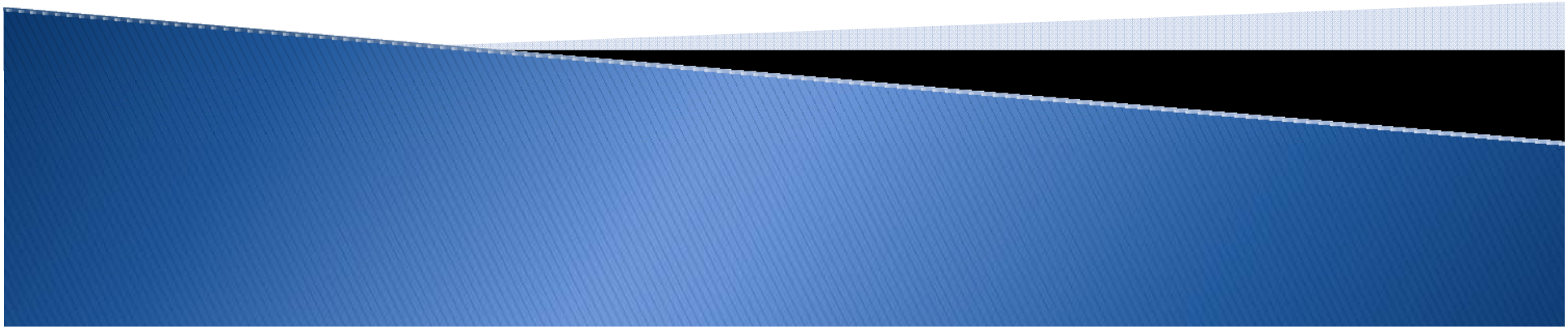
Engagement Through a Regional Looking Glass

Michigan State University Colloquium
11/14/08

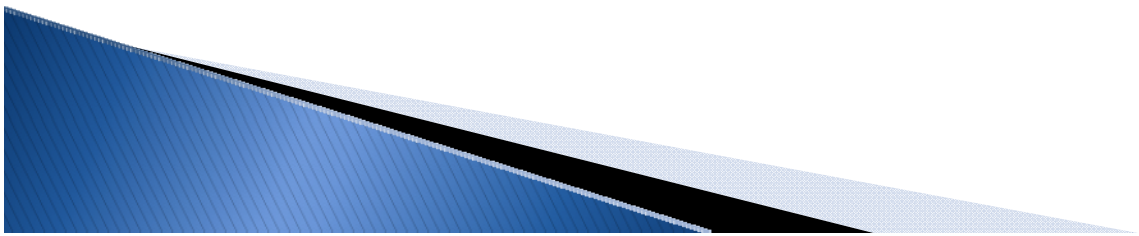
Timothy V. Franklin, Ph.D.
Nancy E. Franklin, Ed.D.



"Well, in *our* country," said Alice, still panting a little, "you'd generally get to somewhere else – if you ran very fast for a long time, as we've been doing."

"A slow sort of country!" said the Queen. "Now, *here*, you see, it takes all the running *you* can do to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"

- Alice in Wonderland and Through the Looking-Glass by Lewis Carroll

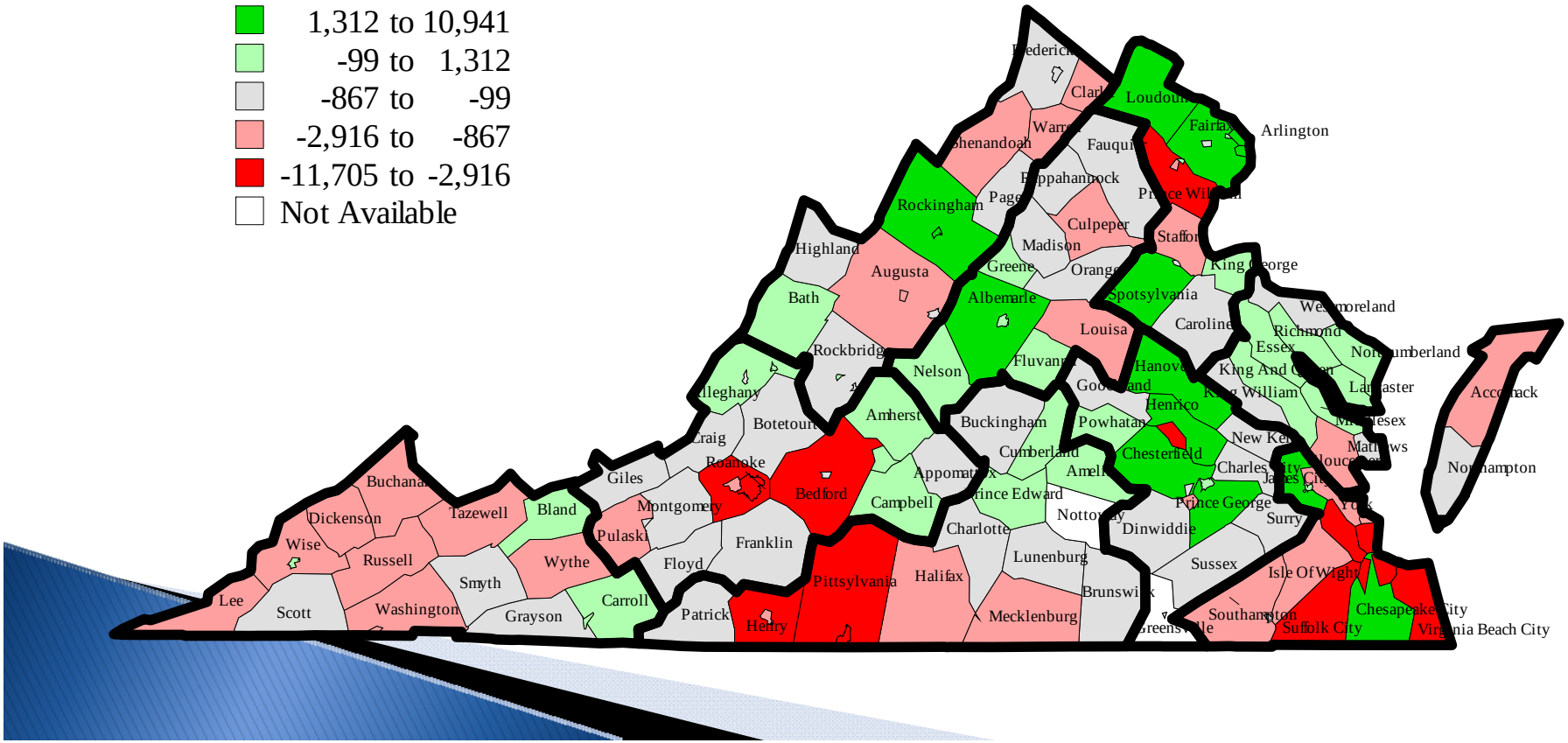


Southside Challenges

- Economic base: Tobacco, textiles, furniture, manufacturing
- August 2001: 7% unemployment in Danville; 7.5% Pittsylvania County
- Rapidly increasing gap between region earnings and other statewide earnings.
- 12% of white residents and 5% of black residents have Bachelor's or Graduate degree
- 20% of adults have less than a 9th grade education

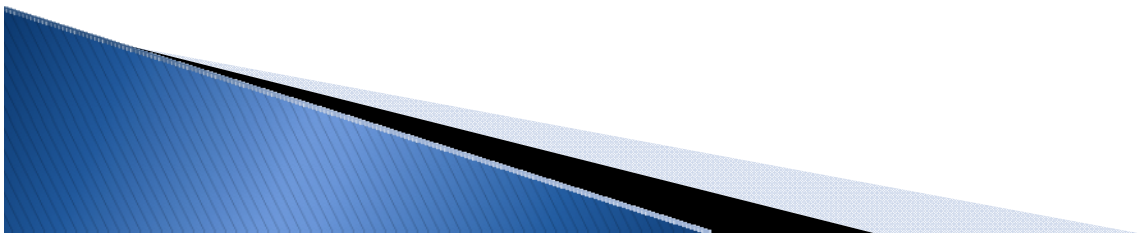
Southside is losing the professional age group the new economy covets

Projected Number Change in 25-44 Year Olds, 2000-2010



Regional Assets

- Strong agricultural history; abundance of suitable fields and greenhouses
- Regional polymers cluster, though commodity-focused
- Emergence of significant road course race track and motorsports industry concentration
- Natural resources – Dan River, Piedmont
- Architectural assets preserved
- Creative, action-oriented local government leadership
- Significant population centers to the north & south
- 2-3 hour proximity to 6 Research I institutions



University Interests

- Top 20 Research Aspiration
- Establish New Research Institute on Campus
- Expand Graduate Education
- Create Additional Laboratories and Faculty Lines
- Increase Public Relevancy and State Support
- Reinvent Land-Grant Mission in Context of 21st Century Needs and Opportunities

Virginia Tech

1 8 7 2

THE INSTITUTE FOR ADVANCED LEARNING AND RESEARCH

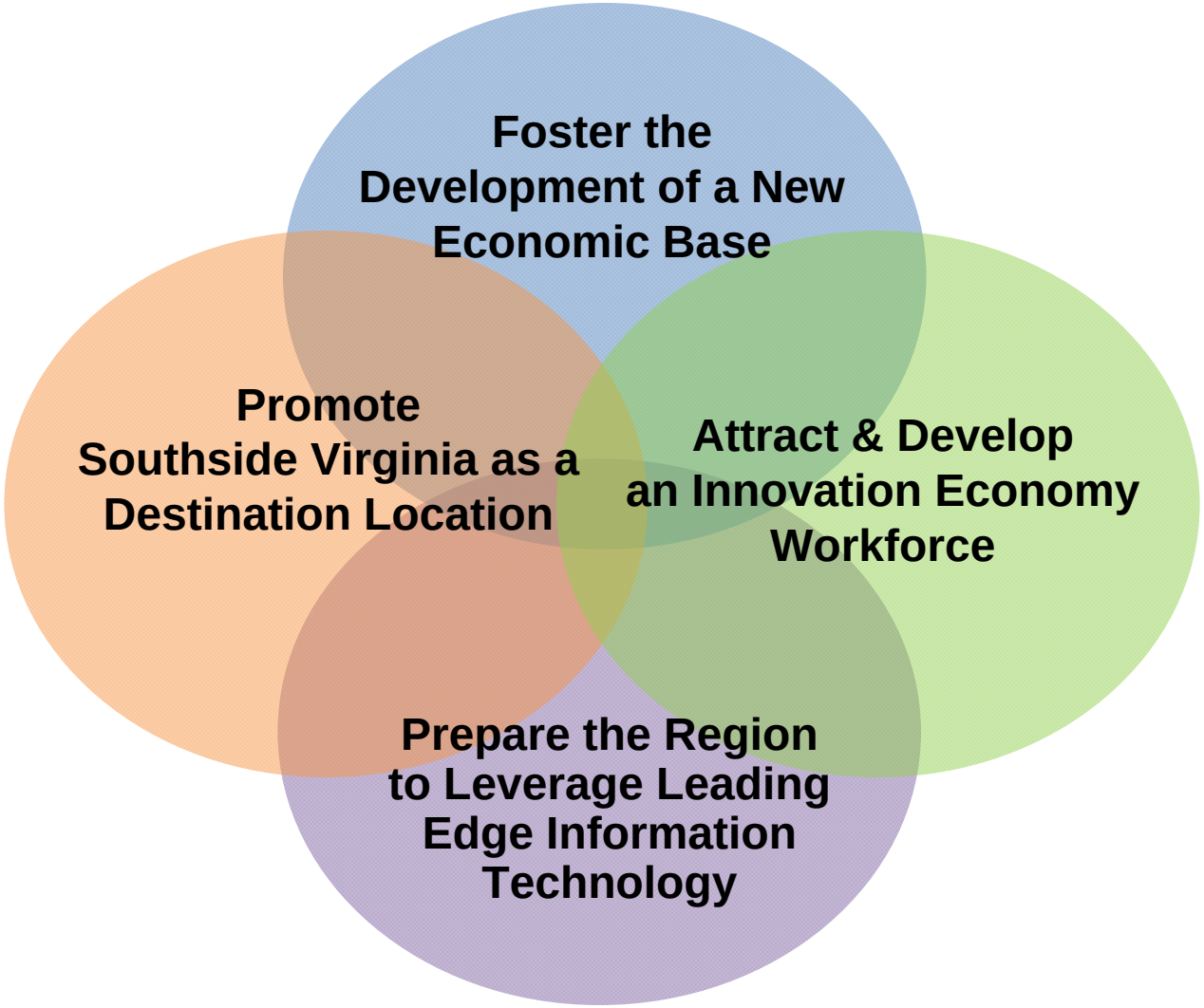
2007 National Winner C. Peter McGrath NASULGC Engagement Award

THE INSTITUTE FOR ADVANCED LEARNING AND RESEARCH

Mission

Attract and Develop Technology and Talent critical to Southside Virginia's economic transformation

Goals



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Targeted Industry Sectors

Foster the Development of a New Economic Base

- Polymers
- Motorsports & Performance Engineering
- Unmanned Systems & Robotics
- Horticulture & Forestry
- Information Technology
- Nanomaterials

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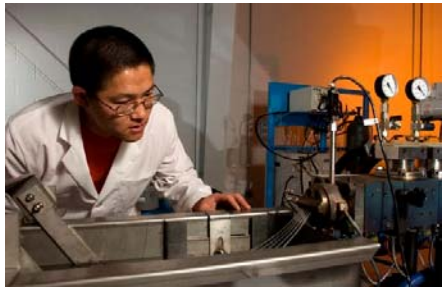
Research Strengths

Foster the Development of a New Economic Base

- AAPPI – Advanced and Applied Polymers Processing Institute



- ISRR – Institute for Sustainable and Renewable Resources

- VT Mechanical Engineering at IALR
  - Performance Engineering
  - Unmanned Systems
  - Road Characterization

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Commercial Ventures

Foster the Development of a New Economic Base

- *VIPER Services* – motorsports teams – w/ODU and VT: testing vehicle dynamics with 8-post rig, driving simulator, chassis dynamometer and LaRC wind tunnel
- *JOUSTER Enterprises*– Department of Defense and associated contractors – development and evaluation of autonomous vehicle systems
- *ISRR Start-ups* – Sale of new varieties of plants and trees
- *AAPPI Services* – Rheology Testing, Analytic Characterization, and Product Development Services

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Technology Commercialization

Foster the Development of a New Economic Base

- Entrepreneurial and Business Support Services:
  - Market Research Specialist
  - Capital Access Specialist
  - Commercialization Specialist

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Educational Program Alignment

Creating a workforce aligned with IALR research initiatives: Seamless pathways in strategic sectors

Hybrid-Delivered Degree Completion Programs

- Motorsports/Performance Engineering
- Unmanned Systems/Robotics
- Polymers Engineering
- High Value Horticulture & Forestry

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Outreach Programs

Attract & Develop an Innovation Economy Workforce

Science, Technology, Engineering and Math Capacity Building Programs for:

- K-12 children
- Southside college students
- K-16 teachers
- Small businesses
- Non-profits
- Adults

Advanced Networking & Technology

Prepare the Region to Leverage Leading Edge Information Technology

- Seed the development of low cost, high speed telecommunications capability
- Linking researchers, schools, businesses, governments, hospitals and citizens in Southside to the world
- Fiber optic cable, gigabit speeds

eDan

Regional Backbone Initiative

Promote Southside Virginia as a Destination Location

Promote Southside Virginia as a Destination Location

- Institute Conference Center (ICC)
- Business traffic to R&D centers
- Community beautification
- Leadership development, particularly minority community

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REINVENTING SOUTHSIDE.
REINVESTING IN VIRGINIA.
The INSTITUTE
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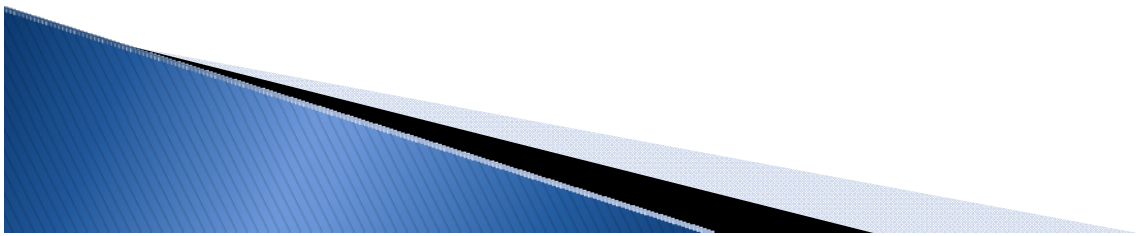
ADVANCED LEARNING & RESEARCH

The Ecology of the Innovation Economy



Why are regions important?

