

## MD/MBA Students: An Analysis of Medical Student Career Choice

Windsor Westbrook Sherrill, Ph.D., MBA

Assistant Professor  
Department of Public Health Sciences  
Clemson University  
Clemson, South Carolina USA

**Background:** An increasing number of medical schools are offering dual degree MD/MBA programs. Career choices and factors influencing students to enter these programs provide an indicator of the roles in which dual degree students will serve in health care as well as the future of dual degree programs.

**Purpose:** Using career choice theory as a conceptual framework, career goals and factors influencing decisions to enter dual degree programs were assessed among dual degree medical students.

**Methods:** Students enrolled at dual degree programs at six medical schools were surveyed and interviewed. A control group of traditional medical students was also surveyed.

**Results:** Factors influencing students to seek both medical and business training are varied but are often related to a desire for leadership opportunities, concerns about change in medicine and job security and personal career goals. Most students expect to combine clinical and administrative roles.

**Conclusions:** Students entering these programs do so for a variety of reasons and plan diverse careers. These findings can provide guidance for program development and recruitment for dual degree medical education programs

As the development health care systems has combined clinical and administrative functions, the role of physician executives has increased as well as the demand for related training of physician leaders. In addition, the uncertainty of the market for physician services has influenced the development of various opportunities for physicians to obtain business training, including dual degree education programs. An increasing number of medical schools are offering dual degree MD/MBA programs in medical and business education. Established through cooperative agreements between medical and business schools, the programs offer a variety of arrangements through which medical students can obtain business and clinical training concurrently. In 1999, there were eight medical schools offering students the opportunity to obtain both the medical and the masters in business administration degrees. In 2004, the Association of American Medical Colleges listed 41 such programs.<sup>1</sup>

Students enrolled in dual degree programs make up an important group for study. Within the traditional medical school environment, they reshape personal ideologies and individual beliefs about physician roles and the fit between clinical and administrative functions. As early adopters of an innovation in medical education, the career choices of these students offer perspective on the direction of medical practice.

### Background

**Career choice theory - Implications for medical students electing business training -** Ginzburg and colleagues described vocational choice as part of a process taking place through many years of maturation. Early aspirations are eventually mediated by more realistic selections as a person has experiences and learns about his own capacities as well as the realities of the labor market and the resources available. The final choices represent a compromise between the person's interests, capacities and values as well as the opportunities and limitations in the world.<sup>2</sup> In assessing occupational choice, Blau<sup>3</sup> suggests that analysis of the processes followed by an individual in making occupational choices should be accompanied by a review of social and economic conditions. Social structure influences occupational choice in two ways: by influencing the personal development of the choosers and by defining the socioeconomic conditions of selection.<sup>4</sup>

In their 1985 book, Ernst and Yett cited three related hypotheses about physicians' career choice.<sup>5</sup> The first is the "experiential" hypothesis that states that experiences during medical school and education are the most important influence on career. Second is the "taste" hypothesis, stating that students begin medical education with previously establish career plans, based on background and personality characteristics. The economics hypothesis, states

that, all other factors equal, physician choice of career is determined by perceptions concerning maximized value of lifetime earnings. Little research has focused specifically on the impact of economic factors on specialty choice, but recent work by health economists has suggested that the potential for higher lifetime earnings increases the probability that a specialty is chosen.<sup>6</sup>

In a review of related literature by David and colleagues<sup>7</sup>, the two major areas of research on influences on medical career choice were identified as personal and societal. Sociologists and economists have increasingly begun to examine structural aspects of the labor market for health professions and have noted that economic and sociopolitical factors have become more of a constraint for physician career development. Societal and sociopolitical forces in career choice are often ignored in research,<sup>6</sup> and these factors could be most important in influencing medical students to seek business education.

Numerous studies have demonstrated that the major influences on educational and occupational choice and attainment are socioeconomic factors, intelligence, race and sex as well as mediating variables such as family and education. Yet studies that ignore factors such as the demand for labor and business cycles are inadequate.<sup>4</sup> In the case of medical students, the decision to obtain the second degree may be more related to perceptions of demand for physician executives than the more traditional influences on educational choices.

