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2010 State of the State
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College and Universities as Drivers of Regional Innovation and Growth



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Innovation Foundation**

ITIF is public policy think tank committed to articulating and advancing a pro-productivity, pro-innovation and pro-technology public policy agenda internationally, in Washington and in the states. ITIF focuses on:

- Innovation processes, policy and metrics
- E-commerce, e-government, e-voting, e-health
- Broadband and telecommunications
- ICT and economic productivity
- Innovation and trade policy



■ Today's Presentation

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The Innovation Context

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Colleges and Universities as Engines of Regional Growth

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Colleges and Universities of Catalysts for Regional Innovation and Growth

■ Innovation Drives Regional Economic Prosperity

- Differences in patenting intensity accounts for 30% of the variation across U.S. regions in the average wage (Porter).
- Patenting and R&D support greater gains in regional per-worker earnings (Goldstein).
- Average wages in U.S. high-tech clusters are \$63,970 versus \$43,180 in non-high tech trade clusters.
- Strong correlation between state per-capita income and innovation factors:

High tech jobs: 0.52	Venture capital: 0.43
R&D investment by industry: 0.46	Scientists and engineers: 0.50

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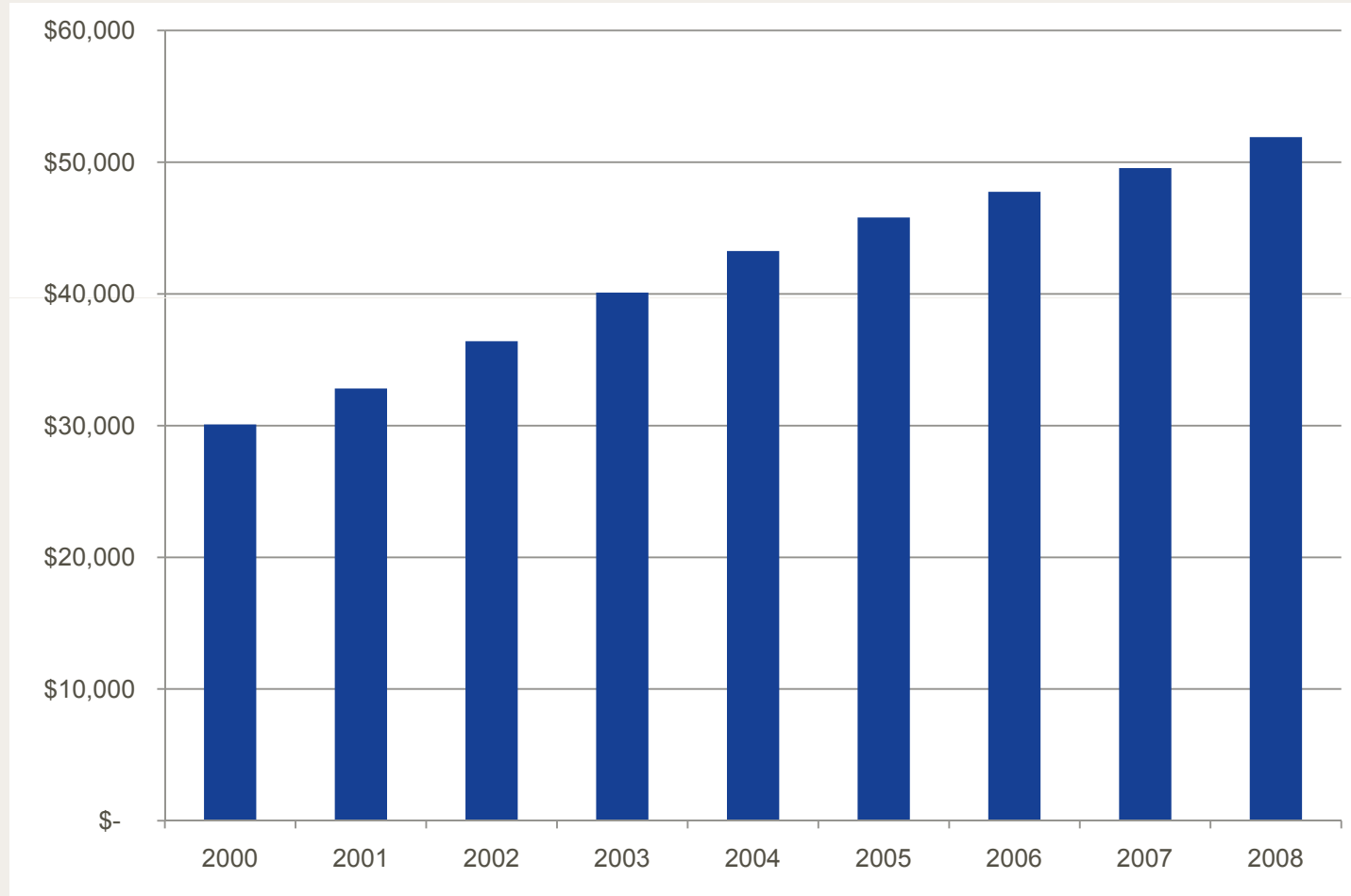
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Colleges and Universities of Catalysts for Regional Innovation and Growth

