ACADEMIC MEDICAL FACULTY AND
THEIR COMPLEX
ROLES

by
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A DISSERTATION

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ABSTRACT

Academic medical centers serve an integral function in society in the training of physicians as well as the safety net provider for numerous patients that otherwise might not have access to healthcare. As resources continue to tighten and funding continues to be scarce, faculty accountability is under increased scrutiny. More specifically academic medical faculty members are feeling the pressure to increase individual production. As academic medical faculties struggle with balancing complex and oftentimes ambiguous roles, the ability to manage and justify resources, the ways academic medical faculty spend their time is increasingly relevant. The purpose of this dissertation was to better understand how academic medical faculties are spending their time and whether or not their time spent on tasks is shifting. This dissertation explored how to better understand the complexities of academic medical faculty members’ roles and how these complexities affect local communities at the physician community at large. The study used a quantitative methodology to better understand how academic medical faculty members spend their time. The study compared trends over a recent five-year period (2004-2008) to see if a shift has taken place on academic medical faculties time spent on tasks. The study also followed up with the same physicians that worked at the institution for the same five-year period to compare how their perceptions of time spent on tasks compares with their actual hours worked.
DEDICATION

This dissertation is to my family who has supported me through this process. Specifically I would like to thank my wife Melissa, my two children Gray and Cate, and my parents, Dr. and Mrs. Malcolm R. Howell who have been great cheerleaders. I would also like to thank my sister, Dr. Claire Major, who encouraged me to pursue my doctoral degree and has been supportive. I am fortunate to have the love and support necessary to achieve the completion of my doctoral degree.
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CHAPTER 1
INTRODUCTION

Recent calls for accountability in higher education have led to increased analysis of faculty workload. As fiscal times continue to challenge the financial viability of academic medical centers, college of medicine faculty are under increased pressure to be creative in increasing clinical productivity (Donohoe, 2004). Academic faculty face challenges in balancing teaching, research, and providing patient care. The underlying question posed to academic faculty is how can the institution sustain its goals and remain fiscally solvent? Academic medical faculty face increased scrutiny by measurements of productivity, accountability, performance, and individual justification of existence.

The tenuous competition for scarce fiscal resources is increasing and performance expectations among academic faculty continue to rise. The accountability and the justification for each unit, faculty member, and clinical care service are under heavy analysis to ensure an optimal mix of services and education experiences to meet institution needs. A recent reorganization at a southeastern public university’s college of medicine stemmed from financial troubles. The southeastern university’s college of medicine lost more than $5,000,000 during fiscal year 1999 and a new dean and vice president for health affairs was hired. The main focus on the reorganization effort was on restructuring the operational units within each department in order to implement consistencies among departments as well as a more stringent focus on fiscal and resource management within the College. The focus on the reorganization has been to
improve operating efficiencies, improve the fiscal operations, and to improve academic faculty productivity.

Problem Background

The modern medical school is challenged on multiple levels facing a more diverse student population than in past years, which causes challenges for academic medical faculty. In 1999, there were an equal number of men and women graduating from medical school (Treptau & Williams, 2000). The number of underrepresented minorities including African Americans, American Indians, and Hispanics applying and graduating from medical schools has increased by more than 45% from 1974 to 1999 (Treptau & Williams, 2000). While this is a significant percentage change, the significance of lacking an ethnically diverse representative number of medical students compared to similar numbers of the American citizenry remained a cultural void. Medical schools today also face challenges in dealing with multiple generations among its students and the challenges that each generation brings in measuring expectations, curricula design and successful mentoring and graduation rates. The medical student body of today bears little resemblance to ones of decades ago. In the informational age, students of today are more astute to subject matter, have access to greater information, and have more individualistic goals as it relates to medical school education.

College’s of medicine today battle numerous challenges which include: (a) the reduction in resident work hours, (b) faculty and other allied health labor shortages, (c) funding cuts – federal government and state government, (d) multiple generational student bases with varying goals and preferred ways of learning, and (e) increasing medical student debt
forcing many physicians to choose more lucrative disciplines of study. The reality among current college of medicine faculty throughout the country is focusing on ways to balance the student educational experience with research, clinical care and outside external forces.

At a recently attended meeting at a state medical school, a physician stated his case with his aggravations of the business aspects of medicine. The conversation continued that academic medicine is changing with a greater emphasis on financial decisions. The senior-ranking physician leader went on to state the case that academic medical centers are not private practice and while financial decisions are important, there is too great an emphasis on finances. As resources are depleted, the challenge for academic medical center faculty is how to balance teaching, clinical care, and scholarly activities. College of medicine revenues are being squeezed in all directions (Lawlor, 2002). The expectations of faculty to generate more funds from private sources challenge the roles and expectations of academic faculty. Academic medical faculties cringe at the thought of rising expectations to enhance external revenue. Clinical based productivity models are proving a disincentive in the eyes of numerous faculties. Academic physicians are being asked to find ways to better manage finite resources of time and money.

Institutions of higher learning have had an economic focus for more than three decades, as integrating higher education institutions into the market place may improve financial stability during tightening economic conditions (Glenna, Lacy, Welsh & Biscotti, 2007). As fiscal times become more challenging, academic medical faculty will feel the pressure to perform and be held accountable for time spent on tasks.

*Academic Medical Centers*

Academic medical centers serve three purposes: instruct students, conduct research, and perform clinical care services (Kennedy, Johnston, & Arnold, 2007). It is interesting to note that
these three purposes are not mutually exclusive yet are tied to each other and intertwined in achieving the individual faculty and institutional goals. As state funding continues to tighten and third party insurance companies cut reimbursements, academic physicians are being thrust into areas to help offset the increased costs of medicine. There has been a more stringent focus on clinical care and other revenue generating activities, primarily due to a lack of financial resources (Watson, 2003; Thibault, Neill, & Lowenstein, 2003). Fiscal challenges are forcing academic physicians to spend more time focusing on revenue generating opportunities, which replaces time for scholarly activities. Academic medical center physicians are having to learn how to balance the economic and ethical side of medicine (Cohen, 2006). Academic medical physicians are being thrust into the world of being better business-minded people dealing with limited resources. The challenging aspect of asking academic physicians to be better business-minded people is that many times it is the antithesis of why many chose their career path. As a result, academic medical centers are dealing with the tension being placed on its physicians to perform in more fiscally productive ways.

A challenge among academic medical centers is the organization and structure of its medical faculty and how the individual faculty members fit into other departments on campus (Watson, 2003). How should college of medicine faculty fit into research centers and faculty group practice plans? How do clinical faculty and basic science faculty co-mingle and work together for the common good of the institution? As academic medical faculty grapple with bloated bureaucracies and fragmented organizational structures, it will be important to look at current duties, functions and job expectations in order to align resources appropriately.

Academic medical faculties face the challenge of higher education as a business as it sells education to its student population (Winston, 1999). Academic medical faculties are forced
to take the business like attitude a step further as it focuses on revenue generating activities. The
challenge among academic medical faculties is that it is not clear in how to focus on the business
side of medicine. Academic medical faculties look to distinguish the issue of higher education as
a business versus the goal to educate its student population. The challenge academic medical
faculties have is balancing the business side of medicine with maintaining scholarly activities
and staying up to date on the latest medical knowledge for optimum patient care and quality
instruction. The challenge among academic medical faculties is the balance among instruction,
scholarly activities/research and clinical care.

Instruction. Academic medical faculties identify time challenges caused by a lack of
protected time to perform scholarly activities such as teaching. Zibrowski, Weston, and
Goldszmidt (2008) analyze the time barrier facing academic medical faculties interested in
pursuing scholarly activities. Zibrowski’s research found that an overwhelming percentage of
the respondents (81%) stated that academic medical faculty members were interested in spending
more time doing educational activities and scholarly work. The issue at hand for academic
medical faculties is that their time is squeezed and expectations are high to provide external
revenue sources.

The balance between research and teaching is a challenge and medical schools wanting to
improve their rankings, and prestige must focus on both. Osler’s (1951) thoughts resonate today:

Teachers who teach current knowledge are not necessarily investigators; many
have not had the needful training; others have not had the needful time. The very
best instructor for students may have no conception of the higher lines of work in
his branch, and contrariwise, how many brilliant investigators have been wretched
teachers? In a school which has reached this stage and wishes to do thinking as
well as teaching, men must be selected who are not only thoroughly au courant
with the best work in their department and the world over, but who also have
ideas, with ambition and energy to put them into force men who can add, each
one in his sphere, to the store of the world’s knowledge. Men of this stamp alone
confer greatness upon a university. (p. 203)
A challenge with academic medical faculty is that instruction is not recognized as highly as research and providing clinical services (Papp & Aron, 2000). Muller (1984) discusses the priority system of academic medical centers:

Despite frequent assertions that the general professional education of medical students is the basic mission of medical schools it often occupies last place in the competition for faculty time and attention. Graduate students, residents, research, and patient care are accorded higher priorities. (p.20)

A major indicator of the reason why academic medical faculty do not spend as much time devoted to the teaching mission of the institution is due to not having enough ‘protected time’ to devote to teaching. Academic institutions struggle with the balance of a focus on academics and generating enough revenues to fund its mission. Zibrowski et al. (2008) identified the perception of faculty that there was a lack of prioritization from their respective institutions related to supporting the teaching mission. The academic faculty also perceived a lack of reward for being a great teacher and a lack of recognition for having a teaching focus.

Many faculty members express a lack of motivation to spend more time on improving the teaching aspect of their jobs due to the strain and pressures of seeking external revenues. The adverse effect on academic capitalistic pursuits as it relates to teaching is difficult to quantify. Numerous faculty members discuss that teaching often takes a back seat due to the focus to seeking funds to pursue other institutional endeavors.

College of medicine faculty are expected to focus on their moral and ethical responsibilities, to lay aside self interests, and to focus on what is best for medical students (Cohen, 2006). The challenge lies in funding time for faculty to teach and pursue scholarly activities. Who pays for this? During turbulent financial times, teaching often takes a back seat to revenue producing activities. In current productivity models, teaching and other scholarly
activities are typically not considered measurable activities and are often not rewarded (Ludmerer, 2004).

Institutional expectations are for clinical educators to be skilled practitioners and effective teachers (Higgs & McAllister, 2007). A challenge among academic medical faculty is how to balance between expectations of providing clinical care and meeting teaching responsibilities. The ambiguity that academic medical physicians face in projecting the role of teacher, clinician, and administrator force many into complex roles and confusion of prioritizing efforts (Romanini & Higgs, 1991).

Perhaps a positive sign is the recognition that some institutions place on the value of medical school teaching in valuing the final product that each medical school offers (Glassock, 1998). The University of California, San Francisco’s School of Medicine has created a teaching academy to encourage faculty members to enhance their skills (Muller & Irby, 2006.). A challenge that is occurring at the University of California’s, San Francisco, School of Medicine is a similar challenge to many institutions in finding the time to free up for academic medical faculty to attend the program.

Many members of academic medical schools recognize that as faculty resources increase, overall participation in teaching of medical students declines (Whitcomb, 2002). The short answer to the reason why instruction levels decrease as the number of faculty increases is due to the focus on producing more external revenues. Medical education often ranks lower on the institution’s priority list behind producing research and increasing clinical care dollars (Korn, 1996). As the shift in priorities takes place among medical schools, the question of purpose is prudent.
The instruction aspect of academic medical faculties’ duties hinges on the meshing of clinical and scholarly knowledge of the physicians. In order to instruct students on how to provide patient care, academicians must stay on top of the current literature and be proficient in their area of specialization. The Accreditation Council of Graduate Medical Education (ACGME, 2009) defines six core competencies that medical residents should possess before graduating: (1) medical knowledge, (2) patient care, (3) systems-based practice, (4) practice-based learning and improvement, (5) interpersonal and communication skills, and (6) and professionalism (Christmas et al., 2008).

Scholarly activities/research. Research efforts and scholarly activities, ranks at the top of the list for faculty to secure tenure and to improve faculty rank (Kennedy, 1997). Academic medical faculty who publish and secure external grant funding are recognized as more accomplished versus a faculty member focused on teaching. Institutions’ compete on prestige and the greater the levels of research funding, the higher the institution’s prominence.

The ability to publish is significant in the reward and tenure process among academic medical faculty (Papp & Aron, 2000). In order to increase publication to demonstrate one’s scholarly ability, the number of authors per article is increasing (Drenth, 1998). The number of publications that an academic medical faculty member writes and the level of prestige that the journal has in its discipline provide credibility to the academic physician’s scholarly ability.

Clinical care. The three pronged mission of academic medical faculty to teach, educate, and perform scholarly activities has to balance with fiscal resources in order to recruit and maintain academic faculty (Peters, 2006). As resources tighten and Clinical services performed serves as a way for academic medial faculty to be measured. The clinical care component of faculty duties is in addition to the expectations of teaching and conducting research.
The clinical care piece on academic medial faulty roles is intertwined with instruction and research (Christmas, Kravet, Durso, & Wright, 2008). Most academicians define their roles as being on top of the latest technological advances in delivering patient care. There are great responsibilities among academic medical faculty members to take care of the patient in the community and committed to delivering the highest level of care (Carey, Wheby, & Reynolds, 1993).

Excellence among academic medical faculties was one who possesses traits of humility, caring, dedicated, nonjudgmental, and continuously striving for excellence (Christmas et al., 2008). The faculty role of providing clinical care to patients is critical to the success of academic medical faculty members in balancing the three pronged mission of instruction, clinical care services and research.

Patient centered education is key for the success of medical students in the learning process (Bleakley & Bligh, 2008). Academic faculty tasked with a patient oriented focus often fall short in creating a succinct methodology in linking patient care to learning. The clinical care aspect of academic medical faculty roles is a combination of teaching and providing clinical services to the population. There is substantial literature on a patient centered approach to medical school teaching and the value that it provides to the learning experience for medical students (Fulford, Ersser, & Hope, 1995).

A positive sign in creating hope for academic medical faculties is that many academic faculty members are given the ability to choose between patient-care activities versus focusing on more research oriented work (Lubitz, 1997; Levinson, Branch, & Kroenke, 1998). Typically, the senior level academic medical faculty works with individual physicians to decide a career track for the physician and to align duties with career ambitions (Papp & Aron, 2000). The
balance between clinical care services to needy patients versus the academic benefit will continue to be a topic of discussion on trying to find proper balance between the two. A trend in many academic medical centers is the ability for faculty to choose a research or a clinical care track position (Jones & Gold, 1998). Numerous clinical faculties attribute their outstanding knowledge and a commitment to life long learning is the keys to intertwining clinical services with student instruction (Christmas et al., 2008).

Theoretical Approach

The research and literature on academic medical faculty and the measurement and accountability on time spent on task lacks standardization. An understanding of faculty work expectations and accountability has produced findings but the literature could be expanded by measuring academic medical faculty roles and responsibilities. Role theory dictates how faculty perceives their role in higher education institutions and the affects it has on their style and effectiveness on teaching (Corbin, 2001).

Biddle (1986) discusses developments in various role theories and the complexities that cause conflicts, and challenges in maintaining role balance. The theoretical framework for this study is based on organizational role theory as it pertains to the balance between institutional expectations and individual faculty behaviors. The work efforts of academic medical faculty are task oriented. As academic medical physicians are tasked with finding ways to increase their productivity through revenue generation, perceptions of the academic faculty role will shift. Laidley and Braddock (2000) see role theory as composed of three criteria: to predict effective approaches to teaching, to create a framework for evaluating current practices, and to create new strategies to improve practices.
The study focused on the various role conflicts that academic faculty face. In particular, the study discussed role complexities, including role conflict, role ambiguity, role overload, and role stress. The framework tied in the different facets that academic faculty face in balancing the workload and expectations of the institution.

Another aspect of the theoretical framework this study explored was the uniqueness of academic medical centers and the complex roles that academic medical faculties face. Academic medical faculties are expected to perform the roles of traditional faculty members to instruct students as well as perform administrative services such as serving on university committees. However, academic medical faculty members are also expected to find ways to be fiscally self-sufficient and increasing the economic viability of their respective college of medicine to find ways to balance their time and roles.

Problem Statement

Despite the good work that has been undertaken, efforts to examine faculty workload have not focused on faculty whose workload differs from traditional faculty. In particular, faculty who teach in medical school clinical settings are understudied, so there is little information about how they spend their time or the ways in which allocations of their workload have changed over time. The uniqueness in the academic medical faculty roles is the added expectation of revenue generation and the ability to be measured by productivity measurements.

