

W

# **University-led Strategic Aviation Research**

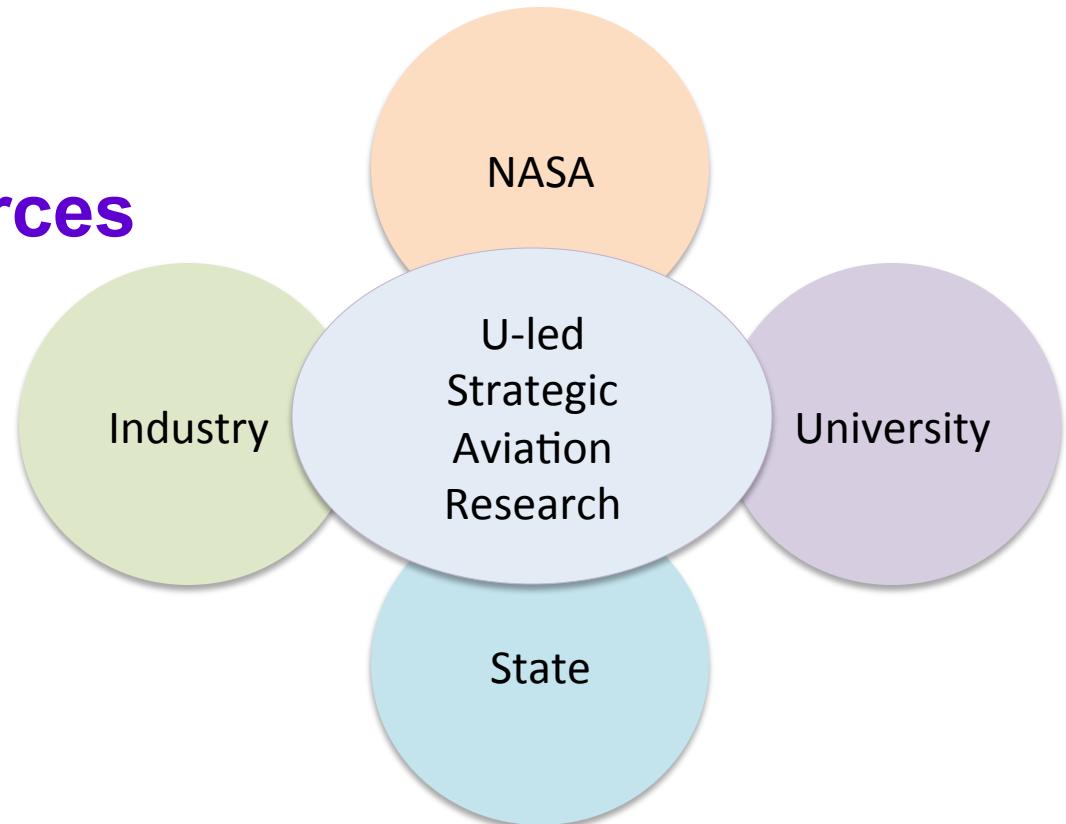
AESB 2015

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# W OUTLINE

- 1. Leverage Resources**
2. Greater Utility
3. Cross-Cutting
4. Innovation at Intersections

