

# Economic Impact of the College of Allied Health Professions on the Local Economy

CBER Research Report #60

by

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## Executive Summary

The economic impact of the College of Allied Health Professions at the University of South Alabama on the local economy is briefly summarized below. The local economy in this report is defined as the economy of Mobile County, Alabama.

### Introduction

1. The term “allied health” was first used in 1966 when The Allied Health Professions Training Act of 1966 was enacted. The Association of Schools of Allied Health Professions was founded in 1967. The College of Allied Health Professions at the University of South Alabama was established in 1975.
2. The fall 2004 student enrollment of the College of Allied Health Professions was 1,283 of which 195 were graduate students and 1,088 were undergraduate students.

### Survey of Students

An extensive survey has been made on students of the College of Allied Health Professions during the Fall 2004 semester. Survey results are summarized.

3. Among all College students, 23.82 percent are married while 76.18 percent are not married. Among undergraduates, 19.82 percent are married and 80.18 percent are not married. Among graduate students, 32.35 percent are married and 67.65 percent are not married.
4. Only 33.85 percent of the College students lived in Mobile and Baldwin counties before they came to the University of South Alabama. The percentage is higher for undergraduates at 43.78 percent and lower for graduate students at 12.74 percent.
5. A large number of students stated that they would not be attending college in Mobile if there were no College of Allied Health Professions. The percentage is 53.00 percent for undergraduates and 94.12 percent for graduate students.
6. The monthly living expenses net of educational expenses are \$3,120.95 for undergraduate singles, \$4,015.79 for married undergraduates, \$2,396.24 for graduate singles, and \$3,973.99 for married graduates. The combined average is \$3,395.70.

### Direct Expenditures Impact

7. The direct expenditures impact of the College of Allied Health Professions has three components: (a) local expenditures made by out-of-town students excluding

expenditures made by students who live in Mobile and Baldwin counties, (b) local expenditures made by College faculty and staff who live in Mobile County only and prorated for the ratio of out-of-town students relative to total students of the College, and (c) external funds generated by the College faculty.

8. Direct expenditures impact of the College of Allied Health Professions is comprised of \$26,617,788.43 by out-of-town students, \$2,170,256.00 for operation of the College and by College employees prorated for local residence and out-of-town students, and \$1,064,446.00 for annual average amount of external funds generated by the College.
9. The total amount of the annual direct expenditures impact of the College of Allied Health Professions on the local economy is \$29,852,490.43.

#### Total Economic Impact

10. Direct expenditures generate additional impact through the multiplier effect. Multipliers adopted in this study are the ones developed by the U.S. Bureau of Economic Analysis specifically for Mobile County, known as RIMS II multipliers.
11. Including the multiplier effect, the amount of total expenditures generated by the College of Allied Health Professions for the local economy is \$60,290,089.67 per year, which leads to \$30,674,241.10 of after-tax retail expenditures in the local economy.
12. The total number of jobs that are created or maintained in Mobile County by the College-generated expenditures is 1,248.
13. Annual tax revenues generated by the College are \$575,807 for the City of Mobile, \$327,933 for Mobile County, and \$1,611,446 for the State of Alabama. Any tax impact made by the College employees residing in Baldwin County is not estimated and thus excluded.
14. The long-term impact of the College to the local economy may alternatively be stated: The College contributes \$4,424,398.39 in increased earnings annually to the state of Alabama of which \$2,145,335.30 is to Mobile County through its education and training. The present value of the annual contributions at five percent discount rate is \$88,487,967.80 to Alabama of which \$42,906,706 is the share of Mobile County. The present value of \$42,906,706 at five percent discount rate means that a deposit of \$42,906,706 at five percent interest rate is needed to generate \$2,145,335.30 each year.

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## Section 1

### Allied Health as a New Profession

Allied health comprises a multitude of disciplines. Allied health care workers are thus responsible for providing an “extremely broad range of basic health services.” [Leonard J. Finocchio, “Looking Into the Future of Allied Health: Recommendations of the Pew Health Professions Commission,” *Journal of Allied Health*, 23 (Winter 1994), 29-33; quotation from p. 30] In this introductory section, we briefly review the history of allied health as a profession.

#### Origin of “Allied Health”

The term “allied health” was first coined in 1966 when staff members of the U.S. Department of Health Education and Welfare (HEW) used the phrase “allied health” in the landmark legislation, *The Allied Health Professions Training Act of 1966*. The Association of Schools of Allied Health Professions (ASAHP) was founded in 1967 with 13 representatives from universities, colleges, schools, and divisions across the country. “Allied health schools and programs expanded greatly between 1967 and 1980, largely due to more than \$300 million in federal funds.” [For details of history, see Karen R. Karni, Abigail Lang, Jacqueline B. Beck, “Why a School of Allied Health?” *Journal of Allied Health*, 24 (Summer 1995) 187-202; quotation from p. 189] Numerous allied health educational programs are organized into one college or school to encourage and facilitate interdisciplinary collaboration around teaching, research, and service involving basic health care outside the role of medical students, physicians, and nurses.

