



Astronauts Steve Robison and John Glenn (NASA photo)

Interview with John Glenn

By Brian Riley

Interview: August 16, 2012

Posted: June 11, 2013, 9:00 pm Pacific Time

BRIAN RILEY: I was reading up on some of the [things that were written starting in 1974](#), when it became a popular topic—colonizing space—putting space stations up. What’s your take on humans colonizing space?

JOHN GLENN: Well, I think it’s good to do [research](#) first. I think we’re a long ways from really putting colonies of people out there who would live their whole lives out there in space. I don’t see that happening for quite some time. I think that it’s good for us to be able to travel in space and do research in space, and I emphasize the research, because space travel to me is far more than just seeing how far we can go. Exploration, of course, is going to new places, but I don’t think we go to new places just solely to say: “Well, we’ve been there,” and come back, interesting though it may be. To me, each time we go farther into space we should use that to do basic research—basic research that can’t be done before you go there. That’s the reason I think

the Space Station is so important right now. I think there's a lot of research to be done there that we have not even touched yet, largely because we've been very limited with the cut of the shuttle system—the ending of the shuttle system that President George W. Bush decreed. That has left us without a way of getting back and forth to do some of the research we would like to have done.

GLENN (continued): But I think no matter where we go in space to me the important thing is not only getting there and getting back, but it's also doing research, because that opens up as a possibility with that new distance of travel in space. As far as actually setting up colonies of people who would live their whole lives in space, I think we're a long ways from doing that yet, and I think we have many, many decades before we could be able to even consider something like that.

RILEY: I think President Obama mentioned a goal of sending a human being or human beings to Mars in the decade of the 2030s?

GLENN: Well, I think the flight to Mars has been talked about many times, and some planning has gone on. And of course, a precursor to people going is to do the robotic research that we're doing right now with [the new robot that we have on Mars right now](#) and it will be sending back a lot of information. I think sometime we will go to Mars and I think we'll explore it with humans sometime, but I think it's really wise to do all the robotic exploration ahead of time and learn as much as possible. Once we have learned as much as possible with the robots, then that's the time to send people, and let them then continue the research that the robots have started.

RILEY: What's the next step in studying the topic of the aging process of humans in space? Are you saying the next step is to study more people?

GLENN: Yes, I would like to see us have more people in the age bracket I was in, between 75 and 80, when many of these changes that occur in the human body on Earth have already started, or have been progressive, and then you go into space and compare that with younger people, and maybe we get some clues for things like turning the body's immune system on and off—What can enhance that?—Or enhancing protein return to the muscle, “PTO” as it's called, [protein turnover](#). Things like that are things that I think are what we should be looking into right now particularly on the Station. That's the reason we built the International Space Station and spent over \$100 billion on getting it up there, and it's too bad we don't have our own means of traveling back and forth.

GLENN (cont.): I think President Bush's decision to cancel the shuttle was just flat wrong. I just disagree with that, and I think that limited the research we can do, but we're getting back to it as much as we can, and we're in the process of developing new means of—where we will have our own means of transportation back and forth to the Space Station. Right now, of course, we have no means of getting to our own Space Station. We have to pay the Russians to put our people up there to send them into space—rendezvous with the Station and bring them back at the end of their stay, and that to me is just wrong. We're supposed to be the world's greatest space-faring nation, and to cancel our own means of getting there I thought was a mistake, even though it would save some money, but President Bush made the decision that we're—he re-directed

NASA toward going back to a base on the moon, but with no budget to get there, and said it had to be done on the existing NASA budget. That budget then—What they had to do, or what he had to do, what he did was say we'll end the Space Shuttle, because it is expensive. It's about \$400 million per launch. And they're going to cancel the Space Shuttle and use that money to plan a mission to the Moon, and in the meantime we have to depend on the Russians to put our people into space and bring them back, and I just don't think that was a very bright decision, or a right decision, so anyway that's behind us now and we're developing new means of getting to the Station, and I hope those come along as fast as possible.

RILEY: Do you think private industry can pick up the slack and produce launch vehicles?

