

IMPORTANCE OF STEM FUNDING FOR OKLAHOMA

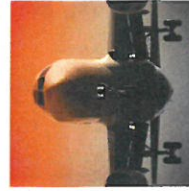
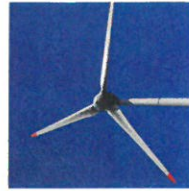
According to State of Oklahoma's Department of Commerce, the state will need to fill over **24,000 technical positions** to maintain the current technical business workload through 2026.

Without more funding of STEM programs starting today, the state's educational system will be **unable to maintain, much less grow, a viable workforce** to meet the existing demand from high-tech industries (e.g. petroleum, aerospace, information technology, renewables, civil, electronics, agriculture and medicine). Thus, to meet this demand, the state will be forced to attract people from other states or these positions will simply go elsewhere. In either case, it will **rob the opportunity to develop our young in-state talent**.

To maintain current requirements combined with future growth potential, there is an essential requirement for **educational funding for secondary/college to increase over the next 10 years**. This funding will provide **JOBS FOR OUR KIDS** and allow them to stay in Oklahoma as well as provide a sustained growing tax windfall of over **\$2.0 Billion to the state**. Without it, Oklahoma will continue to see outsourcing of our brightest students and their jobs to other parts of the Nation.

Description	2016 Jobs	2025 Jobs	2016-2025 Change	Openings	Median Hourly Earnings	Typical Entry Level Education	Work Experience Required	Typical On-the-job Training
Petroleum Engineers	2,852	3,247	395	1,185	\$62.22	Bachelor's	None	None
Architectural Engineering Managers	1,790	1,970	180	714	\$56.31	Bachelor's	5+ years	None
Mining and Geological Engineers, including Mining Safety Engineers	474	544	70	203	\$51.29	Bachelor's	None	None
Computer and Information Systems Managers	3,102	3,479	377	731	\$45.63	Bachelor's	5+ years	None
Electronics Engineers, except computer	1,571	1,492	(79)	300	\$43.24	Bachelor's	None	None
Chemical Engineers	329	354	25	110	\$42.83	Bachelor's	None	None
Aerospace Engineers	762	787	25	227	\$42.81	Bachelor's	None	None
Industrial Production Managers	2,829	2,966	137	912	\$40.92	Bachelor's	5+ years	None
General and Operations Managers	25,250	27,779	2,529	8,672	\$39.31	Bachelor's	5+ years	None
Computer Network Architects	729	791	62	169	\$39.06	Bachelor's	5+ years	None
Industrial Engineers	1,862	2,083	221	757	\$38.04	Bachelor's	None	None
Mechanical Engineers	2,550	2,851	301	1,093	\$37.95	Bachelor's	None	None
Electrical Engineers	1,328	1,442	114	401	\$37.93	Bachelor's	None	None
Civil Engineers	2,743	3,037	294	1,127	\$35.01	Bachelor's	None	None
Computer Systems Analyst	3,455	4,179	724	1,176	\$34.04	Bachelor's	None	None
Electrical and Electronics Repairers	206	216	10	43	\$33.96	Postsecondary nondegree award	None	Longterm on-the-job training
Aerospace Engineering and Operations Technicians	41	49	8	19	\$30.99	Associates	None	None
Computer Programmers	2,439	2,425	(14)	569	\$29.50	Bachelor's	None	None
Electrical and Electronics Engineering Technicians	1,611	1,676	65	431	\$29.33	Associates	None	None

EMPHASIS ON SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS IS OKLAHOMA'S FUTURE!

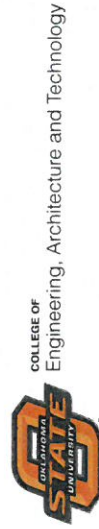


Funding of STEM programs today:

- is for OUR KIDS' future
- is for OUR State's economy
- will be \$\$\$ well spent

It takes 10 years to develop a STEM grad.

Providing educational capacity in the state means a larger tax base in the future. The **TIME IS NOW** to act for Oklahoma's future prosperity.