It is generally believed that financial return is an element in the decision making process concerning careers and education. According to the human capital theory of career choice, individuals maximize financial gains over a lifetime by choosing an optimal mix of training and working. If investment in work skills is considered, education has a significant payoff. It appears that this holds true for business training for physicians. As the demand for physician executives increases, compensation levels have also risen. Recent compensation surveys reflect salary and compensation packages for physician executives well above the median for clinically based practicing physicians.<sup>8</sup>

According to Freeman<sup>9</sup>, students respond to the market in making career and education decisions, and career decisions are particularly impacted by the economic fortunes of high-level occupations such as medicine. Freeman characterizes a cobweb feedback system, which leads to market oscillations. As high salaries and job opportunities induce students to enter

a field, a flood of graduates is produced a few years later. The surplus in turn reduces salaries and employment opportunities, with a subsequent influence on educational programs.

A similar pattern may be seen in dual degree programs. Currently, job opportunities for physician executives are plentiful, inducing medical schools to begin such programs. As the market niche fills, a related leveling effect may be seen in program growth and educational demand.

In offering dual degree educational programs, medical schools are influencing the career decisions of students. According to Levine<sup>4</sup>, schools and families are the two great "socializing agents" in our society. Schools directly influence educational and occupational choices by offering special programs of training, thus offering a context of opportunities and constraints within which career choices are made. By offering dual degree programs, medical schools are recognizing an exception to the traditional approach to medical education. Thus, they are influencing student's career decisions as well as their perceptions of the legitimacy of the role and function of the physician executive.

In "Social Change, Organizational Diversity and Individual Careers", Michael Hanna<sup>10</sup> considers theories of career choice behavior, analyzing relationships between careers and larger scale social change by focusing on the role of organizations as important intermediary actors. Institutional and organizational dynamics define a set of opportunities and constraints for an individual, while individual choices influence the dynamics of organization and institutions. Applied to the example of dual degree programs, one might suggest that organizations (medical schools) serve as a vehicle for expressing preferences of individuals or for affecting change in a larger system, whether by implementing new programs in response to the demand of individuals within the system (medical students) or the dictates of the larger social system (increasing market for physician executives). Either way, educational programs transmit the influence of the larger social system or market to individuals and vice versa.

Specifically, medical schools are offering new programs to provide physicians with business training. This provides the context for the changing role of physicians within society. The programs are developing new options and, as such, are enabling physicians to enhance their roles in the health care system. Consequently, changes in physician careers constitute larger scale social change within the health

care system, as physicians reestablish themselves as leaders.

Most prospective physicians are set into a career track by the time they finish high school. One fourth of future physicians made this career choice before high school.<sup>12</sup> Because career decision making often occurs early, redirecting the career plans of medical students toward business can be challenging. In addition, the traditional medical school culture does not encourage business training. In *Boys in White*, Becker and colleagues extensively profiled medical students of the 1950s, stating that the focus on patient care was one of the basic assumptions about future careers that students make when entering medical school. "Let us recall, first of all, that these students intend to go into the private practice of medicine. Though a few may conceive of alternatives, students ordinarily take it for granted that, sometime after graduation, they will be installed in a doctor's office, seeking and treating patients. They do not expect to go into research or into administration."<sup>11</sup> Even the current medical student is usually attracted to medicine by visions of working in patient care and media-influenced notions of emergency treatment rather than the idea of working for a corporation or insurance company. To impact these perceptions, society and medical schools must value people who pursue less traditional paths in medicine.<sup>13</sup>

**The Influence of medical school** - The medical school environment has a major impact on students' perceptions of the practice of medicine and their related career decisions. Medical school often represents the students' first contact with medical culture, the shared understanding and perspective of the medical profession.

The medical school experience presents a great deal of information that must be prioritized by the student. According to Becker, medical students quickly become aware that they cannot learn all of the material presented, thus they economize of learning by determining if something is important according to whether it is important in actual medical practice. Peter Conrad notes that, often material that is "triaged" as less important is related to the social and organizational aspects of medicine. The nature of the educational experience communicates priorities to students regarding education, such as business, that might be extraneous to "real" medicine, the clinical care. He observes that material related to the general theory behind problems such as historical points, social impact and cost factors can often be ignored by medical students as they focus on clinical details.<sup>14</sup>

According to Ajzen and Fishbein, behavior and intentions are a function of two factors: attitudes toward an act and the perceived normative beliefs of reference groups, mediated by the person's motivation to comply with group expectations<sup>15</sup>. In regard to choices concerning business education, students' decisions are likely influenced by one important reference group in particular, other students. If the medical school culture is one of clinical superiority, negative beliefs toward business training and managerial roles for physicians may be reflected in the career decisions or attitudes of the students. By offering dual degree programs, medical schools are incorporating change to traditional medical education. Thus, the significance of the role of physician executives and business concept is enhanced.

