

SUMMARY OF FSU NATIONAL HIGH MAGNETIC FIELD LABORATORY USERS SURVEY AND ECONOMIC IMPACT STUDY



Installation of one of the world's highest field 900 MHz NMR magnets April 2003



Completed By:
Dr. Tim Lynch, *Director*
Dr. Julie Harrington, *Asst. Director*
**Center for Economic
Forecasting and Analysis**
Florida State University
June 1, 2003

Acknowledgments

The Center for Economic Forecasting and Analysis (CEFA) would like to thank the support and guidance during the culmination of this report of the National High Magnetic Field Laboratory (NHMFL), specifically, Director Dr. Jack Crow, Janet Patten and Kathy Hedick. This work was supported financially through Dr. Peter McLaren, of the Center for Advanced Power Systems (CAPS). In addition, CEFA would like to thank Carter Doyle, doctoral candidate, for providing REMI modeling support, and Jian Xu, FSU doctoral student, for designing and implementing the web-based survey.

The National High Magnetic Field Laboratory (NHMFL) and Its Forecasted Impact on the Florida Economy

Introduction

This report evaluates how the National High Magnetic Field Laboratory (NHMFL) has and will impact the Florida economy. The National High Magnetic Field Laboratory was awarded to Florida State University in August 1990 by The National Science Foundation (NSF). The NHMFL is a national user laboratory that provides magnet systems for research in all areas of science: biology, medicine, chemistry, geochemistry, engineering, materials science, and physics. The NHMFL has been successful in attracting some of the top scientists in the world, including a Nobel Laureate, in these respective areas. Furthermore, scientific research and knowledge about high magnetic fields are critical to understanding matter and living structures and to developing modern technologies and new, improved materials. While the NHMFL has undoubtedly had an impact on the scientific knowledge in these fields, the focus of this report describes the impact of NHMFL on Florida's economy by measuring the increase in employment and economic output generated by NHMFL activities across the broader statewide economy.

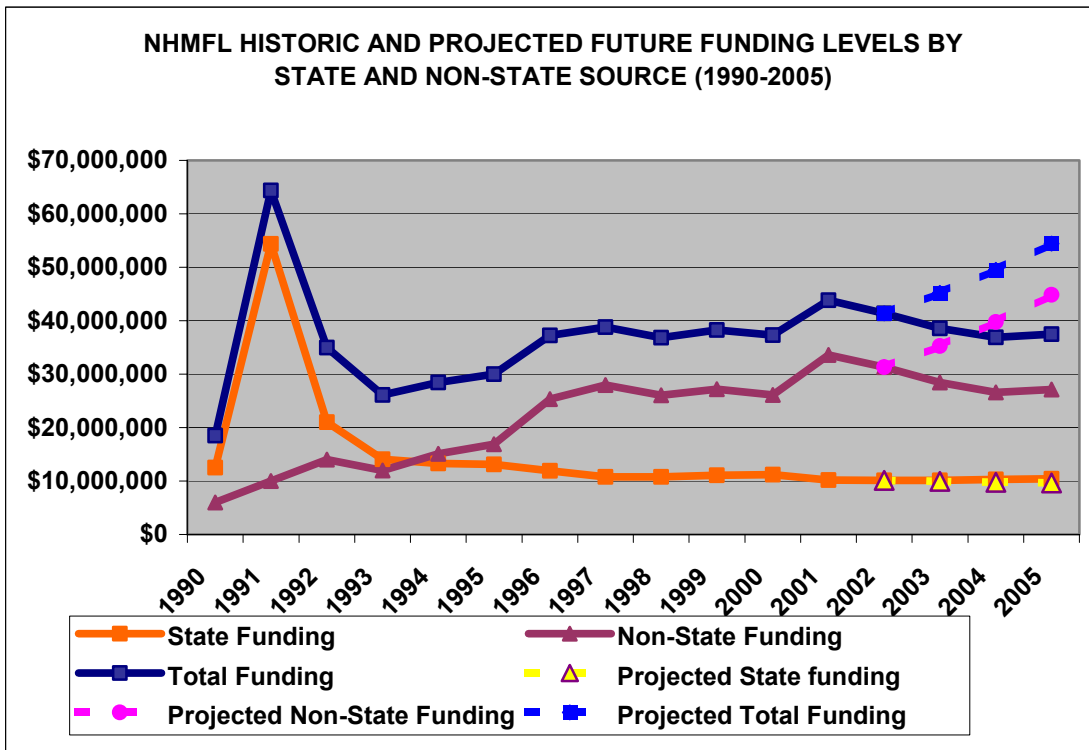
The NHMFL has focused on establishing the essential infrastructure to conduct research by building the largest and highest-powered magnetic fields research facility in the world and recruiting a world-class faculty to conduct research. The NHMFL would not have achieved this goal without critical State of Florida "seed" funding, however. Over the years, the NHMFL has received funding from various sources including the NSF, the State of Florida, work for private industry, and royalties. Figure 1 below shows the amount of funding the NHMFL has received and expects to receive over the 1990 thru 2005 period. State funding includes all funds the NHMFL has received from any State of Florida source, whereas Non-State funds indicate private and or out of state funding (e.g., NSF funding). The bulk of State funding was spent on construction and equipment to get the facility up and running. This commitment by the state to build the building and aid in providing capital equipment was required in the solicitation to the NSF.

As one can see in the graph, the NHMFL received a large amount of funding in its early years. This money was used to build the facility and acquire the equipment and machinery to do the world-class research that currently goes on there. In later years, funding levels are slightly lower, however, since the large infrastructure investment has already been made. Furthermore, one can see from the graph that after 1994, the year the NHMFL'S main complex was dedicated, Non-State funding levels begin to exceed the level of State funding by an amount of almost three to one. State funding levels have been hovering around \$10,000,000 over the last several years, whereas Non-State funding has seen steady increases. The reason for the apparent decline in State and Non-State funding for 2003-2005 is that contracts and other funding engagements have not been completed or secured as of the date of this report. Hence, only the dollar value of secured funding (at the time of this report) is plotted in the graph. However, based on the previous accomplishments of the NHMFL to secure funding,

one can project given the past funding data that future funding levels are expected to be considerably higher. These projections are identified with dashed lines in Figure 1, but are not included in the economic analysis.

To measure the impact of the NHMFL, expenditures on salaries, capital, and direct and indirect expenses were determined. These funds were then put into a Florida regional input-output model, which includes cross linkages between every sector of the full Florida economy. This study did not quantify the intangible benefits generated by the presence of the NHMFL to the local economy, such as enhancement of productivity, earning capacity of graduating students, quality of life enhancements, intellectual stimulation (through publications, presentations, public service), and creation of spin-off companies, among others.

Figure 1. Historic and Future NHMFL Funding



The specific percentage breakdown of NHMFL funding over the years can be observed from Figure 2 and Table 1. The NSF has been the biggest financial supporter of the lab over the years.

Figure 2. Breakdown of NHMFL funding by source

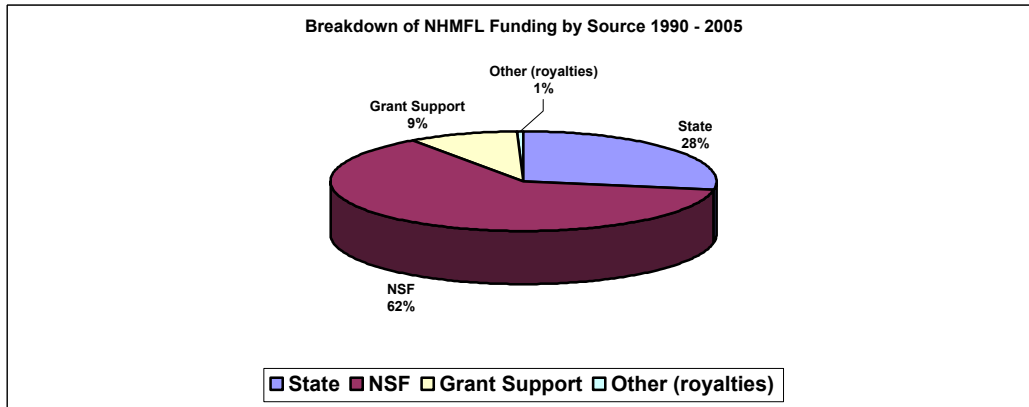


Table 1. Breakdown of NHMFL funding by source

Breakdown of NHMFL Funding by Source (1990 – 2005) (Nominal Dollars)	
NSF	\$270,500,000
State	\$235,300,000
Grant Support	\$78,572,106
Other (royalties)	\$4,600,413

The REMI Model

Staff used the Regional Economic Model, Inc. (REMI, 2000), a widely accepted and used dynamic integrated input-output and econometric model for this study. REMI is used extensively to measure proposed legislative and other program and policy economic impacts across the private and public sectors of the state by the Florida Joint Legislative Management Committee, Division of Economic & Demographic Research, The Florida Department of Labor and other state and local government agencies. In addition, it is the chosen tool to measure these impacts by a number of other leading universities and private research groups that evaluate economic impacts across the state and nation.

