# Technical Appendix H, "Innovation Hub"

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## H.1    Innovation Hub Project

### H.1.1   Project Overview

The addition of UC Merced to California's San Joaquin Valley is hoped and expected to expand local economies through what is commonly called "spin-off industries."  Yet, a research university is only one part of a larger system that is needed to generate such growth.  This system is commonly referred to as an innovation hub, or innovation ecosystem.  Communities with research universities, such as Merced and the surrounding areas, have some form of this system.  What are these systems?  How can these systems be developed and assembled to form an environment for UC spin-off development? What cultural and physical elements should be deployed to facilitate these changes to occur?

In cooperation with UC Merced's *Resource Center for Community Engaged Scholarship Program* (ReCCES), undergraduate students have conducted research about Innovation Hubs and its relevance to the greater Merced Community and the Bellevue Corridor Community Plan area, so that applicable findings could be woven into the Bellevue Corridor Community Plan, located immediately west of UC Merced.  The project sought two deliverables:

1.   Technical Memorandum

     The Technical Memorandum includes an assessment and recommended policies for the City to consider.  The assessment defines and describes what is meant by an Innovation Hub (IH), describes existing IH's in California, and describes essential traits of an IH.  Using this knowledge, and with guidance from the City's planners and consultants, the students created draft plan policy language to give guidance to the City as to how it can encourage the growth of IH's in Merced, and to facilitate development of future research parks in the *Bellevue Corridor Community Plan* area.

2.   Public Presentation

     The presentation was made on November 1, 2012, to the Bellevue Corridor Community Plan's Ad-hoc Citizens Advisory Committee and Technical Advisory Committee, as well as other invited guests of the community.

### H.1.2   What is an Innovation Hub?

An innovation hub is a place that supports the flow of both information and technology through various enterprises. A*n innovation hub models the relationships that are formed between community members, and enables technological development through innovation.  These relationships occur geographically, whether at a local research university, nearby neighborhoods, in government offices and throughout the environmental, social, and economic sectors of the community.  It's a process occurring between people in their community.*  By this direct process flow of information, the original idea can manifest into an educational thought, a service or a product on the market.  A conceptual model of an Innovation Hub is presented below.

Although Innovation Hubs are generally known in the economic sector, according to the *USC Stevens Center for Innovation*, innovation can come from the arts and social sciences as well as engineering or medicine. It can take the shape of new products or services; new ventures, ranging from venture-backed startups to non-profits; as well as new organizational models. Innovation can be any groundbreaking approach or advancement that changes the way we live, work, and play.  All forms of innovation should be encouraged to provide a wide array of benefits.  One of the best ways to spur job creation and economic growth is by facilitating more efficient translation of budding innovations from research centers into the commercial sector.



### H.1.3   Essential and Supportive Inputs of an Innovation Hub

An innovation hub requires certain inputs to be present.  These include:

Research University - A research university generates knowledge and ideas, facilitating innovation. Researchers ponder big questions. How would you improve cancer treatment? Can solar power be produced more efficiently? Why can't X-rays be taken with smaller devices? And sometimes they come up with the answers. When that happens, the *technology transfer offices* at the university can then help them "spin-off" their research into businesses that create jobs or other societal benefits.

"A rich pool of talent with diverse experience and skill-set can bring about market-place disruptions. Academia, another stakeholder, plays a big role in developing such talent. Today's business environment requires creating a mindset shift from the traditional career paths to encourage risk-taking, challenging status quo, ability to think differently and be more adaptive. University and colleges have a significant role to play in shaping this kind of talent base." [2]

Industry - Industry can help create, support, and grow an environment conducive for innovation by:
- Supporting the development of key technology clusters;
- Investing resources in industry-higher education partnerships in key technology sectors;
- Committing to the investment of start-up funding for these industry-higher education initiatives - particularly early stage; and,
- Committing to supporting the seed capital and venture capital continuum to ensure there is sufficient funding at each stage in the cycle to promote market worthy opportunities.

Entrepreneurs/Talent – According to Krisztina Holly of the *USC Stevens Center for Innovation*, innovation starts with the "understory" of the economic food chain: the entrepreneurs. In this group are diverse and future-oriented thinkers that have the potential to advance an economy despite times of struggle; entrepreneurs gives us the mutations - the radical changes that enable groundbreaking ideas to enter the ecosystem if they are worthy. Supportive traits for entrepreneurs include places to meet and network, and housing.

Supportive Traits

***Places to Meet/Networks*** - It is important to create public spaces of interest to attract a variety of people with varying ideas and perspectives.  Tech firms value public realms that foster a melting pot of ideas.  Innovation strategist Vivek Wadhwa, Director of Research at the Center for Entrepreneurship and Research Commercialization at Duke University's Pratt School of Engineering, says "Innovation is about people," and stresses the importance of fostering an environment that facilitates interaction among individuals. Similarly, in the Wall Street Journal's article "For Creative Cities, the Sky Has Its Limit," (July 27, 2012), Richard Florida states, "what matters most for a city's metabolism- and ultimately, for its economic growth – isn't density itself, but how much people mix with each other." Richard Florida is the director of the Martin Prosperity Institute at the University of Toronto's Rotman School of Management and author of "The Rise of the Creative Class, Revisited."  Social Innovation System and Networking Systems support the formation of entrepreneurs.  The Innovative Cities Model (ICM) is a framework of eight elements that outlines the necessary conditions for nurturing and sustaining social innovation within a city's limits.

