Incubating Entrepreneurship State-wide

Identifying and Tracking

## High-Tech Start-ups in Georgia

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Project Overview

Key questions: why do high-tech startups cluster geographically, and what actions should economic planners take to incubate entrepreneurial firms in their regions?

Builds on previous research focused on North Carolina[1] and currently being replicated in Tennessee, Colorado, and Arizona

[1] Feldman & Lowe, 2015

Georgia co-inventors by city, sized by number of registered patents
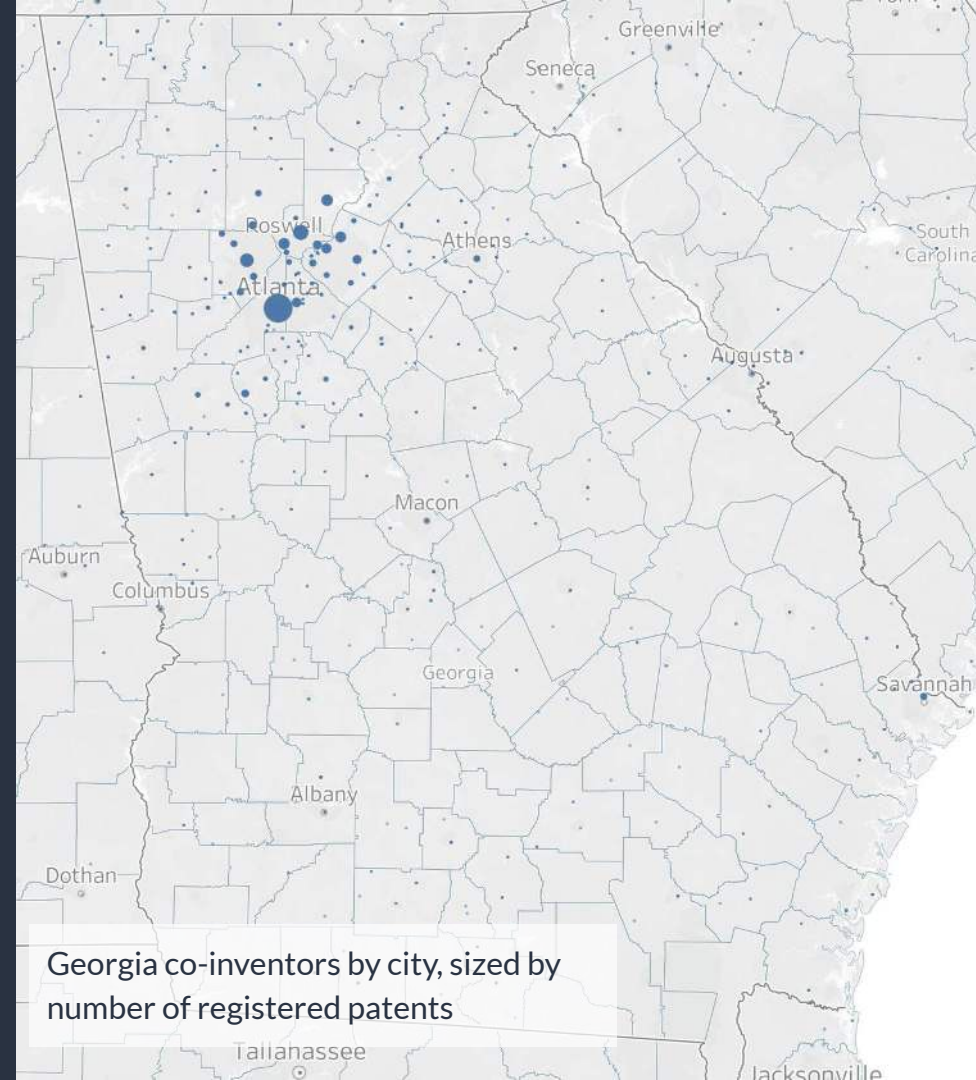
Methodology

Research

How can we identify and classify firms as **entrepreneurial** or **high-tech**?

Analytics

What datasets are available to track **business creation and movement** in Georgia? What additional data can we collect ourselves?

Synthesis

How can we combine what we have learnt from data and interviews to **create recommendations for economic planners**?

Research

Work builds off previous research focused on identifying high-tech or entrepreneurial firms and ecosystems using **non-typical, innovative data sources**

What makes a high-tech or entrepreneurial firm?

NAICS codes	# Employees
Accelerator membership	Ownership structure
Normalized descriptions	Legal status
	Growth rate

Dissecting Diffusion: Tracing the Plurality of Factors that Shape Knowledge Diffusion

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Triangulating regional economies: Realizing the promise of digital data

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Have you been served? The impact of university entrepreneurial support on start-ups' network formation

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Abstract University-based entrepreneurial support organizations devote increasing efforts to create a context and opportunities for interaction among start-up firms. The basic assumption behind these efforts is that networks facilitate access to knowledge and resources and increase the chances of success for start-ups. However, the mechanisms that facilitate the creation of business ties with other members of the same community are yet to be identified and empirically tested. This paper leverages the social network and firm incubator literatures to hypothesize and test mechanisms that create the context and opportunity for business interaction among member firms within one university-based entrepreneurial support organization. The study uses the empirical setting of a large, university based support organization and the sample includes firms with different levels of membership-support. This empirical context allows us to compare different levels of membership-support and identify the dimensions that have greater impacts on a firm's opportunity to establish ties with other members. The results reveal that geographical proximity, ad-hoc service support including shared space, and a larger community of member and graduate firms to which network ties may be formed increases the chance of connecting with other past or current member firms.

