



# Summary ILO Working Group Findings

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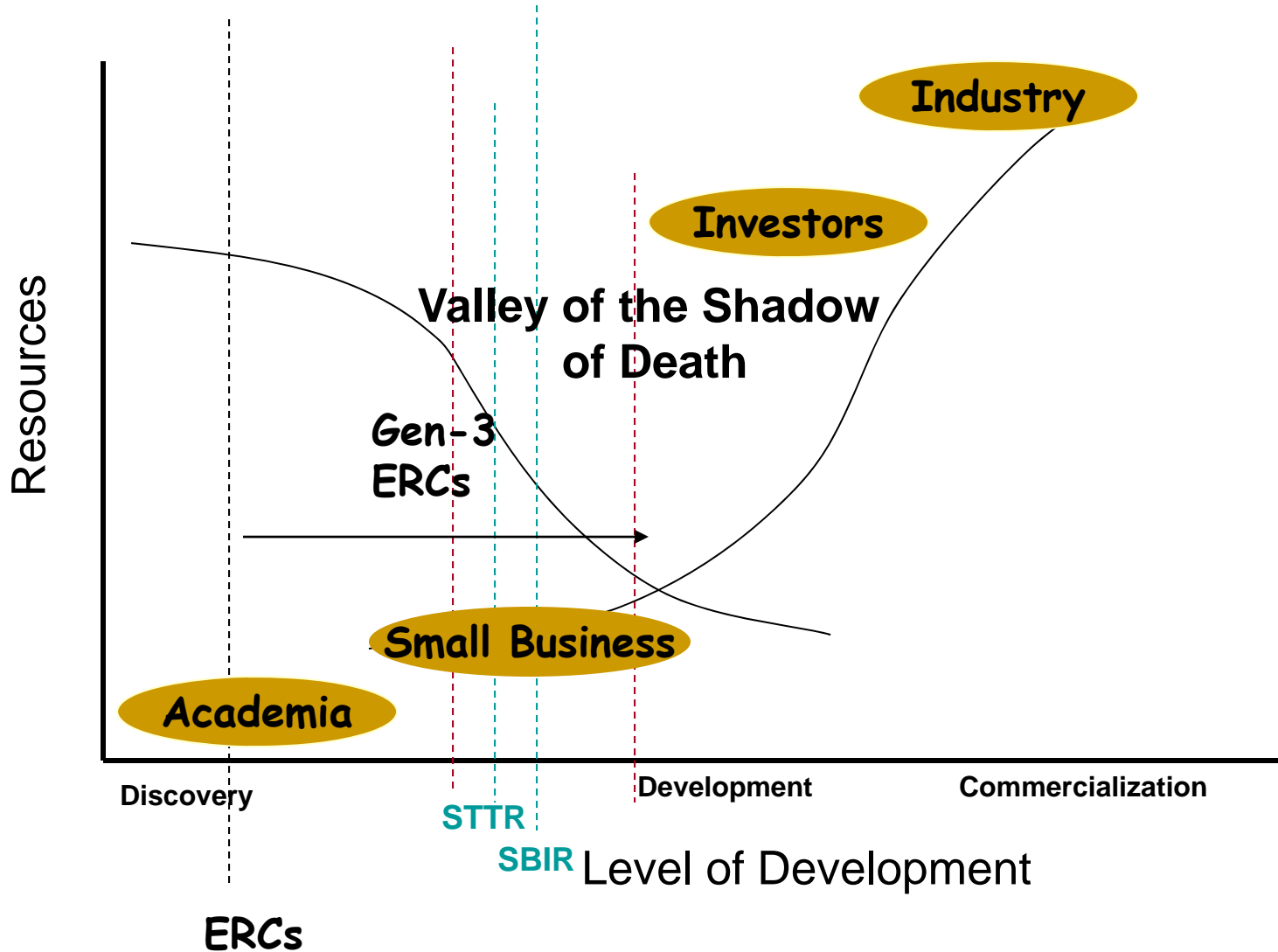
# Outline

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- Bridging the Valley of Death
- Innovation Structures
- Metrics for Gauging Health of Innovation Ecosystem (IE)
  - Standard metrics
  - Metrics for gauging health of IE
  - Metrics for gauging # interactions
  - Qualitative innovation metrics
  - Metrics for Industrial Participants



