

## FY23 Topic Areas Research and Technology Development (TRTD)

### Additive Manufacturing of Compliant Mechanisms for Deployable Structures

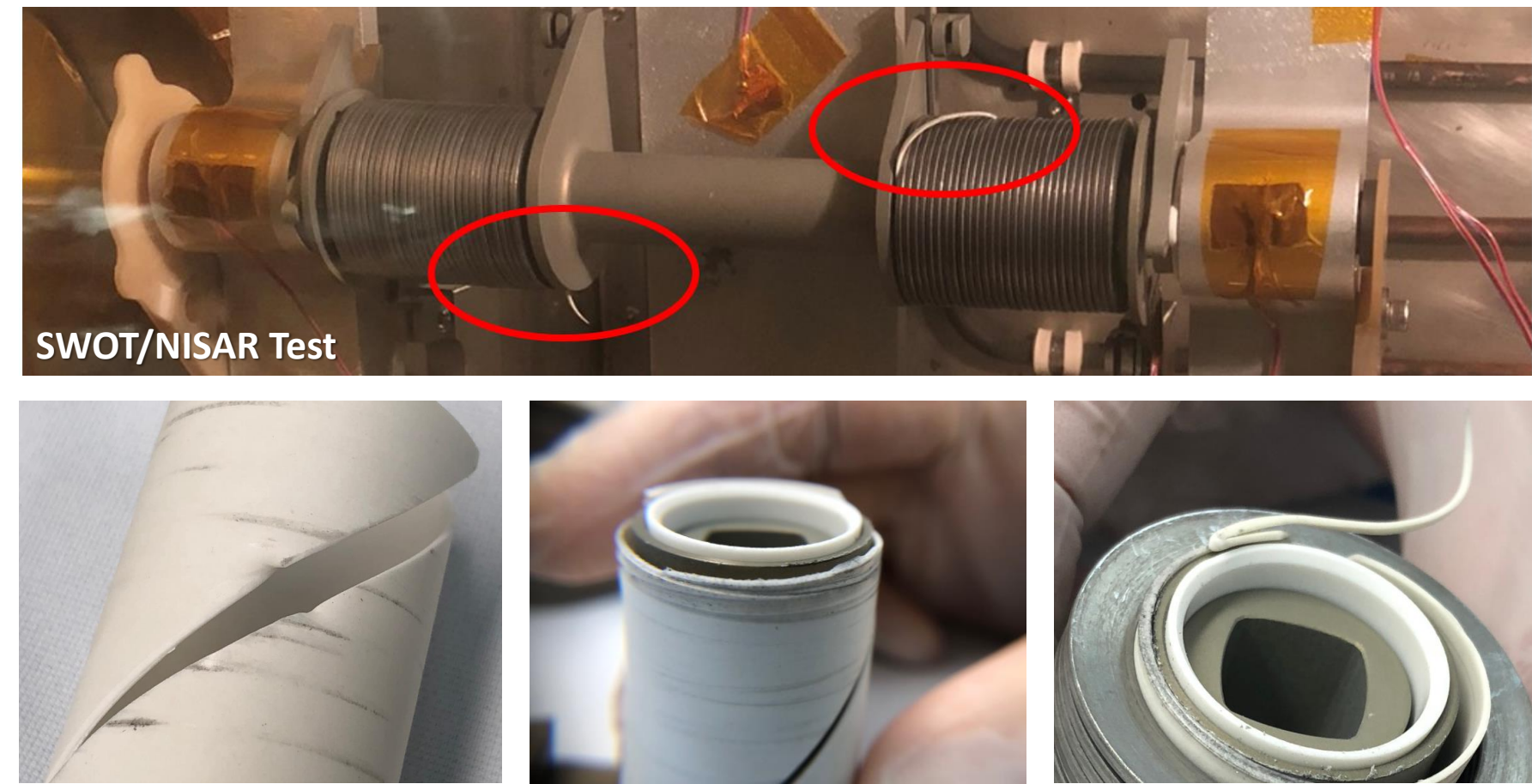
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**Strategic Focus Area:** Additive Manufacturing, Multifunctional Systems

# THE PROBLEM.

JPL flight deployable structures need torsion springs that exceed what is currently achievable with traditional manufacturing.