GLENN: Well, I'm sure they can, but you know it's called "the commercialization of space," which I thought was a misnomer, because we've always depended on private industry to do the building of our space equipment anyway under NASA direction, and that was fine, and that's basically what we're still doing now, except the manufacturers are putting a little bit of their own money into it compared to the government money, and we have three different basic competitor groups: SpaceX—They're the one that sent up the Dragon spacecraft a short time ago; then we have the Sierra Nevada Corporation in Colorado—They're working on a different idea for transportation back and forth; and then Boeing is also involved. So I'm sure that one of those companies will come up with what will be selected as a primary transportation system back and forth to our Space Station.

RILEY: You remember [President Kennedy's famous speech](#) when he said we should go to the Moon. Do you think that a president should say something similar to that today or somebody should say something—set a goal like that?

GLENN: I'm sure we'll get back to something like that. I see this in a little bigger context, perhaps. It's not just a stunt. I think if you go back and look at the philosophy of the United States since our founding days, there are two things that have probably been more important in moving us ahead than any other things that we could have done. Number one, this nation had an emphasis on the individual and so education became available for everyone, and that was number one. That was important. The second element was that we did more research. We put more money into research, into the new and the unknown than any nation in history, and the same thing with education, and those two things led us into a worldwide preeminence in a very short period of time. I think those two things are just as applicable today, in our competitive position around the world, than they have ever been in the past.

GLENN (cont.): We need the best education system in the world. We have it in higher education. We do not have it in general education for all of our people—the K-12 education. Other nations are far, far outdoing the United States in that area. We still have the lead in research, but once again, other nations are pouring more into research also. We still have a lead, but to me it's just very, very important that we keep that lead in basic research, and that's where this idea of the Station and what Steve Robinson's going to be doing there at UC Davis, things like that, that expand our knowledge and continue research in keeping us in the lead in research in the world. We're in a newly competitive position around the world, and unless we keep our lead in education for all of our people and do the research along with that, other nations will start

outdoing us and they will be leaders in the world, and so I see this as being very, very important—the kinds of things that we're doing, and the kinds of things that Steve will be doing there at UC Davis, also.

RILEY: How about after Sputnik. I wasn't alive, so I don't remember, but there was [a big emphasis on education after Sputnik](#). Do you think we need something like that again?

GLENN: Absolutely. On K-12 education this country has gone down, down, down compared to the other nations. It doesn't mean that we have gotten dumber. It just means that we have not advanced as fast in those areas as other nations have done, and we're way down right now. I headed up—some years ago, though; it's been over 10 years ago now—I headed a [national commission](#) sponsored by the Department of Education to look into that very area of K-12 education, because we had some studies, international studies, of 41 nations around the world over a three-year period that showed that other nations were beginning to outdo us in K-12 education and that our kids up to about the fourth grade have a good concept of science and technology. By the time they get out of high school they rank way, way down. We're one of the last of the 41 nations by the time our kids get out of high school, compared to other nations, in math and science and technology. Now in higher education we're still the envy of the rest of the world. But for all of our people we need to upgrade that educational level and get more emphasis on it, and so local, state or federal cuts in education, I think, are a big mistake, and I think we have to get back to being the best educated general citizenry in the world and make sure we do not lose our lead in research, if we're to have a leadership position in the world.

RILEY: Do you have any ideas what might be causing our K-12 problems? Is it perhaps because of a lack of funding or a lack of focus?

GLENN: The teaching level—we found that at that time, if it's not gotten better in the last 10 years, but at that time the math teachers in high school, for instance, twenty-five percent of the math teachers never had any training in teaching math. They were graduates of teacher schools, but they did not have any special training in teaching math as a subject. Twenty percent of the science teachers were in the same category, and even more importantly, there was in both categories in math and in science, about thirty percent of the teachers left the profession within three years and fifty percent were gone to other things and to other locations within five years. So there is not a stable teaching cadre there. In other words, if a math teacher is good, or a science teacher is good, a fair percentage of them will be hired out of that profession to work for AOL or Apple or one of the technical companies. We have not had the same stability that some other nations in the world have had with their teachers.

GLENN (cont.): Another big difference, too, was that most of our competitor nations around the world have a national education system and we're the only major nation in the world that operates off of local school boards. They receive very little direction from state boards of education or from the nation. So local school boards direct basically what happens and too often they're not willing to track or to do the supervision of the education system that will make it world competitive. In other nations they have nationwide education systems where the money is put out more equitably across all of these different areas of the country. In this country, just for example, at the time of our study back ten years ago, the number of schools boards in the United

States was at 14,700. I think it's a few less than that now. But at that time that means that we had 14,700 different school board entities setting largely the curriculum and the money and the local taxation that determine how the education system went in their particular area. And so I think that's a big holdback for progress in that area also. So those are just some things that I think our study ten years ago showed, and if anything has become worse today.

