

Pre-health Sciences Advising Task Force

Final Report to

**Robert Bruininks, Ph.D.
Executive Vice President and Provost
and
Frank B. Cerra, M.D.
Senior Vice President for Health Sciences**

June 2001

Executive Summary

During the period January and May 2001, a campus-wide task force studied pre-health sciences advising in undergraduate programs on the University of Minnesota (UM) Twin Cities campus. Between the early 1970s and May 2000, the College of Liberal Arts (CLA) had sponsored a specialized advising office for pre-health sciences advising referred to by most as "30 Johnston Hall." As the fiscal and educational environment changed in the late 1990s as a result of the Incentives for Managed Growth (IMG) mission-based budgeting at the UM, pre-health sciences advising also changed on campus. Since 1995, the Academic Health Center (AHC) and its colleges increasingly withdrew financial support for the program, concluding in May 2000. CLA, similar to other campus resource decisions, concentrated on its own student pre-health sciences advisement. As a result, the campus-wide resource was no longer available to prospective undergraduate, professional, and graduate students, currently enrolled Twin Cities students as well as alumni and other returning adult students. Apparently little discussion occurred to plan for replacing this central service, and as a result, a number of system-wide stresses were experienced during the 2000-2001 academic year.

During the time frame that the task force deliberated, health professions workforce shortages deepened. After studying historical documents on campus, national, and state health professions workforce trends, programmatic data, expressed student needs and models at other universities, the task force determined that a strong pre-health sciences advising presence on campus is important to meet both student and workforce needs. Quality pre-health sciences advisement is necessary for recruitment to undergraduate, graduate, and professional programs as well as quality in undergraduate education. Task force discussions revealed a vital symbiotic relationship between undergraduate education and health professions education in a comprehensive public university with an academic health center. This service is especially important for a land grant university with responsibilities to educate the future health professions workforce in the state.

Task force recommendations are: a new pre-health sciences advising office and cross-university collaboration; a standing health sciences career advisory council; support for continuously developing the expertise of pre-health sciences advisors; tracking pre-health sciences student classifications in Peoplesoft subplans, outcomes assessment, and the need for immediate implementation of some services to restore support for students making important health sciences career decisions.

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Background

In January 2001, Dr. Robert Bruininks, Executive Vice President and Provost, and Dr. Frank Cerra, Senior Vice President of Health Sciences, appointed a task force to study the current status of pre-health sciences advising on the Twin Cities campus and to make recommendations to improve services to students seeking careers in the health professions. The task force was comprised of fifteen faculty, staff, and administrators, most of whom were nominated by their deans and associate deans of education. Task force members are listed in the appendix.

A number of factors in the health care environment make this an important time to attract and retain students into health professions careers. An aging patient population, advanced technology, changing ethnic and cultural demographics, and the health care environment itself all contribute to a current shortage of health professionals, especially nurses, pharmacists, medical technologists, and dentists. With the need for health professionals increasing, considerable concern is focused on waning interest in health careers by the 18-22 year old age group and by evidence that applications to health professions schools are declining nationally.^{1,2}

At the same time, initial interest in health careers among prospective freshmen is high on the Twin Cities campus. For example, medicine is the most frequently declared interest of prospective freshmen contacting the UM (17,000 of 198,000 inquiries over a three-year period). Other pre-health sciences areas represent significant interest as well: physical therapy = 4,700; kinesiology = 2,900; nursing = 2,600; dentistry = 2,600; veterinary medicine = 1,600; and pharmacy = 1,300. To put this in perspective, the number of students (31,200) expressing initial interest in health sciences as a career is nearly as great as the inquiries about all areas within the Institute of Technology (IT) and considerably more than the number of the Carlson School of Management.³

At the present time, because of the nature of preparation, students who seek careers in the health professions tend to be highly qualified, motivated, and academically prepared. Nationally, as undergraduate programs continue to seek excellence in student outcomes, these students become increasingly desirable. In order to attract, retain, and graduate these students in a timely fashion, maximal support and services must be available on an immediate and as needed basis.

At the UM, the IMG environment implemented in 1997 influenced the philosophy of undergraduate education and advising. Over time, this change has had a negative impact on pre-health sciences advising and recruitment at the UM. From the early 1970s until May 2000, CLA was the primary sponsor of an office for health sciences career development and advising referred by most as "30 Johnston Hall." A campus-based Health Sciences Advisory Board guided this activity. This Office provided academic and career advice to the enrolled "pre-majors" of which a significant subset included pre-health sciences students. Additionally, related to health sciences careers, the staff met the advising and

information needs of “outreach” students, which included all enrolled non-CLA students and any interested individual, including those not enrolled in the UM. Archived documents reveal that the breadth and scope of services and contacts (*i.e.*, individual, group, walk-in, phone-in, e-mail) was extensive.⁴

When the Medical School announced the withdrawal of its funding during the spring 2000 semester, the CLA administration determined that it could no longer sustain a campus-wide resource. The Office closed in May 2000. During the past year, CLA has begun to develop pre-health sciences advising services to meet the needs of its own students. This move is similar to other campus resource decisions in the current financing environment. During the same time, CLA has also moved to a new advisement philosophy, “Learning Communities.” Two 30 Johnston Hall advisors have remained to develop the CLA pre-health sciences services in the Natural Sciences Learning Community, one of nine advising groups.

Apparently little discussion took place to replace the central function on campus. The College of Biological Sciences (CBS) has stepped in to provide expanded services and programs to students from colleges across campus and to “outreach” students. AHC health professions programs have offered some limited services to pre-health sciences students. As of June 2000, these services became the only campus-wide information resources for the entire campus. Knowledge of these services relies on an informal information network. At the UM, since the closing of 30 Johnston Hall, to the extent that face-to-face pre-health sciences advising currently takes place, it resides in the individual colleges and with individual advisors.

All undergraduate colleges and AHC programs as well as the undergraduate students seeking health professions careers depended upon the 30 Johnston program. Philosophically, pre-health sciences advising at the UM had been an individual student-focused activity. That is, it appears from archived documents that systematic intentional recruitment to AHC programs was not the primary intended focus of pre-health sciences advising. The fact that an average of 30% of the AHC student body originates in Twin Cities undergraduate programs would bear this out (Appendix: Range: Medical School: 20.44% to College of Pharmacy: 42.5%). This figure compares to other comprehensive universities with academic health centers.⁵ Therefore, the focus of the function was on advising and preparing students for professional and graduate schools/programs. Differentially, the AHC schools enjoyed the added benefit of a proportionately smaller pipeline of students because of this program.

