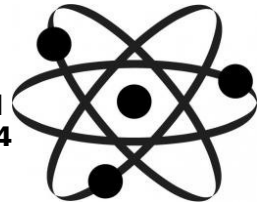


American Workforce Policy Advisory Board May 19, 2020 Meeting Public Comments

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**Brian Lantz
7254 Roos Road
Houston, Texas 77074**



May 11, 2020

Ms. Ivanka Trump, Co-Chair
American Workforce Policy Advisory Board
Advisor to the President
The White House
1600 Pennsylvania Avenue NW
Washington, DC 20500

The Honorable Wilbur Ross, Co-Chair
American Workforce Policy Advisory Board
Secretary, U.S. Department of Commerce
1401 Constitution Avenue NW
Washington, DC 20230

RE: Public Comment submission, to the American Workforce Policy Advisory Board

Dear Adviser Ivanka Trump and Secretary Wilbur Ross:

Attached is prepared testimony, as public comment addressed to the American Workforce Policy Advisory Board and to its members. As your charge is to provide advice and recommendation regarding the existing skills crisis, I hope to make a contribution.

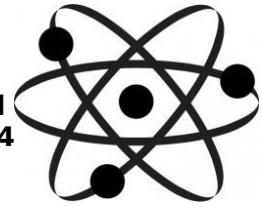
I have benefited from frequent discussions with engineers, scientists, union members and vocational teachers, as well as speaking to university audiences and collaborating in community meetings on STEM related topics.

NASA's "Project Artemis" can be the leading edge of a broad nation-building initiative, once again vectoring our nation towards high rates of scientific and technological progress, in a multi-generational Moon-Mars project. It will demand more of us, as has the war to defeat COVID-19. It will demand the training of a much larger and skilled workforce, one called on to accomplish tasks that frankly are not yet known. With leadership, we will once again "fire imaginations."

I am happy to help, and welcome inquiries. Thank you for your time and consideration.

Sincerely,
Brian Lantz
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**Brian Lantz
7254 Roos Road
Houston, Texas 77074**



May 10, 2020

Public Comment, submitted to the American Work Force Policy Advisory Commission

Rebuilding a National Workforce of Rising Productivity

With the COVID-19 pandemic, we have all been relearning what is “essential” and what is not. A number of underpaid, blue-collar and no-collar jobs are turning out to be essential, and a lot of service sector jobs...well, not so much. It turns out that critical infrastructure workers are an important part of the COVID-19 response, along with those on the front lines.

Of course, the war to defeat the virus might be seen to complicate the Workforce Advisory Board’s efforts to reform and advance effective programs to upgrade our workforce. Instead the hard-won success of the President and his Administration in mitigating the virus, and in particular the successful mobilization of public and private collaboration to produce ventilators and PPE, as well as develop testing and therapies, points to clarity and greater opportunities.

It will take more than more or better apprenticeship programs to build the workforce of the future. First, we must inspire our young people to step-up. To our advantage, our nation, including our youth, have clearly been inspired by the mobilization of national capabilities and efforts to defeat COVID-19. Men and women – and youth – have shown remarkable heroism, grit, and creativity. They require now the inspiration of a great national mission. As a 2007 National Research Council consensus report reminded us,

According to the committee’s interviews and panel discussions, students need to believe that what they are doing will contribute to compelling (even transformational) scientific or engineering research and/or contribute to an important national goal such as space exploration. The goals need to be viewed as real and stable and as having the potential to contribute to important advances in a meritorious field. (1)

I believe that this is the critical element found missing in discussions of our workforce dilemma, which otherwise grapple with the gap in skilled and semi-skilled trades. I am associated with economist Lyndon LaRouche and LaRouche PAC and I have had a concern for some time with how to inspire America's younger people to embrace futures at the very frontiers of science and discovery. This is especially concrete now, as we seek to emerge from the shutdown caused by the virus. I have benefited from frequent discussions



Houston Community Center Meeting to learn about NASA's Project Artemis

with engineers, scientists, union members and vocational teachers, as well as speaking on university campuses and collaborating to organize community meetings on STEM related topics. I have researched and written on this and related topics for more than forty years. Here I will quickly review the direction of our nation's and Mankind's space efforts, and then turn to the issue at hand, that of creating new generations of skilled and productive families.