Allied health as a profession made significant progress when the American Medical Association (AMA) “announced its intent to support the establishment of a new freestanding agency to assume the accreditation responsibilities” of the Committee on Allied Health Education and Accreditation (CAHEA) at its October 1992 meetings.

During the CAHEA’s meeting in 1992, the American Medical Association (AMA) announced its intent to support the establishment of a new freestanding agency to assume the accreditation responsibilities of CAHEA. “A task force on restructuring CAHEA was appointed and, in the early spring of 1993, it proposed the creation of a new agency, the Commission on Accreditation of Allied Health Education Programs (CAAHEP),” solidifying the foundation of allied health as a separate and independent profession. [Clyde R. Willis, “Introduction,” *Journal of Allied Health*, 23 (Winter 1994), pp. 1-2; quotations from p. 1]

Two additional reports in the early 1990s further defined the scope of allied health as a profession: “Healthy America: Practitioners for 2005” and “Health Professionals for the Future: Schools in Service to the Nation” by the Pew Health Professions Commission, and “Report of the National Commission on Allied Health” by the National Commission on

Allied Health established by the Health Professions Education Extension Amendments of 1992 (PL 102-408).

Practitioner competencies envisioned for 2005 in the first report by the Pew Health Professions Commission clearly suggest the wide-ranging scope of allied health professions: [Leonard J. Finocchio, "Looking Into the Future of Allied Health: Recommendations of the Pew Health Professions Commission," *Journal of Allied Health*, 23 (Winter 1994), 29-33; the list from p. 30]

- care for the community's health
- expand access to effective care
- provide contemporary clinical care
- emphasize primary care
- participate in coordinated care
- ensure cost-effective and appropriate care
- practice prevention
- involve patients and family in the decision-making process
- promote healthy lifestyles
- assess and use technology appropriately
- improve the health care System
- manage information
- understand the role of the physical environment
- provide counseling on ethical issues
- accommodate expanded accountability
- participate in a racially and culturally diverse society
- continue to learn

### Objectives of This Study

The primary objective of this report is to estimate the economic impact of the College of Allied Health Professions, University of South Alabama, on the local economy. The local economy in this report is defined as the economy of Mobile County, Alabama.

## Section 2

### College of Allied Health Professions

Introduced in this section is the College of Allied Health Professions at the University of South Alabama. The College was established in 1975 .

#### College Programs

The College of Allied Health Professions has a number of programs at both the undergraduate and graduate levels. These programs are summarized below:

##### Certificate Program

- Radiologic Technology

##### Bachelor in Science

- Biomedical Sciences
- Cardiorespiratory Sciences
- Clinical Laboratory Sciences
- Radiologic Sciences
- Speech and Hearing Sciences

##### Master's Degree Programs

- Health Science
- Physician Assistant Studies
- Occupational Therapy
- Speech-Language Pathology

##### Doctoral Degree

- Audiology
- Communication Sciences and Disorders

These programs are accredited by the Committee for Accreditation for Respiratory Care, Accreditation Council for Occupational Therapy Education, Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association, American Speech-Language and Hearing Association, Joint Review Committee on Education in Radiologic Technology, and the National Accreditation Agency for Clinical Laboratory Sciences.

## College Enrollment in Fall 2004

The fall 2004 student enrollment of the College of Allied Health Professions is the following:

Table 2-1. Fall 2004 Enrollment of the College by Program

Allied Health General Studies	44
Audiology	13
Biomedical Sciences	300
Cardiorespiratory Sciences	25
Cardiorespiratory Sciences - Preprof	31
Clinical Laboratory Sciences	21
Clinical Laboratory Sciences - Preprof	28
Communication Sciences and Disorders	9
Occupational Therapy - Preprof HS	11
Occupational Therapy - Graduate	24
Occupational Therapy - Preprof	46
Physical Therapy - Preprof HS	20
DPT	12
Physical Therapy - Preprof	183
Physical Therapy - Graduate	42
Physician Assistant	69
Radiologic	35
Radiologic - Technology	80
Radiologic - Technology Preprof	180
Speech and Hearing Sciences	82
Speech-Language Pathology	26
Undeclared	2
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total	1,283

Source: College of Allied Health Professions 2004.

Of the total, 195 are graduate students and 1,088 are undergraduate students.

Fall semester credit hours of student enrollment of the College from 1999 to 2003 are summarized in Table 2.