Medical schools have evolved into complex academic medical centers and often struggle with the balance between student education and clinical business opportunities (Watson, 2003). A major reason that academic medical centers have shifted focus away from the narrow goal of teaching is due to a lack of funding. The lack of funding in medical schools is a
complicated problem. A major shift in financing of academic medical centers is due to changes in insurance reimbursements and a shift to managed care (Ludmerer, 1999). Decreases in insurance reimbursements, state funding challenges, and the inability to seek monies for the indigent care population have forced academic medical centers into areas of money generating activities.

Faculty time allocation has been studied (Milem, Berger, & Dey, 2000). However, the main focus of the literature has been written about traditional academic faculty. The literature lacks college of medical clinical faculty in dealing with the complex roles that each one faces. The expectations to teach perform scholarly activities and produce clinical revenues is unique and the roles that academic medical faculty face brings an additional complexity and one that is worthy to study.

The complexities of academic medical centers and the faculty that comprise the institutions are unique and different from other types of faculty. Academic medical schools are expected to adjust and react to numerous outside influences as it relates to supporting the mission of teaching and research. Many departments in higher education institutions are provided with state support and other funding to support teaching and research goals. Clinical units in college of medicines are expected to generate revenue in order to supplement and or create the ability to fund non-clinical related activities (Lawlor, 2002). At many colleges of medicine, the clinical side of the college is expected to create ways to support itself from external third party sources with a lack of additional state support.

This study investigated time on tasks for academic medical faculty. The data was collected using descriptive information on faculty time spent conducting clinical, scholarly and administrative tasks to ascertain if academic faculty roles are changing. The literature on
academic medical faculty and their related time on tasks are lacking. The literature also lacks the measurements of academic faculty accountability as it relates to time spent on tasks.

Research Questions

The questions that guided this study were:

Q1: What degree of role changes have academic medical faculties experienced over the past five years (2004-2008) with regards to time spent on instruction, providing clinical care services, and engaging in research activities?

Q2: What demographic characteristics of medical faculties have experienced the greatest role shift as disaggregated by the demographic variables of gender, age, ethnicity, number of years at the institution, faculty rank, ethnicity, and discipline.

Q3: What is the relationship between faculty perception of time spent on tasks and actual hours worked based on a comparison of new survey data to the five-year aggregate?

Q4: What is the relationship between how academic medical faculties record their percentage time spent on providing clinical care services and the actual clinical care revenues that each generates?

Significance of the Study

This study focused on academic medical faculty roles and how each spends time on task to measure if a shift is taking place with job roles of academic faculty. A recent study discussed physician turnover among academic medical faculties and how burnout plays a significant role among physicians (Golub, Johns, Weiss, Ramesh, & Ossoff, 2008). In order to better understand the roles of academic medical faculties, it is important to understand the complex roles that academic medical faculty face and time spent on work tasks. The study sheds light on balance of work activities and on accountability measures in an academic medical institution.
A significant challenge among medical faculty members is the balance between teaching and research (Kennedy, 1997). Many academic faculty members enter the academic medical profession in order to be able to produce scholarly activities and to conduct research. As the challenges of finances continues to be at the forefront of current discussions, it is important that medical faculty are allowed to continue to participate in scholarly activities.

The study of role expectations and faculty time spent on task is limited for academic medical faculty and in particular the clinical faculty members. Many studies have focused only on time spent on tasks for teaching and research. The literature was enhanced by a study of academic medical faculty members and how their roles and job expectations are affecting the profession. A current concern among academic medical faculty members is the ability to recruit new physicians and to have the time to continue to produce scholarly activities.

Limitations of the Study

This study is limited to a survey of academic medial faculty members at one public institution in the southeastern United States. The results were limited to the survey data that are obtained. The limitations of the study did not infer nor confirm or dissuade information about all academic medical faculties across the country. Job functions, faculty expectations and accountability vary greatly among differing institutions across the country.
Operational Definitions

It is useful to define some terminology used throughout this study. The following serves as a definition of terms.

*Academic medical faculty.* For the purpose of this study, academic medical faculty are defined as medical doctors (M.D.), doctor of osteopathic medicine (D.O.), or clinical faculty members that have clinical based training that are able to diagnose, treat, and perform clinical care services. Clinical faculty and academic medical faculty are synonymous terms in the study.

*Clinical care services.* Clinical care services are services that are rendered to patients in the diagnosing, and treatment of illnesses.

*Billable patient care.* Billable patient care is defined by the treatment of patients in which an amount is charged for the professional services rendered.

*Residents.* Residents are students that have completed medical school and have entered into a post medical school training program to learn a specific medical discipline.

*Medical students.* Medical students are students that have completed an undergraduate degree and are pursuing a medical degree (M.D. or D.O.).

Organization of the Study

The study is organized into five chapters. Chapter 1 introduces the background of the problem, the statement of the problem, the research questions and operational definitions of terms used within this study; it also details the significance of and limitations to the study. Chapter 2 reviews the literature relevant to the statement of problem. Chapter 3 describes the quantitative methodology. Chapter 4 shares the results of the data collection. Chapter 5 contains the conclusions, discussion, and possible future areas of research.
Academic medical center faculties struggle with the balance between the demands of the institution to provide instruction, research and clinical care services. The fiscal challenges that numerous college of medicine’s experience is forcing an increased accountability to manage its resources efficiently including academic medical faculties’ time spent on tasks. As external constituents demand institution accountability, resource allocation will continue to have a great emphasis. As academic medical faculty try to balance their roles and responsibilities in college of medicines, it will be important to maintain the integrity of the institution to meet its education requirements and responsibilities.

Chapter one has introduced the concept of academic faculty time spent on task. The challenges and accountabilities that faculty face in juggling multiple job expectations. Organizational role theory (Biddle, 1986) was chosen as the theoretical framework to try and better understand how the many complexities, challenges, and ambiguities with current faculty roles affect faculty and the institution. The purpose and significance of the study was to better understand how academic medical faculties spend their time and whether or not a shift in job tasks is taking place.

Chapter two discusses three main bodies of literature starting with a discussion about academic medical centers and the many challenges that each is currently facing. The literature review also explores the uniqueness and challenges that face academic medical center faculty members. The challenges that academic medical faculties face in integrating with other faculty members in the institutions as well as administrative expectations that are unique to faculty members in the college of medicine. The third body of knowledge explores role theory; more specifically how organizational influences affect the roles of faculty members to include role
conflict, role ambiguity, role stress, role strain and other factors that can prove problematic on faculty achieving desired results.

Chapter three overviews the design of the study and how the research questions were tested a null hypothesis. The purpose of the quantitative was to measure whether or not a change took place among academic medical faculties in job tasks. The data collected focused on time spent of tasks of academic medical faculty members over a recent five year period (2004-2008). The study also surveyed current academic medical faculty members, who also completed the five years of surveys (2004-2008) to test whether or not their perceptions of time spent on tasks reconciles with the actual self-reported data collected.

Chapter four presents the results of the study. It gives a detailed analysis of the answers to the four research questions. The chapter details the areas where shifts occurred and the areas where no significant statistical change took place.

The final chapter, Chapter five interprets the results. Chapter five details the conclusions of the study and makes reference to how these results compare to the literature cited in Chapter two. The chapter concludes with new areas of research to continue the exploration of how academic medical faculty members spend their time.
CHAPTER 2

LITERATURE REVIEW

As academic medical faculty members are asked to spend more time performing revenue generating activities, less are involved in direct education of students (Watson, 2003). A smaller percentage of faculty members devoting time to teaching can marginalize a well-rounded education for their students. The role of education should be at the forefront at medical schools and the level of commitment to the mission must start with higher level administration (Watson, 2003). The support and development of academicians to manage and enhance the quality of the education experience is imperative to have a successful college of medicine (Whitcomb, 2003).

Thibault et al. (2003) contend that after several decades’ of enormous growth in research and clinical care activities societal benefit has improved. An unintended consequence of the growth in clinical care and research has been a decline in faculty time to foster the education mission unique to medical schools (Tarquino, Dittus, Byrne, Kaiser, & Neilson, 2003). As fiscal resources become scarcer, academic medical faculties could continue to see a decrease in time available to pursue scholarly activities that relate to the educational mission of academic institutions. Ludmerer (2004) promotes the idea that deans and other high ranking officials within academic medicine should pay teachers for their time and promote those who are meritorious. The argument for paying for teaching time makes sense from a mission standpoint, but the funding mechanisms to pay for it are not quite as clear. However, there have been
successful models of teaching academies at schools such as the Johns Hopkins School of Medicine (Ludmerer, 2004).

The literature review focused on three areas related to academic medical center faculties. The first body of literature focused on the background of academic medical centers and the uniqueness how they function in higher education. The second body of literature focused on academic medical faculties and unique traits associated with their roles, more specifically the uniqueness and complexities of blending instruction, research, and clinical care services and how the complexities compare to traditional colleges. The last body of literature focused on organizational role theory and the complexities of role ambiguity, role conflict, role balance, role stress, and other types of role conflicts. The literature review explored different aspects affecting the time spent on tasks by academic medical faculty and how these factors affect current faculty roles and expectations.

Academic Medical Centers

Academic medical centers are a blend of traditional academia, hospital functions, education, and patients (Simone, 1999). Academic medical centers are complex organizations with conflicting cultural phenomenon and exist to serve three purposes: educate, conduct research, and perform clinical care services (Kennedy, Johnston, & Arnold, 2007; Lawlor, 2002). As revenue remains a necessary constituent within higher education, academic medical center physicians are feeling increased pressure to become even more entrepreneurial, which is
straining their already tenuous balance between their academic missions and their push for economic self-sufficiency.

Medical care in the United States depends on academic medical centers to prioritize health care initiatives and to influence health care at the national level. Academic medical centers are not only expected to train medical students and residents on how to be effective physicians, but are also expected to teach and train students to be sensitive to and deal with the social side of medicine (Naughton & Vana, 1994). A conflicting role of academic medical center physicians is balancing roles and expectations to focus on their moral and ethical responsibilities, to set aside self interests, and to focus on what is best for the medical students and patients (Cohen, 2006).

The future of health care and its role of offering a cost competitive and efficient product will be heavily influenced by academic medical centers. A challenging part of academic medical centers leading the way in policy development and implementation is that many academic medical centers are inefficient, bureaucratic, and slow to change. Cunningham et al. (2008) explain:

For more than a decade, concern has been widespread about the financial viability of America’s health care safety net—a patchwork of hospitals, community health centers (CHCs), and free clinics that either have an explicit mission to serve low-income, uninsured people or are widely recognized in the community as playing this role. (p. 374)

Academic medical centers are the safety net for providers in many areas of the United States and struggle to keep pace with increases in costs. The shortfalls in clinical and state revenues and the increased indigent care patient load are forcing academic medical center physicians to seek new funding as private physicians are taking care of fewer patients lacking health insurance (Cunningham et al., 2008). The increased burden on academic medical centers
is continuing to drive academic physicians to develop a more cost conscious and entrepreneurial approach to providing health care services.

Academic medical facilities pursue additional clinical and research dollars to offset the rising costs of educating medical students and residents. Attention to revenue generating activities overshadows uncompensated activities such as teaching and other administrative endeavors (Angell, 2000). As the focus on revenue generation gains credence in higher education institutions, academic medical centers feel pressure to be more entrepreneurial and business-like. The capitalistic focus among academic faculty members is straining their already tenuous balance between their academic responsibilities and their push for economic self-sufficiency (Lawlor, 2002).

Changes in the health care environment have major impacts on the ways in which medical schools fulfill their missions (Sloan, Kaye, Allen, Magness, & Wartman, 2005). A challenge many academic medical centers face is aligning resources with mission. The dynamic nature of academic medical centers and their shifting priorities demand implementing a defensible and systematic methodology for resource allocation (Sloan et al., 2005). The University of Pennsylvania initiated an allocation of resources methodology based on a funds-flow allocation process to better align resources to strategic initiatives (Kennedy, Johnston, & Arnold, 2007).

As academic medical centers look for ways to be more efficient and accountable, the blended amount of time spent on instruction, research, and patient care will be a challenge. As academic medical centers learn ways to balance faculty activities to meet its mission, there will continue to be a strain on resources. Academic medical centers are complex and challenging
entities to navigate and understand as compared to other university departments. The next section explores the uniqueness and differences in academic medical centers.

**Administrative and Financial Complexities within Academic Medical Centers**

*Fiscal challenges.* Academic medical centers are feeling increased pressure that are forcing changes, some financial, some resources, etc. As state funding continues to shrink and the competition for external dollars increases, academic medical centers will need to find economic means to continue their mission of teaching, conducting research, and providing clinical care. The fiscal challenges in academic medical centers are forcing faculty to shift roles with a stronger emphasis on revenue generation (Watson, 2003; Lawlor, 2002).

As academic medical centers continue to face fiscal pressures, it is critical that administrative units of medical schools demonstrate the value that each adds to the school’s mission. Because each unit within a college of medicine is expected to show value and reason for its existence, it is important for units that are not deemed necessary to maintain the core mission of a college of medicine and show a positive return on the university’s investment.

Academic medical centers are reporting an increased demand for services, especially among the uninsured and less favorable third party payers such as Medicaid (Cunningham, Bazzoli, & Katz, 2008). The consequences of the uninsured population for academic medical centers and their faculty are the management of resources and rising costs of providing uncompensated care. As the market shifts and expects efficiencies from academic medical centers, cross subsidies from external sources fund a large percentage of the indigent care patient base, which put unfunded indigent care at risk (Lawlor, 2002). The drain of financial resources to academic medical centers leads to tough decisions in measuring viability of academic programming. Evaluating academic programs is vital for academic medical centers to remain
efficient and cost conscious in order to maintain their core mission to teach, conduct research, and provide clinical care (Ludmerer, 2004).

Organizational complexities. Academic medical centers are hierarchically and organizationally complex organizations and can be difficult to understand and navigate. College of Medicine funding of dollars and resource mechanisms and the methodology of allocation are often politically allocated and non-defensible (Kennedy et al., 2007). Historical funding decisions are often based on previous stakeholders’ abilities to negotiate as well as the ability to make decisions at the institutional level by valuing what the department or service is providing and the perceived value to the institution (Kennedy et al.). The pursuit of the allocation of monies and resources in the institution, hospital, and the college of medicine are competitive and have specific impacts on what types of departmental decisions are made to become or remain fiscally solvent.

Many colleges of medicine have numerous entities under the umbrella of the overarching college. It is not uncommon to have a faculty practice plan that administers the clinical services for the college of medicine physicians; a university hospital or affiliate for medical student training and for academic medical faculty patient care; and the basic science part of the college of medicine that focuses on the hard sciences (Hirsh, Ogur, Thibault, & Cox, 2007). Each entity in a college of medicine is competing for resources and for financial support (Watson, 2003).

Uniqueness of academic medical centers in higher education institutions. A shift has occurred in higher education that is changing the organizational dynamics resulting in incentives created or expanded within higher education (Leslie, 2003). The impacts of these organizational changes is leading more academic medical faculty to pursue capitalistic endeavors. The increased grant, clinical trial, and other academic medical faculty revenue pursuits have shifted
reliance away from state funding with a more stringent focus on self-sufficiency. A unique attribute of academic medical centers is the expectation to increase revenues to balance rising costs (Angell, 2000). With health care reform initiatives and many unfunded mandates, academic faculties are expected to help find ways to cut costs or generate funds to pay for the increased costs (Fisher, Berwick, & Davis, 2009). As institutions focus more on productivity measures, faculty salaries are at risk. Creative and lucrative services are necessary for self preservation (Tarquino et al., 2003). Referred to as self-serving in many ways, creative and lucrative services give academic medical faculty members the ability to maintain gainful employment. If self-preservation cannot be achieved, then educational and research activities could be thwarted as well (Fairweather, 2002). As resources continue to be scarcer, more academic medical centers will find ways to be fiscally solvent. Tarquino et al. (2003) discuss the challenges of setting and measuring performance based compensation in academic medical centers. Factors such as teaching load, research grants, clinical trials and clinical care revenues are all part of the productivity measurement methodology. The struggle for institutional philanthropy with the reduction in federal programs to support facility costs and medical education has resulted in a greater demand for finding new revenue streams (Dickler & Shaw, 1997).

Medical school revenues are squeezed in multiple directions (Lawlor, 2002). The federal government is cutting payments for many Medicaid and Medicare patients and the private market place is demanding lower prices for its products (Lawlor, 2002). Health care delivery systems do not have the ability to set revenue pricing based on services rendered, but are dependent on government and third party insurance companies pricing. If the government or other third party insurance carriers decide to make reimbursement cuts, the provider of the health
care services must be more efficient, shift work duties or forgo revenue on professional services rendered (Lawlor, 2002; Tarquino et al., 2003; Watson, 2003).

