary school and one high school for mentoring demonstration projects has been accomplished
- Development of two new Mechatronics degrees has been achieved
- Establishment and work of the STEMCAP's three working groups are complete
- Metric of 100 high school students participating in technical career outreach programs at Allan Hancock College, College of the Canyons and Cerritos College (100 at each) has been vastly exceeded. Cerritos College, for example, has documented outreach to over 1000 students
- Jet Propulsion Lab and the University of California Santa Barbara have been recruited as an earth science curriculum development partners
- Skills needs identification, curriculum developed for dislocated/unemployed software engineers transitioning to aerospace opportunities, with 15 students recruited for the first class and an approved University of California certificate.
- Outreach materials have been completed, recruitment has begun for technical worker recruitment into teaching through the Troops to Teachers program

SECTION III: CHALLENGES TO PROJECT PROGRESS

Overall Program/Individual Project Administration

Challenge: Building understanding across projects for ultimate project integration; challenge of leveraging resources, knowledge, learning gained shared from one project to another (same as last quarter).

Action Being Taken: Established subset of Project Leads Forum established last quarter – the Sustainability Project Leads Group, which is working on continuity among its projects.

Challenge: Products being developed for Corridor WIRED effort do not yet have an identified “home”...are currently dispersed across CSA/InnovateCalifornia.net/CSEWI websites, etc.

Action Being Taken: Program Manager has begun discussions to ensure access, retrieval effectively.

Challenge: DOL “flowdown” contract issues prior to executing contract, especially with universities, learning institutions.

Action Taken: Persistent and creative working of the problem – in the case of Project 1.6, a CRADA is being pursued as a vehicle of agreement at the same time that the regular WIRED contracting process is being worked.

Challenge: Finalizing metrics for the Corridor WIRED initiative.

Action Taken: Participation in a metrics task force with the State and ETA with the task force spending approximately 40 hours each to define and refine metrics. Draft of metrics now in review by partners, with further refinements being suggested.

Challenge: Sustainability of good work in WIRED Corridor project.

Action Being Taken: Meeting of the Resource Development Task Force, Inclusion of the topic in Partner and Project Lead meetings, distribution of DOL-sent opportunities.

Innovation Support

Challenge: All products reflecting the same vision of an innovation-supportive ecosystem or culture.

Action Being Taken: See Sustainability Project Leads group above.

Industrial Rejuvenation/Supply Chain Competitiveness

Challenge: Creating appropriate training quickly enough to ensure ongoing competitiveness.

Action Being Taken: Fall Supplier Forum to continue development of Common learning outcomes and Maturity Capabilities Model.

Talent Development

Challenge: Linking all the good STEM efforts statewide.

Action Being Taken: Insights, inputs all received, synthesis beginning.

Challenge: Attracting WIB attendance at key Corridor orientation events.

Action Being Taken: Transferring learning to CWA/CCST for inclusion in outreach through Learning Collaboratory in 3.14 and in WIB Toolkit.

Challenge: Recognition of the variety of levels of sophistication and the lack of the use of a common language and tools across the WIBs in the Corridor.

Action Being Taken: Partnership developed with state LMID to facilitate development of tools to address.

SECTION IV: PROMISING INNOVATION PROCESSES and SUCCESS STORIES

A. Promising Approaches, Processes, and Lessons Learned

Project Implementation

- The “standing up” of a subset of the Project Leads Forum (the Sustainability Project Leads), while only to date having one group webinar, promises to enhance communication and understanding across the Sustainability Projects. Sharing contact information and early drafts of deliverables should enhance Corridor WIRED integration overall.

Project Administration and Management

- See focus on “integration”, (P. 1)
- Public Relations and Outreach. Multiple media entities at both the CA Tech 100 and the Regolith, including magazines and television crews with a national audience and an international radio outlet. Outreach materials developed and used at Space Week I Washington D.C. to reach federal policy makers and Space Day in Sacramento to reach state policy makers.
- Initial steps in the development of a sustainability resource strategy.