There are several advantages to using REMI: 1) It is calibrated to local conditions using a relatively large amount of local data. 2) It is based on a strong theoretical foundation. 3) It combines several different kinds of analytical tools (including economic base, input-output, and econometric models). 4) It allows the user to generate forecasts for any combination of future years, allowing the user special flexibility in analyzing the timing of economic impacts. The REMI model used for this analysis was specifically developed for the state of Florida, and includes 172 sectors (See technical appendix for a detailed listing). REMI’s principal advantage is that it may be used to forecast both direct and indirect economic effects over

multiple-year time frames. Other input-output models primarily model for a single year time horizon.

Methodology and Assumptions

Expenditures on salaries, capital, and direct and indirect expenses by the NHMFL, for the years 2000 to 2005, were determined by using 2001 data and assuming that the percentage spent on each category (salaries, capital, etc.) would not vary much over the time frame. We think this is a safe assumption as spending on broad categories such as these within institutions do not vary widely over such a short time frame. Figure 3 and Table 2 provide a breakdown of the NHMFL’S allocation of spending.

Figure 3. Allocation of NHMFL Spending 2001

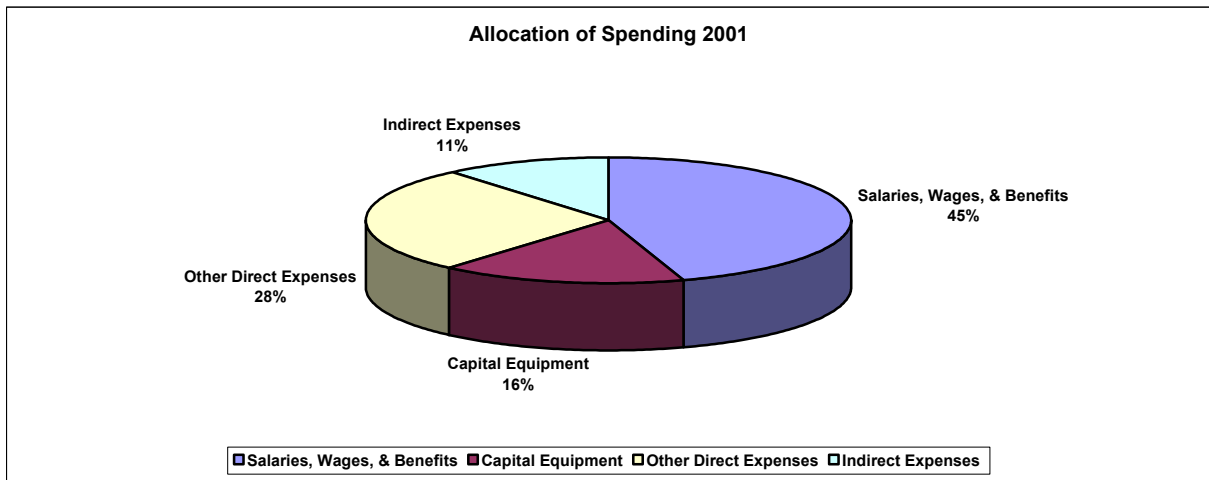


Table 2. Allocation of NHMFL Spending 2001

Allocation of NHMFL Spending by Source (2001)	
Salaries, Wages, & Benefits	\$14,043,089
Capital Equipment	\$5,052,346
Direct Expenses	\$8,365,554
Indirect Expenses	\$3,444,925

With this assumption and knowledge of past and future funding levels, we were able to determine the dollar value that would likely be spent on each category by the NHMFL (Figure 4). Expenditures on salaries, capital, and direct and indirect expenses by the NHMFL were then put into the REMI model to calculate its economic impact on the Florida economy.

The REMI model, as Bolton (1985) states in his review of econometric models, "is a world apart in complexity, reliance on inter-industry linkages, and modeling philosophy" from other econometric models. Conceptually, the model consists of five basic blocks: (1) output, (2) labor and capital demands, (3) population and labor supply, (4) wages, prices, and profits, and (5) market shares. All of these blocks have been calibrated to the Florida economy using state specific data. The policy variables, for the NHMFL spending categories (salaries, capital, and direct and indirect expense), that were chosen within the five basic blocks include: Higher Education, New Educational Buildings, New Industrial Buildings, New Office Buildings, Engineering and Architectural Services, Research and Test Services, and Computer and Office Equipment. (See Table 3) A second simulation using the "higher education" sector alone was also evaluated and chosen for the final analysis. These variables were carefully chosen to reflect the likely spending patterns of the funds within the local economy.

Figure 4. NHMFL Spending 1990 - 2005

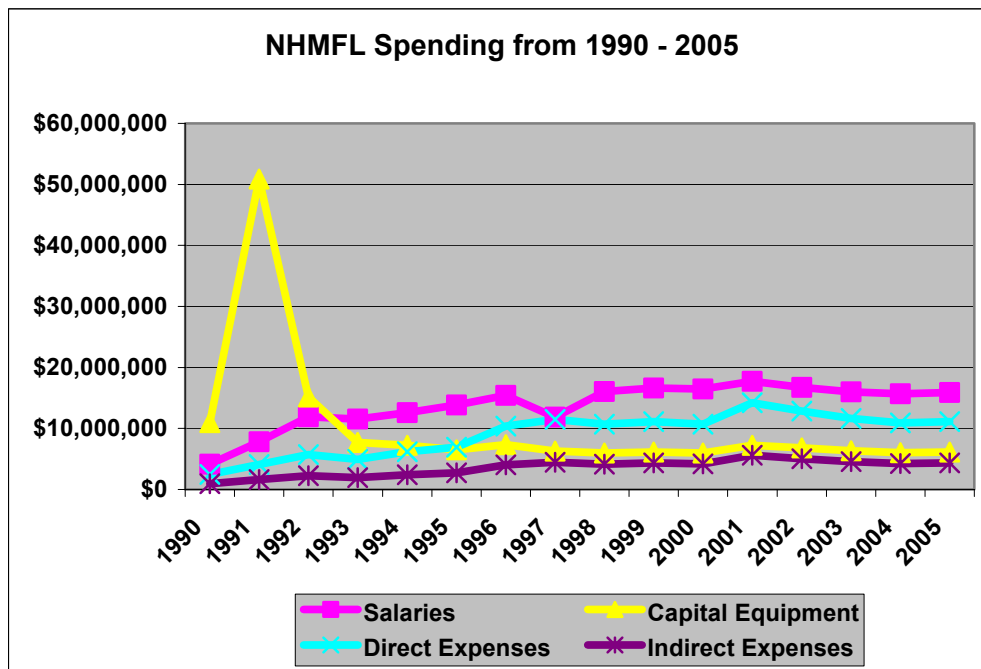


Table 3. REMI Policy Variable Selection

COST	POLICY VARIABLE CATEGORIES	DETAIL SELECTION
Salaries	Output Block→Detailed Government Spending→State Government Spending	Higher Education Spending
Capital Equipment	Output Block→Detailed Industry Output→Non-Durables→Construction Sales	New Educational, Office, and Industrial Buildings
Direct and Indirect Expenses	Output Block→Industry Demand→ Demand	Engineering and Architectural Services, Research and Test Services, and Computer and Office Equipment

Results of the REMI Analysis

After these policy variables were selected and the data entered, the REMI model was used to determine the economic impact of the NHMFL on the statewide economy. Table 4 summarizes the total economic impact of NHMFL State and Non-State Funding on the Florida economy, whereas Table 5 summarizes the total economic impact of Non-State Funding alone. The tables show the economic impacts on employment, gross regional product, real disposable income, and taxes. Gross Regional Product (GRP or state output) is the dollar value of final goods and services produced across the Florida economy. The value of taxes consists of state tax revenues calculated at the state average rates. Lastly, the REMI output for

Table 4. Economic Impact of NHMFL State and Non-State Funding (2000-2005)

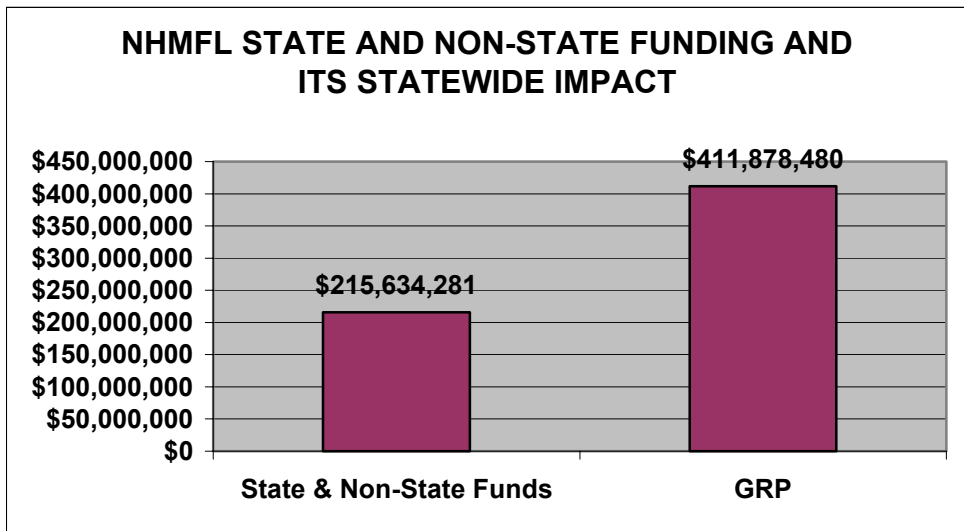
Value of GRP	\$411,878,480
Value of Wages	\$315,358,280
Value of Taxes	\$96,520,200
Number of Jobs	4,630

Table 5. Economic Impact of NHMFL Non-State Funding (2000-2005)

Value of GRP	\$294,503,860
Value of Wages	\$228,390,940
Value of Taxes	\$66,112,920
Number of Jobs	2,932

employment is in job years. Figure 6 shows the total dollar value of inputs into the REMI model and the corresponding GRP that is generated (the values are in 2001 dollars). Similarly, Figure 7 shows the total dollar value on Non-State inputs into the REMI model and the corresponding GRP that is generated.

