



**Rob Krulac**

Mgr. Business  
Development



Founded in 2007, CU-ICAR is an innovation campus and unique ecosystem designed to foster innovation in education, research and business.

CU-ICAR is an enterprise focused on maximizing collaboration between students, faculty, and industry in a unique campus environment.



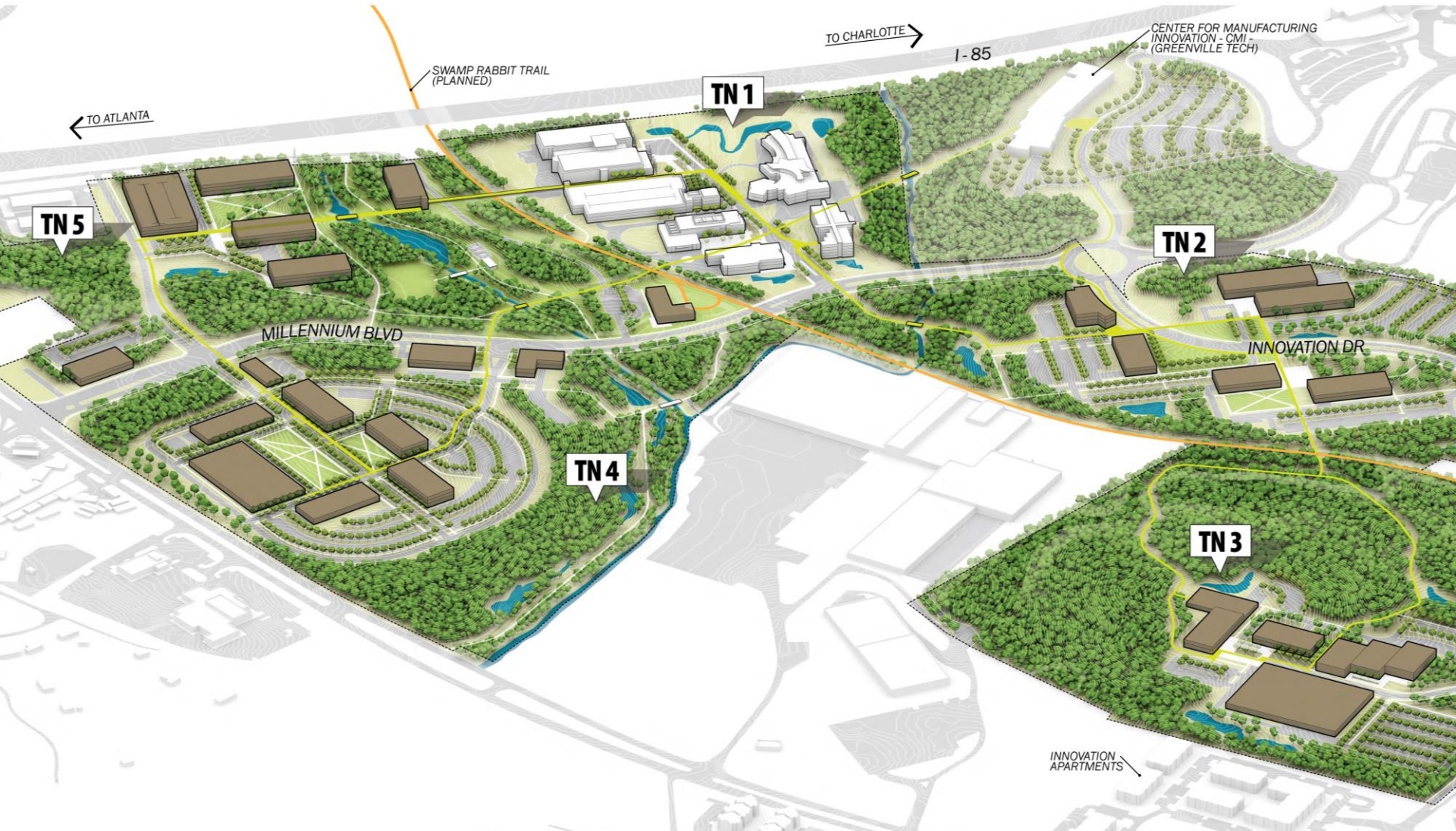
# WHAT IS CU-ICAR?



