

# Arctic Knowledge Economies: A Path to Transition

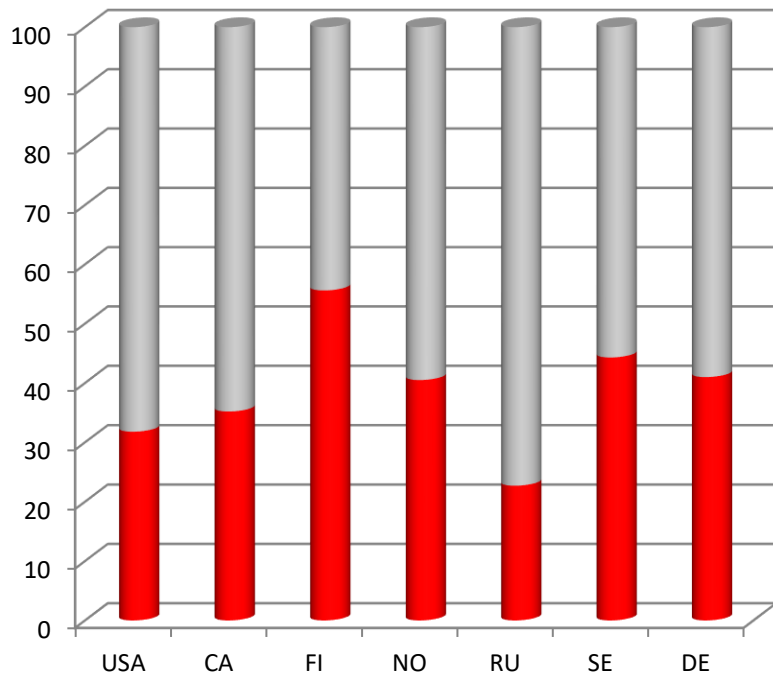
Andrey N. Petrov

*Director, ARCTICcenter*

*University of Northern Iowa, USA*

# Arctic economic Transition?

- **Increasing role ‘new’ (‘other’) sectors vs. resource and public economies, although they may be connected to these through various linkages.**
- **Urbanization of economic activity**