Figure 6. NHMFL Total Funding and Its Economic Impact (2000-2005)



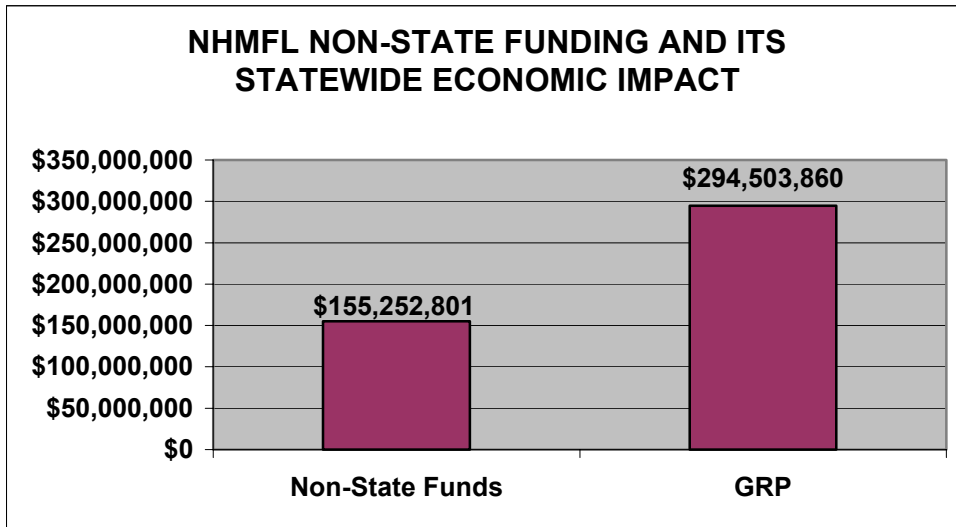
Return on Investment Analysis

The NHMFL ROI calculation involves a comparison between the economic impact generated from state funds and the non-state funds that money was able to attract (\$60,381,480 + \$155,252,801) and the opportunity cost of state funds. The economic impact of state and non-state funds was \$411,878,480. To calculate the opportunity cost of state funds, we assumed that state money that was contributed to the NHMFL would be distributed by the state to some other higher education endeavor. Hence, that amount of state funding was put into the higher education spending variable of the REMI model to see what impact those monies would have if they were not distributed to the NHMFL. The resulting impact, if those monies were spent on some other higher education endeavor, would be \$117,656,154. In this context, the state of Florida ROI for the NHMFL would be calculated as:

$$ROI = (\$411,878,480 / \$117,656,154) * 100 = 350.07\%$$

This ROI implies that for each dollar that the state invested in the NHMFL over 2000-05, the state realized a return of \$3.50.

Figure 7. NHMFL Non-State Funding and Its Economic Impact (2000-2005)



Benefit Cost Analysis

The benefits to the state of Florida were defined as the economic impact resulting from the initial state investment and the amount leveraged by the state investment (contracts and grants, (government and private sponsors), auxiliary fees/services, and other external sources). The costs to the state of Florida were defined as the opportunity cost of the initial state investment redistributed to higher education spending. The REMI model estimated the opportunity cost of the initial state investment to be \$117,656,154.

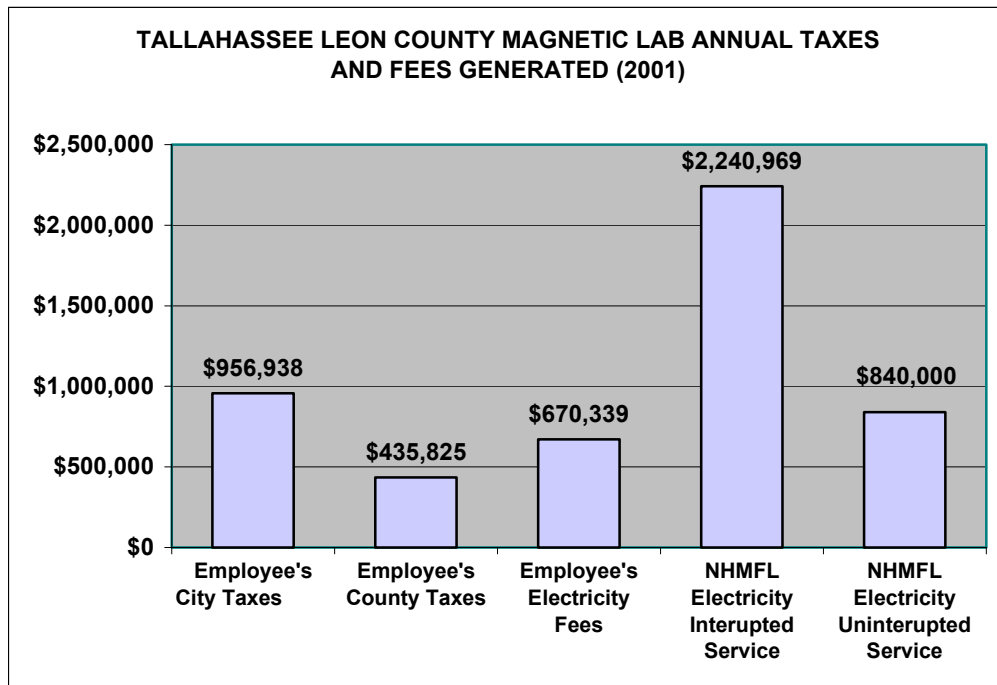
- Benefit to the state from total state and non-state funds (\$60,381,480 + \$155,252,801) is \$411,878,480;
- Cost to the state (opportunity cost of \$60,381,480) = \$117,656,154;
- The benefit to cost ratio is: 3.50

The Benefits of the NHMFL to the City of Tallahassee

The City of Tallahassee enjoys substantial benefits from the NHMFL being in town. The NHMFL, as one would guess, consumes a large amount of electricity of which the city collects revenue for. For the year 2001, the most recent total year for which there is data for, the city collected \$3,080,969 in electricity revenues from the NHMFL. This would rank the NHMFL as one of the five largest customers for the city in terms of electricity revenue collected. Since the physical infrastructure of the NHMFL is government owned, it is not taxed. However, the employees who

work at the NHMFL own houses and other property for which the city and county receives property taxes on. The amount of city and county taxes that NHMFL employees pay for the year 2001 was estimated to be \$1,392,763. Additionally, we estimated that the city collects around \$670,339 in residential electricity revenue from NHMFL employees. The total revenue that the city collected from the NHMFL (the facility itself and from individual employees), for the year 2001 only, was estimated to be around \$5,144,071.

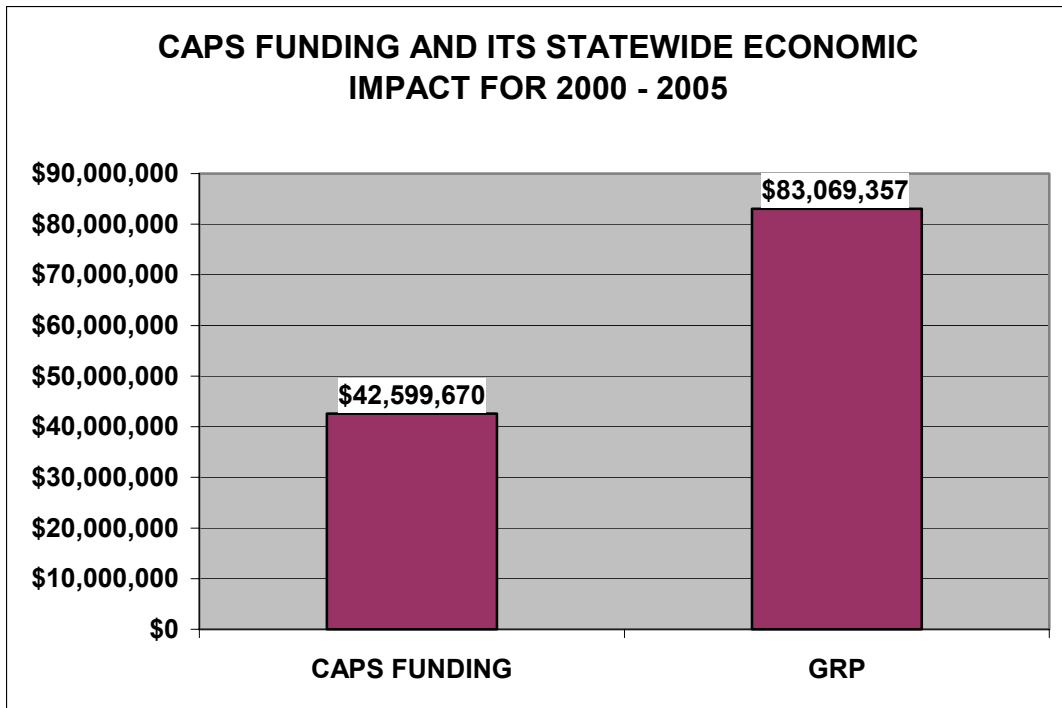
Figure 8. Taxes and Fees Collected by the City of Tallahassee from the NHMFL (2001)