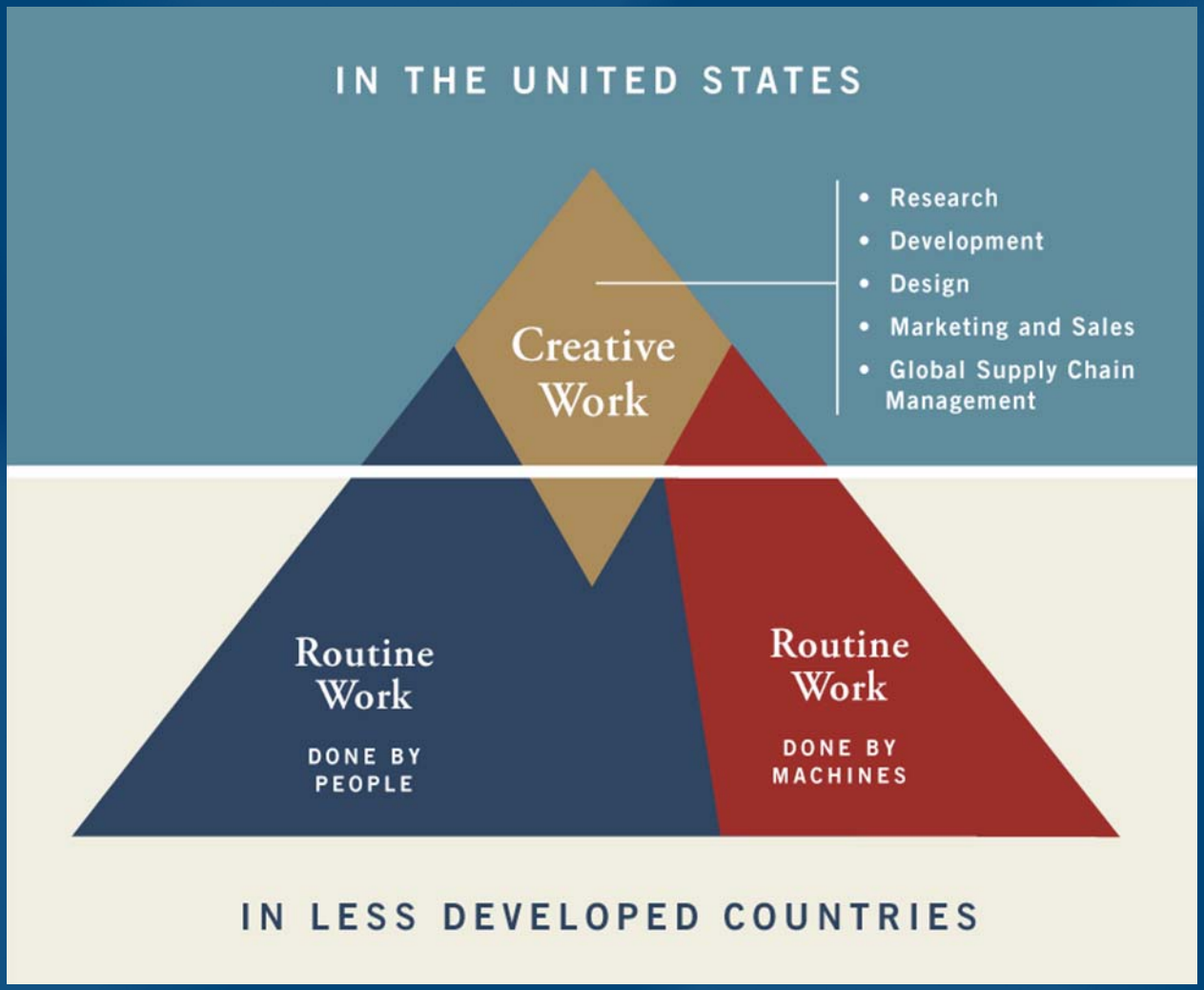
- In essence, regionalism is a critical concept for promoting and sustaining economic development and growth in the knowledge economy. Healthy and innovative regional economies are the building blocks of local development.

- The reason is simple: regionalism and clustering afford opportunities for economies to overcome the disadvantages of small size, low diversity, and poor global integration.

  – Institute for the Economy and the Future

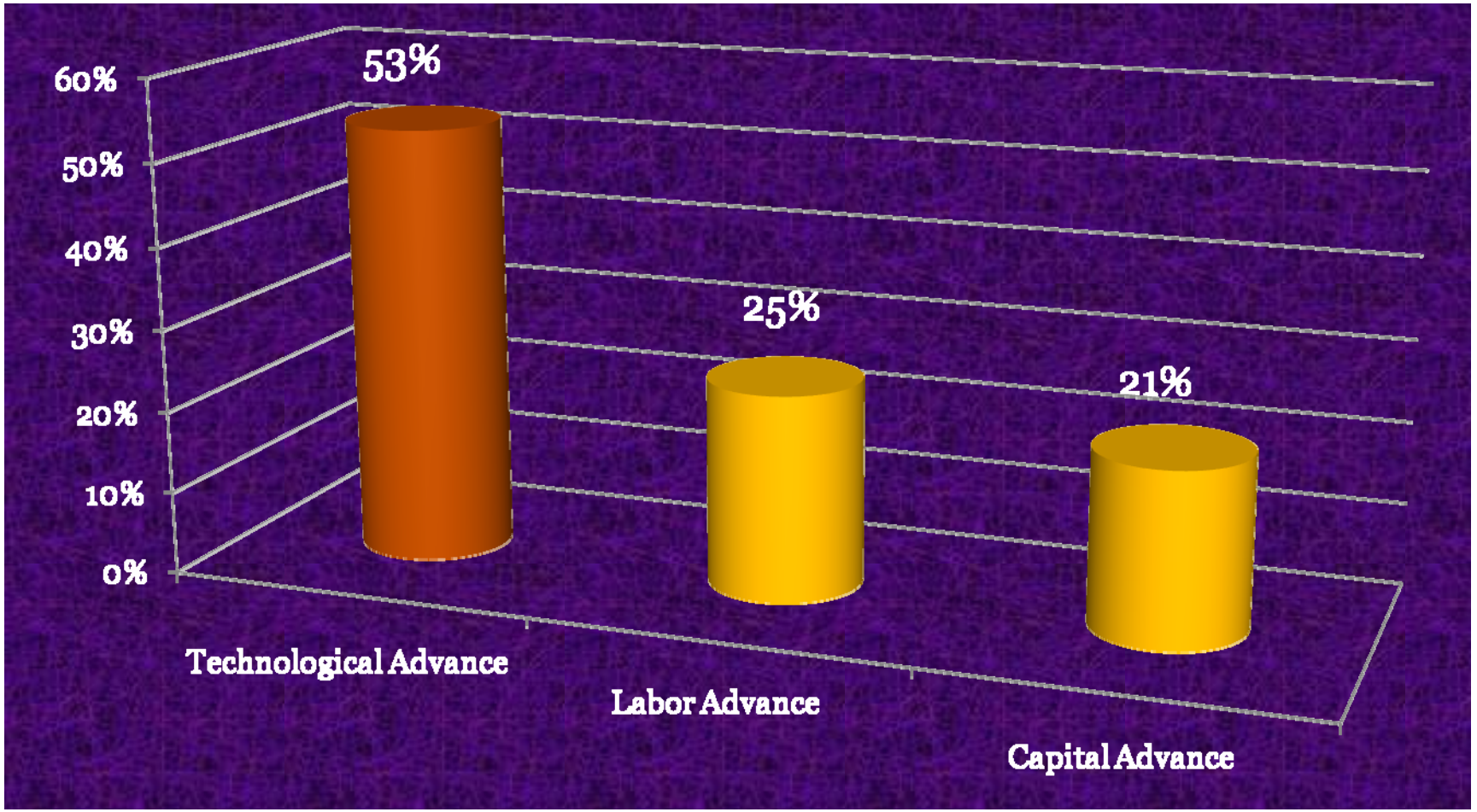
- Technology, talent, and the choice of a place to live are the dominant economic trends of this century.

Innovation Matters



"Tough Choices Tough Times, The Report of the New Commission on the Skills of the American Workforce," National Center on Education and the Economy, 2007.

The Percentage of US Economic Growth Accounted for by Technology Compared to Labor and Capital



Source: Alliance for Science and Technology Research in America (ASTRA)

Talent = Intellectual Capital: the Keystone to Competitiveness

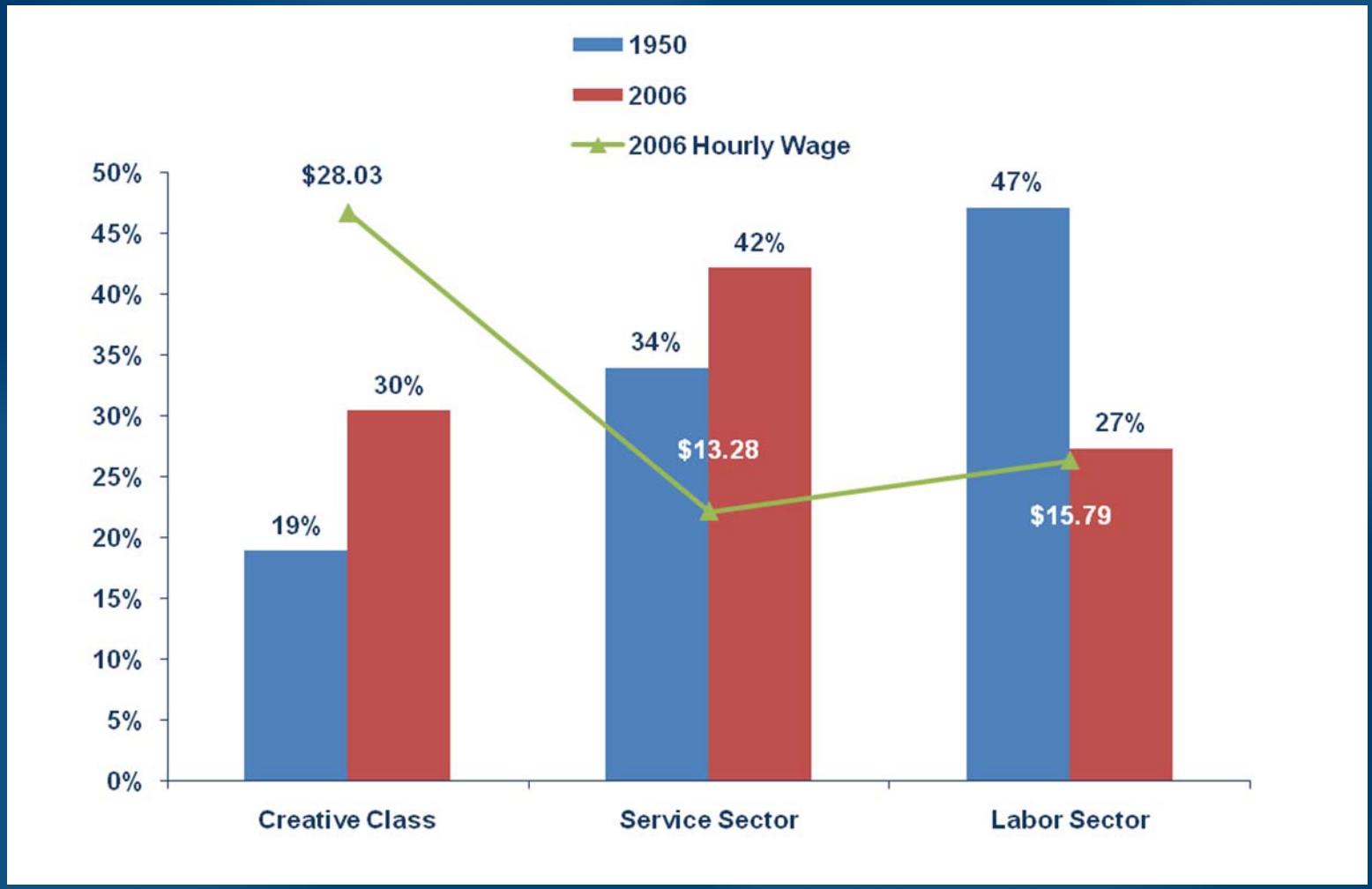
"It's pretty clear that the toughest, most important competitive race in the 21st century worldwide economy will be the global race for talent and workers."

Thomas Donahue, President and CEO

US Chamber of Commerce, 12/05/07 Speech

Talent and Wealth

US Job Growth 1950 – 2006



Source: Bureau of Labor Statistics data as cited in The Rise of the Creative Class by Richard Florida, 2002 and 2006 data as classified per Recasting the Creative Class to Examine Growth Processes by David A. McGranahan and Timothy R. Wojan, 2007

Entrepreneurship, Sector Strategies, & Regional Assets Matter

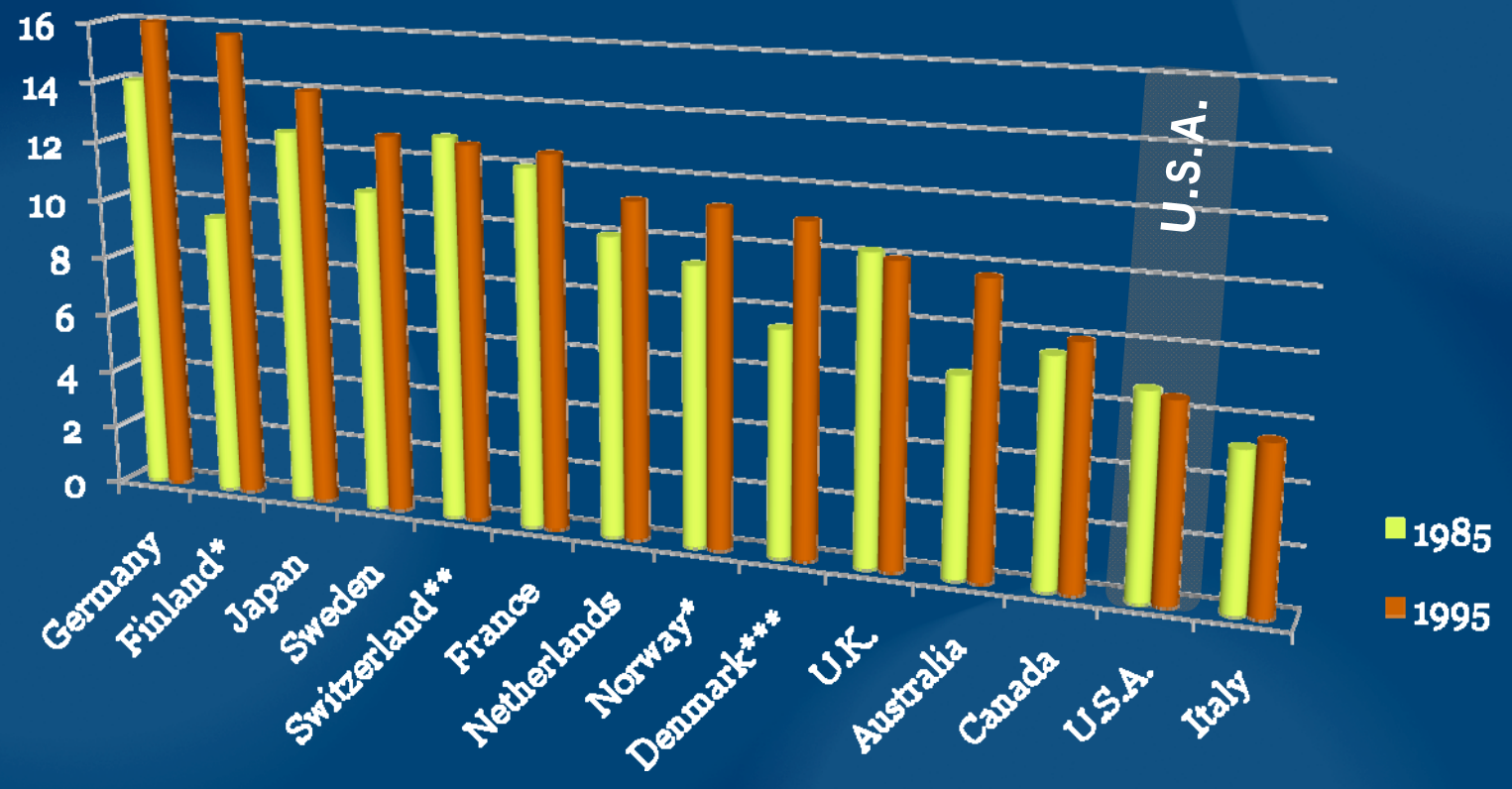
Eras of Economic Thinking

	Industrial Recruiting 1950s to 1980s	Cost Competition 1980s to early 1990s	Regional Competitiveness early 1990s to present
Driver	Export Base	Scale Economies	**Innovation & Entrepreneurship**
Strategies	· Financial Incentives to Firms · Industrial Parks	· Industry Consolidation and Cost-Cutting · De-regulation	· Entrepreneurship · Clusters · Commercial Research
Keys to Success	· Government funds for subsidies and tax breaks · Industrial infrastructure	· Health of existing industries	· Distinct regional assets · Human Capital · Higher Education · Amenities