RILEY: Do you have any thoughts about your flight on the space shuttle with Steve Robinson and him becoming a university professor?

GLENN: I think it's great he's doing that and using his background, his experience, his education to help pass it on to other people who I hope will be inspired by *his* like. Steve is really an outstanding person. I tell you, NASA's loss is UC Davis' gain, because he's truly one of the outstanding astronauts, and I didn't know where he was going to go after his astronaut days, but UC Davis is fortunate in getting him. Steve is really top-notch material.

RILEY: He plans to set up a new research center to study the interaction between humans and vehicles, and it could be any vehicles in hazardous environments. It could be space vehicles. It could be underwater vehicles, or whatever kind, and he calls this "extending the human presence in hazardous environments."

GLENN: Yeah, I know about that. I've talked to him a little bit about that, not a whole lot, but a little bit.

RILEY: Do you have any thoughts on that kind of research?

GLENN: I think it's excellent research. We're getting so dependent on machines and computers, and yet the human element of this, I think, and how you integrate this and what the relationship is and what you can depend on computers to do and what you have to still depend on people to do is a great field to be studying. There has not been as much work done in that area as there should be and that's what Steve will be looking into, as I understand it. The astronauts are very highly selected, obviously, and there's competition to get a slot, and Steve was selected, of course, after stiff competition. But then within the astronaut group, there's some just regular—I won't say "run-of-the-mill astronauts," because that would be an overstatement, but some of them are outstanding within the group, once they've been in NASA for a while and have flown and had some experience, and Steve was in that group that really excelled within the astronaut group in NASA. So he's an outstanding person and very well qualified to look into this area and I'm sure he'll be a great benefit to UC Davis.

RILEY: Do you have any particular memories that stand out from your 1998 space shuttle flight with Steve and the other astronauts?

GLENN: Oh, lots of 'em. We had seven people on that flight and that was something very different to me, since [the other flight](#) I was on was [the first US orbital flight](#) back in 1962. And that was one in which I was alone on, of course, so it was very different to fly with a total of seven people on board on [Discovery/STS-95](#). Steve was one of the more outstanding crew

members and supervised all the research that we were doing on that mission, and I was involved with some of that research. So I worked very closely with Steve. He's a good friend.

RILEY: Is there anything you would have done differently on that flight, if you had a chance to do it again?

GLENN: Oh... No, I don't know that there is. Each one of us had our assigned duties on that flight on a timeline that covered the whole flight all nine days, and we had the experiments put up so that each one—We had 83 different research experiments on that one flight, and so it was a very busy time and each one of the seven crew members had a number of things that each one of us was doing in the research area we were assigned to. Doing it differently? I suppose there might be something different. I don't remember anything I would in particular have done differently. But I'm sure there were—You make a mistake once in a while, so I wouldn't say that it was a hundred percent perfect, but I don't think of anything offhand that I would have done any differently, no.

RILEY: UC Davis also has two other alumni astronauts. One is [Robert Phillips](#) who received his PhD in physiology/nutrition. You might have heard of him, because he had a role as Chief Scientist in NASA, involved with preparations for the space station for a few years in designing the International Space Station.

GLENN: Yeah, I know the name. I don't know him personally.

RILEY: He almost got to go up in space. He was trained as a payload specialist, but then we had the 1986 Challenger disaster and they put off his flight and then the next time he had an issue with a heart condition, so they grounded him, so he didn't get to go up, but he's an expert on studying things like the human aging process in space, so I was going to interview him again after I interview you and maybe see if I could quote him in the article, too.

GLENN: Yeah. The aging in space—that's the reason I was up on that second flight. That's what I was studying. In fact, I was on that flight because when I was in the Senate in Washington, one year when we were preparing for debate on the Senate floor about the NASA budget, I was looking at some of the things that had been discovered in space about the human body, and NASA had charted some 52 changes in the human body that occurred during long term space flights, and a number of them are very similar to things that occur in the natural process of aging right here on earth. When I went up on that second flight I was 77. Now, here on Earth your body's immune system changes somewhat when you get older and you become less resistant to disease and infection. The same thing happens to younger astronauts in space over a period of time. Another one is, as you get older, your body's ability to replace protein in the muscles becomes less, and the same thing happens to younger astronauts during long-term space flight. There are several other things like that.