New and Innovative Solutions to Economic and Workforce Development

- Both Project 1.2 and 3.1 teams are working with the State Labor Market Information Division hand in hand to articulate new data needs and make new uses of data available through this important State resource, working to ensure continuity of job and skills needs assessment and ensuing solutions. Innovation is seen in the intention to include LMID staff in some of the industry interviews being set up to validate both qualitatively and quantitatively the LMID data received. This will allow for greater continuity among all data partners, and will inform LMID’s processing of data requests from both the workforce and economic development communities

Strategic Partnerships/Relationships

Innovation Support

- The Project 1.2 team’s partnership with Bay Bio (facilitated by BASIC/BAEF) and hopefully with the San Diego biotech association will ensure good representation of biotech companies in the skills analysis and job profiles for this project.
- Project 1.4’s connection with the Far West Federal Lab Consortium for the California Tech 100 event has fostered a new partnership with the Consortium on how both EDOs and WIBs in the Corridor, in coordination with the Federal Lab Consortium, can foster innovation. It has also resulted in the Consortium outreaching to industry.

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- The California Association for Local Economic Development (CALED) has been approached as a potential partner for helping to orient economic developers to the WIRED lessons learned and the Innovation Driven Economic Development Model once it is produced.

Industrial Rejuvenation

- Western Research Applications Center (WESRAC), a WIRED 2.2 partner performing a supply chain/network-related project, has been reaching out to various WIRED partners to develop new relationships: CWA, CSA and the South Bay Economic Development Partnership are three organizations which have been approached in regard to collaboration around Trade Adjustment Assistance Center activities. WESRAC has also initiated a partnership with the Council on Competitiveness to build a curriculum for the use of computer simulation in Rapid Prototyping.

Talent Development

- The CWA Memo of Understanding with the California Community Colleges Association of Occupational Educators is targeting mutual understanding and information especially critical in light of the Governor's major funding of a California Technical Education (vocational training) initiative.
- Two new WIBs are now engaged in the CIC WIRED project. Allan Hancock College, lead of Project 3.11, the Mechatronics/Technical Career Outreach project, developed a strategic partnership with both the Santa Barbara County WIB and also the Santa Maria Manufacturers' Association around the Mechatronics program and its other WIRED work. In addition, Workforce2Future, the Santa Clara County WIB, is working with the 1.4 project team to connect their biotech incubator start-ups with WIRED support activities and resources.
- Cerritos College, with ABC, Norwalk/La Mirada School Districts and South East ROP have formed a strategic partnership called "Partnership for Quality Education" to align efforts to implement Career Technical Education and prepare students for the 21st Century workforce. The partnership will create a comprehensive program to prepare students for postsecondary education opportunities.

Leveraging of Resources

The examples below are merely a sampling. Other leverage detail will be available next quarter in an Excel spreadsheet detailing leverage estimated by each partner.

The California Space Authority, which facilitates the California Space Enterprise Strategic Plan, is ensuring leveraging of implementation efforts between the Plan and the Corridor WIRED initiative, many objectives of which are similar. Those objectives aligned fell into all three of the categories below.

Innovation Support

- Twenty executives from innovative companies were tapped by HP and WIRED partner BASIC/BAEF to provide innovation insights and help drive content of the Economic Innovation Model.
- The State of California Business, Transportation and Housing Agency supported California Space Authority in the production of a video highlighting key innovation industries and statewide innovation drivers. Value: approximately \$20,000.
- All of the angel and venture capital panelists and faculty that the 1.4 project team recruited for the California Tech 100 event, plus all of the All-Star company awardees participated at their own expense, creating tremendous value for those innovation start-up companies, economic development entities, WIBs and other innovation stakeholders attending.
- The East County EDC leveraged approximately \$4,550 in self-funded investment between 1 Apr 07 and 30 June 07 that went toward Connectory and innovation asset profile development.
- In addition, \$10,000 in California Business, Transportation and Housing (BTH) investment allowed the development of a design document and static maps presentations for a potential California Aerospace Portal on Connectory.com. The more portals are realized – cut along industry as well as regional economy lines – the greater the value proposition for CIC Portal sustainment. The CA Aerospace Portal will, like the CIC Portal, leverage the Defense Logistics Agency investment in developing a GIS capability for the Connectory.

Industrial Rejuvenation

- The Institutional Research and Planning Office at Antelope Valley College is assisting the AVC supply chain effort and those of its team members, by researching existing literature on supply chain management in order to inform the training recommendations and the supply chain white paper to be provided training organizations.