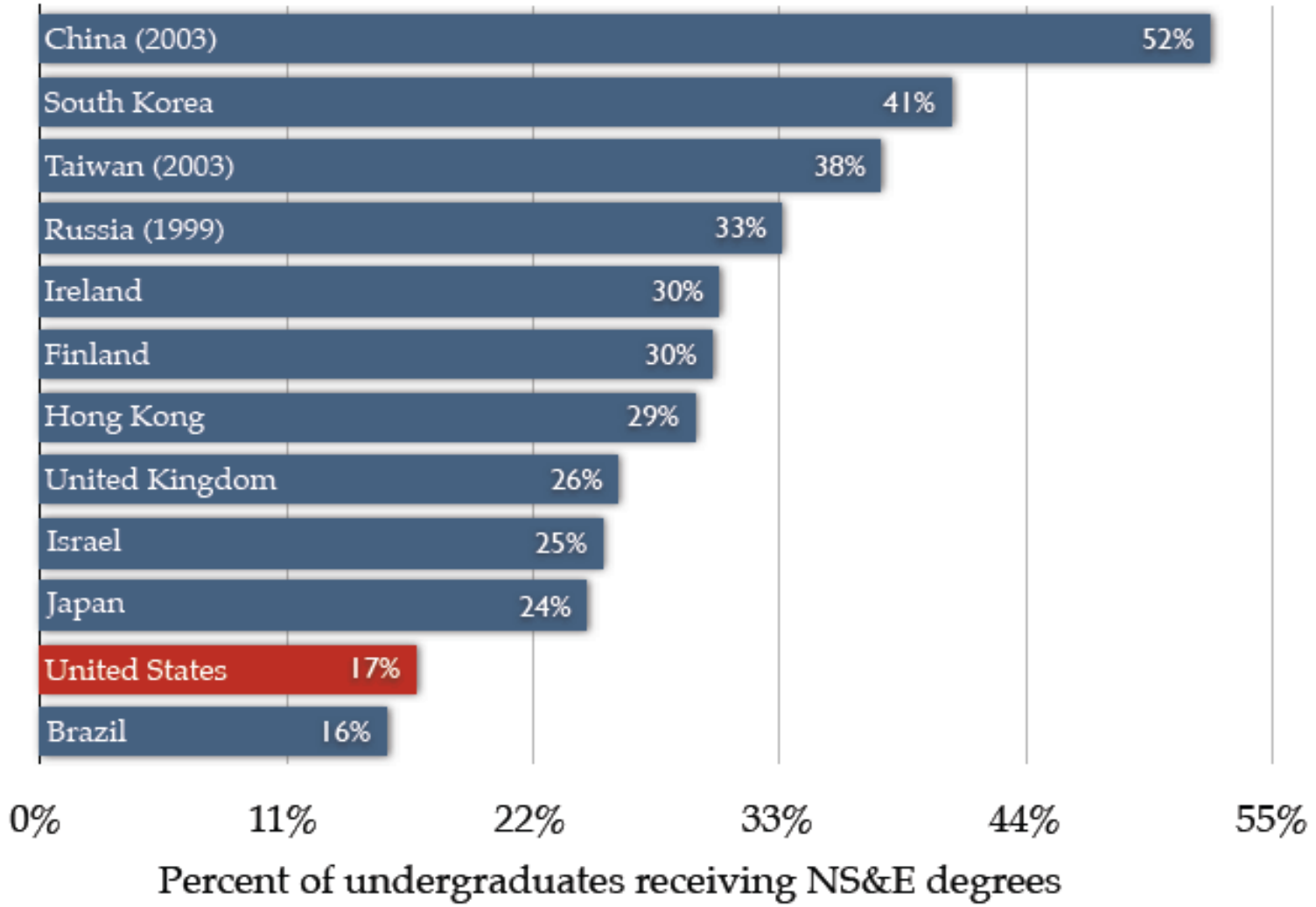
Source: Mark Drabenstott, [former] Vice President and Director, Center for the Study of Rural America, Federal Reserve Bank of Kansas City

Innovation Capacity Means Science and Technology

STEM Grads = 5% of US Total = 50% US Economic Growth over Last 50 years



U.S. Undergraduate Emphasis on Science and Engineering Small



*NS&E degrees include natural (physical, biological, earth, atmospheric, and ocean sciences), agricultural, and computer sciences, mathematics, and engineering. Data are for 2002 (or most recent year).

Source: *NSF Science and Engineering Indicators 2006*.

Compiled by the APS Washington Office.

Regions Matter in Creating & Accumulating Knowledge

- Innovation is regionally bound
- Scientist location can influence the decision to commercialize…knowledge tends to spill over within geographically bounded regions.
- To impact regional innovation requires a thoughtful policy linking regional potential, regional competence, and investments in infrastructure, regional facilities, and regional education institutions

John Bardo, Higher Education and Economic Competitiveness In a Global Economy, UEDA Presentation 10/31/06.


Megaregions of North America
CANADA
Tor-Buff-chester
Cascadia
Nor-Cal
Denver-Boulder
Chi-Pitts
Bos-Wash
So-Cal
Phoenix-Tucson
Dal-Austin
Char-Lanta
So-Flo
Hou-Orleans
MEXICO
Mexico City
0
300 mi
Richard Florida 2008
Map by Tim Gulden and Ryan Morris

Talent Stickiness Matters

Critical Resource: Talented People

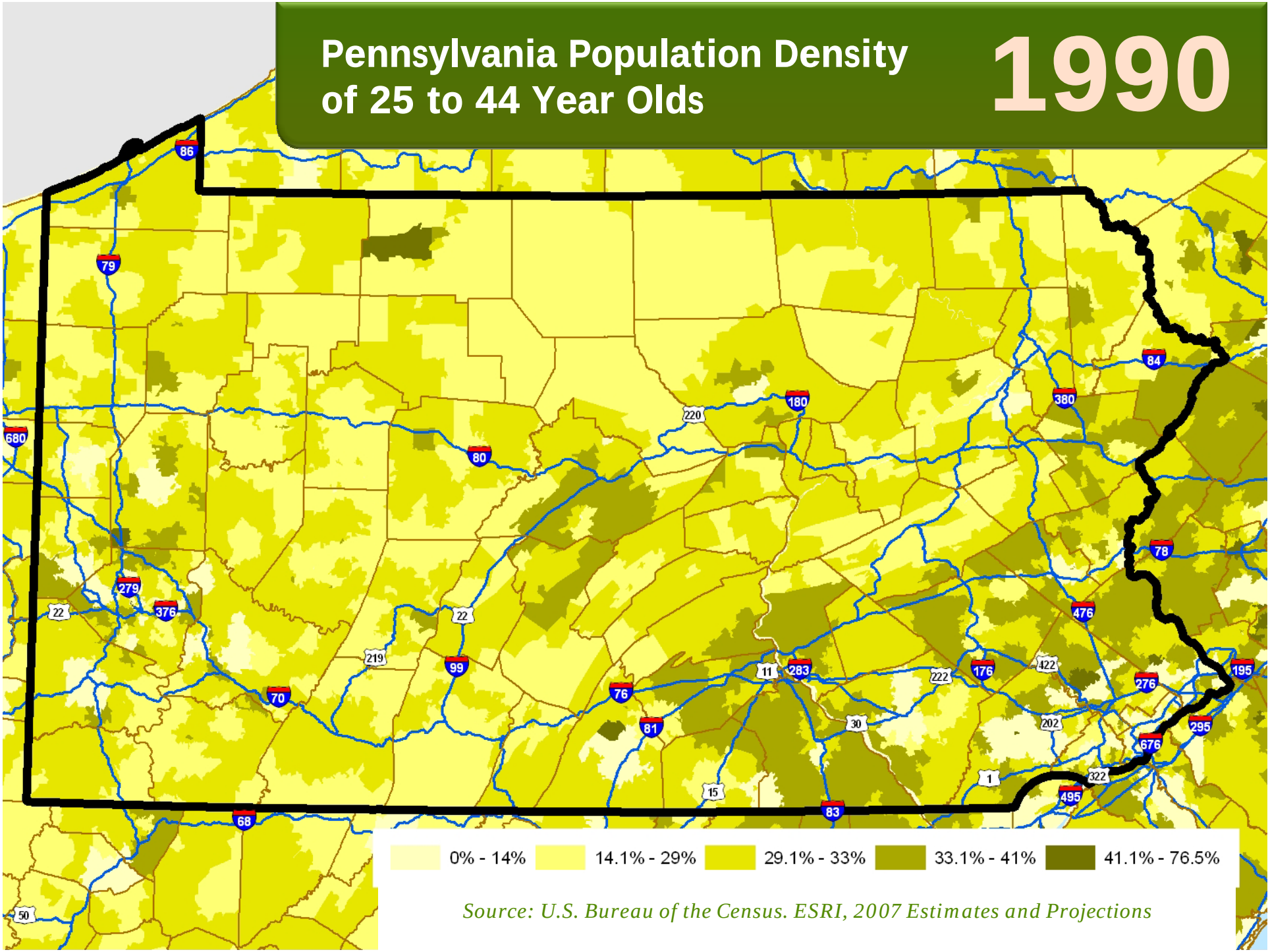
What do talented people want in choosing a place to live?

- People like themselves
- Careers for professional couples
- Entrepreneurial climate that embraces tolerance for new and different ideas