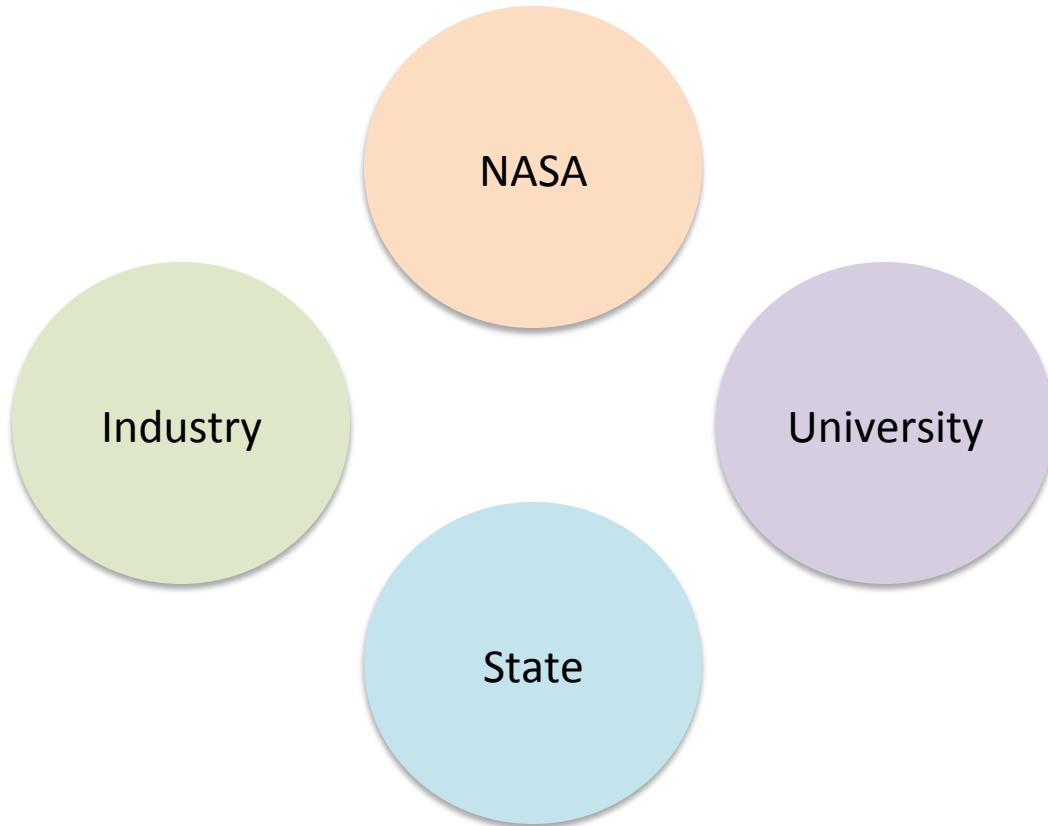




# STAKEHOLDER STRENGTHS

Enable sustained national initiatives

Applied  
research  
capabilities



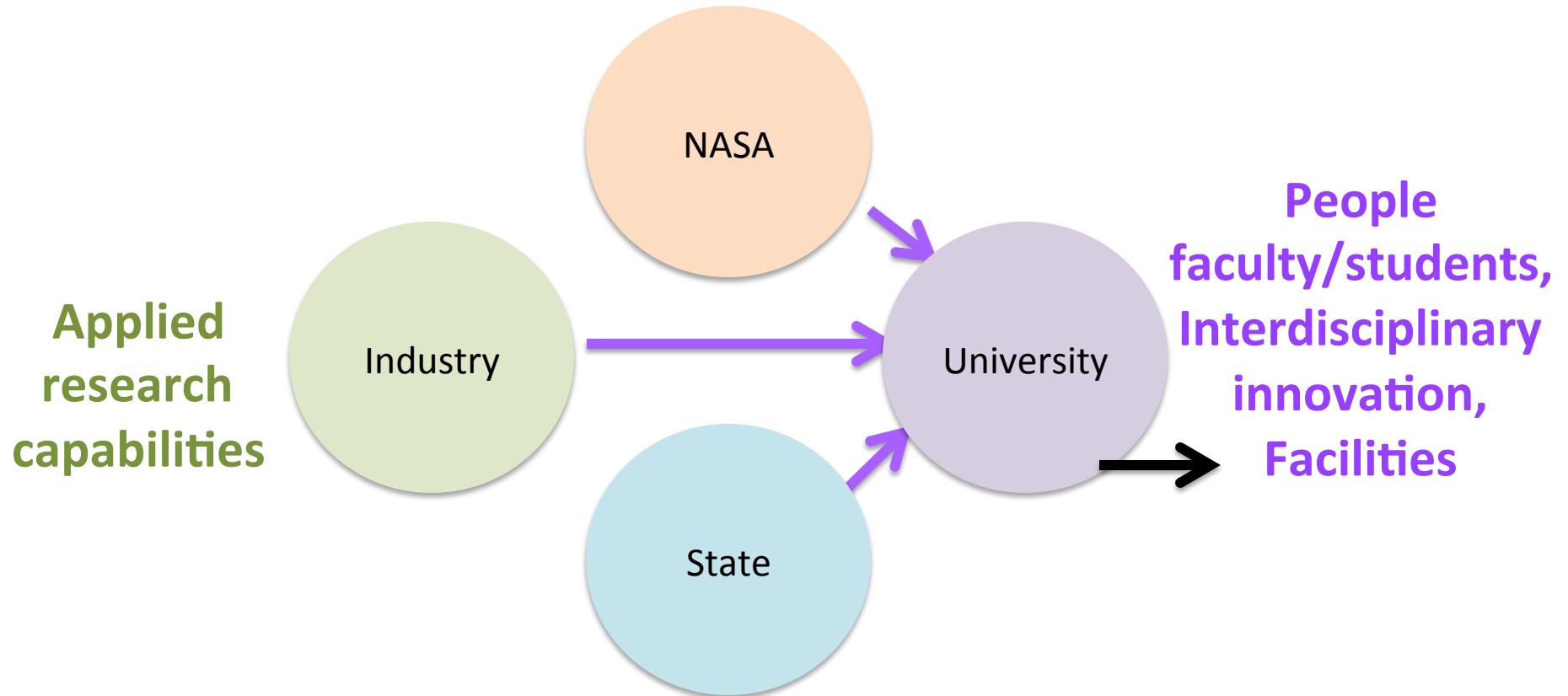
Promote Economic development  
(jobs, jobs & jobs)