Pre-health Sciences Advising Trends Nationally and at the UM

Traditionally, most students entering health professions careers originate from liberal arts and biological sciences areas of study. This trend is both local and national. For example, 912 students out of 3,063 students (29.8%) who enrolled in the AHC professional programs during the Fall 2000 semester were from the Twin Cities campus. Of this number, CLA and CBS undergraduate students accounted for 62.6% (n = 571). Students from 12 Twin Cities undergraduate schools and programs comprised the other 38%.

At the UM, providing pre-health sciences advising for these students is complicated by the existence of separate colleges of CLA and CBS. At colleges and universities with a single arts and sciences college where there is no central campus-wide office, the function of pre-health sciences advising for the entire campus is often housed in this liberal arts and sciences college. Advising and career development are available even to the smaller number of non-liberal arts and sciences students. Increasingly, health professions schools seek this latter group of students for a variety of reasons such as the desire to attract increasing numbers to primary care careers. As this trend has increased, a greater number of these students seek health sciences careers.

Nationally, pre-health sciences advising supports students to prepare to be competitive for admissions to a wide range of health professions schools. The preparation, application, and admissions process to health professions schools is complex. Without accurate information, student time in school can be extended beyond the standard time frame. Advising typically includes: information regarding career options, requirements for admission such as community service, letter of reference preparation, pre-health sciences student organizations, courses and services on career exploration, information on entry testing, transcript analysis, interview skills, and mentoring and shadowing programs.⁶

Some characteristics of the application process are unique to the medical school and other health professions. For example, the qualitative nature of the letter of recommendation has become important in medical school applications to document evidence about behavior. The relationship between the applicant and referee has become particularly important.^{7,8} In addition, the pre-health sciences advisor is often considered the “go-between” and translator between the individual student and the professional school. Understanding the internal processes of health professions admissions committees can be an important competitive edge for the advisee.⁹

There has been a national trend to move away from the “pre-health sciences” major (*i.e.*, pre-dentistry or pre-medical) to a student designation of interest. This designation indicates that in addition to fulfilling requirements for a degree, students need to select courses and experiences to prepare themselves to be competitive for consideration for admission to health professions schools. Therefore, any student can work toward the course requirements needed for pre-requisites for application and admission to health professions schools.¹⁰

At the UM, the adoption of common undergraduate policies in 1998 called for the use of the “undeclared” designation rather than “pre-business” or “pre-nursing” for lower division students. The belief at the time was that the “pre” classification tended to hold out false hope for a large number of students who are eventually not accepted into professional schools. Also, the thought then was that the “pre” classification may have contributed to poor graduation rates in undergraduate programs. Several AHC programs have expressed that the change in designation has had a negative impact on their admission numbers. In their opinion, the lack of the designation has made it more difficult to identify and connect with students who may be considering a health sciences career. Recently, CLA has

accommodated AHC program requests and now tracks the “pre-health sciences” students in the computer systems.

Additionally and for similar reasons, the UM requires a declaration of major by 60 credits to compel students to think in terms of a program that leads to graduation. This declaration requirement has caused special issues for students needing more than 60 credits before transferring to nursing or pharmacy.

Another purpose of pre-health sciences advising on campuses is to provide information to high school seniors as prospective freshmen. In a web site survey conducted by the Twin Cities Office of Admissions, seven of the other ten Big Ten universities have a visible contact for prospective students. An eighth has a contact in the Biology program. (Appendix) Currently, no designated contact exists on the Twin Cities campus, and since the closing of the 30 Johnston Hall Office, requests and responses for information are diffused informally throughout the campus. Faculty and programs report substantial stress as a result. The archived documents of the 30 Johnston Hall Office reveal that considerable services were likely expended on this “outreach” function. During the 2000-2001 academic year, anecdotal evidence demonstrates that a large need is unfulfilled in this area, especially returning adult students. (Appendix)

As noted, the national and university trends in pre-health sciences advising are complex and have implications for quality undergraduate education and advising as well as recruitment of prospective freshmen, undergraduate, and graduate students into health professional schools.

Events Surrounding the Convening of the Task Force

A number of relevant events surrounding the convening and work of the Pre-health Sciences Task Force are listed below.

Prior to 2000

Since the 1970s, 30 Johnston Hall, under the sponsorship of CLA, serves as a resource for health careers information and pre-health sciences advising. (Description above).

May 2000

The 30 Johnston Hall Office closes.

Summer 2000

- Concerns are voiced regarding the potential impact of the closing of 30 Johnston Hall.
- Meetings and training sessions are held among various AHC schools, advising units, and career centers to develop “stop-gap” measures to address the closing of 30 Johnston Hall.

Fall 2000

- CLA moves to an advisement philosophy called “Learning Communities” to integrate academic advising and career counseling needs.
 - o Pre-health sciences advising services evolved throughout the academic year to meet the needs of CLA students exclusively. As issues have been identified with the changes, CLA administration and staff have responded to expressed needs. For example, the School of Nursing and the College of Pharmacy have made specific requests to the Associate Dean of

- Student Services who has been responsive. Pre-health sciences students are now identified in the Peoplesoft subplan.
- o CLA students have access to career development opportunities through the Career and Community Learning Center and CLA Link.
 - o The bulk of CLA pre-health sciences advising presently takes place in the Natural Sciences Community which advises a majority of students who will seek health professions careers. Other CLA learning community students may utilize these resources.
 - o Medicine and Allied Health Programs such as Occupational Therapy currently have prospective students in as many as five CLA learning communities. The Occupational Therapy faculty now work with these five communities directly. Medicine works through Jim Galvin, Natural Science Community Coordinator, to inform advisors on pre-medical advising issues.
 - o Medicine recruits a faculty advisor for AED Pre-medical Honors Society, a position previously held by personnel from the 30 Johnston Hall Office
 - o The School of Dentistry provides a career information advising day for all interested UM advisors from CLA, CBS, Athletics, etc.
- The May 2000 closing of the 30 Johnston Hall Office exacerbated campus-wide problems in student advising, career development for the health professions, and recruitment to AHC schools. Many issues were not apparent until the closing of the Office.
 - o As a result, Twin Cities students no longer had a single campus-wide location to obtain information about health careers, application to health professions schools, course requirements, etc.
 - o AHC programs that enjoyed the recruitment benefit were caught off guard and had not anticipated new internal services they needed to develop. Small AHC programs without staff recruiters must use faculty for the undergraduate advising functions in the absence of campus advising resources.
 - o Most experienced pre-health sciences advisors have either retired, left the UM, or work in other areas of the UM. Two remained in CLA to develop services specific to CLA program needs.
 - o Each Twin Cities and AHC college/program experienced an impact that is unique to the program.
 - o Cottage industries targeted Twin Cities campus students with programs such as "So you want to be a doctor." One physician charges \$450 for a two-three day seminar with some sessions held in Moos Tower. Anecdotally, task force members report that this physician plans to expand offerings to other health professions. It is unclear when this enterprise began or the relationship to the closing of the 30 Johnston Hall Office.
 - o The UM Office of Admissions regularly receives a large number of requests from prospective freshmen for information regarding health careers. Over 6,035 requests were received in the