Talent Development

- Ninety Science, Technology, Engineering and Math (STEM) stakeholders served on one of four breakout groups at the May 19th STEM Collaborative Action Plan Forum, helping to drive content for the STEMCAP. All covered their own expenses and time, with the event held on the weekend to provide greater opportunity for K-12 teacher involvement.

Sustainability

- While the California Workforce Association (CWA), the EDD and the State WIB have all worked together in the past, their new effort to transform the service model to a skill-based system is very promising, and, with the support of all three stakeholder organizations, could drive long-term change in the California workforce system.

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- Curriculum being drafted by Space Information Laboratory, UCSB and JPL for earth sciences/systems, with plans to promulgate through the California Science Teachers Association. This could ensure ongoing continuity in the emerging earth sciences arena in California public schools and articulation of course content to the UC system.
 - The Board of Directors of the Bay Area Science Innovation Consortium (BASIC), after seeing the value of the Innovation Roundtable (Project 1.1) held in April, agreed to become directly involved in a “Basic 21st Century Workforce” project to align with the CIC WIRED 1.2 21st Century Worker Profiles project. Board involvement and alignment of BASIC internal projects with WIRED project priorities fuels sustainability of the 21st Century Workforce development effort.
 - A subset of the Project Leads Forum, those leads of the Sustainability Projects, are now being convened by CSA to ensure not only continuity across projects, but long-term sustainability, through individual project, organization or partner resource identification and exploitation and also institutionalization of findings.
 - Jack O’Connell, Superintendent of Public Instruction (K-12) for California; Rick Stephens, Sr. Vice President, The Boeing Company; and Cal Poly President Warren Baker, Chancellor-appointed CSU lead for the California Math and Science Initiative, as speakers at the May 19th STEMCAP Forum, have all been introduced to the STEMCAP, generating a greater likelihood of their adoption of its recommendations into their statewide (and in some cases national) efforts.
 - Contract was signed with ARCHES, the Alliance for Regional Collaboratives for Heightened Education Success, to develop the STEM Collaborative Action Plan. 2008 contract deliverables include the piloting of some STEMCAP recommended programs in the ARCHES regional collaborative network. Those Collaboratives enjoying program success will look for ongoing support on their own.
 - As a result of UCR’s involvement in WIRED, several students, faculty and staff members from the Bourns College of Engineering, Anderson Graduate School of Management, and Government and Community Relations Department have participated in workshops conducted by the WIRED program and by business development organizations, notably OCTANE in Orange County, California. From these roots, the campus is undertaking an initiative to systematically introduce venture capitalists to UCR and to introduce innovative faculty and students at UCR to the process of commercializing new concepts. These actions are outside the UCR WIRED SOW, but provide excellent promise for sustainability.

Replication

- Both the Innovation Roundtable and the California Tech 100 event are being “templated” by organizers, with those templates to become part of the Innovation Driven Economic Development Toolkit for future replication by other regions or sub-regions.

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- Project 3.11 partners performing various demonstrations of outreach projects targeting high school and middle school students for entry into high-tech careers and college coursework will be preparing lessons learned both for their individual campus efforts and collectively. The dozens of outreach strategies being designed and delivered will be ripe for replication and available on the Innovate California website.

B. Sharing “Success Stories”

Innovation Support

- Innovation Roundtable is an inspiring success story that will be reported on next quarter, upon receipt of the event recap.
- Thirty-five “hot start-up” entrepreneurs were given coaching, power point presentation support and the opportunity in a “Ballroom Blitz” to present their innovations to venture capitalists. Recruited by Project Team 1.4, these entrepreneurs came from all over California to the California Tech 100 event held in Irvine April 24-25. Full report on Tech 100 will soon be available on InnovateCalifornia.net, but the event also engaged two Governor Cabinet secretaries and senior State officials, inspired a State video on California innovation, and honored 75 Innovation All-Stars for their innovation spirit.
- UCR credited WIRED for inspiring a concept developed by the UCR Management 269 class which was exposed to the UCR pilot project faculty and students together into an “innovation immersion” experience within corporate culture of some innovation-oriented companies. The interface and interaction among business, faculty and students inspired the class culmination project – a business plan for a new venture – to be a concept for The Biz BoxSM, a nonprofit organization dedicated to providing universities and technical business with management consultations and patent matching services. The Box would connect businesses with patents to commercialize and then work with the companies to assure ongoing revenue streams. Key to the concept of the Box is the multidisciplinary faculty and student participation, a somewhat innovative approach for a university project. Interestingly enough, the UCR/Stanford WIRED project will lead to development of training and education programs designed to foster innovation environments. Perhaps it already has recommended an innovative collaborative learning process whereby real-world application benefits from the diverse skills of students and faculty integrating research with potential business opportunities.