GLENN (cont.): But what I was looking into, since I was 77, what I proposed was that we look into some of these things and see if we could find out what within the human body turns these systems on and off. In other words, if we could do something that enhances the body's immune system here on Earth, it would be a tremendous step forward in the fight against disease and

[inaudible] and cancer and other things. So that's what my purpose in being up there was, to make measurements and do research on me at the age of 77 to see if we could find out by comparing the results on me in space with the younger people and maybe get answers to some of those things on the immune system or protein turnover or vestibular functions and other things—heart changes. So that's the reason I was up there was to do research on aging and that has not been followed through on. I was the only person of that age who's been in space, and I've always thought that if NASA followed up getting some other people up in that age bracket so that we have a base of half-a-dozen people or so, then it starts meaning something scientifically. So far in that age bracket I'm the only one that old that's been up there. So we need more examples of that, and I hope that that kind of research on aging is continued one of these days.

RILEY: That kind of echoes what Robert Phillips told me. He said that it's difficult to draw a lot of conclusions from one person on one flight like that.

GLENN: That's exactly right. My comparison with the younger people came out pretty good. We didn't make any big breakthrough discoveries, but that doesn't mean they're not there to be made, and I still think we need to do more. I talked to the people in NASA about the possibility of putting some older folks on board and maybe even one of these days when we get our own means of transportation back and forth to the Space Station again—putting some of the older people up there for a longer period of time and see what the response is. They're interested in doing that. They just haven't been able to do it so far.

GLENN (cont.): Before we finish let me just put a word—I think UC Davis is very fortunate to have gotten somebody like Steve Robinson. He's highly interested in it. He's looking forward to it very much. I talked to him just a short time ago. He's really looking forward to getting going out there and helping establish this new area, and I say it's a loss to NASA to lose somebody like Steve, but it's UC's gain.

--

Brian Riley can be reached at info@brianriley.us

[CLICK HERE](#) to read the related article.

[CLICK HERE](#) to read an additional article.

See also:

[Friendship 7 launch video](#)

[Friendship 7 film](#) (launch: 15:30 to 20:21, landing: 25:30 to 29:18)

[Friendship 7 reentry transcript](#)

[Friendship 7 patch](#)

Friendship 7 television news coverage: [Part 1](#), [Part 2](#), [Part 3](#), [Part 4](#), [Part 5](#), [Part 6](#).

[Discovery/STS-95 launch video](#)

[Discovery/STS-95 landing video](#)

[Discovery/STS-95 patch](#) (designed by Steve Robinson)

Discovery/STS-95 television news coverage: [Pre-flight](#), [Part 1](#), [Part 2](#), [Part 3](#), [Part 4](#), [Part 5](#), [Part 6](#), [Part 7](#), [Part 8](#), [Part 9](#), [Part 10](#), [Part 11](#), [Part 12](#), [Part 13](#), [Part 14](#), [Part 15](#), [Part 16](#), [Part 17](#), [Part 18](#), [Part 19](#), [Part 20](#), [Part 21](#), [Part 22](#), [Part 23](#), [Part 24](#), [Part 25](#), [Part 26](#), [Part 27](#), [Part 28](#), [Part 29](#), [Part 30](#), [Part 31](#), [Part 32](#), [Part 33](#), [Part 34](#), [Part 35](#), [Part 36](#), [Part 37](#), [Part 38](#), [Part 39](#), [Part 40](#), [Part 41](#), [Part 42](#), [Part 43](#), [Part 44](#), [Post flight 1](#), [Post flight 2](#).

[Omni magazine interview](#) (October 1983, pp. 127-132, 190) ([PDF version](#))

Key names/terms: John Herschel Glenn, Jr., Stephen Robinson, Robert W. Phillips, Tracy Caldwell Dyson, STS-95, Curtis L. Brown, Jr., Steven W. Lindsey, Pedro Duque, Scott E. Parazynski, Stephen K. Robinson, Chiaki Mukai, John H. Glenn, Jr.

[Google News search](#)

[HOME](#)

Previous version: [interview_with_john_glenn_5_june_2013.html](#)

http://brianriley.us/interview_with_john_glenn.html