



WICHITA STATE  
UNIVERSITY

# Wichita State University's Innovation Campus

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Kansas Board of Regents

January 2014

# Topics for Today

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- Importance of economic restructuring
- Importance of technology-based entrepreneurship and innovation
- WSU's response to changing economic conditions: The Innovation Campus
- Impact on the region and the state
- Funding for the Innovation Campus

# Dual Economic Trends

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Globalization



Regionalization

# Megapolitans by 2050

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2005 Metropolitan Institute at Virginia Tech

# Critical Drivers of Prosperity

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Entrepreneurship and technology-based innovation linked to regional location are the critical drivers of prosperity in the globalized “New Economy”

This requires a highly educated workforce **and** infrastructure that supports and endorses those activities

# The Kansas Economy

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- Increasingly linked to global and regional networks. Wichita 3<sup>rd</sup> in percent of metropolitan GDP derived from international trade
- Overall labor demand is in low-income, low-skill jobs; most highly demanded college graduate jobs not in highly innovative fields
- Bachelor's degree worth \$1.1 million additional earnings compared to high school

# Kansas Competitiveness

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- 58 percent of “High Demand” jobs in Kansas require a high school diploma or less
- Projections for growth show that customer service representatives, janitors and cleaners, housekeeping cleaners, combined food preparation and serving workers, registered nurses, and cashiers will be most in demand in the near term.

None of these are high economic innovation occupations

# High Demand Jobs in Kansas Do Not Reflect an “Innovation Economy”

In-Demand Jobs			
Kansas			
Occupational Title <sup>1</sup>	Most Common Education <sup>2</sup>	Total Rank <sup>3</sup>	Average Annual Wages <sup>4</sup>
Nursing Aides, Orderlies, and Attendants*	Postsecondary non-degree award	30	\$23,030
Registered Nurses*	Associate's degree	30	\$58,750
Cashiers	Less than high school	30	\$18,500
Combined Food Preparation and Serving Workers, Including Fast Food	Less than high school	30	\$17,910
Customer Service Representatives	High school diploma or equivalent	30	\$30,810
Retail Salespersons	Less than high school	30	\$24,040
Waiters and Waitresses	Less than high school	30	\$18,950
Truck Drivers, Heavy and Tractor-Trailer	High school diploma or equivalent	30	\$39,040
Stock Clerks and Order Fillers	Less than high school	29	\$22,630
First-Line Supervisors/Managers of Retail Sales Workers	High school diploma or equivalent	29	\$37,280
Office Clerks, General	High school diploma or equivalent	28	\$26,500
Food Preparation Workers	Less than high school	27	\$18,650
Landscaping and Groundskeeping Workers	Less than high school	27	\$24,410
Receptionists and Information Clerks	High school diploma or equivalent	27	\$24,230
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	Less than high school	27	\$22,540
Laborers and Freight, Stock, and Material Movers, Hand	Less than high school	27	\$25,440
Teacher Assistants	High school diploma or equivalent	27	\$22,050

Source: <https://klic.dol.ks.gov/admin/gsipub/htmlarea/uploads/High%20Demand%20Dashboard%202013.pdf>



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- Kansas per capita income and income growth lags the nation
  - International trade is highly NAFTA oriented followed by China, Japan and others
  - Of every 1,000 jobs in Kansas, 2.6 are in “farming, fishing, and forestry”

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- Below average in new high tech business formations

WSU is focused on becoming the state's leader in responding to the demands of the New Economy and increasing competitiveness

# Key Innovation Indicators

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- KS is low in percent of S&E graduate students as percent of workforce
- KS is low in early stage capital availability
- KS is low in SBIR/STTR indicators (number and percent of GDP)
- KS is low in new firm formation per 1,000 residents

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- KS ranks 32<sup>nd</sup> in R&D and 30<sup>th</sup> in R&D performance
  - Business R&D below national average
  - Academic R&D below average
  - Very low in academic patents awarded
  - Low in patents per 1,000 S&E employees

# Innovation and Entrepreneurship

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- Kansas is low in entrepreneurial activity according to Kauffman
- With exception of KC area, no counties in Kansas have a high share of “high tech” companies
- Wichita has a high share of high tech employment concentrated in a relatively few companies

# Importance of Innovation

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- Over the last two decades, **all** net new job growth in the U.S. is from new businesses with a life of under five years
- Within the new business sector, only high technology firms have added net new jobs at a rate faster than job loss caused by business failure or business contraction
- Large and older business have been shedding jobs in the U.S.