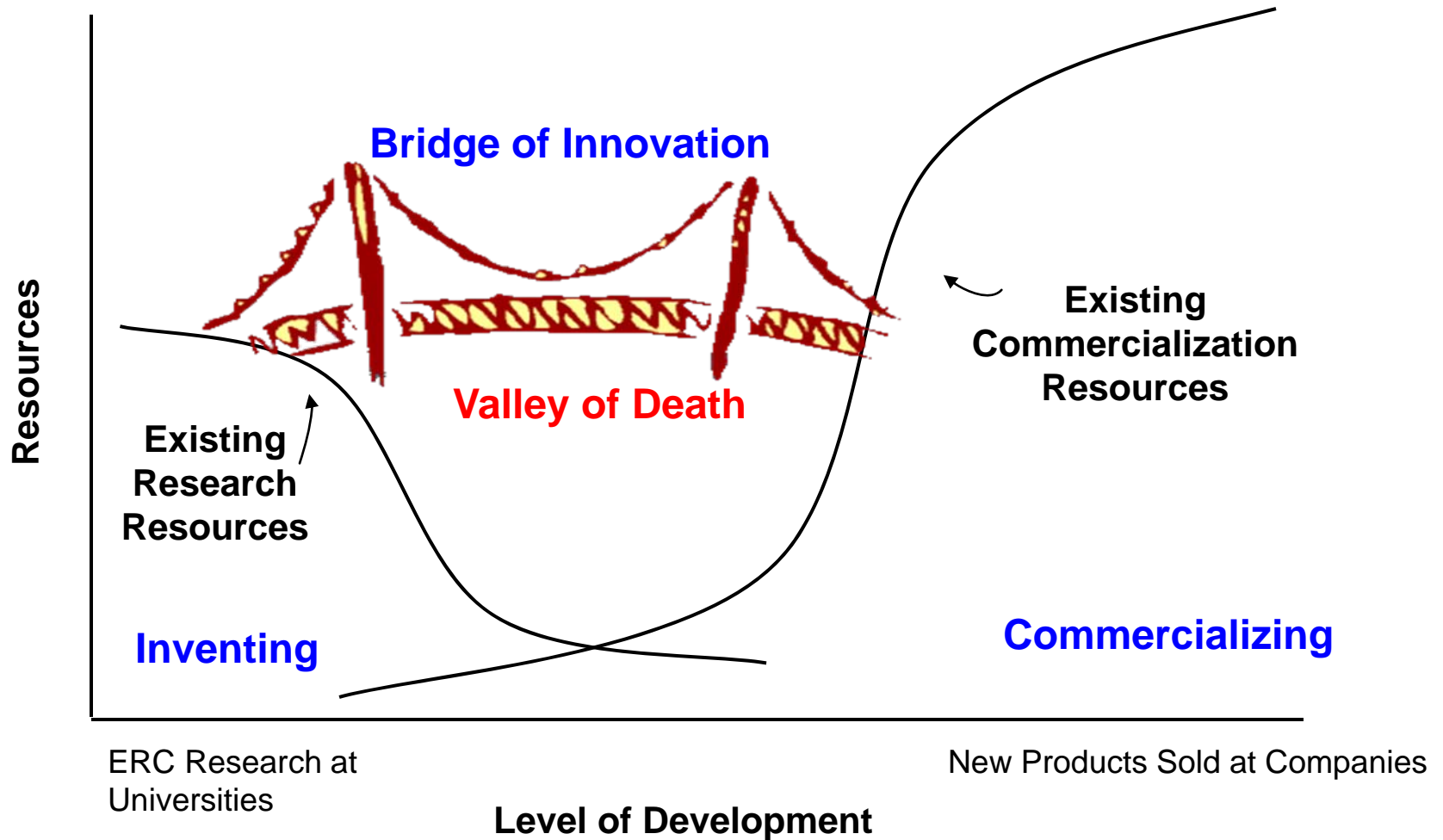
# ERCs & SBIR on the Innovation Spectrum