Click to Loop Pennsylvania Population Density of 25 to 44 Year Olds 1990 to 2012

Pennsylvania Population Density of 25 to 44 Year Olds

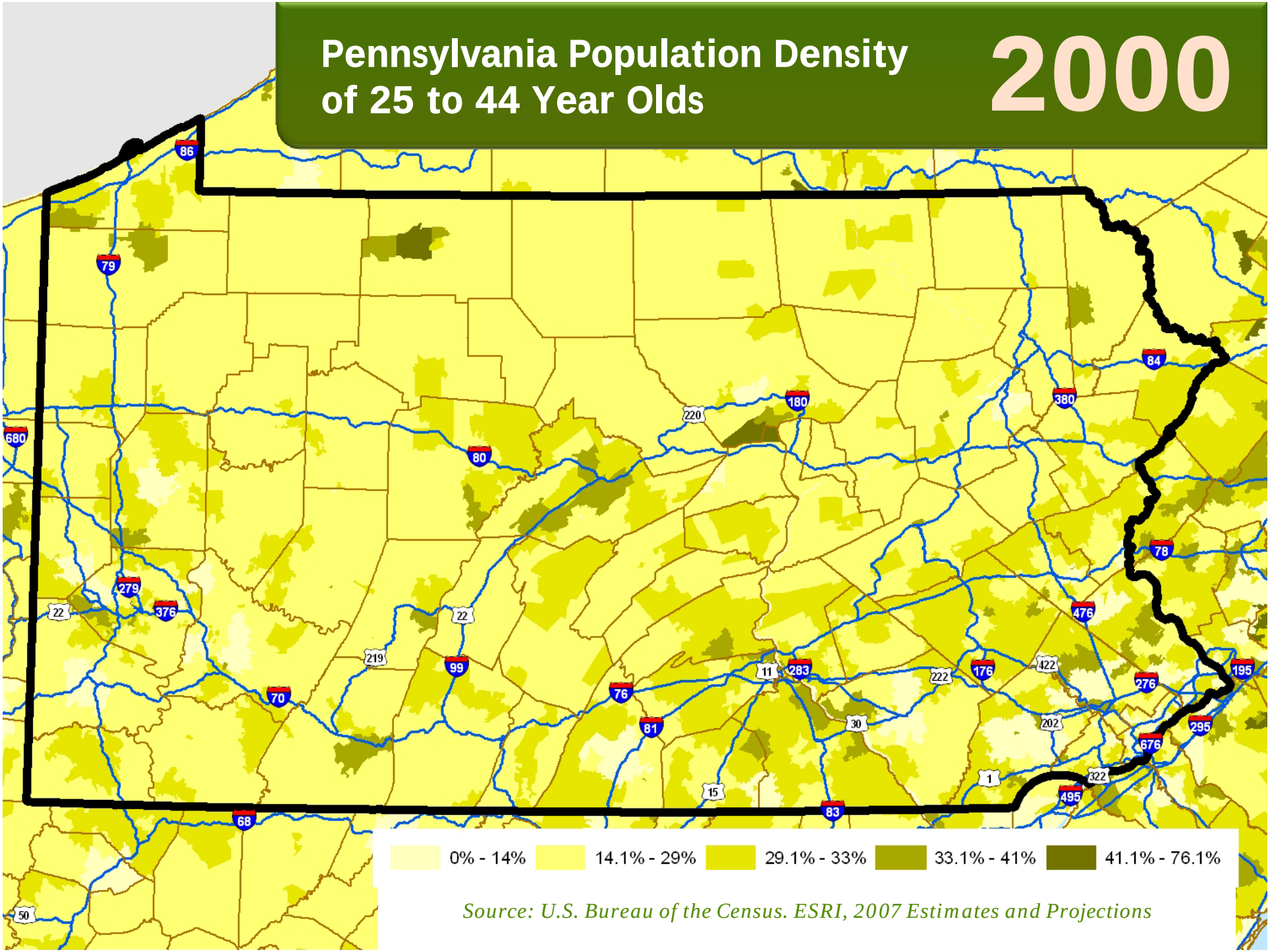
1990



Source: U.S. Bureau of the Census. ESRI, 2007 Estimates and Projections

Pennsylvania Population Density of 25 to 44 Year Olds

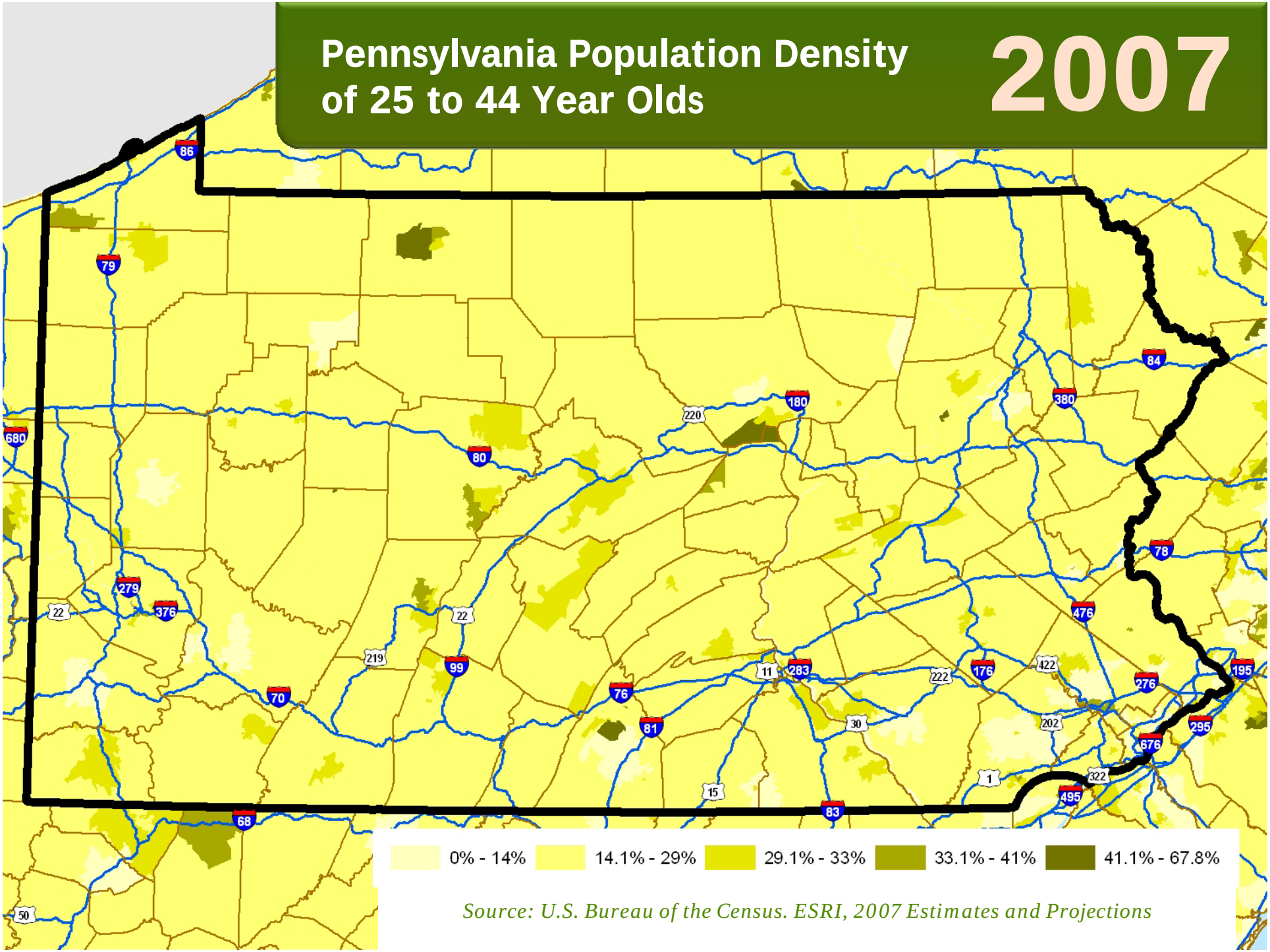
2000



Source: U.S. Bureau of the Census. ESRI, 2007 Estimates and Projections

Pennsylvania Population Density of 25 to 44 Year Olds

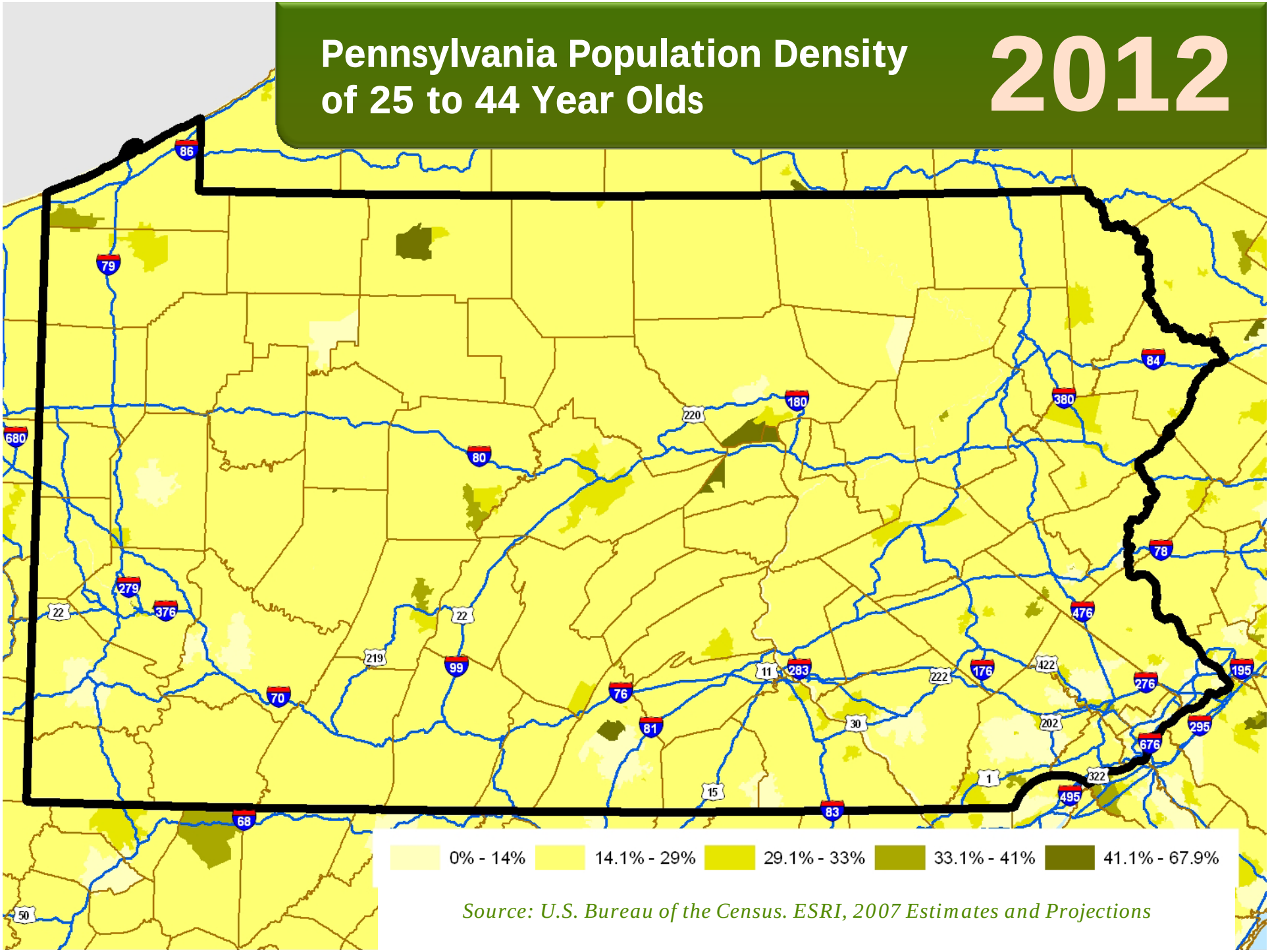
2007



Source: U.S. Bureau of the Census. ESRI, 2007 Estimates and Projections

Pennsylvania Population Density of 25 to 44 Year Olds

2012



Source: U.S. Bureau of the Census. ESRI, 2007 Estimates and Projections

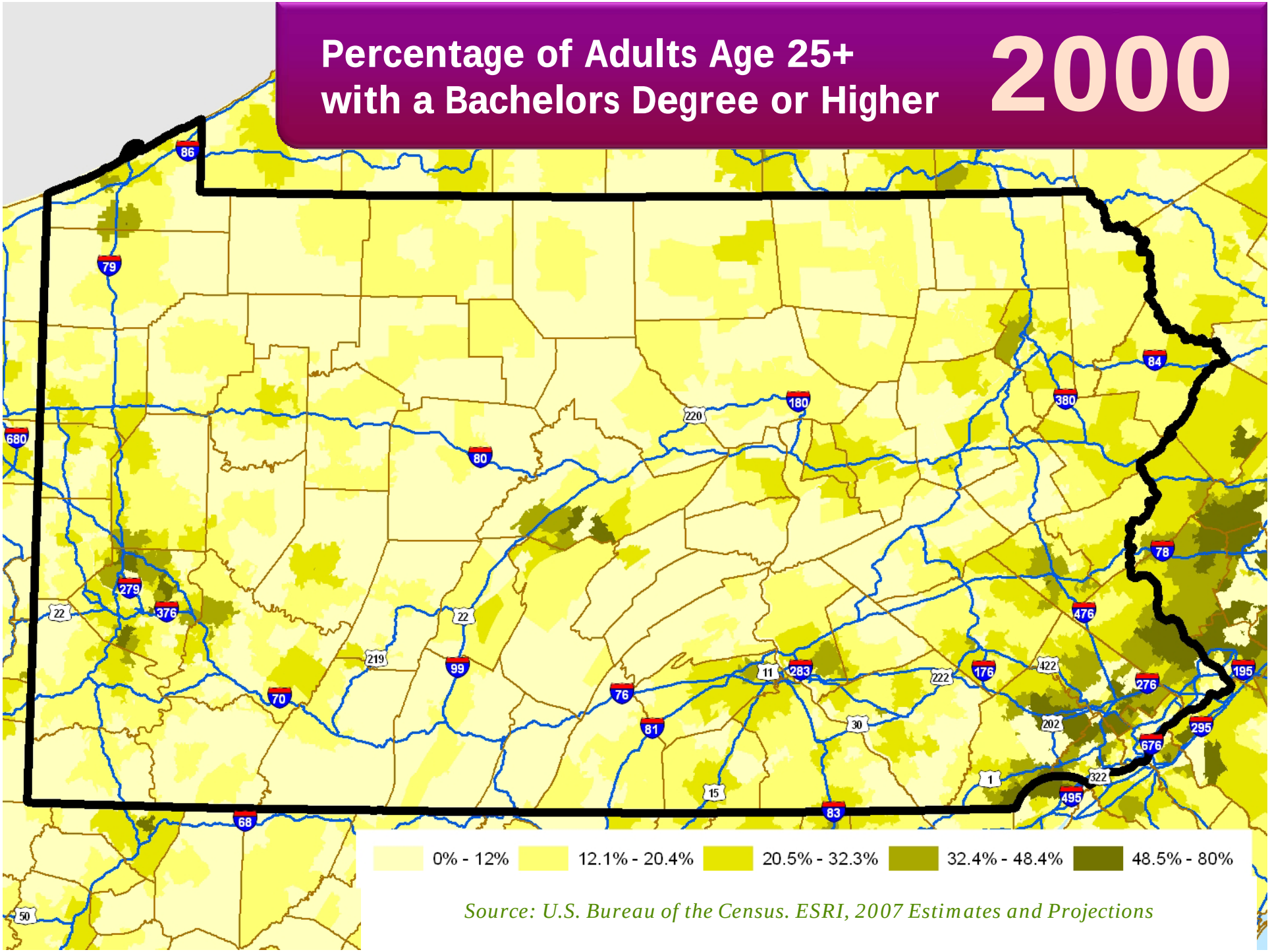
What it takes to build a 21st Century Economy:

- **Talent—**Particularly STEM expertise
- **Innovation—**A locus of distinctive innovative activity
- **Advanced Infrastructure—** High speed capacity to interface with global markets, suppliers, and collaborators

Strategies to create value in a 21st Century Economy

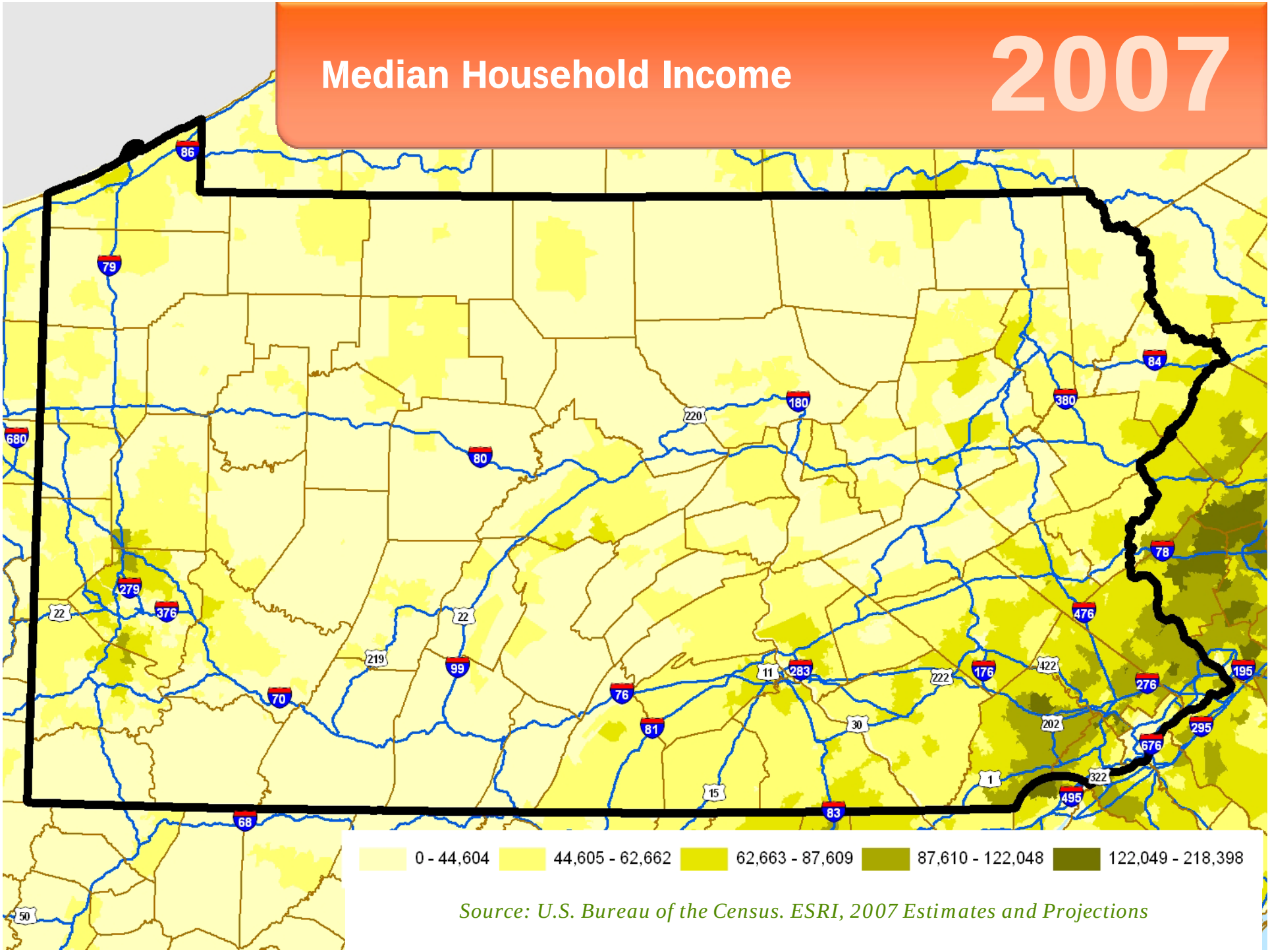
- Regionalism
- Sector alignment with regional assets
- Economic sociology and innovation infrastructure
- University partnerships

Percentage of Adults Age 25+ with a Bachelors Degree or Higher 2000



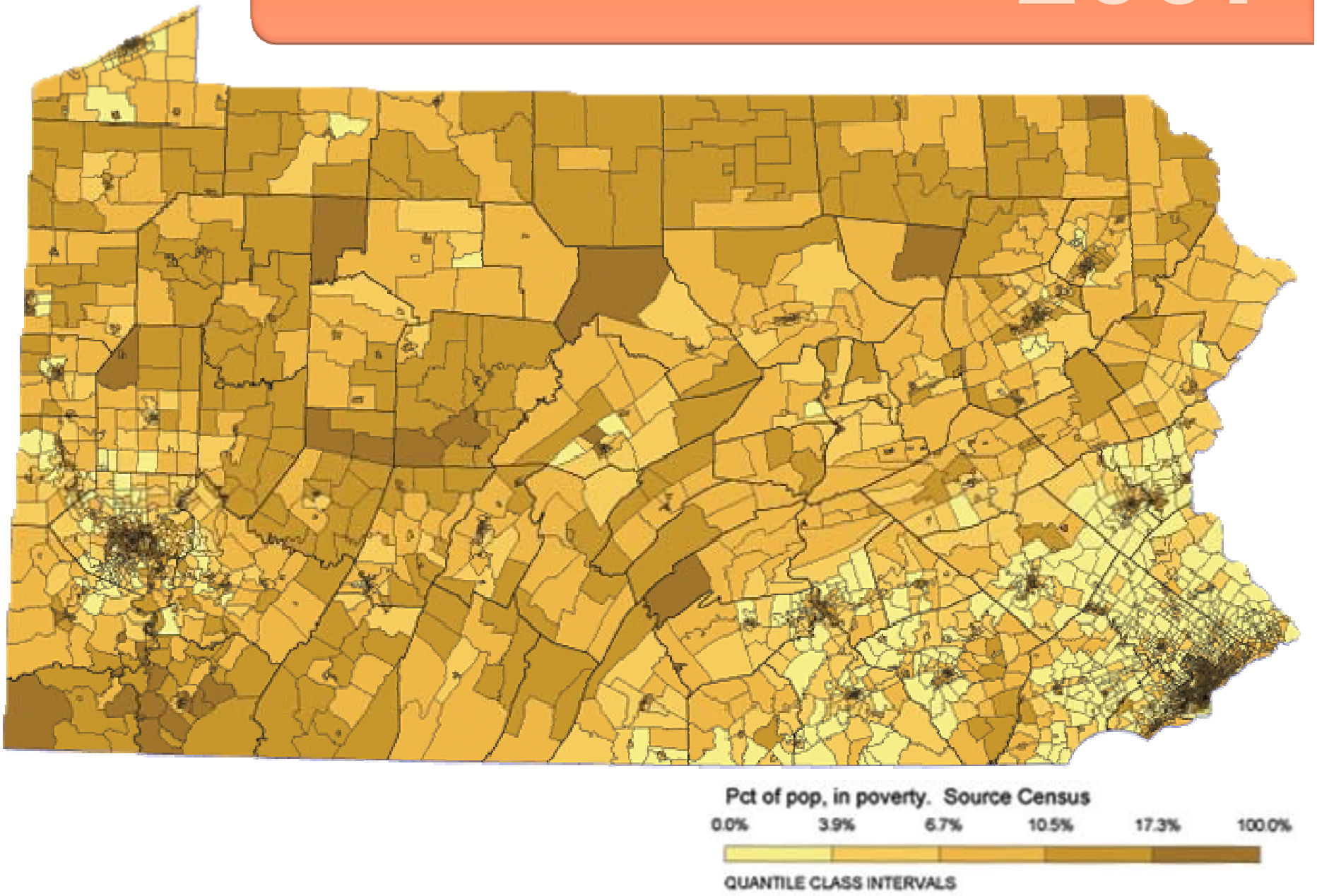
Source: U.S. Bureau of the Census. ESRI, 2007 Estimates and Projections