2000-2001 academic year. No official campus-wide source is currently designated to answer questions. Responses to requests are handled on an individual basis.

- o The undergraduate health professions career course that attracted over 200 – 400 students annually has not been taught for two years.
- o Medical school and dental school admissions personnel experienced an increased number of questions and requests for information and tours of the medical and dental schools by prospective freshmen and their parents. Additionally, undergraduates and returning adult students sought information regarding transcript analysis and the application process. Often these requests are last minute and for academically non-competitive students.
- o To address the acute need, AHC schools have trained faculty advisors in undergraduate programs regarding local and national application and admission procedures into health professions schools.
- o Prospective returning adult students interested in exploring health professions careers do not currently have a point of contact in the UM. Many requests are ambiguous and require individualized sessions to answer questions.
- o On October 9, 2000, the pre-medicine honorary student organization wrote a letter to President Yudof outlining the problem of access to information and advising. (Appendix) Barbara Brandt met with this organization in November 2000.
- o CBS has two staff advisors who are very knowledgeable about admissions to medical school, but this is not their primary responsibility.
 - During the past year, to meet the growing demands CBS advisors have made an effort to understand a number of health sciences programs to meet the advising needs of students. However, they report that it is especially difficult to stay current with programs discussed infrequently such as occupational therapy, medical technology, and mortuary sciences.
 - While CBS advisors are available to all students, many students are unaware of the services. Given the present staffing and other responsibilities, CBS advisors could not meet the needs of all students.
 - CBS offers alumni mentoring programs and medical school informational sessions that are open to all students..
 - The CBS student services personnel estimates receiving up to ten phone calls a day from students seeking information regarding health professional careers.
- National studies report health professions workforce shortages. Minnesota has severe shortages in a number of health professions.
- A pre-health sciences advising task force representative of the entire Twin Cities campus is charged to address the issue.

Spring 2001

- The pre-health sciences advising task force is convened in January 2001.
- Meeting over the course of several weeks each program is provided the opportunity to present its perspective of the issue. Several AHC programs report low application pools and ultimately alarmingly low numbers of qualified students. Some AHC programs do not fill their classes. Nationally, health professions schools are experiencing a decline in application numbers. Therefore, the low numbers in the AHC may not be completely related to the closing of the 30 Johnston Hall Office. However, there is a heightened awareness of the need for new recruitment strategies.
- In addition to resources in CLA and CBS, other resources are identified on campus:
 - The pre-health sciences section of the SEAM (Student Excellence in Academics and Multiculturalism) program open to CLA and General College (GC) students
 - Annual pre-medical day in April hosted by the Medical School
 - Monthly BSN meetings offered by the School of Nursing
 - Twin Cities hospitals and clinics where students can shadow and volunteer
 - “Discover Dentistry” Program offered biannually
 - Pharmacy Preview Day is offered regularly
 - “First Step” Meetings
 - Tours for prospective students in AHC colleges on an ad hoc basis
- Subcommittees focus on the issue from the student, faculty/program, and national model perspective.
 - Student subcommittee conducted two meetings with students to discuss pre-health sciences advising from the student perspective
 - The faculty/program subcommittee summarized the information from the school reports in the task force
 - The national model subcommittee studied web sites and called a number of university offices of pre-health professions advising, notably Big Ten Schools
- The Occupational Therapy program announced it plans to present the survey course on health careers during the Spring 2002 for undergraduate students and advisors in the health professions.
- The College of Continuing Education plans to open the UM Career and Lifework Center in September 2001, providing a door to the UM for adults seeking education to refocus and enrich their careers and lifework. The Center is distinctive in its emphasis on educational planning as a foundation to its career and life planning services. The Center will provide consultative and referral services with products and resources for individuals who are asking the questions, “What’s next for me and how do I get there?” The Center will develop services and products that can be financially sustained by a range of revenue opportunities such as user fees, new tuition attribution, grants, and UM support. The

development of services can be specific to health professions based on audience needs and financial sustainability.

- The School of Nursing created a pre-nursing status for 60 credit plus students. The School increased the number of monthly BSN information sessions, and changed the role of the recruiter from recruitment to one-on-one advisement for “outreach” students.
- While unrelated to pre-health sciences advising, Wayne Sigler, Director, Office of Admissions; Craig Swan, Vice Provost for Undergraduate Education; and Barbara Brandt, Assistant Vice President for Education, Academic Health Center, visit AHC programs to begin discussions regarding fast-track admissions. Barbara Brandt and Laura Koch, Associate Vice Provost, begin discussions regarding freshmen seminars and residential living centers focusing on health professions.

Estimate of Current Need for Pre-health Sciences Advising

In attempting to understand the number of potential students who could be served by pre-health sciences advising on the Twin Cities campus, archived data from 30 Johnston Hall is useful. The 30 Johnston Hall Office offered individualized advising services and programming to CLA and campus-wide students seeking careers in the health professions. Archived Office statistics have been located from the years 1994 through 1998. During the Fall Quarters 1994–1998, an average of 1,253 CLA students were assigned to the Office for appointment, phone-in, and group advising services. During the Spring 2001 semester, CLA has identified 809 students who indicate a current interest in health professions careers.

In addition to CLA students, “outreach” (non-CLA) students and individuals not enrolled in the UM but interested in health sciences careers were also advised in individualized appointments. In 1992-1993, the Office staff advised the highest number of outreach students. During that year, the Office documented that advisors saw 1,942 “outreach” students in 30-minute appointments. This figure likely understates the number of student contacts. In actuality, the number of other direct student services included walk-in contacts, phone contacts, personal statements reviews, test information on Medical College Admissions Test and Dental Admissions Test, and communication with other colleges regarding students.

After the 1994-1995 year (n=1,554), the number of “outreach” students served in individualized appointments declined significantly (1995-96: n=519; 1996-97: n=601; 1997-98: n = 390). The cited reasons for the declining number of “outreach” students were: increased programming that served a large number of students, increased phone-in and walk-in services, and decreased funding from the AHC and professional schools. During the 1992-1993 through 1997-1998 academic years, 30 Johnston Hall programming attracted a yearly average of 1,486 attendees in workshops and seminars. From the data, it is unknown if these students attended more than one seminar and counted more than once. However, the topics of the seminars were significantly diverse (*i.e.*, dentistry vs. pharmacy vs. medicine), indicating the number could be close to the 1,486.

Interest in health professions careers waxes and wanes. It should be noted that 1995 was a banner year for applications to medical schools at 46,591 applicants.¹¹ This year was approximately four years after an economic recession, a time in which interest in health careers historically increases nationally. Therefore, in 1995 AHC schools likely felt a comfort level with the high numbers in the applicant pools. With the current economic downturn, the number of potential applicants and related service requests could increase in the near future.

The current total number of students who are interested in health careers on the Twin Cities campus is difficult to assess because there has not been an attempt to code these students in the Peoplesoft subplans. As noted, the CLA staff reports that in winter 2000, 809 pre-health sciences students in CLA were counted. However, at the time of the task force CBS was beginning to track pre-health sciences students. IT, a college with the third largest numbers of pre-health sciences students, does not track them.

In trying to understand application trends to AHC schools, it is significant to note that the number of Minnesota resident applicants to the Medical School is in decline: 644 residents in 2000 and 569 in 2001. Additionally, the number of UM accepted and matriculating applicants is declining as well, causing concern that the numbers of physicians with ties to the state is declining. This steady decline may be the impact of the closing of the 30 Johnston Hall Office or to the national trend.

The applicant to matriculate numbers for national, total UM Medical School applications, and Twin Cities applications to the UM Medical School by year are:¹²

Table 1: Comparison of National Applicants and UM Medical School Applicants and Twin Cities Applicants

	National Statistics		UM Med School All Applicants		UM Med School TC Applicants	
	Applicant Pool	% change	Applicant Pool	% change	Applicant Pool	% change
1998	40,886	-5%	1945	-6.4%	199	-1.5%
1999	38,372	-6.1%	1874	-3.6%	203	+2.0%
2000	36,579	-4.7%	1996	-9.6%	141	-30.5%
2001	34,396	-6.0%	1654	-2.4%	124	-12.1%

The available data for the number of Twin Cities applicants and matriculates for all Medical Schools are the following: 1997: 225/62 (27.5%); 1998: no data available; 1999: 228/73 (32.0%); and 2000: 185/65 (35.1%).

Based upon the available information, an estimate of the number of current Twin Cities students interested in all health careers could be between 2,000 and 2,500. In examining declining applicant numbers in contrast to past interest documented in the 30 Johnston Hall data, there is a great need to capture interest, act upon requests, and recruit new students to health sciences careers.

Expressed Student Needs

The task force had several opportunities to gather student input into the recommendations for pre-health sciences advising. Jane Brumbaugh, a junior in CBS and a member of Alpha Epsilon Delta (the pre-medical honorary society) served as a member of the task force. Additionally, the student subcommittee met with two groups of students to learn their perspectives about the issue. One group represented AHC students who reflected back on their experiences on the Twin Cities campus. The second group was comprised of current Twin Cities campus students.¹³

Students believe that early preparation is critical to be successful applicants to health professions schools. To not prepare early can be a significant expense in time and money for students. They recognize that entrance into graduate and professional schools requires more than checking off a list of pre-requisite courses. It involves career exploration to understand the array of professions and personal discovery to find the right fit. Currently, students report that they do not know where to go on campus to start preparation. Seniors report that they wish they had begun the process earlier because they have come to realize that a number of activities beyond course work, grades, and test scores are important in the process. Such activities as voluntarism, letters of recommendation, and interview skills are also considered.

Students recognized that the regular college advisors have taken on an added burden this year to advise them about health professions schools. They report that these advisors are not equipped with the resources or information to help students adequately prepare for graduate and professional programs in the health sciences. In their opinion, advisors may be knowledgeable in one area and have information from personal experience, but they do not have all of the resources that should be available.

In all communications with students, the task force learned that they have high expectations for student services at the UM. These students report that they chose the UM with the expectation that such a large public university will have the resources and support for undergraduates in pre-health sciences. The students who participated in meetings regarding pre-health sciences advising desire assistance in various areas:

- Accurate and timely advising information (print, web information, personal contact)
- “One Stop” Advising and Career Counseling
- Assistance in selecting courses, gaining career information, applying to professional schools, selecting a major, and locating practitioner references for application purposes
- Effective integration and coordination of all types of services in successfully meeting student needs: academic model, life counseling, student referrals, follow-up, etc
- Student-focused services with emphasis on successful outcomes

Students Who Need Pre-health Sciences Advising

The task force identified the following categories of students and prospective students who need access to information regarding health careers and advice regarding preparation for application to health

professions education programs. These types of students have tailored information and counseling needs in relationship to health sciences careers (Table 2). The categories are:

Categories of Prospective Students

- Prospective Freshmen/High School Seniors
- Freshmen, sophomore undeclared
- Transfer Students
 - Admissions group session (screen for individual needs)
 - Directly referred to health professions program (individual appointments)

Enrolled Students

- Will earn Baccalaureate
- “Pre-major” e.g., nursing, pharmacy, mortuary sciences
- Graduate, professional school-seeking
- Unrealistic goals or do not know goals: need support

“Plan B” Students: Alternative plan needs (academic success, interests)

- Change major once in professional program
 - Alternative plan within health sciences
 - Alternative plan outside health sciences
- Unsuccessful admission to professional program
 - Alternative plan within health sciences
 - Alternative plan outside health sciences

Returning Adult Students: Delivery System: Technology, groups, 1:1

- Post-Baccalaureate (other degree)
- No degree upon entry
- Unrealistic goals or do not know – need support

Table 2: Sample Student Need for Pre-health Sciences Advisement

Type of Student	High School/ Prospective Students	New Admission	Freshman/ Sophomore	Junior	Senior
Knows career goals	Information regarding: H.S. programs on UM campus Campus visits Fast Track Students Recruitment Transcript analysis	Decision regarding: College, major, or undeclared selection CLA: Learning community	Course planning Academic course planning: Prerequisites for health profession school First Step Meetings Student organizations Web resources Mentoring Visits with AHC schools	Volunteer activities Test taking prep Test taking strategies School visits	Letters of recommendations Applications Interviews School visits
Does not know major or career goals	Information regarding: H.S. programs on UM campus Campus visits	Decision regarding: College selection CLA: Learning community	Career exploration: Introduction to careers (courses, health careers) Course planning Academic course planning: Prerequisites for health profession schools First Step Meetings Student organizations Web resources Mentoring Visit with AHC schools	Volunteer activities Test taking prep Test taking strategies School visits	Letters of recommendations Applications Interviews School visits

Type of Student	First Contact	Other Important Tasks	Application to Schools	Outcomes	
Returning Adult: Non-degree, Post Baccalaureate	Call to UM Transcript analysis Career exploration	First Step Meetings Course pre-requisites Web resources Volunteer activities Test taking prep Test taking strategies School visits	Letters of recommendations Applications Interviews School visits	Success No success	→ Plan B

Programmatic Perspective: The Relationship Between Advising and Recruiting

The task force discussions that occurred regarding pre-health sciences advising highlighted the symbiotic relationship between undergraduate education and recruitment strategies in health professions education programs on a comprehensive campus with an academic health center. A literature review and conversations with national experts failed to reveal any previous discussion of this phenomenon.

However, understanding this relationship is essential in defining future directions for pre-health sciences advising on the Twin Cities campus. As the health professions workforce shortage deepens in Minnesota, the nature of this relationship cannot be taken lightly. This reality is especially true in a land grant university with responsibilities for educating the future health professions workforce for a state.

The University of Minnesota AHC houses the only, or one of few, health professions programs in the state or region (*i.e.*, dentistry, pharmacy, public health, and medical technology). Additionally, a significant number of physicians who currently practice in the state are UM graduates. While there is currently not a severe shortage of physicians in Minnesota, it is anticipated that within the next several years, over half of physicians age 55 or older will retire.¹⁴ Therefore, Twin Cities students represent prospective students for AHC programs and ultimately health professionals for the state of Minnesota.

Pre-health sciences advising takes on new meanings within a broadened context of societal need. For example, the AHC and the UM recognize that diversity in the health professions and general workforce is an important outcome of contemporary undergraduate and health sciences programs. As the national and state demographics change, there is a growing need for a health professions workforce that is culturally competent and representative of the general population. Strong linkages between Twin Cities undergraduate and AHC programs to support undergraduate under-represented minorities is one potential strategy to work toward achieving this important goal.

Additionally, the state needs health professionals other than those represented in the AHC, such as optometrists and physician assistants. Individual students will be more suited to these professions than those currently offered in the AHC. The task force also discussed “Plan B” students who are not admitted to programs of first choice but could find rewarding careers in other health professions.

In light of this complex relationship and societal need, categorizing pre-health sciences advising activities as “advising” or “recruitment” is difficult at best. While advising is essential in recruitment, conflicts of interest may arise when substantial recruitment efforts are employed in advising relationships.

It additionally makes the practical reality in an IMG environment of “who pays” even more complicated. To address these issues, task force recommendations and decisions need to be couched within this relationship.

Recommendations

The task force makes the following recommendations based upon its deliberation and study.

Recommendation 1: A Pre-health Sciences Advising Office

A Pre-health Sciences Advising office should be opened on the Twin Cities campus to serve as a resource for career development and services to prospective and current undergraduate, professional, and graduate students interested in pursuing health sciences careers and to meet programmatic needs.

Primary Intended Outcomes: (1) Prospective freshmen, campus-based, and returning adult students will have accurate and accessible information to make informed and timely decisions to assist them to be competitive for admissions to health professions schools. (2) Prospective freshmen, campus-based, and returning adult students will have information regarding AHC schools and colleges and other health professions programs.

For nearly 30 years, CLA served as the host to a campus-wide resource for pre-health sciences advising, health professions career exploration, and provision of external information. The number of individuals who were served is impressive, although it is difficult at this time to assess the quality of the student and programmatic outcomes achieved. Student and contact frequency counts were collected rather than outcomes data (*i.e.*, successful admissions, student satisfaction, efficiency, AHC admissions); therefore, these outcomes can only be inferred at this time. One possible indicator is the decline in numbers of Twin Cities students applying to and accepted into AHC programs since the 30 Johnston Hall Office reduced services. It is likely that this resource benefited the AHC program pipeline, but is unclear to what extent. With the experience of considerable stress on the UM system during the 2000-2001 academic year, most task force members acknowledged the importance of the former campus-wide resource in pre-health sciences advising.

The retrieved, archived correspondence from the 30 Johnston Hall Office demonstrates a dialogue between the AHC programs and CLA regarding the potential for a negative impact of diminished funding. No communication with other programs is currently available. In the IMG environment, given the decreased funding, CLA made the decision to focus its pre-health sciences funding on its own students. Additionally, CLA intentionally changed its overall advisement philosophy to Learning Communities and pre-health sciences advising is now integrated into this design. The staff has spent considerable time and resources to tailor the pre-health sciences advisement materials to meet the needs of CLA students. Many former “30 Johnston Hall” print materials are now available and prominently displayed on the CLA web site. A search on the UM

web site since the task force began its work demonstrates a growing number of ways to access the CLA materials. Such information on the UM home page is not available in other colleges. It is too early to document outcomes of the new undergraduate and integrated pre-health sciences advisement model.

A subcommittee (membership listed in the Appendix) was formed that studied national models at other universities for handling pre-health sciences advising. After contacting a number of universities, this subcommittee favors the pre-health sciences advising model at the University of Illinois at Urbana-Champaign Career Service Center (UIUC), a central independent career and advising office. UIUC students voted to assess themselves \$12.00 a semester to open a career development center. Within this center is a specialty office on health professions advising, staffed by six-seven individuals. It is that subset of the career development center that the subcommittee believes is the best model for an office on the Twin Cities campus. This group is relatively small but specializes in the various health professions and works closely and coordinates with the 27 career service and academic advising programs across campus to provide information and support.¹¹

The task force recommends that a mission statement should be developed that highlights both the advising and recruitment functions of the office. These functions specifically include: (1) provide accurate and timely career and application information and advising to prospective and current students; (2) support the UM Office of Admissions; (3) coordinate communications with undergraduate and AHC programs in relationship to pre-health sciences advising and recruiting; and (4) serve as a point-of-contact and triage center for individuals seeking information regarding health sciences careers.

The office should have the following features:

- One-stop specialized pre-health professions advising open to all current and prospective students [undergraduate students, non-degree seeking post baccalaureate students, transfer students, community health-care professionals]. Efficiency models such as group advising and technology-based services should be used to conserve resources.
- A career development and services program that would fully coordinate and integrate with academic advising to allow exploration of all health sciences education options, including those at the UM and other institutions.
- Located in close proximity to the AHC complex (preferably PWB or MT). Beginning Fall 2002 semester, 5,000 undergraduates will be attending classes in the new Molecular and Cellular Biology Building. An office in the AHC would serve these students and still be accessible to other undergraduate programs such as IT.

- A partnership administration structure symbolizing collaboration between undergraduate programs and the AHC, perhaps the Vice Provost for Undergraduate Education and the AHC Assistant Vice President for Education.

Services and resources of the office should support student investigation of and entry into the health professions by providing:

- Access to a specialized pre-health sciences advising.
- Multiple service delivery modalities (individual and group sessions, workshops, seminar series, large group presentations, career exploration/career development courses).
- "In-person," print and technology-based resources.
- 24/7 access to information via state-of-the-art website.
- Pre-health Sciences E-newsletter
- Advising and programming for career exploration, career decision-making, establishing career options and alternatives.
- Advising and programming for pre-application activities, such as:
 - Coordination of publicity of pre-health professions courses, *e.g.*, Terminology in the Health Sciences
 - Clearinghouse for internships/shadowing experiences in the health professions
 - Data base of educational and research opportunities
 - Workshops on professional school entrance exams
 - Facilitation of student organizations focused on pre-health sciences careers
- Advising and programming for application process, such as:
 - Researching and selecting professional schools and graduate programs
 - Accessing and completing applications (national and individual program applications)
 - Interviewing
 - Financing professional and advanced degrees
- Students should use technology support such as the portfolio and emerging portal software.

The office will not serve as the primary academic advisor for undergraduate degree completion, etc.

The office would take leadership in establishing and maintaining:

- Close collaboration with the colleges offering various health sciences degrees
- Strong interface with other campus units: Advising Offices, Career Centers, Learning Resource Centers, Office of Undergraduate Admissions, Community and Diversity Initiatives, and AHC programs
- Consultative relationship with all advisors across the Twin Cities campus on issues regarding pre-health professions curricula and admissions

- Connections with professional organizations related to health sciences advising (National Association of Advisors for the Health Professions), and health professions (*i.e.* Hennepin and Ramsey Medical Societies)

The office would be staffed:

- By advising professionals with specialized knowledge of the health sciences, and skills in academic and career counseling.
- At an advisor to students-served ratio of approximately 1 to 300 (as recommended by the National Association for Academic Advisors), with two-three advisors recommended for start-up.

The AHC Office of Finance prepared a budget to estimate the operating expenses for an advising office. Estimates are made to reflect a “free-standing” office; therefore, figures are estimates. The budget is located in the Appendix.

In making this recommendation, the subcommittee considered alternative models and the implications of each. These alternatives are listed in the Appendix.

Recommendation 2: A Health Sciences Career Advisory Council

A standing group (*i.e.*, council or advisory committee) should be convened to focus on pre-health sciences advising and related broader health professions workforce needs to articulate and guide issues relative to pre-health sciences advising and the relationship to health professions education on the Twin Cities and coordinate campuses.

Primary Intended Outcome: Stakeholders in health professions education will be guided by informed decisions regarding pre-health sciences advising, the health professions workforce, and UM systems.

As noted, pre-health sciences advising, as viewed in a broader context, has implications for not only individual students and returning adults to campus but also for the graduation of the appropriate number of health professions to serve the workforce needs of Minnesota. As the state enters a precarious time in the health care workforce, decisions regarding pre-health sciences advising would be guided by information. Representatives of this group should be faculty, students, student service personnel, administrators, and health care. This group should focus on higher education and health care trends to assist in making policy decisions that can impact key internal and external stakeholders.

Recommendation 3: Pre-health Sciences Advising Expertise

Pre-health sciences advisors should be supported to continuously develop their specialized knowledge and expertise.

Primary Intended Outcome: Based upon accurate and timely advisement provided by competent and well-informed pre-health sciences advisors, UM students who are interested in health professions will be successful in career exploration, timely course matriculation, and application to health professions schools of their choice.

As noted, competent pre-health sciences advising requires specialized knowledge and expertise to meet multiple and complicated needs. A number of nuances in advising and information can determine whether a student is successful in application and admission to a health professional school. Students need trust and confidence that their advisors can effectively support them in making complex decisions. As any professionals, these advisors need to be supported to continuously develop.

- Pre-health sciences advisors and AHC student services advisors need to continue to network. The conversations in the task force advanced respect and understanding of the complex issues relative to student, faculty, and individual college needs. This networking should include formal professional development between individuals involved in pre-health sciences advising.
- The UM should become a patron (organizational) member of the National Association of Advisors for the Health Professions (NAAHP). This organization is nationally recognized as the leader in both pre-health sciences and health sciences advising. Membership would not only avail university advisors to journals and development but also the NAAHP web site would provide information to students and prospective students about contacts at the UM. Presently, unlike most states there is not a designated individual to contact regarding health professions careers.

Recommendation 4: Pre-health Sciences Student Classification

For planning purposes, undergraduate colleges should track pre-health sciences interests in Peoplesoft subplans to identify students who need pre-health sciences information and advisement.

Primary Intended Outcomes: (1) Current programming for students exploring health careers will experience increased attendance because those students will be targeted to receive information regarding available resources. (2) Individuals charged with planning for programming to students interested in and exploring health careers will make informed data-driven decisions. (3) Students who wish to identify early with a health profession will strengthen their interest by participating in activities such as student organizations and profession-specific activities offered by AHC health professions programs.

Providing targeted information and services to students interested in health care has become more difficult since the change in “pre-health” designation. Planning for this group is also difficult because of the inability to estimate the size of the group of students interested in health careers. For example, the School of Nursing and the Occupational Therapy program had grown

accustomed to this early identification for planning purposes. The CLA initiative to code the pre-health interests in the Peoplesoft subplans should be emulated by other undergraduate programs and shared to assist with future planning.

Recommendation 5: Comprehensive Outcome Assessment

Comprehensive outcome assessment plans should be developed to track the success of pre-health sciences advisement.

Primary Intended Outcome: Decisions regarding pre-health sciences advising and resources will be made based upon establishing outcome targets, assessment strategies, and continuous evaluation of collected data.

In this era of accountability, to assist with continuous quality improvement of this program, programmatic outcomes, and metrics should be developed to guide decision-making. Such measures as successful admissions to health professions schools; retention of students in Minnesota; attraction of highly qualified prospective students; and student, faculty and staff satisfaction are all among the possible outcomes that could be articulated and assessed.

Recommendation 6: Immediate Service Need

Regardless of the long-term structural change in pre-health sciences advising made at the university level, some services must start immediately to fulfill individual student and programmatic needs.

Primary Intended Outcome: Prospective freshmen, campus-based, and returning adult students will have accurate and accessible information to make informed and timely decisions and alleviate daily stress on UM faculty and programs.

As noted, the task force recommends structural changes in pre-health sciences advising at the UM. Because such decisions can take some time, the task force urges the implementation of critical services to meet information needs of prospective freshmen, campus-based, and returning students. These services should be considered “band-aid” approaches and not long-term solutions. These include:

- An effective web site to guide students through information seeking and decision-making activities needs to build upon the work in CLA to transfer the 30 Johnston Hall materials to on-line format. Web sites are part of but not all of the solution. As noted many times in the task force deliberations, many services that are needed are individualized advisement.

However, a number of routine questions can be answered through accurate information in an easily accessible location. Students must be guided to accept responsibility for information seeking. Prospective freshmen and their parents can benefit from accurate information on the web site.

- Individualized decision protocols need to be developed to guide students where to seek specific types of services and information. Additionally, these protocols can assist UM personnel to inform and best serve current and prospective students. Such students are currently cycling around the UM. For example, during task force deliberations an advisor described complex student situations such as a returning adult student who needed transcript analysis to enable her to understand what courses to take as pre-requisites for medical school. This student did not necessarily desire to attend the UM. In an environment of limited and focused resources, the significant number of such requests cannot possibly be met. However, with the new Adult Career and Counseling Center or a new pre-health sciences advising structure, this individual may pay for such a service.
- An individual needs to be designated/hired to answer the significant number of prospective student questions related to health professions coming into the Office of Undergraduate Admissions and other areas of the university.

Conclusion

A task force appointed by Robert Bruininks, Executive Vice President and Provost, and Frank Cerra, Senior Vice President met from January 2001 to May 2001 to examine the issue of pre-health sciences advising on the Twin Cities campus. This committee was convened in response to a number of issues that have evolved on campus during the past academic year after the closing of a central office for pre-health sciences advising that served as a point of contact for prospective and currently enrolled students. Students and programs experienced considerable campus-wide stress in relationship to the closing of this office. After an analysis of data, consideration of issues, and examination of health professions workforce trends, the task force recommended a new structure to strengthen current services to these students.

Appendices

Pre-health Sciences Advising Task Force Members, January - May 2001

Student Subcommittee

Bruce Benson, Associate Director, Professional Relations, College of Pharmacy
Jane Brumbaugh, Student Representative, College of Biological Sciences
Chris Kearns, Assistant Dean for Student Services, College of Liberal Arts
Kathleen Peterson, Director, Student Services, College of Biological Sciences
Gale Shea, Director, Enrollment Management, School of Dentistry
Craig Swan, Vice Provost for Undergraduate Education

Faculty/Program Subcommittee

Diane Anderson, Assistant Professor, Occupational Therapy
Barbara Brandt, Assistant Vice President for Education, Academic Health Center
Laura Koch, Associate Vice Provost
Joan Pasiuk, Director, School of Public Health Student Services

National Model Subcommittee

Marilyn Becker, Director, Admissions, Medical School
Judy Beniak, Director, Student Services, School of Nursing
Kathryn Hanna, Associate Dean, College of Biological Sciences
April Schnell, Director, Career and LifeWork Center for Adults, College of Continuing Education
Wayne Sigler, Director, Office of Admissions

Big 10 Pre-Med Advising Summary

	Illinois	Indiana	Iowa	Michigan	Michigan State	Northwestern	Ohio State	Penn State	Purdue	Wisconsin
Is pre-med advising available for prospective students?	Yes	No formal program	No formal program	No specific person	Yes	Yes	Yes	Yes	Yes	No, premed; Yes, bio majors
Is pre-med advising available for current students?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Does the UM provide a specific person to contact for more information on pre-med?	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	No
Does the UM have a formal pre-med program?	No	No	No	No	No	Yes	No	No	No, but a suggested curriculum	No
Does the UM have an early admission program to its medical school?	No	Yes, rural for rural Indiana students	No	No longer	Yes	Yes	Yes	Yes	No	Yes
					(10 students)	(60 students)		(20 students)		(50 students)

Websites & Notes:

Illinois	Website: www.careercenter.uiuc.edu/health/sc-begin.htm Notes: Advising is provided through the student's major, but there are also additional advisors for professional schools. In addition, there is a Health Careers House which provides general counseling and offers assistance with the application process.
Indiana	Website: www.indiana.edu/~coasinfo/advising.shtm Notes: Besides advising through the student's major, Indiana also provides support through the Health Professions and Pre-Law Information Center which offers special academic advising and current information on admissions standards for professional schools.
Iowa	Website: www.uiowa.edu/%7euuaactr/majors/med.htm Notes: Current students work with a pre-medical adviser in the Academic Advising Center.
Michigan	Website: www.lsa.umich.edu/prehealth Notes: Pre-med advising available for current students through the College of Letters, Arts and Sciences.
Michigan State	Website: www.chm.msu.edu/chmhome/admissions/la3hand.htm#Senior-Year Notes: Prospective students are urged to contact the College of Natural Sciences to learn more about pre-medical services. Advising for current students is provided through the College of Natural Sciences.
Northwestern	Website: www.cas.northwestern.edu/ug/premdres.html Notes: Pre-med advising provided through their College of Arts and Sciences. See the above website--a Premed Web Resource Page.
Ohio State	Website: www.osu.edu/prospective/visit/visit_dept.html Notes: Prospective and current students are advised for pre-med through Arts and Sciences advising.
Penn State	Website: www.psu/dept/scassocdean/premed.html Notes: A pre-medicine major is offered. Premed advising for prospective and current is provided through the College of Sciences.
Purdue	Website: www.purdue.edu/HSCI/page49.htm Notes: Prospective and current students are advised for pre-med through the School of Health Sciences.
Wisconsin	Website: www.medsch.wisc.edu/education/msp/msp.html Notes: Advising for both prospective and current is unclear, perhaps through "Cross-College."