External influences. Another challenge that academic medical centers face is when external agencies dictate changes in the amounts of monies and resources that academic medical centers receive. Many times, insurance companies dictate a set fee schedule that each is willing to pay for set services which leads to a fragmentation of care and a challenge for physicians (Brantes, Risenthal, & Painter, 2009). By the nature of the insurance business, the insurance companies have the ability to change the amount of money paid to physicians for services rendered and thus costs have to be better managed and often times decreased (Kuttner, 2008). Physicians have little or no say on these changes other than the choice to accept the fee schedule and treat the patient. In forecasting revenues to cover expenses this type of change leads to greater deficits and can shift role and responsibility changes to meet the declining external revenues reimbursement (Kuttner, 2008).

Another external influence on academic medical centers is an agency that accredits residency programs also known as the residency review committee. The governing body for residency programs is the Accreditation Council for Graduate medical Education and is responsible for mandating specific criteria for roles and expectations of faculty members in the training of residents (ACGME, 2009). The challenge with the mandates is there is no additional funding to meet the increasing expectations of this governing body. Challenges to balancing the educational mission to its students, academic medical centers have been plagued with the recent change in resident work hours (Goiten, Shanafelt, Nathens, & Curtis, 2008). The spirit behind the change was to protect the resident physician and to limit the number of hours that can be worked in a week to improve patient safety. The reality from the resident work hour restriction
has been increased faculty costs to cover patient care and resident physicians missing out on valuable educational experiences, if the events lead to more than 60 hours in a work week (Goiten et al., 2008). Mandates of time spent on managing a program with no additional reimbursement to cover this expense can prove to be difficult. If a particular physician is expected to generate external revenue to offset salary costs, yet is mandated to spend a certain amount of time to meet an unfunded mandate, resources are negatively affected.

Another challenge is unfunded institutional mandates. If the universities decide to give pay raises or to increase internal taxes to fund other university commitments, it is an unfunded mandate. In essence, many colleges of medicines clinical departments are treated as ancillary services. College of Medicines’ are challenged with ambiguous roles in balancing the education of its medical students with the expectation to create scholarly work.

The challenges of understanding the uniqueness and complexities of academic medical centers are important to understand in order to explain many of the ambiguity that academic medical faculties face. The external pressures and unexpected consequences from external constituents can prove to be significant challenges to academic medical centers. The uniqueness of academic medical centers leads to the uniqueness of academic medical faculties, which will be discussed in the next section.

Academic Medical Faculties

Numerous scholars have explored what influences the attitudes and practices of faculty (Austin, 1990; Cameron & Ettington, 1988; Dill, 1991; Frost & Jean, 2003; Tierney & Rhoads, 1994). Academic medical center departments have unique cultures in the Institution’s overarching culture and are distinct by unit, division, and department. As faculty experience cultural
pressure to meet institution expectations, conflict arises in balancing the ability to balance the multitude of expectations that academic medical faculty face. One such conflict is combining academic theory with practical application (Frost & Jean, 2003).

A challenge among maintaining academic medical faculty members is the growing level of discontent with the profession (Lowenstein, Fernandez, & Crane, 2007). The increasing level of discontent serves to be problematic in maintaining a level of satisfaction among their duties and functions. The increased pressure for academic medical faculty to produce research, and generate clinical revenues is a greater taxing on their time spent and added pressure to be more accountable for their daily actions (Levinson & Rubenstein, 2000).

*Instruction.* The support and development of academicians to manage and enhance the quality of the education experience is imperative to have a successful college of medicine (Whitcomb, 2003). The difference between medical faculty and other traditional faculty is the expectation to balance instruction with revenue generating activities. A significant issue with the focus on placing a higher emphasis on faculty expectations other than teaching is the serious content that numerous academic medical faculty have to leave the profession altogether (Lowenstein, Fernandez, & Crane, 2007). The intent for academic medical faculty to leave the profession stems from the fact that high quality teaching is not rewarded (Lowenstein, Fernandez, & Crane, 2007).

A valuable insight into what is positive about academic medical faculty members and their roles in the institution is the positive relationship between the medical students, resident and patients (Pololi, Conrad, Knight, & Carr, 2009). Numerous bodies of literature discuss the importance of physician, patient, and student interactions and the trust that develops from those
relationships and how these positive relationships improve patient care and educational outcomes (Kaplan, Greenfield & Ware, 1989; Knaus, Draper, Wagner & Zimmerman, 1986; Fugelli, 2001).

**Complex roles.** As academic medical faculty work towards balancing their complex faculty roles, many of the economic behaviors directed to them come from outside constituents (Levin, 2006). The literature lacks insight in cultural conflicts that occur between faculty and these external constituents. Academic medical faculties experience numerous external forces that affect their direction in prioritizing their complex roles. External forces exert pressure on faculty to commit more focus on teaching or conducting research (Braxton & Berger, 1996).

Many external constituents expect teaching and instruction accountability among faculty when state dollars are allocated for such purpose (Fairweather, 2002). Clinical faculty in college of medicines have an even greater expectation to meet the teaching needs and research efforts that are funded through state dollars, yet are also expected to produce clinical revenue and to provide a societal benefit by taking care of patients in their respective catchments area (Kennedy, Johnston, & Arnold, 2007).

The pressures placed on medical teachers to meet their academic duties are growing (Papp & Aron, 2000). The demands of instruction and the preparation that it entails is growing more intense as are the pressures to obtain research funding and to publish scholarly literature (Papp & Aron, 2000). Academic departments of medicine and individual faculty members are expected to compete effectively for extramural research support while preserving their teaching mission (Tarquino et al., 2003). The literature is lacking in detailing or describing successful academic medical faculty performance based incentive plans.

The question at hand for academic medical centers, as with all of higher education, is how to balance teaching, research, and education to provide faculty and students with
meaningful and productive academic careers. Balancing of duties coupled with the push for generating more funds from private sources, has complicated the roles of academic physicians. Academic medical faculty members are expected to balance work productivity with the expectation to meet the needs of its medical students and to do what is right and ethical in meeting the instruction needs of the institution (Cohen, 2006).

Faculty time spent on tasks shift as categorical responsibilities complicate faculty roles. As academic physicians are thrust into greater clinical responsibilities, research and other administrative functions are pushed to the side (Choski, Simeone, Chari, Dorey, Gruner, & Upperman, 2009). Choski et al. (2009) argue that balancing multiple duties leads to difficulties and stress as it relates to balancing the functions of academic physicians.

Problems in balancing academic faculty roles can lead to challenges for academic institutions. The expectation for academic medical physicians to balance their faculty roles with outside influences such as family events and extracurricular activities can lead to faculty turnover and discontent (Lowenstein, Fernandez, & Crane, 2007). Carr, Bickel & Inui (2004) point out that the conflicts in roles and balance among academic medical faculty members are causing physicians to choose not to sacrifice the time necessary to appease all parties involved to meet the expectations inside and outside the work force.

A challenge with academic medical faculties’ complex roles is the struggle with physician burnout (Golub et al., 2008). The biggest factor that plays into academic medical faculty turnover is the balance between personal and professional lives (Golub et al., 2008). The significance of better understanding the complexities of academic medical faculties can lead to ways to better assess role expectations and ways to create role balance.

*Academic Medical Faculty versus Traditional Faculty*
Academic medical faculty members have many of the same expectations of traditional faculty in that each is to contribute to instruction, and scholarly work for the institution. Traditional and academic medical faculties are expected to serve on university committees and be engaged in the faculty senate and the other mechanisms to seek faculty input throughout the institution. (Nutter, Bond, Coller, D’Alessandri, Gewertz, Nora, Perkins, Shomaker, & Watson, 2000). Many traditional faculties are expected to contribute scholarly work back to the literature similar to that of academic medical faculty (Rice, 2002).

A major difference between academic medical faculty and traditional academic faculty is the expectation of revenue generation and the ability to externally solve fiscal shortfalls. The challenge with academic medical faculties and the clinical practice of medicine are the many challenges that the external forces dictate.

So what makes academic medical faculties stay and excel in their respective roles? Poloi et al. (2009) opine that:

The qualities and rewards felt from their relationships with students and patients, the excitement of the intellectual challenge of medicine, an altruistic social contract, and the few close relationships that they do have with colleagues buffer, protect and support faculty in their contributions to health care education, and research, and decrease the likelihood of members of this critical group leaving academic medicine. (p. 112)

Academic medical faculties are unique as compared with traditional faculties and are faced with complex roles and expectations. Academic medical faculty face pressures of balancing instruction, research, and clinical care services. As resources become scarcer and academic medical faculties are asked to continue to find ways to solve the financial woes of colleges of medicine, challenges will continue to be prevalent in hiring, and maintaining gainfully employed physician academicians.
The challenges that academic medical members’ face and the uniqueness of their roles lead to challenges in meeting institutional expectations. Academic medical centers are in a dilemma in balancing individual expectations of its faculties with meeting the expectations of the institution. The challenges and complexities that academic medical faculties face are detailed through the theoretical framework, organizational role theory, as the literature review explains many influences that affect faculty members.

Role Theory

Academic medical faculties are balancing individual behaviors with expectations from external constituents. The balance between social positions and expectations form the basis for how role theory is defined (Biddle, 1986). In particular academic medical faculties face the challenge of balancing job task expectations with the goals of personal development and scholarly activities. How does academic faculty bridge individuality with collective structure? The dual nature of consensus building through collective structure and individual agency is complex (Callero, 1994). Baker and Faulkner (1991) conceptualize roles as resources and claim that roles are part of the tools in social structures and that the human element is expressed through roles as resources.

Roles are often defined in two ways. One way to define roles is to relate tasks that individuals are expected to perform and the technical systems where they interact (Graen, 1976; Katz & Kahn, 1978; McCall & Simmons, 1978). The second way in which roles are determined is through social systems where individuals function (Taraafdar & Williams, 2007). The systems where individuals function can be derived from organizational structures, hierarchies, reporting relationships and authorities given to individuals in the entity (Graen, 1976; Katz & Kahn, 1978).
The theoretical perspective of role theory is not without disagreement among scholars. Joas (1993) argues that role theory is alive and well and embedded in our culture, while Mangham (1996) challenges the theoretical perspective as an outdated methodology. Yet, role theory is lacking in critical contemporary publications (Simpson & Carroll, 2008). Simpson and Carroll argue that an urgent need exists to further study role theory to adequately understand the ramifications of roles in organizations. The early development of role theory defined role it as a formal process that developed over numerous stages (Simpson & Carroll, 2008). Role theory as a formal process is debated with numerous authors citing the evolution of cultural immersion as the way roles are developed and theorized (Berger & Luckmann, 1966).

Other theorists see role theory providing three functions: to predict which approaches are effective; to create a framework for evaluation; and to create a framework for new untested strategies (Laidley & Braddock, 2000). A challenge with role theory is that society is dynamic and the individuals that make up roles in institutions change and can diverge as priorities shift. A challenge in analyzing role theory in academic medical faculties is the balance of individual self with the collective social structure of the organization (Piliavin, Grube, & Callero, 2002). According to role theory (Biddle & Thomas, 1966; Goode, 1960), university faculties with dual allegiances may experience role conflict when their superiors and other institution leaders who expect behaviors are in competition with one another (Boardman & Bozeman, 2007).

*Role Expectations and Time on Tasks*

The interest in studying how faculty spends their time is not new in higher education. There is an increasingly concerned contingency on how time is allocated and what the affects are to students pursuing education (Bok, 1992; Boyer, 1990; Massey & Zemsky, 1994). Faculty face dilemmas in balancing role-playing expectations of administrators with role making based on
individual preference and time spent on tasks (Harvey, Novicevic, Sigerstad, Kuffel, & Keaton, 2006). A significant study on how faculties spend their time was conducted by Massy & Zemsky (1994). The authors contend that work to increase discretionary time by loosening academic responsibilities and specific ties to the institution. The Massy & Zemsky study (1994) focuses on teaching activities versus research activities.

Changes in academic medical faculty roles are changing at a rapid pace due to a shift in health care economics (Bland & Holloway, 1995). Clinical academic faculty members are expected to teach, though protected time is decreasing, as well as generate external sources of revenue (Levinson & Rubenstein, 1999). Academic medicine physicians that are expected to have a large clinical practice can lead to challenging recruitment efforts due to the nature of academic physicians wanting to teach and conduct research.

**Shifting Demographics**

The shifts in demographic trends among academic medical faculties are obvious as junior faculty fill the pipeline with members of generation X (Howell, Joad, Callahan, Servis & Bonham, 2009; Lowenstein, Fernandez, & Crane, 2004). With the shift in demographics, academic medical center faculty members have a stronger focus on the balance between family and work and often take a holistic approach to the career experience (Lowenstein, Fernandez, & Crane, 2004; Bickel & Brown, 2005). Younger academic faculty members want greater work flexibility and the ability to customize a career path.

Financial pressures are leading to challenges in recruiting academic faculty as Bickel and Brown (2005) contend that the buyer’s market to recruit academic faculty appears to be ending. The upcoming retirement of baby boomers will further complicate the number of faculty vacancies. Academic health centers are dependent on generation X graduates to meet the need of
a declining workforce (Bickel & Brown, 2005). There are numerous complexities in bridging the cultural shift that generation X physicians will add to an aging academic faculty population including differences in work ethic, differing job expectations, and level of commitment to the institution (Bickel & Brown, 2005).

What causes shift or changes in faculty role performances? Many faculty roles are shifting and changing due to systemic changes in institution priorities and institution focus (Mile, Berger, & Dey, 2000). Numerous isomorphic tendencies create conforming pressures for academic faculty members (Meyer, 1970; Meyer & Rowan, 1977). Many new academic medical faculty members are mentored by more senior level faculty and are often shown the ropes of how to establish a career as an academic medical faculty member. The new faculty members are taught how to succeed and how to prioritize tasks on jobs in order to seek promotions and institution recognition (Massey & Zemsky, 1994). How much do institution expectations for its faculty members dictate faculty roles and time spent on tasks?

Gender and Faculty Roles

Women make up approximately half of all students in universities and in professional settings (Cropsey, Masho, Shiang, Sikka, Kornstein, & Hampton., 2008). Women are entering medical school at increased rates, which leads to increases in the number of women entering the field of academic medicine (Cropsey et al., 2008). Increasing numbers of women in medicine has raised the issue of how this affects the practice of medicine (Riska, 2001). Gender differences between men and women lead to unique role conflicts and role strains and typically differ based on attitudes, roles outside of work, and other external commitments (Elliott, 2008). Despite increasing numbers of women entering the work force, gender specific role attitudes have changed little (Greenhaus & Parasuraman, 1999). Specific role development by gender
among medical students and medical faculty are affected by the mentors and the expectations that each encounters and can be attributed to socialization theory (Ferree & Hall, 1996). Gender differences between men and women exist in the prioritization of family, career, and outside commitments. Women are more likely to rank family first as compared with men that tend to focus more on work performance (Cinnamon & Yisrael, 2002).

Gender pay inequalities are reflective of gender bias (Academe, 1999). Yet the issue may be more complex than simply the sex of the faculty member. Women who are more greatly focused on raising children and prone to more part time roles typically are delayed for promotion and are paid less than their male counterparts (Hensel, 1991). The pay inequities are troubling in academic medical faculties as a greater number of physicians entering the field are female and seek part time and flexible hours.

Elliott (2008) analyzed the differences in gender roles among academic faculty. The results showed that men and women have equal amounts of stress and role strain yet the differences between the two are significant. Elliott determined that women’s role strain was more tied to external factors not specifically relating to the actual job itself and were more family oriented. The men in the study were found to be more affected by actual job demands and role expectations.

In measuring the roles of academic physicians, the literature did not deem gender to be a significant factor that leads to faculty disengagement nor to turnover in academic medical faculty positions (Lowenstein, Fernandez, & Crane, 2007). The study by Lowenstein et al. (2007) showed high levels of satisfaction among women in the promotion and tenure process. However, turnover in the medical field, more specifically in women is alarming. Cropsey et al. (2008)
research contends that faculty attrition, especially with women and minorities, is a serious concern.

*Role Conflict, Ambiguity & Overload*

Institution expectations running counter to the ways academic faculty see their roles can lead to role conflict and ambiguity (Wolverton, Wolverton, & Gmelch, 1999). Academic medical faculties are expected to conform to institution policies, procedures and priorities that sometimes conflict with personal values. Balancing personal goals with institution priorities can lead to complexities in prioritizing job tasks and meeting established institution goals (Howell et al., 2009). Many conflicts arise when external situations force academic medical faculty to change behaviors in order to improve a financial shortfall. The larger and more complex institutions the greater chance for role conflict and ambiguity among its faculty (Ryan, 1980). As academic medical faculties are forced into different and more complex roles, there is a higher probability that fragmentation will cause ambiguity and complexities in the organization (Tierney, 1988).