Median Household Income 2007

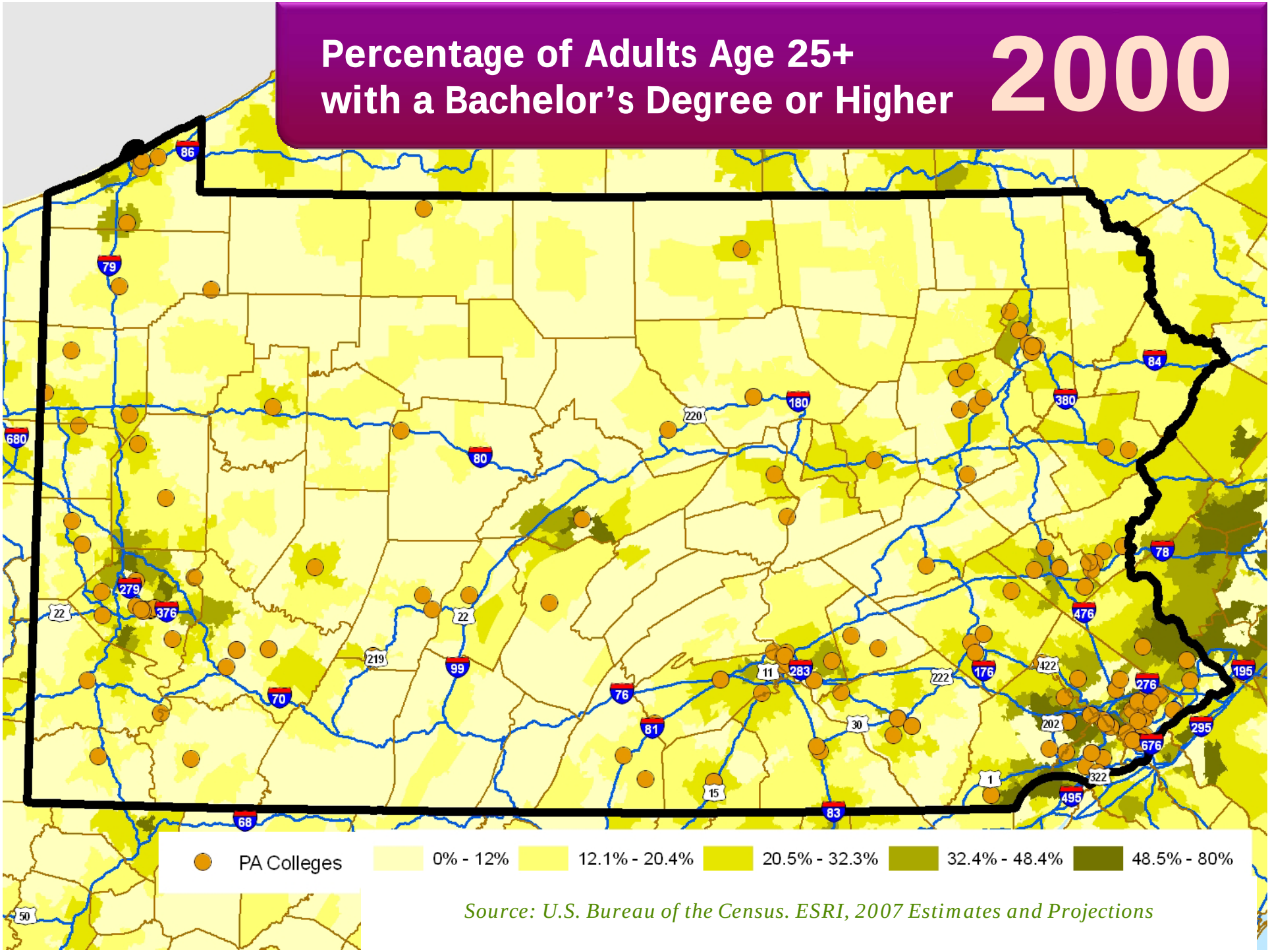


Source: U.S. Bureau of the Census. ESRI, 2007 Estimates and Projections

Percentage of Population in Poverty 2007

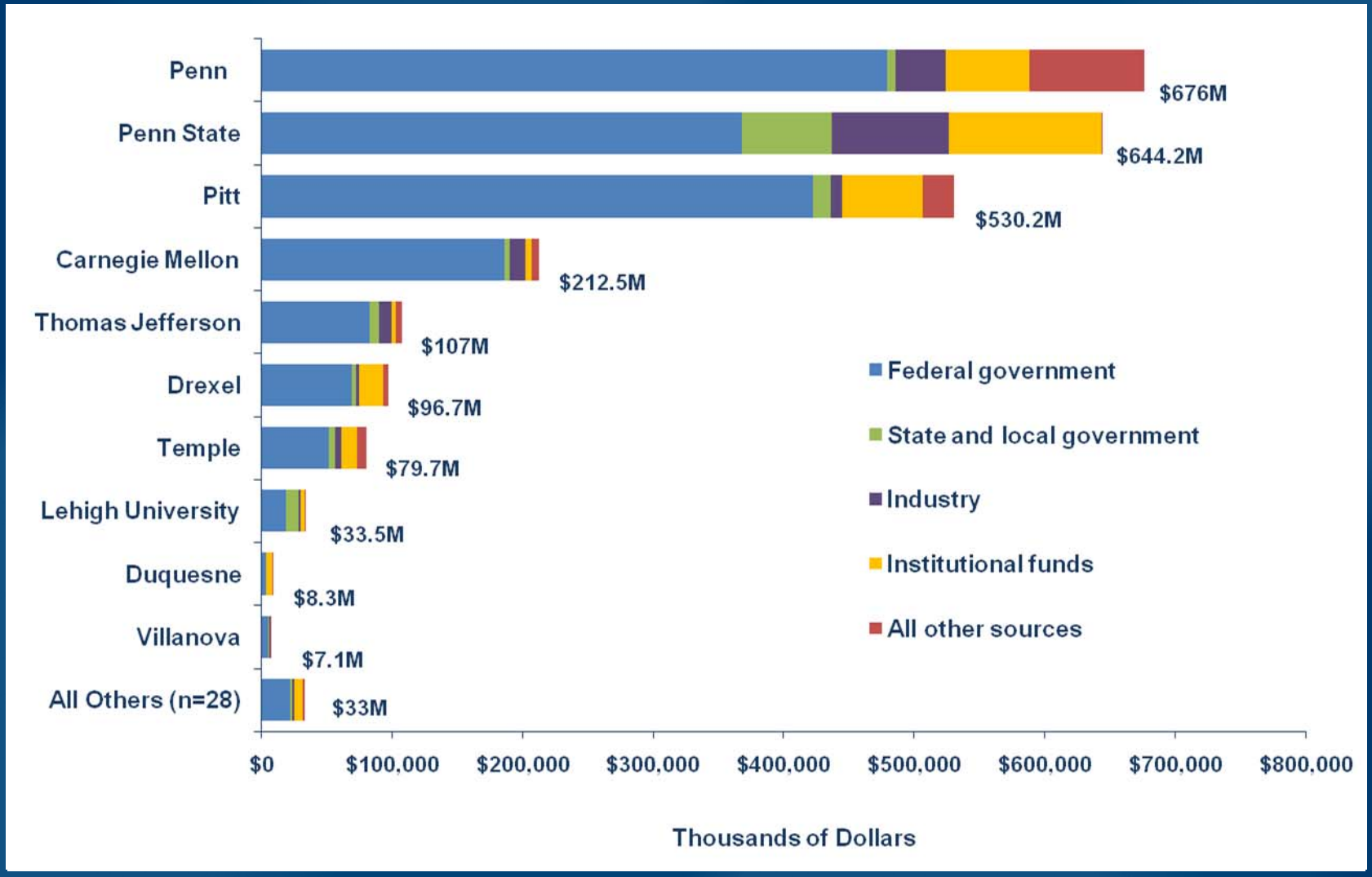


Percentage of Adults Age 25+ with a Bachelor's Degree or Higher 2000



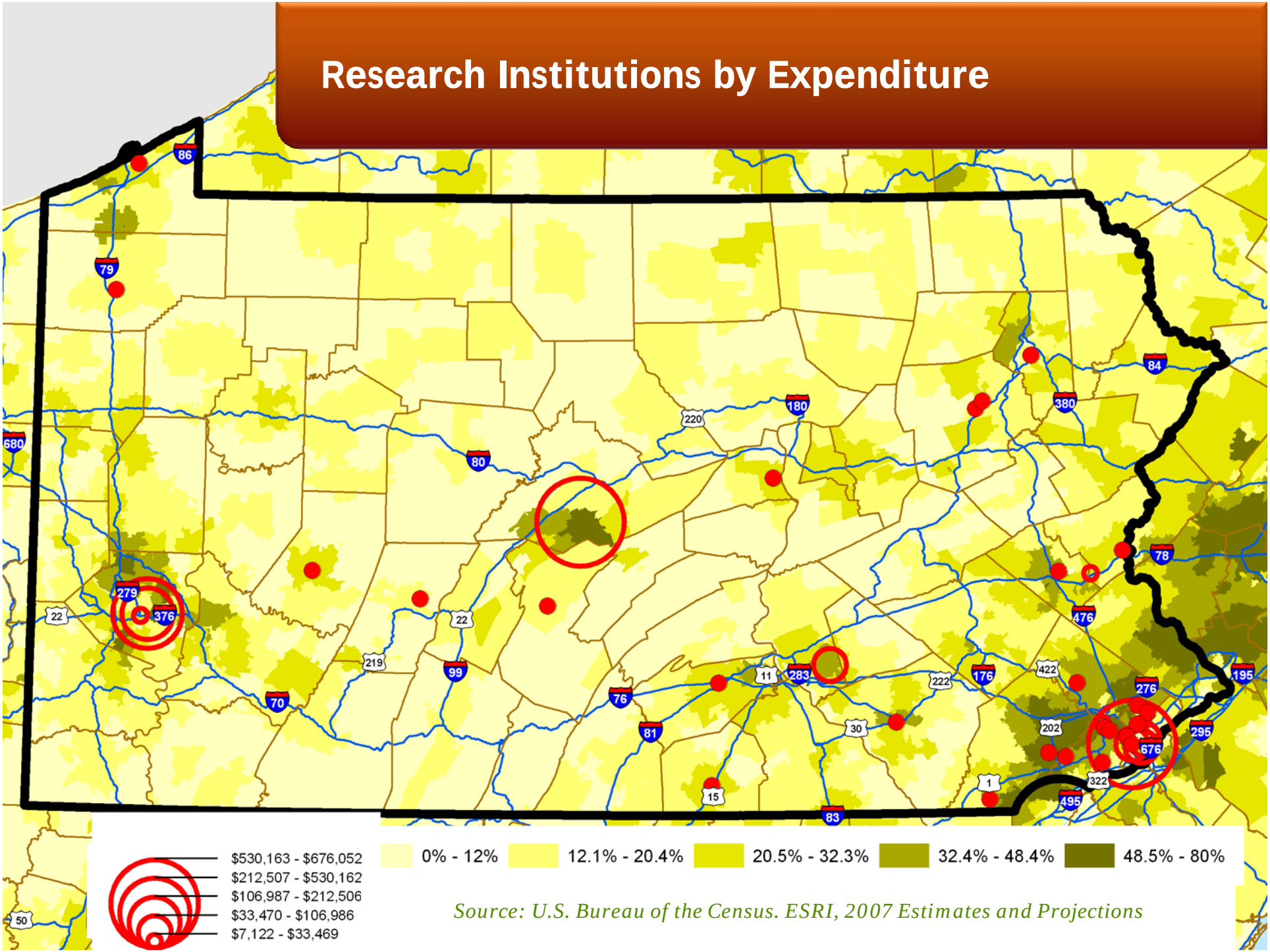
Source: U.S. Bureau of the Census. ESRI, 2007 Estimates and Projections

R&D Expenditures By PA Institution



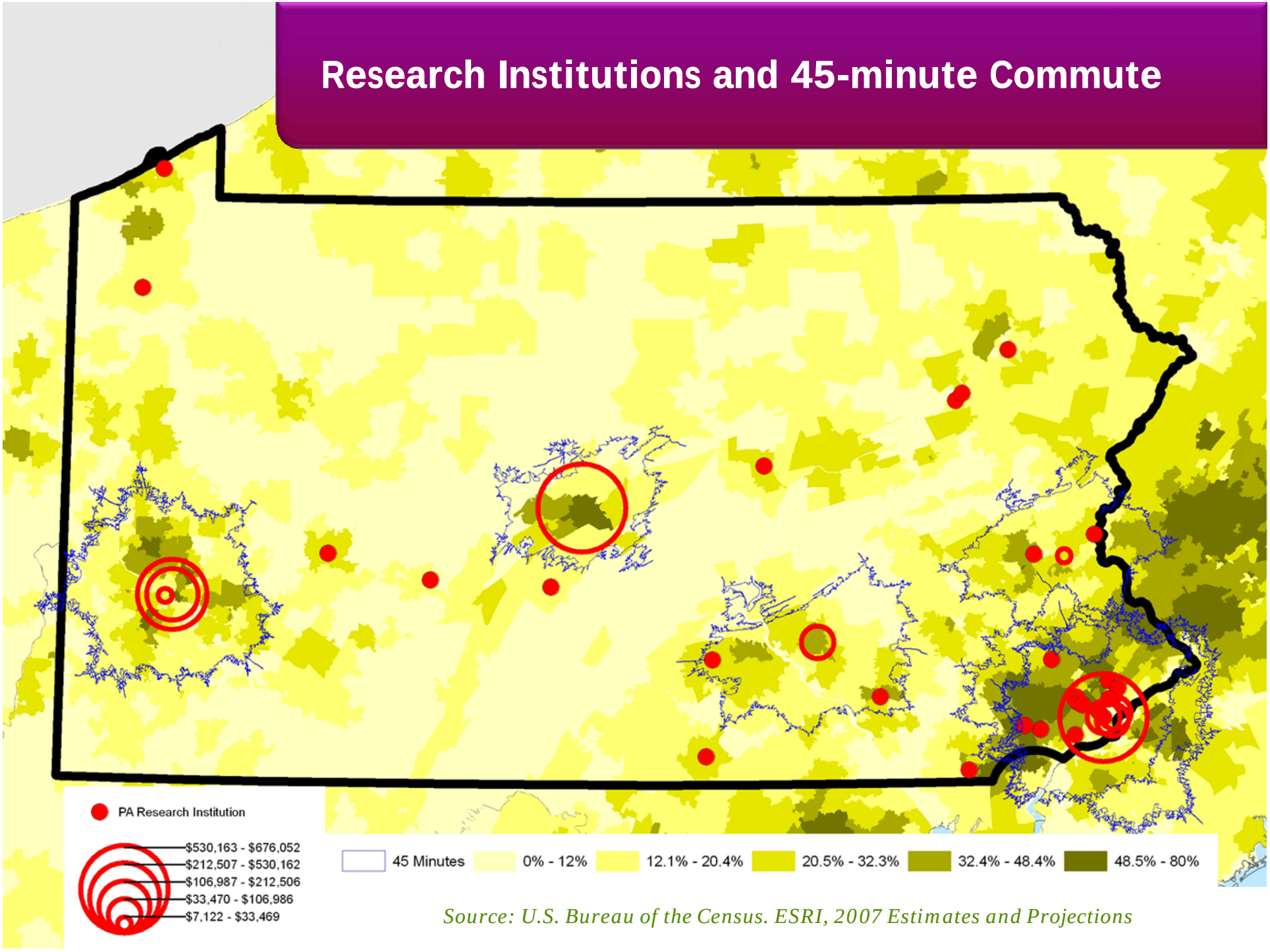
Source: National Science Foundation/Division of Science Resources Statistics, Survey of Research and Development Expenditures at Universities and Colleges, FY 2006

Research Institutions by Expenditure



Source: U.S. Bureau of the Census. ESRI, 2007 Estimates and Projections

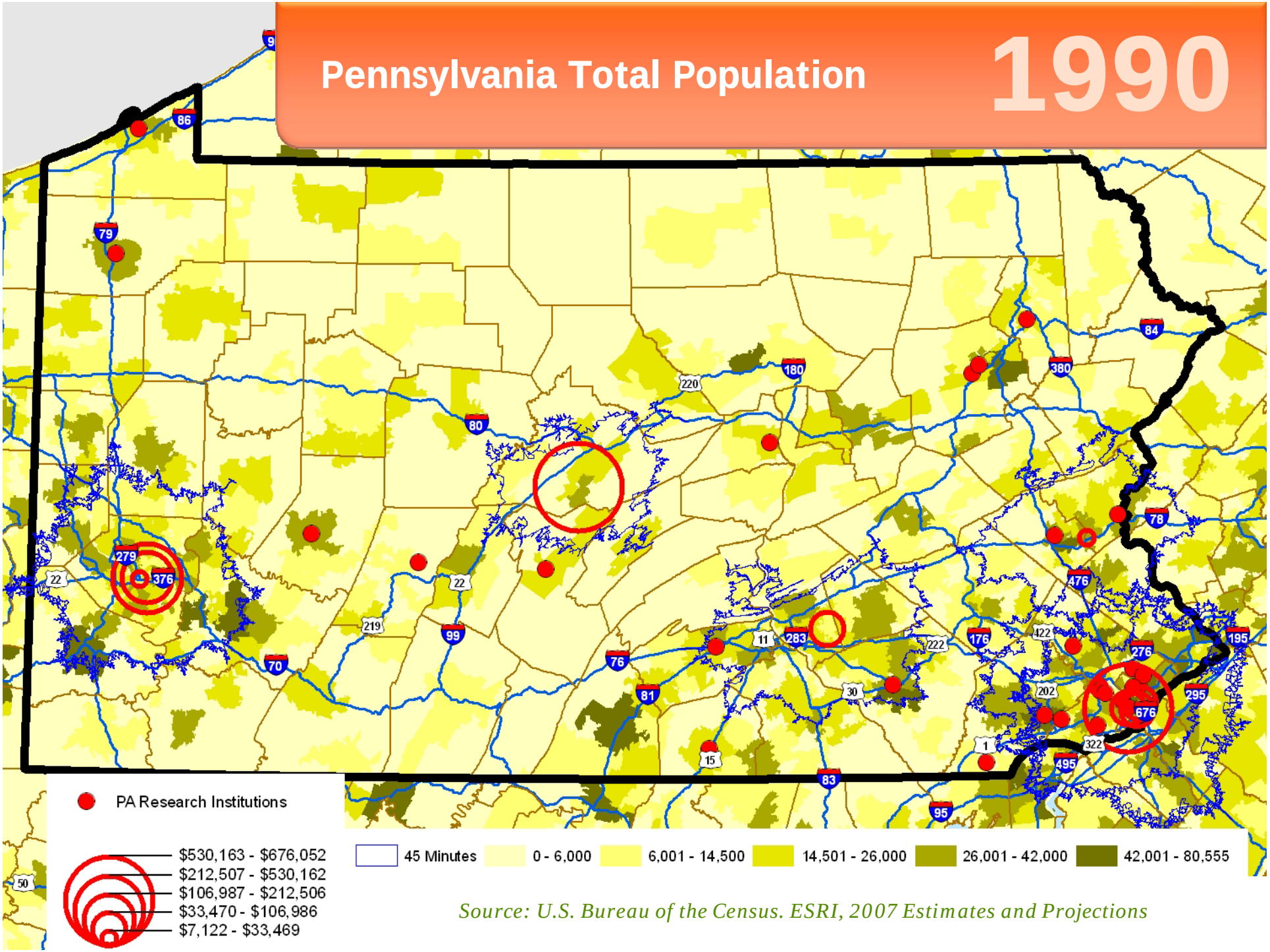
Research Institutions and 45-minute Commute