People  
faculty/students,  
Interdisciplinary  
innovation,  
Facilities



# TRADITIONAL FUNDING MODEL

Enable sustained national initiatives



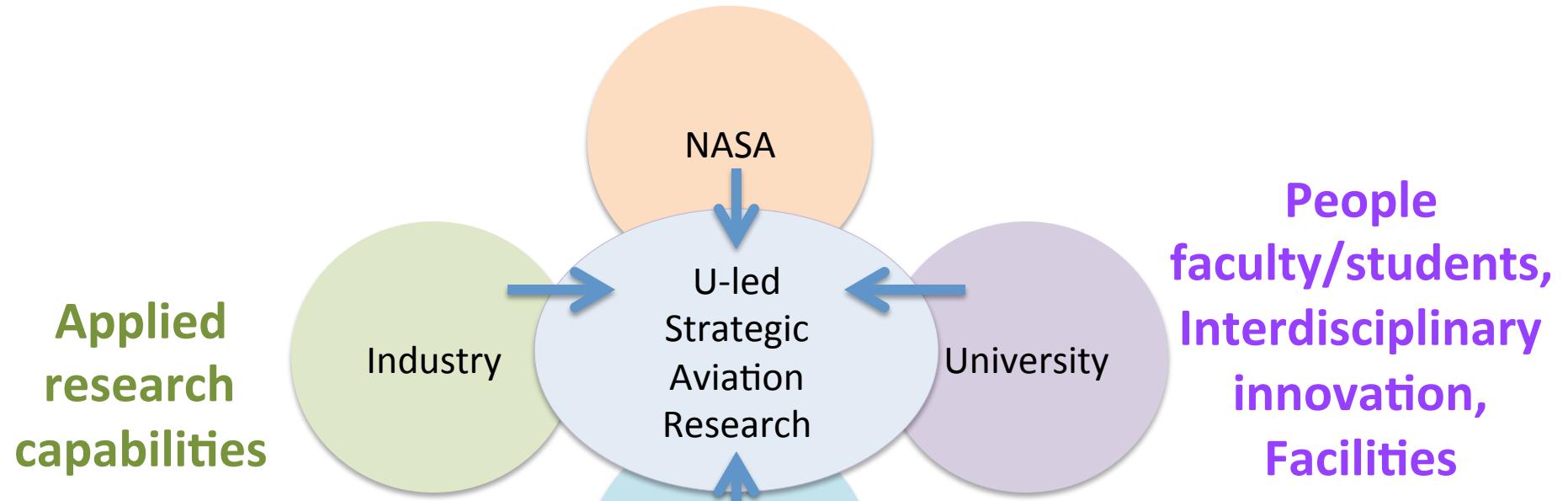
Promote Economic development  
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# CENTER: LEVERAGES RESOURCES