Academic medical faculties face inter-role conflicts (Kossek & Ozeki, 1998) as roles shift and change. Role conflict surfaces when incompatible roles are projected onto the role occupant (Brookes, Daly, Davidson, & Halcomb, 2007). Role overload takes place when overwhelming expectations are placed on an individual that is greater than the individual’s capacity (Major, 2003). Current evidence explains how role conflict and role strain can lead to numerous individual issues including lack of productivity, anxiety, job turnover, anxiety and withdrawal (Chang & Hancock, 2003).
University faculty members’ roles are more complex with the advent and an emphasis on creating new research centers as faculty are asked to take on greater roles (Boardman & Bozeman, 2007). Marks and MacDermid (1996) discuss shortcomings in the literature on multiple roles. One shortcoming is the insufficient consideration of organization roles and selves. A second shortcoming is the assumption that roles and selves have a hierarchical structure (Marks & MacDermid, 1996).

As academic medical faculty members are asked to spend more time performing revenue generating activities, less are involved in direct education of students (Watson, 2003). A smaller percentage of faculty members devoting time to teaching can marginalize a well rounded education for their students (Whitcomb, 2003). The role of education should be at the forefront at medical schools and the level of commitment to the mission must start with higher level administration (Watson, 2003).

An individual experiences role conflict when exposed to contradictory, inconsistent or incongruent role requirements (Tarafdar et al., 2007). The greater the lack of clarity, the higher the chance of role conflict. Conflict often arises when a role crosses the boundaries of the organization (Stamper & Johlke, 2003; Veloutsou & Panigyrakis, 2004).

Role Change

Role change is defined as a change in the shared understanding of typical role functions (Thornton & Nardi, 1975). In order for a role to change variability a behavior must be altered and will need to be distinguished from normal variability (Turner, 1990). Role change happens through role transition and is recognized as a dynamic movement between relatively stable patterns (Kelly & Mathews, 2001). Transitioning roles requires that a person give up many
behaviors to learn new behaviors associated with the new role (Goodling, 2003). Murray (1998) refers to the change in roles as crossing boundaries.

Recent literature discusses roles as dynamic and emergent, and constantly changing (Perrone, Zaheer, & McEvily, 2003). The dynamic nature of academic medical faculty member’s roles plays a significant piece in health care delivery (Jordan, Landham, Crabtree, Nutting, Miller, Strange, & McDaniel, 2009). As expectations evolve for academic medical faculty to balance ways to provide instruction and patient care, their ability to change the ways in which tasks are completed will play a significant role in delivering health care instruction and patient care to their constituents.

Role Strain/Stress

Goode’s (1960) early formulation of role strain was viewed as economic in form, and as a sequence of role bargains where individuals minimize role strain through a selection process among distinct, and sometimes conflicting, role behaviors (Boardman & Bozeman, 2007). A challenging expectation for full-time, tenured or tenure-track faculty is to assume multiple roles and responsibilities thus enhancing the likelihood of role strain.

A consequence of role stress is low productivity, dissatisfaction in the workplace, and overall poor job performance (Jex & Beehr, 1991). Stress is a cognitive response that individuals experience when they anticipate an inability to achieve job role expectations (Tarafdar et al., 2007). Role strain is a response to an imbalance between the individual and the demands and expectations of the work environment (Cooper, Dewe, & O’Driscoll, 2001).

Role strain presents a challenge to higher education institutions and the individuals hired to perform tasks (Elliott, 2008). As more dual employed families work and balance outside job responsibilities, the risk or turnover, and burnout are prevalent. Role strain is highly prevalent
among junior faculty balancing work and life responsibilities during probationary periods (Jacobs & Winslow, 2004). Role strain often leads to an increase in stress levels, a decrease in physician productivity and to burnout, exhaustion, and a diminished sense of personal accomplishment (Choski et al., 2009). The on-going expectations of fitting perceived or expected social roles and meeting employer expectations lead to role strain and stress (Elliott, 2008). Dual faculty homes level of job strain are increased, if each member is in a specialized field of study and each member is seeking employment (Gappa & MacDermid, 1997).

A new form of role stress affecting faculty is the inundation of computer and information technology and has been deemed the term “technostress” (Tarafdar et al., 2007). The topic of technostress is a relatively new topic, but pertinent to the academic medical faculty community. The expectation for teaching physicians to stay on top of the latest literature in the treatment of disease as well as having access to state of the art equipment takes a toll on the role expectations and stress of academic medical faculties. Tarafdar et al. (2007) discuss the inverse relationships between role stress and individual productivity as the expectations to stay on top of new technology changes leads to role conflict and overload among faculty members. As academic medical faculties continue to grapple with soaring job expectations of teaching, research, and scholarly activities coupled with the financial pressures of decreases in funding, role stress and strain will continue to be a factor.

A study by Shanafelt, et. al. (2009) determined that as more academic faculty members are able to focus on aspects of work that is meaningful to them, the risk of role stress and burnout diminishes significantly. The role of academic medical physicians has the potential to be a rewarding and fulfilling career endeavor (Shanafelt et al., 2009). The study by Shanafelt et al. (2009) discusses the challenge in tying role stress back to specific indicators of the root cause of...
career burnout. There is little information between the positive meanings derived by physicians as part of their daily activities versus the vulnerability of burnout (Shanafelt et al., 2009). As role stress continues to be at the forefront of academic medical physicians, the risk of burnout and turnover remains high.

*Role Expectations/Productivity*

Role expectations among faculty vary significantly by institution, specialty, discipline, and department needs. Numerous authors found that faculty productivity is based on a reward system (Fairweather & Rhoads, 1995; Diamond, 1993). The rewards structures for faculty are heavier correlated with faculty output versus socialization and attitudes. The literature discusses measuring faculty productivity and the balance between teaching and research, but does not incorporate the third component for academic faculty that joins in the measurements of clinical care responsibilities.

Academic medical centers are expected to train the next generation of health care professionals, the expectation of the faculty roles among academic medical faculty is to provide good role models for the medical students in training (Christmas et al., 2008). Defining and measuring faculty role expectations has lagged behind in many academic institutions thus, rewards and recognition have yet to be fully recognized as well (Christmas et al., 2008). The inability to clearly define faculty job expectations as well as the failure to recognize teaching, research, and clinical excellence threatens the core values of academic medical centers (Christmas et al., 2008; Levinson & Rubenstein, 1999; Yusuf, 2006).

*Role Identity and Construction*
As roles are closely tied to an individual’s sense of identity, the individual learns to behave and react more closely to their identity and expectations in the organization (Jain, George, & Maltarich, 2009). Roles in organizations provide a set of work expectations and how an individual occupies such positions (Callero, 1994). The interaction between role and identity construction defines the ability of the person to function effectively in the organization. Simpson and Carroll (2008) argue:

Symbolic interactionist and systems approaches offer different perspectives on the relationship between role and identity; the former sees role as a prop in the staging of identity performances, while the latter views it more as a context-determined, evaluative tool that specific identities. (p. 31)

Role identity was developed to correlate the link between socially defined elements and how the individual interprets the role (McCall & Simmons, 1978). As role theory evolves and ties to identity construction, a state of flux can form with fragmentation and multiplicity problems in the roles of individuals (Alvesson & Willmott, 2002). Sveningsson and Alvesson (2003) argue that the states of flux that individuals experience in constructing identities are merely temporary stabilizations. The temporization of roles and identity constructs give structure to the flux of human experience and interaction (Simpson & Carroll, 2008).

As academic medical faculty gain insight into the context and meaning of their role identity, the manner in which each physician interprets the role provides normative support into what constitutes appropriate behaviors (Jain, George, & Maltarich, 2009). The evolution of role identity is tied to the established tradition of coupling the roles in line with others in the same field (Barley, 1989). Much of the role identity norms in medical faculties are tied to traditions and mentored relationships.

Role Balance
Role balance is the ability to fully engage in the performance of each role in one's total role system, and to approach a typical role with an attitude of attentiveness and care (Marks & MacDermid, 1996). As academic medical faculties seek to understand and meet the role requirements of their positions, role ambiguity and complexities can challenge role balance. The conflicting message that many academic medical faculty receive in generating more external revenue is the expectation to teach and do scholarly activities.

Declining revenues are having impacts on institutions of higher learning with variations of significance (Leslie, 2003). The changing ways in which governmental agencies assist in the funding of institutions of higher learning coupled with the increased pressure being felt by faculty to be fiscally productive could lead to an increased complexity in balancing expectations with missions of institutions. A question at hand for academic medical centers, as with all of higher education, is how to balance teaching, research, and education to provide faculty and students with meaningful and productive academic careers. Balancing of duties coupled with the push for generating more funds from private sources, has complicated the roles of academic physicians (Whitcomb, 2003).

Academic physicians today face the challenge of dealing with increasing financial and clinical responsibilities and stressors yet are often expected to compete in an increasingly competitive research environment (Choski et al., 2009). The challenge of balancing duties and striving for unattainable and unrealistic expectations is adding stress and disappointment for institutions and individuals alike in trying to achieve a level of success.

Role Perception

It is likely that faculty perceived roles have direct affects on teaching styles, professional goals, and effectiveness in scholarly pursuits (Sarbin & Allen, 1969). Perceptions of roles are
influenced by many external and internal factors including societal attitudes, governmental policies, and current trends in the profession (Brookes et al., 2007). Perceived roles are attributable to the current environment and expectations those faculties are given.

The perception of many academic medical physicians entering a faculty role in academic medical centers is the ability to engage in scholarly activities. The perceived role in academic medical centers by numerous physicians is the ability to have time to reflect and have time to pontificate ways to contribute to the scholarly literature (Watson, 2003). Often times, the perceptions of faculty roles versus the realities are contradictions. As academic physicians are forced into thinking about the payer mix of their patients, the business models of academic medical centers, and the ‘bottom line’ perceptions of what academic medical faculties signed up for and what they are expected to do differ (Lowenstein, Fernandez, & Crane, 2007). Many academic medical faculties perceive their roles and thus, enter careers in academic medicine based on their individual personalities, learning and career goals, interest in research, and the influence of mentors and role models (Brancati, Mead, Levine, Martin, Margolis, & Klag, 1992; Connelly, Sullivan, Peters, Clark-Chiarelli, Zotov, Martin, Simon, Singer, & Block, 2003; McManus et al., 2003; O’Sullivan, Niehaus, Lockspeiser, & Irby, 2009; Park, Minor, Anders, Vikis, & Poenaru, 2005; and Rubeck, Donnelly, Jarecky, Murphy-Spencer, Harrell, & Schwartz, 1995).

Role theory and the uniqueness of academic medical physicians into how each fits into the organization is a complex issue. The review of the literature has highlighted many facets that affect faulty roles and in particular how academic medical center faculties are affected by balancing their complex roles. The expectations of academic medical faculties vary at the departmental, unit, and individual level and are often unique to other faculty roles in traditional
academia. The challenge that academic medical center faculties face is balancing the complex roles to meet the instruction, research, and service goals of the institution. The challenges of blending faculty expectations with the challenges of role ambiguity, stressors, and identity can lead to many of the complexities and the roles of academic medical faculties.

Conclusion

The literature contained three themes as it relates to academic medical centers and their faculties. The overview of academic medical faculty roles described the many complexities and challenges that are affecting their current existence. The review of literature described the uniqueness of academic medical faculty members and the challenges that many face in integrating with other traditional faculty roles. The literature concluded with a description of roles and the many complexities, challenges and ambiguities that current academic medical faculty member’s face.

As resources are increasingly scrutinized, faculty accountability will increase. Increased pressures driven by resource justification will force academic medical centers and their faculty members to justify their purpose and the necessity of said positions. As academic medical faculties balance roles to teach, to conduct research, and to provide clinical care services, it is important to focus on the overall goals of the institution. The role expectations of academic faculty members and the complexities that each face in their roles is important to understand as these critical positions serve as safety net providers for the population at large.

Chapter three explains the framework for the study. The study focused on a quantitative methodology in order to measure if a shift has taken place among academic medical faculty
members and how each spends their time. More specifically chapter three discusses the research design and the specific criteria measured. The chapter also reiterates the research questions and gives more specific direction in how the study has been framed using Biddle’s (1986) organizational role theory.
CHAPTER 3
METHODS

Background

Academic medical centers are under pressure to better manage resources and to be more efficient in the teaching of medical students and residents (Lawlor, 2002). The increased costs of healthcare related services, coupled with unfunded educational requirements and the challenge of providing indigent care is taking a toll on colleges of medicine and their resources. The responsibilities of academic medical faculties are to balance efforts among instruction, research, and providing clinical services (Whitcomb, 2003). As academic medical faculties are asked to complete and juggle various tasks, a frequent question is how each person spends time on tasks. As resources continue to tighten and are more scarce, a focus is on how academic medical faculty members spend their time. As financial deficits mount and stress is placed on academic medical faculty members to be more fiscally productive, the strain and stress from the shift could pose harm to the profession and deter young physicians from entering the field of academic medicine.

Purpose of Study

This quantitative study examined if a significant change is took place on how academic medical faculties spend their time. The significance of answering the question is to better understand the future challenges in recruiting and maintaining academic medical faculty members. In a recent conversation with a senior-level administrator (L. Clement, personal
communication, August 18, 2009) on how academic medicine is changing to a more businesslike focus, the physician explained that he is concerned that the focus on how to see more patients, collect more revenues, and be more ‘efficient’ will lead to the demise of academic medical centers. “I became an academic medical physician to shape young lives and to do scholarly activities. It seems like every other meeting I attend focuses on finances and what we as an institution are going to do to improve our fiscal situation.” The ironic part of these discussions is that academic medical faculty members do not enter this profession to manage dollars and run businesses. The focus of academic medical faculty members is how to balance among the key expectations of their jobs and to teach, perform clinical services, and to produce scholarly work.

This study focused on whether or not a statistically significant change took place in faculty time spent on tasks. It is important to better understand if time spent on revenue generating activities is increasing while time spent on teaching, research, and other administrative activities is decreasing. As academic medical faculties enter the profession it is important to maintain the integrity of the educational program and for academic medical faculty members to have a true description of what their roles and responsibilities will entail.

Theoretical Framework

Role theory. There are numerous types of role theories and challenges among roles in institutions (Biddle, 1986; Marks & MacDermid, 2009; Turner, 1990). The complexities and internal and external factors that influence roles are complex. Academic medical faculty members face many of the complexities as their roles are defined in institutions. What is their role? Who determines what role functions are most essential? A large component of role determination is a prioritization of what is expected, role change (Turner, 1990), balancing roles and role conflict (Marks & MacDermid, 1996; Wolverton, Wolverton, & Gmelch, 1999),
challenges of role ambiguities (Kossek & Ozeki, 1998), and dealing with role strain and role stressors (Goode, 1960).

So how do academic medical faculties spend their time? The theoretical approach answered this question through role theory to better understand how academic medical faculties spend their time in their related organization and whether or not a shift is taking place. More specifically, the focus of this study relied on organizational role theory (Biddle, 1986) and what affects this has on faculty time spent on tasks. The study focused on organizational role theory and how academic medical faculties fit into institutions and how they spend their time.

Research Design

As covered in the literature review, the concept of role theory has many complexities and numerous factors that affect faculty behaviors. Biddle’s (1986) theory on organizational role theory describes many ways in which institutions affect role definition and how accepted role behaviors among its faculty members affect work flow and institution expectations. A challenge in better understanding faculty roles, in particular, the uniqueness of each individual’s thought processes, goals, and the way each sees their particular role in the institution.

The design of this study used a quantitative methodology in order to test a null hypothesis on whether or not academic medical faculty roles have shifted over the past five years. The data used for this study are internal data captured through the university’s hospital system and used to report physician time spent on tasks. The data analyzed consisted of the clinical faculty members in one specific college of medicine. The study analyzed time spent on job tasks across departments, gender, ethnicity, rank, and years worked in academic medicine.
The study measured current data of how academic medical faculty members spent their time as it relates to teaching, research, and providing clinical care services. More specifically, the data was analyzed over a five-year period to see if a change took place among academic faculty members in how each person spends their time. The importance of understanding how academic medical faculties spend their time can affect numerous external funding agencies. The data captured at this respective public university as part of the self-reporting time spent on tasks can positively or negatively affect institution federal funding for instruction. If the data reported shifts away from instruction time and more towards clinical care services or other non-instructional time, the Institution may receive less federal funding for its medical school instruction.

