F I S C A L I M P A C T R E P O R T

SPONSOR Lujan **ORIGINAL DATE** 2/10/2022 **LAST UPDATED** **HM** 48

SHORT TITLE STEM Career Pipeline Study **SB**

ANALYST Chilton

ESTIMATED ADDITIONAL OPERATING BUDGET IMPACT (dollars in thousands)

	FY22	FY23	FY24	3 Year Total Cost	Recurring or Nonrecurring	Fund Affected
Total	Uncertain	Uncertain		Uncertain	Nonrecurring	General Fund

(Parenthesis ( ) Indicate Expenditure Decreases)

Related to House Bill 115.

SOURCES OF INFORMATION
LFC Files

No Response Received
Public Education Department (PED)
Workforce Solutions Department (WSD)
Higher Education Department (HED)

SUMMARY

Synopsis of Memorial

Taking note of New Mexico's problems in achievement among its students, House Memorial 48 specifies steps to be taken to improve New Mexico's students' ability to perform well in science, technology, engineering, and mathematics (STEM). The memorial requests the following:

1) That PED, HED, and WSD work together to study aspects of the pipeline from school to career in the STEM subjects, inventorying current programs and initiatives.
2) That these departments provide the results of their inventory to the Legislative Finance Committee (LFC) and the Legislative Education Study Committee (LESC) by September 1, 2023.
3) That the three departments work together to address shortage of teachers, especially in STEM fields.
4) That PED be tasked with making recommendations regarding STEM fields to the Legislature and the governor by December 1, 2023.

5) That copies of the memorial be given to the governor, the chairs of LFC and LESC, through PED and HED, to local public school superintendents and public institutions of higher learning, and to the secretary of WSD.

There is no effective date of this memorial. It is assumed that the effective date is 90 days following adjournment of the Legislature.

FISCAL IMPLICATIONS

There is no appropriation in House Memorial 48.

There will costs to the agencies involved in inventorying STEM programs throughout the state, in finding solutions to the shortage of teachers of STEM subjects, and in reporting the findings of their studies to the governor and the Legislature.

SIGNIFICANT ISSUES

The memorial makes note of the following as background:

1) New Mexico students score poorly on proficiency in foundational skills in reading, math and science.
2) STEM jobs are in high demand in New Mexico and throughout the country.
3) Both public schools and institutions of higher education attempt to provide preparation of all sorts for later success
4) PED, HED, WSD, and the Early Childhood Education and Care Department have established a resource, RISE NM, to provide needed research to inform student transitions from secondary to higher education and then to careers.
5) STEM teachers need initial and on-going professional development.
6) High schools and institutes of higher education must work together to improve professional development programs for STEM teachers.
7) STEM-focused extra educational time can be beneficial to students if well-coordinated.
8) Research on evidence-based programs to determine best methods in extended learning in STEM subjects.

According to a 2016 LFC report, "Science, Technology, Engineering and Math (STEM): Degree Production and Employment Outcomes",

> High tech industries have created 65 percent of new jobs since the recession and their employees earn twice as much as the average worker outside the industry. However, while New Mexico is ranked 1st in high tech resources like Ph.D. scientists and federal research dollars per capita, the state is 50th in high tech employment growth since 2000, at negative 30 percent.
>
> High tech industry growth is predicated on innovation, and science, technology, engineering, and math (STEM) education is identified nationally as the driving component of innovation in the 21st century. STEM education is incentivized in the state's higher education funding formula and the innovation cycle largely begins at New Mexico's research institutions, according to the Economic Development Department. The objective of this evaluation is to evaluate STEM degree production and

> innovation development at higher education institutions. It measures the effectiveness and benefit of incentivizing STEM education, examines the efforts by institutions to incorporate innovation and entrepreneurship into student learning outcomes, and examines how institutions leverage their role as drivers of innovation into economic opportunity for New Mexico.
>
> New Mexico higher education institutions are under-producing STEM graduates for an average high tech economy. Approximately 2,600 STEM students graduate each year for 4,600 high tech job openings, estimated from Department of Workforce Solutions projections and Brookings Institute data on average high tech job growth in the U.S. The high tech industry in New Mexico hires a lower percent of STEM graduates from New Mexico institutions than expected, compared to the industry national average, and the state struggles to retain top out-of-state talent, as out-of-state STEM students who graduate from New Mexico institutions are half as likely to be employed in New Mexico.
>
> Despite shortages of STEM workforce production, STEM graduates working in New Mexico have the highest salaries outside of the health fields. In particular, STEM graduates working in the high tech industry have a higher median salary than graduates from any other field in any other industry. While costs for educating STEM graduates are higher than for non-STEM graduates, the additional costs provide a measurable return on investment to the state.

It is unlikely that the conclusions of such a study would have changed in the time since the issuance of that report.

The Legislature has considered 22 bills regarding STEM education since the beginning of the 2016 Legislative session, two in 2016, two in 2017, six in 2019, nine in 2020, one in 2021, and two in this Legislative session. Many have been limited to parts of the state or individual or several educational institutions; most have not passed or been signed. This memorial would request a more comprehensive approach.

RELATIONSHIP

Related to House Bill 115, which according to its own Fiscal Impact Report, "creates a science, technology, engineering and mathematics (STEM) plus fund and appropriates $5 million from the general fund to the STEM plus fund to carry out a STEM plus pilot project. The bill requires PED to partner with NMT, NMHU, and WNMU to provide STEM professional development for teachers; programs and research projects for high school students; and after-school programming and tutoring for kindergarten through fourth-grade students in Socorro, Santa Fe, and two other school districts selected through an application process. The pilot project includes data collection and analysis of teacher, student, and programs to determine efficacy of the project. There is no effective date of this bill. It is assumed the effective date is 90 days following adjournment of the Legislature."

LC/acv