■ "Other" sectors

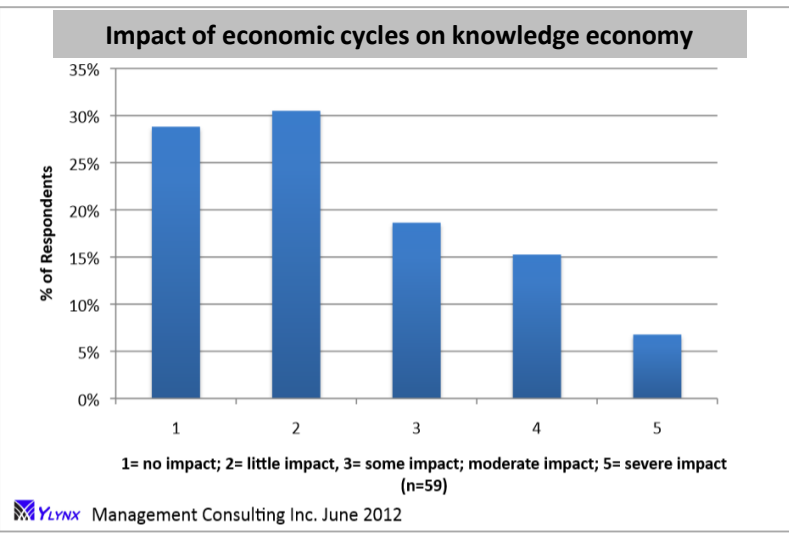
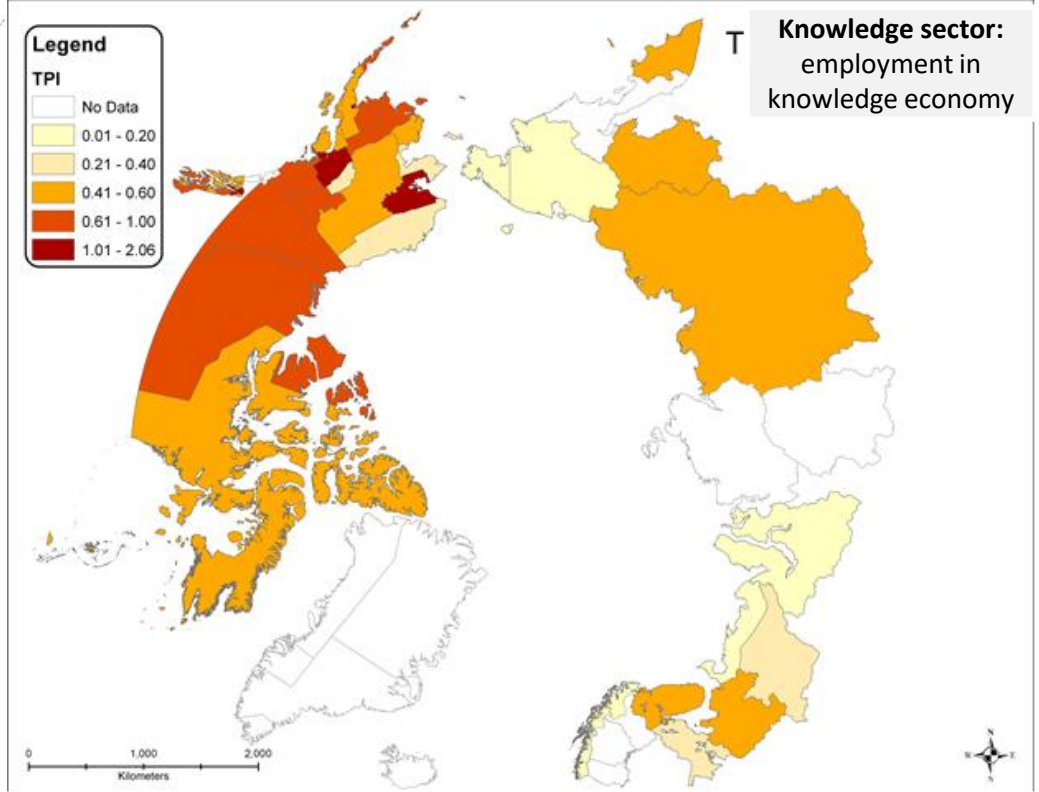
