

**Questions for the Record to Dr. Greg Autry**  
**U.S. Senate Committee on Commerce, Science, and Transportation Committee**  
**Full Committee Nominations Hearing**  
**November 10, 2020**

**Written Questions Submitted by the Hon. Tammy Duckworth to Dr. Greg Autry.**

**Question 1.** NASA's CFO oversees a \$22.6 billion budget that covers a range of projects with different needs. What in your past work experience enables you to lead such a large and critical budget?

**Answer.**

Thank you, Senator Duckworth. I appreciate the opportunity to discuss my qualifications.

My service on the NASA agency review team provided me with an unparalleled opportunity to delve deeply into NASA programs, budgets and accounting. As the business professor on the team, I was often tasked with budget analysis and with engaging the Office of the CFO during our research. I would encourage you to reread the letter that then NASA CFO David "Radz" Radzanowski has sent to this committee in support of my nomination. He writes:

*"Dr. Autry understands the role of the CFO and its responsibilities to Congress, the NASA Administrator, the Office of Management and Budget and the White House. I believe you can count on him to continue to deliver the high-quality management, oversight and reporting that has distinguished the Office of the Chief Financial Officer at NASA over the last decade."*

The CFO's job is not one of managing the details of a \$28 billion budget (NASA appropriations for FY 2020 were \$22.6b, offsetting revenues from work done for other agencies and unobligated balances carried over from the previous year add more than \$5b to total budgetary resources.) NASA CFO is a leadership position managing 1,200 civil servants and 600 contract employees in the Office of the CFO. These highly qualified NASA personnel are fully capable of doing the bookkeeping, accounting and reporting. The agency recently issued another excellent Annual Agency Financial Report for FY2020 and received a 10<sup>th</sup> consecutive "Clean" opinion from the external auditor. I concede that I expect my supporting team to be more knowledgeable about the details of process and procedure than I.

I have extremely broad management and finance experience. I've led small, innovative organizations as well as teams and budgets inside a large corporation distributed across several states. My management expertise resulted in me being requested by the University of California, Irvine to join their faculty following the completion of my MBA there. After several years of teaching, I was encouraged to pursue a PhD in Management and I was hired by the Marshall School of Business at the University of Southern California. My USC workshops attracted highly respected business and governmental space figures.

I've taught management, accounting, finance and economics to executives, professionals and entrepreneurs for two decades. Many of the students I've mentored have gone on to great success

in space firms. I would note that Relativity Space, whose founders I have mentored since their time at USC, just secured a new \$500 million investment at a valuation of over \$2 billion. This is on top of their previously raised \$177 million.

I possess a unique understanding of private sector space operations and insight into the agency from a programmatic and process viewpoint. The current and previous administration have, with Congressional support, expanded public-private partnerships significantly. The contracting landscape is evolving, and the vendor pool is expanding in ways that are challenging to career professionals at GAO and OMB. Moving ahead, maximizing the value of both traditional contractors and entrepreneurial firms requires an understanding of how they operate, what resources they have, and how they view their relationship with government. If confirmed, I will add significant value in ensuring that Congress gets what they expect from appropriations.

**Question 2.** The CFO plays a very important role in promoting and securing funding for critical scientific programs. The 2018 NASA budget request that you worked on included cuts to climate studies and STEM programs. How did you come to the conclusion to cut these important programs?

**Answer.**

Thank you, Senator, for the opportunity to address this. The CFO isn't a policy making position, and the CFO does not establish the priorities of NASA budget. If confirmed it will be my job to implement the will of Congress as represented in appropriations. My efforts at securing science funds will be directed by the NASA Administrator with input from the Science Mission Directorate and the Decadal Survey.

I am passionate educator and mentor to STEM students. My own STEM career was inspired by NASA's accomplishments. My wife has been a public-school teacher and principle. Your committee has received many letters in support of my nomination from leading space scientists and engineers I have had the pleasure to work with. These include Dr. Alan Stern, PI on the New Horizons probe to Pluto; Dr. Scott Hubbard, NASA's former "Mars Czar," former Ames Director and professor of Astronautics at Stanford; along with most of the leadership at USC's renowned department of Astronautics, where Neil Armstrong earned an MS during his Apollo days. *How* STEM education is supported at NASA is not the decision of the CFO. I will implement the will of Congress under the direction of the NASA administrator.