The Future of Mankind in Space

In December of 2017, President Donald Trump signed Space Policy Directive-1 to return Americans to the Moon and prioritize crewed missions to the lunar surface. On March 26, 2019, in remarks to the Fifth Meeting of the National Space Council in Huntsville, Alabama, Vice President Pence announced the Administration's intention to send the first woman and the next man to the moon within five years. Vice President Pence framed this as the front end of the broader Moon-Mars program which President Trump has addressed on several occasions. NASA's "Project Artemis" can represent the leading edge of a broad nation-building initiative, vectoring our nation towards high rates of scientific and technological progress. Project Artemis can and must be the fully conceived as an inspiring, multi-generational project to colonize the Moon and Mars.

Rebuilding and rapidly transforming the US economy today, to fully participate in creating a "space infrastructure platform" for our nation and for mankind can inspire the development of today's and tomorrow's workforce in many demanding and creative ways. We can mobilize a creative potential which exists in our young people, but may seem hardly visible in the current cultural prison. We can "fire their imaginations."

Indeed, leading nations including the US, but also Russia, China, India, Japan and others are on their way to the Moon and Mars! What is happening ?

If we step back, we see that Mankind is in the process of building out, in both cooperative and competitive ways, the beginnings of a interplanetary space infrastructure platform for mankind. This is an exciting opportunity with which to challenge the nation. As you might recall, President John F. Kennedy proposed a joint program with the USSR to go to the Moon. This was in his September 20, 1963 UN speech to the UN General Assembly, just one year after the Cuban Missile Crisis!

We have the unique opportunity to build on a new-found purpose to revamp and upgrade our productive capacities as we further redirect our nation to insure generations of rising productivity and secure the futures of our communities and our families. We can now organize our nation towards a comprehensive upgrading of labor force productivity, in conjunction with seeking our scientific breakthroughs on the frontiers of knowledge. This will absolutely require a rapid rebuilding of our advanced manufacturing base, as well as new supply chains and the revitalizing of the old.

Rebuilding and rapidly transforming the US economy today, to fully participate in creating an "interplanetary space infrastructure platform" for mankind will require the development of today's and tomorrow's workforce in many creative ways:

*We will increasingly be working with those aspects of nature that lie in the micro-physical and macro-physical domains, requiring an increasingly sophisticated reliance on instrumentation that extends beyond the reach of our five senses. This includes, emphatically, the study of living processes and their applications.

*Our workforce will be working with much higher energy flux densities which require increased precision and sophistication in instrumentation and machine tool design and applications. The concentration spans must dramatically increase. The recent statement by a Pentagon spokesman that the US needs a “precision manufacturing capability” only indicates the scale of what is required.

*As we know, the cultural level of our workforce, and the communities from which they are drawn, must be dramatically and joyfully ‘up-shifted,’ to reflect a growing mastery and celebration of the creative capabilities in each person. This requires, as Lyndon and Helga LaRouche have developed, a conscious return to classical cultural principles. These qualities will necessarily be reflected in the growth and development of our families and family life.

This requires that we mobilize the potential which exists in the young. We must “fire their imaginations.” President Trump has spoken of our current national situation, struck by the virus, as being equivalent of WWII or 9/11. Recall the response to President Kennedy’s post-Sputnik announcement of a national goal: to place a man on the moon, and return him safely to earth before the decade is out. Recall also the WWII mobilization following Pearl Harbor, and the lines that formed outside Draft Board offices.

The “First Tier” of a modern day “Space CCC” might draw again on the original Civilian Conservation Corps (CCC) program of the 1930’s and early 40’s. This time, campuses could be urban based as well as rural, with significant educational and cultural components, and collaborate with community based organizations (CBO’s). (3) I have written on this, and if there is interest, I would be glad to share my thoughts. However in this paper, it is important to concentrate on the “Second Tier” of workforce development that is critically important to the Commission’s task. Here we are talking to young men and women who already have, or soon will have, a high school education or GED, and are ready to think about what they need by way of career and technical education.

Becoming a Machinist, and Raising a Family



*Houston Community College
Manufacturing Lab*

learning the skills, problem solving, and creating. I believe you are aware of this.