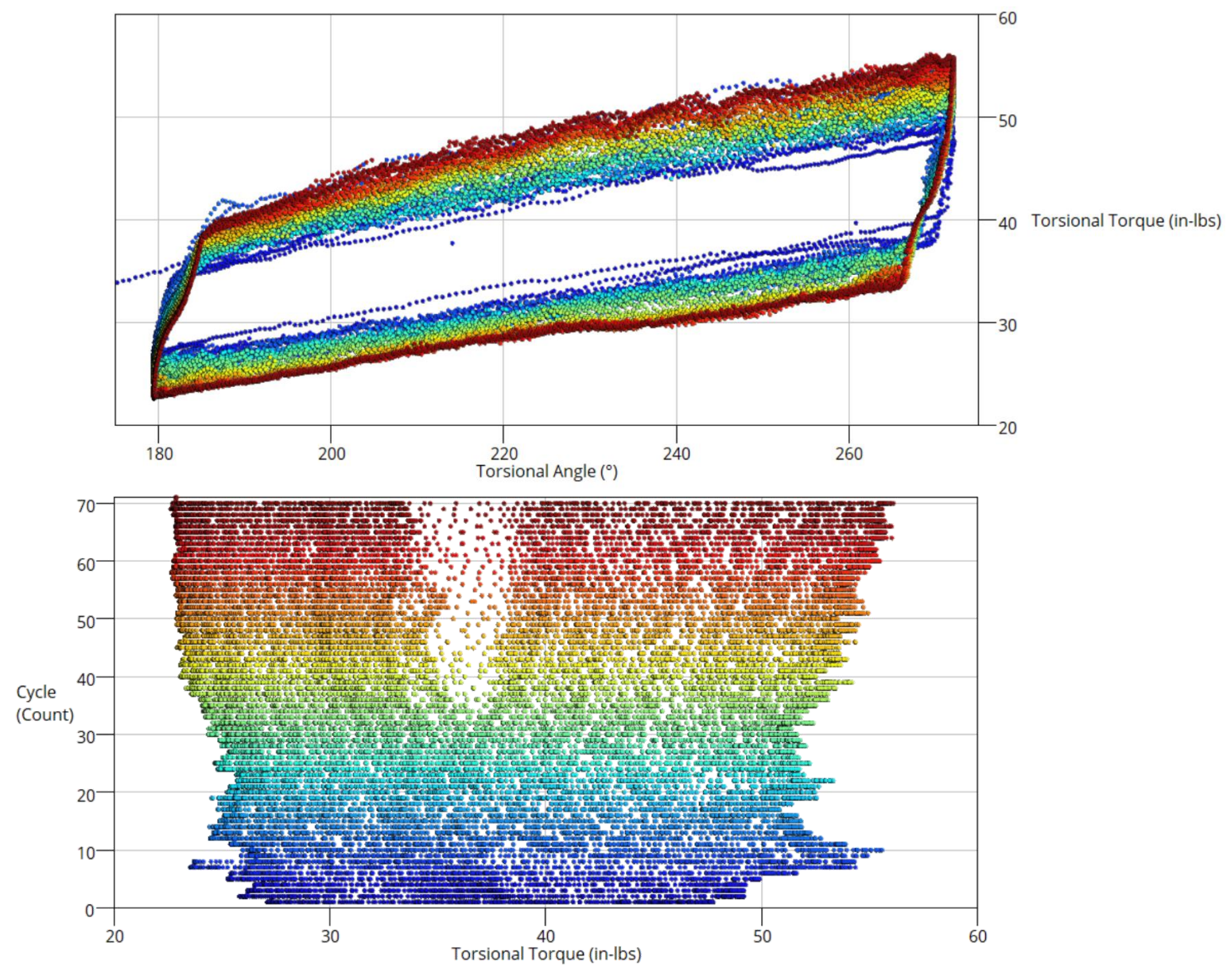
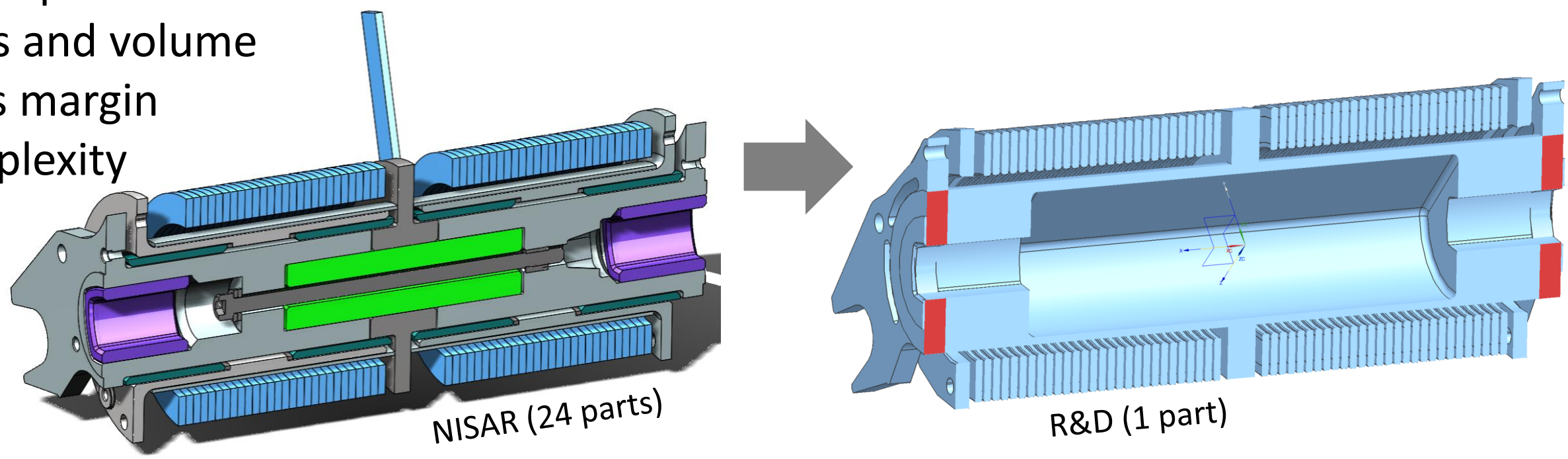
- SWOT, NISAR, and other mission with deployable structures require spring mechanisms with high torque-to-volume ratios.
- Rectangular cross-section springs provide high torque density, but are difficult to traditionally manufacture and interface with.