**A 250-ACRE  
INNOVATION  
CAMPUS DEDICATED  
TO MOBILITY**

# OUR VISION

to become the premiere automotive research, innovation, and educational enterprise in the world.



# OUR APPROACH



## EDUCATION

**Department of Automotive Engineering**  
Clemson University  
College of Engineering, Computing, & Applied Science

### Deep Orange

Collaborative graduate multi-disciplinary new vehicle prototype program



## RESEARCH

Powertrain  
Connected Vehicles  
Advanced Materials  
Manufacturing  
Human Factors  
Vehicle Performance  
Systems Integration



## ECONOMIC DEVELOPMENT

\$250 million total investment  
23 companies on site  
+900 jobs created

# EDUCATION & ALUMNI



**410 Degrees Awarded in  
Automotive Engineering  
through FY2017**  
359 Masters  
51 PhD



## **Top Employers After Graduation**

1. Ford Motor Company
2. Fiat Chrysler Automobiles
3. BMW Group
4. Honda R&D Americas
5. Cummins, Inc.



## **Top Employing States After Graduation**

44% Michigan  
21% South Carolina  
5% California  
5% Ohio  
5% International  
20% Other

# DEEP ORANGE

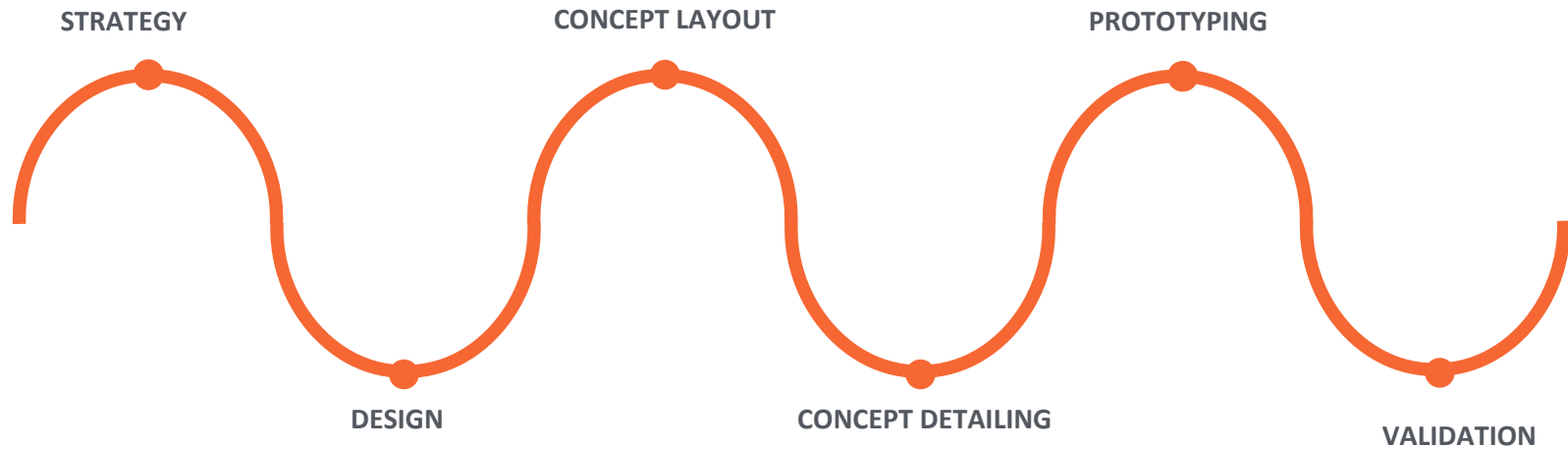
C L E M S O N   U N I V E R S I T Y



# DEEP ORANGE

## systems integration approach to graduate education

Annual new vehicle prototype release from two-year product development cycle. Integral feature of the Automotive Engineering MS curriculum.