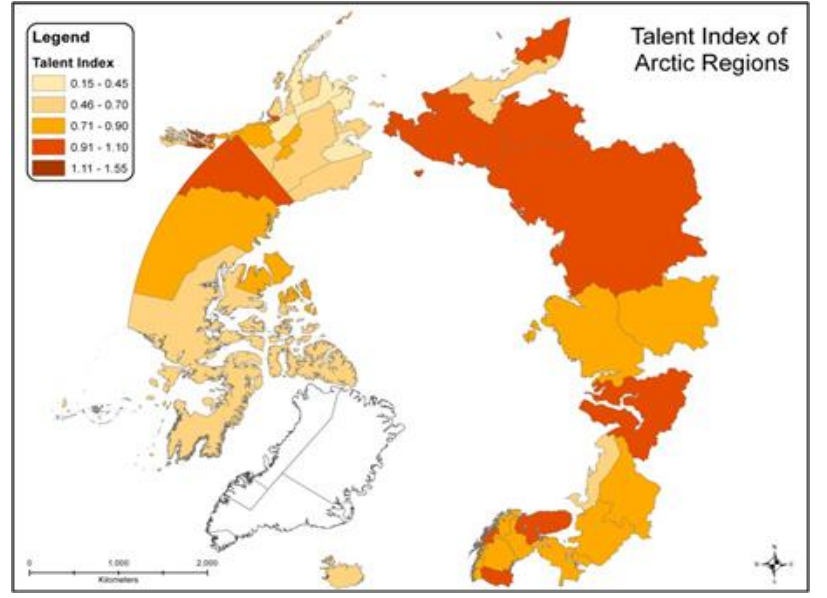
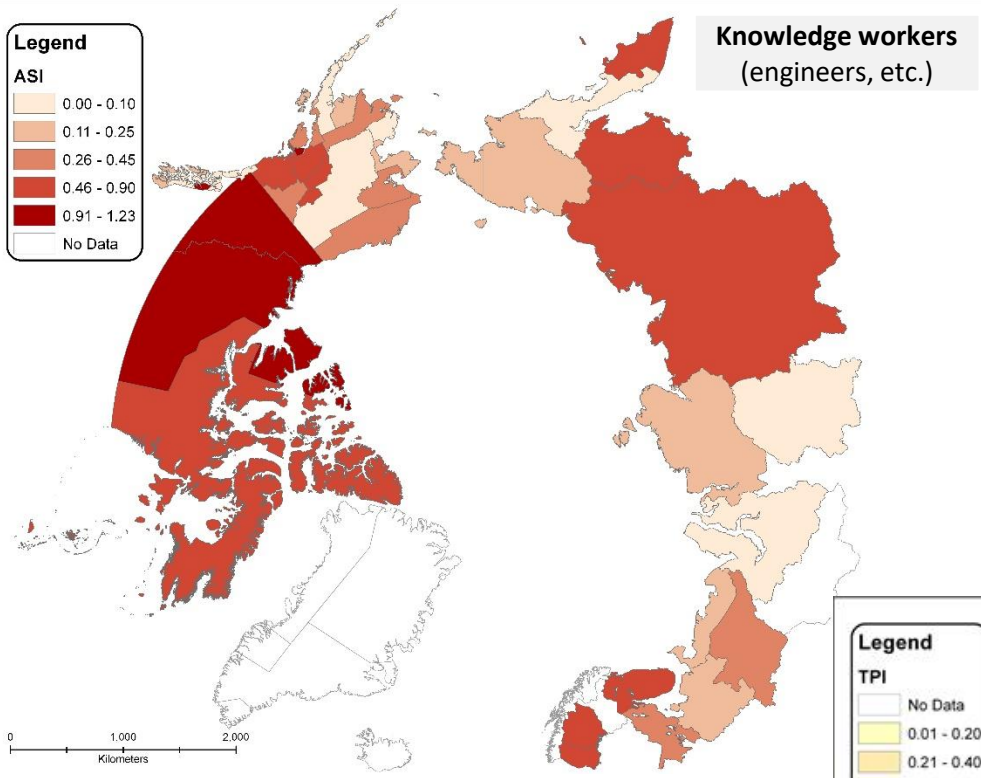