Table 2-2. Fall Term Student Credit Hours by Program - Fall Term

	1999	2000	2001	2002	2003
<b>Audiology</b>					
Graduate II	0	0	0	0	84
Total	0	0	0	0	84
<b>Biomedical Sciences</b>					
Lower	365	416	550	1,495	702
Upper	1,651	1,316	1,354	1,399	1,263
Total	2,016	1,732	1,904	2,894	1,965
<b>Cardiorespiratory Sciences</b>					
Upper	413	260	328	391	372
Upper Clinical Hours	124	83	72	112	96
Total	537	343	400	503	468
<b>Clinical Lab Sciences</b>					
Lower	0	0	0	0	1,516
Upper	217	182	192	210	230
Upper Clinical Hours	0	0	0	0	60
Total	217	182	192	210	1,806
<b>Communication Sciences and Disorders</b>					
Graduate II	28	48	47	83	51
Total	28	48	47	83	51
<b>Occupational Therapy</b>					
Lower	34	30	38	28	0
Upper	783	799	604	173	0
Upper Clinical Hours	276	234	280	130	0
Graduate	0	0	0	0	382
Graduate Clinical Hours	0	0	0	0	26
Total	1,093	1,063	922	331	408
<b>Physical Therapy</b>					
Lower	32	25	39	39	21
Upper	192	0	0	0	0
Upper Clinical Hours	467	495	480	0	0
Graduate	860	1,091	936	804	1,055
Graduate Clinical Hours	0	0	0	360	345
Total	1,551	1,611	1,455	1,203	1,421

Physician Assistant Studies					
Graduate	1,228	1,238	1,172	1,074	1,112
Graduate Clinical Hours	453	453	467	413	387
Total	1,681	1,691	1,639	1,487	1,499
Radiologic Sciences					
Lower	698	816	790	846	894
Upper	141	137	160	202	203
Lower Clinical Hours	194	272	245	258	305
Upper Clinical Hours	113	104	156	185	175
Total	1,146	1,329	1,351	1,491	1,577
Speech Pathology & Audiology					
Lower	153	120	132	105	102
Upper	429	363	255	351	354
Graduate	500	518	506	423	319
Graduate Clinical Hours	172	146	170	139	127
Total	1,254	1,147	1,063	1,018	902

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Source: The University of South Alabama, Statistical Profiles 2004, pp. 68-69.

### Section 3

#### Survey of Students

An extensive survey has been made on students of the College of Allied Health Professions during the Fall 2004 semester. Survey results are summarized in tabular form in this section in order of the question in the survey. The questionnaire is attached to this study as Appendix 1.

Table 3-1. Are you married?

	Total	Percentage
Undergraduates		
yes	43	19.82%
no	174	80.18
total	217	100.00%
Graduates		
yes	33	32.35%
no	69	67.65
total	102	100.00%
Combined		
yes	76	23.82%
no	243	76.18
total	319	100.00%

Table 3-2. Where did you live before coming to the University of South Alabama?

	Undergrad	Percent	Graduate	Percent	Total	Percent
Mobile county	73	33.64%	11	10.78%	84	26.33%
Baldwin county	22	10.14	2	1.96	24	7.52
Other Alabama	50	23.04	24	23.53	74	23.20
Florida	15	6.91	20	19.61	35	10.97
Mississippi	37	17.05	27	26.47	64	20.06
Other states in the U.S.A.	15	6.91	14	13.73	29	9.09
Foreign country	5	2.30	4	3.92	9	2.82
Total	217	100.00	102	100.00	319	100.00%

Table 3-3. Status at the College?

	Total	Percentage
Undergraduate	217	68.03%
Graduate	102	31.97
Total	319	100.00%

Table 3-4. If there were no College of Allied Health Professions, would you be attending:

	Total	Percentage
<u>Undergraduate</u>		
another college at U of SA	89	41.01%
another college in Mobile County	13	5.99
no college in Mobile County	115	53.00
total	217	100.00%
<u>Graduate</u>		
another grad school at U of SA	5	4.90%
another grad school in Mobile County	1	0.98
no grad school in Mobile County	96	94.12
total	102	100.00%

Table 3-5. Employment status?

	Total	Percentage
<b>Undergraduates</b>		
employed, full-time	24	11.06%
employed, part-time	114	52.53
not employed	79	36.41
total	217	100.00%
<b>Graduates</b>		
employed, full-time	0	0.00%
employed, part-time	20	19.61
not employed	82	80.39
total	102	100.00%
<b>Combined</b>		
employed, full-time	24	7.52%
employed, part-time	134	42.01
not employed	161	50.47
total	319	100.00%

Table 3-6. Total expenditure during a typical month by you or your family

	Average				
	under-single	under-married	grad-single	grad-married	combined
food at home	\$194.53	\$309.74	\$145.16	\$278.00	\$208.09
food away from home	104.19	124.87	78.89	94.00	100.14
alcoholic beverages	53.57	52.14	34.19	46.64	46.48
mortgage payments	528.81	802.98	300.00	831.85	693.99
home maintenance	101.32	131.43	33.00	93.57	96.18
rent for house/apt	489.73	480.28	396.70	534.23	460.12
telephone	56.94	67.50	54.72	78.00	60.53
utilities	124.20	162.56	89.59	136.00	124.67
domestic services	54.38	126.67	10.00	83.33	80.83
household furnishings	89.24	79.00	49.05	64.38	73.33
clothing	100.98	81.41	78.75	71.96	89.30
vehicle purchase	301.83	428.59	300.50	381.35	346.30
gas, oil, auto repair	114.19	171.68	82.70	158.54	119.01
vehicle insurance	145.78	130.97	99.68	128.17	131.75
health insurance	106.07	193.27	179.44	155.56	153.00
medical expenses	60.42	59.15	43.58	40.31	53.32
entertainment	52.06	52.86	44.33	41.90	49.05
personal care	41.97	35.46	37.75	30.26	38.83
books, periodicals	103.94	48.02	68.53	148.95	90.27
tobacco	51.67	84.17	51.25	75.00	63.41
contributions	56.63	132.25	29.49	111.79	70.24
life insurance	86.09	101.79	39.00	109.09	93.03
miscellaneous	102.41	159.00	149.94	281.11	153.83
total	\$3,120.95	\$4,015.79	\$2,396.24	\$3,973.99	\$3,395.70

