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Impact of Center for High Technology Materials on the New Mexico Economy

The Center for High Technology Materials (CHTM) at the University of New Mexico was established in 1983 by the state of New Mexico who provided seed investment of $10 million. CHTM was developed with the purpose of promoting high technology research and development, enhancing UNM, state and federal interaction and fostering entrepreneurship with the goal of stimulating economic development. In the more than 30 years since the initial investment, CHTM has attracted additional sources of external funding, including out of state funding. This external funding has been used by CHTM for high technology research, development and outreach and to support high technology jobs in the state. This memorandum assesses of the economic impact of CHTM on New Mexico's economy.

Since the initial funding by the state of New Mexico, the center has attracted more than $260 million out of state dollars (in 2014 dollars) through nearly 1,450 contracts with the average contract size of nearly $180,000. The average annual award received by the center was more than $8 million. Over the period, roughly 89% of the total funding was expended within New Mexico for various purposes. Of the monies spent in New Mexico, approximately 12% was spent on purchases of lab equipment, 20% spent on hiring students, 12% spent on hiring senior personnel, including UNM faculty, and 6% was spent on technical support and the remaining 50% was spent on various research activities.

In this analysis, IMPLAN 3.0 (IMPLAN) was used to estimate the economic impact from CHTM activities.[1] IMPLAN is a regional economic modeling and impact analysis application that works with a proprietary New Mexico input-output database with North American Industry Classification System sectors. IMPLAN calculates how much of any given expenditure stays in-state and traces the economic impact on New Mexico industries. The software takes into account the fact that some output is "leaked" out of the state by way of domestic and international trade. IMPLAN is widely used in performing economic impact analyses.

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[1] Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive West, Suite 140, Stillwater, MN 55982 www.implan.com.

The externally funded and locally spent dollars have created sizable impact on the New Mexico economy. The annual average economic impacts in terms of employment, labor income and economic output are presented in Table 1. In particular, the external funds spent by CHTM created 131 jobs (including indirect and induced jobs)[2], $6.5 million in labor income and $11.7 million economic output annually. That means CHTM directly and indirectly supports 131 jobs in New Mexico on an ongoing basis. Because much of the funding comes from out of state dollars, most of these jobs would not exist absent CHTM because CHTM operates as a conduit for attracting external funding and in-state spending.

Table 1. Average Annual Economic Impact of CHTM on the State of New Mexico (in 2014 dollars)

Impact Type	Employment	Labor Income	Output
Direct	88	$4,389,955	$6,658,017
Indirect	15	$611,425	$1,645,324
Induced	28	$1,104,931	$3,353,897
Total	131	$6,504,276	$11,657,237

Source: CHTM, UNM Bureau of Business and Economic Research, and IMPLAN.

Since 1983, the cumulative total impact in 2014 dollars was more than $372 million economic output and $208 million labor income. In addition, compared to the initial state investment of $10 million (or $24 million in 2014 dollars), CHTM has attracted more than $250 million out of state dollars, or greater than ten times the initial state investment, to New Mexico.

In addition, BBER conservatively estimated state and local government gross receipts and income tax revenues stemming from CHTM operations. In 2014 dollars, the gross receipt tax collected was approximately $204,000 annually and $208,000 in personal income tax revenue was estimated to have been collected per year by the state.[3] Cumulatively, since 1983 more than $12 million in tax revenue (gross receipt tax and personal income tax) have been paid to state and local governments in New Mexico.

The estimations offered above include only primary impacts – the direct, indirect and induced impacts to New Mexico of out-of-state funding to CHTM. There are important secondary impacts not included in these estimates generally associated with educational, research and

[2] BBER assumed that the average cost of a student is roughly $40,000 per year including benefits and administration and that total employee compensation for senior personnel was $80,000 per year.

[3] Gross receipts and excise tax receipt estimate is based on a study by the Institute on Taxation and Economic Policy: *Who Pays, A Distributional Analysis of the Tax Systems in All 50 States, 2013*. p. 88. Personal income tax revenue estimates assume 3.2% effective tax rate on wage and salary earnings. This estimate is based on NM personal income tax payments as a percent of total wage and salary earnings. Both series are available on line from the US Bureau of Economic Analysis.

economic development mission of CHTM and the University of New Mexico. According to data reported by CHTM and UNM.STC:

- Research at CHTM has resulted in the award of 156 U.S. patents, roughly 35% of the UNM portfolio.
- About 38% of patents have been licensed through the Science & Technology Corporation at UNM (STC.UNM), resulting in an estimated $10 million in royalty income for UNM.
- 13 companies have been created by CHTM faculty and students.
- Perhaps most importantly, 220 Doctoral students and 247 Masters students have carried out their research at CHTM since the founding of the center in 1983.