# Knowledge economy (KE): talent and knowledge workers in the Arctic

- **Knowledge economy:** economic sectors engaged in and dependent on new knowledge production
- “Supply side” measures: workers/human capital, investments in R&D, etc.
- “Output side” measures: patents, production
- “Knowledge workers” – employed in KE
- “creative capital”

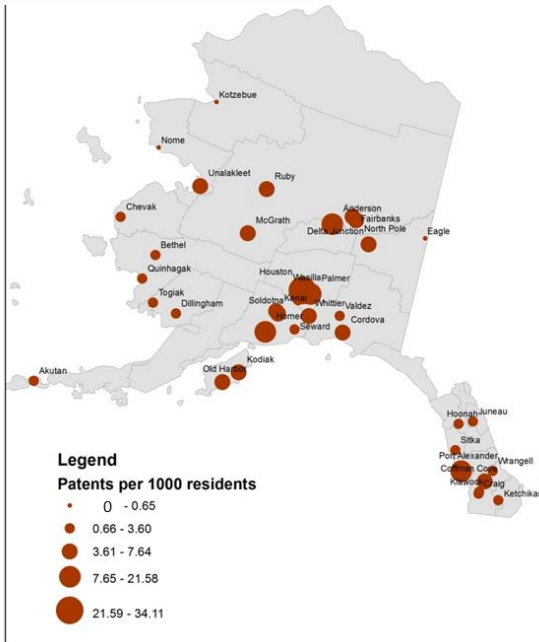
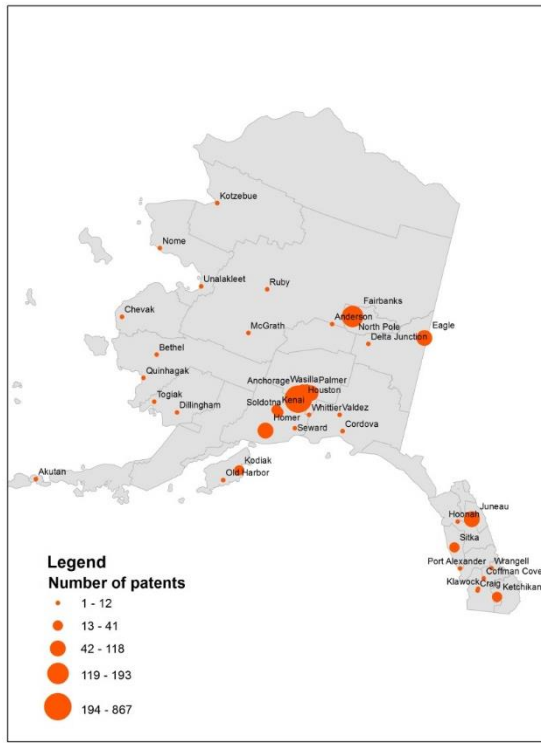
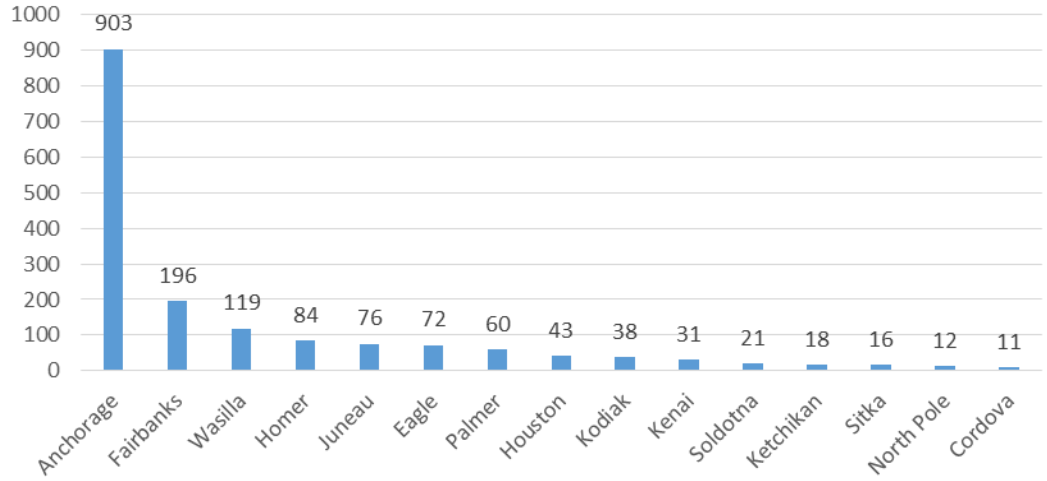
# Why knowledge economy is important?

- Responses to *global* economic trends
- Creates employment for *local* residents
- *Diversifies* economy
- Creates *competitive* advantages
- *Less decoupled* from local economy
- Builds *human capital* (retention and attraction)
- Invests in other transferable *capacities and skills*
- More compatible with the notion of *sustainable development*
- Already emphasized in development strategies