My record on NASA's role in understanding and improving the stewardship of our planet is clear. I would not have 20 solar panels on my roof or own two electric cars without NASA's important investments in STEM. While I don't take personal responsibility for the FY2018 budget request, I will note that it did protect most of the very large increases that had been implemented in preceding years. The 2018 request for "Earth Systemic Missions" was \$778 million vs. the 2007 budget of \$473 million.

**Question 3.** If confirmed as NASA’s CFO, would you support funding for climate studies and STEM programs?

**Answer.**

CFO is not a policy position, and my personal beliefs and priorities will not set the budget. If confirmed, my job will be to manage Congressional appropriations responsibly, under the guidance of the NASA Administrator. I will do so at the highest ethical standard and provide accurate reports to stakeholders on how these funds were allocated. The NASA Administrator and Science Mission Director will advocate for programs they believe will return the most value from our taxpayer investment. Their choices will be informed by the decadal survey.

My personal record supporting NASA’s role in Earth science research and in developing technologies that mitigate pollution is clear. It is critical that we understand our own planet’s atmosphere, oceans and climate, and that we learn from the history of our neighboring worlds as well. Learning what events caused Mars to lose most of its atmosphere and surface water, and how the surface of our “sister planet” Venus was transformed into a hellish landscape by a natural runaway greenhouse gas syndrome, may give us insights into our own biosphere.

NASA inspired my own STEM career in computing. And inspired me as a first-generation college student. I have spent a great deal of time connecting STEM students with careers in aerospace. Nothing would make me happier than being able to connect students with NASA, its rich educational resources, internships, and activities. Congress, the White House and the NASA Administrator will determine the best organizational mechanisms for this.

**Question 4.** Can you please state whether you accept the overwhelming scientific consensus demonstrating that humans are the primary driver of climate change over the last 100 years?

**Answer.**

As noted, the CFO is not a policy position. I take our environment seriously. Lessons my stepfather, instilled in me still ring true, “Always leave the camp cleaner than you found it” and “Leave nothing but footprints.” I grew up in the Los Angeles of the 1970s, where the air was nearly as unbreathable as Beijing’s is today. American ingenuity solved that problem. We should do our best to limit any emissions in ways that support American standards of living and competitive economic development. Someday, space-based solar power systems may provide zero pollution energy at night and under winter cloud cover (serious shortfalls of ground-based systems).

That said, I am a social science researcher trained in economics and management theory and not a climate scientist. I should not interpret data and models that I do not fully understand. I would not expect a climate scientist to “accept” an economic theory, even if it were the dominant paradigm advocated by most leading economists. Science must not be politicized. From my outsider understanding of the topic, a majority of climate scientists believe that human activities have contributed to the emission of gases that can induce climate change and that this poses a significant ecological threat. That concerns me.

If confirmed, my job will be to manage Congressional science appropriations responsibly, under the guidance of the NASA Administrator. I will do so at the highest ethical standard and provide accurate reports to stakeholders on how these funds were allocated.

**Question 5.** The stated mission of the office of the CFO for NASA is *“To be the credible expert, trusted advisor and source of quality information on matters related to finance and resources, including the management of associated risk, for NASA programmatic and institutional decision making.”* How will you be able to help a leading U.S. scientific agency understand and prepare for the effects of climate change?

**Answer.**

I will follow the will of Congress and support Congress in doing their job of appropriations by providing accurate financial reporting and timely answers to inquiries. However, I am not qualified to determine *how* the agency should “understand and prepare for climate change.” I must leave that understanding to NASA’s excellent scientists, and the preparations to engineers and facilities staff at our field centers. Where appropriate, I will strive to honestly convey the concerns and needs of these experts to Congress.