The academic medical faculty at the public southeastern university are currently working at the institution and have been employed at for the past five years (2004-2008) and completed a time study (see Appendix A) for each of the five years received a follow-up survey. The follow-up survey to current academic medical faculty used a Likert scale. A Likert scale measures the assessment of attitudes. The five responses to the Likert scale that will be used in this study are strongly agree, agree, neutral, disagree, and strongly disagree. The goal of using the Likert instrument in the follow-up surveys is to compare perceptions of current academic medical faculty members time spent on tasks versus the actual time that was recorded on the annual cost surveys.

The study focused on a better understanding of whether or not faculty time on tasks shifted and whether or not the academic medical faculties perceived their roles. The study determined if a statistical relationship existed between perception and realities. The data were analyzed using a descriptive logical comparison to compare actual results with perceived results.
Instrumentation

Time Study Survey

The time study survey measures faculty time spent on tasks and is broken into three main categories: (1) teaching activities, (2) hospital activities, and (3) professional activities. The study analyzed data during the years of 2004-2008. Each category is described in greater detail below.

Teaching activities. The first section of the survey, teaching activities, is used to track the number of hours academic medical faculty spend as it relates to graduate medical education (GME). The section is used to capture the hours that academic medical faculty spend in various interactions with residents. Each faculty member is asked to count the number of hours that each spent in providing education to residents. The teaching categories are broken into five categories: (1) teaching related to direct patient contact, (2) residency program administration, (3) residency teaching preparation, (4) other contacts with residents, and (5) teaching/conferences and graduate medical education.

The time spent teaching related to patient care consists of direct resident supervision. A primary emphasis of the patient care oversight is to oversee the residents’ delivery of patient care. Residency program administration consists of time spent in overseeing the coordination of the resident education experience including resident clinical rotations, scheduling of residents for lectures and other educational events; meeting with residents to give guidance and feedback towards performance; and assist the residents in patient and personal problem solving. Residency teaching preparation mainly consists of faculty time spent preparing for lectures and the coordination of resident academic activities. The category of other contact with residents
would consist of time spent assisting residents with their educational experience. Teaching, conferences, and other graduate medical education is time that academic medical faculties spend in delivering lectures, presenting information at conferences and time spent assisting in graduate medical education which consists of committee meetings and other related activities.

*Hospital activities.* The hospital activity category is related to administrative duties that academic medical faculty members are expected to participate. The hospital activity time consists of the following four categories: (1) hospital operations and administration, (2) supervision of hospital personnel, (3) hospital committees, and (4) other hospital related functions.

The category of time spent on hospital operations and administration is related to the number of hours that academic medical faculty members’ spend in assisting with the day to day operations of running the hospital. Many of the faculties assist the hospital administration in problem solving operational issues in the hospital as well as serving as advisors and consultants to the hospital operations employees in implementing process changes and improvements to overall functioning of the hospital. Many academic medical faculties also serve as representatives from their respective disciplines to discuss ways to improve many of the patient services that are offered at the hospital.

The supervision of hospital category relates to the direct supervision of hospital staff. A large portion of many of academic medical faculties’ time is spent on hospital committees. The purpose of the hospital committees is to improve patient outcomes and to oversee the quality assurance plan at the hospital. Many of the academic medical faculty members assist in reviewing patient outcomes, evaluating current services, and making recommendations on improving the ways in which many of the hospital functions are organized. The other hospital
category consists of other hours that academic medical faculties spend conducting hospital activities outside of the previously mentioned categories.

*Professional activities.* Professional activities consist of the following four categories: (1) billable patient care, (2) time spent in the classroom with medical and other students, (3) research related activities, and (4) other related professional activities. Billable patient care consists of time that academic medical faculties spend in seeing patients and providing treatment in which a patient receives treatment and a bill is generated. Patient care that is not related to resident education is captured in this category. Billable patient care consists of hours that academic medical faculties spend in the ambulatory clinic setting; the in-patient hospital setting; and conducting out-patient clinical procedures.

Classroom time conducting education for medical students and other non-resident related teaching is captured in this section due to the fact that the time spent performing this task is considered non-allowable time for graduate medical education re-imbursement. However, this study focused on how academic medical faculties spend their time so the hours spent on this task will be considered part of the instruction component of academic medical faculties’ time on tasks.

The research category is the time that academic medical faculties’ spend on conducting outside research activities. Research activities consist of grants and clinical trials. The time spent writing grants and applying for clinical trials is also captured in this category. The last category in this section refers to other professional related activities. Other professional related activities consist of time spent in developing new skills, learning new procedures and the development of new protocols, and standards of patient care.

For the purpose of the study, the focus was on the following three categories: (1) teaching activities, (2) clinical care, and (3) research. The data to be extrapolated were the number of
hours devoted to teaching activities, the number of hours providing billable patient care, and the number of hours conducting research. The other information that was available from the survey is the individual name of each participant, the department in which the physician works, and the time period in which the physician logged hours worked.

*Follow-Up Survey*

The follow-up survey that was administered to academic medical faculty that have been at the institution during the five-year period (2004-2008) to evaluate academic faculty perceptions of times spent on tasks versus actual times spent. The following demographic information was collected:

1. Gender was referred to as identity as it is experienced with regard to individuality as male or female. The respondent is asked to select “male” or “female”.
2. Age referred to as the length of life for the individual answering the survey. Age was requested and measured by asking each person to input their age.
3. Total years worked in academic medicine. Each person was asked to record the number of years that each has worked in academic medicine excluding any years training as a medical student, resident, or fellowship program.
4. Faculty Rank: each individual was asked to record current faculty rank from the following choices: clinical instructor; assistant professor; associate professor; professor; chair of department;
5. Ethnic identification: referred to the ethnic identification of the respondent. In using the ethnic categorical classifications from the U.S. Census Bureau, the following six mutually-exclusive categories will be used for the survey: American Indian or Alaska
Native; Asian; Black or African American; Native Hawaiian or Other Pacific Islander; White, and Two or more races.

6. Discipline: referred to as the area of specialization where the academic medical faculty was trained. The disciplines at the respective institution are Emergency Medicine; Family Medicine; Internal Medicine; Neurology; Neurosurgery; Obstetrics & Gynecology; Orthopedic Surgery; Pathology; Pediatrics; Radiology; and Surgery.

7. Tenure: This is referred to whether or not the faculty member has tenure at the current institution.

Description of the survey. The survey was designed to measure whether current academic medical faculty feel like their perceived time spent on tasks is commensurate with what they would equate to their expected time on task. The questions designed for the survey were written to be non-bias and to be non-gender specific. The participants were given specific instructions on answering each question. The survey was distributed electronically through Survey Monkey and all results will be received electronically as well. The survey was not timed and the time to complete the survey was deemed to be less than five minutes.

Each question was given five choices for the participants’ response. The survey was developed using the Likert scale (1932) with each question being offered the following answers: strongly agree, agree, neutral, disagree, and strongly disagree. The survey helped to better understand how academic medical faculties perceive their current time spent on each task. The survey was created to better understand a categorical answer to the major aspects of academic medical faculties time spent on tasks (see Appendix B for the complete follow-up survey). More specifically, the follow-up survey asked the following questions:
Using the Likert scale, please answer each of the following questions:

Strongly Agree       Agree       Neutral       Disagree      Strongly Disagree

1. I spend more time performing clinical activities now versus five years ago.
2. I am expected to bring in more clinical revenues now versus five years ago.
3. I have more time to produce scholarly work versus five years ago.
4. I have more time to prepare for teaching responsibilities.
5. I feel institutional finances take precedent over teaching.
6. I feel the need to focus on increasing my clinical productivity instead of focusing on scholarly work.
7. I am given enough time to stay on top of current medical information.
8. I have more time to prepare for lectures given to medical students and residents.
9. I am more satisfied with my job role now versus five years ago.

Research Questions

The following research questions were answered in analyzing academic medical faculties time spent on tasks:

Q1: What degree of role changes have academic medical faculties experienced over the past five years (2004-2008) with regards to time spent on instruction, providing clinical care services, and engaging in research activities?

Q2: What demographic characteristics of medical faculties have experienced the greatest role shift as disaggregated by the demographic variables of gender, age, ethnicity, number of years at the institution, faculty rank, ethnicity, and discipline?

Q3: What is the relationship between faculty perception of time spent on tasks and actual hours worked based on a comparison of new survey data to the five-year aggregate?
Q4: What is the correlation between how academic medical faculties record their percentage time spent on providing clinical care services and the actual clinical care revenues that each generates?

Site Selection

Demographics of Site

The university chosen for the survey is a public school in the southeastern part of the United States. The institution is relatively young in that it has been in existence for just over forty years. The student population has grown by 13% over a recent five-year period and is comprised of the following ethnicities based on institutional categories: 67% white; 18% African American; 2% Hispanic American; 3% Asian American; 6% Other International Ethnicity; 1% Native American; 3% Did not self identify (Summary Enrollment Profile, 2008).

The institution is one of two medical schools in the state and is faced with state funding shortfalls and large deficits. This particular state’s current climate is challenging with a lack of fiscal resources. The school of medicine continues to balance ways to generate enough resources to cover expenses while upholding its three-pronged mission to teach, conduct research and provide clinical care services. The academic medical center serves as the regional tertiary care hospital and is challenged with a large indigent care population.

As a regional medical center, the primary focus of the institution is on providing clinical care services as compared to other research oriented academic medical centers. Research and grant activities are encouraged with the expectation that all research related activities are funded. Many faculty members are attracted to the school due to its heavier focus on providing clinical care services and the ability to teach medical students, residents, and fellows.
The clinical college of medicine faculty consists of approximately 150 full-time equivalent positions. The 150 faculty full-time equivalent positions are divided into eleven clinical departments each with its own chair of the department. New faculty members are typically hired into non-tenure track positions. The expectation is that new faculty members generate enough revenue to cover their cost. Revenue generation is expected from either grant funding or new clinical care revenues or a combination of both grants and clinical care dollars. The clinical departments in the college of medicine all report to a senior triumvirate of leaders that dictate and establish the strategic priorities of the institution. The triumvirate team consists of the Dean of the College of medicine, the Vice President of Health Sciences, and the Vice President for Clinical Services.

Data Collection

The data was collected from a public school in the southeastern United States and included self-reported data from academic medical faculty on how they spend their time on work tasks. The data was reviewed from a five year period, years 2004-2008. The only surveys used were for the same physician that has recorded work hours each year over the five year period (2004-2008) and is still at the current institution. The survey instrument was administered online and the results were submitted online. The time to complete the survey is under five minutes.

The data was entered into Microsoft Excel (2003) and then transferred to SPSS (2008) to acquire the descriptive statistics. The information collected from each survey included gender, rank, discipline, ethnicity, age, and years spent working in academic medicine. The demographic factors included in this study give a broad overview of the participants in this study.
The second part of the data collection was a survey to current academic medical faculty members that were with the institution during the same five-year period (2004-2008) to compare with the self-reported survey. The rationale behind surveying current faculty members was to understand whether or not their perceptions of their time spent on tasks correlated with their self-reported time over the past five-year period.

Participants

The population size of the clinical faculty members in the college of medicine is approximately 150 full-time equivalent employees. For the purpose of this survey, the sample size included faculty members that were at the institution all five years (2004-2008) and who participated in the time study surveys each of the five years. The number of participants at the institution for the entire five-year period and who also completed a survey each year consists of 50 physicians. Approval and a preliminary letter from the Dean of the College of Medicine giving permission to survey the current academic medical faculty (Appendix C).

The follow-up survey was provided to each of these 50 academic medical faculty members following an introduction letter familiarizing each participant with the study (see Appendix D). The purpose of the follow-up survey was to compare the actual hours worked using the 2004-2008 survey data to how each participant felt their time is being spent. In particular, the study compared actual hours worked to the perceived time spent in performing three tasks: (1) teaching activities, (2) clinical care activities, and (3) research.
Data Integrity

The data were sorted by physician name and department to reconcile a complete listing of physicians that were at the institution for all five years and completed the time study each year. The participants included in the survey are those individuals that completed a survey each year (2004-2008). The data was recorded based on the number of hours each person recorded as the hours worked during the two-week period. The data entered were the hours recorded and rounded to the nearest hour in cases where partial hours were reported. The data was submitted to the hospital accounting office and is reviewed collectively to ensure accuracy. The hospital accounting office always follows back up with participants if outliers exist or if there are any questions on how the survey is to be completed in order to maintain the integrity of the data.

Measures

Independent Variables

1. Gender
2. Age
3. Total years worked in medicine
4. Faculty Rank
5. Ethnicity
6. Discipline
7. Tenure or non-tenure
Dependent Variables

1. Percent of time spent performing teaching activities
2. Percent of time spent performing clinical care activities
3. Percent of time spent conducting research activities

Answering the Research Questions

1. What degree of role changes have academic medical faculties experienced over the past five years (2004-2008) with regards to time spent on instruction, providing clinical care services, and engaging in research activities?

   **Hypothesis 1a**: There is no change in regards to the percentage of time academic medical faculties spent on instruction over a five year period.

   **Hypothesis 1b**: There is no change in regards to the percentage of time academic medical faculties spent on providing clinical care services over a five year period.

   **Hypothesis 1c**: There is no change in regards to the percentage of time academic medical faculties spent on research activities over a five year period.

2. What demographic characteristics of medical faculties have experienced the greatest role shift as disaggregated by the demographic variables of gender, age, years worked at institution, rank, ethnicity, and discipline?

   **Hypothesis 2a**: There are no differences in role shifts among academic medical faculties related to gender.

   **Hypothesis 2b**: There are no differences in role shifts among academic medical faculties related to age.
Hypothesis 2c: There are no differences in role shifts among academic medical faculties related to years at institution.

Hypothesis 2d: There are no differences in role shifts among academic medical faculties related to rank.

Hypothesis 2e: There are no differences in role shifts among academic medical faculties related to ethnicity.

Hypothesis 2f: There are no differences in role shifts among academic medical faculties related to discipline.

Hypothesis 2g: There are no differences in role shifts among academic medical faculties related to tenure.

3. What is the relationship between faculty perception of time spent on tasks and actual hours worked based on a comparison of new survey data to the five-year aggregate?

Hypothesis 3a: There are no differences in perceived versus actual time spent in relation to the clinical care role.

Hypothesis 3b: There are no differences in perceived versus actual time spent in relation to the research role.

Hypothesis 3c: There are no differences in perceived versus actual time spent in relation to the teaching role.

4. What is the relationship between how academic faculty members record the percentage of time spent on providing clinical care services and the actual clinical care revenues each generate?
Data Analysis

Both descriptive and inferential data analyses were used to analyze the data. However, no cause and effect outcomes will be inferred. An ANOVA was used to test the hypothesis for research questions 1 and 2 using repeated measures with an alpha of .01 for all statistical tests. The repeated measure ANOVA was chosen to accommodate the collection of data and for multiple comparisons to eliminate the increased chances of a Type 1 error which occurs by using multiple t-tests.

The hypothesis tested for Questions 3 and 4 used the Wilcoxon Signed-Rank Tests to assess perceived versus actual changes over time. This nonparametric test was used to compute the magnitude of the differences between the time periods. The Wilcoxon Signed-Rank test is more powerful than other nonparametric tests in assessing correlated data.

The data analyzed by sex, age, gender, ethnicity, rank, discipline, and years spent working in academic medicine. The respondents time spent on tasks were determined based on the mean of each factor and were disaggregated using the mean for each data factor. The independent variables were compared to the dependent variable to determine which demographics are most different. The mean scores of the survey will be disaggregated by each independent variable in order to determine the areas with the greatest differences. More specifically, a statistical analysis was completed to compare gender, faculty rank, discipline, years in field, ethnicity in order to understand if there are relationships among the demographic variables.
Summary

The fundamental assumption in this study was that each individual faculty member perceived their role individually and had a unique perspective in the perception of time each spends on various tasks. More specifically it is understood that each person that completed the survey had different perspectives on how much time each one spends on tasks and how their time has or has not shifted over the last five years. The goal with the study was to have a greater understanding if physicians’ time spent on tasks shifted and if so in what ways.
CHAPTER 4

ANALYSIS OF RESULTS

Introduction

The role of academic medical faculties are more complex with an increased focus on clinical care and other revenue generating activities, primarily due to a lack of financial resources (Watson, 2003; Thibault, Neill, & Lowenstein, 2003). The study focused on four research questions comparing how academic medical faculty members spend their time among teaching, research, and clinical care activities. The study was designed to analyze if a shift took place among the work activities of academic medical faculties to teach, conduct research, and perform clinical care activities over a five-year period.