A longtime teacher and skilled machinist gave me his explanation for the difficulties in recruiting youth to his skilled line of work: the biggest hurdle in getting students interested is convincing them that the work is not dirty, hot and physically hard. They have the idea in their head that this is a dirty job, like working as a car mechanic and otherwise working in a shed. His program has been able to fill less than 50% of the available training program. It is not the technical difficulty of the program which is stopping people from joining, he pointed out. And once a student starts the program, they quickly get hooked by the process of

However, there is also the systemic problem of generations of assault on productive employment in

areas of technology and science. We have been through waves of layoffs over the decades which rippled through the heartland of the US, as in oil & gas, and in the NASA program itself. What reliable career has there been on the horizon, for a dedicated young man or woman to commit to, being assured of an income with which to settle down and raise a family? For example, what would Boeing now say? Can NASA put this concern to rest, honestly looking back in its own rear view mirror? Perhaps one could arrive at the military-industrial complex as offering challenges and security. However, if that is all that is left of our proud agro-industrial might, who is going to be left to pay the taxes to sustain it!

So, what is the forecast for stable, challenging employment of an aspiring electrical engineering tech, or other prospective two year graduate armed with an solid “associate of science in engineering” degree? What must be done to make the American middle class viable again? To raise a family based on a single wage earner’s paycheck – or a wage earner-and-a half? This unanswered question is also why many of our machinist and engineering tech programs at community colleges are under enrolled. **We now require a farsighted industrial policy for our nation, pivoting on a truly national program for Moon-Mars colonization.** The idea is as old as Alexander Hamilton and has never really gone away. It is the federal government, to insure the general welfare, that must now be brought forward, partnering with agro-industrial businesses, to organize stability in the market place, reward foresight, and most importantly insure the viability of long term capital investment in plant, equipment and labor force.

As you are all well aware, there is already on-going coordination between corporations with their own apprentice programs; collaborating are state governments and local community colleges, vocational schools and also universities. The apprenticeship programs of trade unions also play a significant role in providing reliable trained workers. Transitioning veterans also measurably add to the potential pool. However, these efforts lack a Moon/Mars Mission transformative national calling. Even in their own terms they are hit-and-miss, as often self-admitted. Consider if you are a corporation, operating under guidance from your CFO – perhaps appointed on the advice of a stockholding hedge fund -- and perhaps facing a corporate merger. How much time is dedicated to working with community college representatives on job training programs for tomorrow’s workforce? Consider likewise the pressures on a relatively small highly specialized machine shop owner working with the ups and downs in manufacturing, mining, and oil & gas in today’s upside-down world. And that was before COVID-19! **We will need federal coordination, perhaps a Labor Task Force as part of realizing a national industrial policy, to creatively promote and problem-solve a growing and skilled workforce in the context of our modern day, Promethean “Moonshot.”** It will raise the bar. Such a federally coordinated effort will have the task of evolving and up-shift our workforce over the coming decades.

Having said that, let’s spin off some figures, and create a snapshot of one profession, that of a machinist (of which there are many specialty certifications). What might our Moon/Mars Mission and broader, renewed manufacturing base require? There are currently about at least 380,000 machinists working in the the United States, according to the US Labor Bureau of Statistics. (Some figures go as high as 480,000.) In the short term, if we were to plan to triple this number, what would that take? I don’t think that is an extreme number, under our circumstances. It is probably an underestimate of what we will need, to bring back supply chains and build up the high tech manufacturing base of a US “full-set” economy. That would require the training of 800,000 additional, motivated men and women in at least an initial two year professional program, in a relatively short period of time – say over a decade at most. They would already need a high school education or GED, and be seriously interested, before entering these programs. There would then be continued on-the-job training, as in the machinist profession and engineering techs.

So this would be, what we might call the higher, “second tier” required within an overall “Space CCC.” This 2nd tier would not be organized around campuses, as might less skilled jobs training, but around existing advanced training centers, and new “manufacturing and innovation centers” that would be built. These would overlap with and be coordinated with existing and expanding apprenticeship programs that would also need to be federally supported and incentivized. Discussions with NASA and an appreciation of NASA’s in-house training programs might be fruitful. None of this can be reduced to short term corporate or government cost-benefit analysis as a basis of decision making. We have already gone down that road, and paid the price.

At the federal level, and in dialogue with the American people, these programs would be created in tandem with the new space-related and ‘hard’ as well as ‘soft’ infrastructure programs being financed through a national bank or equivalent, utilizing new targeted national credits. Indeed such a “second tier” would play a vital part in building out a new national infrastructure platform, and the “first tier” could find in them a vital training ground as well. If this initial “burst” effort, to produce 800,000 young, new qualified machinists, was to be completed within approximately a seven-plus year period (for example), this would require approximately 125,000 students entering the program each year and successfully completing their programs in two years.