Traditionally, the medical school culture has not encouraged interest in business education. This situation is influenced by the powerful reference groups and the medical school socialization process. Although the medical school culture is a powerful socializing force, and clinical training has been the sole focus, new programs are giving rise to change. Faculty serving as physician executives provide models to follow and emulate, and new initiatives such as dual degree programs are offering business training to medical students.

## Methodology

A survey and interview process was used to provide an exploratory study of students enrolled in MD/MBA programs at six dual degree programs to assess motivation and influence in electing dual degree programs. Students from MD/MBA programs at Wake Forest University / Bowman Gray School of Medicine, Thomas Jefferson University and Widener University School of Business, University of Chicago, University of Pennsylvania, University of Illinois at Urbana-Champaign, and Tufts Medical School / Brandeis were included in the study. Students were surveyed and interviewed. Survey response rates among students were maximized by repeated contact via telephone correspondence and email as well as the support of MD/MBA program directors. Two waves of the survey were distributed, and students were contacted by telephone and email regarding participation in the study. Completed surveys were obtained from 74 dual degree students of the total available population of 87 dual degree students (85 percent response rate).

**Table 1****MD/MBA Students: Degree of Influence on Decision to Seek Dual Degree**

<b>Factors influencing MD/MBA decision</b>	<b>Mean score</b>
Career opportunities	2.78
Opportunity for innovation	2.67
Consistent with career interests	2.65
Opportunity to make a difference in med.	2.55
Consistent with my skills and ability	2.53
Opportunities to lead in medicine	2.53
Interest in MBA course content	2.49
Desire to influence future of medicine	2.43
Opportunity for independence	2.36
Desire to know about economics of med.	2.33
Intellectual stimulation	2.32
Intellectual content of program	2.30
Desire to retain influence over practice	2.17
Demand for physician executives	1.86
Challenge of program	1.84
Desire for authority	1.84
Prestige of degree	1.81
Opportunity to obtain additional education	1.81
Job security	1.63
Income prospects	1.74

In order to identify a comparison group to the dual degree students, the survey instrument was revised so that it could be administered to traditional medical students (MD only) at each institution site. Control group students were selected based on a set of “matched “ characteristics with the dual degree students. Traditional medical students generally matched the dual degree students in gender, age and year in medical school. 80 control group students returned surveys; response rate among this group was 70 percent.

The survey instrument was developed for this study, but included some questions in the Association of American Medical Colleges (AAMC) annual Graduating Medical Student survey. Many of the questions related to career goals and background were modeled after those used in Howard Becker’s Interview of medical students in the 1960s ([Boys in White](#)). As a proxy for pilot testing of the instrument, the survey was pretested during development by a focus group of medical students who were interviewed concerning suggestions for revision and improvements of the instrument. The pretest did result in improvements in clarity of the instrument, particularly in regard to wording of questions. Data from the surveys were tabulated with the assistance of SPSS. Factor analysis was used to analyze data re-

lated to the reasons students elect MD/MBA programs.

The interview tool was developed to obtain descriptive information from dual degree students regarding their perceptions of the direction of medicine and their career interests as well as their reasons for electing to enter the dual degree program. Structured interviews were used to ask detailed questions regarding MD/MBA students’ backgrounds, career interests, and decisions regarding dual degree programs. Forty of the dual degree students were interviewed either in face-to-face interviews or via telephone, depending on geographic location of the programs. The forty students interviewed represented all of the programs included in the study. Interviews were analyzed using Ethnograph qualitative analysis software.

## **Results**

**What factors influence these students’ decisions to enter the MD/MBA program -** Dual degree students were asked to rate the degree to which a set of factors influenced their decision to participate in the program on a scale of 0 to 3 (0 being no influence, and 3 being a strong influence). The most influential factors were career opportunities, opportunity for innovation, opportunity to make a difference

in medicine, consistent with my skills and abilities, opportunities to lead in medicine, and consistent with career interests. Table 1 includes mean scores for each factor, indicating how dual degree students prioritize influences on their decision-making.