The four research questions were answered in the study: Research question 1: What degree of role changes have academic medical faculties experienced over the past five years (2004-2008) with regards to time spent on instruction, providing clinical care services, and engaging in research activities. Research question 2: What demographic characteristics of medical faculties have experienced the greatest role shift as disaggregated by the demographic variables of gender, age, years worked at institution, rank, ethnicity, and discipline? Research question 3: What is the relationship between faculty perception of time spent on tasks and actual hours worked based on a comparison of new survey data to the five-year aggregate? Research question 4: What is the relationship between how academic medical faculties record their percentage time spent on providing clinical care services and the actual clinical care revenues that each generates?
Research Sample

*Participant Demographics and Characteristics*

Demographic data were collected for the participants. The demographic data included in the study consists of Age, Gender, Ethnicity, Faculty Rank, Tenure Status, and Discipline. The target population for this study was medical faculty at one public institution in the southeastern United States. Each participant’s data were collected by the school of medicine at this institution and a post survey was administered via Survey Monkey, an online survey and data collection software. The population of the academic faculty consisted of approximately 150 full-time equivalents and the study sample consisted of fifty medical faculty members representing 33% of the entire medical faculty. Of the fifty medical faculty members surveyed, thirty-two (64%) participants returned their survey. Two participants did not complete the survey, so 60% of the participants (30) completed the entire survey.

The data analysis method used for the demographic variables was a descriptive analysis. For the demographic variable, age, the data was dichotomized for purposes of further inferential analysis. Frequency analysis showed that 24% (n=12) of the participants were less than 50 years of age and 76% (n=38) were 50 years of age or older. For the demographic variable, gender, 22% (n=11) of the participants were female and 78% (n=39) of the participants were male. The ethnicity variable was categorized into several classifications, however 82% (n=41) of the participants were White removing this variable as a potential variable for inferential statistics. Three other ethnicity groups were represented in this pool of participants with 4% (n=2) African American, 10% (n=5) Asian, and 4% (n=2) other unspecified ethnicity. The other three demographic variables represent position and faculty related status within the participant’s position as a medical faculty member, see Table 4.0. The descriptive data were used for the
entire population in order to answer questions 1 and 2 so as not to short change the data.

Research questions 3, 4 and 5 were related to the follow up survey and its comparison to the original data.

Table 4.0

*Frequencies and Percentages Position Related Demographics*

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<th>Frequency</th>
<th>Percent</th>
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<tr>
<td></td>
<td>Non-Tenured</td>
<td>28</td>
<td>56</td>
</tr>
</tbody>
</table>

Hypotheses Testing

Hypothesis 1:

1a. $H_0$: There is no change in regards to the percentage of time academic medical faculties spent on instruction over a five-year period.

1b. $H_0$: There is no change in regards to the percentage of time academic medical faculties spent on providing clinical care services over a five-year period.

1c. $H_0$: There is no change in regards to the percentage of time academic medical faculties spent on research activities over a five-year period.
The null hypotheses were tested using a series of Repeated Measures Analysis of Variance (ANOVA) with an alpha of .01 for all statistical tests due to multiple ANOVA tests in order to reduce errors. The Repeated Measures ANOVA tests for significant differences among means on a measure under several conditions. The repeated measure ANOVA was chosen to accommodate the collection of data on three separate factors over a five-year period. The repeated measure ANOVA is ideal for multiple comparisons among conditions in a longitudinal study rather than calculating multiple t-tests which increases the chance of a Type I error.

Results

The results of Hypothesis 1a, 1b, and 1c state that there are no statistically significant changes over a five-year span in the percent of time medical faculty spend on instruction, providing clinical care, and research activities. The Wilks’ Lambda was .91 for Hypothesis 1a; and .88 for Hypothesis 1b and 1c. The Wilkes Lambda test is the most commonly used in repeated measures ANOVA to compare means (Everitt & Dunn, 1991), in this case the collection of time spent on instruction, providing clinical care, and research over time. The Wilks’ Lambda provides the same statistical data as an F-test in a one-way analysis of variance indicating the proportion of variance that is accounted for in the sample. The F value was 1.2 for Hypothesis 1a; 1.53 for 1b and 1.60 for Hypothesis 1c. Significance levels were ($p = .35$) for Hypothesis 1a; ($p = .21$) for Hypothesis 1b; and ($p = .19$) for 1c. Alternative statistics such as the Pillai’s Trace, Hotelling’s Trace, and Roy’s Largest Root can also be used to estimate the ANOVA F test; however in this case, the most commonly used statistic provides identical estimation of F as the secondary choices. The results of the series of repeated measure ANOVAs indicate no statistical
significant changes over the five-year time frame for medical faculty time spent on Instruction, providing Clinical Care, or on Research and therefore the null hypothesis were not rejected.

Hypothesis 2:

2a. $H_0$: There are no differences in role shifts among academic medical faculties related to gender.

2b. $H_0$: There are no differences in role shifts among academic medical faculties related to age.

2c. $H_0$: There are no differences in role shifts among academic medical faculties related to years at institution.

2d. $H_0$: There are no differences in role shifts among academic medical faculties related to rank.

2e. $H_0$: There are no differences in role shifts among academic medical faculties related to ethnicity.

2f. $H_0$: There are no differences in role shifts among academic medical faculties related to discipline.

2g. $H_0$: There are no differences in role shifts among academic medical faculties related to tenure.

The null hypotheses were tested using a series of Analyses of Variance (ANOVAs) with alpha set at .01. The ANOVA tests for significant differences among group means; specifically shifts in time spent in the three role of concern: Research, Clinical Care, and Teaching. Findings will indicate if group membership explains a significant portion of the variance in role shift. In this case group membership is based
on demographics: Gender, Age, Years of Experience, Rank, Ethnicity, Discipline, and Tenure. The ANOVA is ideal for multiple comparisons among groups and provides a more powerful analysis than calculating multiple t-tests which increases the chance of a Type I error. Further, ANOVA provides more information needed for interpretation of results such as effect size.

Results

The results of Hypotheses 2a, 2b, 2c, 2d, 2f, and 2g are presented in Table 4.1, 4.2, 4.3, 4.4, 4.5, and 4.6 respectively. The null hypotheses state that there are no statistically significant shift in role dedication for medical faculty over the five-year span as it relates to demographics. Hypothesis 2e, which is related to ethnicity, was not included in the analysis based on the homogeneity of the sample. In order to conduct an analysis to compare group means, a minimum of a 20/80 % split in population must be present (Tabachnick & Fidell, 2007). For this study, 82% of participants are white, 4% African American, 2% Asian, and 4% other; therefore, group means could not be compared due to underrepresentation in three groups.

The results of the series of ANOVAs indicate no statistically significant shifts in roles based on five of the six demographics: Gender, Age, Years of Experience, Rank, and Discipline; therefore, hypotheses 2a, 2b, 2c, 2d, 2e and 2f are not rejected. However, Tenure would have a statistically significant, ($p = .02$) and moderate effect ($\eta^2 = .10$) on the shift in time dedicated to teaching over the five-year period at a more liberal use of alpha at .05. If the case of alpha at the 5% level, hypothesis 2g was rejected as 10% of the variance in the shift was explained by the tenure status of the medical faculty. Results indicate that, on average, tenured medical faculty increased their percentage of time spent on teaching over the five-year span by .06% ($SD = .15$)
while non-tenured medical faculty decreased their time spent on teaching over the five-year span by .06% ($SD=.20$).

**Table 4.1 – ANOVA - Gender**

<table>
<thead>
<tr>
<th>Group – Gender</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift in Teaching Role</td>
<td>1</td>
<td>.07</td>
<td>1.94</td>
<td>.17</td>
<td>.04</td>
<td>.28</td>
</tr>
<tr>
<td>Shift in Research Role</td>
<td>1</td>
<td>.00</td>
<td>.38</td>
<td>.54</td>
<td>.01</td>
<td>.09</td>
</tr>
<tr>
<td>Shift in Clinical Care Role</td>
<td>1</td>
<td>.10</td>
<td>3.12</td>
<td>.08</td>
<td>.06</td>
<td>.42</td>
</tr>
</tbody>
</table>

**Table 4.2 – ANOVA - Age**

<table>
<thead>
<tr>
<th>Group – Age</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift in Teaching Role</td>
<td>1</td>
<td>.10</td>
<td>2.95</td>
<td>.09</td>
<td>.06</td>
<td>.39</td>
</tr>
<tr>
<td>Shift in Research Role</td>
<td>1</td>
<td>.00</td>
<td>.01</td>
<td>.94</td>
<td>.00</td>
<td>.05</td>
</tr>
<tr>
<td>Shift in Clinical Care Role</td>
<td>1</td>
<td>.10</td>
<td>3.18</td>
<td>.08</td>
<td>.06</td>
<td>.42</td>
</tr>
</tbody>
</table>

**Table 4.3 – ANOVA – Years of Experience**

<table>
<thead>
<tr>
<th>Group – Years of Exp</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift in Teaching Role</td>
<td>1</td>
<td>.06</td>
<td>1.78</td>
<td>.17</td>
<td>.10</td>
<td>.43</td>
</tr>
<tr>
<td>Shift in Research Role</td>
<td>1</td>
<td>.01</td>
<td>1.04</td>
<td>.38</td>
<td>.06</td>
<td>.26</td>
</tr>
<tr>
<td>Shift in Clinical Care Role</td>
<td>1</td>
<td>.06</td>
<td>1.87</td>
<td>.15</td>
<td>.11</td>
<td>.45</td>
</tr>
</tbody>
</table>
Table 4.4 – ANOVA - Rank

<table>
<thead>
<tr>
<th>Group – Rank</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift in Teaching Role</td>
<td>1</td>
<td>.02</td>
<td>.52</td>
<td>.47</td>
<td>.01</td>
<td>.11</td>
</tr>
<tr>
<td>Shift in Research Role</td>
<td>1</td>
<td>.00</td>
<td>.18</td>
<td>.68</td>
<td>.00</td>
<td>.07</td>
</tr>
<tr>
<td>Shift in Clinical Care Role</td>
<td>1</td>
<td>.03</td>
<td>.94</td>
<td>.34</td>
<td>.02</td>
<td>.16</td>
</tr>
</tbody>
</table>

Table 4.5 – ANOVA - Discipline

<table>
<thead>
<tr>
<th>Group – Discipline</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift in Teaching Role</td>
<td>1</td>
<td>.04</td>
<td>1.27</td>
<td>.29</td>
<td>.05</td>
<td>.26</td>
</tr>
<tr>
<td>Shift in Research Role</td>
<td>1</td>
<td>.02</td>
<td>1.96</td>
<td>.15</td>
<td>.08</td>
<td>.39</td>
</tr>
<tr>
<td>Shift in Clinical Care Role</td>
<td>1</td>
<td>.02</td>
<td>.66</td>
<td>.52</td>
<td>.03</td>
<td>.15</td>
</tr>
</tbody>
</table>

Table 4.6 – ANOVA - Tenure

<table>
<thead>
<tr>
<th>Group – Tenure</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift in Teaching Role</td>
<td>1</td>
<td>.17</td>
<td>5.41</td>
<td>.02</td>
<td>.10</td>
<td>.63</td>
</tr>
<tr>
<td>Shift in Research Role</td>
<td>1</td>
<td>.04</td>
<td>.39</td>
<td>.54</td>
<td>.01</td>
<td>.09</td>
</tr>
<tr>
<td>Shift in Clinical Care Role</td>
<td>1</td>
<td>.12</td>
<td>3.81</td>
<td>.06</td>
<td>.07</td>
<td>.48</td>
</tr>
</tbody>
</table>

Hypothesis 3: There are no differences in perceived versus actual role shift.

3a. H₀: There are no differences in perceived versus actual time spent in relation to the clinical care role.

3b. H₀: There are no differences in perceived versus actual time spent in relation to the research role.
3c. H₀: There are no differences in perceived versus actual time spent in relation to the teaching role.

The null hypotheses were tested using a series of Wilcoxon Signed-Rank Tests to assess changes over time. This nonparametric statistic was employed to compute the magnitude of the differences between the two time periods for all cases and classified the differences as positive, negative, or tied. If the two time periods are similarly distributed, the number of positive and negative differences will not differ significantly. The Wilcoxon Signed-Rank test is more powerful than other nonparametric tests assessing correlated data such as the McNemar test for dichotomous data or the Sign Test. Each participant that completed the survey (n=30) answered items related to their perceived increase or decrease in time spent on each role: (a) Research, (b) Clinical Care, and (c) Teaching. The survey items were rated on a Likert-type scale ranging from Strongly Disagree to Strongly Agree. Three categories for perceptions were created: (a) Less Perceived Time Spent, (b) Neutral, and (c) More Perceived Time Spent. The actual increase or decrease in time was calculated by subtracting the time spent on each role in 2004 from the time spent in 2008. The results were re-coded into three categories: (a) Less Time Spent, (b) Neutral, and (c) More Time Spent. Those with actual differences of ± .05% were placed in the Neutral category. Findings will indicate if perceptions of time spent in each role is significantly different from actual increases or decreases in time spent in each role. Given that the Wilcoxon Signed-Rank test takes into account the magnitude of the change, those cases where the More Perceived Time Spent is compared to Less Time Spent will affect the outcome of the test more than those cases where More Perceived Time Spent is compared to Neutral.
Results

The results of Hypothesis 3a are presented in Table 4.7 and 4.8; Hypothesis 3b are presented in Table 4.9 and 4.10; and Hypothesis 3c are presented in Table 4.11 and 4.12. The null hypotheses state that there are no statistically significant perceived versus actual role shift for medical faculty over the five-year span. The results of the series of Wilcoxon Signed-Rank Test indicate statistically significant differences in perceived versus actual shifts in time spent in two of the three domains: Research and Teaching; therefore, hypotheses 3b and 3c are rejected. Hypothesis 3a is not rejected since no significant differences were indicated in perceived versus actual shifts in time spent in Clinical Care.

Table 4.7 – Wilcoxon Sign-Rank Test – Clinical Care Perceived Shift versus Actual Shift

<table>
<thead>
<tr>
<th>Variance Group</th>
<th>N</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived less than Actual</td>
<td>11</td>
<td>-1.08</td>
<td>.28</td>
</tr>
<tr>
<td>Perceived greater than Actual</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived same as Actual</td>
<td>11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.8 – Crosstab – Clinical Care Perceived Shift versus Actual Shift

<table>
<thead>
<tr>
<th>Actual Less Time</th>
<th>Actual Neutral</th>
<th>Actual More Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Less Time</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Perceived Neutral</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Perceived More Time</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 4.9 – Wilcoxon Sign-Rank Test – Research

<table>
<thead>
<tr>
<th>Variance Group</th>
<th>N</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived less than Actual</td>
<td>4</td>
<td>-3.15</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Perceived greater than Actual</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived same as Actual</td>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.10 – *Crosstab – Research Perceived Shift versus Actual Shift*

<table>
<thead>
<tr>
<th></th>
<th>Actual Less Time</th>
<th>Actual Neutral</th>
<th>Actual More Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Less Time</td>
<td>5</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Perceived Neutral</td>
<td>17</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Perceived More Time</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4.11 – *Wilcoxon Sign-Rank Test –Teaching*

<table>
<thead>
<tr>
<th>Variance Group</th>
<th>N</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived less than Actual</td>
<td>5</td>
<td>-2.04</td>
<td>.02</td>
</tr>
<tr>
<td>Perceived greater than Actual</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived same as Actual</td>
<td>11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.12 – *Crosstab – Teaching Perceived Shift versus Actual Shift*

<table>
<thead>
<tr>
<th></th>
<th>Actual Less Time</th>
<th>Actual Neutral</th>
<th>Actual More Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Less Time</td>
<td>9</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Perceived Neutral</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Perceived More Time</td>
<td>8</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

Hypothesis 4: There are no differences in perceived revenue expectation versus actual charge increase/decrease generated.

The null hypothesis was tested using a Wilcoxon Signed-Rank Tests to assess change over time. This nonparametric statistic was employed to compute the magnitude of the differences between the two time periods for all cases and classified the differences as positive, negative, or tied. If the two time periods are similarly distributed, the number of positive and negative differences will not differ significantly. The Wilcoxon signed-rank test is more powerful than other nonparametric tests assessing correlated data such
as the McNemar test for dichotomous data or the Sign Test. Each participant that completed the survey (n=30) answered items related to their perceived expected increase or decrease in revenue. The survey items were rated on a Likert-type scale ranging from Strongly Disagree to Strongly Agree. Three categories for perceptions were created: (a) Less Perceived Expected Revenue, (b) Neutral, and (c) More Perceived Expected Revenue. The actual increase or decrease in revenues generated was calculated by subtracting the revenues for 2004 from the revenues in 2008. The results were re-coded into three categories: (a) Less Revenues, (b) Neutral, and (c) More Revenues. Those with actual differences of ± $1000 were placed in the Neutral category. Findings will indicate if perceptions of increased or decreased revenues are significantly different from actual increases or decreases in revenues generated.

Results

The results of Hypothesis 4 are presented in Table 4.13 and 4.14. The null hypotheses state that there are no statistically significant perceived versus actual revenue generation for medical faculty over the five-year span. The results of the Wilcoxon Signed-Rank Test indicate statistically significant differences in perceived versus actual shifts in revenue generation; therefore, hypothesis 4 is rejected.

Table 4.13 – Wilcoxon Sign-Rank Test – Revenue Generation Perceived Shift versus Actual Shift

<table>
<thead>
<tr>
<th>Variance Group</th>
<th>N</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived less than Actual</td>
<td>3</td>
<td>-2.44</td>
<td>.02</td>
</tr>
<tr>
<td>Perceived greater than Actual</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived same as Actual</td>
<td>16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The last question on the follow up survey asked whether or not the faculty member was satisfied with their role. The survey items were rated on a Likert-type scale ranging from Strongly Disagree to Strongly Agree. The results identify half of the participants were less satisfied in their role as compared to five years ago. See results in Table 4.15.

Review of the analyses for all hypotheses resulted in mixed findings. Hypotheses 1a, 1b, and 1c were not rejected indicating that medical academic faculty did not significantly shift the percentage of time they spent in their three major roles, (a) teaching, (b) research, and (c) clinical care. Hypotheses 2a through 2f were not rejected indicating that role shifts are not differentiated based on demographics and other characteristics such as (a) gender, (b) age, (c) years at institution, (d) rank, (e) ethnicity, and (f) discipline. However, hypothesis 2g was rejected (p=.02) signifying that full professors and department chairs increased their percentage of time dedicated to teaching activities significantly more than assistant and associate professors. The lack of shift in percentage of time demonstrated in hypotheses 1 and 2 was accurately perceived
by the participants overall for research and teaching as evidenced by no significant finding for hypothesis 3b and 3c; however, participants did perceive a higher shift in clinical care services than actual existed and therefore hypothesis 3a was rejected (p=.02). Interestingly, related to the finding of hypothesis 3a, hypothesis 4 was rejected as well showing that while faculty perceived a higher shift in clinical care services, they also perceived a significantly higher shift in revenues generated than occurred (p=.02)
CHAPTER 5
FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The objectives of this study are fact based and perception based. The first objective of this study determined how academic medical faculty members spend their time among instruction, research, and clinical care activities and how that has changed over a five-year period of time based on records of actual hours spent in each role. A second objective of this study was to investigate academic medical faculty’s perceptions of their role change over time. Further, in reviewing their perceptions of role change over time, an investigation into perceived clinical revenue generation was conducted. The last objective of the study was to determine the satisfaction level of the sample of academic medical faculty.

To statistically provide information related to the study’s objectives, four hypotheses and one research question were considered. The first hypothesis looked at shifts in actual time spent in each role. The second hypothesis looks at the differences in role shift based on six variables - (a) age, (b) gender, (c) ethnicity, (d) faculty rank, (e) tenure status, and (f) medical discipline. The last two hypotheses compare actual data versus academic medical faculty perceptions for role shift and clinical revenue generation. The concluding research question addresses academic medical faculty members’ satisfaction with their jobs over the five-year period.

Academic medical faculty members balance their complex and ambiguous roles. It is important to better understand how they balance time among the areas of instruction, research, and providing clinical care services. Studying academic medical faculty members’ shifts in
priorities and revenue generation is important to understand, if priorities for the faculty member and of the hospital shift over time and to see if revenue generating activities take precedent. As resources become scarce over time, institutions look for ways to increase and generate more revenues. The literature covers many concerns facing academic medical centers to include finding new revenue streams as well as increasing current revenues to cover increasing costs. Academic medical centers are unique in the expectation to increase revenues to balance rising costs (Angell, 2000). With health care reform initiatives and many unfunded mandates, academic faculties are expected to help find ways to cut costs or generate funds to pay for the increased costs (Fisher, Berwick, & Davis, 2009). Creative and lucrative services are necessary to balance uncompensated and unfunded mandates for self preservation (Tarquino et al., 2003). As institutions focus more on productivity measures, faculty salaries are at risk. The purpose of the study was to better understand how academic medical faculty members spend their time and to see if roles shifted in balancing the three-pronged mission to teach, produce research, and to provide clinical care services.

Results and Discussion

Research Question 1

Research question one investigates the degree of role change for academic medical faculties over a five year period (2004-2008) based on percentage of time spent on instruction, providing clinical care services, and engaging in research activities. The question was analyzed in three hypotheses. The repeated measures ANOVA analysis for hypothesis 1a indicates no significant differences exist (p = .35) in the percentage of time academic medical faculties spent on instruction over a five-year period. As with hypothesis 1a, the repeated measures ANOVA
analysis for hypothesis 1b did not indicate any significant changes ($p = .21$) in percentage of time spent providing clinical care services. The analysis of the repeated measures ANOVA for the final hypothesis, 1c, also failed to indicate any significant changes ($p = .19$) in percentage of time conducting research activities over the five-year period. The lack of significant findings in the series of repeated measures ANOVAs related to role shift indicates that academic medical faculty did not change the percentage of time they spent on each role: (a) instruction, (b) clinical care, and (c) research.

**Research Question 2**

Research question two examines the degree that demographic characteristics of medical faculties’ affects role shift. Demographic factors investigated include (a) Gender, (b) Age, (c) Years Worked at Institution, (d) Rank, (e) Ethnicity, (f) Discipline, (g) Tenure. As with hypothesis 1, hypothesis 2 is addressed in separate hypotheses and each of the seven hypotheses are analyzed using an ANOVA. Review of the analysis for hypothesis 2a, 2b, 2c, 2d, 2f and 2g indicate no significant changes in role shift for (a) Instruction, (b) Clinical Care, or (c) Research when taking (a) Gender, (b) Age, (c) Years of Experience, (d) Rank, or (e) Discipline into consideration ($p > .08$ in all instances). Ethnicity was not analyzed due to the homogeneity of the population, as 82% of participants are white and 18% were split among African-American, Asian, and other. Divergent from the other hypotheses for research question 2, the analysis of the ANOVA for Tenure, hypothesis 2g, shows a statistically significant role shift for time spent on instruction ($F=5.41, p=.02, \eta^2=.10$) with a more liberal use of alpha of .05. The results indicated that on average, tenured medical faculty increased their percentage of time spent teaching over a five year period by .06% (SD = .15) while non-tenured faculty decreased their time spent on teaching over the five year period by .06% (SD = .20). Perhaps the shift in time spent on
instruction for tenured faculty is related to the security that each has with job protection and less pressure to produce revenue generating activities. While tenure did have an effect on the shift in percentage of time spent teaching, it did not significantly impact the percentage of time spent providing clinical care or conducting research.

The lack of statistically significant differences for all factors on all roles except Tenure related to Instruction indicates that overall the sample of academic medical faculty is stable in relation to shifts in roles over the five-year period regardless of demographic and other factors related to their employment. Given this, results of this study could be generalized to other like populations. Further research on the affects of tenure status on percentages of time dedicated to teaching would need further investigation in a later study.

Research Question 3

The objective of research question three was to determine if academic medical faculty have a realistic perception of the change in percentage of time they spend on each of the roles they fulfill (a) teaching, (b) clinical care, and (c) research. In reviewing the analysis, no significant differences were indicated between faculty’s perceptions and their actual percentage of time shift for Clinical Care (p = 28). However, significant differences are indicated in the other two of three roles: Teaching and Research (p = .02 and <.01 respectively). Of the 30 participants, 19 perceived more hours spent conducting research than the actual percentage of time recorded. Similarly fourteen of the thirty participants perceived a greater amount of time teaching than the actual percentage of time recorded. Given the push of medical facilities to produce more revenue, faculty members may be more cognizant of their time dedication to clinical care than to teaching and research. While there is added pressure that scholars face in keeping up with up–to-date with medical information and research, the drive to produce revenue
through clinical services may have affected the actual hours logged in the areas of teaching and research even though the faculty’s perception is that they have increased their percentage of time.

**Research Question 4**

The findings in research question three shows that academic medical faculty, overall, are accurate in their perceptions of the amount of time they spend on clinical services; however, the analysis of research question four indicate that there is a difference between the perceived versus actual revenues generated from clinical services for a significant portion of the participants ($p = .02$). Of the thirty participants, eleven perceived a greater shift in clinical care revenues than actually took place and fifteen participants perceived that they had increased in clinical care revenues and actual did have an increase.

**Research Question 5**

The objective of research question 5 was to assess participants’ satisfaction with their jobs over the five-year time frame. Of the 30 participants, 15 (50%) rated they were less satisfied with their jobs than they were five years ago and nine of the 30 (30%) were neutral in their job satisfaction. Only six (20%) out of the 30 rated they were more satisfied with their job as compared with five years ago.

**Literature**

The literature discusses many of the fiscal challenges in academic medical centers that force faculty to shift roles with a stronger emphasis on revenue generation (Watson, 2003; Lawlor, 2002). While this study did not show a statistically significant change in clinical care productivity of this particular faculty group, the perception that revenue generation is more prevalent than it was five years ago. Many external factors have affects on academic medical
faculty members in creating revenues to pay for costs. As costs increase, a shift towards more revenue generation are necessary to cover expenses, change leads to greater deficits and can shift role and responsibility changes to meet the declining external revenues reimbursement (Kuttner, 2008). The increased expectation to find ways to cover increasing costs is consistent with the feelings that these academic medical faculty members perceive that they are working more to increase clinical care revenue dollars.

The findings of this study, did not take into account the financial exigency that academic medical centers as a whole face in working towards ways to cover increasing costs. Revenues at medical schools are squeezed in multiple directions (Lawlor, 2002). The federal government continues to cut payments for many Medicaid and Medicare patients forcing academic medical centers to react and make financial decisions to provide its clinical care services in order to remain fiscally solvent (Lawlor, 2002). The study results were consistent with the literature that fiscal resources and the need to produce more clinical revenues is a high priority at academic medical schools. The focus and attention placed on revenue generating activities overshadows uncompensated activities such as teaching and other administrative endeavors (Angell, 2000).

As indicated by the responses in this study, job satisfaction is an issue among academic medical faculty members. Decreasing job satisfaction is consistent with current literature on this topic as well. A challenge among maintaining academic medical faculty members is the growing level of discontent with the profession (Lowenstein, Fernandez, & Crane, 2007). The increasing pressure and stress on the job is a major factor in looking at job satisfaction among academic medical faculty members. The focus and priorities given to generate clinical revenues is a greater taxing on their time spent and added pressure to be more accountable for their daily actions (Levinson & Rubenstein, 2000).
Institution expectations that run counter to the ways academic faculty see their roles can lead to role conflict and ambiguity (Wolverton, Wolverton, & Gmelch, 1999). If perceived expectations fail to match with university goals and expectations, role confusion creates challenges. Roles are closely tied to an individual’s sense of identity, and tend to behave and react more closely to their identity and expectations in the organization (Jain, George, & Maltarich, 2009). Individual roles in organizations provide work expectations and in turn how these individuals occupy such roles in the entity (Callero, 1994).

In reviewing the data, Biddle’s (1986) role theory was an appropriate theoretical framework in looking at how academic medical faculty members spend their time. The only significantly statistical difference was the variable of teaching and tenure. The faculty members with tenure had the ability to shift their time spent on teaching. An explanation for this shift towards more teaching is tied back to the protected status that tenure brings and the ability for the faculty members to focus their roles more on teaching. Role theory also accounts for the difference in actual roles versus perceived roles. It was interesting that although numerous faculty members felt like they spent more time producing more revenues, the actuality of a shift was not statistically significant. The perceived roles of these faculty members are related more back to the culture and expectations at the institution.

Conclusions

The data collected in this study focused on the ways in which academic medical faculty members spend their time among teaching, research, and clinical care services. A limitation to the study was the homogeneity of the ethnicity of the faculty (82% white) and was limited to one
school of medicine in the southeastern United States. The study was also limited by only analyzing data from one school.

Conclusion 1

The perception of academic medical faculty differs from how they actually spend their time in measuring clinical productivity.

In reviewing the data in this study, there is no difference in actual clinical care dollars produced over a five-year period, yet the perception of the increased clinical role was statistically significant. The data does not support an actual shift in clinical production, yet 37% perceived a greater clinical work load. This dissonance could be related to institutional priorities. As institutions are under pressure to produce increased fiscal resources and the conversations about increased revenue production are more prevalent, this could contribute to the perception that everyone is focused on and pressuring academic medical faculty to produce more clinical care revenues.

Conclusion 2

Tenured faculty members spend more time teaching as compared with clinical care and research activities.

The study showed a significant difference in the amount of time shift that took place where tenured faculty members increased their percentage of time related to instruction when using a more liberal alpha of .05. The tenured academic faculty members in the study were more senior and had more time at the institution and perhaps this is why there was an increased emphasis on teaching activities. The tenured faculty members were not concerned with publishing and conducting research as much since they do not need publications and research to be promoted. This approach allows more time to perform teaching activities.
Conclusion 3

Academic medical faculty members in this study are less satisfied with their roles as compared with five years ago.

In understanding perceived roles versus actual roles, academic medical faculty members felt that they were spending more time in producing clinical care revenues. The actuality of the study proved that there was no significant statistical differences between hours worked and perceived hours. Further, the data did not show where the academic medical faculty members produced more clinical care revenues, yet the faculty perceived that they were producing more revenues. The perceived shifts in roles could be a major reason why the faculty members were less satisfied with their current job role as compared with five years ago. While role theory explains the various functions and responsibilities each academic medical faculty faces, institutional priorities and focus often dictate many of the reasons why and how these roles evolve and how each person spends their time.

Recommendations for Practice

The following recommendations are designed to give practical suggestions to better facilitate and organize expectations for academic medical faculty. In order to achieve success it is important for all involved to have a clear and concise understanding of the many roles that academic medical faculty members are expected to fulfill. This section offers guidance to upper level physician leadership, academic medical faculty members, and healthcare administrators that often serve as facilitators to organize the business aspects of the individual departments. The intent with this section is to present recommendations to each of these groups providing a more unified approach to creating job satisfaction and clarity to oftentimes ambiguous roles.
Deans/Vice Chancellor Recommendations

Recommendation 1

As senior level physician administrators recruit future academic medical faculty members, it is important to set proper expectations as to what the individual faculty member’s role will be.

It is much easier to set the expectation on how the new faculty member’s role will fit into the roles of teaching, research and providing clinical care activities. Setting clear role expectations, productivity measurements, and establishing clear criteria for evaluation will pose less role confusion, stress and ambiguity. If senior level physician leaders have these conversations in the beginning it can also help set the tone for the organization and help to explain the culture and expectations for performance.

Recommendation 2

Relook at the tenure and promotions model for rewarding faculty behavior.

Academic faculty members are expected to make significant contributions in clinical revenues. However, a challenge is that many are rewarded and promoted based on research and other scholarly activities. Perhaps heavier weight and reward should be given to the strong clinical care producers and perhaps a clinical tenure track would reward and promote these individuals for producing clinical care revenues.

Recommendation 3

Develop an incentive plan to motivate faculty to align with institutional goals

In order to motivate faculty members, it is worthwhile to reward appropriate behavior. An incentive plan aligned with institutional goals can assist in motivating faculty to achieve the
desired results. A challenge with the particular institution studied was a lack of a true incetive plan to positively affect individual faculty behaviors.

**Academic Medical Faculty Recommendations**

**Recommendation 1**

*It is important for each academic faculty member to understand the expectations for their role.*

Academic medical faculty roles are complex. Many times, young faculty members do not understand the complete scope of what is expected to balance the roles of teaching, research and providing clinical care. Communication is critical in developing a realistic understanding of what it takes to have success as an academic faculty member.

**Recommendation 2**

*Establishing an area of research or a clinical care niche can be helpful*

As resources continue to tighten among academic medical centers across the country, it is important for incoming faculty to meet a specific institutional niche. It will be important for incoming faculty members to carry their individual faculty expense through research or clinical care revenue generation. Faculty members should have a thorough understanding of individual goals and expectations in joining an institution.

**Health Care Administrator Recommendations**

**Recommendation 1**

*It is important to understand ways in which faculty and administrators can work collaboratively in meeting the needs of the institution while achieving faculty retention.*
Health care administrators are facilitators in helping the individual department meet its educational, research and fiscal goals. It is important to build a strong communicative relationship among the physician leadership, institutional leadership and individual faculty members. It is also important to serve a resource to the chair in helping to establish clear expectations for its faculty members.