# However....

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- National data should not be confused with local data; local conditions can be affected
- South Central Kansas has a strong, imbedded economic base of large firms that must continue to innovate
- Even if at a national level jobs are being shed, jobs can be created at the local level through innovation and relocation
- The key is to create locational advantages that drive large enterprises to invest in South Central Kansas

# New Kauffman Foundation Study

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Of new and young firms, high-tech companies play an outsized role in job creation. High-tech businesses start lean but grow rapidly in the early years, and their job creation is so robust that it offsets job losses from early-stage business failures.

Ian Hathaway, "Tech Starts: High-Technology Business Formation and Job Creation in the United States." Kauffman Foundation Research Series: Firm Formation and Economic Growth, August 2013, p. 2.



# How Does Wichita Rate?

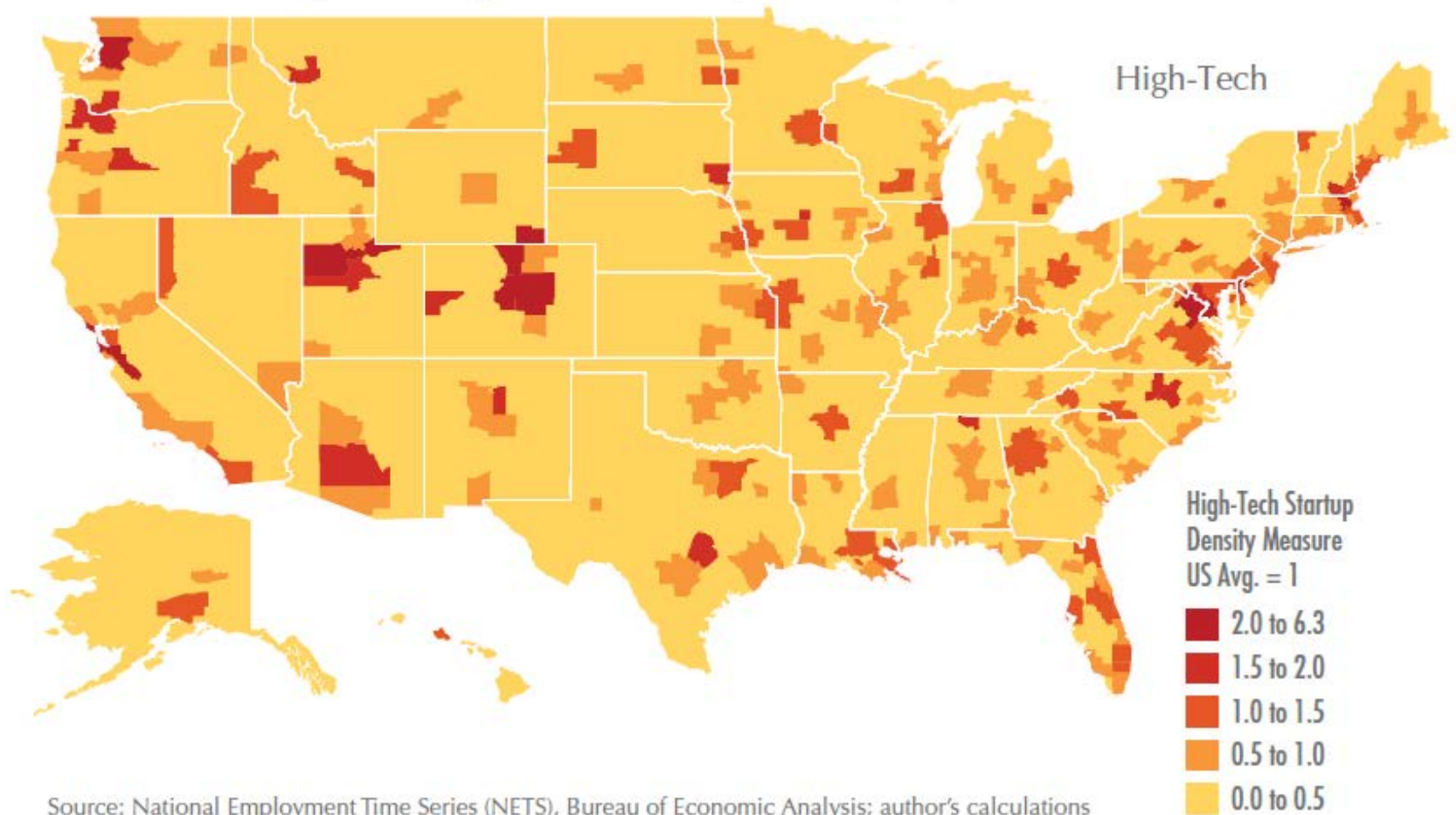
## (Kauffman Foundation Data)