***Housing*** - Diverse housing options for families and students in a close proximity to research and retail facilities.

Local Government/Community Understanding and Involvement - Understanding the roles that different partners contribute to the process of developing an innovation hub is the final key input.  Michael Cohen, Partner of the Strada Investment Group, summarized the Public—Private partnership as follows:
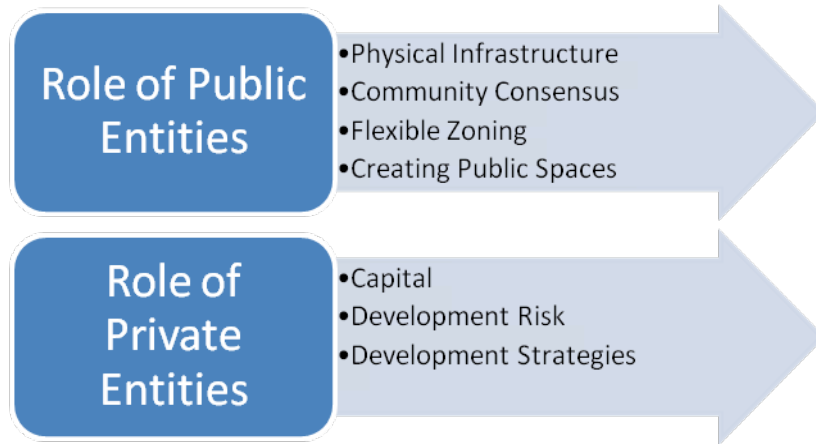
### H.1.4    Examples of Innovation Hubs

Each Innovation Hub provides essential resources for the surrounding area's economy including entertainment, research, and housing for residents. Three of the most successful innovation hubs are the Riverside campus University Village, UC Davis community, and the Claremont Village.  Examining the case studies of these innovation hubs' mistakes and challenges/obstacles, provide insight on how to make the Bellevue Corridor successful, sustainable, and innovative.

Developed in 1996, UC Riverside developed its University Village, designed to be a shopping hub catering to the local student population with lively entertainment. However, the village faced various obstacles and made vital mistakes, preventing its potential success and overall reputation of the project. Delayed construction prior to the village being built not only lost interest in consumers, but lost potential housing residents. Additionally, once construction was completed, the structure found retail properties for tenants and retailers to be vacant with little interest in demand, and little to no available parking during peak hours in the day and an overwhelmingly large crowd of consumers during lunchtime only rather than early in the morning or later in the evening. Lastly, the village catered more to student demands rather than that of the local community, therefore summertime and other holiday breaks caused retailers to generate little to no profit.

Davis attempted to develop a "university – oriented city" community by combining big city and small-town amenities alongside conservation and environmental programs. In contrast to Riverside's University Village, Davis provided an excess amount of available parking while most of its consumers were taking public transportation to its location. The Davis community also did not accommodate to interests and demands of the local community residents and was located in accordance and access simply to the campus, with little retail stores located in the actual town of Davis. Its mistakes were more so architectural in the fact that their buildings were one-story and flat, low-hanging trees blocked signs of retail stores, and car and bike lanes were blocked by congested intersections.

The Claremont Village (also called the New Village), built in 2007, is a metropolis comprised of small boutiques, offices, art galleries, and restaurants, notorious for its immense parking structure, five-screen

movie theater, hotel and commercial buildings that include their own offices from the local, regional, and national sector and retail stores. Also, because Claremont attempted to impede automobile transportation of its consumers it limited parking availability, which became one of the most detrimental mistake of the Village. Reducing the amount of parking especially influenced congestion during prime consumer hours of lunch and dinner and unmarked roads confused pedestrian consumers. The New Village shops threatened the success of the Old Village, (an innovation hub previously built), that housed many local mom and pop stores and was losing appeal from local consumers that appreciated the Old Village's "unique charm."

Analyzing the mistakes of these three primary innovation hubs, the Bellevue Corridor should offer the following traits to be successful. Firstly, the Corridor should strive to meet the demands of not only the students, but the local community as well, to guarantee profit generation year-round, not just during the academic schedule. Secondly, the Corridor should be a combination of local mom and pop shops and various retail chains to reflect the relationships of the students and local community. The architecture of the Corridor should be modern and up to date with the city regulations of transportation with clearly marked roads and cross walks for pedestrians, bike riders and automobiles. There should be an adequate amount of appealing competitively priced housing. Lastly, the Corridor should be spacious as to not become congested throughout the prime rush hours.