I would politely suggest to Congress that when considering infrastructure spending bills, appropriations should be included for urgently needed repairs to NASA’s aging infrastructure. The agency is burdened with a number of facilities constructed in the 1950s and 1960s that are badly in need of repair, updating, and environmental remediation. I look forward to working with you to ensure those facilities remain capable of supporting NASA’s missions, and that they are safe for our workers under any anticipated conditions.

**Question 6.** International cooperation is essential to the future of progress in space, from the International Space Station to addressing space junk. On Russian television you said that China is worse than 1930’s Nazi Germany government and you are a member of the group Committee on Present Danger: China, which believes that “As with the Soviet Union in the past, Communist China represents an existential and ideological threat to the United States.” Do you see any benefits to cooperating with China in the space domain?

**Answer.**

Thank you, Senator Duckworth, for the opportunity to address this extremely important question. The position of CFO is not a policy making one and my job will be to implement the will of Congress as directed by the NASA administrator under the guidance of the White House.

I could not agree more with you about the critical importance of international cooperation in space. NASA has been, and continues to be, an agency that represents America at its best and positively engages with many nations in the grandest of human endeavors, with full transparency — something that some other national space agencies cannot claim.

With specific regard to China, let me first say I sincerely wish that my admonitions over the last two decades had not been as prescient as they have turned out to be. I could enumerate the

offenses of the current Chinese regime, but we all know what those are and how large their scale is. The US Senate has reacted to recent gross violations of civil rights in Hong Kong and human rights among the Uighur peoples. I sincerely thank you for that.

My respect and admiration for the people of China is backed by activities of record. I have traveled extensively in China as a researcher, tourist and volunteer. The committee has received letters in support of my nonmention from many of my Chinese American colleagues, students and friends. Wei Jingsheng, widely regarded as the *Father of Chinese Democracy*, wrote:

*When in California, I have made an effort to visit Dr. Autry at his university and to show my support for his work in business, economics, space and civil rights*

I am not alone in my concern. A Pew research report last month showed that an unfavorable view of China is held by 73% of Americans, 73% of Canadians 73%, 75% of South Koreans 75%, 81% of Australians 81% and 86% Japanese.

There are areas where cooperation with the Chinese regime in space will be required due to treaty obligations and safety concerns. There are also other areas where cooperation with China may be desirable. In particular, the exchange of scientific data and materials may accelerate our knowledge of the solar system without risk to our IP or security. These choices will be made by NASA Administrator, guided by the White House and Congress.

**Question 7.** If the U.S. does not engage with China in space, are any other countries poised to counterbalance China's ambition and ensure that the space domain remains open and accessible?

**Answer.**

Another excellent question. Again, the CFO is not a policy making position, but my record on advocating for international engagement in space is very public.

Our goals in space must include expanding human knowledge as well as developing the economic and material potentials of that domain. These activities will benefit the American taxpayers who fund them, but will also return value to everyone on Earth, as NASA has for decades.

As we take our first steps into the solar system, we must be careful to avoid repeating the historical errors of the age of exploration and take carry only Lincoln's "better angels of our nature," with us. There should be no place in the future of humanity for totalitarianism, censorship, religious oppression or ethnic persecution. The world expects no less of the United States.

Many free nations have already joined our scientific and human exploration efforts in space. NASA's current work on the Artemis Accords, which will establish bold goals and set strong standards and behavioral norms in space, will benefit all nations. The swift adoption of these bilateral agreements by an expanding group of very diverse nations is a testament to the respect the world has for our space agency and our democratic institutions.

**Question 8.** If confirmed, how will you engage with China productively to prevent further militarization of the space domain and a counterproductive new “space race”?

**Answer.**

Again, the CFO is not a policy making position or diplomatic position. It is significantly removed from military policy and geopolitical strategy. Engagement choices will be made by the White House, Department of State, Congress and the NASA Administrator.

As an economist and business expert let me note that a “space race” need not be military nor counterproductive. Competition in scientific discovery, human exploration, technological innovation and commercial development can be a powerful, positive force. Whether that competition is on an Olympic ice rink or in space, bold attempts to enhance national prestige have often been a force for good. Many tangible benefits to humanity were spawned by the first Space Race including GPS, satellite communications, Earth imaging and the research computing network that eventually became the Internet.