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- National Average in this analysis set at 1.0
- High-tech start-up density in 1990, 0.5 and in 2010, 0.7. Below national average, but some modest gains
- ICT Start-ups in 1990, 0.4 and in 2010, 0.6. Below national average, but modest gains

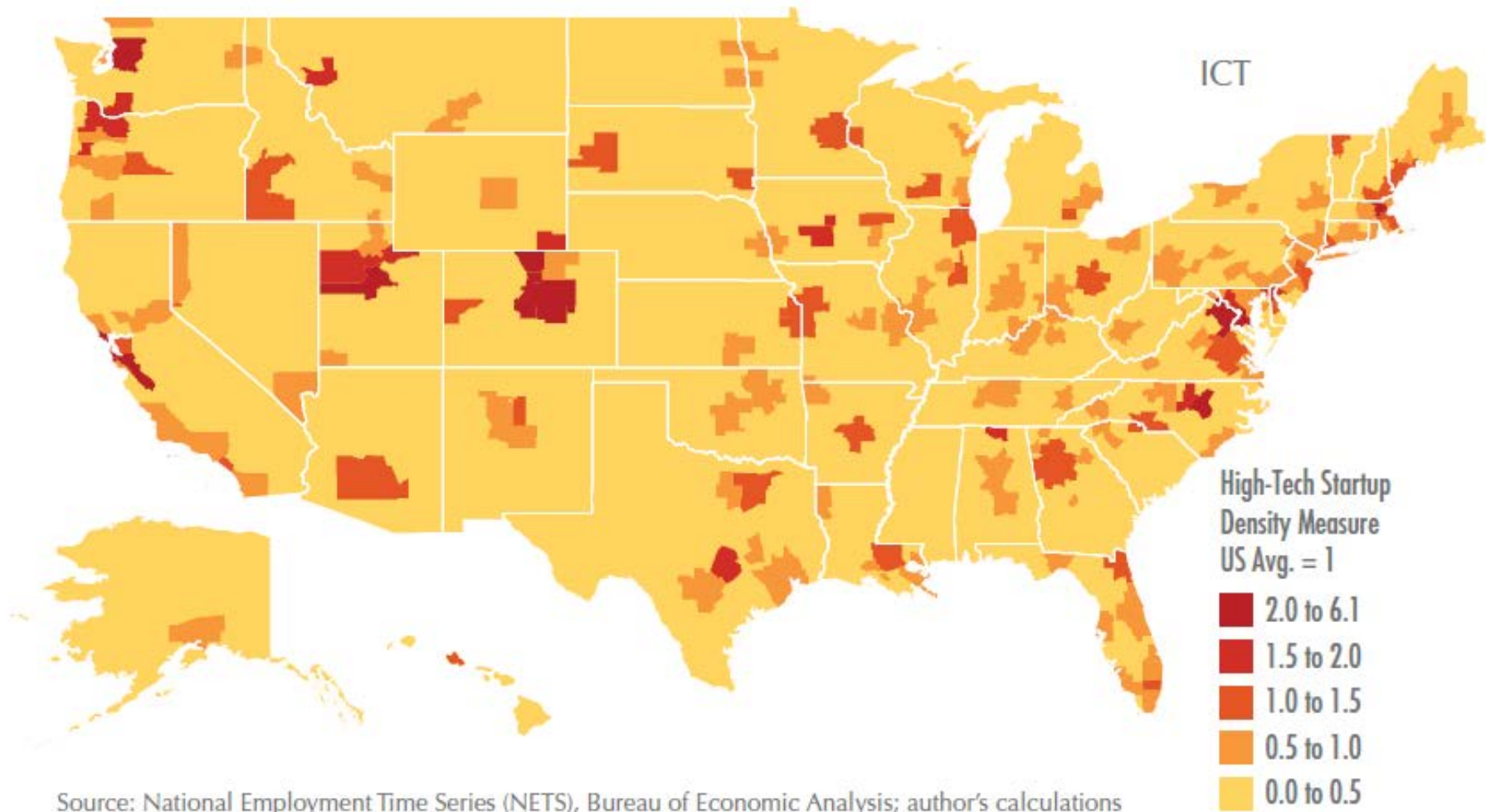
# High Tech Start Ups in the United States (Kauffman Report)