Note that miscellaneous items include gifts for family and friends, extra expenses, cable internet/TV, credit cards, pet care, day care, travel, makeup, jewelry, gym membership, purses, outings, Wal-Mart/ Target, restaurants/fast food, music lessons, debt payment, hobby supplies, cell phone, and diapers. Note also that students added the following amount for monthly educational expenses: \$1,048.31 for undergraduate-single, \$616.92 for undergraduate-married, \$616.94 for graduate-single, \$767.19 for graduate-married, and \$837.79 for all students combined.

## Section 4

### Estimating the College's Direct Expenditures Impact

Estimates of the direct expenditures impact of the College of Allied Health Professions are made in this section. Note that the impact arise from expenditures that would not have been made without the existence of the College in Mobile County.

#### Student Expenditures

The estimation procedure of direct expenditures by students is a little complicated. All students of the College of Allied Health Professions are divided into eight groups:

- undergraduate - single paying in-state tuition
- undergraduate - single paying out-of-state tuition
- undergraduate - married - single paying in-state tuition
- undergraduate - married - single paying out-of-state tuition
- graduate - single paying in-state tuition
- graduate - single out-of-state tuition
- graduate - married paying in-state tuition
- graduate - married out-of-state tuition

Four comments are in order. First, the classification between in-state tuition and out-of-state tuition is needed because students from Escambia and Santa Rosa counties of Florida and students from George, Greene, Harrison, Jackson, Perry, and Stone Counties of Mississippi are allowed to pay in-state tuition even if they are from out-of-state. In table 3-2, therefore, only those students who came from "Other states in the U.S.A." and "Foreign country" are assumed to pay out-of-state tuition. The percentages are 8.91 percent for undergraduate and 17.65 for graduate students. Second, the estimation of direct expenditures net of tuition is limited to those students who come from places other than Mobile and Baldwin counties since students in Mobile and Baldwin Counties can be assumed to spend the similar amount with or without the College of Allied Health Professions. Third, it is assumed that single out-of-town students do not stay in Mobile during summer while married out-of-town students stay in Mobile during summer even if they do not take classes. Finally, full-time tuition and fees, rather than part-time tuition and fees, are calculated based on the assumption that out-of-town students are more likely to be full-time students.

Annual direct expenditures that these students make are estimated according to the following formula:

(a) undergraduate - single paying in-state tuition

$$\begin{aligned} &= 1,088 \text{ (number of undergraduates)} \\ &x 0.8018 \text{ (\% of single undergraduates from table 3-1)} \\ &x 0.4700 \text{ (\% of undergraduates from Other Alabama, Mississippi \& Florida in} \\ &\text{table 3-2)} \\ &x \$3,120.95 \text{ (monthly living expenditures for single undergraduates from} \\ &\text{table 3-6)} \\ &x 8 \text{ (months, i.e., two semesters per year)} \\ &+ \$2,145 \text{ (in-state tuition \& fees for 15 credit hours of undergraduate)} \\ &x 2 \text{ (two semesters per year)} \\ &= \$11,995,863.17 \end{aligned}$$

(b) undergraduate - single paying out-of-state tuition

$$\begin{aligned} &= 1,088 \text{ (number of undergraduates)} \\ &x 0.8018 \text{ (\% of single undergraduates from table 3-1)} \\ &x 0.0921 \text{ (\% of undergraduates from Other states in the U.S.A. \& Foreign} \\ &\text{country in table 3-2)} \\ &x \$3,120.95 \text{ (monthly living expenditures for single undergraduates from} \\ &\text{table 3-6)} \\ &x 8 \text{ (months, i.e., two semesters per year)} \\ &+ \$4,050 \text{ (out-of-state tuition \& fees for 15 credit hours of undergraduate)} \\ &x 2 \text{ (two semesters per year)} \\ &= \$2,656,790.15 \end{aligned}$$

(c) undergraduate - married paying in-state tuition

$$\begin{aligned} &= 1,088 \text{ (number of undergraduates)} \\ &x 0.1982 \text{ (\% of married undergraduates from table 3-1)} \\ &x 0.4700 \text{ (\% of undergraduates from Other Alabama, Mississippi \& Florida in} \\ &\text{table 3-2)} \\ &x \$4,015.79 \text{ (monthly living expenses for married undergraduates from table} \\ &\text{3-6)} \\ &x 12 \text{ (months per year)} \\ &+ \$2,145 \text{ (in-state tuition \& fees for 15 credit hours of undergraduate)} \\ &x 2 \text{ (two semesters per year)} \\ &= \$5,318,876.75 \end{aligned}$$

