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## FISCAL IMPACT REPORT

SPONSOR Picraux ORIGINAL DATE 1/28/08  
LAST UPDATED \_\_\_\_\_ HB 432  
SHORT TITLE UNM Manufacturing Engineering Program SB \_\_\_\_\_  
ANALYST Wilson

### APPROPRIATION (dollars in thousands)

Appropriation		Recurring or Non-Rec	Fund Affected
FY08	FY09		
	\$385.0	Recurring	General Fund

(Parenthesis ( ) Indicate Expenditure Decreases)

Duplicates SB120  
Relates to Appropriation in the General Appropriation Act

### SOURCES OF INFORMATION

LFC Files

Responses Received From  
Higher Education Department (HED)  
University of New Mexico (UNM)

### SUMMARY

#### Synopsis of Bill

House Bill 432 appropriates \$385,000 from the general fund to the board of regents of the University of New Mexico for expenditure in fiscal year 2009 for the manufacturing engineering program's manufacturing training and technology center cleanroom phase two development and auxiliary salaries.

The MEP is a Research and Public Service Project (RPSP). The MEP operates a cleanroom within the MTTC on the UNM Science and Technology Park.

### FISCAL IMPLICATIONS

The appropriation of \$385,000 contained in this bill is a recurring expense to the general fund. Any unexpended or unencumbered balance remaining at the end of fiscal year 2009 shall revert to the general fund.

The MTTC building and the MTTC cleanroom have been built up over the past decade, using a capital investment mix of State bonds, federal funds, and UNM bonds, totaling \$13M. In

addition, New Mexico companies, such as Intel, Philips Semiconductor, Next Generation Economy and SNL, have provided over \$3,000,000 in modern process equipment. This facility is unique in the State of New Mexico,

The MTTC completed a \$3,400,000 Phase II construction expansion during 2007. This construction nearly doubled the functional size of the cleanroom. In addition, it installed several tools, including \$600,000 of NSF-funded process tools.

UNM states that the MTTC cleanroom needs a base line of funding from the State, in order to establish a nominal safe, steady level of operation and training. The cleanroom can then build a pool of user-derived fees, albeit variable, from university grants, federal labs and companies on top of that base. However, UNM claims that without the \$385,000 requested herein, the minimum level of safe operations will not be achieved.

The MTTC Cleanroom is expected to support the training of over 100 students per year. It is expected to eventually leverage over \$15,000,000 per year of graduate-level research. And, it is expected to support more small companies needing pilot production, to thereby secure millions of dollars of venture capital. The MEP, since 1992, has brought in over \$25,000,000 in federal funds, which has been leveraged by \$8,800,000 of State capital and programmatic funds, \$4,300,000 of UNM funds, and \$3,400,000 of industry donations.

A request was submitted by UNM in the amount of \$1,041,900 to the HED for review. The HED funding recommendation for FY09 is a continuance of FY08 recurring funding in the amount of \$656,900 with no additional funding at this time.

## **SIGNIFICANT ISSUES**

This cleanroom facility is unique in the state of New Mexico and it is now a core resource not only for UNM, but also for the State for workforce, technology and economic development in the area of microsystems and bio-nano-energy technologies. Without sufficient staffing and supplies, this facility will languish. Forward looking states across the nation have made major investments in university-based micro and nano fabrication facilities, and in the annual support of such facilities, in order to either spawn or draw high-tech companies, with high-pay, high-tech jobs to their regions.

MEP is a multi-disciplinary master's-level academic program that prepares students for real-world manufacturing and management. The graduate program covers modern manufacturing methods across computer, mechanical, electronic, and business disciplines.

UNM offers several options leading to a master's degree in manufacturing disciplines. Students may earn Master of Science (MS) degrees in Mechanical Engineering or Electrical Engineering with a manufacturing concentration, or a student may earn the degree of Master of Engineering in Manufacturing Engineering -- a degree that is aimed at engineering practice and covers a wider range of manufacturing topics than the M.S programs.

This bill supports the expansion of the UNM graduate-level MEP within the UNM school of engineering. The MEP program seeks to:

1. Build a nationally-competitive manufacturing engineering program able to meet the statewide demand for high-tech workers.

2. Promote economic growth by facilitating, developing, transferring, and teaching new manufacturing technologies.
3. Train students on state-of-the-art equipment.
4. Deliver industry-relevant courses that utilize industry expertise.
5. Articulate training, curriculum, and facilities with regional community colleges.

UNM notes that this funding will support teaching, research, commercialization requirements of the Manufacturing Training and Technology Center cleanroom and cover the cost of materials, supplies, periodic maintenance and minor equipment.

### **ADMINISTRATIVE IMPLICATIONS**

The MEP cleanroom needs additional staff engineer and technician, and additional materials, supplies and contract services for preventative maintenance, tool refurbishment, periodic etc. to safely, effectively and efficiently meet user demand. Users include UNM undergraduate and graduate engineers, UNM researchers, large and small companies seeking to prove their concepts to venture capitalists. Several times per year, the MTTC cleanroom hosts workshops, offered to regional high-school faculty and out-of-state community college faculty, on how to fabricate micro devices such as pressure sensors.

UNM states that without the \$385,000 requested herein, the MTTC cleanroom will not achieve a minimum level of safe and efficient operations. The current staff of two is already stretched to meet instructional demands for the various training lab sessions required of the universities. Since more tools and infrastructure have been added to the cleanroom in the past year, the demands on staff are more severe. Furthermore, the community college and commercial users will like to have extended hours of operation on nights and weekends, which cannot be provided with current staffing. The cleanroom as a business community asset is thereby diminished and its long-term viability made questionable, as a consequence.

### **OTHER SUBSTANTIVE ISSUES**

The MTTC Cleanroom is a high-tech facility, open to multiple educational institutions UNM research operations and small companies seeking to demonstrate working microsystem prototypes to venture capitalists. The cleanroom can create microsystems for biomedical, bioenergy and telecommunication applications. However, to build these systems, the facility needs to properly and safely operate expensive, complex equipment and supporting infrastructure such as DI water, acid-waste neutralization, scrubbers, chilled water, boilers, gas supplies, etc. These tools require potentially hazardous liquid and gas chemicals. Gowns and safety gear must be worn by all users of the cleanroom. The cleanroom coordinates with fire marshals and hazmat teams on a regular basis to review safety protocols and response plans. Students, company users, and staff must adhere to the buddy system. As the cleanroom grows in size and user demand, the staff must increase in order to safely accommodate the necessary coverage of tools and users.

DW/mt