■ Universities and Colleges as Engines

- From 2006-2009 higher education jobs increased by 8% (91,000 jobs), while total U.S. employment declined by 1.5%.
- College towns are growth hubs:
 - In a sample group of 25 college towns, median annual population growth rate increased from 0.8% from 2000 to 2006 to 1.1%. from 2006 to 2009.
 - They attract people due to amenities.
 - They create jobs directly from income coming to the universities and colleges.

■ Universities and Colleges Are Bringing in More R&D



■ Out-of State Students Are Growing

- Increase in out-of-state students. For example, from 2006 to 2009, out-of-state students at Oregon universities grew 49 percent, compared to just 7 percent for in-state. For every out-of-state student Oregon colleges and universities are able to pay for two more Oregon students to come to school.
- Foreign student enrollments increased from 525,000 in 2006 to 585,000 in 2009.

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■ So What Drives Regional Innovation and Entrepreneurship?

- Educated Residents: a greater proportion of college educated residents drives higher rates of new firm formation, particularly in “traded service sectors” and “high-skill sectors.”
- Research Universities: (e.g., presence of research universities are key factor in local firms gaining SBIR grants and in number of local startups).
- Agglomeration Economies: (stimulate SBIR awards; new firm startups in traded services)

■ Colleges and Universities Foster Human Capital

- Researchers have consistently shown that the share of the adult population with a college degree is a strong predictor of future population growth. Raising the overall education level of an area increases the wages of all workers in the area (Moretti 2004) and contributes to economic growth (Glaeser, Scheinkman, and Shleifer 1995).
- The share of the workforce with a college degree is a key factor in explaining state economy productivity (Iranzo and Peri 2009) and relative per-capita personal income (Bauer et al. 2008).
- College graduates earn more and therefore pay more in state taxes. They are less likely to receive public assistance, have lower costs for employment-related programs, and are less likely to be imprisoned (Trostel and Gabe 2007).

■ Attracting Out-Of-State Students Can Foster Growth

- Attending a public university in a particular state increases students' probability of locating in the state.
- High ability students tend to be at least as strongly influenced in their adult location choices by where they attend university than are middle and low ability students. ⁽¹⁾
- Because high ability out-of-state students earn more, their expected future state tax payments are higher.
- Student migration explains nearly all of the greater in-migration to highly educated non-metropolitan counties. ⁽²⁾