Letter to President Yudof

October 9, 2000

To Whom It May Concern

We, the members of Alpha Epsilon Delta pre-medical honor society, urge the University of Minnesota-Twin Cities to demonstrate its support of students by establishing a pre-medical advising center.

Last year the College of Liberal Arts provided limited assistance to pre-medical students through its pre-health sciences advising office. Some of us were fortunate enough to have attended the First Step Meeting through CLA. However, all freshmen and many sophomores have no place to go to find out general information about medical school and the application process. Upperclassmen are in a more precarious situation as they prepare for the MCAT and apply to medical school.

There is no one for students to call when questions about medical school arise. CLA general advisers tell us that pre-medical issues and preparation are no longer their responsibility. Regular college advisers are not equipped with the resources or the information to meet the student demand. Medical schools depend on undergraduate advisers to provide pre-medical students with accurate information. It is shameful that the University of Minnesota-Twin Cities does not provide this population of pre-professional students with the same services as other major universities.

The University of Minnesota-Twin Cities owes its pre-medical students current and accessible advising. Pre-medical students commit themselves to a broad course of study and major in areas ranging from philosophy and English to microbiology and biochemistry. In order to be competitive applicants, we strive to maintain a GPA above 3.5. We also participate in a broad range of community organizations to reaffirm our commitment to a profession based on serving others.

We have chosen the University of Minnesota-Twin Cities for an undergraduate education and/or post-baccalaureate work. An acceptance or rejection by a medical school reflects not only on the individual but also the institution he or she represents. The road to medical school can be treacherous without resources, which explain deadlines, prerequisite coursework, and application procedures. The number of medical school applicants has dropped nationwide in recent years. Poor advising is a contributing factor. A pre-medical advising center would increase the number of medical school applicants.

As a voice of the student body, we want to express our frustration at the disparity in pre-medical advising services. We also recognize that the University of Minnesota-Twin Cities is in a position to make the path for pre-medical students much smoother by establishing a pre-medical advising center.

The members of Alpha Epsilon Delta pre-medical honor society.
(signed by 57 members)

Pre-health Sciences Advising Model Options

<u>Pre-health Sciences Advising Models</u>	<u>Evaluation</u>	<u>Comments</u>
1. PHS Advising within each college	Unacceptable - Not Recommended	<ul style="list-style-type: none">a. Quality of services would be compromised.b. Increased workload on individual advising units.c. Overly extensive staff training would be required.d. Would require duplication of services and resources.
2. Multiple PHS Advising units on campus	Unacceptable - Not Recommended	<ul style="list-style-type: none">a. Multiple units would prove confusing to referring personnel and potential users.b. Would require duplication of services and resources.
3. Pre-Health Sciences Advising Center*	Acceptable - Recommended	<ul style="list-style-type: none">a. Efficient, cost-effective, user-friendly.b. Could be established in timely manner.
4. PHS Advising Unit within campus wide Graduate and Professional Advising Center	Acceptable - Not Recommended	<ul style="list-style-type: none">a. Efficient, cost-effective, user-friendly.b. Would provide increased awareness of health professions opportunities to broader range of students.c. Implementation time would be extended to too long a period.

* See expanded proposal on recommended model

"Origin" of Students in Academic Health Sciences Colleges, Fall 2000

Base cohort is from the Fall 2000 official enrollment file. Latest Ugrad Program is the latest UM undergraduate college of enrollment where the student was degree seeking. These students did not necessarily graduate from their latest undergraduate college.

	Vet Med	Dentistry	Med Sch - TC	Nursing	Pharmacy	Public Health	Med Sch UMD
Twin Cities							
CBS	15	23	104	2	35		7
CCE	3		3	5			11
CHE		2	1		4		3
CLA	20	46	124	77	90		24
COAFES	37	1	3		3		
CNR	1				1		
CSOM		2	2		1		
EHD		1	1		1		4
GC			1				1
MedT	1				4		
IT		7	31	1	10		1
Nursing		1					5
OT			1				
PT							1
TC Total	77	83	271	85	149		57
Duluth							
CEHSP			1				1
CLA			2		2		
CLS					1		2
CSE	7	18	32	1	19		1
Morris	13	10	23		19		4
Waseca							
UM	97	111	329	86	191		65
Non UM	205	258	997	114	293		183
TOTAL	302	369	1326	200	484		248
% UM	32.12%	30.08%	24.81%	43.00%	39.46%	26.21%	24.63%
% TC Students	25.50%	22.49%	20.44%	42.50%	30.79%	22.98%	6.72%

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- ³ Office of Admissions, UM of Minnesota-Twin Cities, 2001
- ⁴ Archived Materials, 30 Johnston Hall, available in the Office of Education, Academic Health Center
- ⁵ Personal communication with Brice Corder, Executive Director, National Association of Advisors for Health Professions, May 21, 2001.
- ⁶ National Association of Advisors for the Health Professions, "Premedical Advising," in Medical School Admissions Requirements, 2002-2003. (2001) pp. 23-25.
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- ¹¹ Elam, C.L., Taylor, E.D., and Strother, E.N. "Preparing for Medical School and the Medical Profession: Advice to Advisors," NACADA Journal, Volume 16 (2), Fall 1996.
- ¹² Medical School Admissions Office, May 18, 2001
- ¹³ Reports available in the AHC Office of Education
- ¹⁴ Merritt and Hawkins web site, <http://www.merrithawkins.com>, "Year 2000 Survey of Physicians 50 Years Old and Older"