Enable sustained national initiatives

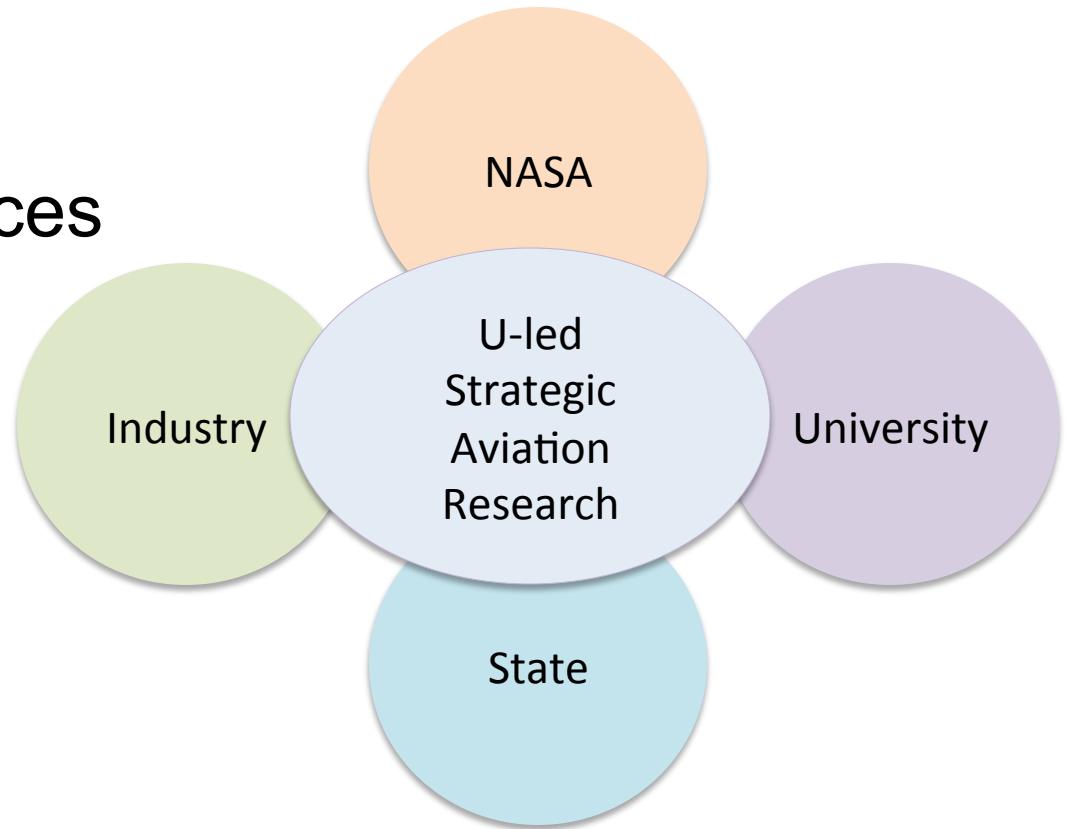


Promote Economic development  
(jobs, jobs & jobs)

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# W OUTLINE

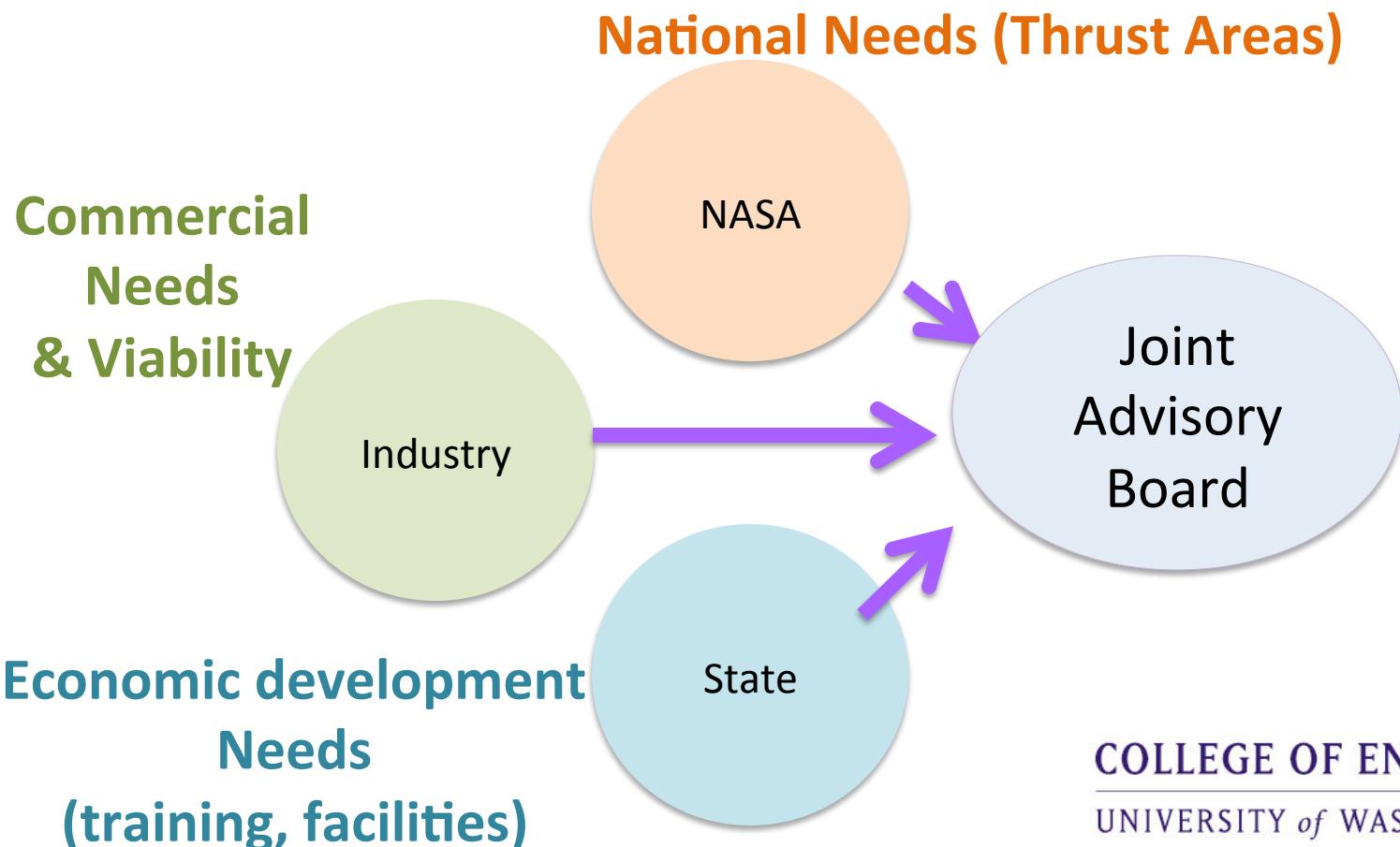
1. Leverage Resources
2. **Greater Utility**
3. Cross-Cutting
4. Innovation at Intersections





