RTRC

Raytheon Technologies Research Center

Vision. Applied.

As the innovation hub for Raytheon Technologies and its businesses, the Raytheon Technologies Research Center (RTRC) puts our technical vision to work. We anticipate the discoveries in science and technology that are destined to change aerospace and defense—then transform that research into future-redefining solutions and products.

We are:

- **Empowering Raytheon Technologies' leadership in innovation**
- **Overcoming critical challenges**
- **Building a safer, more connected world**

KEY CAPABILITIES

Aerothermal and physical sciences

- Aerodynamics and acoustics
- Chemical sciences
- Combustion and propulsion technology
- Materials science
- Measurement science
- Mechanics and manufacturing
- Thermofluid sciences

Intelligent systems

- Artificial intelligence
- Optimization and control technologies
- Systems engineering
- Electric and electromagnetic systems

The science of what's next

We collaborate with the businesses of Raytheon Technologies to continuously innovate the next big things in aviation, space and defense. Applying open minds and the latest science and research tools, we empower Raytheon Technologies and its businesses with new ways of thinking, smarter ways of working, and breakthrough innovations that provide unprecedented value and competitive leverage. We also draw on the expertise of major universities and national laboratories to discover new pathways to the future.

Future-ready

We partner with Raytheon Technologies businesses to transform innovative research into practical applications in sustainable aviation, cybersecurity, energy conservation and advanced defense systems. By forecasting trends and opportunities, we're able to innovate breakthrough technologies that yield high ROI for customers and government agencies. Our unique talent, experience and resources also allow us to deliver rapid responses to critical, time-sensitive challenges.

RTRC includes some of the world's leading scientists, researchers and engineers.

85%

of our technical staff hold advanced degrees

69%

hold doctorates

90+

year history

34

countries represented by RTRC researchers

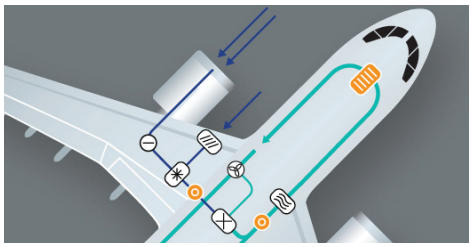
Raytheon Technologies

COLLINS AEROSPACE | PRATT & WHITNEY | RAYTHEON INTELLIGENCE & SPACE | RAYTHEON MISSILES & DEFENSE

Major research areas

For more than 90 years the Raytheon Technologies Research Center has operated as a multidisciplinary group of experts collaborating on groundbreaking innovations.

While we respond to a wide range of challenges from across our organization, we are primarily focused on six major areas of research.



Complex integrated systems

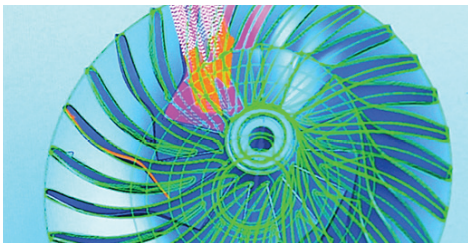
Leveraging multidisciplinary optimization to explore and develop creative new architectures that deliver overarching functionalities of a system

- Artificial intelligence-guided architecture exploration
- Cyber-physical co-design
- Physics-based models
- Rotating detonation engines

Advanced materials and manufacturing

Performing revolutionary research in high-temperature alloys, composites and manufacturing methods, including 3D printing and additive manufacturing to enable high-performance components and systems

- Next-generation materials
- Tools and processes to enable printing of advanced geometries
- Real-time defect detection during part builds



Model-based digital thread (MBDT)

Digitally linking modeling tools and processes to form a single, contiguous chain of knowledge across the entire product's life cycle from design and manufacturing to the aftermarket

- Model criteria, libraries and tools enabling key knowledge exchange across the customer, engineering, manufacturing and aftermarket chain

Autonomy-enabling technologies

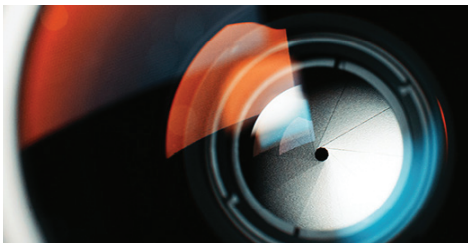
Developing reasoning systems and automation to execute missions and assignments with reduced or zero human interaction

- Systems engineering
- Design methodology and tools
- Formal methods
- Embedded system design
- Artificial intelligence and machine learning

Electrification and sustainability

Targeting zero carbon emissions from aircraft by developing power and energy systems that leverage electric, hybrid electric and alternative fuel systems

- Thermodynamic cycle and aircraft mission analysis
- High-performance converters
- Electrical drive train integration and complex system analysis
- Advanced thermal management solutions



Disruptive technologies

Driving groundbreaking innovations with an eye toward advancing aerospace and defense capabilities

- Cryptography and communication
- Neuromorphic sensing and imaging
- Neuromorphic computing

Raytheon Technologies

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To learn more about our inspiring and collaborative career opportunities, visit us at RTX.com/careers

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