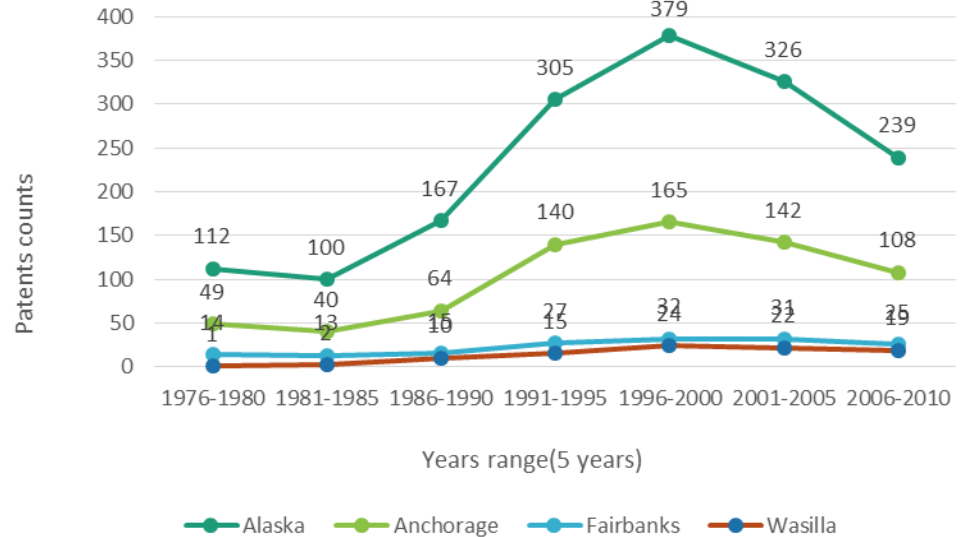


# Knowledge economy in Alaska

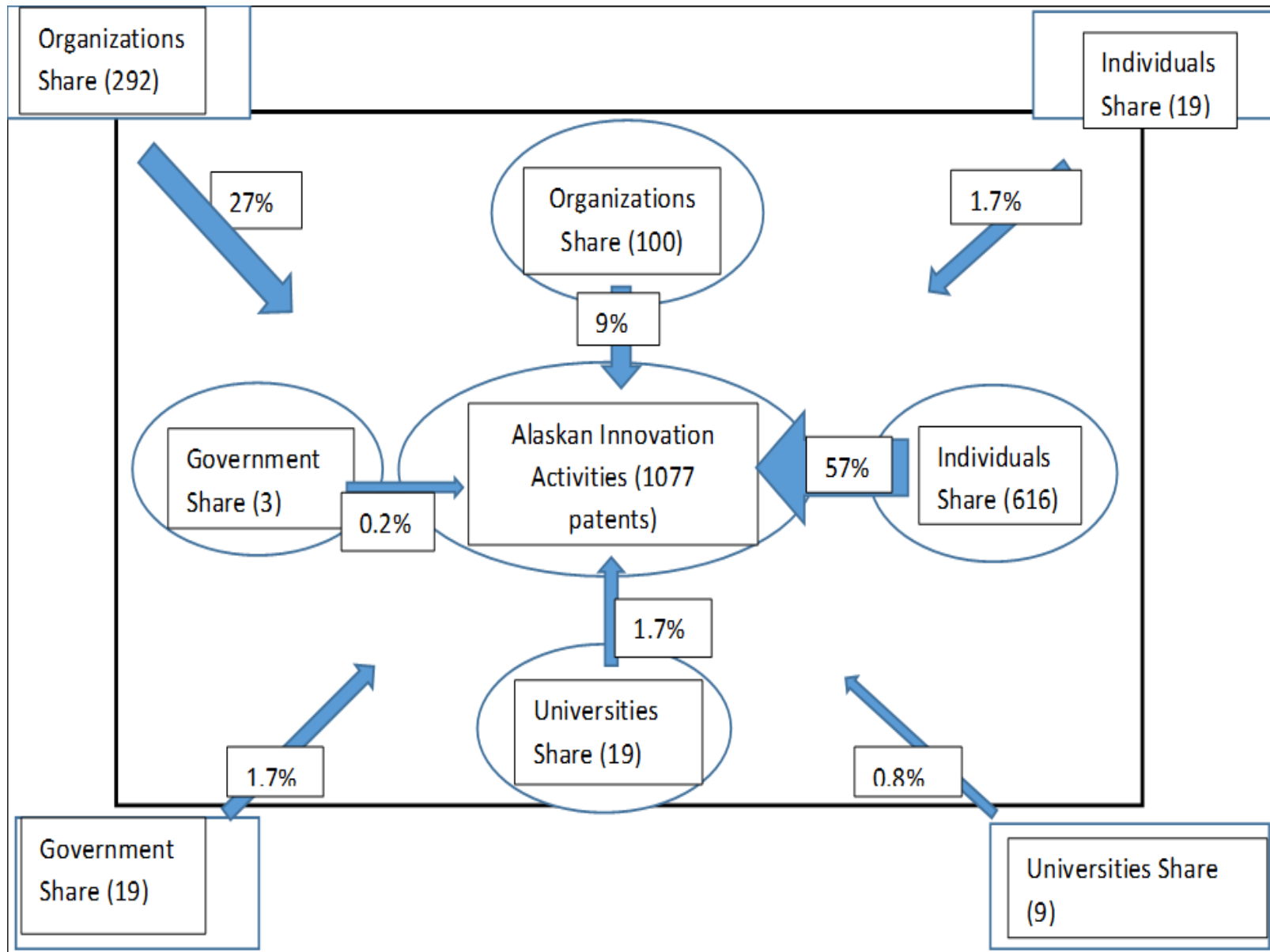
Patents



Patents

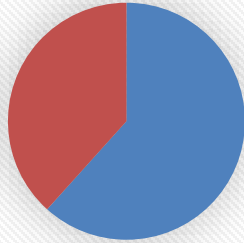


# Alaska's Regional Innovation System