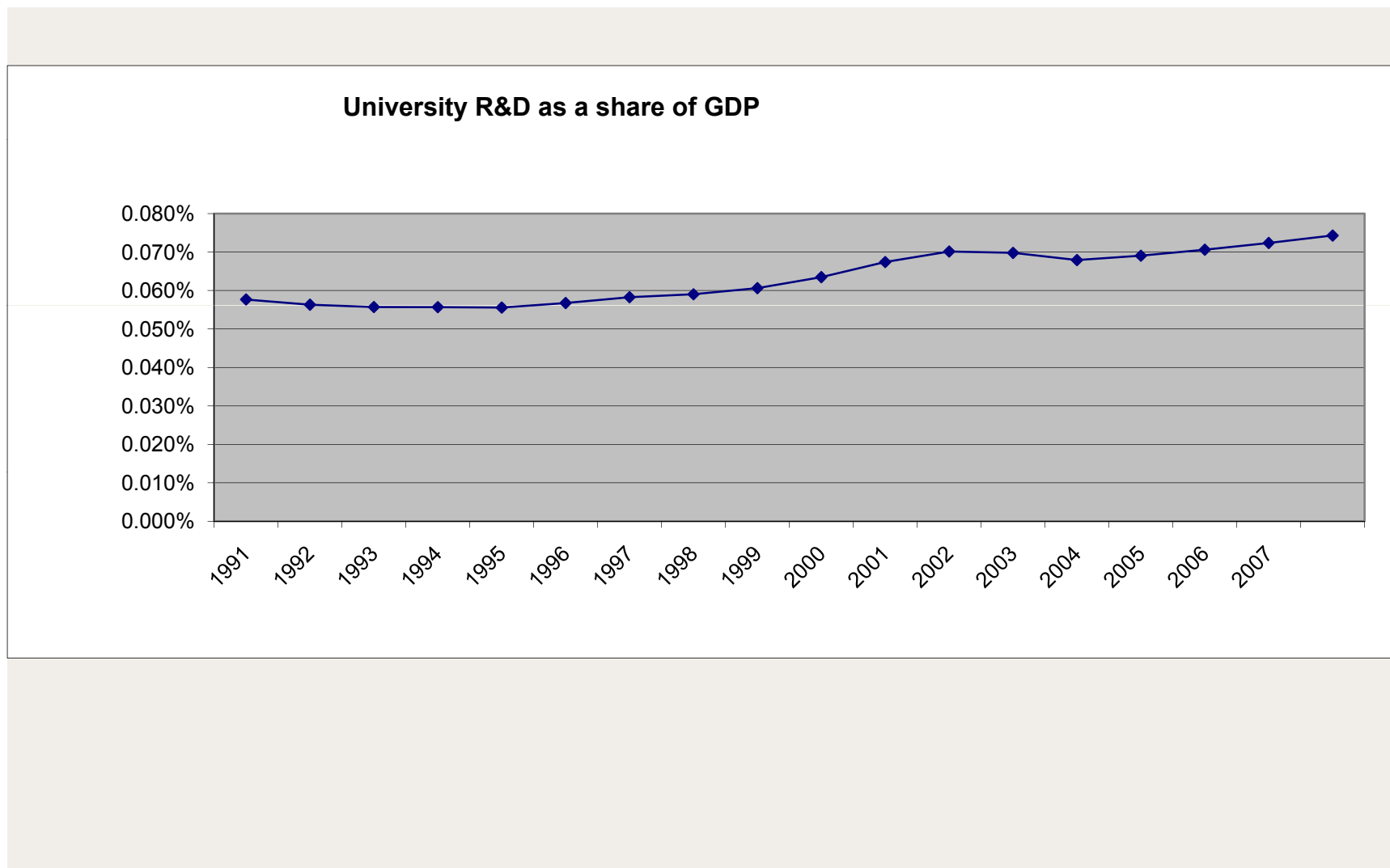
(1) Groen, Jeffrey A. and Michelle J. White. "In-State Versus Out-of-State Students: The Divergence Of Interest Between Public Universities And State Governments," *Journal of Public Economics*, (2004), v 88.

(2) John V. Winters, "Human Capital and Population Growth in Non-Metropolitan U.S. Counties: The Importance of College Student Migration," Auburn University, (October 2010).

■ Universities are Becoming More Important Player in the Innovation Process ⁽¹⁾

- Annual patent applications filed from universities increased from 2,600 in 1994, to 7,200 in 2003 to 11,751 in 2009.
- From 1994 the number of revenue generating licenses in universities increased from \$217 million, to \$1 billion in 2003, to \$1.9 billion 2007.
- New start-ups formed increased from 212 in 1994, to 348 in 2003, and 510 in 2007.

■ Universities are Becoming More Important Player in the Innovation Process ⁽²⁾



Thank You

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