

NASA Future Forum

Theme

- John Glenn, Neil Armstrong, and the late Judith Resnik are among the many great pioneers of space from Ohio. In fact, Ohio has produced more astronauts than any other state. We are proud of all these Ohioans who have done so much to make history and truly change the future.
- NASA's space exploration and research efforts have not only opened corners of the universe, they have improved life on this planet. NASA's countless advances affect our daily lives and energize our economy. In materials, medicine, biology, fuel economy, aviation, information technology, and telecommunications NASA has sped our path to the future.

About the Event

- NASA is holding forums in 7 U.S. cities this year to discuss how NASA can

contribute to innovative technology, scientific research, and education.

- Part of ongoing effort to mark the 50th Anniversary of NASA.

The Diverse Ohio Economy

- If Ohio were a country, our economic output would rank 26th among all the nations of the world.
- Ohio exports more than \$37 billion in products to more than 200 countries
- More freight traffic goes through water ports on Lake Erie and Ohio River than goes through Panama Canal.
- Ohio has the largest fuel cell supply chain in the country.

- Proctor and Gamble in Ohio employs more scientists, engineers, and PhDs than Harvard.
- First Solar in Toledo produces more thin solar panels than any plant in country.
- Ohio is home to more than 450 aerospace suppliers and manufacturers and has the second highest value-added aerospace workforce in U.S.

NASA Glenn and The Ohio Economy

- NASA Glenn Research Center has a \$1.1 billion economic impact in Ohio.
- *Research & Development Magazine* recognizes great advances with its “Top 100” R & D award each year. These are the Oscars of invention. And NASA Glenn has collected scores of these awards, more than all other NASA centers combined.

- NASA Glenn pioneered the use of hydrogen as a rocket fuel, powering the space shuttle main engine and other advanced rockets.
- NASA Glenn is working on the next generation of propulsion – allowing travel farther into space.
- NASA Glenn has contributed to aircraft safety with revolutionary techniques to protect aircraft from icing and to prepare pilots to deal with ice.
- NASA Glenn has assisted hundreds of companies turn aerospace technologies into marketable products
- NASA Glenn has assisted with critical medical research – including helping the Cleveland Clinic develop an artificial heart pump.

- Our great academic institutions support aerospace research in Ohio through numerous alliances such as the Ohio Center of Aerospace Propulsion and Power, and centers at campuses across the state including:
 - the Von Ohain Fuels and Combustion Center at the University of Dayton
 - the Gas Turbine Laboratory at Ohio State
 - the Bearing Test Facility at the University of Akron
 - the Small Turbine Test Facility at the University of Toledo.

Building Ohio Jobs

- Advancing Ohio's energy economy is one of the central commitments I have made in our Building Ohio Jobs plan – our \$1.7 billion dollar program to create jobs and strengthen Ohio. We will dedicate \$250 million to an investment in energy-

creating and energy-saving technologies that will help create jobs and power all our industries.

- NASA Glenn, along with our research universities, have made major advances in achieving greater fuel efficiency in engines.

Education Innovation

- Inspiration, Innovation, and Discovery – these are the building blocks of what NASA does everyday. And these are the building blocks of what our education system should do everyday.
- We have made a commitment to increase both access and quality of education from pre-school to advanced degrees.
- Our ten-year plan for the University System of Ohio will guarantee that a high quality associate and bachelor's degree in the core academic fields necessary to land

a good job will be available on a campus within thirty miles of every Ohioan.

- *Seniors to Sophomores.* We will give every twelfth grader who meets the academic requirements a choice of spending their senior year in their home high school or spending it on a University System of Ohio campus.
 - Tuition for the year will be free.
 - Students will receive their high school diploma and one full year of college credits at the same time.
 - Our goal is to raise the aspirations of all students, to challenge students who might feel disengaged from their high school studies, and to help students who want to accelerate their college education.

- Our vision for our Primary and Secondary schools: we must create learning environments that foster and nurture creativity, innovation, and global competency.
- Proposed creating a Director of the Department of Education.
- STEM. Our commitment to Science, Technology, Engineering and Math is one of the most essential investments we can make, not only in our students but in our state.
 - We are developing STEM Schools and Programs of Excellence.
 - Enhancing STEM educator professional development.
 - In higher education, we are attracting undergraduates into the STEM

disciplines. The Choose Ohio First Scholarship, a \$100 million scholarship program, will encourage Ohio students to study science, technology, engineering or mathematics, or become teachers in those fields

- Increasing the number of renowned STEM scientists and researchers in higher education with a \$50 million investment.

- “To confine our attention to terrestrial matters would be to limit the human spirit”
– Astronomer Stephen Hawking