THOUGHTS FROM SOME OF OKLAHOMA'S SUCCESSFUL ENGINEERS ON WHAT NEEDS TO BE DONE:



"The U.S. needs more people educated in science, technology, engineering and mathematics (STEM) to maintain our technological pre-eminence in the modern battle space. The inability of the state of Oklahoma to produce enough STEM graduates causes me great concern. I would simply ask you to keep the pressure on, I need your help. I can hire every four-year engineering graduate the state of Oklahoma produces at Tinker Air Force Base and still have empty chairs. Obviously that's not a path to sustainability. It has to start in elementary school and continue through the university level. That requires sustained funding. We can't do it one year and not the next. We have an obligation ... to create an economic system that helps draw us away from the oil and gas centered-economy, puts more pre-eminence on the aerospace and defense industry, raises the tax base, and raises the opportunity for better jobs, better education and a better quality of life for Oklahomans."

**Lt. General Lee K. Levy II |
Commander TAFB Sustainment Center | Midwest City**

"Now is the time to invest in making our future leaders smarter, and thus it is not the time to make it harder on them (i.e. reduce our investment in them). The state of Oklahoma is home to key growth industries that rely on STEM skills, including Aerospace/Defense, Energy, Agriculture & Bioscience, and numerous Manufacturing sectors. Of course there's never enough money for all the things we need, right? But to scrimp on investing in the human capital that will serve as the fuel for Oklahoma's industrial engines of the future ... well, that just doesn't feel right!"

**Mitch Johnson | B.S. Industrial Engineering
MBA Operations Mgt | Dallas**



"So what are the competitive advantages that Oklahoma can cultivate to build on (its energy) success story and take advantage of what lies ahead? How about investing in innovation and people with strong support for our universities and education system! Retaining the best faculty, having modern facilities and strong research programs are keys to success that must not be compromised. Cost cutting and tuition increases will only go so far and we need to have the foresight to fund the development of human capital and technology that will drive our economy into the future."

**Jeff Fisher | B.S. Mechanical Engineering
CEO Ascent Resources | Oklahoma City**



"To be successful, we need to be able to develop and retain our young professionals and enable them to shape tomorrow's energy solutions. Oklahoma has immensely talented young students who could benefit greatly from an enriched and well-funded engineering education at one of our state schools and, in turn, we will all benefit in what they will give back to our great state."

**Heath DePriest | B.S. Chemical Engineering
Managing Director Midstream Terminals Phillips 66 | Ponca City**

"How is Oklahoma to compete in a National and world economy if funding is continued to be cut from our public schools and universities? Engineering analyses and common sense says as a state we can't continue to underfund education and even maintain a minimum level of opportunity for our children and young adults. It's time for the Legislature and the Governor to make tough decisions about the State's economic future past the next election cycle and support comprehensive funding increases for our public schools and universities so that our 6th and 7th graders on up can meet Oklahoma's needs for economic growth in the future. High tech industries that are here in Oklahoma need to know that WE THE PEOPLE care about theirs and our own children's future. Making hard decisions to fund Oklahoma's education system now will do that."

**Jaime McAlpine, PE, BS | Petroleum Engineering Technology
President, CEO Chermac Energy Corporation | Edmond**



"It is time for the state of Oklahoma to (come) together in funding education at all levels throughout the state. It is unacceptable to lead the nation in sustained funding cuts for education. We need a well educated workforce. We need this for our state and we need it for the sake of our children and their place in the future. This is not city vs. rural vs. suburbs. This is not about raising taxes. This is about making education a priority with what we have. It is time for (our state leaders) to think of the next generation."

**Mark Brewer, Ph.D. | Electrical Engineering
Former Sr. VP and CIO Seagate Technology | Oklahoma City**

"What should Oklahoma be doing to fix this? It must get to work developing and implementing better plans to prepare its own young citizens for STEM degrees as well as grow even more capacity at the university level to close the job demand gap. If this isn't done, the state will continue to squander the potential of many worthy young Oklahomans who would immensely benefit from gaining and applying this kind of education."

**Ed Stokes, MBA, PE, PMP | B.S. Civil Engineering
Recent retiree from Conoco Phillips | Houston**