(d) undergraduate - married paying out-of-state tuition

$$\begin{aligned} &= 1,088 \text{ (number of undergraduates)} \\ &x 0.1982 \text{ (\% of married undergraduates from table 3-1)} \\ &x 0.0921 \text{ (\% of undergraduates from Other states in the U.S.A. \& Foreign} \\ &\quad \text{country in table 3-2)} \\ &x \$4,015.79 \text{ (monthly living expenses for married undergraduates from table} \\ &\quad \text{3-6)} \\ &x 12 \text{ (months per year)} \\ &+ \$4,050 \text{ (in-state tuition \& fees for 15 credit hours of undergraduate)} \\ &x 2 \text{ (two semesters per year)} \\ &= \$1,117,942.36 \end{aligned}$$

(e) graduate - single paying in-state tuition

$$\begin{aligned} &= 195 \text{ (number of graduate students)} \\ &x 0.6765 \text{ (\% of single graduates from table 3-1)} \\ &x 0.6961 \text{ (\% of graduates from Other Alabama, Mississippi \& Florida in table} \\ &\quad \text{3-2)} \\ &x \$2,396.24 \text{ (monthly living expenditures for single graduates from table 3-6)} \\ &x 8 \text{ (months, i.e., two semesters per year)} \\ &+ \$1,743 \text{ (in-state tuition \& fees for 9 credit hours of graduate students)} \\ &x 2 \text{ (two semesters per year)} \\ &= \$2,080,442.65 \end{aligned}$$

(f) graduate - single out-of-state tuition

$$\begin{aligned} &= 195 \text{ (number of graduate students)} \\ &x 0.6765 \text{ (\% of single graduates from table 3-1)} \\ &x 0.1765 \text{ (\% of graduates from Other states in the U.S.A. \& Foreign country} \\ &\quad \text{in table 3-2)} \\ &x \$2,396.24 \text{ (monthly living expenditures for single graduates from table 3-6)} \\ &x 8 \text{ (months, i.e., two semesters per year)} \\ &+ \$3,246 \text{ (out-of-state tuition \& fees for 9 credit hours of graduate students)} \\ &x 2 \text{ (two semesters per year)} \\ &= \$597,497.74 \end{aligned}$$

(g) graduate - married paying in-state tuition

$$\begin{aligned} &= 195 \text{ (number of graduate students)} \\ &x 0.3235 \text{ (\% of married graduates from table 3-1)} \\ &x 0.6961 \text{ (\% of graduates from Other Alabama, Mississippi \& Florida in table} \\ &\quad \text{3-2)} \\ &x \$3,973.99 \text{ (monthly living expenditures for married graduates from table} \\ &\quad \text{3-6)} \\ &x 12 \text{ (months per year)} \\ &+ \$1,743 \text{ (in-state tuition \& fees for 9 credit hours of graduate students)} \\ &x 2 \text{ (two semesters per year)} \\ &= \$2,247,133.51 \end{aligned}$$

(h) graduate - married out-of-state tuition

$$\begin{aligned} &= 195 \text{ (number of graduate students)} \\ &x 0.3235 \text{ (\% of married graduates from table 3-1)} \\ &x 0.1765 \text{ (\% of graduates from Other states in the U.S.A. \& Foreign country in} \\ &\quad \text{table 3-2)} \\ &x \$3,973.99 \text{ (monthly living expenditures for married graduates from table} \\ &\quad \text{3-6)} \\ &x 12 \text{ (months per year)} \\ &+ \$3,246 \text{ (out-of-state tuition \& fees for 9 credit hours of graduate students)} \\ &x 2 \text{ (two semesters per year)} \\ &= \$603,242.10 \end{aligned}$$

Total direct expenditures impact of students is obtained by adding the eight figures derived in the above:

expenditures by single undergraduates in-state tuition	\$11,995,863.17
expenditures by single undergraduates out-of-state tuition	2,656,790.15
expenditures by married undergraduates in-state tuition	5,318,876.75
expenditures by married undergraduates out-of-state tuition	1,117,942.36
expenditures by single graduate students in-state tuition	2,080,442.65
expenditures by single graduate students out-of-state tuition	597,497.74
expenditures by married graduate students in-state tuition	2,247,133.51
expenditures by married graduate students out-of-state tuition	603,242.10
total	<u>\$26,617,788.43</u>

## College Expenditures

The total College salary & wage expenditures during FY 2004-05 is \$5,069,923.89 of which \$4,101,309 is faculty salary and \$968,615 is staff salary, while the total non-wage operational expenditures of the College during FY 2004-05 is \$479,915.65. Operational expenditures can safely be assumed to be all local expenditures. Salary & wage expenditures are different, however, since all staff and many faculty members live in Baldwin County, not in Mobile County as shown in Table 4-1.