# Between Invention and Commercialization

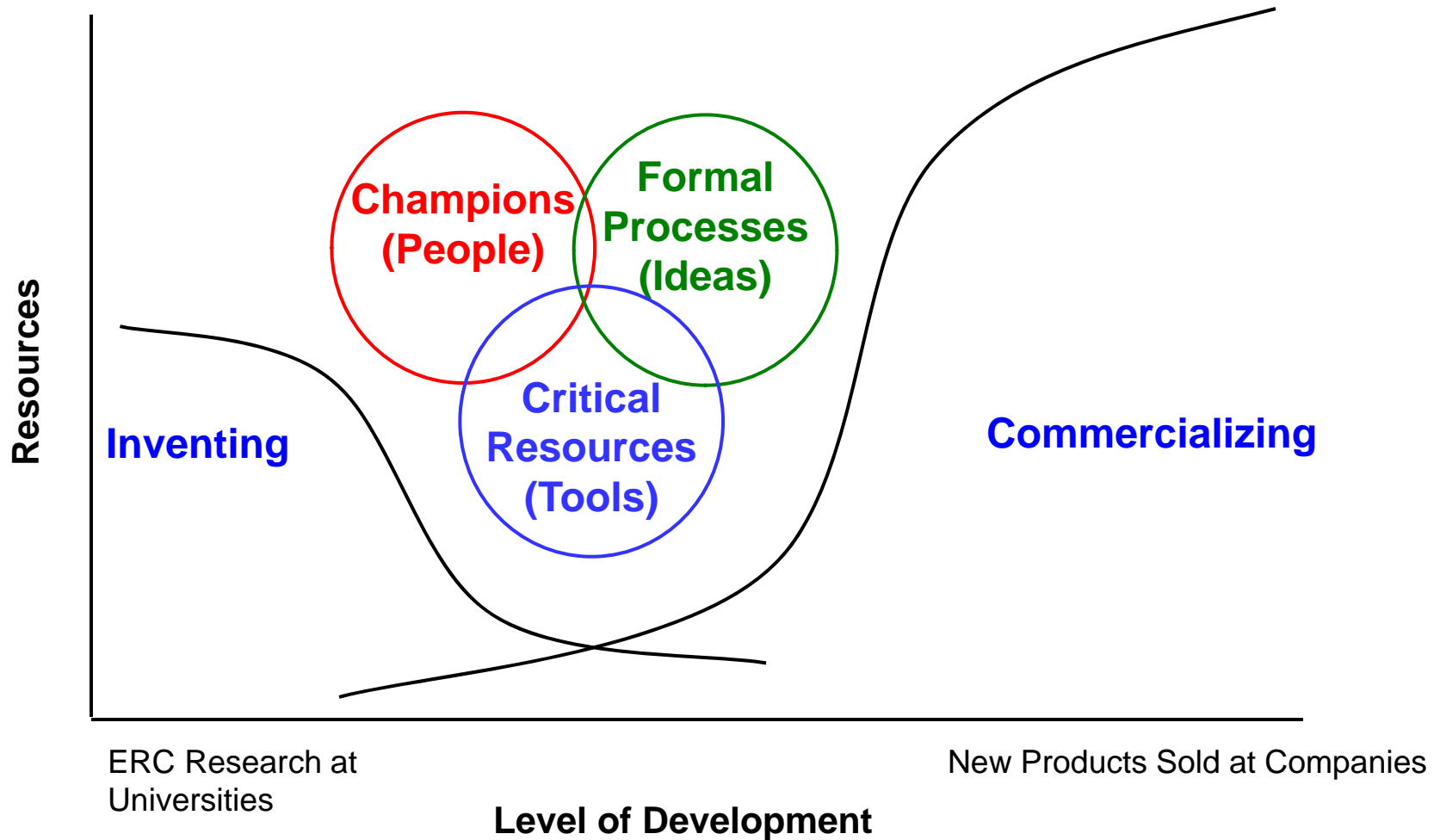
Innovation Program to Bridge the Valley of Death





# Closer Look at the Valley of Death

## Overlapping Structural Resources and Activities





# QoLT Foundry Process

QoLT Team,  
end-users,  
practitioners,  
& partners

identify

vet

perform due  
diligence

validate

Intellectual Capital  
Retention

- Metrics
- IP status
  - customer interest
  - prototype
  - supporting data
  - inventor passion
  - market dynamics
  - ease of productizing