# GREATER UTILITY

– **Joint Advisory board of Stakeholders**  
enables better need identification





## GREATER UTILITY (CENTER SIZE)

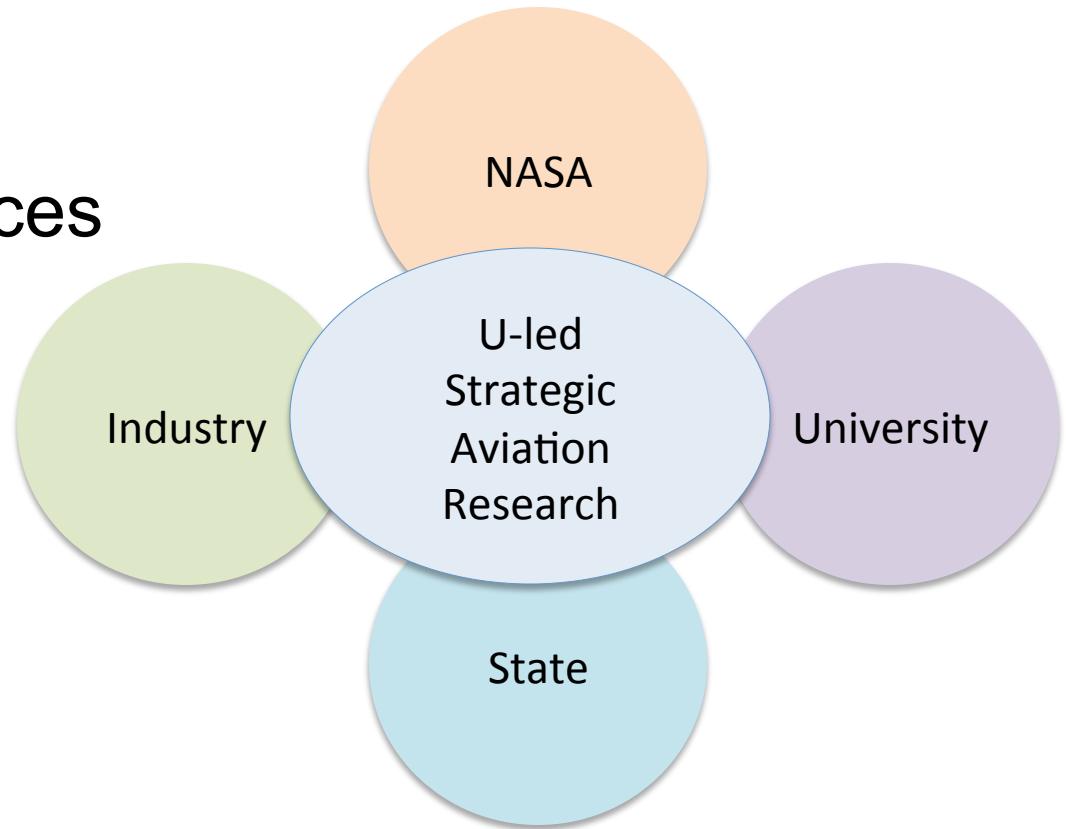
- Issue: enable strategic projects

CENTER should be large enough to promote high-level participation in advisory board from stakeholders (e.g., industry) and undertake strategic research projects