Factor analysis can be used to analyze an instrument with a large number of items and to determine whether different factors related to a concept are being tapped by various subgroups of questions. Factor analysis explores whether items group together in some logical way; items which measure the same concept are expected to be more highly correlated. Principal components factor analysis was used to analyze the data related to students' reasons for seeking the MD/MBA. In the model, eigenvalues greater than one determine which factors are selected. Four factors had eigenvalues greater than one and accounted for over 50 percent of the variance in responses. Variance accounted for by each factor was 19.26 percent, 13.37 percent, 8.67 percent, 8.20 percent for Factors 1, 2, 3, and 4 respectively. Reasons students identified for the dual degree grouped into the following factors:

- Group 1: (eigenvalue 4.62) opportunity to make a difference in medicine, career opportunities, desire to influence the future of medicine, desire to know more about the economics of medical practice, opportunities to lead in medicine, desire to retain influence over clinical practice;
- Group 2: (eigenvalue 3.21) intellectual content of program, challenge of program, consistent with my skills and abilities, intellectual stimulation, interest in MBA course content, opportunity to obtain additional education;
- Group 3: (eigenvalue 2.08) income prospects, prestige of dual degree, uncertainty of job market for physicians, job security, opportunity for independence;
- Group 4: (eigenvalue 1.97) encouragement of a mentor, encouragement of a physician.

Of twenty-four items, only three did not "load" on one of the four groups, a possible indicator that this particular instrument in the survey is a reliable one. One of the factors that did not load in the groups was the "demand for physician executives". Students' interview comments suggest that they may have misunderstood the terminology in this factor. Discussion regarding issues such as the market for physician services indicated a lack of understanding of market related terms such as "demand".

Other influences that did not load in the four groups were "desire for authority" and "encouragement from other students". This result is consistent with responses to the questions related to the influence of mentors. Only five of the dual degree students reported that they were influenced to enter the program by other medical students, while greater numbers reported that they were influenced by physicians or family members.

The most influential factors in students' decisions to obtain dual degrees were in group one. Although social desirability bias could be an issue, these results support the idea that these students want to "make a difference in medicine" and have goals to be leaders in the health care system. They value innovation as well as opportunities to influence the future of medicine. The following are examples of the numerous interview comments which illustrate such priorities: "I want to influence the direction that health care is going to take"; "It is important for physicians to have business backgrounds so they can shape where medicine is going"; "The reason I got into medical school was to make a difference, but now the humanistic-philanthropic side of medicine seems to be out the door. I figure I will use the MBA to incorporate the values of why I became a physician in the now capitalistic medicine.... I say I can't beat the system and this will help me get into it". "I decided I want to have a broader scope in my medical career and take leadership roles in addition to practicing medicine. I am interested in changing what is going on in health care in the 90s".

Group three factors were not rated as highly by the students. As a group, these factors seem to be more related to income prospects, job security and prestige. Again, these could be indicators of students' values and plans for the dual degree. Nevertheless, numerous students commented in the interviews that they anticipated career benefits from having both business and medical degrees. One student stated, "I want to help them (physicians) make money doing well for patients so that everyone's interests are served".

**When are these students deciding to enter the dual degree programs** - This information is relevant to dual degree programs in recruiting efforts. What information about the programs is getting to students applying for medical schools, and does the existence of these programs have an impact on recruitment at medical schools? Of all the dual degree students surveyed, 51.4 percent of respondents decided to participate in the dual degree program when applying for medical school. Forty-two percent of

dual degree students report that they decided before medical school that they would participate in the MD/MBA program, and a smaller number elected the program during the first year of clinical training. This would suggest that the existence of the dual degree program must have had some impact on student selection of medical schools. Only three students decided to apply during the second year of medical school, and one decided to apply during the third year of medical school.

The fact that so many of the students determined that they would apply for the dual degree program before applying or when applying to medical school suggests that the medical schools could use the dual degree programs as a recruitment tool for students interested in the interdisciplinary nature of the dual degree.