A NHMFL Spin-Off:CAPS

The Center for Advanced Power Systems, CAPS, was established by Florida State University and The National High Magnetic Field Laboratory (NHMFL) to focus on research in the area of power technologies. CAPS is working- in tandem with academia, industry, and government- on applications of recent advances in power semiconductors, materials, advanced controls and superconductivity to advanced power system technologies. To measure the impact of CAPS alone - a similar methodology as above was followed, expenditures on salaries, capital, and direct and indirect expenses were determined. These funds were then put into a Florida regional input-output model, as was done with the NHMFL, to gauge the impact of CAPS alone on the Florida economy. Figure 7 below shows the economic impact CAPS is forecasted to have on the Florida economy. Clearly, as one can see from the chart, CAPS is forecasted to have a very positive impact on the Florida economy. This impact will be felt through CAPS' expenditures causing demand for other goods and services to rise and thereby increasing incomes and jobs in our state.

Figure 9. CAPS Funding and Its Economic Impact (2000-2005)



Conclusions

The results of the economic analysis using the REMI model indicated that the NHMFL performs a significant role in the state of Florida economy. The economic benefits extend to job creation, GRP, personal income and state taxes.

- For every \$35,560 of NHMFL state funding, one job is created;
- For every dollar of state funding on the NHMFL, GRP increases \$1.95;
- For every dollar of state funding on the NHMFL, income increases \$1.44;
- Given the state investment, the NHMFL contributes an additional \$30 million in tax revenues;
- The return on investment of to the state of Florida is 350.07% and the benefits to cost ratio for is 3.50.

National High Magnetic Field Laboratory (NHMFL) 11/14/02
Summary of NHMFL Users Survey

Introduction

After a thorough review of data (annual reports and budgets) submitted by the NHMFL staff to the Center for Economic Forecasting and Analysis (CEFA), staff determined that a survey was needed to gather additional data on NHMFL users, including demographic and perception information. The NHMFL is the only "National User Facility" of its kind in the western hemisphere.

Survey Approach

The survey of NHMFL users was conducted during April and May of 2002. It should be noted that response to this users survey was voluntary. The survey instrument used to collect these data can be found in Appendix A of this report. The survey questions were limited to the following areas of information.

1. Contact Information
2. Organizational Information
3. Staffing Information
4. Performance and Benefits of NHMFL Operations Information

In an effort to maximize return rates, the survey was designed as a short list of "easy to answer questions" that would require a relatively brief period of time to complete. Each question was posed using a single statement or question. The survey was administered via the Internet and respondents could access and submit the completed survey form "on-line", thereby encouraging response. Respondents were able to also view all their responses (in terms of number and percent) following survey completion.

Limitations of Survey Approach

Because the survey was designed to be a short and "easy to answer" instrument, a minimum of text was devoted to the elaboration of each question. To avoid any misunderstanding, two telephone numbers and e-mail addresses (of staff in Tallahassee) were provided for respondents who had either technical or substantive concerns with any part of the survey. The question that arose most often among respondents who called (or e-mailed) for clarification was whether they should report their funding levels unique to their user group. Often, many users had been awarded grants that included a portion of NHMFL funded activity, however, users were unsure whether to include the entire grant or the NHMFL funded portion in their response. Staff responded to this question by asking the user to breakout the NHMFL funded portion of their research, if possible. The objective of the question was to discern the amount of funding available to users for NHMFL-related research. Another question that surfaced multiple times was whether the users should include publications specific to their NHMFL funded activities if they had already included those publications as a part of their departmental publications. Accordingly, staff responded that those publications should be included since they were a part of NHMFL activity. In the survey design,

staff made sure to consistently include the language “performed or conducted at the NHMFL” in each question, in an attempt to avoid confusion.

Survey Instrument

The initial survey instrument went through a number of early revisions in order to reduce the questions to those that were applicable to the four areas listed in the previous section (survey approach). The final draft instrument was reviewed by the NHMFL director and two other staff. The pertinent revisions were made to the final survey instrument prior to distribution to the 354 users.

The survey was conducted via the Internet, thereby allowing responses to be “on-line”. Each user was contacted by e-mail in order to direct them to an Internet address that contained a survey instrument individually addressed to the user. To the extent possible, each of the questions on the survey instrument utilized:

- Pull-down menus with pre-selected choices, values or ranges of values; or
- Boxes to insert a numerical value.

The approach taken was to simplify the effort, standardize the responses and shorten the time for completion of the survey instrument. These mechanisms allowed many users to complete the survey instrument relatively quickly. Questions #23 (What do you see as the most significant three limitations (in prioritized order) to completing your research at the NHMFL) and #24 (Do you have any comments or information that you would like to add concerning the survey) were the only “text field” questions on the survey instrument. These questions were designed to provide the respondents with an opportunity to add comments about user areas of concern and accomplishments.

Responses to the Survey Instrument

The approach taken and the survey instrument utilized resulted in 166 responses out of 354 contacted for the survey (or 46.6% or 47% response rate – See Table 1). Table 1 shows the number of responses for each of the survey questions.

Table 1. Response (by Question) to the NHMFL Users Survey

Question #	# Responses	Question #	# Responses
Question #1	162	Question #13	159
Question #2	166	Question #14	135
Question #3	166	Question #15	151
Question #4	164	Question #16	152
Question #5	162	Question #17	92
Question #6	156	Question #18	154
Question #7	164	Question #19	157
Question #8	163	Question #20	154
Question #9	156	Question #21	159
Question #10	124	Question #22	156
Question #11	147	Question #23	158
Question #12	133	Question #24	114

Some survey respondents chose to answer only certain questions. For questions having a response frequency of less than 166, it is assumed that some questions were completed because they were viewed as being applicable, relevant or because the data for these questions were not readily available to the person completing the survey instrument.

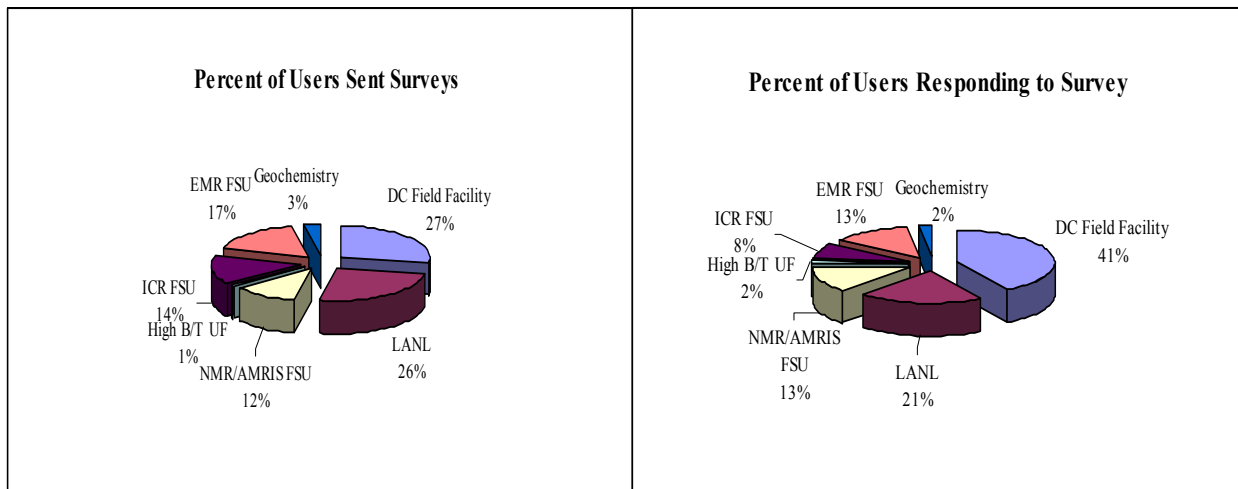
Data on Centers and Institutes

The following sections will describe the results of the survey tabulated into counts or frequencies, percentages, means, ranges and other noteworthy statistical results.

Number of NHMFL Users

According to the data obtained from the NHMFL annual reports and NHMFL staff, there were 354 NHMFL users for fiscal year 2001. A breakdown of these users responding to the survey, and their NHMFL affiliation, is shown in Figure 1.