Table 4-1. Full-time (FT) and Part-time (PT) Employment by Residence

	Baldwin Co.		Mobile Co.		Other	
	FT	PT	FT	PT	FT	PT
Faculty	12	0	28	0	1	0
Staff	14	5	0	0	1	0

Source: College of Allied Health Professions, 2004.

All staff salary is treated as non-local expenditures, while the Mobile County share of the College faculty salary is calculated on the basis of the residence of full-time faculty as follows:

$$\text{Share} = \text{faculty salary} \times \frac{28}{41} = \$4,101,309 \times 0.68293 = \$2,800,894$$

To summarize, the College expenditures that relate to local economic impact are the following:

faculty salary	\$2,800,894.00
staff salary	0.00
operational expenditures	479,915.65
<b>total</b>	<b>\$3,280,809.65</b>

The portion of the College expenditures that relate directly to local economic impact, however, is smaller since only the portion of these expenditures that represent the percentage of students who would not be in Mobile relative to total College enrollment. That is:

$$\begin{aligned} \text{Direct impact expenditures} &= \$3,280,809.65 \times (100\% - 26.33\% - 7.52\%) \\ &= \$2,170,256 \end{aligned}$$

in which 26.33 percent is the portion of students who live in Mobile County and 7.52 percent of the portion of students who live in Baldwin County. Assumption implicit to this

calculation is that students who live in Mobile County would still live in Mobile County without the College of Allied Health professions and students who live in Baldwin County would not be spending money in Mobile County with or without the College of Allied Health Professions.

External Research Grants

During Fall 2004, faculty members of the College were working on a number of external grants, which include: [Source: College of Allied Health Professions, Annual Report of Faculty Scholarly/Professional Activities June 2003 - May 2004, pages, 3, 11, 29, & 34]

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National Science Foundation - \$434,224
National Institutes of Health - \$130,600
National Science Foundation - \$332,749
National Institutes of Health - \$1,101,705
Alabama Department of Forensic Sciences - \$4,000
NASA/Alabama Space Grant Consortium - \$20,000
J.L. Bedsole Foundation - \$5,000.00
National Health Service Corps/Alabama Department of Public Health - \$8,000
National Institute on Aging - \$950,000
American Speech-Language-Hearing Foundation - \$5,000

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Since this study is intended to estimate annual economic impact, however, the amount of external research funds employed in this study is based on the average of annual grants that the College faculty had received from 1999 to 2003 as shown in table 4-2.

Table 4-2. Sponsored Research and Training Awards to the College

<u>Fiscal Year</u>	<u>Amount</u>
1999	\$1,127,609
2000	1,557,179
2001	1,058,972
2002	656,686
2003	921,782
average	<u>\$1,064,446</u>

Source: The University of South Alabama, Statistical Profiles 2003-2004, p. 129.

Direct Expenditures: Summary

Direct expenditures impact of the College of Allied health Professions is summarized as follows:

expenditures by students	\$26,617,788.43
expenditures by faculty & College	2,170,256.00
external grants generated	1,064,446.00
total	<u>\$29,852,490.43</u>

## Section 5

### Total Economic Impact with Multipliers

Economic events of sustaining nature such as the operation of the College of Allied Health Professions generate multiplier effects as students, faculty and the College spend money in the local economy, those who receive the money will in turn spend the same money after taxes are paid and deductions in the form of corporate retained earnings are made. Estimated in this section are total economic impacts associated with the College of Allied Health Professions.

#### Multipliers

Multipliers adopted in this study are the ones developed by the U.S. Bureau of Economic Analysis specifically for Mobile County, known as RIMS II multipliers. RIMS II multipliers for the specific category of interest to this study, i.e., colleges/ universities/ professional are as follows:

Final Demand Multipliers	
Output	2.0196
Earnings	0.6283
Employment	35.8362
Direct Effect Multipliers	
Earnings	1.6968
Employment	1.5208

Final demand multipliers are used when the amount of expenditures is known, while direct effect multipliers are used when either earnings figures or employment figures are known. In this study, earnings and employment are derived from direct expenditures, and thus final demand multipliers are employed in tables estimating expenditures impact on local retail industries.

#### Total Expenditures & Employment Impact

The annual expenditures impact on the Mobile County economy that is generated by the College of Allied Health Professions and the number of jobs that are created or maintained by the these expenditures are derived in Table 1. All figures in Table 1 include the multiplier effect. In the table, total annual expenditures made on food industry, for example, is \$4,325,068 of which \$2,668,659 is spent on groceries and the remaining \$1,656,409 is spent on local restaurants.

The total number of jobs that are created or maintained by the College-generated expenditures is 1,248.

It may be noted in table 5-1 that the amount of income tax that the employee pays depends on a number of factors such as the amount of non-wage assets the employee has, the number of dependents, marital status, and more. In order to maximize the range of application of our estimates, the employee is assumed married, has an average number of members in the family, and claims a standard deduction.