Figure 7: High-Tech Startup Density by Metro in 2010

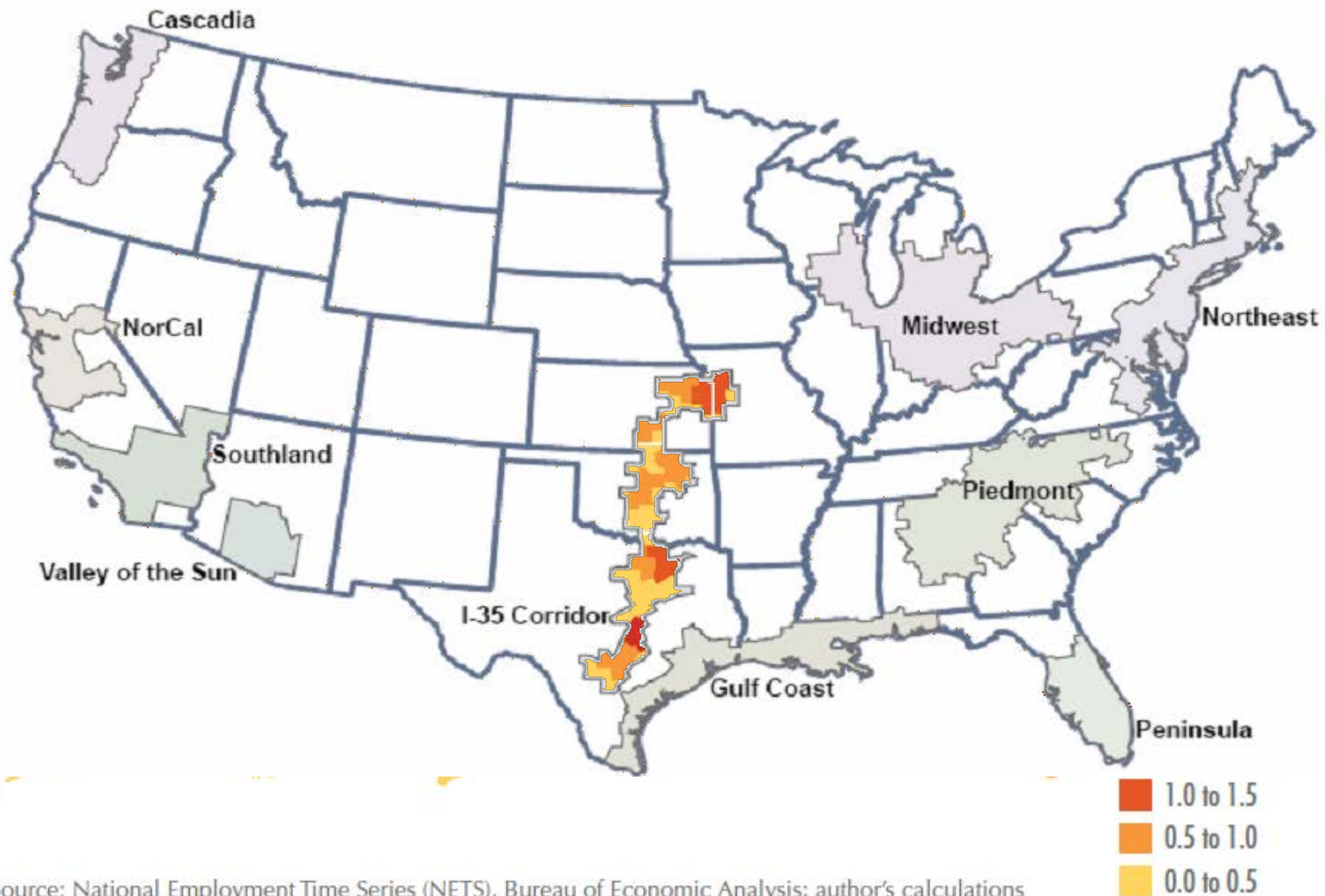


# ICT Startups (Kauffman Report)

Figure 8: ICT High-Tech Startup Density by Metro in 2010



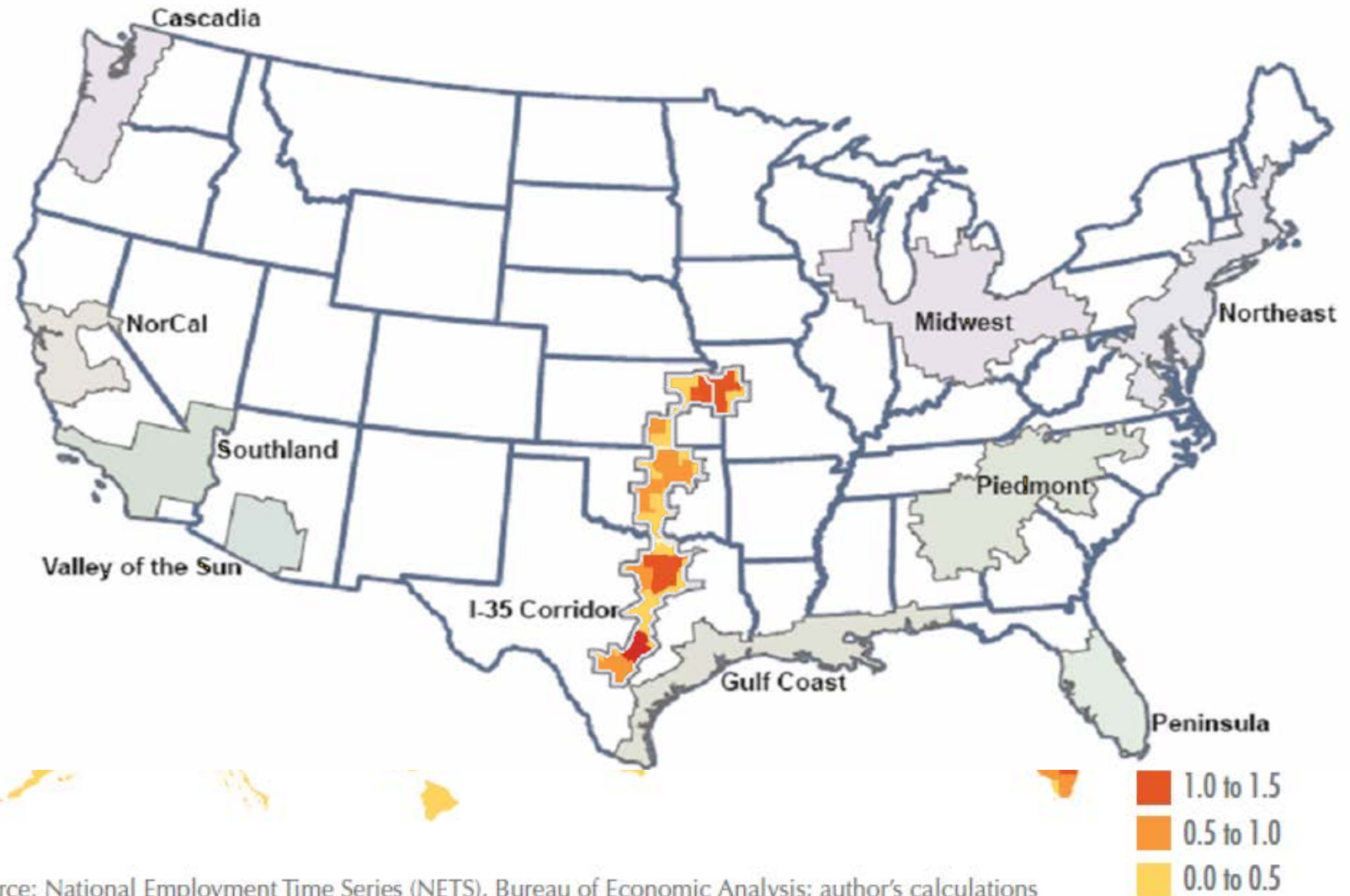
# High Tech Start Ups in the United States (Kauffman Report)



Source: National Employment Time Series (NETS), Bureau of Economic Analysis; author's calculations