Industrial Rejuvenation

- Space Systems/Loral in Santa Clara County, California, has begun the training of 279 of the estimated 1000 employees set to be trained in satellite production over the life of the WIRED grant. As a company with out-of-state and offshore competition, Space Systems/Loral is matching the State of California Employment Training Panel’s (ETP’s) projected investment of \$1,072,500 with \$2,774,585 in trainee wages being paid during training. The

ETP is part of the California Labor and Workforce Development Agency and is an in-kind WIRED partner of the California Innovation Corridor effort, pledging \$2M in WIRED-related training support for eligible industry applicants approved through the ETP funding process.

ETP panelists recognized the advanced manufacturing value of the Space Systems/Loral training request, especially in light of the company's need to train its employees in new manufacturing processes, tools and equipment to compete with out-of-state and global competition. An estimated 700 new hires will be part of the 1000 projected trainees. The training is targeting frontline workers, which meets ETP's legislated mandate to invest in developing the skills of frontline workers and to foster job retention in high-wage, high skill jobs.

Talent Development

- Fifteen students entered the new "Software Engineering for Aerospace and Defense Applications" certification program at University of California Santa Cruz Extension. These dislocated or unemployed IT software engineers are "retooling" themselves to enable the transferring of their skills to another industry. Program started when the California Space Authority discussed the apparent skills gap in dislocated IT software engineers residing in the same vicinity as major space companies seeking software engineers. NOVA and CSA performed a skills assessment and created career ladders for space-related IT workers under a State grant from the California Labor and Workforce Development Agency in 2003. CSA included a follow-on project in its WIRED grant application to the State, which was approved and later funded by DOL/ETA. NOVA contracted with UCSC Extension to create curriculum and deliver software engineering training, while it focused on other job search skill training and coordinating the program. The UCSC provides instruction, but also presentations by aerospace industry professionals providing tips on seeking work in the industry. Two cohorts of students will be trained under Project 3.7, but already two students from the first cohort, which is only half finished, have been hired by Lockheed Martin.
- As a piece of an elementary and high school mentoring pilot, approximately 500 students of all grade levels at Sherman Oaks Grade School participated in a balloon flight to nearly 100,000 feet. The balloon was transporting "PearlSats", halved ping-pong balls carrying the students' own science experiment payloads. This high-altitude experiment allowed students to see the altitude effects on common, everyday and sometimes unique materials. Designed as an outreach effort to focus the attention of elementary students on STEM careers and excite students' scientific curiosity with a hands-on project, the balloon flight was done for the entire school. Launched from the helicopter landing pad near the Mt. Hamilton Observatory near San Jose, the balloon was recovered about 120 miles away near Stockton. Flight time was approximately three hours. During the flight, periodically the balloon's position was announced over the school public address system.

Sherman Oaks is a K-6 charter school with a large Latino population. The classes are taught half-day in Spanish, half-day in English. Mr. Alfred Tadros, Director of NASA/Civil & DoD Programs, Space Systems/Loral and an MIT graduate, has been recruited as a mentor for the Sherman Oaks Grade School. Two other mentors will be recruited for the 2007-08 school year, so that each fourth grade class will have a science or engineer as a mentor. The balloon project was co-sponsored by the NASA Space Grant Consortium. In coordination with that effort, a science workshop featuring beginning electronics and circuitry with fourth and fifth graders – the original target population – was also accomplished.

- STEM and technical career outreach efforts by Project 3.11 members reached over 1000 students - middle school to high school level - this quarter, with science camps, MESA-related events, career days, high school presentations, weeklong student workshops, tours, and other activities. CSI technology, rapid prototyping, AutoCad, surfboard design, robotics competition, and other activities served to attract interest.