Also, estimating the impact of new expenditures on different sectors of a local economy in table 5-1 requires knowledge on how the after-tax dollars are spent on these sectors. A good approximation of these expenditures on different sectors of an economy can be made by using the U.S. consumer expenditure survey. The consumer expenditure survey program began in late 1979, and is conducted by the U.S. Bureau of the Census for the U.S. Bureau of Labor Statistics. The principal objective of the survey is to collect current consumer expenditure data which provide a continuous flow of data on the buying habits of American consumers. The survey consists of two components: (1) An interview panel survey in which the expenditures of consumer units are obtained in five interviews conducted every 3 months; and (2) a diary or record-keeping survey completed by 5,000 participating households for two consecutive 1-week periods. Table 5-1 is derived from the consumer expenditures survey of the Southern region.

Table 5-1. Estimating Expenditures Impact

Local Economy by Sector	Total Impact	Sub-Group
Direct local expenditures	\$29,852,490.43	
> Total output impact (x 2.0196)	\$60,290,089.67	
> Total wages in millions (x 0.5775)	\$34,817,526.79	
> After-tax wages (x 0.881)	\$30,674,241.10	
> Employment impact (x35.8362)	1,248	
<hr/>		
Food	\$4,325,068	
Food at home		2,668,659
Food away from home		1,656,409
Alcoholic beverages	\$245,394	
Housing	\$9,416,992	
Shelter		4,907,879
Utilities, fuels, & public services		2,300,568
Household operations		552,136
Housekeeping supplies		398,765
Household furnishings & equip.		1,226,970
Apparel and services	\$1,687,083	
Transportation	\$6,104,174	
Vehicle purchases		2,883,379
Gasoline and motor oil		1,042,924
Other vehicle: maint/repair/ins etc		1,901,803
Public transportation		276,068
Health care	\$1,809,780	
Entertainment	\$1,472,364	
Personal care/read/ed/smoking etc	\$1,993,826	
Personal care products & services		398,765
Reading		122,697
Education		429,439
Tobacco & smoking supplies		276,068
Miscellaneous		736,182
Cash contributions	\$920,227	
Personal ins/pension/social security	\$2,699,333	
Total local expenditures	\$30,674,241	

## Tax Impact

The tax revenues generated each year by expenditures made by students, faculty & staff, and general operation of the College of Allied Health Professions are estimated in Table 5-2. In the table, the after-tax total wage figure (\$30,674,241) is quoted directly from table 5-1.

Annual tax revenues generated by the College are \$575,807 for the City of Mobile, \$327,933 for Mobile County, and \$1,611,446 for the State of Alabama. Any tax impact made by the College employees residing in Baldwin County is not estimated and thus excluded.

Table 5-2. Estimating the Tax Impact

>After-Tax Wage	\$30,674,241
<hr/>	
<u>Mobile, City</u>	
sales tax, general	\$ 339,871
sales tax, restaurant	82,820
auto tax	57,668
gasoline tax	27,811
property tax	67,637
City Total	<hr/> 575,807
<u>Mobile County</u>	
sales tax, general	101,532
auto tax	14,417
gasoline tax	13,906
property tax	198,079
County Total	<hr/> 327,933
<u>State tax</u>	
income tax	1,012,250
sales tax, general	406,127
auto tax	57,668
gasoline tax	111,245
property tax	24,156
State Total	<hr/> 1,611,446

## Long-Term Impact of the College

The long term impact of the College of the Allied Health Professions on the local health care industry is difficult to quantify, but is just as important as the earnings, employment and tax impact estimated so far in this report. There are some indications that demonstrate the importance of the College on the local health care industry. One such indicator is the high percentage of graduates who found employment within six months of their graduation. The percentages are summarized in table 5-3.

Table 5-3. Percent of Students Employed within 6 Months of Graduation

	2001	2002	2003	2004
CRC	100	83	92	91
CLS	86	50	100	100
OT	100	100	100	100
PT	90	100	100	100
PA	82	69	58	79
RAD	96	100	95	100
SPA	100	100	100	100

Source: College of Allied Health Professionals 2004; note that BMD students continue their education in another program.

The high percentage of students who find employment upon graduation may be due in part to the high first-time pass rate on national certifying examinations in the fields of their study. The pass rates are shown in table 5-4.

Table 5-4. First-Time Pass Rate on National Certifying Examinations

	2001	2002	2003	2004
CRC	100	80	75	80
CLS	100	60	100	100
OT	100	100	82	n.a.
PT	93	78	80	82
PA	88	100	94	93
RAD	100	100	95	n.a.
SPA	95	100	81	78

Source: College of Allied Health Professionals 2004; note that BMD students do not take professional tests because they continue their education in another program.

Although it is difficult to estimate the long-term impact of the College of Allied Health Professions on the local health care industry, it is possible to approximate the impact by estimating how much more money the College's graduates may be making in the area by completing their programs at the College.