Sufficient size  
(scope and time)  
to enable  
strategic projects

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# CROSS CUTTING

## – Why cross-cutting?

- Need Sufficient expertise for the research
- Example: Focused research topic
  - Single university: maybe one top faculty in area
  - Multiple universities needed to build expertise
- Example: Broad thrust area research
  - different research areas are needed (human factors, data, fluids, etc.)
  - Cross-cutting could be different universities and/or different companies

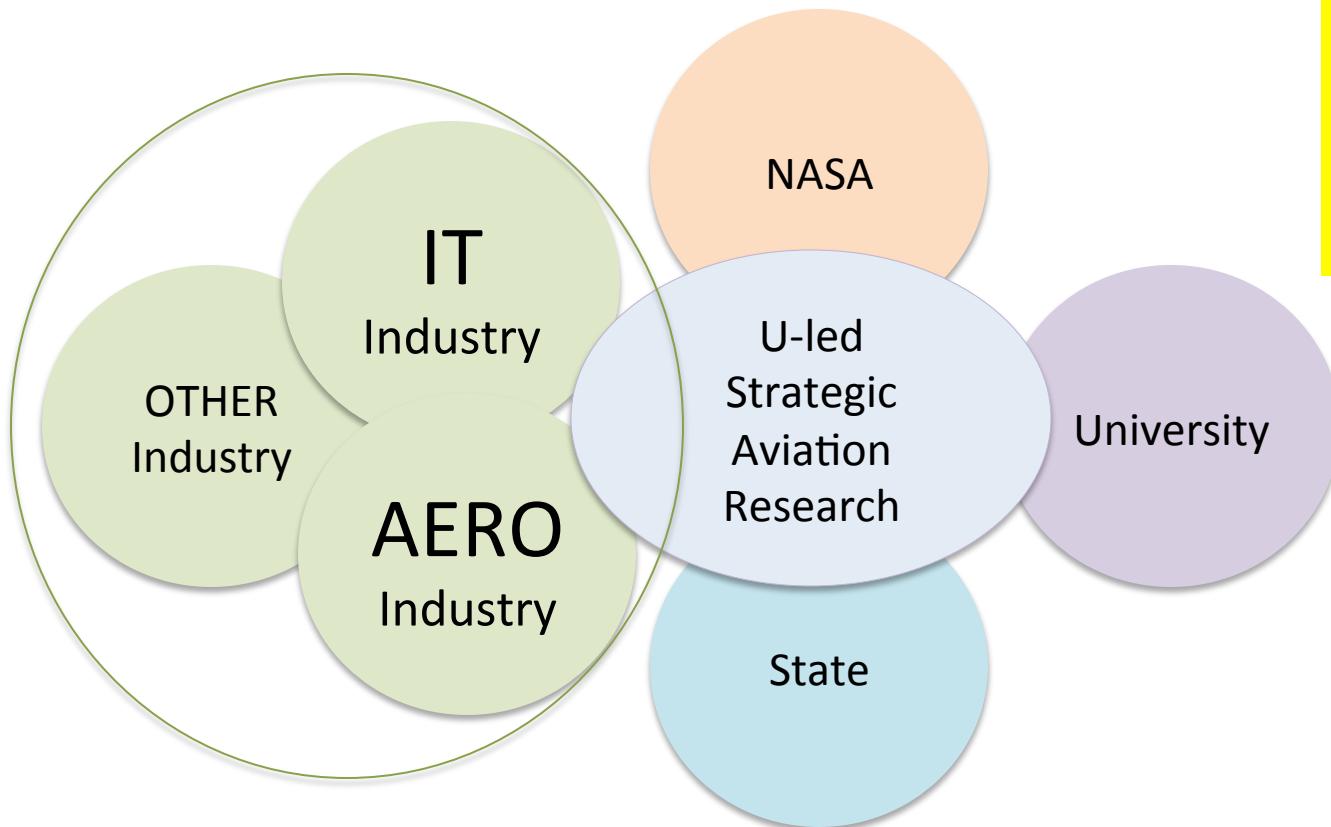


## CROSS CUTTING INDUSTRIES

- Example: DATA is important to, e.g.,
  - Safety of assured autonomy
  - Security of cloud-based computation/storage
  - Performance Optimization
- **Strengths** in different industry sectors
- e.g., in the Pacific Northwest
  - **IT** (Microsoft, Intel, Amazon, others)
  - **Aerospace** (Usage: Boeing, Blue-Origin, Insitu)