**Mentors and other influences** - Dual degree students were asked whether individuals such as mentors and physicians were influential in their selection of the dual degree program. Fifty-three percent of students stated that individuals influenced their program decisions. Of those that did answer this question in the affirmative, the top two categories of influence were family members and physicians (See Table 2). Student comments in interviews reflect that many students are being encouraged to get business training by experienced physicians as well as residents.

**MD/MBA student income expectations** - Both the dual degree and control groups were asked what they expected to earn five and ten years after completing residencies. The MD/MBA group had an expected mean income after five years of \$167,986 (range of \$40,000 to \$400,000), while the M.D. students had a mean of \$132,208 (range of \$45,000 to \$250,000). These figures are significantly different;  $t(147)=3.66$ ,  $p<.0001$ . According to the AAMC na-

tional survey of all medical students graduating in 1996, the mean income expectation five years after completing all training is \$142,578;  $t(71)=3.01$ ,  $p=0.003$ . Students were also asked about income expectations ten years after completing training. Mean for the MD/MBA group was \$293,422, while mean for the MD group was \$182,467;  $t(147)=5.98$ ,  $p<.0001$ . The differences between the two groups surveyed were significant, as well as the difference between the national group of medical students and the dual degree students.

Several traditional medical students responded to the questions regarding income with written comments such as "no idea", while almost all of the dual degree students provided a numeric response. Could this suggest that dual degree students are more comfortable with issues of finance and income, or have they given more thought to their future economic status? A number of responses and interview comments suggest that dual degree students anticipate earning more money later in careers by assuming new duties that combine administrative and clinical activities. For example, one student clearly expressed a desire to practice in primary care and stated that he expected to make \$65,000 five years out of residency. Yet the same individual reported that he expected to earn \$300,000 after ten years.

Several responses to the income questions indicate that students may have misunderstood these questions. Some responses seemed to reflect what students' might have considered residency salaries (such as \$45,000). In particular, one individual reported that he planned to enter the field of hand surgery and would make \$45,000 five years after finishing training and \$350,000 ten years after training. Perhaps the student assumed that the question referred to five years after medical school graduation, at which point he/she would be in residency training. To control for such response error, unreasonable (or

**Table 2**  
**Individuals Influencing Career Choice**

Individual Influence	Students Influenced	Percentage
Parent/family member	26	36.1
Physician	22	30.6
Faculty	13	18.1
Administrator/business person	10	13.1
Mentor	9	12.5
Fellow Student	5	6.9

**Table 3**  
**Income Expectations**

	<b>Years</b>	<b>MD/MBA Students</b>	<b>Medical Students</b>
<b>Primary Care</b>	Five Year Expected	\$142,857 (n=14)	\$104,318 (n=22)
	Ten Year Expected	\$249,285	\$141,590
<b>Specialty Care</b>	Five Year Expected	\$185,000 (n=23)	\$155,937 (n=32)
	Ten Year Expected	\$285,130	\$228,812
<b>Not Sure</b>	Five Year Expected	\$160,303 (n=33)	\$125,869 (n=23)
	Ten Year Expected	\$300,303	\$165,434

inconsistent) responses were removed, and descriptive statistics recalculated. Dual degree students expected \$170,929 in income after five years, and traditional medical students expected \$134,533 (significant differences,  $t(143)=3.76$ ,  $p<.05$ ). Ten year expectations were also adjusted for response error. Again, the responses by dual degree students (\$293,329) were significantly different than those from traditional medical students (\$181,333) ( $t(143)=6.04$ ,  $p<.000$ ).

As might be expected, income expectations were significantly different among students planning to enter primary and specialty care. For all respondents to the survey, the mean expected five year salary for students going into primary care was \$119,305, while the mean expected salary of those going into specialty care was \$168,091. For ten years from training, the income mean for primary care group was

\$183,472, and the specialty group reported average expected incomes of \$248,873. Table 3 provides a breakdown of salary expectations by type of field for the dual degree and control groups.

**Career plans / job activities** - As an indicator of their career plans and aspirations, dual degree students were asked to rank activities according to how they would feel about them as primary job responsibilities. Job responsibilities ranged from CEO of a for-profit hospital to Medical Director of an inner city health clinic. Job responsibilities were developed to provide indicators of the types of positions these students might desire, particularly related to their tendencies toward more altruistic positions and activities that might be traditionally associated with the "business" of medicine. Table 4 provides mean scores for the job activities, ranked in order of those jobs that were most desirable to the students.