**Written Questions submitted by the Hon. Jon Tester to Dr. Greg Autry.**

**Question.** NASA’s EPSCoR program brings much-needed research investment to places outside the major tech hubs, including Montana, and has long enjoyed broad bipartisan support in Congress. Why has the Trump administration worked so hard to eliminate not just this program but the entire Office of Education at NASA, including in the FY2018 budget that you helped to develop?

**Answer.**

Thank you, Senator Tester, for the opportunity to address this. The NASA CFO isn’t a policy making position, and the CFO does not establish the NASA budget. If confirmed it will be my job to implement the will of Congress as represented in appropriations.

My record in support of governmental funding for research investment is a strong and public one. As a business professor I specialized in teaching engineering students, and as a researcher I focused on the role of government in the emergence of new industries. I have noted my own STEM career was inspired by NASA’s accomplishments in the 1960s and 70s. I went from being a first-generation college student to a professor at a leading university, mentoring STEM student.

Regarding past decisions, I cannot speak for the White House on their broader goals. Specifically, I had no input whatsoever on any decision involving the EPSCoR program at the National Science Foundation.

I do not take personal responsibility for the entire 2018 budget request nor the specific decisions concerning NASA’s Office of Education. I don’t believe anyone opposed NASA STEM engagement and the issue was more about the most effective mechanism for delivering it. I would need to look into the current state of this issue and report back to you. An outside study to determine whether a dedicated office at NASA HQ is the most effective way for NASA to

deliver value to STEM education might be useful. If confirmed, I will implement Congressional STEM education appropriations under the guidance of the NASA Administrator.

**Written Questions submitted by the Hon. Kyrsten Sinema to Dr. Greg Autry.**

*Planetary Defense.* NASA is tasked with the responsibility of planetary defense, however recent studies and reports indicate that planetary defense research and activities are underfunded at the agency.

**Question.** How will you work with your NASA colleagues to ensure that this critical responsibility is adequately funded so that missions can meet their optimal timelines for launch?

**Answer.**

Thank you, Senator Sinema, for bringing up this important topic. The dramatic photos of comet Shoemaker-Levy 9 slamming into Jupiter taken by NASA's Hubble space telescope promoted the first Congressional response to the NEO threat. Much is already being done. The Catalina Sky Survey, based at the University of Arizona, has discovered roughly 50 percent of the 20,000 known Near Earth Objects (NEOs). NASA's Planetary Defense Coordination Office is working with powerful partners in government and industry. DoD, DoE, NSF and FEMA are already engaged in this process with NASA's Planetary Defense Coordination Office (PDCO). In September, NASA signed an MOU with the newly created U.S. Space Force that includes cooperation on Planetary Defense. Whenever appropriate we should seek align the interest of America's private investors with NASA's goals in order to maximize return to our taxpayers.

NASA is also engaging our international partners in addressing this global threat. The Asteroid Impact and Deflection Assessment (AIDA) mission, which combines ESA's Hera mission with NASA's Double Asteroid Redirect Test (DART) spacecraft which will test deflection techniques in space. Non-spacefaring countries can also contribute, and the International Asteroid Warning Network (IAWN) is good example of this.

If confirmed, I will prioritize bringing myself up to speed on the critically important NEOSM (Near-Earth Object Surveillance Mission) project and other proposals for tracking threats to our planet, and keep you informed on the progress.

Testing mitigation options is important as well. Most important, as referenced in your question, is insuring the launch of NASA's DART spacecraft next July. DART benefits from years of investments Congress has supported in NASA's Solar Electric Propulsion (SEP) systems, also being used on the upcoming Lunar Gateway. As CFO it would be a priority of mine to ensure that the DART project stays on schedule for its critical launch window. The target binary asteroid will not wait for us to be ready. If confirmed, I will do what is in my power to clear any bureaucratic delays and work with you and with OMB to make sure the funds appropriated for this are well and properly used, and that you are kept informed of the progress on the project. I look forward to working with you on planetary protection efforts if I am confirmed.