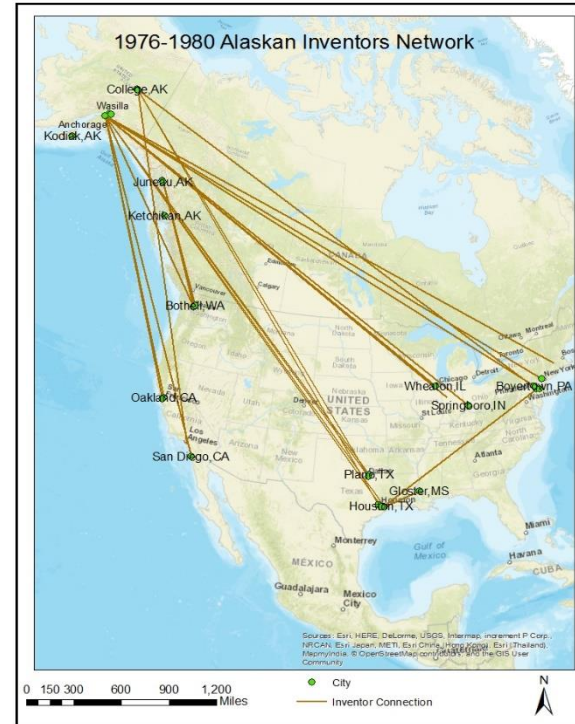


# Alaska Inventor Networks: then and now

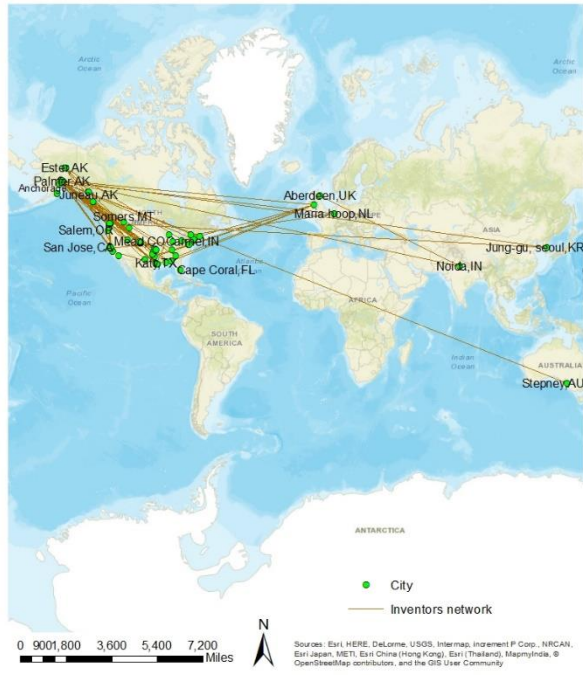
1976-1980



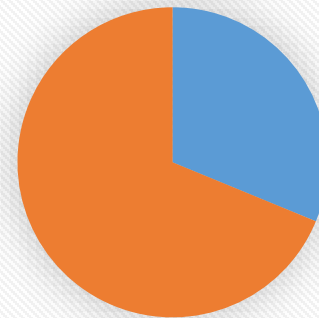
■ Individuals inventors ■ CompanyInventor



2006-2010 Co-Inventors Network



2006-2010



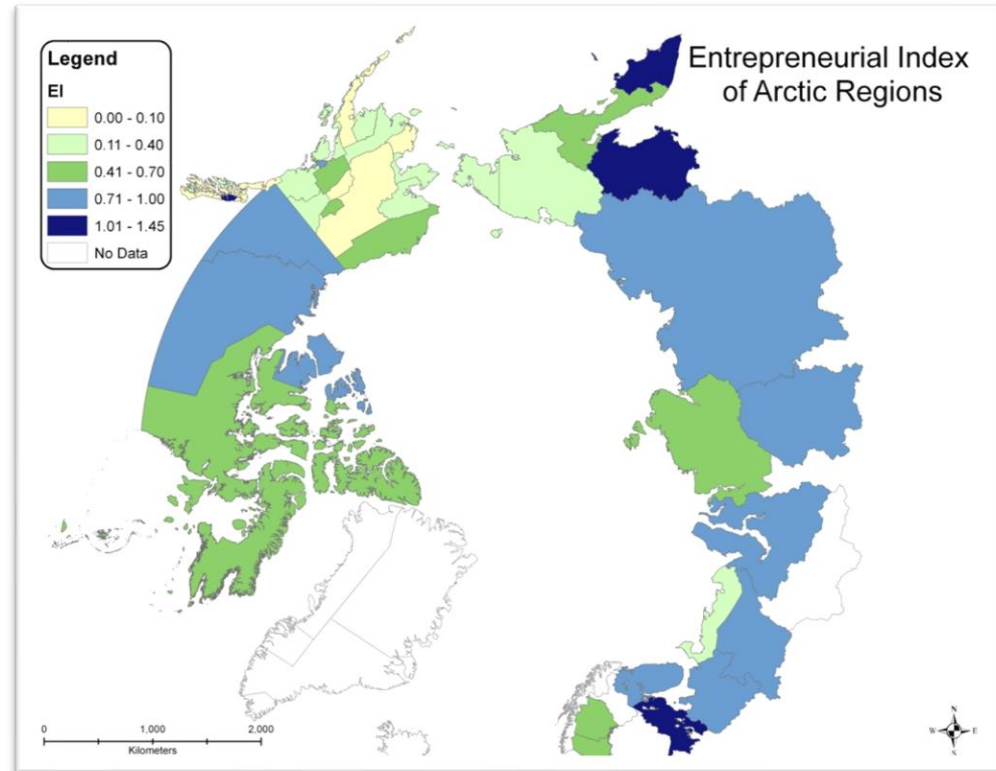
■ Individuals inventors ■ CompanyInvntor





# Entrepreneurial capital: *the great Arctic gap*

- *Entrepreneurial Index*
- **Less than 1% of working-age population in the Arctic is entrepreneurs**
- (defined as labor force participants who hire other labor).



# Discussion

What are the common characteristics of knowledge economies?

- *urban* (but not necessarily large city)
- *embedded and endogenous*
- *knowledge-driven*
- *community-based*
- *deviating from path-dependency*
- *human-capital intensive*
- *globally-connected*

# Discussion

How Arctic knowledge economies is different from “the south”?

- key role of **individual inventor** or single industry
- strong **connectedness to external** networks vis-a-vis weak links within the Arctic
- obscured relationship between formal education and knowledge production
- elevated role of **informal skills**
- Importance of other forms of creativity: leadership, artistic
- remaining dependency on boom and bust cycles in resource extraction, public sector, etc.

# ARCTIC Center

Arctic, Remote and Cold Territories Interdisciplinary Center  
**UNIVERSITY OF NORTHERN IOWA**

## Interdisciplinary center for the studies of Arctic, remote and cold regions:

- Arctic sustainability
- Community economic development;
- Adaptation to environmental change;
- Community-industry relations;
- Interdisciplinary and community-focused research
- Knowledge co-production and Indigenous methodologies

<https://arctic.uni.edu/>  
[andrey.petrov@uni.edu](mailto:andrey.petrov@uni.edu)