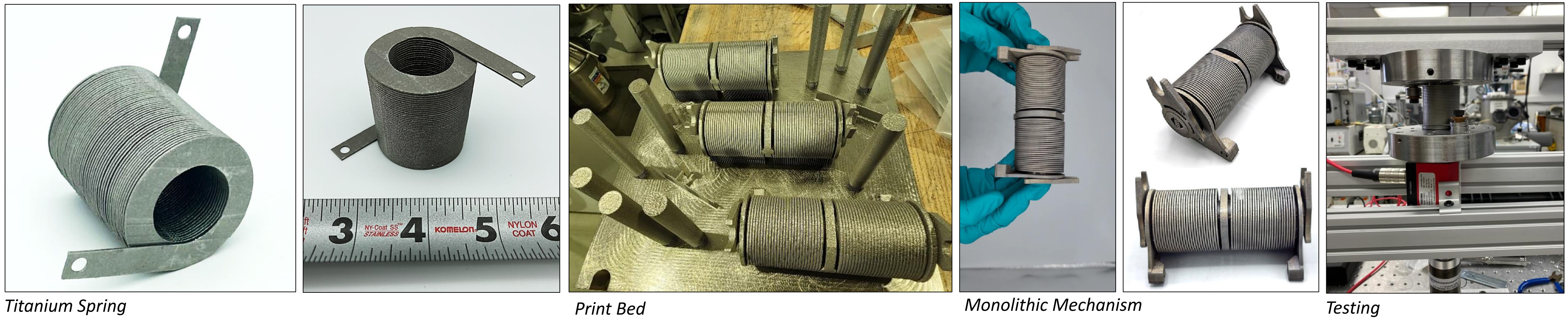
# THE GOAL.

Use advanced manufacturing to increase torque performance for deployable structures.

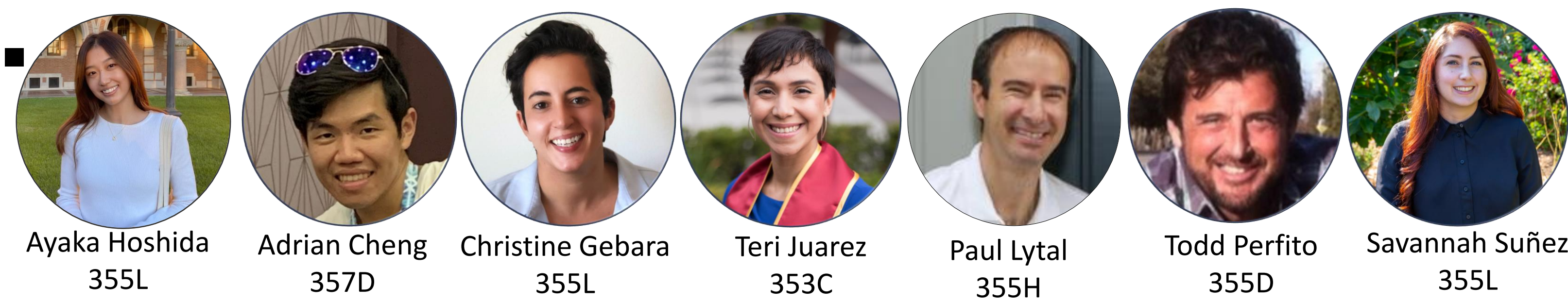
- Increase torque performance
- Decrease mass and volume
- Increase stress margin
- Decrease complexity
- Decrease cost



# THE PROCESS.



# THE TEAM.



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Clearance Number: CL#00-0000  
 Poster Number: RPC#  
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**Publications:**  
 C. Gebara, P. Lytal, J. Rimoli, "Additive Manufacturing of Compliant Mechanisms for Deployable Aerospace Structures," *Journal of Materials Engineering and Performance* 31, 6083–609, Springer US, June 27, 2022.

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