Machinist studies and hands-on work are not simple, but reportedly do quickly absorb the attention of participants. They are designing, making, building and producing actual products, constructively with their minds and hands. Likewise in fields such as electrical, HVAC and so-forth. Further, there is continuing “on-the-job” training, as this is inherent in nature of LaRouche’s “Machine Tool Principle.” The discovery of new physical principles as well as new applications of the old, drive the machine tool design sector; these new capabilities find their way into the development of new machine tools and materials science, creating waves of innovation in machine tools applications. The pay scale also must increase with the improving skills and productivity, and rewards the family and community. As one aspect, we can keep in mind that “space age materials” are going to be particularly demanding in terms of a developing new skill sets. Oil & gas is already an area where these new materials are being used for the development of new drill bits that can withstand extreme pressures and temperatures, but this is only one example. Likewise in other areas of production, mining and transportation. Now in the development of hypersonics as well. These skills will help us mine and colonize the Moon, and the overall Moon/Mars Mission will drive the creation of new technologies and materials science, and spinoffs which can be forecast as orders-of-magnitude greater than even the NASA Apollo Program.

A clear science driver, for now expanding our manufacturing and machine tool sectors, would be a much expanded and supported “Moon-Mars” colonization program for the USA. Such a program has been envisioned with Project Artemis but needs to be scaled up to a national mission of the dimensions of the Apollo program of the 1960’s. The real cost is less than nothing. Published studies in the 1970’s already determined that for every penny spent on the Apollo Program, seven pennies were returned to the US economy and the American people. (1)

Today, the President and his administration can apply similar “American System” methods to re-opening and rapidly expanding our economy. It is clear that certain sectors of our nation’s economy, such as in the service sector or in oil & gas, will not employ as many people as in the past. I would add that in the Houston Metro region, there are many former NASA workers who were displaced and re-employed in the oil and gas sector [and may well be unemployed again]. They would love to return to NASA or to the private contractors of a revitalized and expanding US space program. In addition to a national space mission, I would also suggest collaborative missions in the biosciences, the construction of great infrastructure projects, the development of fusion

energy, and the building of new cities. Such projects can also be organized to pay for themselves many times over.

The revival and further upgrading and expansion of our real economy require a targeted infusion of federal credits on capital account, at the leading edge of science and technology development. With a galvanizing effort led by President Donald Trump, we can also provide the missing ingredient to our national workforce quandary. That is, inspiring our youth to become the newly upgraded workforce of machinists, welders, engineers and scientists that we require and will require for the foreseeable future. We can, in accomplishing this, also inspire their parents and grandparents with new found hope for our nation's future.

There is certainly the human potential. The explosion of the "makers movement" and success of Fab Labs in a variety of educational environments shows up the interest of young people in building "things" – engineering-oriented pursuits such as electronics, robotics, 3-D printing (additive manufacturing), and 3D computer-aided design in the use of CNC machine tools. We don't have time to waste.

Sincerely,

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*Houston Community College Fab Lab
Display at Community Event*

(1) Michael K. Evans, *The Economic Impact of NASA R&D Spending*, Chase Econometric Associates, Inc., Bala Cynwyd, Pennsylvania, Contract NASW-2741, April 1976. Like the Midwest Research Institute report of 1971, this study showed an overall seven-to-one return on NASA expenditures but arrived at this figure using different methodology. Additionally, the study suggested that a sustained increase in NASA spending of \$1 billion for the 1975-1984 period would increase the gross national product (GNP) by \$23 billion by 1984; reduce the rate of increase in the Consumer Price Index by 1984 such that it would be a full 2 percent lower than indicated in the baseline projection; reduce the unemployment rate by 0.4 percent by 1984, and increase the size of the labor force so that the total number of jobs would increase by an additional 0.8 million; and by 1984 increase productivity in the private non-farm sector by 2 percent more than the baseline projection.

(2) *Building a Better NASA Workforce: Meeting the Workforce Needs for the National Vision for Space Exploration* (2007), National Research Council Consensus Study Report, ISBN 0-309-10765-2 Available through <http://www.nap.edu>

(3) *Building Community College/CBO Partnerships, A report to the William and Flora Hewlett Foundation* <https://files.eric.ed.gov/fulltext/ED486153.pdf>