Recommendation 2

Leadership philosophy, institutional goals and individual faculty expectations should be aligned and clear to meet goals and set expectations.

The health care administrator is the person to help bridge strategic goals with individual faculty goals. The philosophy of the department is established by the physician leader of the area and it is the job of the administrator to help implement and operationalize the strategy. It is important for the administrator and the physician leader to have a shared vision of where the department is going and to be able to articulate the shared goals with the faculty.

Healthcare Reform Recommendations

Recommendation 1

Strategizing and preparing for the unknown.

It is safe to say that there are many flaws with the current healthcare system. The sustainability of rising health care costs is problematic. As institutions look at possible healthcare changes, it is important to do an internal inventory to assess how well each unit in the academic medical center is functioning. As costs continue to rise, each part of healthcare will need to be justified. No one knows the specifics of how healthcare reform will affect academic medical centers, except that changes will need to take place in order to cut costs and improve services.
Recommendation 2

Measuring clinical outcomes at academic medical centers

Academic medical centers are expensive places to receive services. As tertiary care and training institutions, typically some of the sickest and most complicated patients seek care at these facilities. Based on the complexities of these patients and the expense it costs to have the latest technology coupled with teaching expenses, improved outcomes will need to be a justification for the increased costs at academic medical centers. As academic medical centers continue to expect higher re-imbursements based on costs, improved clinical outcomes will need to be documented in order to justify the discrepancy.

Recommendations for Future Research

Recommendation 1

A qualitative study could enhance the understanding of if and why roles are shifting among academic medical faculties.

In order to expand the literature base, perhaps a greater number of academic medical faculty members across the United States could be surveyed to better understand their roles and if and in what ways their roles are shifting. Do academic medical faculty members feel their roles are shifting and if so why. The why component would be an interesting question to pose. This qualitative study could expand the literature base on better understanding why academic medical faculty members feel their roles are shifting and what concerns they have with the shift.

Recommendation 2
Another interesting question would be if the addition of institution type would affect the ways in which academic medical faculty members spend their time. Is there a difference between public and private institutions on how faculties spend their time?

This study was limited to one public school in the southeastern United States so the addition of private schools to compare with public schools would add an interesting element. Another interesting factor to study is the financial status of the particular institution and the wealth of endowments and other financial resources availability to measure if priorities and time spent on task is different based on the financial means of the institution. Does size of the institution and strategic goals shape how academic medical faculty members spend their time?

Recommendation 3

If the years were expanded to a ten, fifteen, or a twenty-year period, would a statistically significant shift take place on how academic medical faculty members spend their time among instruction, research, and clinical care productivity?

This study did not show a statistically significant shift in work duties among academic medical faculty members over a five-year period. Would a statistical shift have taken place over a greater time period? In looking at the issue over a greater period of time, it could lead to role shifts. The data could be analyzed to see when and what caused the various shifts to take place.

Recommendation 4

While this study compared actual clinical productivity over a five-year period, another variable to consider is whether or not teaching load has increased over a period of time as compared with other variables and how to measure teaching loads.

As part of the three-pronged mission of academic medical faculty members to teach, conduct research, and provide clinical care services, it would be interesting to look at academic
productivity. Academic productivity could be compared based on a review of current faculty curriculum vitae to see if teaching loads increased or decreased in relation to the other two variables of research and providing clinical care services. It would be interesting to use the same demographics of this study and to disaggregate the variables to better measure teaching loads. It would add value if teaching related activities could be measured and to see how time variations compare with accomplishments in teaching.

Recommendation 5

As new faculty members join an academic institution, is there a lag time given to produce teaching and research skills?

In looking at academic achievements of academic faulty members, is there a sufficient lag time in evaluating the ability to publish and to produce grants? An interesting study could analyze academic productivity factoring in the time it takes to get started in research and publishing scholarly articles. Measuring academic productivity might be better measured over a span of years to factor in lag time for the time it takes to publish research and to submit and receive funding opportunities for grants.

Recommendation 6

What makes academic medical faculty members satisfied in their job roles?

This particular study showed that fifty percent of the participants were less satisfied with their jobs as compared to five years ago. An interesting study would be to ask what things lead to satisfaction among academic medical faculty members. It would be interesting to compare this among different types of institutions, different demographic variables and in particular those with or without tenure.
In analyzing the data, academic medical faculty members feel they are working harder in producing more clinical care revenue. Although the data did not show a statistical difference in producing greater clinical care revenues, it is on the minds of the physicians that they are working harder. The perception of academic medical faculty members working harder producing clinical care revenues might hinge on the environment of this particular institution and the current fiscal focus by the institution.

Many academic medical centers are currently focused on fiscal challenges and one way to focus on this aspect is to look for ways to increase revenues. As entities focus and continue to discuss opportunities to improve the financial performance of the entity it is important that financial implications are not the sole conversation. As academic medical centers look for ways to improve their financial performance, it is important not to lose focus on the three-pronged mission to teach, produce research, and provide clinical care revenues.

Recommendation 7
How to address generational differences?

Each new generation has its own unique set of characteristics. An interesting future research study could focus on generational differences among new physician entering the world of academic medicine and in what ways each person is motivated. It will be important to better understand the motivational factors necessary in order to create and inspire future academic faculty members.

Balancing of roles for academic medical faculty members is complex. The tension and pull individuals often feel in balancing teaching, research, and clinical care can create frustration, ambiguities and can send mixed messages on what is important and valued. As we look to the
future and the many challenges that health care will face, establishing and creating a strong faculty work force will be incredibly important to meet future societal needs.
REFERENCES


Rice, R.E. (2002). Beyond scholarship reconsidered: toward an enlarged vision of the scholarly work of faculty members. *New Directions for Teaching and Learning, 90*, 7-17.


APPENDIX A

Physician Time Study

PHYSICIAN AND STAFF TIME STUDY INSTRUCTIONS

Please read the following:

Medicare requires time studies to support the cost incurred by the system for graduate medical education as well as medical directorships.

Please make every effort to complete the time study accurately and promptly. If the two-week period chosen for the study does not materially represent your normal activities, please choose an appropriate period in the immediate future and be sure to fill in the “study period” with the correct dates. This set of time studies are due no later than August 31, 2009.

Instructions

1. Fill in your department and name and the dates to be studied in the space provided at the top of the time study form, if not already provided for you.

2. Fill in the amount of time spent rounded to the nearest half-hour (ex. 1 or 2.5) in the blanks under the appropriate date and category. DO NOT write beginning and ending times in these fields.

3. At the end of each day place the total hours worked in the space provided at the bottom of the time study. Even if you are on house call, you can never record more than 24 hours in one day. (Please only record on call time spent in the hospital.)

4. Upon completion of the time study, total the hours by category in the far right hand column and down by day. Please verify totals. Verify the hours listed by category agree with the total hours worked for the day.

5. Sign the study in the space provided at the bottom of the page. Please do not submit a time study with no name and/or an illegible signature.

IF YOU ARE NOT WORKING THE FULL TWO WEEKS DESIGNATED ON THE TIME STUDY, YOU MUST CHOOSE A SUBSEQUENT TWO WEEK PERIOD TO COMPLETE THE TIME STUDY. CHANGE THE DATES ON THE FORM TO THE DATES YOU ACTUALLY USE. WE MUST HAVE TWO TWO-WEEK TIME STUDIES COMPLETED DURING THE 2009 FISCAL YEAR.

KEEP A COPY OF YOUR TIME STUDY IN THE EVENT ORIGINAL IS LOST IN TRANSIT.
THIS IS THE SECOND TIME STUDY FOR FISCAL YEAR 2009. BOTH THESE TIME STUDIES (THIS ONE AND THE ONE DATE JUNE 2009) MUST BE COMPLETED AND SUBMITTED IN A TIMELY MANNER.
APPENDIX B

Follow-Up Survey

Using the Likert scale, please answer each of the following questions:

<table>
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<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
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1. I spend more time performing clinical activities now versus five years ago.
2. I am expected to bring in more clinical revenues now versus five years ago.
3. I have more time to produce scholarly work versus five years ago.
4. I have more time to prepare for teaching responsibilities.
5. I feel institutional finances take precedent over teaching.
6. I feel the need to focus on increasing my clinical productivity instead of focusing on scholarly work.
7. I am given enough time to stay on top of current medical information.
8. I have more time to prepare for lectures given to medical students and residents.
9. I am more satisfied with my job role now versus five years ago.
APPENDIX C

Permission to Administer Follow-Up Survey

UNIVERSITY OF SOUTH ALABAMA

October 12, 2009

Malcolm G. Howell
3759 Annuth Drive
Mobile, AL 36608

Dear Mac,

I am very interested in the study on faculty time commitments as a topic for your dissertation. This is an important and timely topic for all medical schools and practice plans in this country. I look forward to learning whether trends have changed during the past five years. Please let me know if I can be helpful in assisting you with the completion of this project. I wish you good luck in achieving your personal goals.

Yours sincerely,

[Signature]

Samuel J. Strada, Ph.D.
APPENDIX D

Letter of Introduction

October 15, 2009
3759 Amruth Drive
Mobile, AL 36608

Dear Participant:

My name is Mack Howell and I am a doctoral student at the University of Alabama. I am conducting a dissertation study of how academic medical faculty spends their work time on various tasks. More specifically, I am studying how academic medical faculty spends their time among three areas: instruction, clinical care services, and research. I am asking for your participation to better understand your perceptions of how you spend your time and whether or not a shift has occurred over the past five years.

All of your responses are confidential and will be used only for my academic pursuits. Any data gathered would only be reported in aggregate and therefore no one will know specific answers. I am also willing to share the findings from my study if you are interested. I can be reached at 251-689-4002 or mackghowell@yahoo.com should you have any questions. Thanks so much for your time.

Sincerely,

Mack Howell
APPENDIX E

TITLE OF THE RESEARCH

Academic medical faculty and their complex roles

Principal Investigator
Mack G. Howell, Doctoral Candidate
3759 Amruth Dr.
Mobile, AL 36608
mackghowell@yahoo.com
(251) 689-4002

Co-Investigator/Faculty Advisor
Dr. David P. Jones
Assistant Vice President for Student Affairs
University of Alabama
djones@sa.ua.edu
(205) 348-9364

DESCRIPTION OF THE STUDY:

The purpose of this study is to better understand academic medical faculties perceive their roles. More specifically, to better understand how you allocate your time. You have been invited to participate in this survey to better understand the perceived role shifts, if any have taken place, during the five year period at your current institution.

RISK/BENEFITS:

This study presents no risk to you. All personal information and the results from the questionnaire will be kept secure and confidential. If you have any questions or concerns as it relates to answering these questions, please contact Dr. David Jones, at the number listed above.

COSTS AND PAYMENTS TO PARTICIPANT:

There are no costs to you or monetary compensation for participating in this study.

CONFIDENTIALITY/PRIVACY

The information that you provide will be kept in the strictest of confidence. All survey data will be destroyed, 12 months at the conclusion of the study.
PARTICIPANT’S RIGHT TO WITHDRAW FROM THE STUDY:

You have the right to refuse to participate in this study and/or withdraw at any time with no penalty to you.

VOLUNTARY CONSENT BY PARTICIPANT:

I have read the preceding consent form, and I fully understand the contents of this document and voluntarily consent to participate in the research titled, “Academic Medical Faculty and their Complex Roles.” All of my questions concerning this study have been answered. I hereby consent to participate on this research study.

1. Full Name:

2. E-Mail:

3. I acknowledge to have read the consent form above, and voluntarily agree to become a participant in this research study.
APPENDIX F

UNIVERSITY OF SOUTH ALABAMA

CMC3 135 * MOBILE, AL 36688-0002

03/02/2010

INSTITUTIONAL REVIEW BOARD

Initial Approval

Protocol #: 10-031 Type: EXEMPT
Principal Investigator: HOWELL, MALCOLM G.
Protocol Title: ACADEMIC MEDICAL FACULTY AND THEIR COMPLEX ROLES

Approved: 03/05/2010 Status: ACTIVE

Category: 45 CFR 46.101 (d)

a) Research involving the use of educational tests, surveys, interviews, or observation of public behavior
b) Data recorded to prevent identification of subjects
c) Prevention for risk of disclosure of subjects’ responses outside the research (placing subjects at risk of criminal civil liability, or damage financial standing, or reputation)

This panel, operating under the authority of the DHHS Office for Human Research and Protection, assurance number HRA 000311603, has reviewed the following items:
1.) Protection of the rights and the welfare of the human subjects involved.
2.) The methods used to secure and the appropriateness of informed consent.
3.) The risk and potential benefits to the subject.

On the basis of this review, we recommend:

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<tr>
<td>(X) Initial Review</td>
<td>( ) Other (See Notes)</td>
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for the protocol and consent in terms of the University of South Alabama’s statement of policy and procedure concerning the use of human subjects in the investigation.

The regulations require that the investigator not initiate any changes in the research without prior IRB approval, except where necessary to eliminate immediate hazards to the human subjects, and that all problems involving data and adverse events be reported to the IRB immediately.

This and subsequent consent forms that have been approved will be certified with an IRB stamp on every page. You must use copies of the current consent form with the current IRB approval stamp unless consent has been waived. All subjects must receive a copy of the current consent form.

NOTES:

Protocol #: 10-031

©Copyright 2009/USA/CMC3
TITLE OF THE PROJECT:

Academic medical faculty and their complex roles

Principal Investigator
Mack G. Howell, Doctoral Candidate
3759 Ammuth Dr.
Mobile, AL 36608
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(251) 689-4002

Co-Investigator/Faculty Advisor
Dr. David P. Jones
Assistant Vice President for Student Affairs
University of Alabama
djones@ua.edu
(205) 348-9564

DESCRIPTION OF THE STUDY:

The purpose of this study is to better understand how academic medical faculty see their roles. More specifically, to better understand how you spend your time. You have been asked to take part in this survey to better understand if and how you feel your role at the university has changed over the last five years.

RISK/BENEFITS:

This study presents no harm to you. All personal information and the results from the survey will be kept private. If you have any questions or concerns as it relates to answering these questions, please contact Dr. David Jones, at the number listed above.

COSTS AND PAYMENTS TO PARTICIPANT:

There are no costs to you. You will not be paid for your participation in this study.

CONFIDENTIALITY/PRIVACY

The information that you provide will be kept in the strictest of confidence. All survey data will be destroyed, 12 months at the conclusion of the study.

PARTICIPANT'S RIGHT TO WITHDRAW FROM THE STUDY:

You have the right to refuse to participate in this study and/or withdraw at any time with no penalty to you.

VOLUNTARY CONSENT BY PARTICIPANT:

[Signature]

[Date]

[Institutional Review Board]

[Stamp]
I have read this consent form and fully understand what I have read. I voluntarily agree to participate in the study titled, "Academic Medical Faculty and their Complex Roles." All of my questions about this study have been answered. I hereby agree to participate in this research study.

3. I agree that I have read this consent form and voluntarily agree to participate in this research study.

APPROVED  EXPIRES
MAR 05 2010
UNIVERSITY OF SOUTH ALABAMA
INSTITUTIONAL REVIEW BOARD
Academic Medical Faculties & Their Complex Roles

1. Consent to Use Survey Data

The purpose of this study is to better understand how academic medical faculty see their roles. More specifically, to better understand how you spend your time. You have been asked to take part in this survey to better understand if and how you feel your role at the university has changed over the last five years.

You have the right to refuse to participate in this study and/or withdraw at any time with no penalty to you.

1. I have read this consent form and fully understand what I have read. I voluntarily agree to participate in the study titled, "Academic Medical Faculty and Their Complex Roles." All of my questions about this survey have been answered. I hereby agree to participate in this research study.

☐ I agree  ☐ I decline

APPROVED  EXPIRES
MAR 05 2019
UNIVERSITY OF SOUTHERN ALABAMA
INSTITUTIONAL REVIEW BOARD
April 6, 2010

Malcolm G. Howell  
Department of Higher Education Administration  
College of Education  
The University of Alabama

Re: IRB # 10-OR-103 “Academic Medical Faculty and Their Complex Roles”

Dear Mr. Howell:

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your protocol has been given expedited approval according to 45 CFR part 46. You have also been granted the requested waiver of documentation of informed consent. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Your application will expire on April 6, 2011. If your research will continue beyond this date, complete the relevant portions of Continuing Review and Closure Form. If you wish to modify the application, complete the Modification of an Approved Protocol Form. When the study closes, complete the appropriate portions of FORM: Continuing Review and Closure.

Should you need to submit any further correspondence regarding this proposal, please include the above application number.

Good luck with your research.

Sincerely,

Carmantato T. Myles, MSM, CIM  
Director & Research Compliance Officer  
Office for Research Compliance  
The University of Alabama