Build  
team, secure IP  
& prototype

develop  
model & biz  
plan

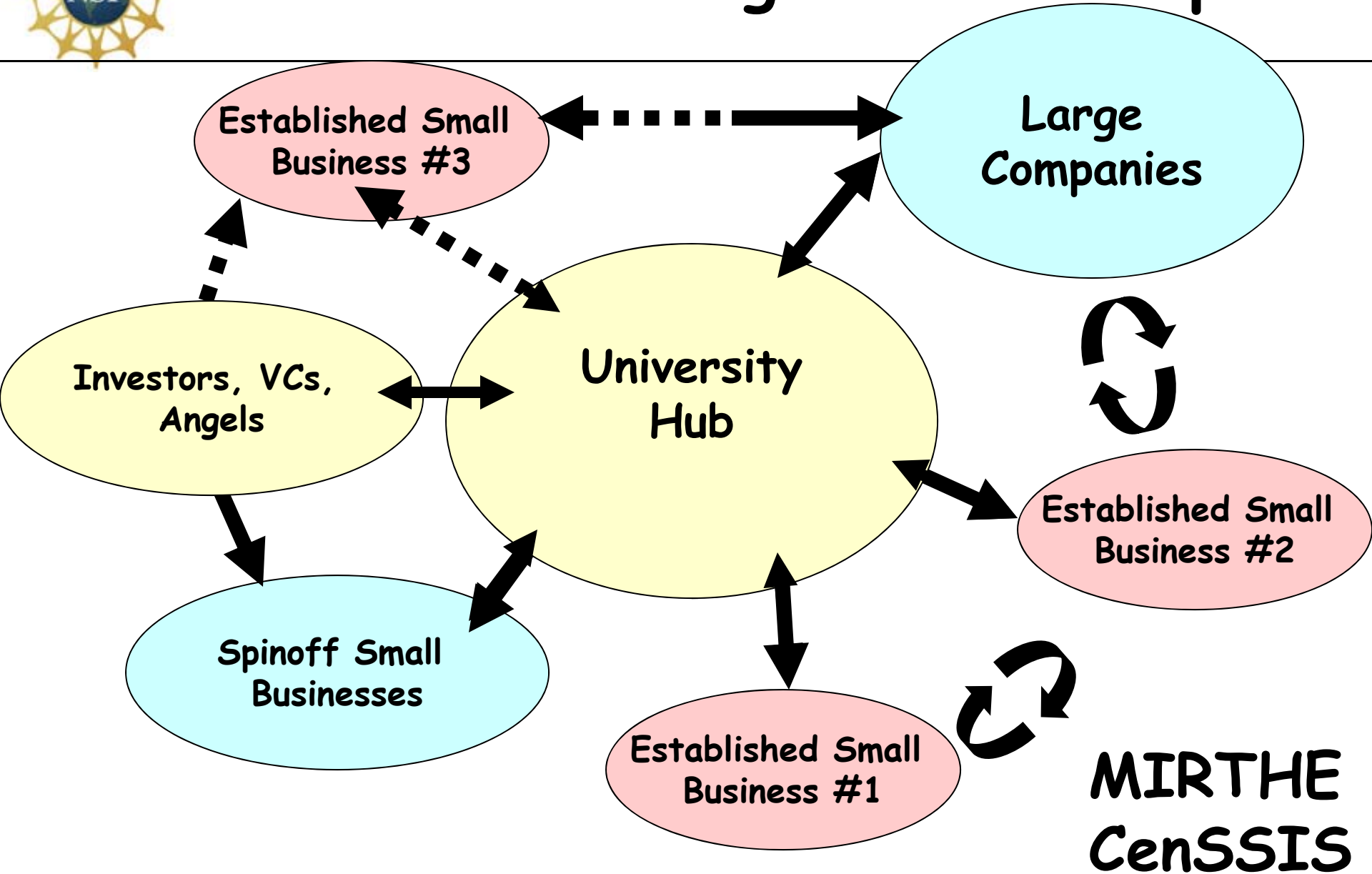
form  
company

Customer  
-Investors

QoLT Industry / Practitioner  
Advisory Board & others



# Innovation through Partnerships





# NC State's Centennial Campus

## A University-Industry-Government Community

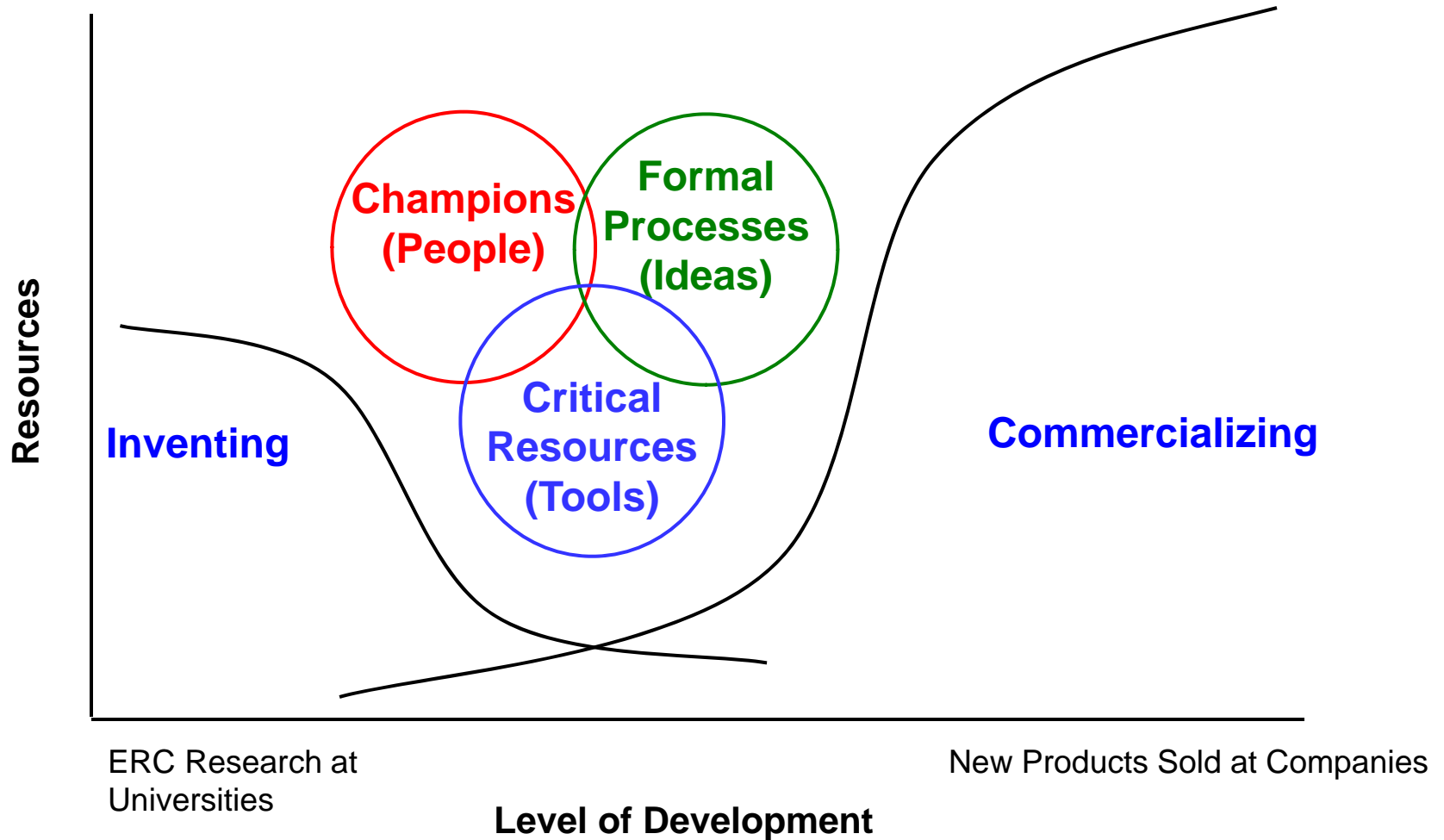
- FREEDM Systems Center and NCSU College of Engineering
- Rated World's Top University Science Park [AURRP]
- Culture of Partnership with Industry
- Community of **learning, innovation** and **entrepreneurship**



# FREEDM



# Metrics to Measure Bridging Structures





# Innovation Ecosystem Metrics - 1

- Standard Metrics (QRC data)
  - # publications
  - # joint publications with industry
  - # conferences
  - # joint abstract with industry
  - # patent disclosures
  - # patents filed
  - # ERC start up firms
  - # innovation partnerships formed
  - # small business performing translational research within ERC



# Innovation Ecosystem Metrics - 2

- Metrics for gauging health of innovation system
  - # student start-ups
  - # interactions between companies & students
  - # companies actively mentoring students
  - # innovation workshops
  - # industry firms co-located with academia
  - # firms using university facilities
  - % students taking entrepreneurial/ business courses
  - Funding level from industry (small, med, large)
  - How does industry value ERC attributed that aren't patentable
  - How successful are graduates in start-ups/ business
  - Use student impressions of best career path as barometer



# Innovation Ecosystem Metrics - 3

**Generally activities that cross pollinate people maximize impact**

- Metrics that gauge extent of interactions among ERC participants.
  - # Joint publications (students with industry)
  - # meetings with industry organized by Center and involving students
  - # internships and job placement with industry
  - # entrepreneurial courses taken by students



