PCAST Presentation

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Jonathan Gruber, MIT

Based on “Jump Starting America” with Simon Johnson

Two Central Facts

1) The U.S. has ceded leadership in public R&D financing

- 1963: 2% of GDP
- Today: 0.6% of GDP, 14th in the world
  - Perhaps half of China as % of GDP

2)The U.S. economy has become geographically fractured

- 90% of innovation jobs created in just 5 cities
- 75% of venture capital in just 5 cities
- But housing costs in top ten cities 300% of average city

Why Public R&D is Essential: Spillovers

- Private firms underinvest in R&D since they do not value (and may actually want to avoid) spillovers to other firms
- The *social* rate of return to R&D is THREE TIMES the *private* rate of return
- Has critical implications for economic growth and jobs
- Technologies from flat screen TV to synthetic biology started in the U.S. but centers moved overseas due to lack of R&D investment
  - $100 billion plus in global profits on flat screens – almost none in US

Why Public R&D is Essential: Financing

- U.S. venture capital is a success story in software/IT
- But “spray and pray” model not well positioned for investments that are very capital intensive and have a long lead time – e.g. green energy
- Example: Boston Power

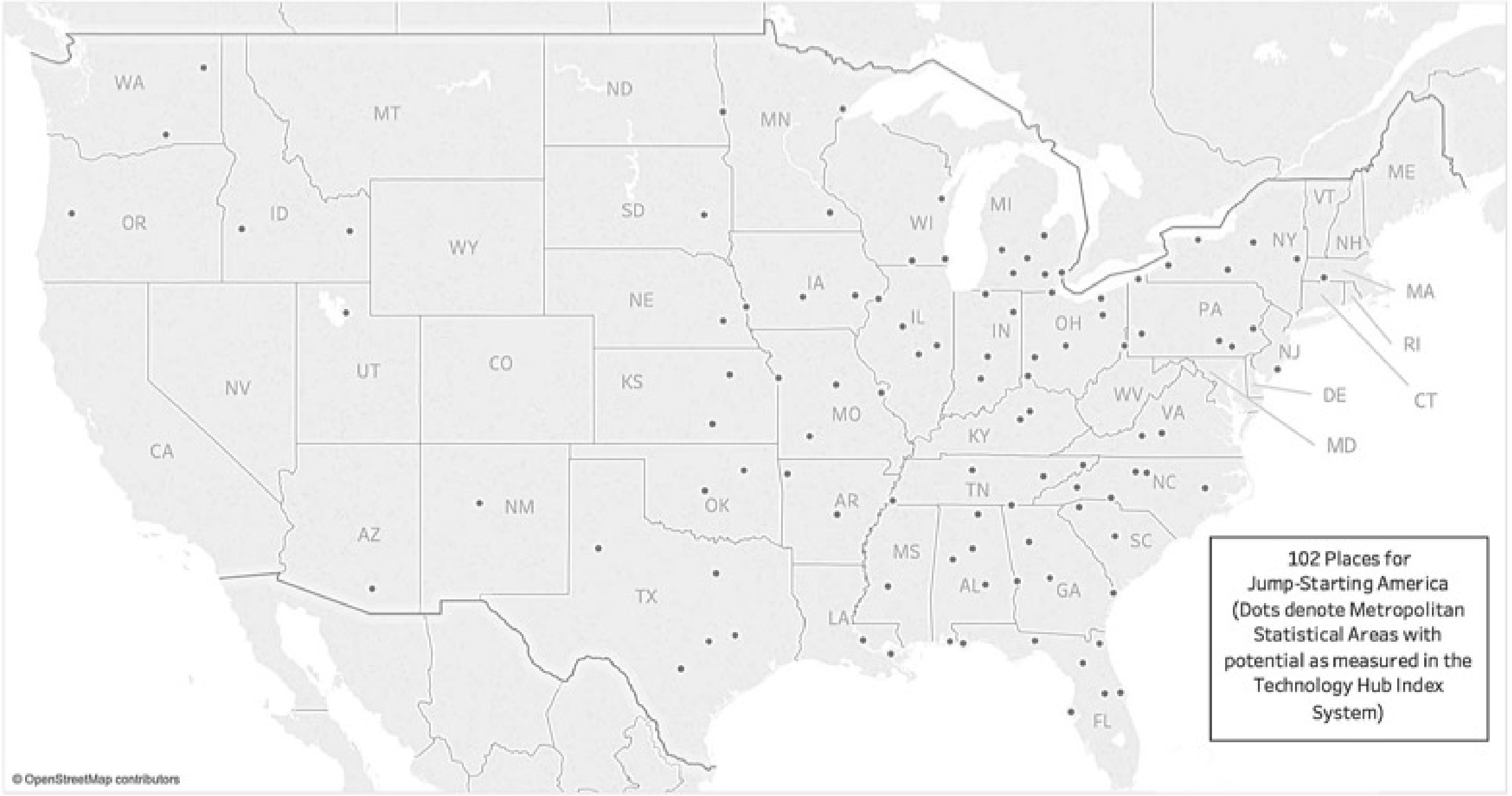
Public R&D is Central

- Growth of public R&D to 2% of GDP from WWII to mid-1960s responsible for every major tech innovation of past 70 years
  - Computing
  - Satellites/GPS
  - Pharmaceuticals
- And public R&D continues to be incredibly productive
  - Human Genome
  - NIA more generally
  - I-Robot
- Not just innovation but jobs

Both Public & Private R&D Share a Common Flaw: Geographic Concentration

- Our innovation resources and jobs are concentrated in just a few coastal cities
- Natural given “agglomeration”
- But those cities won’t grow to allow for this – restrictive housing
- And our nation is too large to have all the best jobs just on the coasts
  - Economic and political divisions result
- Doesn’t have to be this way – lots of potential tech hubs
  - Remember Seattle wasn’t pre-ordained!

102 Places for Jump-Starting America



Solution: More R&D, More Tech Hubs

- Why this can work: mystery city
- Huge benefits – productivity and jobs
- Tech hub competition can ensure race to the top
- USICA embodies these principles
  - $100 billion R&D investment over 10 years is small but a step in the right direction