# DEEP ORANGE

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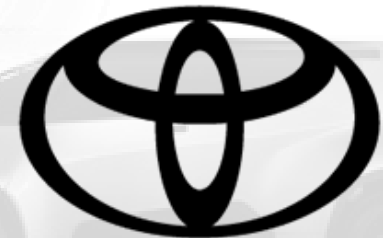


# DEEP ORANGE

C L E M S O N   U N I V E R S I T Y



**mazda**



**TOYOTA**





# PARTNERS

Over 100 industry partners collaborate with CU-ICAR.

The U.S. Department of Commerce named CU-ICAR as one of four best practices for facilitating university-industry collaboration.

Over 80% of research at CU-ICAR is industry sponsored.

# COMPONENT TESTING LAB

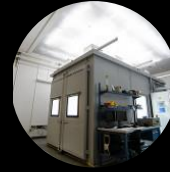
Facilities Capabilities & Specifications



Vibration Chamber



Shaker System



Solar Chamber



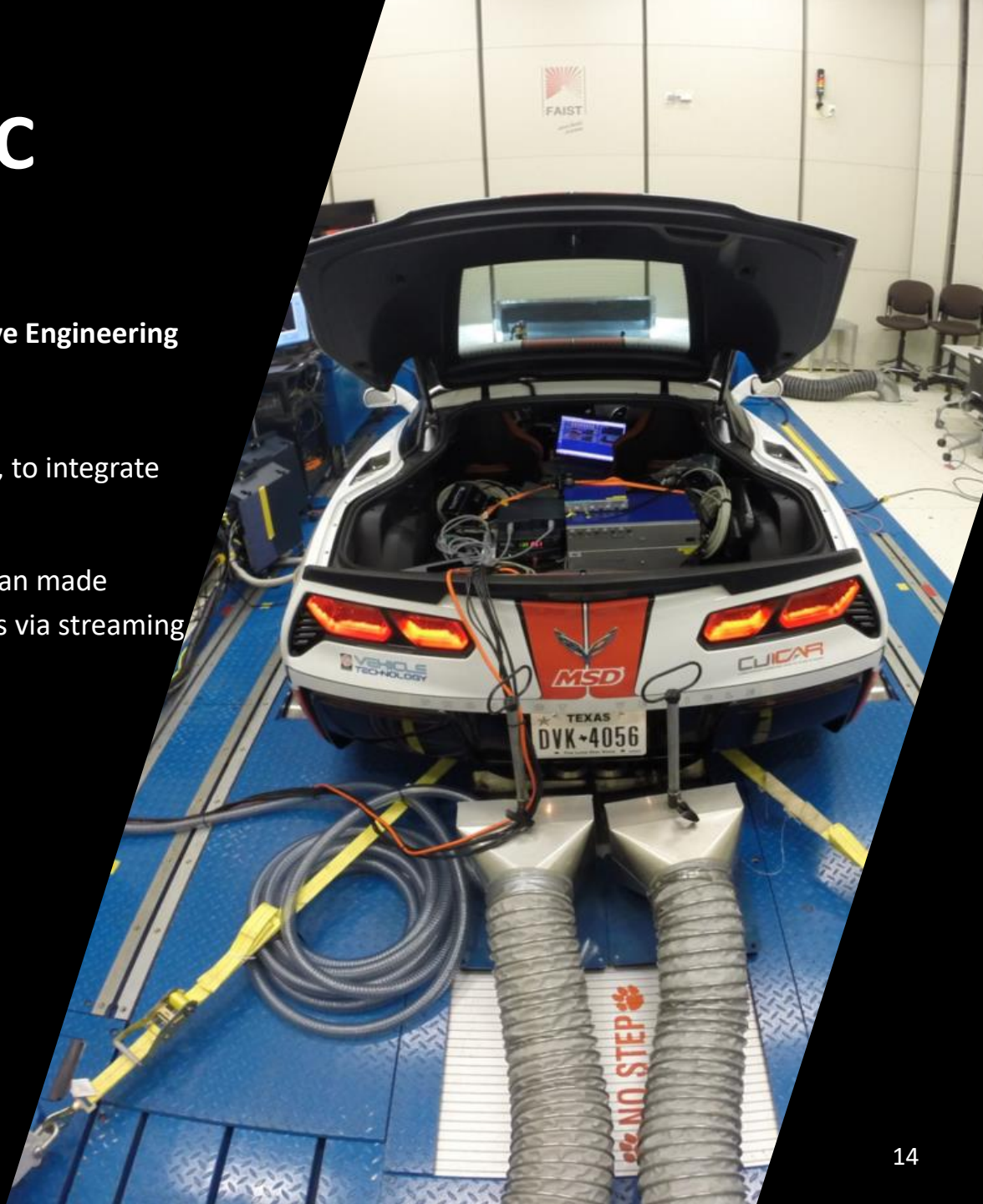
Solar Irradiation System



# NEW ACADEMIC PROGRAMS

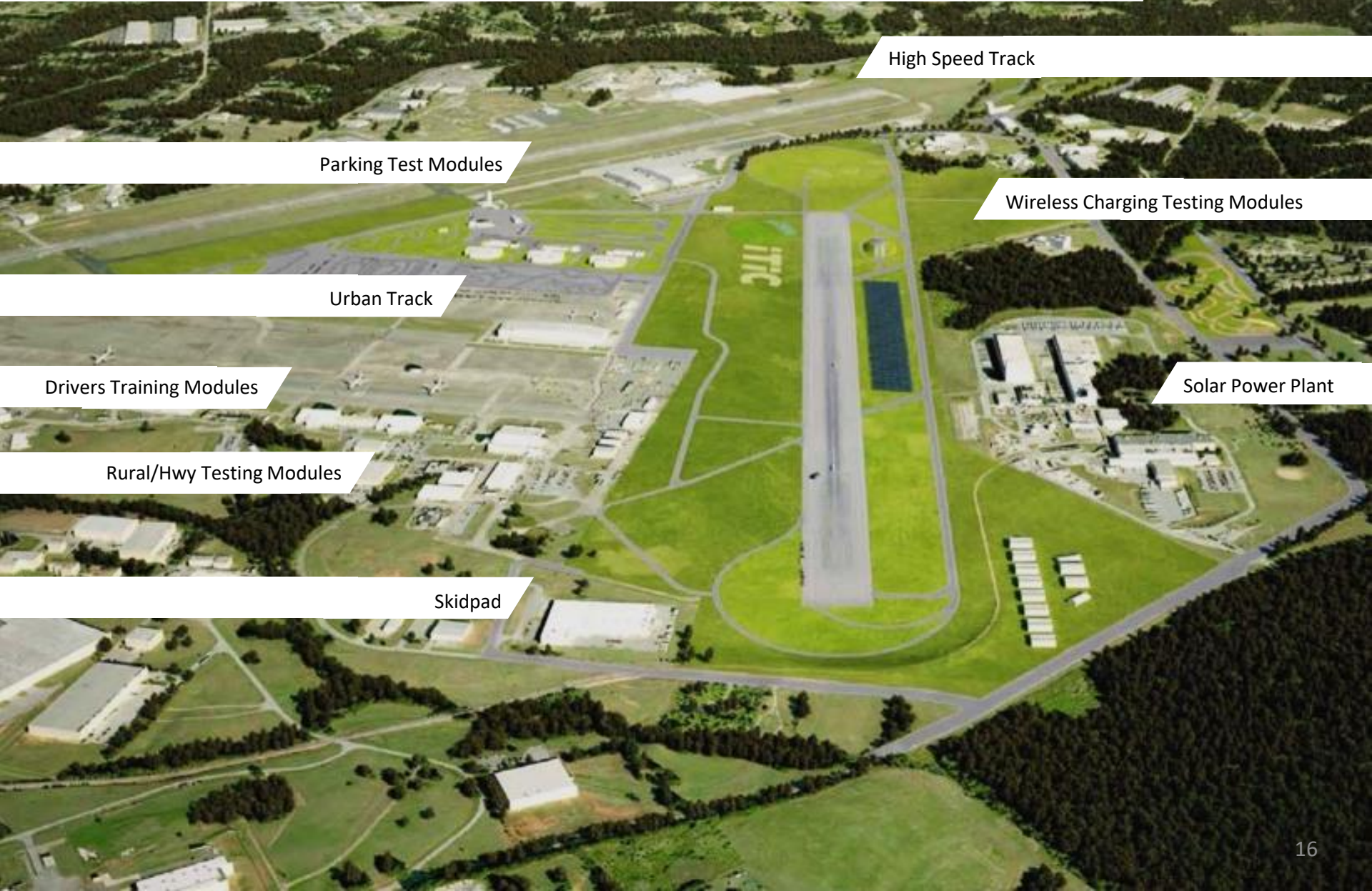
## Undergraduate Certificate in Automotive Engineering