Keywords Entrepreneurial support organizations · University · Networks

JEL Classification C30 · I22 · I23 · O3 · O51

Analytics

Developed custom script library (30+ scripts) that **synthesizes multiple databases into a single source-of-truth** for scalable classification and filtering

GA NETS
Purchased from Dun & Bradsheet
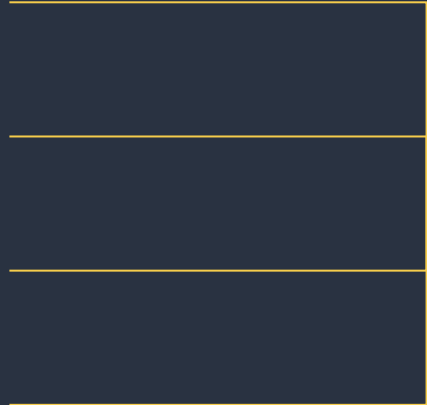
GA Secretary of State
Web-scraped with Python and R

Crunchbase
Education access with REST API

Incubator Ecosystems
Collected and verified *manually*

Total Firms: 2.5M

Data Cleansing

Name standardization
Fuzzy text matching
OCR tuning
Duplicate removal
Data re-encoding
ENT filtering
High-Tech filtering
Manual verification
NAICS re-classification
Branch agglomeration

GA PLACE Database
Final output, loaded into web portal for researcher ease-of-access

Total Firms: 60k

Data Cleansing

Ensuring accurate associations between data sources often involved **a large amount of time spent on manual verification**, in particular to match company names

This company shows up as either **ArrayFire** or **Accelereyes** depending on the database

Synthesis

Used R and Python to **aggregate location and movement trends across cohort**, and identify subset of firms to reach out to for interviews

Interview details were then synthesized based on founder opinions on location choice and institutional support preferences to **understand what differences matter to start-up founders** when they are selecting where to begin their next company

Note: interviews performed by other researchers
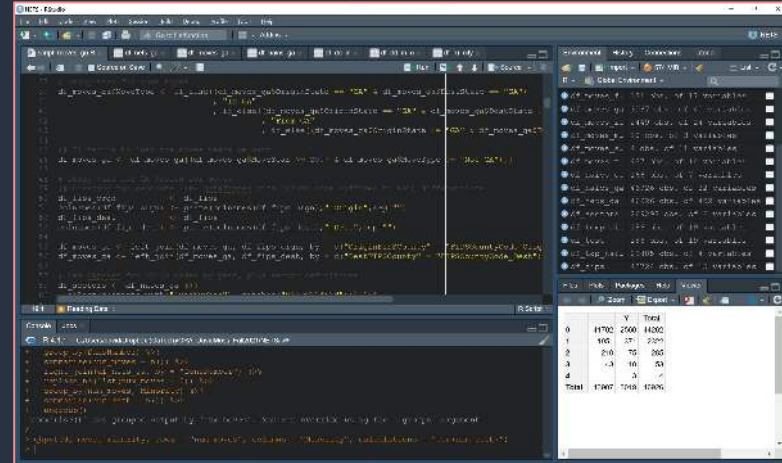
Ecosystem Database Interviews (1 of 3): About

39 interviews: Atlanta (19), Athens (6), Augusta (5), & Savannah (9)
- Ongoing: Macon (1), Columbus, smaller areas

Some findings:
- Institutions drive entrepreneurship in rural/smaller areas more so than founders
  - Founders relocate if no local resources
  - Small core of champions move the ball for smaller cities/nascent ecosystems
- Attitude toward ATL: 800lb guerrilla; net negative, but need the resources flowing through & the tax base supports entrepreneurship elsewhere
- In ATL, trying not to duplicate support services
  - Not an issue in smaller places
  - Still, hard to find mentors in life sciences

Preliminary Findings

Atlanta

Atlanta *does* act as a "magnet", **drawing in promising startups from other Georgia regions**, but the overall effect is only pronounced in the regions already close to Atlanta

Migration

Georgia has seen a **net increase in startups in recent years** as more people move into the state than leave it, **led primarily by minority-owned firms**

Support

Clear opportunity to **build and strengthen local networks**, *especially to support first-time and minority founders*, and then look to **coordinate efforts state-wide**

Planners should ask: what are the key **strategic, resilient, high-wage industries** in each place, and how can they **create synergies with other industries/places** across the state?
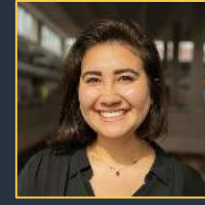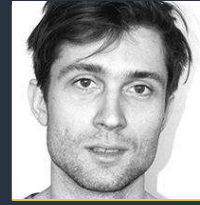
Research Team

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Thank You

Questions?

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