## H.2    Recommended Community Plan Policies

The opportunity to plan for future land uses and to develop places that invite social networking on land immediately adjacent to UC Merced presents a unique and valuable opportunity to expand and enhance an innovation hub. A concerted effort to expand and enhance a local innovation hub in Merced, framed by an understanding of the City's strengths and weaknesses, and implemented overtime at a scale and focus suited to the community, can enable the City to maximize the social, environmental, and economic benefits.

Our vision of the *Bellevue Corridor Community Plan* area, consists of research, retail, and residency. It will create an affordable and sustainable community that will generate new ideas. This will bring the town, businesses, and research together creating a unique and distinctive place. These new ideas will strengthen the economy and Merced will become a major city gateway. No longer will UC Merced be isolated from its city.

While the entire San Joaquin Valley and points beyond will benefit from the research, innovation, and new technologies from UC Merced, the local community and development pattern of lands near the university will influence the success of the *Innovation Hub* in Merced. The *Bellevue Corridor Community Plan* can contribute the following:
- Attract new researchers, and sustain current graduates and their research;
- Attract small businesses;
- Identify future sites for research and development parks for UC Merced Spin-Off Development;
- Create a gateway community to UC Merced; and,
- Create a living environment for entrepreneurs and the work force to work, live, and play/network .

### H.2.1    A Locally Engaged and Attractive Research University

- Support the development of a premier research university. The university serves as a stepping stone for the student population to begin to become part of the Merced Community and to bring ideas back to the public "innovation realms" that are located in the Bellevue Corridor.
- Attract new researchers and sustain current graduates and their research.

### H.2.2    Collaborative Efforts by Industry and University
- Seek and encourage local industries that align with the academic and research focus of UC Merced.
- Support and encourage the development of an "Innovation Institute" for local innovators to help develop intellectual property into tangible products to improve the economic, social, and environmental needs of the community.
- Provide retail and office incubator-spaces for small businesses.

### H.2.3    Attract and Retain Entrepreneurs and UCM Graduates

Places to Meet/Network: Some of the most important meetings are spontaneous. Spontaneous meetings occur when paths intersects while traveling from one place to another or standing in line for coffee or lunch. Chance interactions have the qualities of being informative, creative, and social in an important way that reinforces relationships.  The Bellevue Corridor should be a place that invites such interactions.
- *Land Uses*: Interactive nightlife comprised of art galleries, live music to showcase local talent, and family outdoor events are primary activities that would be implemented within the Bellevue Corridor to encourage growth and development.
- *Activities*: Support and encourage community-based farmers markets for local farmers and shoppers, hosted by local businesses or other sites in the Bellevue Corridor Plan area.
- *Pedestrian-Related Street Components*: Develop streetscapes with ample amenities such as landscaping, shade trees, generous sidewalks, street furniture, signage, lighting, and art to promote pedestrian movement, community attractiveness, and informal meeting spaces.
  *Done right, pedestrian-related street components can spark street-level interaction and maximizes the potential for informal contact of the average person in a given public space at any given time.*
- *Scale*: To assure frequent interactions, ensure that pedestrian-scale design exists throughout the plan area, but particularly in highly populated areas.
  *At the individual space level, indoor and outdoor spaces will be intimate and active enough to encourage people to meet or stop to engage when they encounter one another.  "In the absence of a pedestrian scale, density can be big trouble" -- Jane Jacobs.[3]*

Residency:  To encourage the flow of ideas, the innovation hub should not only have places to meet, but a population to fill such space.  This includes: 1) researchers expanding on current and new research and development; 2) students, both undergraduate and graduate levels; 3) young families seeking new business or research opportunities; 4) anyone willing to embrace a lifestyle of creativity with the incorporation of thoughts inspired by surrounding people; 5) target market solely seeking

products/service from innovation hub; 6) entrepreneurs who have the passion to be an addition to an innovative community; and, 7) small businesses offering a variety of options for the innovative community (restaurants, coffee shops, boutiques, apparel stores, etc.)

- Provide a myriad of housing options, proximate to research, retail, and recreation.
- Develop family-oriented public and private spaces, separate (in time or space) from incompatible entertainment activities (dance clubs, bars, hookah lounges, night-clubs).
- Encourage the siting of student housing adjacent to or in close proximity to UC Merced.
  *This supports the efforts of UC Merced to form strong interpersonal bonds within the academic community, which supports interdisciplinary learning, innovation, and knowledge development. It also serves as a stepping stone for the student population to begin to become part of the Merced Community, and brings ideas back to the public "innovation realms" that are located in the Bellevue Corridor.*

### H.2.4    A Supportive Local Government and Community

- Through interactive activities and programs held within the Corridor, encourage relationships to develop between local Merced residents and UC Merced students.
- Community outreach such as health and education awareness.
- Support and encourage local collaboration between industry, UC Merced, entrepreneurs, and local governments.

Sources

1.    Krisztina Holly, *Former Vice Provost for Innovation at the University of Southern California, and Executive Director for the USC Stevens Institute for Innovation.*
2.    Tathagat Varma, Sr Director-Business Operations, Yahoo! Software Development India.
3.    Wall Street Journal article "For Creative Cities, the Sky Has Its Limit," (July 27, 2012).