# ICT Startups (Kauffman Report)



# Wichita State is Responding

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- New strategic plan calls for recommitment to engaging with the community, region and state
- Focus on “making a difference”
- A critical strategy involves developing the Wichita State University Innovation Campus (WSUIC)

# Wichita State University Innovation Campus

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- Based on best practices to integrate the need for regional competitiveness with the highest quality education
- Focused on public-private partnerships in research, development, technology transfer, business spin-outs, and new product and process development
- Integrates student learning, academic research, and business R&D

# Mission

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The mission of the WSUIC is to provide a venue for researchers and technologists from private enterprise to work closely with faculty and students from WSU to create and deploy globally competitive technologies in critical areas related to aerospace, bio-medical engineering, software and software engineering, and human factors psychology among others



# **Significance to the Economic Base**

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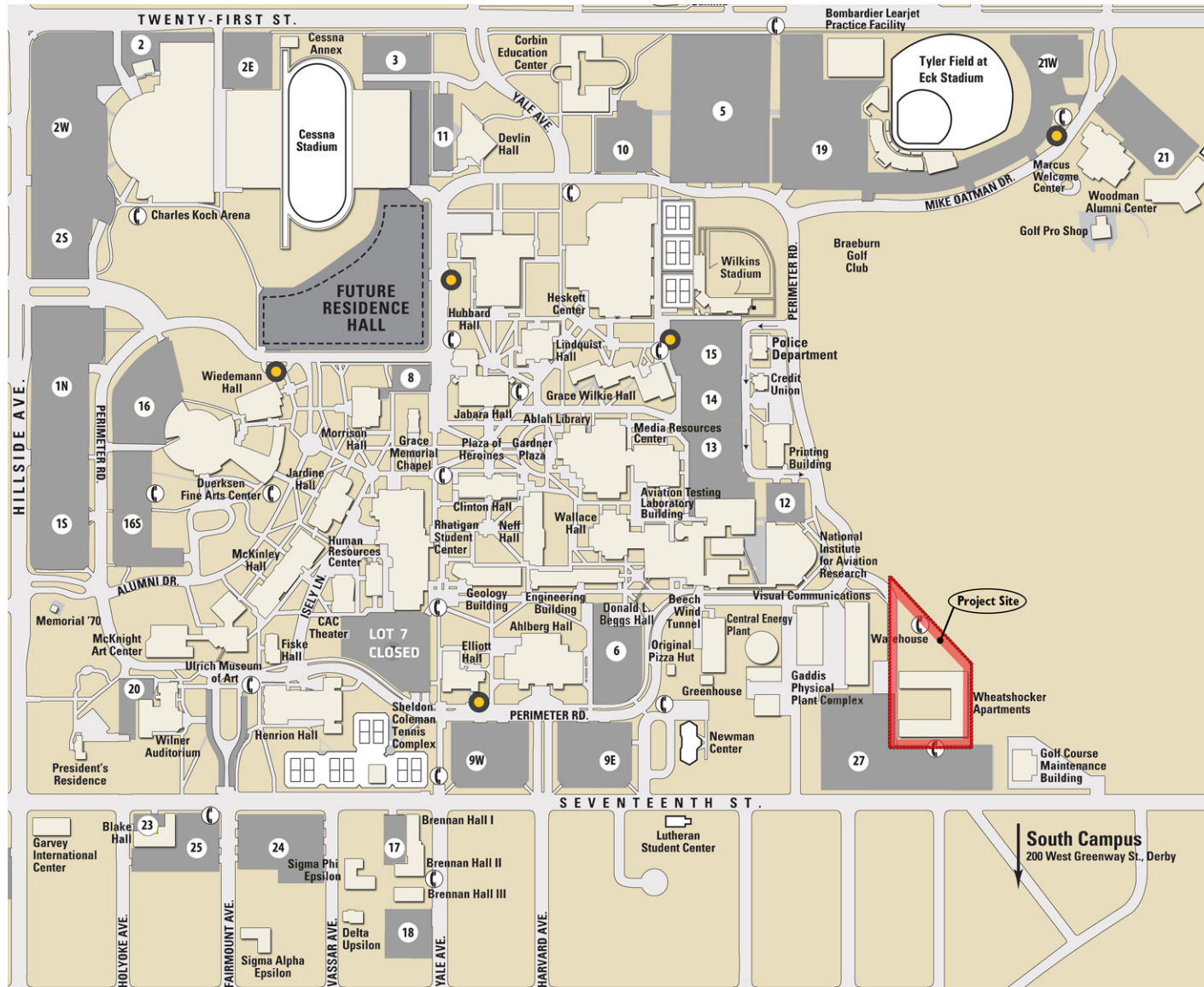
A primary purpose of WSUIC is to expand the economic base of the Wichita metropolitan area through economic diversification and new business formation