**Table 4**  
**Job Activity Preferences of MD/MBA Students**

<b>Job Activity</b>	<b>Mean Score*</b>
Med. Dir. Multi-specialty group	1.56
Med. Dir. of major HMO	1.70
Med. Dir. Of largest insur./managed care co. in region	1.85
CEO of biotechnology company	1.93
Med. Dir. Single specialty group	1.93
Chief of staff of 500-bed hospital (tertiary care) in for-profit system	1.93
Nationally recognized expert in cost control disease management	1.93
Chief of Staff of large, tertiary care academic med center serving indigent population	2.00
Medical Liaison of WHO	2.00
Chief of Staff of sole provider hospital in rural area	2.11
Dep Dir for State Board of Health	2.30
Med Dir of inner city health clinic	2.60

**Rank 1 – 3 with 1 most desirable**

**Table 5**  
**Student Career Preferences**

<b>Career Activities</b>	<b>MD/MBA Student Interest</b>	<b>MD Student Interest</b>
<b>Faculty Career</b>	13.5%	27.5%
Research Scientist	-	2.5%
Private Clinical Practice	54.1%	81.3%
Salaried Clinical Practice	24.3%	51.3%
Administrative Duties (no clinical duties)	13.5%	3.8%
Combination of Admin. and Clinical Duties	78.4%	26.3%

Another analysis that was done of these questions involved dividing the job activities into subgroups based on activity type. Subgroups were developed to reflect items that might indicate students' altruistic versus economic philosophies. The first group included medical director of an HMO, CEO of biotechnology company, medical director of insurance company, and chief of staff of a for-profit hospital system. In contrast to the first group of activities, which were related to for-profit or "business" medicine, the second group included activities traditionally associated with the caring aspects of medicine. This group included medical director of inner city health clinic, chief of staff of a rural hospital, medical liaison for WHO, and Deputy Director for State Board of Health. The combined group ratings were compared with t-tests. As expected, the subgroup scores were significantly different. Mean for the "business" subgroup was 1.85; the "altruism" subgroup mean was 2.25.  $t(105)=3.02, p=.003$ . That is, students considered the business group more appealing.

Some items were not included in the analysis of the two activity subgroups. Although medical director of a multi-specialty group was ranked as a favorite job activity by dual degree students, it was not chosen as a logical indicator of economic focus versus altruistic tendencies and thus was not in the groupings.

Although the results of this information would indicate that the students prefer business activities, the comments in the interview do not support the idea that the dual degree students are "in it for the money". As one student stated, "I want to be in a position where I make good decisions for my patients in a hospital that will benefit them whether that will be cutting costs for them or getting them better care. I want to keep patients first."

Both dual degree and traditional medical students were asked to select their preferences from a list of career activities, including such things as full-time faculty appointment, private clinical practice and administrative duties. Seventy-eight percent of dual degree students expressed an interest in a combination of clinical and administrative duties; only 13.5 percent of dual degree students planned administrative jobs with no clinical practice. A similar question regarding career preferences was included on the AAMC survey of graduating medical students. Only 1.8 percent of graduating students expressed an interest in health care administration without clinical practice. Table 5 provides additional results on career preferences.

### **Conclusion**

The horizon of health care is rapidly changing. Historically, physicians acquired management roles because they had inherent business skills; physician executives often received business training on an ad-hoc basis. Increasingly, the system requires physicians with advanced skills in business, finance and organization management. Dual degree programs in medicine and business have emerged to fill the training gap. The students enrolling in these programs are a unique group. Their motivations for electing business training and their career choices provide indicators concerning the future of medical practice. As one student commented: "I decided I want to have a broader scope in my medical career and take leadership roles in addition to practicing medicine. I am interested in changing what is going on in health care...I think it will be very interesting to follow the combined degrees [students] and to see if the combined program really does enhance what we have talked about – the concern for patients and making

sure they are the primary focus of the business of health care.”

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## Correspondence

Windsor Westbrook Sherrill, Ph.D., MBA  
Assistant Professor  
Department of Public Health Sciences  
Clemson University  
528 Edwards Hall  
Clemson, SC 29634

Phone: 864-656-0263  
E-mail: [wsherri@clemson.edu](mailto:wsherri@clemson.edu)