Figure 1. Summary of Percent of Users Sent and Percent of Users Responding to Survey and Their NHMFL Affiliation 2001.



In terms of user's primary research affiliations, 43% of research conducted in the U.S. was affiliated with NHMFL, and 57% was affiliated with the university. Regarding research conducted outside the U.S., 23% was with a university, and 11% was with a national lab or federal government.

On average, 50% of researchers spent more than one week while using NHMFL's facility. Forty percent of users visited only one time, and 21% used NHMFL facilities two to three times during 2001.

Survey respondents were requested to estimate the percent of total effort allocated to each of these six areas, and were restricted to sum these percentages to 100%.

- Basic research;
- Applied research;
- Teaching;
- Training/Instruction;
- Public service; and
- Other activities

Regarding NHMFL user’s activities, 56% were 100% basic research and only 4% were 100% applied research. Interestingly, 74% had no element of applied research in their research directives. The majority of NHMFL users had no teaching, training/instruction, or public service component in their research functions. Table 2 gives an overview of user’s research activities.

Table 2. Breakdown of NHMFL User Effort (%) by Category for 2001

	Basic Research	Applied Research	Teaching	Training/ Instruction	Public Service	Other	Total
Activity %	82.0	11.3	2.8	2.4	0.8	0.7	100.0%

Other survey questions requested information on the types of employees affiliated with NHMFL and the nature of these activities. Table 3 shows the survey responses for types of employees affiliated with the NHMFL (not including students). Users were primarily employed as faculty (58%) or research scientists (30%). The majority of a user’s collaborative group comprised at least one tenured faculty, tenure earning faculty, non-tenured faculty, post doc, and technical staff. Fifty percent of the 47 respondents had at least one collaborator that was theory, and 21% of 123 respondents had at least one collaborator that was experimental.

Table 3. Type of Employee and User Group Involved with NHMFL Activities.

User Employed As:	Total
Faculty	97
Graduate Student	5
Other	6
Post Docs	6
Research Scientist	49
Total	163
# Collaborators in User Group	Total
Tenured Faculty	108
Tenure Earning Faculty	29
Non-Tenured Faculty	40
Post Docs	95
Technical Staff	67

Total	339
-------	-----

Another important aspect of NHMFL operations is the involvement of students in NHMFL projects and other related activities. Student involvement in NHMFL activities addresses multiple motivations, including the following:

1. Employment;
2. Education enrichment and training; and
3. Degree requirements.

Data indicate that some students work at NHMFL as a means of employment while in school. The often flexible work environment, on-campus location, an annual schedule that tracks the academic calendar and competitive hourly wages are attractive to many students. Some students may work at NHMFL as a way to garner valuable professional experience that tends to augment or enrich the purely academic training received through coursework. Finally, some students need to fulfill a degree requirement for graduation (e.g., internship, Master's thesis, major paper or hours of demonstrated experience) and work at NHMFL as a way to facilitate attainment of these goals. Question #12 on the survey instrument requested information on the number of students affiliated with NHMFL activities. Table 4 provides data on the number of students affiliated with NHMFL users, and in terms of the working status of the students.

Table 4. Number of Students Affiliated with NHMFL Users by Type and Working Status.

Student Type	Total
Doctoral Candidates	101
Master's Candidates	37
Bachelor's Candidates	31
Completed Doctorates	34
Completed Master's	21
Completed Bachelor's	16
Total	240

Student Status	Total
Unpaid Employees	16
Paid on External Grants	79
Institution Funded	44
Total	139

In total, there were 139 students affiliated with NHMFL research that responded to this question or an average of 17 students per NHMFL facility (of the eight units). Based on these data, it can be seen that a relatively large number of students are involved with the research activities of NHMFL. In addition, 123, or 88% of the students are receiving income as a result of these activities. The remainder of the students are volunteering their time in order to gain required credit for graduation or to gain professional experience to enrich, or otherwise complement, their academic training.

The survey requested information from users related to funding levels and sources, in Question #14. Table 5 provides average funding levels per source relating to NHMFL research. The bulk of users funding was obtained from federal sources (55%), with the average federal funding being \$124,000. Non-U.S. sources of funding was second, with 25% of the users averaging \$47,000 in non-U.S. funding. Institution funding followed, with 28% of the users receiving an average of \$23,000 in institution support for their research.

Table 5. NHMFL Funding Sources by Average Funding Levels for 2001.

Funding Sources	Number of Respondents	Average Funding Level
Federal/Gov't	92	\$123,598
Institution	46	\$22,885
Private Sector/Industry	22	\$19,181
Non-Profit	19	\$8,158
Non-U.S.	42	\$46,573
Other	25	\$4,820
Total	246	\$61,290

In order to provide a more comprehensive picture and identify other accomplishments of NHMFL users faculty and staff, information was requested on the following activities:

- Number of publications (peer and non-peer reviewed);
- Number of invited and contributed presentations;
- Number of other important activities related to research conducted at NHMFL during 2001 (e.g., conferences/symposia organized, workshops/training sessions, professional services to organizations and committees, presentations to community groups/other organizations, patents/copyrights, licenses and spin-off companies).

Tables 6, 7, and 8 shows the number of reported publications, conference, and other notable accomplishments, respectively, completed during 2001.

Table 6. Number of Publications Reported by NHMFL Users During 2001.

Type	Peer Reviewed Publications	Average per Unit	Non-Peer Reviewed Publications	Average per Unit	Total
Number	117	15	45	6	162

Table 7. Number of Presentations Reported by NHMFL Users During 2001.

Type	Invited Presentations	Average per Unit	Contributed Presentations	Average per Unit	Total
-------------	------------------------------	-------------------------	----------------------------------	-------------------------	--------------

Number	92	12	112	14	204
--------	----	----	-----	----	-----

Table 8. Number of Other Important Activities Reported by NHMFL Users During 2001.

Other Activity	Number
Conferences, Symposia, etc. Organized	64
Workshops/Training Sessions	23
Professional Service (Organizations, Committees, etc.)	15
Presentations to Community Groups/Other Organizations	28
Patents/Copyrights	4
Licenses	0
Spin-off Companies	0
Total	134

Survey Question #18 asked the users if they received any license royalties. Only one user had received any license royalties, and they did not elaborate on the royalty amount. The survey then requested information from the users relating to the commercialization of the users products. Eight users had research that led to product development and commercialization, in such areas as superconducting, 900 MHz NMR, high field Nb₃Sn wire, liquid crystal welding, NHMFL digital synthesis, and vertical cavity lasers. Twenty-six users expected their research to lead to products emerging in the near future, again, in such areas as superconducting, capacitors, cryogenic apparatus, nanotechnology, miniature resistive thermometers, mid-IR lasers, rotating resonance cavities, novel calorimeters and smart quasi crystals for thermal insulation, among others.

Table 9 depicts the rank orders of the top three of the user's beneficiaries, including the top three rankings in each category. Sixty-five percent of NHMFL users identified researchers (faculty and staff) as being their top ranked beneficiary. Forty-eight percent ranked students (graduate and undergraduate) as being their second ranked beneficiary, and 16% of users thought funding organizations would be their third ranked beneficiary of research conducted at the NHMFL.

Table 9. Top Three Beneficiaries of NHMFL Users for 2001

Beneficiary	First (#)	Rank	Second (#)	Rank	Third (#)	Rank
Community Colleges & Univ.	1		2		17	3
Federal Gov't	4		9	3	19	2
Funding Organizations	3		9	3	27	1
International Gov't	0		1		3	
Local Gov't	0		0		1	
Non-profit Org.	1		2		1	
Other	2		1		2	
Other State Gov't	0		0		3	
Private Companies	5	3	2		11	
Researchers	108	1	37	2	6	
Schools K-12	0		0		1	

State of Florida	1		1		6	
Students	31	2	80	1	10	
Total	156		144		107	

In order to establish an estimate of the opportunity cost of the NHMFL facility, the users were asked the impact on them if the NHMFL were not available to perform their research. Of the total number of respondents, 74% would not be able to perform their research if the NHMFL facility were not available. Table 10 provides a summary of the users responses. One hundred nine (or $\frac{3}{4}$ of the survey respondents) would experience a serious or significant impact (loss) regarding their ability to perform their research in the absence of the NHMFL.

Table 10. Summary of the Impact of the Absence of the NHMFL Facility to User’s Research

Impact	Number	Percent
Moderate	27	18
No Impact	2	1
Serious/Significant	109	74
Very Limited	10	7
Total	148	100

Users were asked what were three main limitations to completing their research at NHMFL. Those primary areas, or categories, of limitations to NHMFL users are listed in Table 11. The responses were varied, but some primary categories arose numerous times. A full listing of the limitations cited by users is listed in Appendix B.