# Jobs

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The WSUIC creates a crucial opportunity to produce high paying competitive jobs that both increase the median income of the area and which promote other job growth. Technology researchers are paid substantially above the state median wage with leading researchers achieving salaries three to six times that median. Likewise, national data show that jobs related to electronics and software technology pay 17 percent or more higher than the median. And, depending on the specific technologies involved, each technology job has a multiplier of 2.5 to 4.5

# First Phase Location



# Current Condition



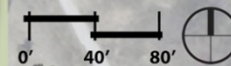


N.I.A.R.  
Building

Gaddis  
Physical  
Plant

Technology II  
Facility

**New Connector  
to Loop Road**

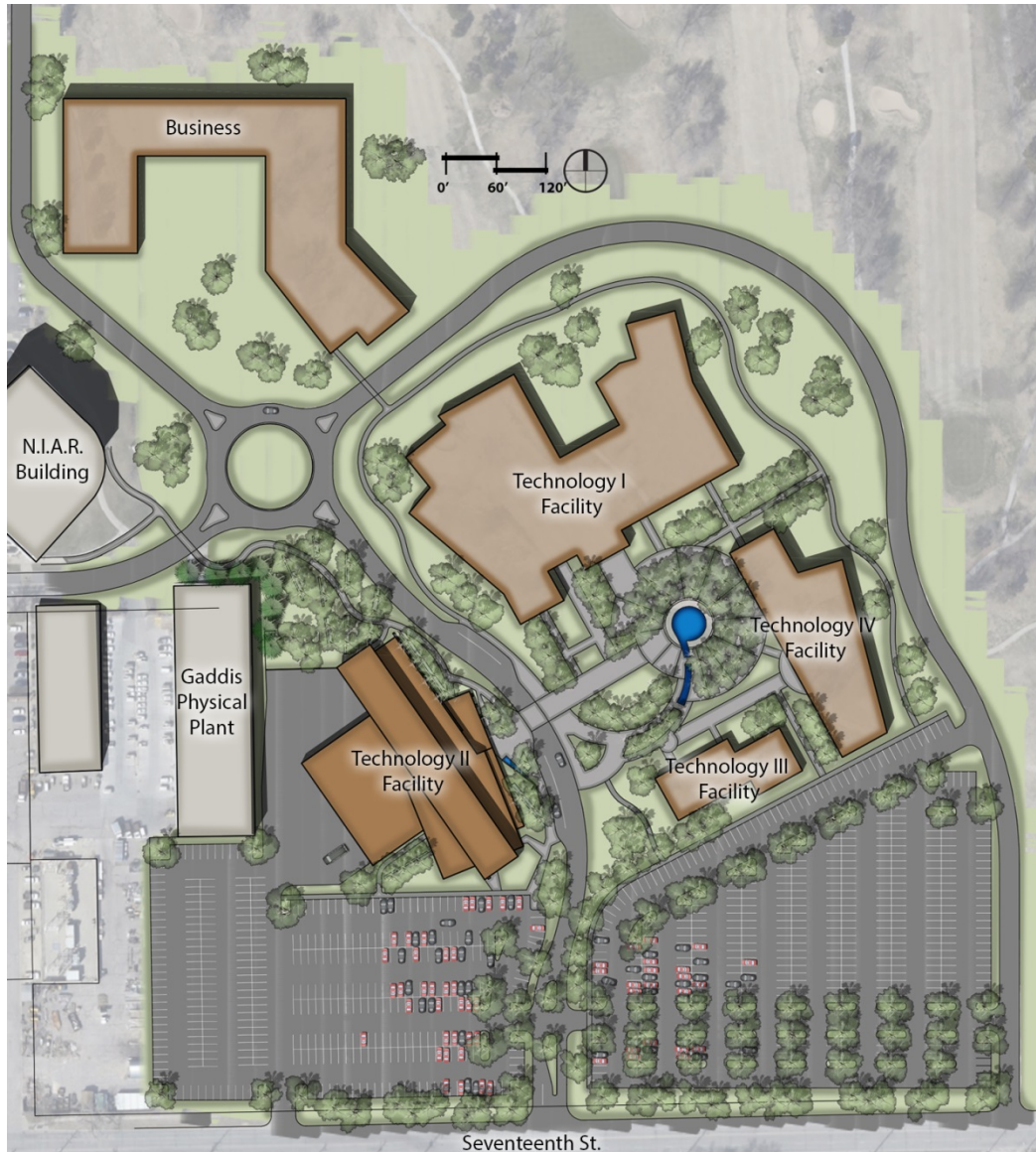


**New Entrance**

Golf Course  
Maintenance  
Building

Seventeenth St.

# Phase II Build Out





# Visual of Technology II



# Funding

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- Technology II will be developed using EEG and other funding. It is anticipated that there will be no request for tuition or fees to support construction of this building
- Building will generate income since it will house private sector enterprises
- Remaining development of technology buildings will be based on private (partners and gifts), state, local government, and federal funding; allocation of increased indirect costs; and rents



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- It is expected that funding for the new business building will require contributions from students in the form of tuition or fees
  - Other academic buildings may require tuition or fee funding. No other academic buildings are planned for the Innovation Campus at this time
  - WSU will continue working with local government, the Chamber of Commerce, and others to support development of the IC to support high tech jobs

# Technology II: Program

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- Conceptual plan for approximately 20 engineering experiential learning labs
- Two floors reserved for private sector research labs, technology transfer offices, and new technology incubators
- Designed to connect student learning and technologically-based innovation

# Importance to the University

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- Promotes the university's core mission and all strategic goals and KBOR's "Foresight 2020" strategic plan
- Directly supports KBOR's goal of increasing educational attainment in the state by providing opportunities for educated students to continue living and working in Kansas. It does little good to educate the state's population if people have to leave state to find suitable work
- Encourages increased enrollment and student retention by creating unique opportunities to learn, apply that knowledge, and gain employment to support their education
- Supports cross-disciplinary work involving multiple colleges to promote innovation, support business development and provide enhanced educational opportunities for students from all three colleges