Source: U.S. Bureau of the Census. ESRI, 2007 Estimates and Projections

Click to Loop Pennsylvania Total Population
1990 to 2012

Pennsylvania Total Population 1990



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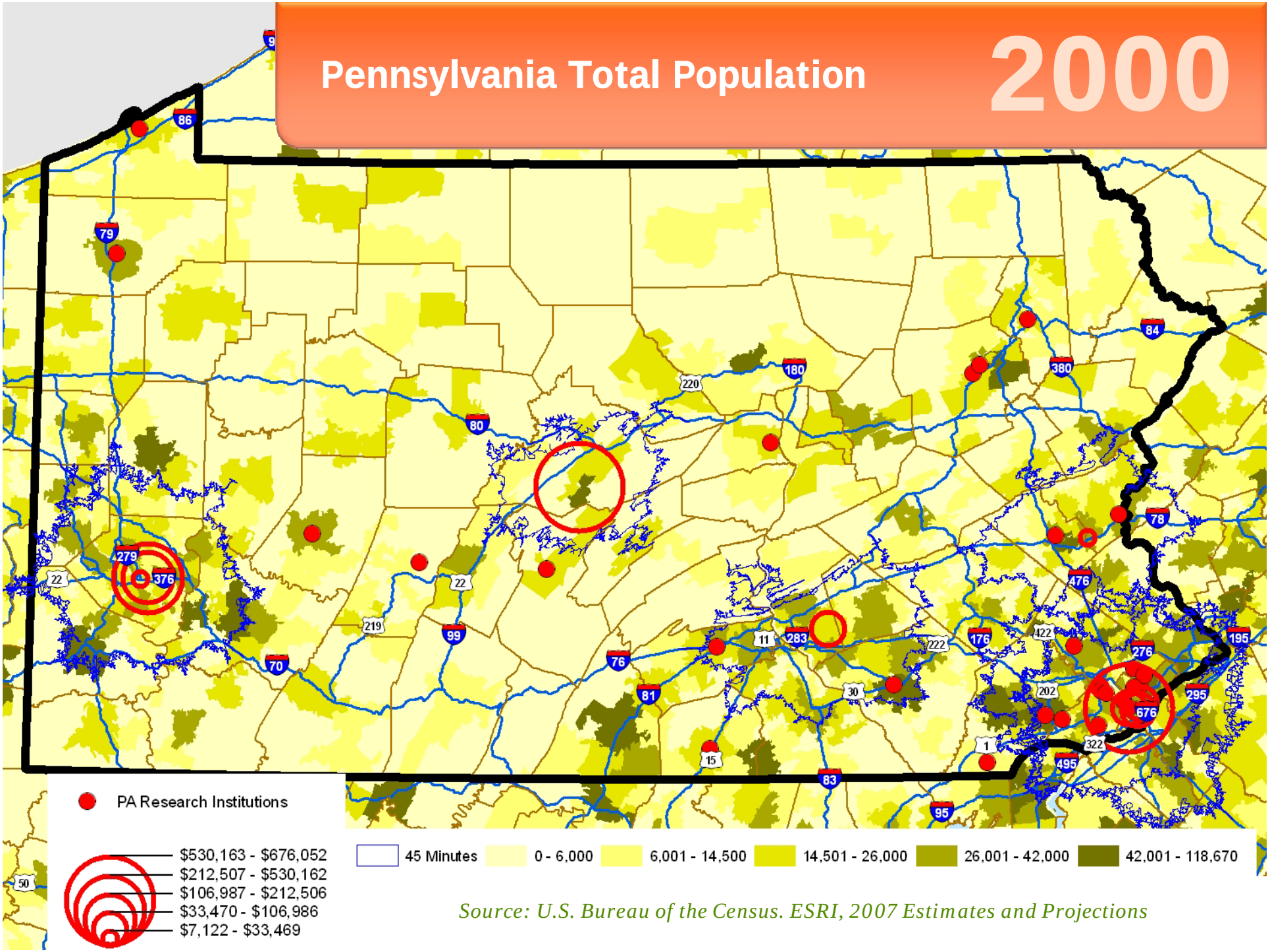
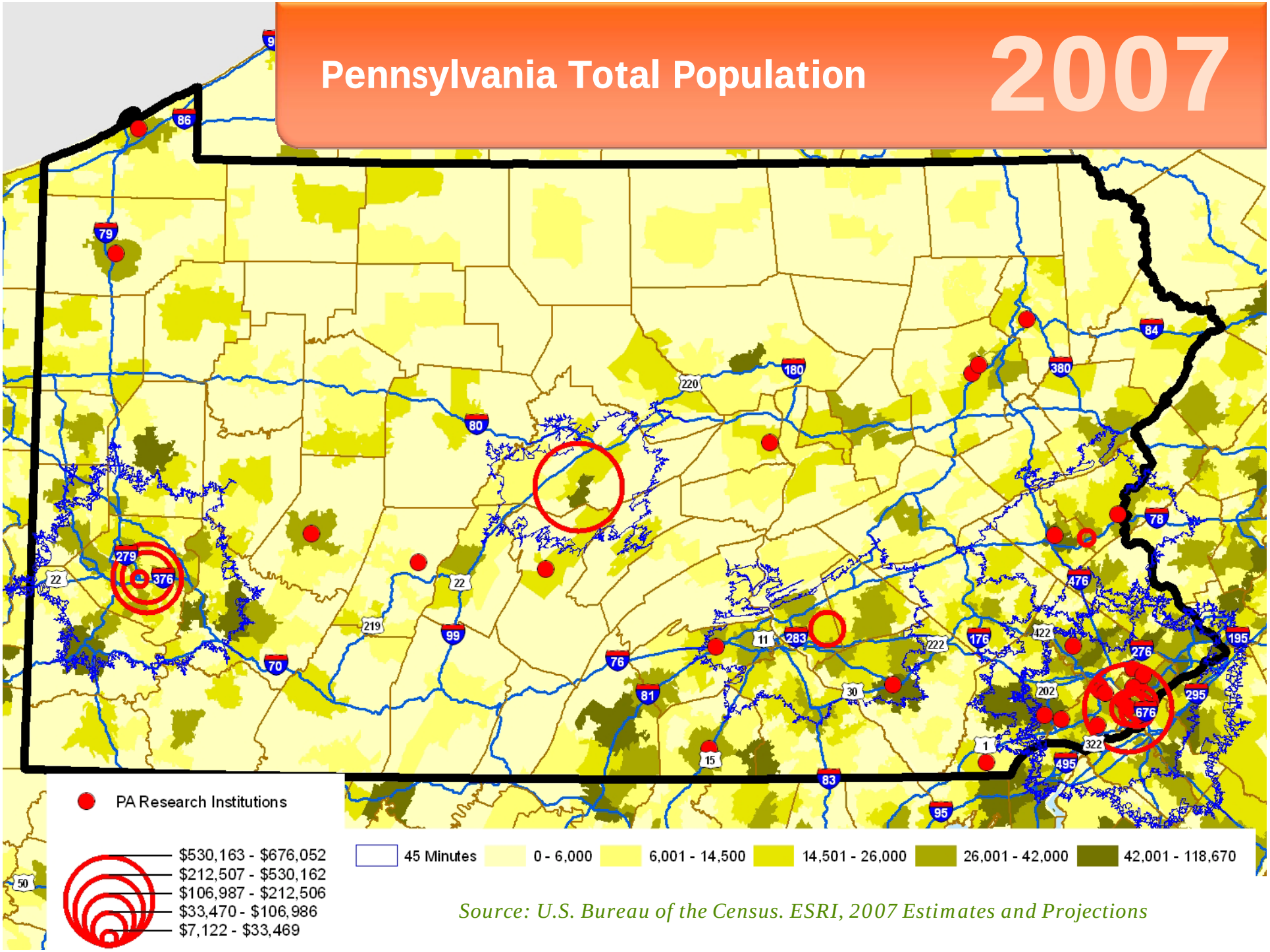
Pennsylvania Total Population 2000



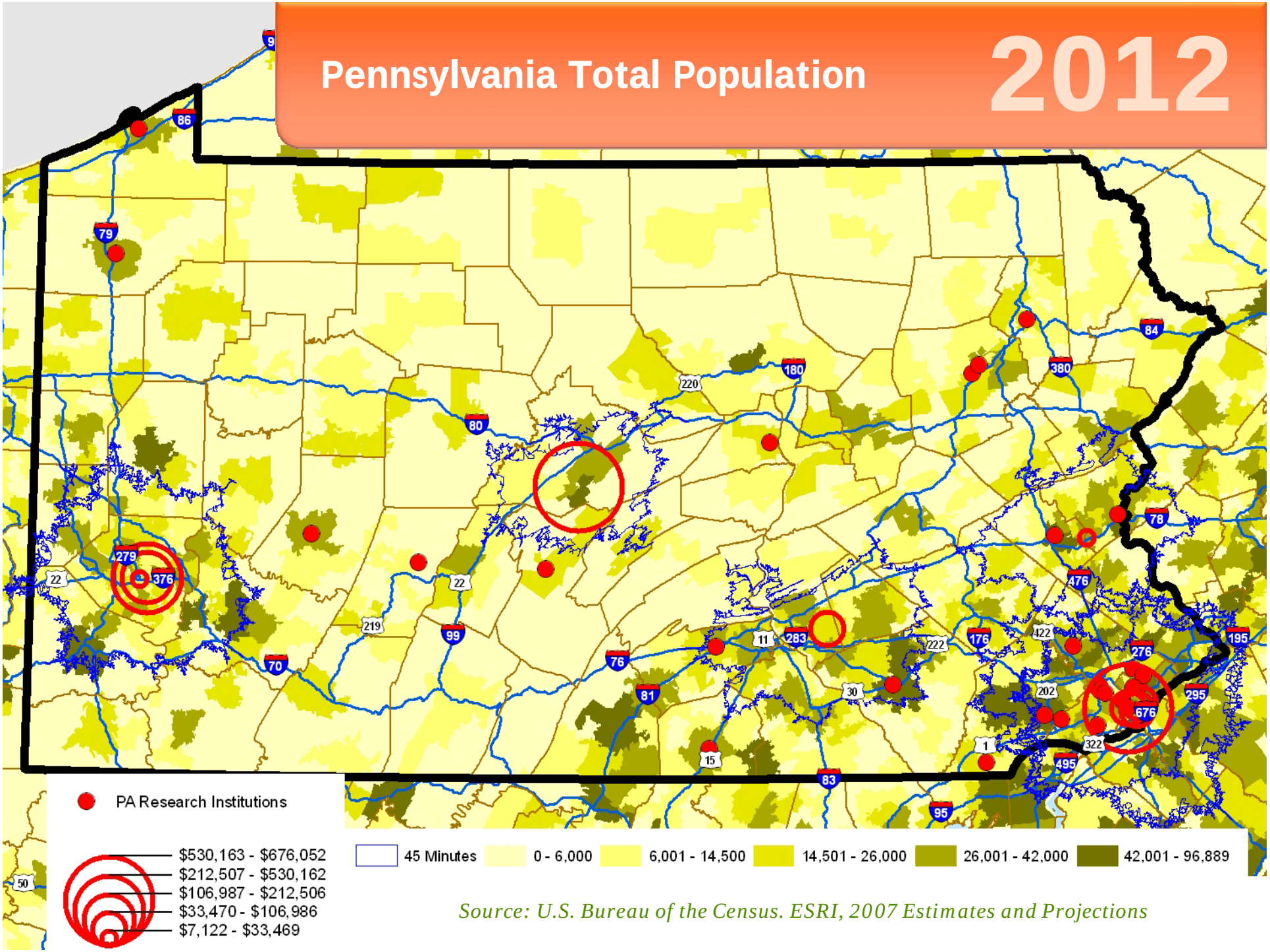
Source: U.S. Bureau of the Census. ESRI, 2007 Estimates and Projections

Pennsylvania Total Population 2007



Source: U.S. Bureau of the Census. ESRI, 2007 Estimates and Projections

Pennsylvania Total Population 2012



Source: U.S. Bureau of the Census. ESRI, 2007 Estimates and Projections

Redevelopment Dilemma??
Integrated Regional Program Model

Without integrated regional effort:

- Companies—Mature or eroding markets
- Workforce—Accelerate Brain Drain
- Communities—Without economic and talent base: no tax base → no hope → no future

The Have-Not Challenge

Dominant Competitiveness Trends:

- Digitalization
- Regionalization
- Globalization

Typical Gaps in Regional Competitiveness:

- Static or Eroding Economic Base
- Brain Drain – General Loss of Talent Base
- Small Science and Engineering Talent Base
- Lacking or Trailing in Innovation Infrastructure
- Lagging in Communications Infrastructure
- Poor Schools
- Quality of Life Lacks Distinction

Problem for the Have-Not Regions:

Market conditions work against self-correction:

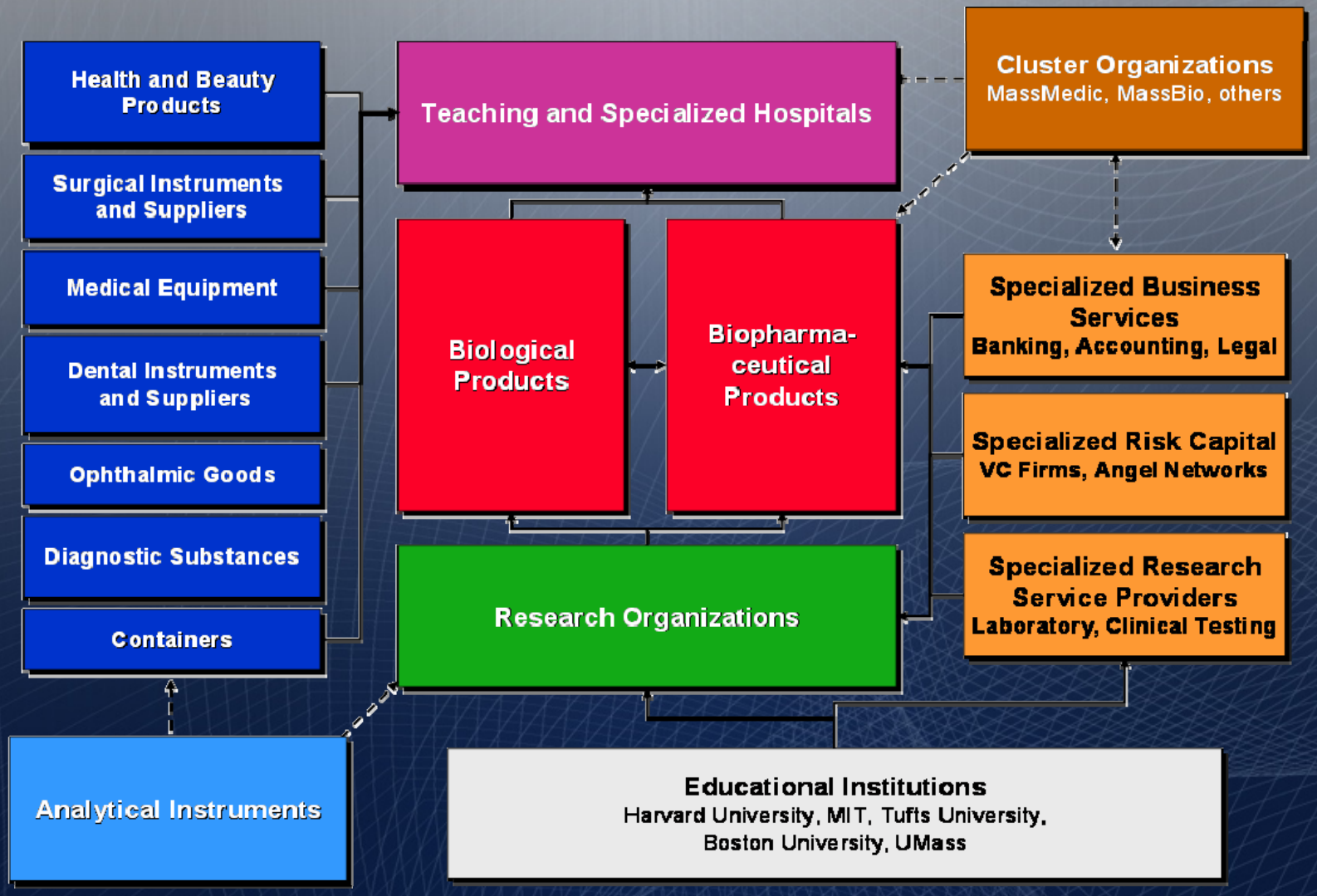
- Research universities are located in other places
- Critical infrastructure is developed in other places
- Talent migrates to other places
- High-tech jobs are created in other places
- Growth happens in other places
- Wealth is created in other places

How can your region create value in a 21st Century Economy?