Table 11. Summary of Significant Limitations to User’s Completion of Research at the NHMFL

Limitation	Number	Percent
Limited Time (including magnet time)	71	27
Funding (including travel funding)	52	19.5
Equipment Problems (including lack of equipment)	42	16
Technical/Staff Assistance	22	8
Travel Distance & Lack of Amenities (Dining,etc)	20	7.5
Access and availability to the facility	19	7
Politics and Administrative Constraints	10	4
Other	30	11

The final question on the survey instrument requested information from the respondents on any additional comments. This was a text field question allowing each user to identify comments. The purpose of this question is to provide the reader with the impression of the scope and types of comments provided by NHMFL users. While not exhaustive, this information is useful in understanding how users of the NHMFL address some of the more basic needs of the state. In order to organize these 52 responses into both manageable and meaningful

information, the following taxonomy of four sub-categories of comments is utilized and presented in Table 12. The resulting assignment of specific comments is, therefore somewhat arbitrary, but useful none the less. A listing of all comments can be found in Appendix C. Please note that comments were limited to a specific amount of text, and thus, will appear truncated in certain cases.

Overall, a significant number (29, or 56%) of users gave complimentary feedback regarding the NHMFL. Their levels of satisfaction with NHMFL ranged from being "satisfied" to "superb facilities" to "essential to the progress of science". The category relating to the survey covered elaboration of Question #23 (limitations) to not understanding some of the survey questions (as previously discussed in the limitations of survey approach section). Basic equipment comments concerned equipment problems and one user wanted to contribute some equipment items to the NHMFL. The general comments were varied, but most described their working and unique relationship with the NHMFL.

Comments Categories	Number	Percent
Positive responses regarding the NHMFL	29	56
Survey Responses and Methodology	11	21
General Comments	8	15
Equipment	4	8

Conclusions

- NHMFL users were a diversified group, 36% of the users were located outside the U.S., in Europe (western and eastern), Japan, Korea, Russia, South America, Australia and Israel. Nationwide, 25 (15%) of the users were located in Florida, and the remainder were distributed among many states, approximately 6% from California, and the rest from Massachusetts, Illinois, Utah, Colorado, Virginia, Maryland, Iowa, New York, Michigan, Minnesota, Oklahoma, Georgia, Alabama, North and South Carolina, New Jersey, Wisconsin, and Pennsylvania.
- The majority (82%) listed basic research as their primary research function. About 60% of the users that responded to the survey were faculty, the remainder were research scientists, and other technical staff.
- The bulk of the users funding came from federal sources, averaging \$124,000 per user.
- User accomplishments included an average 3.6 in referred journals and 2.3 invited conferences for 2001.
- Users were also active in the area of other accomplishments, participating and organizing conferences (39%), community presentations (17%), workshops (14%), professional service (9%), in addition to pursuing patents and product commercialization as an outcome of their research.
- The primary beneficiaries of 65% of the users were researchers (faculty and staff), and their secondary beneficiaries for 48% of the users were students (graduate and undergraduate).
- Of the total number of respondents, 74% would not be able to perform their research if the NHMFL facility were not available. One hundred nine (or $\frac{3}{4}$ of the survey respondents) would experience a serious or significant

- impact (loss) regarding their ability to perform their research in the absence of the NHMFL.
- Regarding limitations to the users research, a large number of users cited time limitations (magnet, travel, etc.) to be the most noteworthy limitation to their research (27%). Lack of sufficient magnet time was the most frequent response by users. Other major areas of concern included general lack of funding for their research and travel, equipment problems, scheduling difficulties (including access and availability of equipment), overall distance and location of the NHMFL, limited expertise of technical staff, politics and administrative red tape, among others. Overall, general comments were highly complementary of the NHMFL facility and staff. According to the users survey responses, NHMFL has made a significant and important contribution to their research.

Appendix A



Center for Economic Forecasting and Analysis

NHMFL User's Survey

CONTACT INFORMATION

1. Name of the NHMFL facility where research was conducted (please select all that apply) :

- DC Field Facility
- Pulsed Field Facility LANL
- High B/T UF
- AMRIS UF
- NMR FSU
- ICR FSU
- EMR FSU
- Geochemistry FSU

2. Name of person completing survey

First name Last name

3. Your preferred e-mail address

ORGANIZATIONAL INFORMATION

4. Was your research conducted at the NHMFL affiliated with (please select) :

United States

NHMFL	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	
University	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	Name of University <input style="width: 80px;" type="text"/>
Private Sector/Industry	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	
National Lab/Fed.Gov't	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	

Non-U.S.

University Yes No Name of University

Private Sector/Industry Yes No

National Lab/Fed.Gov't Yes No

5. For what time period per visit did you use the NHMFL facilities to perform research during 2001?

6. How many visits did you make during 2001?

7. What percent of your NHMFL activities are (sum to 100%):

Basic Research %

Applied Research %

Teaching %

Training/Instruction %

Public Service %

Other %

Total (100%): %

8. Are you employed as

If other, please state

9. How many collaborators (senior personnel, technical staff, and postdocs) do you have in your user group? (*Please do not include student employees*) . If you are involved in multiple user group research activities, please be inclusive.

Tenured Faculty Tenure Earning Faculty Non Tenured Faculty Post Docs Technical Staff

10. Please indicate the number of collaborators by activity (*skip question if not applicable*) :

Theory Experimental

11. How many staff in your user group(s) have the following: (*Please do not include student employees*) .

Doctorate or equivalent Master's Bachelor's Sp. Certificates

12. How many graduate or undergraduate students were involved or have directly benefited in user group research activities for 2001?

Candidates for:

Doctorate's Master's Bachelor's

How many have completed for 2001?

Doctorate's Master's Bachelor's

13. How many of the graduate and undergraduate students were:

Employees (Paid): Interns/Class Credit (Unpaid)
On External Grants
Institution Funded

AMOUNT AND SOURCES OF USER GROUP FUNDING AND EXPENDITURES

14. What was your funding level for NHMFL-related research at the NHMFL during 2001?

Federal/Gov't	\$	<input type="text"/>	
Institution	\$	<input type="text"/>	
Private sector/Industry	\$	<input type="text"/>	
Non-Profit	\$	<input type="text"/>	
Non-US	\$	<input type="text"/>	
Other	\$	<input type="text"/>	If other, please state <input type="text"/>

RESEARCH IMPACT

15. How many publications related to research performed at the NHMFL were made by your group during the survey period?

Scholarly publications (peer reviewed)

Other publications (non-peer reviewed)

16. How many presentations related to research performed at the NHMFL were made by your group during the survey period?

Invited Presentations

Contributed Presentations

17. What were other important activities related to research conducted at the NHMFL during the survey period?

- Conferences, Symposia, etc. organized
- Workshops/Training Sessions
- Professional Service (organizations, committees, etc.)
- Presentations to community groups/other organizations
- Patents/Copyrights
- Licenses

Spin-off Companies

Name of spin-off

18. Do you receive any license royalties?

Yes No

If so, how much?

19. Has the research you and your colleagues completed led to any commercialized products?

Yes No

Which?

20. Are any other products likely to emerge in the near future?

Yes No

Which?

21. Please rank (by level of importance to your user group) your top three beneficiaries of research conducted at the NHMFL:

1st

Ranked:

If Other, please state

2nd

Ranked:

If Other, please state

3rd

Ranked:

If Other, please state

22. If the NHMFL were not available to perform your research, would you be able to perform your research?

Yes No

What impact would this have on your ability to perform your research?

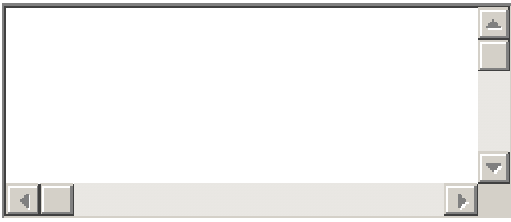
23. What do you see as the most significant three limitations (in prioritized order) to completing your research at the NHMFL?

1)

2)

3)

24. Do you have comments or information that you would like to add concerning the survey?



Save

Submit

Appendix B

Q23 First Limitation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-100 (No response)	42	25.3	25.3	25.3
	access	2	1.2	1.2	26.5
	access to instrumentation	1	.6	.6	27.1
	access to magnets	1	.6	.6	27.7
	Access to the Facility	1	.6	.6	28.3
	Administrative Load	1	.6	.6	28.9
	amount of awarded time	1	.6	.6	29.5
	Appropriate equipment	1	.6	.6	30.1
	availability of instrumentatio	1	.6	.6	30.7
	availability of magnet time	2	1.2	1.2	31.9
	Availability of time at facili	1	.6	.6	32.5
	Budgetary constraints	1	.6	.6	33.1
	bureaucracy in state policies	1	.6	.6	33.7
	change in research	1	.6	.6	34.3
	Complexity of the measurements	1	.6	.6	34.9
	Cost	1	.6	.6	35.5
	cost of travel	1	.6	.6	36.1
	cost, in terms of time and \$	1	.6	.6	36.7
	dilution fridge availability	1	.6	.6	37.3
	distance	1	.6	.6	38.0
	distance from FSU/NHMFL	1	.6	.6	38.6
	Distance from UK	1	.6	.6	39.2
	Distance to the site	1	.6	.6	39.8
	Distance to travel	1	.6	.6	40.4
	Equipment problems	1	.6	.6	41.0
	field limited 55 T	1	.6	.6	41.6
	FSU/UF politics	1	.6	.6	42.2
	funding	2	1.2	1.2	43.4
	Funding	4	2.4	2.4	45.8
	funding from Brazil	1	.6	.6	46.4
	generator failure - no power	1	.6	.6	47.0
	Getting time scheduled	1	.6	.6	47.6
	higher field solution NMR	1	.6	.6	48.2
	instrum. time availability	1	.6	.6	48.8
	instrument time	1	.6	.6	49.4
	Insufficient funding	1	.6	.6	50.0
	Insuficient technical assistan	1	.6	.6	50.6
	lack of infrared spectrometers	1	.6	.6	51.2
	Lack of magnet time	1	.6	.6	51.8
	Lack of time	1	.6	.6	52.4
	lack of travel funds	1	.6	.6	53.0
	large distance to university	1	.6	.6	53.6