# CENTER: ACROSS INDUSTRIES



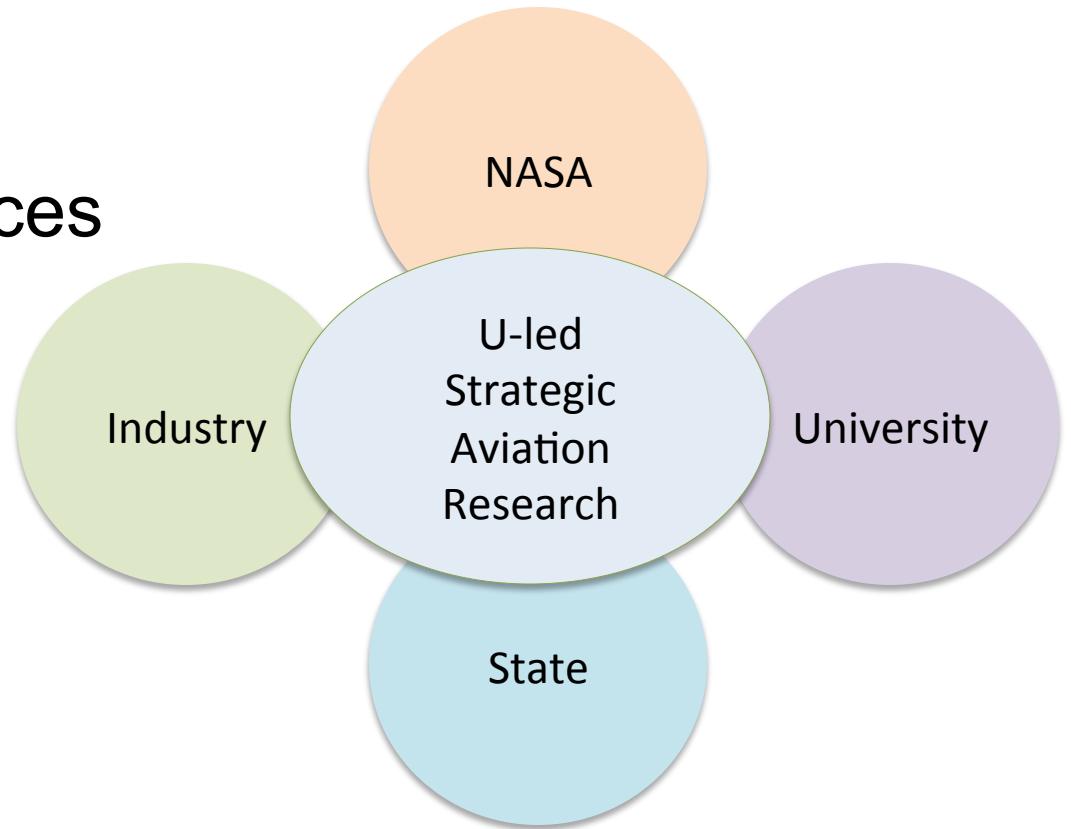
Cross cutting  
can be  
across  
industries

**U-led CENTER COULD BRING SUCH DIVERSE INDUSTRIES TOGETHER  
(solve common problems, e.g., assured autonomy)**

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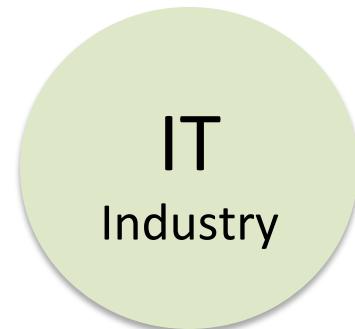
# W OUTLINE

1. Leverage Resources
2. Greater Utility
3. Cross-Cutting
4. **Innovation at Intersections**





# INNOVATION AT INTERSECTIONS



Microsoft  
Intel  
Amazon

Cloud enabled Computing  
Security  
Data



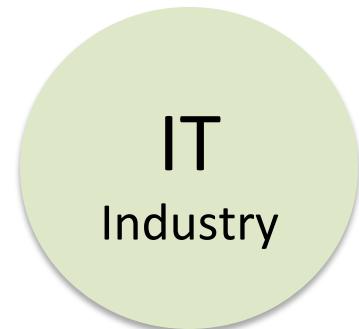
Boeing  
Blue-Origin  
Insitu

Aerospace  
Manufacturing,  
UAV

**Fertile Area: Potential Innovations affecting assured autonomy:**  
Security, cloud-enabled computing, verification and validation  
Similar issues in both sectors