Engage a Research University

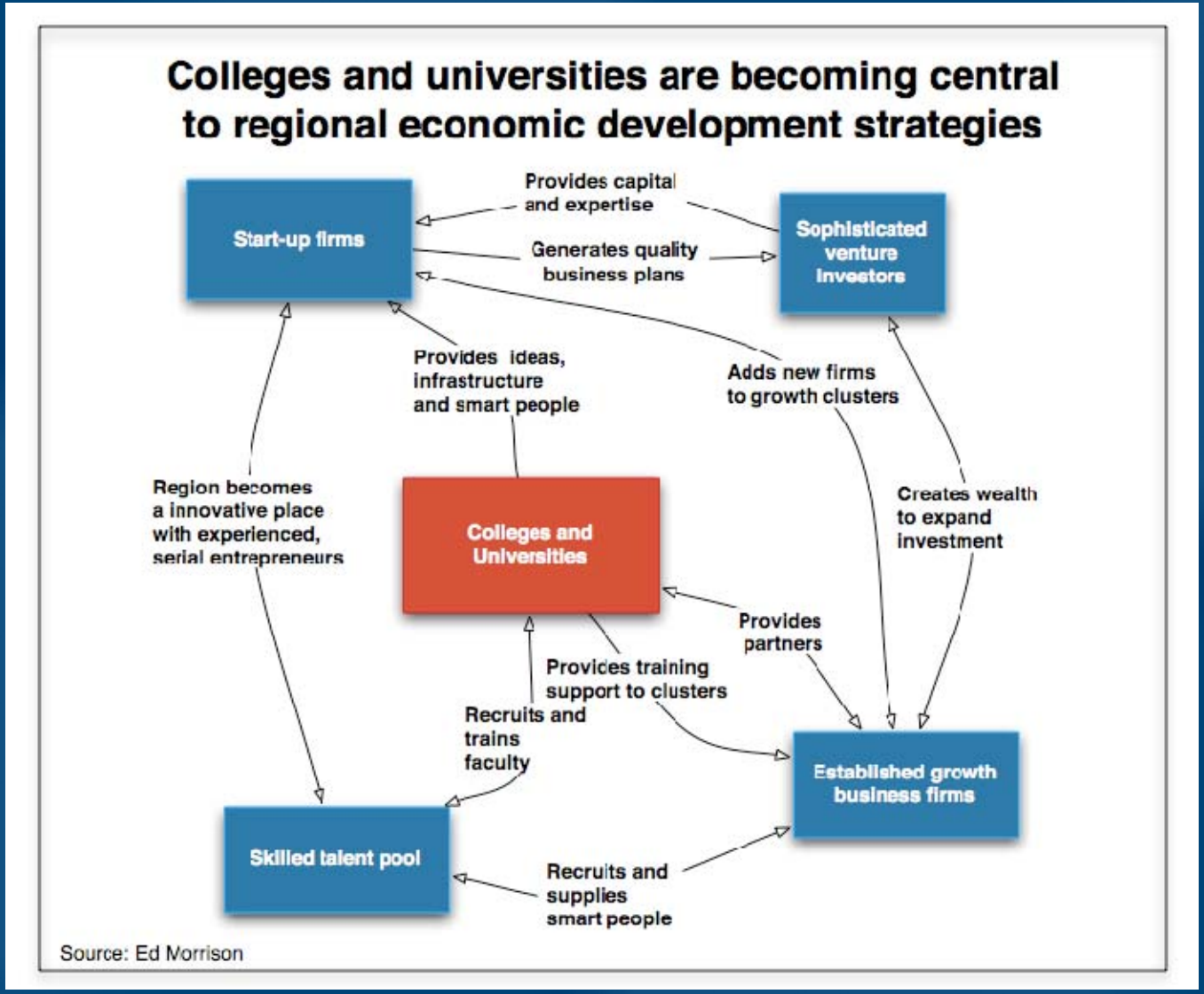
- Existing, Highly Credible Public Assets
- University Produces Competitiveness Rx
  - *Talented People* in faculty and students
  - *New Ideas/Critical Technologies* = Innovation Capacity and Innovation Networks
  - Expertise in Nation's *Technology Infrastructure* (e.g. National Lambda Rail)
  - Magnet for High-Tech Firms and *Entrepreneurs*
  - Creative Climate attracts *Quality of Life* which Attracts Talented People

An organized *cluster initiative*: Massachusetts Life Sciences



University Roles in Economic Engagement

Talent and Innovation Supply Chain



Structure for Enlightened Self Interest with Key Partners

- University Principal Investigator
  - Top grad students and post-docs.
  - Unique research equipment
  - Competitive grant opps. through bigger lab
- Federal Laboratory
  - Talent for lab
  - Public relevance for funding stability
  - Creative colleagues
- Private R & D Laboratory
  - Lower investments in capital equipment and facilities
  - Pay as you go access to facilities.
  - Talent and technology crossovers.
  - Easy access to innovation supply chain relationships and networks.
  - Value in being close (creative climate or “rain forest” effect).

What core concept, collaborative initiative, and $$$ brings these partners to the table?

Benefits from Research-led Economic Development

- Spillover for new firm starts, talent and technology.
- Place-based expertise (faculty and researchers).
- Outsourced R & D capacity for SMEs.
- Technology transfer (patents into local firms).
- Bright grad students in region
  - Talent to attract companies
  - Future entrepreneurs
  - Talent stickiness from having creative constituents
- Creative climate attractive to high value jobs and workers.

Benefits from Research-led Economic Development

- ED strategy to strengthen region's primary economy.
- Traffic from gazelles and talent into your region.
- Connections to national and global value networks.
- Brand prestige of partners (university, federal, and private R & D)
- Part of a "compelling story" about community progress, civic atmosphere, and vision.
- Image as a community/region that "gets it."

Creating a Technology and Talent Hub

- Plant a public seed for a stronger private economy with *regional funding* to leverage other sources.
- Create a *"place"* or hub in your region.
- Use *Innovation Infrastructure* investments to bring together key R&D partners around "place."
- Partner with a *Superstar Researcher* for vision and competitive opportunities in talent and technology.
- Create *complementary labs and commercial ventures* to those at PSU UP.
- Develop a *Shared Agenda* based on enlightened self-interest.
- Develop a *partnership structure* to bring and keep together critical partners.

"Skate to Where the Puck Will Be"

- Create a regional "magnet" by building off regional assets or industrial sector with a future.
- Pair research focus, commercial testing & engineering services facility, and entrepreneurship programs in an integrated program model.
- Use shared facility and innovation infrastructure to create traffic from innovative firms and talented researchers.
- Build value as an outsourced R&D asset for small and medium-sized industry.

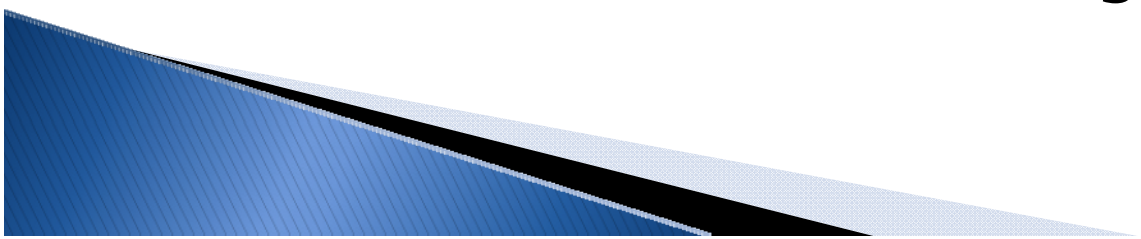
Rules of Engagement

University will engage:

1. With Regional leaders capable of *being stewards*
2. With Regional stewards who have *access to resources*
3. When *new programs* will be funded with *new $$*
4. When regional stewards commit to community *consensus building*
5. When *regional economic competitiveness* is a priority above geopolitical boundaries

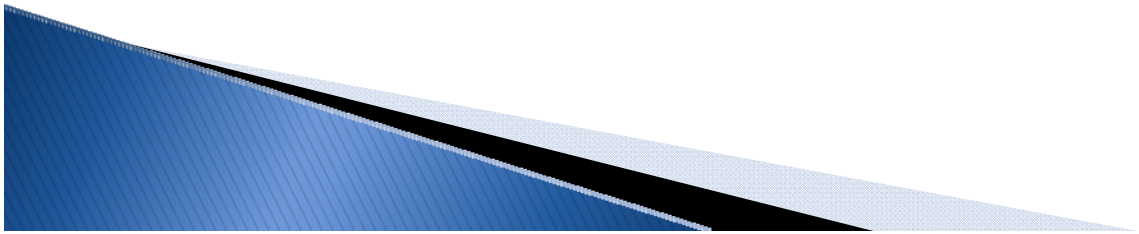
Is Regional Engagement an Idea Whose Time Has Come?

- Regional economic and social challenges lend themselves to the strengths of universities
- Universities are becoming more sensitive to calls to address the public good at the local level
- Policymakers have a strong interest in economic competitiveness but little concept about how universities might be engaged



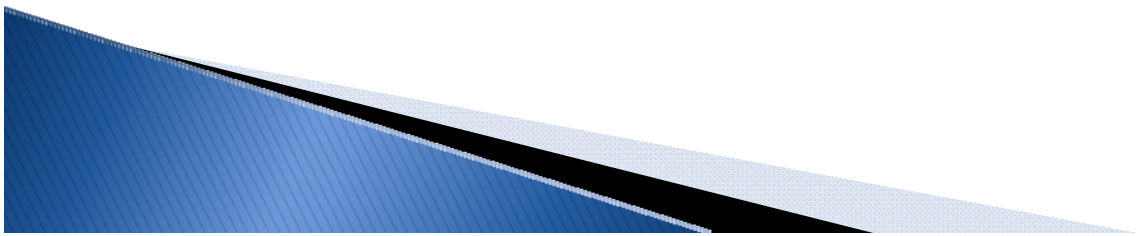
Reports on University-Regional Engagement are Appearing

- OECD: *Understanding The Regional Contribution Of Higher Education Institutions*
- Council on Competitiveness/WIRED: *"Cooperate."*
  A Practitioner's Guide for Effective Alignment of Regional Development and Higher Education
- Alliance for Regional Stewardship/AASCU/NCHEMS: *Tools and Insights for Universities Called to Regional Stewardship*
- Forum for the Future of Higher Education: *Colleges and Universities and Regional Economic Development*
- European University Association: *The Rise of Knowledge Regions: Emerging Opportunities and Challenges for Universities*
- New Economy Strategies: *21st Century Academic Research Enterprises: Linking Know-What to National Grand Challenges and Regional Economies*

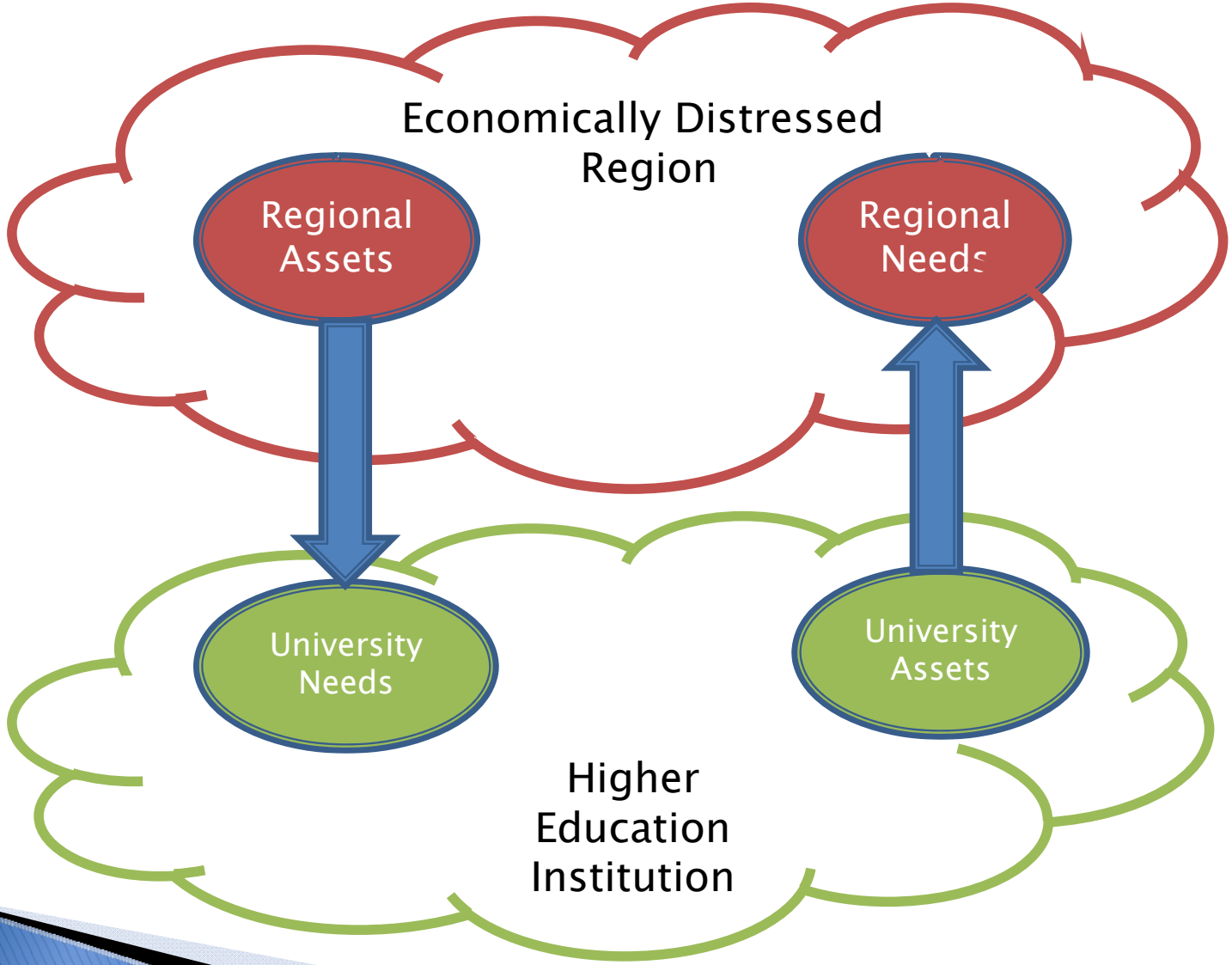


Moving Beyond Entrepreneurial Engagement to University-Regional Engagement

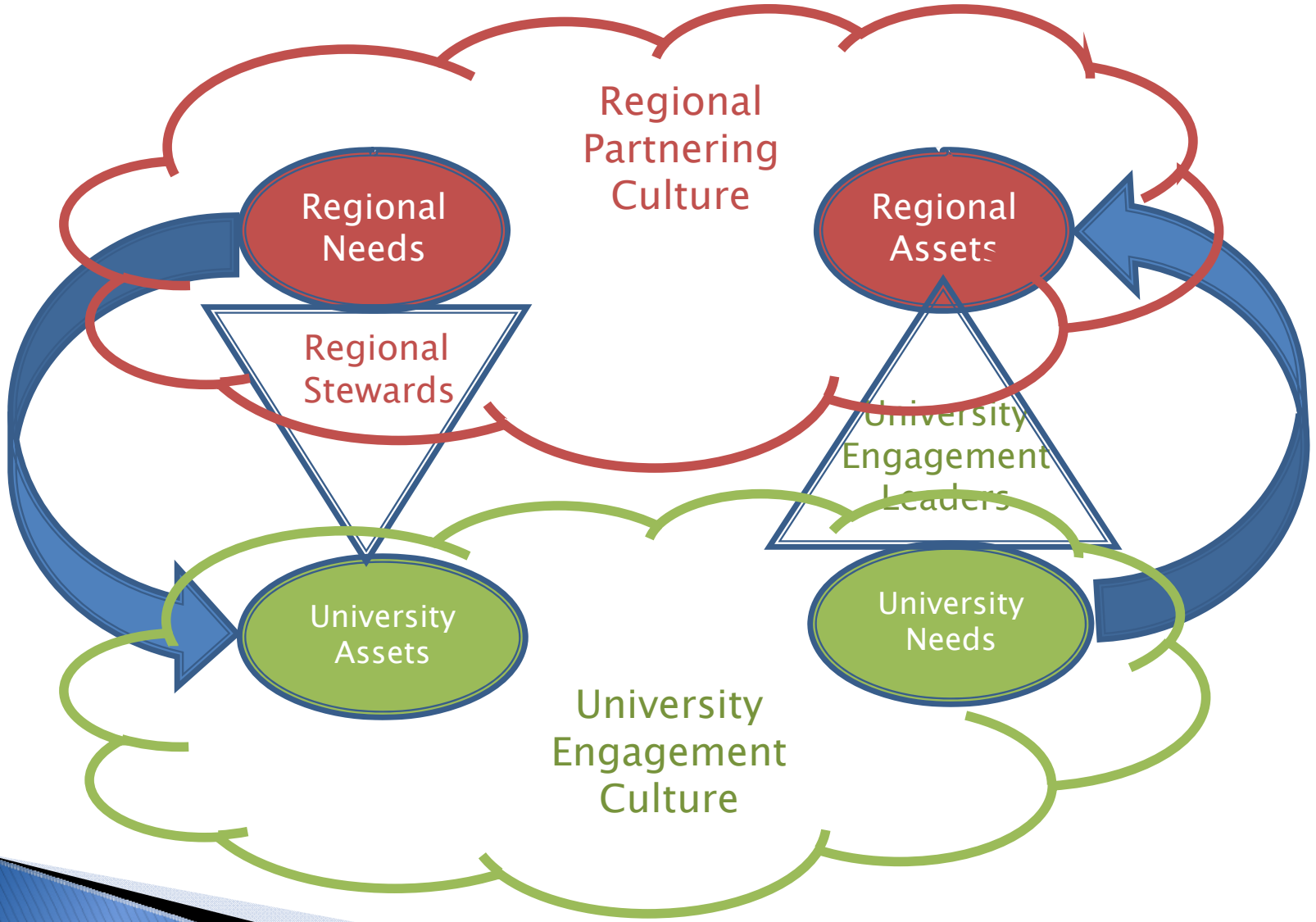
- University-Regional Engagement Assumes:
  - Addressing complex issues
  - Over an extended period of time
  - Multiple university players across departments and disciplines – potentially including faculty, professional staff, students