level of tech support at NHMFL	1	.6	.6	54.2
Limited access to equipment	1	.6	.6	54.8
Limited housings for visitors	1	.6	.6	55.4
limited magnet time	3	1.8	1.8	57.2
Limited magnet time	1	.6	.6	57.8
limited sensitivity	1	.6	.6	58.4
Limited time	1	.6	.6	59.0
Limited Time	1	.6	.6	59.6
Low ENDOR sensitivity	1	.6	.6	60.2
M vs. T with high fields	1	.6	.6	60.8
machine time	1	.6	.6	61.4
Machine time availability	1	.6	.6	62.0
Magnet availability	1	.6	.6	62.7
magnet failure	1	.6	.6	63.3
magnet time	3	1.8	1.8	65.1
Magnet time	1	.6	.6	65.7
Magnet Time	1	.6	.6	66.3
magnet time availability	2	1.2	1.2	67.5
magnet time available	1	.6	.6	68.1
magnet time in general	1	.6	.6	68.7
magnet time limit	1	.6	.6	69.3
Major project funding.	1	.6	.6	69.9
Man-power in the EMR team	1	.6	.6	70.5
na	1	.6	.6	71.1
NHMFL is underfunded 3-fold	1	.6	.6	71.7
no path for LANL staff involve	1	.6	.6	72.3
no significant deficiencies	1	.6	.6	72.9
NO special limitation	1	.6	.6	73.5
No VT MAS NMR	1	.6	.6	74.1
none	1	.6	.6	74.7
None	2	1.2	1.2	75.9
Not enough magnet time	1	.6	.6	76.5
not enough user support	1	.6	.6	77.1
Not sufficient time allocated	1	.6	.6	77.7
on site housing	1	.6	.6	78.3
Outside NSF Funding	1	.6	.6	78.9
poor cooperation of staff	1	.6	.6	79.5
power stop from town Jan 2001	1	.6	.6	80.1
research for wire material	1	.6	.6	80.7
Scheduled Magnet Time	1	.6	.6	81.3
scheduling adjustments	1	.6	.6	81.9
sensitivity of ENDOR spect.	1	.6	.6	82.5
Short operation time	1	.6	.6	83.1
shortage of time	1	.6	.6	83.7
small temperature range	1	.6	.6	84.3
summer salary for faculty	1	.6	.6	84.9
support from my industry	1	.6	.6	85.5
support instrumentation	1	.6	.6	86.1

teaching duties	1	.6	.6	86.7
Technical limitations	1	.6	.6	87.3
time	1	.6	.6	88.0
Time	2	1.2	1.2	89.2
time limitation	1	.6	.6	89.8
time limitations	1	.6	.6	90.4
time to visit	1	.6	.6	91.0
timely purchasing	1	.6	.6	91.6
To be short in time	1	.6	.6	92.2
too few NHMFL technical	1	.6	.6	92.8
staff				
travel costs	1	.6	.6	93.4
Travel Costs	1	.6	.6	94.0
Travel elsewhere	1	.6	.6	94.6
travel fee	1	.6	.6	95.2
Travel Funding	1	.6	.6	95.8
Travel funds	1	.6	.6	96.4
travel money	1	.6	.6	97.0
travel to and from NHMFL	1	.6	.6	97.6
travel to NHMFL	1	.6	.6	98.2
UK funding for science!	1	.6	.6	98.8
US-Czech cooperation rules	1	.6	.6	99.4
user's support	1	.6	.6	100.0
Total	166	100.0	100.0	

Q23 Second Limitation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	-100 (No response)	81	48.8	48.8	48.8
	access	1	.6	.6	49.4
	access time	1	.6	.6	50.0
	access to instrumentation	1	.6	.6	50.6
	Administrative duties	1	.6	.6	51.2
	alloted magnet time	1	.6	.6	51.8
	angularly resolved capability	1	.6	.6	52.4
	Availability of samples	1	.6	.6	53.0
	Available time at NHMFL	1	.6	.6	53.6
	bad temperature stabiluty	1	.6	.6	54.2
	better equipped NMR	1	.6	.6	54.8
	chemistry facilities	1	.6	.6	55.4
	competition for magnet time	1	.6	.6	56.0
	cost of airfare	1	.6	.6	56.6
	delay between visits	1	.6	.6	57.2
	delays	1	.6	.6	57.8
	Distance	1	.6	.6	58.4
	Facilities to prep samples	1	.6	.6	59.0
	fed funds for basic science	1	.6	.6	59.6
	financial limitations	1	.6	.6	60.2
	funding	2	1.2	1.2	61.4
	Funding	1	.6	.6	62.0

funds	1	.6	.6	62.7
Grant Writing	1	.6	.6	63.3
Housing Costs	1	.6	.6	63.9
instruments sensitivity	1	.6	.6	64.5
Insufficient staff at NHMFL	1	.6	.6	65.1
Insuficient time allocation	1	.6	.6	65.7
lack of 24 hour access to DC	1	.6	.6	66.3
lack of appopr. ENDOR	1	.6	.6	66.9
probe				
Lack of Dinining Facilities	1	.6	.6	67.5
lack of funding	1	.6	.6	68.1
Lack of funding	1	.6	.6	68.7
lack of infrared probeheads	1	.6	.6	69.3
Lack of manpower	1	.6	.6	69.9
lack of money	1	.6	.6	70.5
lack of support facilities	1	.6	.6	71.1
limited funds	1	.6	.6	71.7
limited magnet time avail.	1	.6	.6	72.3
limited running time	1	.6	.6	72.9
Local User Support	1	.6	.6	73.5
(Manpower)				
long trip	1	.6	.6	74.1
machine time	1	.6	.6	74.7
Machine Time	1	.6	.6	75.3
magnet time	2	1.2	1.2	76.5
Money	1	.6	.6	77.1
more and better equipment	1	.6	.6	77.7
NHMFL is far-off Prague	1	.6	.6	78.3
NHMFL staff time	1	.6	.6	78.9
No magnet time w. priority 1	1	.6	.6	79.5
none	1	.6	.6	80.1
None	1	.6	.6	80.7
not enough machine time	1	.6	.6	81.3
not enough PCs for users	1	.6	.6	81.9
Not enough semiconductor	1	.6	.6	82.5
physi				
not getting IHRP(5 times)	1	.6	.6	83.1
novel materials	1	.6	.6	83.7
on site biolab for sample prep	1	.6	.6	84.3
payment for liquid helium	1	.6	.6	84.9
pulse duration time	1	.6	.6	85.5
sample handling facilities	1	.6	.6	86.1
short user time	1	.6	.6	86.7
stability of magnetic field	1	.6	.6	87.3
Stuff support	1	.6	.6	88.0
support availability (machinis	1	.6	.6	88.6
tempertr control inteference	1	.6	.6	89.2
testing of pulse coil designs	1	.6	.6	89.8
thermal stability	1	.6	.6	90.4
Time	3	1.8	1.8	92.2

Time constraints	1	.6	.6	92.8
time for travel	1	.6	.6	93.4
Time limit on magnet	1	.6	.6	94.0
time on the 45 T hybrid	1	.6	.6	94.6
travel expenses	3	1.8	1.8	96.4
Travel Expenses	1	.6	.6	97.0
travel funds	1	.6	.6	97.6
travel support	1	.6	.6	98.2
travel uncertainties	1	.6	.6	98.8
Unknown stray impedences	1	.6	.6	99.4
visiting scientist budget cuts	1	.6	.6	100.0
Total	166	100.0	100.0	