- Launches Fall 2017
- Labs will be held on CU-ICAR campus, to integrate undergraduates
- Courses will be delivered at CU-ICAR and made available to students on main campus via streaming and online methods





# International Transportation Innovation Center



High Speed Track

Parking Test Modules

Wireless Charging Testing Modules

Urban Track

Drivers Training Modules

Solar Power Plant

Rural/Hwy Testing Modules

Skidpad

# ONE RESEARCH DRIVE

Completed in 2016 and adjacent to BMW ITRC, One Research Drive includes 80,000 square feet across four floors of rentable multi-tenant space.



# Center for Manufacturing Innovation



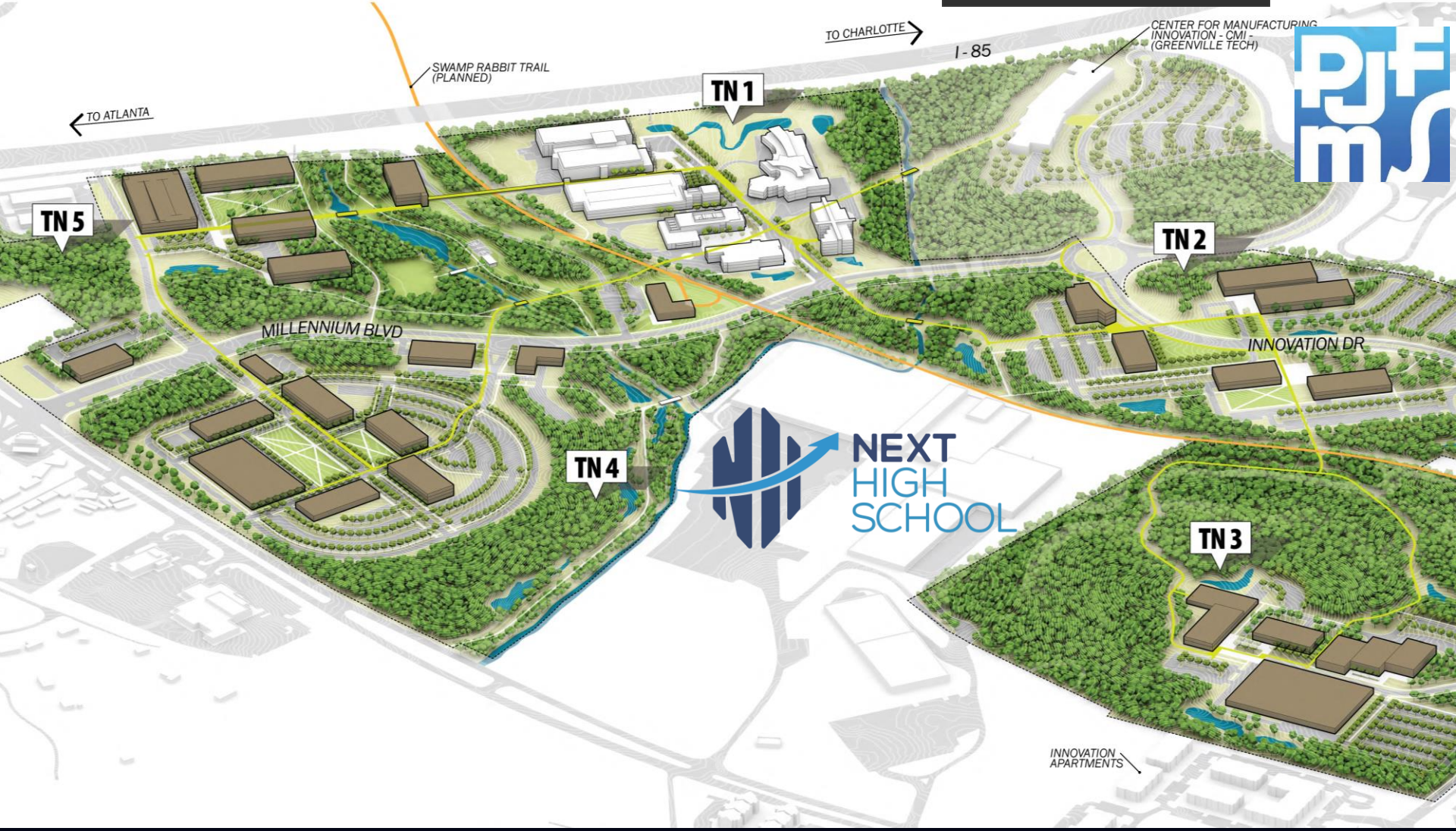
## Partnership with Greenville Technical College