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- It formally links WSU's nationally renowned entrepreneurship program with technology innovators in engineering, human factors, and software development
  - Increases institutional impact on the state, region, community, and university neighborhood
  - Encourages developments near the university that enhance university competitiveness and quality of life
  - Strongly supports enhancement of the university's reputation in the state, nation, and globally
  - Provides new revenue streams to support enhancement of university quality

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- Increase the ability to recruit and retain global class faculty.
  - Act as a locus for development of patents and intellectual property that can affect prosperity
  - Substantially increases funded research, especially with regard to research sponsored by private enterprise
  - Support and encourage business spin-outs that produce revenue for the university through licenses or shares of successful enterprises
  - Foment innovation by creating an environment rich in resources that encourage and support collaboration and joint research

# Benefits to Students

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- Post-doctoral students in engineering, software and computing, and human factors psychology have opportunities to develop and work on projects that can result in publications, patents, and contacts that can result in permanent career placement or development of new technology-based enterprises
- Doctoral and master's students can work in laboratories on critical new technologies that can result in dissertations, professional publications, and contacts that can result in career placements, access to additional education, or development of new technologies that can produce new technology-based enterprises
- Undergraduate students can work in laboratories as assistants and learn new techniques and experiences that can result in undergraduate research projects and experiential education that creates deeper learning while providing experiences that increase their competitiveness in the workforce

# Benefits to Business

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- Increases competitiveness by supporting innovation and product development
- Provides easy access to university resources
- Encourages students to work with the businesses to be “trained while being educated”
- Creates needed “density of creativity” that can spur innovation

# Benefits to South Central Kansas

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- Promotes economic competitiveness of existing and new enterprises
- Encourages relocation and expansion of enterprises that can produce new high-paying jobs
- Increases global competitiveness
- Diversifies the economic base



# Benefits to Kansas

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- Increases employment and economic competitiveness
- Helps protect vital existing enterprises
- Encourages economic expansion and increased state revenues
- Supports continuing high quality of life for Kansans

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- Leverages state resources by promoting private sector expenditures within the state's boundaries