# Innovation Ecosystem Metrics - 4

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- Metrics for Industrial Participants beyond # of members and amount of dues collected
  - In-kind donations (in \$)
  - # meetings with industry organized by ERC
  - # proposals submitted (mainly SBIRs)
  - # Center mediated interactions between small and large companies



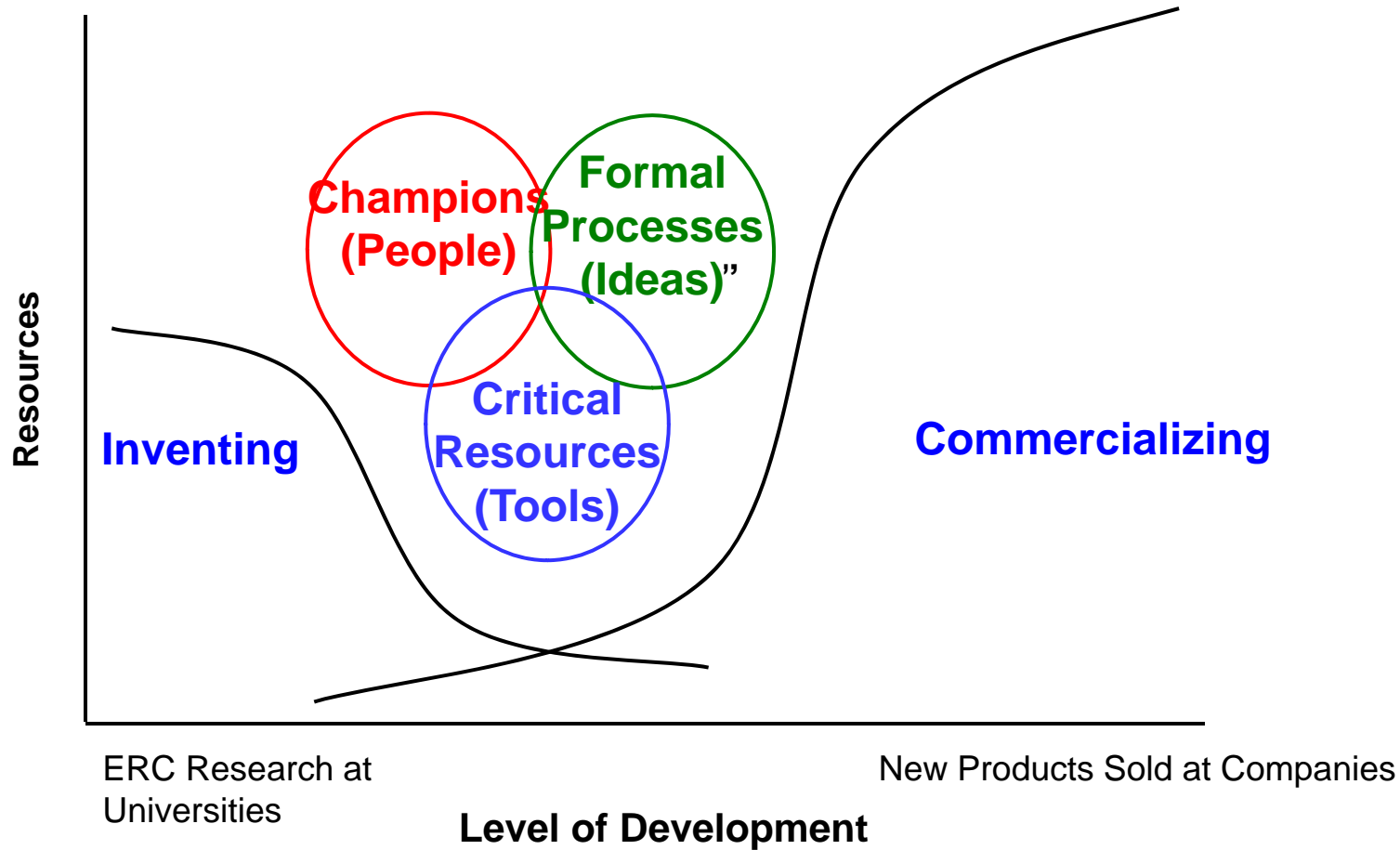
# Innovation Ecosystem Metrics - 5

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- Qualitative innovation metrics:
  - Require that the ERCs prepare innovation nuggets for its top 2 or 3 innovations each year. Start this in Year-1 so that the ERC participants start developing the mind-set for innovation early on.



# Metrics to Measure Bridging Structures



Characteristics of Good Entrepreneurial Team?