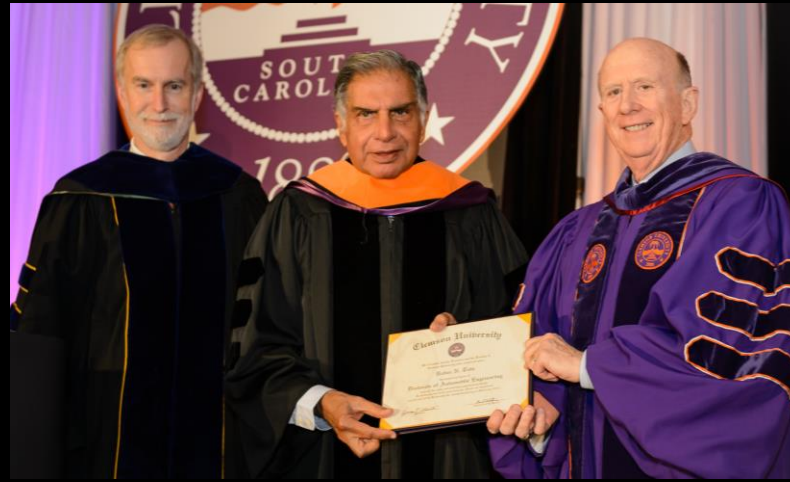
- Respond to needs of industry
- CU PhD students and Greenville Tech students working together on research, capstone projects
- New model for education, workforce
- Three labs: assembly cell, mobile robots, composites

## Clemson Labs

- Composites: development of cost-effective, efficient, and sustainable technologies
- Research testbed for data-enabled assembly and human-based sensing
- Automation, industrial mobile manipulators, human-robot interaction
- Capstone projects for students enrolled in the Certificate in Manufacturing

# Educational Ecosystem





# PLAYERS ON A GLOBAL STAGE



Carlos Ghosn, Renault Nissan  
Nov. 7, 2017  
CU-ICAR



**THANK YOU**