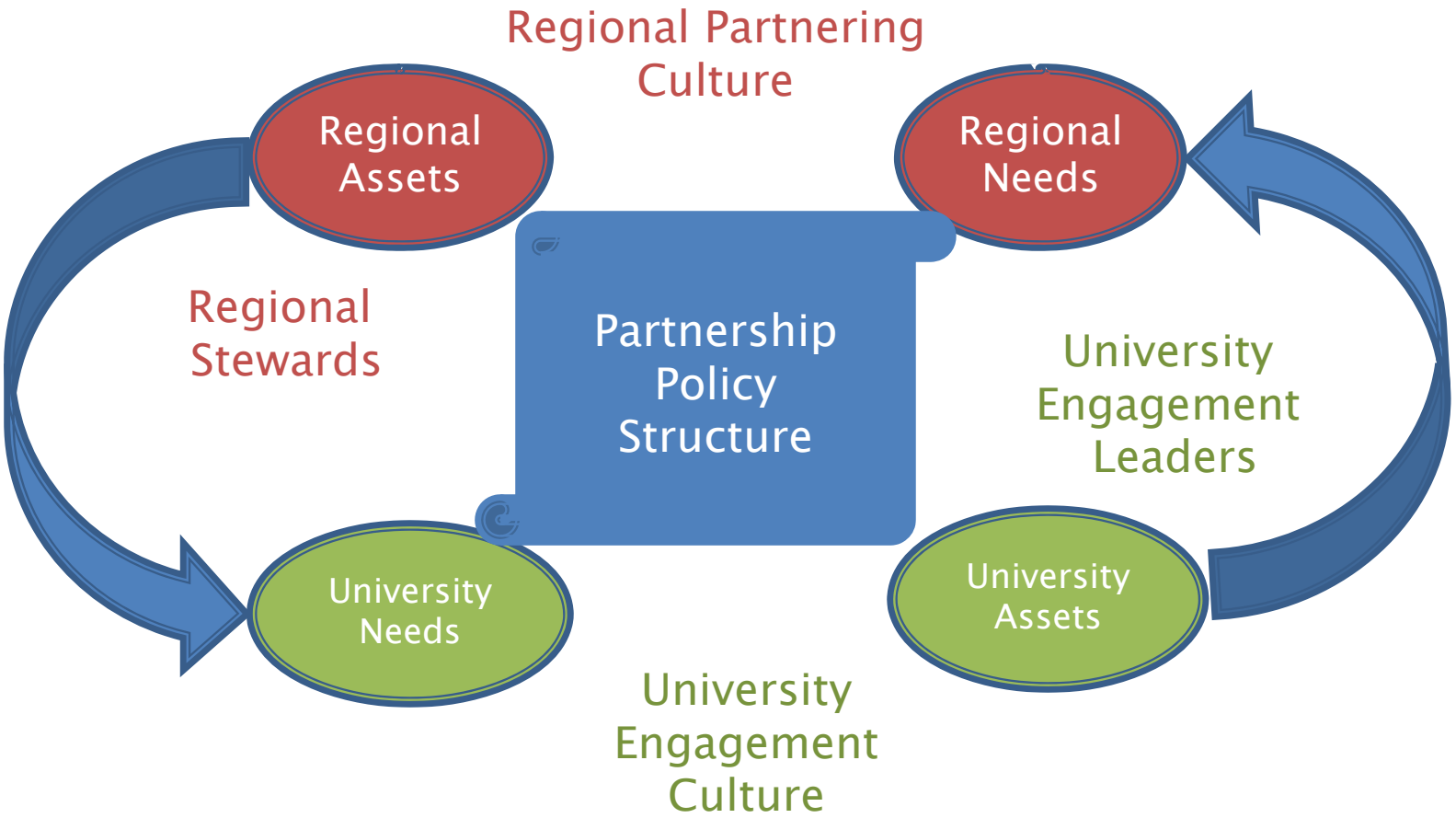
Ingredients for Regional Engagement: Match Between Partner Needs and Assets



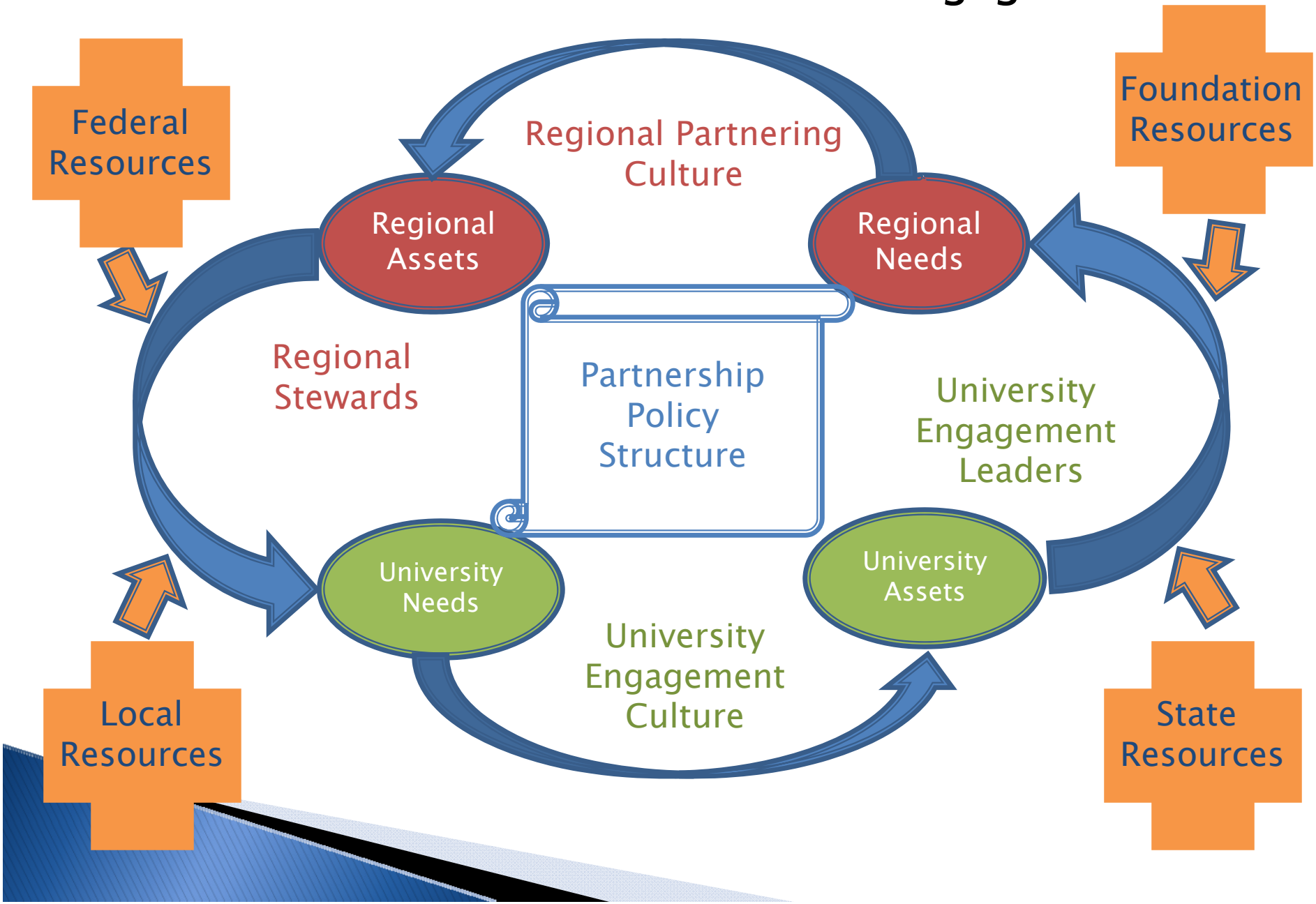
Facilitators of Regional Engagement: Alignment of Needs and Assets Across Cultural Boundaries



Structuring Regional Engagement: Policies that Sustain the Partnership



Accelerators of Engagement:
External Resources Increase Assets for Engagement



First Wave and Second Wave Regional Engagement

- *First Wave* – universities perform straightforward roles addressing regional issues as subject experts
- *Second Wave* – universities bring external resources to a region and combine them with other external resources, creating a "local buzz" that has a transformatory effect on the regional economy

Arbo & Benneworth, "Understanding the Regional Contribution of Higher Education Institutions: A Literature Review" OECD (2007)

Regional Engagement Typology: Approach to Engagement

Characteristics	First Wave Engagement	Second Wave Engagement
Target	Symptoms	Cause
Scope	What is	Desired
Regional Goal	Catching Up	Competitive Advantage
Type of Intervention	Programmatic, Issue	Thematic, Geographic
Strategy Selection	Mass	Custom
University Scale of Effort	Departmental	Institutional
Resources	Finite	Additive
Outcome Goal	Deliver	Empower

Regional Engagement Typology: Roles and Relationships

Characteristics	First Wave Engagement	Second Wave Engagement
Relationships	One-way	Two-way
Primary University Role	Driver	Facilitator
Primary Community Role	Facilitator	Driver
Scope	Original Players	Partnering Infrastructure
Disciplinary Expertise	Disciplinary Silos	Cross-Disciplinary
Regional Interface	Individual Regional Actors	Regional Stewards
University Interface	Entrepreneurial Faculty or Public Service Unit Players	Engagement Champions
University Coordination	Disconnected Faculty and Service Unit Efforts	Coordinated University Efforts

Franklin, "The Land-Grant Mission 2.0: Distributed Regional Engagement (2008)

Regional Engagement Typology: Research Implications

Characteristics	First Wave Engagement	Second Wave Engagement
Driven by	Faculty Interest	Regional Opportunities
External Sponsored Funding Destination	Campus	Region
Conducted by	Campus-Based Faculty	Regionally Located Faculty
Predominant Disciplines	Social Science	Engineering and Others
Primary Outcome Goal	Scholarship, Publications	New Regional Assets
Role of Graduate Students	Travel to Region to Conduct Research	Live in Regional While Conducting Research
Role of Regional Entities	Social Service Providers: Tap Research Expertise to Address Population Liabilities	Businesses: Tap Research Expertise to Develop New Product Niches
Role of Regional Economic Developers	Promote Role of Interventions in Strengthening Population	Utilize Recruiting Strategy that Leverages Research Assets

Franklin, "The Land-Grant Mission 2.0: Distributed Regional Engagement (2008)

Regional Engagement Typology: Education Implications

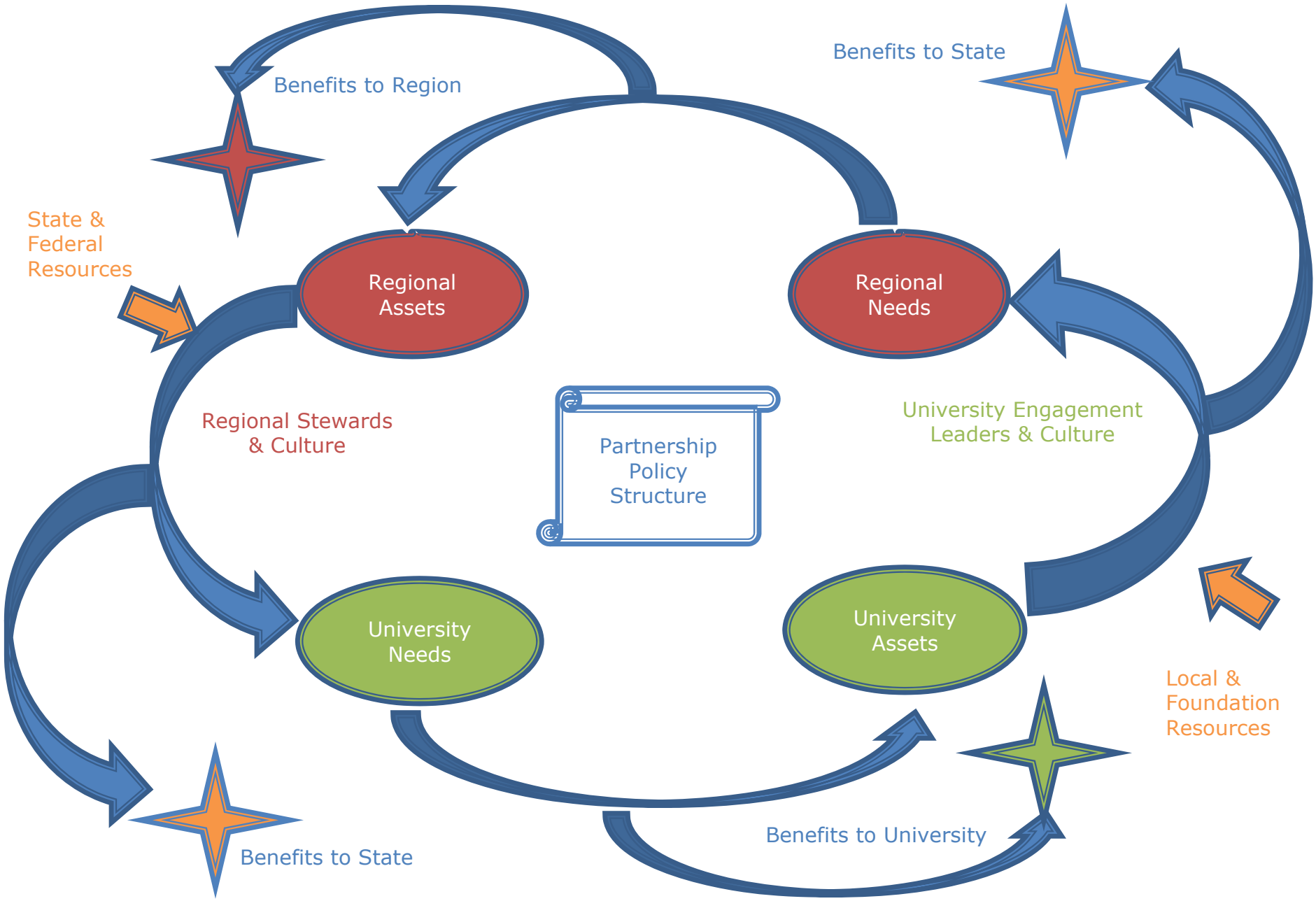
Characteristics	First Wave Engagement	Second Wave Engagement
Role of Undergraduates	Students Learn About Regional Issues from Faculty Experiences	Students Actively Engage with Regions on Issues and Solutions
Regional Workforce Development	Targeted to Existing Employers	Targeted to Desired Future Employers
Regional Workforce Credentialing	Skills Certification	Post-Secondary Certification
Regional Entrepreneurship Development	Stand-Alone, Non-Credit Program Offerings	Entrepreneurship Components Integrated into Regionally Offered Degree Programs
Baccalaureate Degree Offerings in Region	High Demand Programs	Engineering and Other High-Need Low-Demand Programs
K-12 Linkages to Senior Institution Regional Curricular Offerings	Various Outreach Programs	STEM Capacity Development and College Readiness through Outreach Programs and Integrated Curriculum Pathways
Community College Linkages to Senior Institutional Regional Offerings	Articulation Agreements in High Demand Program Areas	Articulation Agreements and Local Availability of Engineering and other STEM-Related Degree Programs

Franklin, "The Land-Grant Mission 2.0: Distributed Regional Engagement (2008)

Regional Engagement Typology: Public Service Implications

Characteristics	First Wave Engagement	Second Wave Engagement
University Role	Provide Discreet Services	Incorporate Services into Comprehensive Regional Strategy
University Players	Outreach Public Service Units	Includes Non-Outreach Administrative Departments
Regional Role	Contract for Discreet Services Provision	Incorporate Services into Comprehensive Regional Strategy
Regional Physical Infrastructure Development Focus	Spec Buildings, Water, Sewer	Fiber Optic and Wireless Communication Infrastructure
Regional Service Infrastructure Development Focus	Social Safety Net Gaps	Business Development Support System
Regional Leadership Development Focus	Leadership Development	Regional Stewardship
University Outcome Goal	Revenue Generation or Fulfilling Public Mandate	Integrate Public Service as Part of a Holistic Engagement Portfolio/Stewardship Portfolio

Franklin, "The Land-Grant Mission 2.0: Distributed Regional Engagement (2008)



Virtuous Circle: Transformative Regional Engagement

Universities as a Crossroads

In that sense, higher education institutions find themselves as something of a crossroads; they are spaces through which global, national, and local actors pass in seeking to realize their goals.

Peter Arbo and Paul Benneworth, (2007). Understanding the regional contributions of higher education institutions; OECD.

Universities as a Crossroads

Universities are often large strategic actors with the opportunities to build linkages between these different actors, their intentions and resources.

Peter Arbo and Paul Benneworth, (2007). Understanding the regional contributions of higher education institutions; OECD.

Universities at a Crossroads

And this places universities at a crossroads, raising the question of how they will consolidate this situation.

Peter Arbo and Paul Benneworth, (2007). Understanding the regional contributions of higher education institutions; OECD.

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