# INNOVATION AT INTERSECTIONS



Microsoft  
Intel  
Amazon

Cloud enabled Computing  
Security  
Data



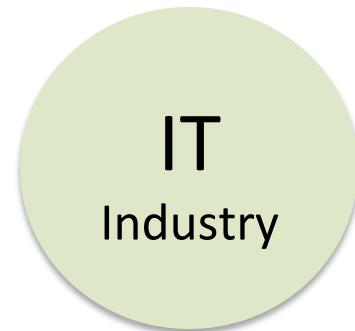
Boeing  
Blue-Origin  
Insitu

Aircraft  
Manufacturing,  
UAV Automation

**Challenging to bring them together:  
Differences in scale: size, time, volume. IP issues.**



# CENTER: EXPLOIT INTERSECTIONS



Microsoft  
Intel  
Amazon

Cloud enabled Computing  
Security  
Data



Boeing  
Blue-Origin  
Insitu

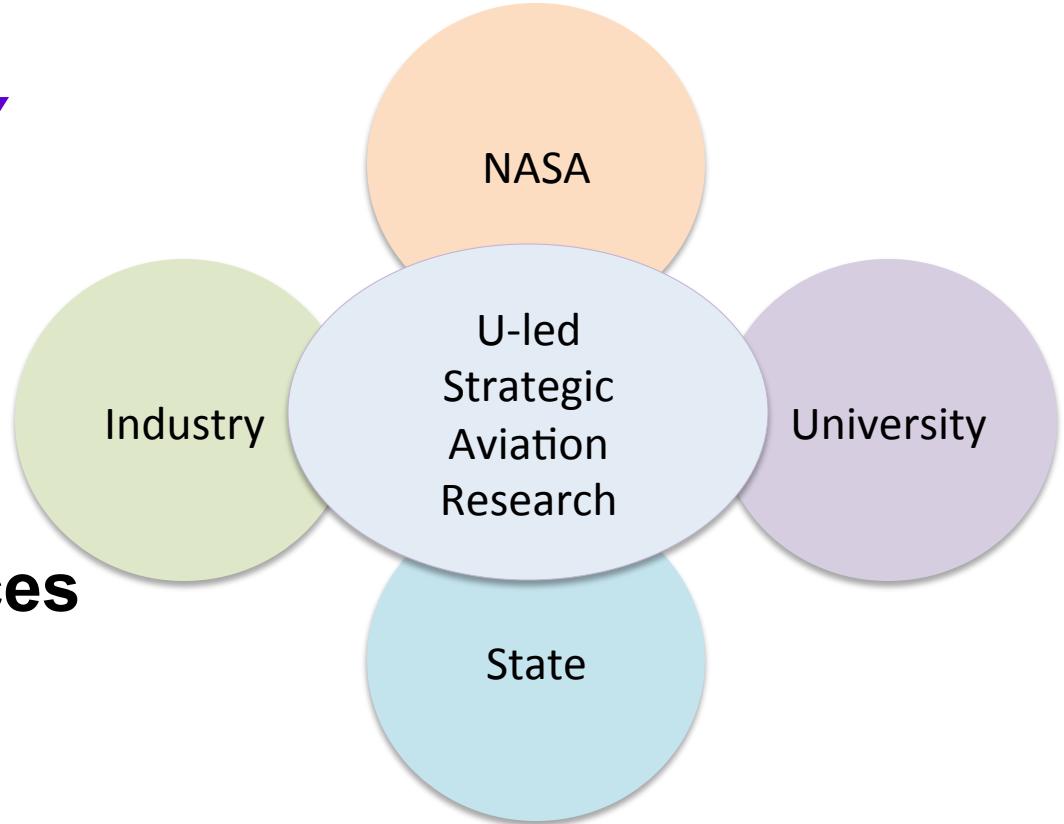
Aircraft  
Manufacturing,  
UAV Automation

U-led  
Center can  
exploit  
innovations  
at the  
intersections

**A Center could bring them together to address common needs**



# SUMMARY



- 1. Leverage Resources**  
(funds/strengths)
- 2. Greater Utility**  
(needs identification,  
size for strategic efforts)
- 3. Cross-Cutting**  
(can be across industries)
- 4. Innovation at Intersections**  
(address common goals)