Q23 Third Limitation

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid -	1	.6	.6	.6
-100 (No response)	109	65.7	65.7	66.3
a few options	1	.6	.6	66.9
access	1	.6	.6	67.5
access to instrumentation	1	.6	.6	68.1
Ancillary probes	1	.6	.6	68.7
avail. equipment	1	.6	.6	69.3
available machine time	1	.6	.6	69.9
competition for time on magnet	1	.6	.6	70.5
computing abilities	1	.6	.6	71.1
cryogen expenses	1	.6	.6	71.7
current level of funding	1	.6	.6	72.3
Electrical noise problems	1	.6	.6	72.9
equipment such as tuangle lase	1	.6	.6	73.5
faculty salary support	1	.6	.6	74.1
Financial User Support	1	.6	.6	74.7
Funding	2	1.2	1.2	75.9
improvements to EMR instrument	1	.6	.6	76.5
instrumentation availability	1	.6	.6	77.1
IR not supported on hybrid	1	.6	.6	77.7
lack of restaurant	1	.6	.6	78.3
lack of special optical equip.	1	.6	.6	78.9
Location of Laboratory	1	.6	.6	79.5
magnet time	1	.6	.6	80.1
more interest in solution NMR	1	.6	.6	80.7
Need to travel across the US	1	.6	.6	81.3
NHMFL facilities underfunded	1	.6	.6	81.9
none	1	.6	.6	82.5
None	1	.6	.6	83.1
not enough personals	1	.6	.6	83.7

other commitments	1	.6	.6	84.3
other time commitments	1	.6	.6	84.9
Personal financial support	1	.6	.6	85.5
PI's time	1	.6	.6	86.1
Pulsed fac. is understaffed	1	.6	.6	86.7
quality of students	1	.6	.6	87.3
remoteness	1	.6	.6	88.0
requires extensive method	1	.6	.6	88.6
deve				
Safety requirements	1	.6	.6	89.2
sample availability	1	.6	.6	89.8
Sample availability	1	.6	.6	90.4
samples	1	.6	.6	91.0
scheduling of time	1	.6	.6	91.6
southern laid-back attitude	1	.6	.6	92.2
teaching activities	1	.6	.6	92.8
technical assistance	1	.6	.6	93.4
technical help	1	.6	.6	94.0
Time	2	1.2	1.2	95.2
Timing	1	.6	.6	95.8
trained grad students	1	.6	.6	96.4
travel expense	1	.6	.6	97.0
travel money	1	.6	.6	97.6
Tuition Costs for students	1	.6	.6	98.2
unfair IHRP distribution	1	.6	.6	98.8
unforeseen accidents with	1	.6	.6	99.4
expt				
university duties	1	.6	.6	100.0
Total	166	100.0	100.0	

Appendix C

Survey General Comments

1. While we were there the He3 system had trouble getting to base T. Our results were ambiguous due to the unknown nature of parasitic capacitance etc. in the equipment. Support staff had insufficie
2. The facilities and staff at the magnet lab. are superb. In comparison with the former MIT magnet lab., the level of support, quality of research environment and magnetic fields available are 5
3. Support facilities refers to experimental facilities that support magnetic field work; i.e. experimental techniques for characterization outside of the magnets. Faculty salary support refers to the I
4. The NHMFL is an indispensable national asset. It puts the Florida on the map of international centers of scientific excellence.
5. I dedicated 50 % of my time to User support Group and 50 % to Condensed Matter Theory Group, which is conformed by sub-groups. Above I have included and combined the information from both groups.
6. The NHMFL offers an invaluable educational opportunity for training a new generation of researchers, and for pushing the envelope of science. These opportunities are essential for the health of the U
7. As a professor at an undergraduate institution I would like to stress the positive impact that visits to the NHMFL have on my students. Several have spent summers as interns at the NHMFL. Several
8. provide larger spaces to answer question 23
9. A national high magnetic field lab is essential to the progress of science.
10. We are waiting for higher sensitivity for before trying to do ENDOR experiments at high field on weak biological samples.
11. expansion to question 23, since it cut off sentences:
 - 1) distance from FSU/NHMFL (I am based in Chicago)
 - 2) competition with other users for magnet time (scheduling difficulties in general)
12. As a non-US-based scientist, I did not really understand some of the questions (such as item 4) in this survey.
13. I am very much satisfied with the NHMFL operation.
14. The DC facility of the NHMFL is indispensable for performing world-class research in studies of electronic properties in semiconductor materials, an area very important for applications in technol

15. NHMFL is a world-beating facility which should not only be maintained but expanded. Having first-hand experience of leading research laboratories in Europe and Asia I am convinced that the NHMFL is t
16. I would like to thank my colleagues at the EMR group: Dr. L.C. Brunel, Dr. J. van Tol, and Dr. C. Saylor for their time, expertise and the absolutely stimulating environment during my visit.
17. I have used a 20T magnet with a large bore. The magnet is very useful for our experiment concerning crystal growth in high magnetic field. I could obtain data which I have never get at any other place
18. The contribution of the NHMFL to my research was very important.
19. The outreach effort to get scientists and students from under represented areas and groups has been very remarkable. Mag lab staff involved with long term resident students should receive better trai
20. The NHMFL is an extremely important facility, particularly the ICR MS. There has been a long standing controversy in petroleum chemistry. When the NHMFL FT-ICR MS weighs in people will listen.
21. Our group in Frankfurt is not a "typical user group". We obtain our pulse field coil from the NHMFL and use them in our own laboratory. Without these coils a lot of our research activities are impos
22. In the 6 years I've been associated with the lab, UF has moved from being an "equal partner" to a very minor player in the entire operation. If this is not fixed, I predict that the lab will be lost,
23. This one visit made in October 2001 was the first by our group. Thanks to the excellent technical assistance provided by the Laboratory staff and the unique research facility, we have produced no
24. This is an odd survey that is aimed at external users of the NHMFL. Having staff at the NHMFL complete it is potentially misleading to the end users of the data.
25. Our group has been able to perform world class research with the excellent staff at the NSF funded FT-ICR User Facility. Our collaboration was able to get started because of travel funds made availab
26. I deeply appreciate Prof. T. Cross, Dr. W. Brey, Dr. R. Fu and P. Gor'kov for the support and the collabortion during my visits to NHMFL. I also very much grateful to Mrs. Mary Layne for arranding my
27. NHMFL is significantly contribution to materials research. Our group has benefited in the research of quasi crystals and organic magnets as well as fullerene nanomaterials. The impact of this research

28. The NHMFL is a superb facility to carry out research. Excellent colleagues, facilities and atmosphere come together to make a nearly ideal research environment
29. We are completely satisfied with the facilities and the assistance that we received in executing our experiment. Only a grad student went and he came back with a very complete data set that we are sti
30. I am unable to answer to the questions because I performed some HF ESR experiments through a collaboration with Prof. Annalisa Maniero who spent a period of research at the National High Magnetic Fiel
31. The NHMFL is a wonderful facility and I am very thankful for its existence and its strong user support.
32. The support by the State of Florida in establishing NHFML was crucial. The magnet lab is a better one than had it remained at MIT. Continued support by the State of Florida will continue to direct t
33. I don't understand question 23. My student had superb help both at the Tallahassee and the Los Alamos location. His ability to examine magnetotransport at the NHMFL contributed greatly to his thesis.
34. Will you collaborate on an NSF-ROA grant award application?
35. I am a theoretical physicist who has worked with researchers at the NHMFL. For this reason, may of the above questions do not apply to me directly (I do not explicitly use the experimental facilities)
36. the staff at the ICR were consummate professionals they were able to perform experiments that had not been feasible elsewhere
37. NHMFL helped us a lot
38. I have wonderful and very useful interactions over the years with B. Schrieffer (papers together). We have ongoing projects on clapping mode measurements in organic superconductors and on Farad
39. The NHMFL is an outstanding facility that provides a unique opportunity for carrying out very high magnetic field measurements by users on an international scale. Considering its resource limitations
40. The NHMFL helped me get started by assisting the construction of a very high performance FT-ICR Mass Spectrometer. There is absolutely no way I could have pulled this off with Alan Marshall and Ch
41. The research in Tallahassee was conducted in collaboration with Staff at the NHMFL and Professor Samoilenko from Moscow partly to develop a new facility for the NHMFL and therefore for other users.

42. I am now working at the NHMFL as a Post Doctoral research associate. I have completed the survey based upon my status during my visit in July 2001.
43. The facility and the people are first rate and very helpful.
44. Very impressed by the quality of the magnet. Important competence of the US colleagues for high magnetic field experiments.
45. I was as a one year Visiting Scientist at the NHMFL in Tallahassee (03/95-03/96). Since then I have not visited the laboratory. I am a Full Professor at Universidade Federal Fluminense and present
46. You need to define your terms -- was ambiguous in certain places. For instance, when you ask for "funding level for NHMFL-related research at the NHMFL", what exactly do you mean -- total research do
47. I'm willing to contribute to 2 very much needed improvements to CIMAR equipment:
1) 2- or 3-axis goniometer
2) He-3 dilution probehead
48. Cooperation between Boreskov Institute of Catalysis (Novosibirsk, Russia) and NHMFL is significant for the study of catalysts.
49. This new project just started in Dec. 2001. Therefore there are no publications available yet. When we arrived in Dec. 2001, user support was very limited and the equipment was not maintained at the
50. In my opinion, NHMFL provides an excellent service for researchers. If we are limited in what we can do using NHMFL facilities, it is only by local UK funding issues.
51. Personnel at NHMFL were supportive and it was a pleasant working environment.
52. I am a research scientist involved in the design and fabrication of a major new magnet system. 1. I do not conduct "research" at any specific facility at the NHMFL, rather I am involved in the creat