According to table 591 on page 387 of the Statistical Abstract of the United States 2003 (123rd edition published in 2004), the percentages of U.S. civilian labor force by the level of education in 2002 are as follows:

- 10.3 percent – less than high school diploma
- 30.8 percent – high school graduate
- 27.4 percent – less than a bachelor's degree
- 31.4 percent – college graduate

Another way of looking at these numbers is that a median worker in the U.S. has an education level of some college without bachelor's degree. Table 631 on page 416 of the same publication indicates that the average hourly wage of health care and social assistance workers was \$15.33 in 2002. Converting the hourly wage to an annual wage:

$$\$15.33 \times 40 \text{ hours} \times 52 \text{ weeks} = \$31,886$$

Table 695 on page 462 of the Statistical Abstract indicates that average earnings of those with "bachelor's degree or more" are higher by 80.7 percent for male and 58.4 percent for female than average earnings of those with "some college, no degree". Averaging the two, average earnings increase by 69.55 percent when the worker's level of education increases from some college to bachelor's degree or more:

$$\$31,886 \times 0.6955 = \$22,176.71$$

Returning to the College of Allied Health Professions, the total number of students enrolled at the College in the fall 2004 was 1,283. Multiplying the earnings increase by the number of students:

$$\$22,176.71 \times 1,283 = \$28,452,722.78$$

Note that this figure represents the College's contribution in earnings to the health care industry over four years for all areas of students' origin. Note also that when some students drop out, there are others joining the College through transfer. Table 3-2 in Section 3 of this report indicates that 30.16 percent of all students of the College are from Mobile County and 62.20 percent are from Alabama including Mobile County. The annual contribution of the College to the health care industry, measured in increased earnings, can then be estimated for Mobile County and for Alabama:

Mobile County

$$\$28,452,722.78 \times 0.3016 / 4 = \$2,145,335.30$$

Alabama

$$\$28,452,722.78 \times 0.6220 / 4 = \$4,424,398.39$$

To summarize, the College contributes \$4,424,398.39 in increased earnings annually to the state of Alabama of which \$2,145,335.30 is to Mobile County, through its education and training. The present value of the annual contributions at five percent discount rate is \$88,487,967.80 to Alabama of which \$42,906,706 is the share of Mobile County. The present value of \$42,906,706 at five percent discount rate means that a deposit of \$42,906,706 at five percent interest rate is needed to generate \$2,145,335.30 each year.

## Appendix 1

### Student Questionnaire

Instructions: Please provide answers to the following questions to the best of your knowledge. You will not be identified in any way so confidentiality is assured.

1. Are you married?

\_\_\_\_\_ yes \_\_\_\_\_ no

2. Where did you live before coming to the University of South Alabama?

\_\_\_\_\_ Mobile County  
\_\_\_\_\_ Baldwin County  
\_\_\_\_\_ Other Alabama  
\_\_\_\_\_ Florida  
\_\_\_\_\_ Mississippi  
\_\_\_\_\_ Other states in the U.S.A.  
\_\_\_\_\_ Foreign country

3. What is your status?

\_\_\_\_\_ undergraduate student  
\_\_\_\_\_ graduate student

4. Assuming that there were no College of Allied Health, would you be:

[undergraduate students only]

\_\_\_\_\_ attending another college at the USA  
\_\_\_\_\_ attending another college in Mobile County  
\_\_\_\_\_ not attending college in Mobile County

[graduate students only]

\_\_\_\_\_ attending another graduate school at the USA  
\_\_\_\_\_ attending another graduate school in Mobile County  
\_\_\_\_\_ not attending graduate school in Mobile County

5. What is your employment status?

\_\_\_\_\_ employed, full-time  
\_\_\_\_\_ employed, part-time  
\_\_\_\_\_ not employed

6. Questions on this page apply only to you and your spouse living in Mobile. Please estimate, for each of the categories listed below, the total expenditure during a typical month by you or your family.

food at home .....	\$ _____
food away from home .....	\$ _____
alcoholic beverages .....	\$ _____
mortgage payment including interest/insurance/taxes..	\$ _____
home maintenance and repair .....	\$ _____
rent for house or apartment .....	\$ _____
telephone .....	\$ _____
utilities (gas, power, & water) .....	\$ _____
maid, gardening, and other domestic services .....	\$ _____
furniture, appliances, and other household furnishings.	\$ _____
clothing including shoes .....	\$ _____
average monthly cost of vehicle purchase .....	\$ _____
gasoline, oil, auto maintenance & repair .....	\$ _____
vehicle insurance .....	\$ _____
health insurance .....	\$ _____
other medical expense including drugs .....	\$ _____
entertainment (admissions, home video, etc) .....	\$ _____
beautician, barber, and other personal care .....	\$ _____
books, periodicals, and educational material .....	\$ _____
education expense (tuition, room/board, etc) .....	\$ _____
tobacco and smoking supplies .....	\$ _____
contributions to charity and churches .....	\$ _____
pensions, retirement, and life insurance .....	\$ _____
miscellaneous .....	\$ _____

please specify: