STRATEGIC PLAN
FOR
THE UNIVERSITY OF NORTH CAROLINA
SCHOOL OF MEDICINE

March 1, 2012

UNC
SCHOOL OF MEDICINE

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Our aspiration is to be the nation's leading public school of medicine. With that goal in mind, and recognizing that we build on a foundation of excellence across all missions, we have engaged in an extensive year-long strategic planning process, involving faculty and staff across the School, culminating in the set of strategic priorities and initiatives that are detailed in this document.

We identified five key cross-cutting themes:

- Increasing *innovation* across missions
- Working in *teams* and *across disciplines*
- Providing exceptional *service to the state and to our broader communities*
- Establishing transparent *goals* and *metrics* and instilling *accountability*
- Increasing *functional integration* of the School of Medicine and the UNC Health Care System

Specific highlights of the plan include:

- *Research*: We will build on existing strengths in basic mechanistic, model system and clinical research to position UNC as a leader in translational and multidisciplinary team science at the forefront of applying discovery science to human health. Key to this effort will be providing the tools needed at all stages along the translational continuum (from basic to clinical to population research) by making targeted investments in research infrastructure while streamlining and strengthening current assets.

- *Education*: We will restructure the medical school curriculum to prepare students for 21st century medicine. A foundation of this effort will be to invest in the necessary infrastructure at UNC and across the state and to optimize student recruitment and admissions to provide needed physicians for North Carolina and beyond.

- *Clinical care*: We will design and implement a comprehensive program to improve quality of care across the UNC health care system, enabled by an integrated SOM-HCS informatics strategy. Recognizing the unique role that UNC can play as a fount of innovation in the emerging health care system, we will establish a Center for Health Care Innovation.

- *Faculty*: Faculty are our most precious asset. We will improve tracking of individual and institutional performance on key dimensions, ensuring that faculty expectations, evaluations and rewards are aligned. By providing targeted benefits, promoting career development opportunities and addressing the needs of specific subgroups, we will create conditions in which as many of our faculty as possible succeed — our overall goal.

Our proposals are aspirational, representing what we believe we need to put into place in order to become the nation's leading public medical school. We understand that we, and all others in American health care, are entering a time of transformative rather than usual change; we, and all academic health centers, face many fiscal and regulatory threats. We believe, however, that these conditions will also provide opportunities for leadership and innovative solutions as the new health system is created. It is through this leadership that we will become the nation's leading public school of medicine. We believe that this strategic plan — with its emphasis on meaningful innovation, teamwork, accountability and careful integration — is the right roadmap to guide us through the coming years.

Background

Context for This Plan

The UNC School of Medicine most recently published a strategic plan in October 2006, and it led to a number of positive changes and new initiatives at the School. Since that time, various external factors — including the economic crisis at the federal and state levels, the uncertainty of health care reform and ever-shrinking NIH budgets — have presented both challenges and opportunities to the SOM. The time was ripe for a new strategic plan.

A Strategic Planning Steering Committee, chaired by Dr. Marschall Runge and comprised of members from both the SOM and HCS and representing expertise spanning all three of the SOM's missions of research, clinical care and education, was charged by Dean Roper with oversight of the strategic planning process. This committee engaged the strategy consulting firm AltshulerGray to provide guidance and facilitate a two-phase effort to:

- Assess the current state of the SOM vis-à-vis its stated vision
- Define strategic priorities and initiatives to move the SOM toward its vision

During Phase 1, the committee reaffirmed the vision for the SOM established in the 2006 strategic plan (see below). To determine how the School was performing in light of this vision, a thorough analysis was conducted of the current state of the SOM through a series of over 70 interviews with key faculty leaders, a faculty-wide survey, internal analyses of funds flow and faculty productivity and benchmarking analyses of research productivity and education and curriculum design (see below for a summary of these findings and Appendix C for a complete synthesis of Phase 1 output). Based on the findings from Phase 1, the committee identified a set of strategic priorities in research, clinical care, education and faculty career development that the SOM should pursue. These strategic priorities were not meant to encompass all important activities at the School, but rather to focus on a set of critical areas that could be addressed feasibly in a single strategic planning effort. Critical topics such as graduate medical education, the North Carolina Area Health Education Centers program (AHEC) and Allied Health Sciences will warrant separate strategic planning efforts.

During Phase 2, the committee formed a series of faculty-led task forces and charged them to explore each of the identified strategic priority areas more fully and to develop detailed proposals, informed by additional analyses and peer benchmarking, of how best to address these strategic areas. At the end of Phase 2, the output from these task forces was synthesized into a draft strategic plan that was presented to and discussed with School of Medicine faculty. The final strategic plan presented in this document represents the collective efforts of all involved in its creation.

Health Care System Strategic Plan

By intention, the UNC Health Care System was engaged in a strategic planning process at the same time that the School of Medicine was preparing its strategic plan. Because the two entities are integrally related, the resulting plans are designed to be complementary. To achieve this goal, there was significant common membership by faculty members and others on the steering committees of both the HCS and SOM strategic plans. To optimize these planning efforts and avoid duplication, particularly in the area of clinical care, the SOM strategic plan was designed to address academic and faculty needs and opportunities in clinical care, while the HCS strategic plan was designed to focus more on the operational aspects of the delivery of care and on strategic decisions for clinical programs. For instance, research relevant to cost-effective, high quality delivery of health care is addressed within the SOM strategic plan, while strategies to implement this research and to leverage work from outside UNC, as well as the mechanisms by which decisions will be made on which programs to expand and in what geographic locations, are part of the HCS strategic plan. There are, however, numerous intentional areas of overlap. As one example, quality improvement across the HCS is addressed in both the SOM and HCS plans with a single, system-wide initiative envisioned to address quality across both institutions.

Thus, consistent with the missions of the School of Medicine and the Health Care System to advance the health of the people of North Carolina, both plans share an emphasis on quality, innovation and efficiency in the delivery of medical care. Key elements of the Health Care System strategic plan that are not addressed in the SOM strategic plan include clinical network development, identification of core business opportunities as a means to strengthen our network and reduce costs (including integration of certain business functions across the HCS) and information services related to health care delivery.

Next Steps

While some of the initiatives laid out in this plan are ready for immediate implementation, others will require additional planning, design and/or buy-in, and estimates of required resources will need to be refined. As such, some of the initiatives may evolve from their original conception as presented in this document. This plan will be a living document that is modified as internal and/or external factors necessitate.

A strategic plan does not in itself produce the desired change; people do. To facilitate progress and successful implementation, each of the strategic priorities has been assigned to stewards (see Appendix A), and each underlying strategic initiative (see Appendix B) will in turn be assigned to individuals who will be responsible for its execution. Progress will be made transparent so that derailments can be quickly identified and stumbling blocks removed.

The implementation phase will feature:

- A governance structure that includes both senior leadership ownership of the process as well as day-to-day project management
- Clear accountability for each initiative with individual stewards assigned, responsibilities understood and milestones identified and managed
- Ongoing management of the process that allows continuous review of progress, including a formalized schedule of meetings with clearly defined deadlines
- Transparency of progress, within the School of Medicine leadership team and across the SOM.

UNC SOM Today: Vision and Current State

Vision

The Strategic Planning Steering Committee reaffirmed the vision established in the 2006 strategic plan, namely:

To be the nation's leading public school of medicine.

This vision was further clarified to emphasize that *leading,* in this context, is an expression of our aspiration to be in the vanguard, serving as a model for other public medical schools in research, clinical care and education. This vision, and our position as a public school of medicine, imply a dual charge: to best serve the citizens of the state of North Carolina directly through excellence in care, education and research, while at the same time providing national and international leadership and serving as an exemplar for what a leading public school of medicine can be. A critical component of this vision is the responsibility to address access, effectiveness and disparities of care as part of our education and research missions. Though other connotations of *leading* may follow (e.g., higher NIH or *US News* rankings), these definitions are not at the core of this mission.

Simply put, the ultimate measure of our leadership is the degree to which others follow us.

Current State

The state of the UNC School of Medicine is strong across all three missions: our faculty continue to conduct critically important research, provide outstanding clinical care and service to the citizens of North Carolina and educate physicians and others to serve the state, lead the nation and contribute to health and wellness nationally and internationally. However, given the aspiration to be the nation's leading public school of medicine, opportunities were identified across all three missions to push us still closer to achieving this vision.

Research

Our research enterprise is strong overall. In a number of specific areas, we are viewed as having programs at the forefront of preeminence nationally and internationally. These programs span disciplines (basic science, social science and humanities, translational and clinical research and health outcomes/comparative effectiveness/health policy) and disease areas. A non-comprehensive list of disease-specific areas of excellence includes (in alphabetical order) cancer, gastrointestinal diseases, genetics, immunologic diseases and transplantation, infectious diseases and HIV, and kidney diseases. The University Cancer Research Fund has proven a tremendous asset, boosting cancer research in particular and providing essential infrastructure that has benefited our researchers in many different fields of research.

Our highly collaborative culture has not only established us as an attractive and propitious place to conduct research but also positions us well for the growth foreseen nationally in team science. Centers such as the Carolina Center for Genome Sciences, the Cecil B. Sheps Center for Health Services Research, the Institute for Global Health and Infectious Diseases and the UNC Lineberger Comprehensive Cancer Center are seen as highly successful organizational models, providing key infrastructure while fostering community and collaboration across a number of interdisciplinary research programs. The work of our faculty has been recognized by such national organizations as the Howard Hughes Medical Institute, the National Academy of Sciences and the Institute of Medicine. Work in the prevention of HIV led by UNC faculty was *Science* magazine's scientific breakthrough of the year in 2011, a first-time honor for the University.

We also continue to attract the highest caliber of pre- and post-doctoral research trainees and to be a national leader in establishing mechanisms to develop and deliver training opportunities. The Office of Graduate Education in the SOM receives financial support from the Dean's office to administer the Biological and Biomedical Sciences Program (BBSP), which has increased our ability to attract high-quality applicants and has enhanced development opportunities for our predoctoral trainees.

At the same time, we have a number of challenges with regard to our research mission. While there is much outstanding research underway at UNC, many felt that further growth in research will require a focused, overarching institutional research vision. Interestingly, although our overall level of extramural research funding is high, with UNC ranking 15th in total NIH funding for FY2011, on a closer look we found wide variations in research productivity across the faculty, with a small proportion of faculty generating the vast majority of research dollars. This is both a strength (reflecting tremendous achievement by some of our best investigators) and a weakness (reflecting a lack of depth across the spectrum of investigators at UNC). There are opportunities to improve our research profile in multiple ways. Our basic science departments may not be taking full advantage of opportunities in translational research. Research in our clinical departments varies considerably, and although some of our clinical departments rank very high compared with peers at other institutions, our research is lacking in some departments that characteristically are strong research engines at other top-tier institutions. Clinical trials and clinical research are areas in which we could grow substantially, enhancing the breadth and depth of research

and further improving our ability to serve our patient population. Success in these endeavors will necessitate closer integration between SOM investigators and HCS clinical priorities.

With regard to graduate education, the BBSP program faces an uncertain funding environment that threatens its long-term success. And there are opportunities to better prepare our PhD and postdoctoral trainees for changes in the extramural funding environment, for example, by investing in and bolstering training in translational research.

A challenge facing not just UNC but all medical schools is the projected continued contraction of extramural funding sources. Implementation of a comprehensive plan to increase the research presence of UNC must recognize the likelihood that the major research funding sources for UNC (federal, state and industry) will likely be very significantly constrained over the next five years.

Education

We continue to attract the highest caliber of medical students. Only 4 to 5% of applicants are accepted. Of these, on average, over 70% choose to attend UNC. UNC's program is nationally recognized, as evidenced by the medical school's number 2 rank in *US News and World Report* for primary care. The MD/PhD and MD/MPH programs are highly successful and a strong draw for medical students. Fully one-quarter of medical students enroll in the MPH program, the MD/PhD program continues to grow and additional training programs in the medical humanities and business are in the planning stages. Our medical students are highly competitive for residency placements, and ultimately, 40% of our graduates choose to practice in North Carolina.

Comprehensive assessment of our educational programs identified some current challenges and many opportunities. Addressing these challenges and achieving recognition as a leader in medical student education will require a significant commitment of time and effort. Despite our historical reputation for innovation and leadership in medical education (including our early championing of the AHEC system), it is clear that we are no longer considered to be on the cutting edge of innovation in medical student education. In addition, based on the recent report by the North Carolina Institute of Medicine identifying shortages in critical areas of medicine and in particular regions in North Carolina, there is an opportunity for us to more effectively meet these needs through targeted changes in medical student education.

Formation of an Academy of Educators was an important component of the 2006 SOM Strategic Plan. To date, the Academy of Educators has successfully provided recognition for dedicated faculty educators, and these faculty members have been significantly involved in leadership roles within the medical student education program. The Academy of Educators will be critically important to achievement of the curriculum revision outlined in this strategic plan.

Clinical care

The SOM and UNC HCS embrace the institution's responsibility to the state to deliver consistently high quality health care. This necessitates providing comprehensive, state-of-the-art tertiary and quaternary care for the critically ill, providing access to high quality health care across the spectrum to all North Carolinians, including those with limited financial resources, and establishing leadership positions for the state in regard to the quality and cost of health care. SOM faculty and the UNC HCS are committed to fulfilling our mission as the safety net hospital for North Carolina. As a part of this mission, in addition to the care we provide to the underserved, we also provide care to patients in special circumstances, such as those requiring treatment at STD/HIV clinics, inmates of the State prison system and individuals with tertiary or quaternary care needs who receive their primary care in county, state and federally subsidized clinics. The institution takes great pride in the level of care provided by the UNC Health Care System to the citizens of all 100 counties of North Carolina — including $300 million in uncompensated care. We are equally proud of our unique and substantial contributions to providing compassionate and high-quality care for patients seen in local health departments; patients with mental health needs; and members of the uniformed services, military retirees and their families. The efforts in recent years to build a comprehensive health care system, with the acquisition of Rex Healthcare and the expansion of the Triangle Physician Network, have extended the reach and impact of the SOM faculty while providing a key source of financial stability to the SOM. With the integration of the SOM and HCS under a single CEO/Dean in 1998, the relationship between the two institutions has continued to strengthen.

There is a widespread belief among SOM faculty that we can and should do more to prepare for the future of health care — in particular, to be able to deliver population-based, metric-driven, quality-focused care to the citizens of North Carolina and to lead the way in defining 21st century medicine at national and international levels, building upon the successes accomplished here in clinical care. Many faculty members feel that the clinical mission must focus on innovation in health care. Balancing the competing demands of clinical care with other traditional academic missions (research and teaching) will require careful planning for the future. Positioning us to be a national leader in clinical care will require investment in clinical infrastructure — in particular in the information technology required to measure, track and deliver state-of-the-art quality care.

UNC SOM Going Forward: Strategic Priorities and Initiatives

While the work of the faculty task forces was organized by mission (research, education, clinical care) and by faculty development issues, the strategic planning process highlighted a set of broad imperatives that cut across the missions and that underlie nearly all of the strategic priorities and initiatives. These were:

- Increasing the level of *innovation* across UNC SOM
- Working in *teams* and across disciplines
- Providing exceptional *service to the state of North Carolina and to the broader national and international communities UNC serves*
- Establishing transparent *goals* and *metrics* and instilling *accountability*
- Leveraging SOM investments by enabling greater *functional integration* of SOM resources with those of the UNC Health Care System and of UNC

These cross-cutting themes are included in each of the strategic priorities and initiatives outlined below, which are organized in this report by research, education, clinical care, and faculty development. (A full list of strategic priorities and initiatives can be found in Appendix B.)

Research

The research enterprise of the SOM is strong and flourishing, as evidenced by its rank in 2011 as 15th among U.S. medical schools in total NIH funding and 7th among public schools of medicine. This success is a product of a vibrant and highly collaborative community of investigators, working in a supportive environment that features thriving interdisciplinary centers and an expansive breadth of core facilities and platforms that enable innovative, cutting-edge research. To build upon these successes, we and all medical schools must face the challenge of fostering translational research by bridging basic science with clinical care. Meeting this formidable challenge will require continued investment in curiosity-driven basic research to drive the novel discoveries that form the foundation for advancements in clinical care as well as the establishment of an efficient communication framework between basic and clinical scientists necessary to achieve effective translational research.

We must achieve this goal within a rapidly changing extramural funding landscape. Constrained federal and state budgets are expected to make competition for research dollars ever more challenging. Additionally, agencies such as the NIH are increasingly directing these limited dollars away from more traditional, single-investigator awards (e.g., R01s), to larger, team-based projects spanning multiple basic and clinical disciplines (e.g., U01 mechanisms and Clinical and Translational Science Awards, or CTSAs).

Institutionally, we are particularly well suited to adapt to the changing priorities of federal, state and industry funding given the existing culture of cross-cutting collaboration and advanced technology. That said, for us to distinguish ourselves as one of the most successful

research institutions in the coming era, we must develop a forward-looking research vision that capitalizes on our particular strengths to succeed in this rapidly evolving research landscape. This means maintaining and improving our research infrastructure, embracing the shift towards team-based basic and translational research and simultaneously continuing to invest in the basic mechanistic research programs upon which these translational efforts depend. This recognizes the need for our faculty to conduct research locally, regionally, nationally and internationally in order to address critical health-related research questions.

To accomplish these goals, we will more actively engage the full breadth of our talented faculty, leverage our innately collaborative culture and invest strategically in the platforms our investigators will need to conduct transformative research in this new era.

There are three strategic priorities within the research mission:
- SP1. Set translational and multidisciplinary team science as a vision for UNC research, and provide the tools needed to foster successful teams
- SP2. Stimulate team-based, translational research with targeted investments in key translational research areas
- SP3. Streamline the organization and management of the research infrastructure to ensure it is best positioned to meet the future needs of SOM investigators

SP1. Set translational and multidisciplinary team science as a vision for UNC research, and provide the tools needed to foster successful teams

Initiative 1: Establish team and translational science as an institutional priority, and set goals for increasing team and translational science at UNC

The shift in extramural research funding from single-investigator awards to larger team-science awards is expected to continue, and UNC's deeply embedded culture of collaboration positions us to take advantage of this shift. By more effectively bringing together investigators from across the continuum of translational research (from basic scientists to clinicians to population/community researchers), we will be well positioned to lead in achieving the goals of translational medicine: the effective and efficient translation of basic discovery science to clinical application to dissemination that can, ultimately, change both medical practice and policy.

By continuing to invest in the successful basic mechanistic research programs that are the foundation for translational research and building on our history as a leader in team and translational science, we will be able to increase faculty competitiveness for extramural funds, raise our already high profile among academic health centers and engage a larger proportion of basic and clinical faculty in our research mission. A common theme in the interviews and faculty survey was the need for a clear research vision to guide investment and efforts. Highlighting team and translational science as an institutional priority and setting clear goals will be an important early step in stimulating efforts in team science.

Key elements
- Make an explicit institutional commitment to team and translational science at the senior leadership level that encompasses the full spectrum of basic and clinical research
- Facilitate the role of Centers as a key interface between basic science and clinical faculty
- Structure graduate education programs as a focal point for organizing interdisciplinary research teams
- Identify best practices from those research teams at UNC that have demonstrated the greatest success in translational science
- Set institutional goals for team and translational science, including the formation of investigative teams (which include individuals with expertise that spans a broad range of research knowledge and technologies) and acquisition of extramural funding, and monitor progress towards these goals
- Emphasize potential for and track record of team building in recruitment and retention of investigators
- Incorporate these goals and metrics into annual Chair reviews.

Initiative 2: Facilitate the establishment of teams by providing top-down guidance as well as tools to facilitate bottom-up investigator-driven team formation

In order to catalyze the development of team-based science that best leverages our talented faculty and multi-dimensional basic science and clinical expertise, we must be vigilant in identifying emerging research trends and specific areas where teams of UNC faculty could be at the forefront of cutting-edge research. Additionally, in order to assist and encourage investigators from different disciplines to form innovative scientific teams, faculty need to be well informed about the many diverse resources available at UNC for generating team science. To facilitate this ongoing dialogue on opportunities for innovative team formation, we will adopt both top-down and bottom-up approaches to identify opportunities for team building and provide the tools necessary to make our wealth of team science resources (both talent and tools) more visible to our research community.

Key elements
- Institute a regular top-down review of potential interdisciplinary team opportunities overseen by the Office of Research led by the Vice Dean for Research
- Hire personnel focused on responding quickly to RFAs for large multidisciplinary grants built around faculty research interests and strengths
  - E.g., EPA non-faculty PhDs as critical members of the research team who understand the science and can help with proposal preparation and program management once the proposal is funded. This would greatly expand the capabilities offered by NC TraCS, which is limited in scope and availability
- Build and expand a series of databases that provide ready access to potential collaborators and resources
  - E.g., expand the Reach NC website (reachnc.org/) and provide resources to ensure continual updates and accuracy

- Require all faculty (both researchers and clinicians) to keep SOM-linked web profiles up to date and accurate
- Charge the Office of Research to identify needs and develop additional tools and databases to enable team research
  - E.g., enable access for clinical experts to defined patient populations; create a database of available UNC biostatisticians; catalog other tools for research such as mice portfolios (via IACUC), antibodies, drugs, reagents.

SP2. Stimulate team-based, translational research with targeted investments in key translational research areas

Initiative 1: Leverage the success of the North Carolina Translational and Clinical Sciences Institute (NC TraCS) and the SOM's multidisciplinary research centers as primary homes for translational research at UNC

Since its creation in 2008, the North Carolina Translational and Clinical Sciences Institute (NC TraCS) has served as a nexus for team-based translational research at UNC. Funded through an NIH Clinical and Translational Science Award (CTSA), along with significant contributions from the SOM, HCS, and University, NC TraCS has provided a forum for the creation and execution of innovative translational research projects that have helped take novel scientific discoveries from the bench to the bedside to the broader communities the SOM serves. The faculty survey conducted as part of the strategic planning effort found that nearly 75% of clinical faculty and over 50% of basic science faculty have engaged with NC TraCS, receiving support from the NC TraCS pilot funding program, utilizing its extensive research resources (e.g., biostatistics, informatics) and taking advantage of its many educational and training programs. Through February 2011, NC TraCS has helped 106 UNC investigators obtain 182 NIH grants totaling $215 million and yielding 163 publications.

NC TraCS has served as a valuable complement to our multidisciplinary research Centers, which have proved to be a highly effective organizational model for research at the SOM, providing key infrastructure while fostering community and collaboration across a number of interdisciplinary research programs. The Office of Research has worked to facilitate the use of Centers as a key interface between basic science and clinical faculty, and going forward, the Centers and NC TraCS, with organizational support from the Office of Research, will continue to play critical roles in fostering team-based translational research. NC TraCS should continue to expand its reach throughout the institution and beyond, helping to coordinate the Centers and providing resources for translational research, especially to faculty members with no Center affiliation.

To work toward the vision of building an even stronger team-based translational research program at UNC, involving both basic and clinical faculty from multiple departments and disciplines, NC TraCS must a) provide the oversight and resources needed to identify and help form teams ready to respond to new RFAs quickly and successfully, b) support these teams and engender their success and c) determine when and how to wind down team science efforts that no longer fit within our broader research portfolio.

Key elements
- Strengthen ties among NC TraCS, Centers and the Office of Research to coordinate and promote efforts in interdisciplinary translational research involving trainees and faculty from across the research spectrum
- Reaffirm the mission of NC TraCS to serve as a nexus for team-based translational research at UNC
- Ensure broad awareness of NC TraCS resources, and actively engage faculty to participate in team-based translational research
- Provide pilot funds for multi-investigator basic/clinical/translational research by expanding the funding and scope of the existing TraCS study section
  - Establish two-year small-team discovery/translational grants to develop multi-disciplinary teams and data around a novel scientific idea
  - Establish two-year large-team projects focused on a disease, other cross-cutting area of investigation or new technology
  - Define annual metrics (e.g., submission of multi-PI grant, P01, U01) and milestones to evaluate team progress and ensure successful project completion
- Expand membership of the NC TraCS study section to include a greater number of basic science faculty with an expanded scope of expertise
- Define circumstances for which a department (or other entity) could request exemption from matching fund requirements for institutional pilot grant (and other) funds (led by NC TraCS under the leadership of the Executive Dean and Vice Dean for Research).

Initiative 2: Use the Center for Health Care Innovation as a platform for translational research

The Center for Health Care Innovation (see Clinical SP2, Initiative 1) will have as its mission to initiate, evaluate and support adoption of disruptive innovations in the delivery and financing of health care that are patient-centered, improve health outcomes and lower costs. The initiatives that this Center intends to establish, starting with Carolina Advanced Health, can provide fertile ground for translational research, overcoming the barriers that currently thwart various kinds of human studies at UNC. This Center will offer unique opportunities to test carefully considered and thoroughly vetted translational research projects that fit with its overall mission. The Center for Health Care Innovation is ideally positioned to become a testing ground for projects that, if successful, will inform the development of cutting-edge, best-practice approaches for the care of individuals who require high intensity medical care. While the Center for Health Care Innovation and the Carolina Advanced Health Initiative will not be the locus for all translational research at the SOM, they will form a conduit for development of carefully selected approaches capable of utilizing the unique resources being developed in this multi-partner collaboration.

Key elements
- Incorporate mechanisms for conducting translational research into plans for the Center for Health Care Innovation (See Clinical SP2, Initiative 1).

Initiative 3: Expand efforts and invest additional resources in key areas identified for basic and translational research

The strategic planning process has identified a number of areas where proactive investment is warranted in order to position us as a leader in translational research. Bioinformatics and biostatistics are two essential capabilities for translational research that we have identified as clear needs. Furthermore, translational pathology and tissue procurement capabilities at UNC must be expanded beyond their traditional focus on cancer to enable greater translational research opportunities. We must also make continued strategic investment in animal models research to increase return on investment and reinforce our status as an international leader in this area. Additionally, imaging is a critical translational research capability that would benefit by a comprehensive, integrated cross-SOM strategy, leveraging investments to date.

Finally, the related fields of comparative effectiveness research, quality of care research and community-based research offer a particular opportunity for UNC and its affiliated hospitals, physicians and surrounding communities. The proliferation of medical treatments combined with the contraction of medical dollars has resulted in a critical need to find the best strategies to approach disease. Comparative effectiveness research, quality of care research and community-based research (involving participation of patients from community-based practices as well as non-clinical community-based organizations and the public more broadly around health issues relevant to those communities) have significantly contributed to improved care and best-practice application of treatments to our own patients as well as the appropriate translation of these treatments to the community more broadly. This is a burgeoning area for research, and our investments to date (e.g., the Sheps Center) have already begun to highlight our ability to successfully engage in these translational areas. Additionally, the comprehensive UNC Health Care System-wide quality program, described later in this document, should provide ample opportunities for this type of research. Such investments to expand our efforts in this area are expected to yield positive returns and serve as an exemplar for team science and translational research.

Key elements
- Improve integration of bioinformatics and biostatistics at the SOM, and invest in necessary additional staff to address needs
  - Establish SOM analytical fellow program to provide year-long research experiences for statistical and computational graduate students in the College of Arts and Sciences to leverage this pool of statistical expertise and talent
  - Strengthen relationships with RENCI (Renaissance Computing Institute) by identifying facilitators to connect UNC and RENCI investigators and resources
  - Embed technical and biostatistics staff in departments, centers and clinical research units to provide added support for biostatistics and bioinformatics faculty

- Expand translational pathology and tissue procurement to enable more translational research, expanding efforts beyond cancer
  - Create a translational pathology IT team to design a web-based system to track surgical pathology specimens and derivatives in the surgical pathology archives, the Translational Pathology Lab (TPL) and the Tissue Procurement Facility
  - Hire a research pathology archives librarian to manage all tissue-related research requests
  - Hire an additional research specialist for the TPL
  - Explore opportunities to expand TPL beyond its current limited space
  - Address regulatory, informatics and organizational challenges for translational pathology and tissue procurement
- Strategically invest in continued growth of animal models research platforms
  - Develop a secure, searchable online database of available mutant mouse lines
  - Add cryopreservation and re-derivation technologies to current core capabilities
  - Increase commercial partnerships by providing mutant animal resources and phenotyping capabilities to the private sector
  - Participate in the ongoing DLAM financial assessment to protect low per diems
  - Strategically prepare for increased use of rat transgenic capabilities
- Develop a strategy for setting priorities for investment to enhance our imaging capabilities
- Invest in comparative effectiveness research, quality of care research and community-based research
  - Coordinate efforts with other UNC health science schools and research centers to leverage infrastructural investments and faculty expertise (e.g., strengthen relationship with the Collaborative Studies Coordinating Center)
  - Restore infrastructure funding to the Sheps Center to provide support for grant preparation and management as well as data management and analysis
  - Establish rapid turnaround pilot funds for collaborative efforts in quality improvement and community-based research
  - Recruit faculty focused on quality improvement and implementation research
  - Increase the pool of available statistical support
  - Target funds for the purchase, maintenance and cross-UNC integration of securely managed clinical and administrative data (e.g., Marketscan, CMS, PREMIER) to enhance research infrastructure.

SP3. Streamline the organization and management of the research infrastructure to ensure it is best positioned to meet the future needs of SOM investigators

Initiative 1: Develop an SOM-wide strategy for the organization and management of cores and platforms including the centralization of core/platform oversight and core consolidation, where appropriate

We currently have about a hundred core facilities administered by individual departments and centers. Annually, it is estimated that more than $20M flows through these cores. While this infrastructure has enabled our faculty to engage in cutting-edge and innovative research, the proliferation of cores and lack of central oversight have led to resource duplication, unnecessary administrative burden and an environment in which cores are often only evaluated in a reactive manner (e.g., efforts to save a core which has run continued annual deficits) rather than proactively. In order to streamline core facilities and platforms and shift institutional attention from putting out fires to evaluating core investments strategically, a process of centralization and consolidation of research core facilities will be initiated.

Key elements
- Centralize recharge accounting and evaluation and oversight of cores in the Office of Research, headed by the Vice Dean for Research
    – Keep financial responsibility and day-to-day management of cores with home departments and centers
    – Transfer current staff from the NC TraCS Office of Translational Technology to the Office of Research to support oversight role
- Consolidate core facilities (both physically, where appropriate, and to eliminate duplicative services). Opportunities for functional integration of resources within the SOM and at UNC-CH will be highly sought
    – Charge the Office of Research with oversight of this process
    – Establish metrics to determine the desirability and feasibility of consolidation (e.g., financial and user evaluation data, technology life cycle, space availability, possible reduction of duplicative services).

Initiative 2: Institute a systematic, metric-driven evaluation of existing research platforms to ensure investments efficiently and effectively provide faculty with vital, high-quality research resources

Since the establishment of the Core Facilities Advocacy Committee (CFAC) in 2007, much progress has been made in the monitoring and evaluation of core facilities. Through the efforts of the Office of Translational Technology (OTT), cores are currently asked to submit annual planning, financial and user survey reports. This has been a successful approach that has resulted in significant improvement in the function of certain cores. However, this approach has not been implemented uniformly across the SOM, at least in part because a number of cores have not provided the needed information to enable optimal oversight by the CFAC and OTT. To optimize core performance, identify underperforming cores and intervene promptly (without unnecessarily last-minute efforts, which can be costly), this approach needs to be systemized. For this reason, we will adopt a universal core review policy to regularly and systematically assess the performance of all cores and platforms in the

SOM. Adherence to this policy will be required for renewal of core funding support from the Dean's office, departments and Centers, or from any other institutional entity.

Key elements
- Establish criteria and processes to measure success of cores and platforms regularly
    - Centralize collection of financial and user feedback data in the Office of Research
    - Require all cores to submit annual reports in order to be eligible for SOM-sponsored funding resources
    - Charge the Core Facilities Advocacy Committee to review core data and make recommendations to the Vice Dean for Research on appropriate action
- Create a process to address underperforming cores (including sunsetting, if necessary)
    - Charge CFAC with the identification and monitoring of underperforming cores and with making recommendations to the Vice Dean for Research on appropriate courses of action (e.g., additional investment, sunsetting)
    - Require underperforming cores to submit financial reports and other requested data on a more frequent basis than is currently required
- Provide fractional salary support to CFAC members to reflect their expanded, formalized roles
- Add sixth CFAC member with bioinformatics/computational expertise.

Initiative 3: Institutionalize the process for evaluating new technologies, research areas and resource needs

In order to promote the continued strategic development of our core facilities and research platforms and to ensure we develop those resources that are most crucial to our continued success, we must move away from the squeaky-wheel approach of evaluating infrastructure requests and instead adopt a systematic process for evaluating potential investments to best meet both the needs of our faculty and our broader institutional research goals.

Key elements
- Establish a systematic process for evaluating investment requests
    - Create four categories of potential investment (large investments >$500K, small investments <$500K, ongoing maintenance and transition funding <$50K and funding for mergers or sunsetting <$10K)
    - Design RFA-like processes for each investment type, including requirements for formal proposals, business plans, outside expert consultations, etc.
    - Establish decision-making processes for each investment type to ensure the timely evaluation of proposals.

Initiative 4: Ensure financial stability for the first year of the Biological and Biomedical Sciences Program

The Biological and Biomedical Sciences Program (BBSP) has proven to be a great success, attracting a broader pool of high-quality applicants to UNC and providing a strong and broad foundation of learning for our graduate students in their first year. Recent state funding reductions have reinforced the need to ensure sustainable funding to support students in their first year, before they have affiliated with a particular department and lab. We will seek to raise an endowment via philanthropic support to solidify the financial foundation of this important component of our graduate education program.

Key elements
- Ensure financial stability for the first year of the BBSP by raising an endowment of philanthropic support
- Enhance our postdoctoral training environment in basic and translational sciences and increase the ability of our investigators to attract the best and brightest trainees.

Education

Education is a critically important mission of the SOM. As the practice of medicine changes, we need to ensure continually that we are developing engaged students who are well prepared to serve as health care leaders of the future.

Technology is changing medicine and, importantly, changing the availability of information. We need to provide our students a solid basic and population science understanding as well as an appreciation for the connection between science and clinical application, and then prepare them to be life-long learners who will be able to access and apply the information they need. Today's physicians must be able to work in diverse populations and environments. We must provide our students experiences that develop the ability to work in diverse teams alongside nurses, pharmacists and other allied health professionals, taking care of populations of patients and improving the quality and cost-effectiveness of care. Furthermore, our curriculum needs to take better advantage of our outstanding students by helping them develop their interests and promoting active learning and other advances in teaching methodology that have been demonstrated to be effective in other settings.

We have a long tradition of training leaders in health care and health professions education in North Carolina and at the national level. We strive to continue to leverage our unique dual mission of serving the state and providing leaders for the national and world stage.

The timing of this strategic planning effort in education is fortuitous for a number of reasons. Today's students and trainees are technologically sophisticated and will be able to leverage the rapid emergence of new learning technologies in order to master the knowledge base needed as well as to develop the habits of successful life-long learners. Moreover, the interface of science and patient care is becoming more continuous than ever before, and the delivery of health care will likely change substantially in coming years. We will leverage new and emerging technological advances with the goal of improving our educational programs.

Highly sophisticated search engines allow educators and students to access information from many different sources and in many different formats in a time-efficient manner, thereby enabling the formal curriculum to focus on essential topics. We believe this type of technology can also be useful to our students as they prepare materials to study for examinations, including licensing examinations (e.g., the USMLE).

We can also focus on developing educational tools that will allow educators and learners to rapidly adapt to new discoveries (in all relevant areas of medical research) as well as to changes in health care delivery that result from health policy initiatives. In doing so, we will not only best serve our students and trainees. We will develop the kinds of educational tools and approaches that will be emulated at other institutions across the US and worldwide and that will re-establish the preeminence of medical education at UNC.

There are three strategic priorities within the education mission:
- SP1. Restructure the curriculum to prepare students to be leaders of 21st century medicine
- SP2. Optimize student recruitment and admissions practices and programs to provide physicians needed for the state of NC and national leaders, in order to meet our goal of being the nation's leading public medical school
- SP3. Develop and support infrastructure that will ensure our continued ability to train physicians, both within Chapel Hill and across the state.

SP1. Restructure the curriculum to prepare students to be leaders of 21st century medicine

Initiative 1: Enhance students' learning of the basic sciences and provide enhanced clinical learning opportunities for students across the curriculum

Students will need to effectively integrate basic and clinical sciences to optimally care for their patients in the 21st century. This integration will need to begin in medical school. Rather than learning in a sequential basic science and clinical curriculum, students need to learn within a curricular structure that integrates basic and clinical science throughout the four years. Students also need to be prepared for practice in a rapidly changing health care environment that includes working in teams of health care professionals in a wide range of clinical care delivery settings.

Key elements
- Reorganize and revamp the content of the basic science curriculum to emphasize integration across basic and clinical sciences
  - Restructure the basic science curriculum to allow earlier direct patient care experiences
  - Leverage new technologies to support efficient delivery of curricula
  - Further limit formal course work and total contact time

- Enhance Step 1 performance through optional board review class and Step 1-like NBME practice exams
- Add components that integrate basic science concepts into the clinical curriculum and develop skills in translational research
    - Develop new educational programming on translational medicine required of all third- and fourth-year students
- Provide opportunities for medical students to develop the ability to work in diverse teams to provide patient care by leveraging the diverse set of health professions on campus

Initiative 2: Promote and develop additional active learning opportunities

The lecture format is not engaging to today's learners. The new curriculum will be enriched through the addition of more team-based learning (TBL), problem-based learning (PBL), student-led sessions and innovative small group approaches with the goal of engaging students and facilitating the development of the skills they need to be life-long learners, including taking initiative and working in teams.

Key elements
- Implement the incorporation of TBL over a three-year timeline, with the ultimate goal of delivering a much larger portion of the content in MS1 and MS2 via TBL
- For the basic science curriculum, limit lectures and contact time
- Develop a cadre of core teaching faculty (teaching champions) who are well trained in skills that facilitate active learning.

Initiative 3: Introduce mechanisms that allow students to focus their educational experience and meet personalized learning goals

Our students enter with a diverse set of interests and varied career goals, but the current curriculum provides a one-size-fits-all experience. Acknowledging the value of the diversity of student interests, the new curriculum will encompass elements tailored to these interests and career goals.

Key elements
- Establish voluntary tracks that allow students to better prepare for their ultimate career aspirations
    - Develop tracks in medical education, global health, rural/community medicine and clinician-scientist. Other tracks could be developed based on the results of this broader strategic planning process or future broad interests and needs
    - Retain a curriculum core that is common to all students, but allow each track the opportunity for a personalized and relevant educational experience, especially with first-year summer experiences and third- and fourth-year electives
    - Assign faculty to mentor students within tracks

- Develop thesis opportunities
  - Add thesis or other scholarly project requirement for specific tracks. The details of what a thesis or scholarly project would entail, how it would be evaluated and the specific tracks and proportion of the class anticipated to complete such a project are yet to be determined. Allow "Graduation with Thesis" indication on transcript.

Initiative 4: Add longitudinal elements in the clinical curriculum that shift more training towards ambulatory care

The vast majority of medical care is delivered in the outpatient realm, while the majority of clerkship contact hours in the third year are spent on inpatient services in block rotations. We must provide additional opportunities for students to experience the highly interactive, one-on-one learning setting embodied in the outpatient clinic with continuity of patients and teaching across specialties. Additional opportunities for integrated longitudinal curricula will be developed within our statewide educational system. The development and implementation of longitudinal clinical experiences will be overseen by the Education Committee, chaired by the Vice Dean for Education.

Initiative 5: Establish a Medical Education Innovation Fund to seed innovative education programs

Ongoing innovation in the curriculum is critical to ensuring that our program continues to meet the needs of a rapidly evolving medical system. The Medical Education Innovation Fund will promote ongoing innovation by providing competitive seed funding to faculty to experiment with new approaches in medical education at UNC. Successful approaches would have the potential to be implemented more broadly and even disseminated beyond UNC. Philanthropic support will be sought to establish an endowment for this purpose.

SP2. Optimize student recruitment and admission practices and programs to provide physicians needed for North Carolina and the nation

Initiative 1: Establish specific, measurable and achievable goals for training physicians to serve the needs of North Carolina, the US and beyond

We have a mission of training practicing physicians, health care leaders, biomedical researchers and academicians to serve the needs of North Carolina, the US and beyond, and we have been very successful in meeting our mission. For continued success, we will need to establish specific goals for meeting the needs of the state, region, and nation.

Key elements
- Establish specific, measurable and achievable goals for intermediate and long term educational outcomes of the school that reflect our institutional strength in both primary care/population health research and subspecialty care/basic science research.

- – E.g., percent of graduates practicing in NC, percent of graduates who are underrepresented minorities, percent working in underserved communities, percent holding faculty appointments, percent with independently funded research
- Invest in robust data systems in order to be able to track the immediate and long term outcomes for the school
  - – Make these additional investments through the Sheps Center for Health Services Research
  - – Institute regular surveys of graduates in order to determine current career tracks and to measure trends in graduates' choices of careers in academic medicine, research and other fields.

Initiative 2: Establish and support recruitment and admission practices and programs that support institutional goals

The population of North Carolina is highly diverse and becomes more diverse each year, particularly with the rapid growth in the Latino population. To meet our established institutional expectations for diversity, we must leverage existing successful programs and develop new ones where additional opportunities exist.

Key elements
- Expand the Medical Education Development (MED) program
  - – Expand to 120 students per summer (from 80)
  - – Expand scope to include Hispanic/Latino students and disadvantaged rural students
- Develop a loan forgiveness program, working in collaboration with the Office of Rural Health, for students who choose to practice in rural or other shortage areas and choose specialties that are in short supply throughout North Carolina.

SP3: Develop and support infrastructure that will ensure our continued ability to train physicians, both within Chapel Hill and across the state

Initiative 1: Proceed with full development of clinical campuses

Regional campuses are a unique feature of the SOM that accrue substantial benefit to UNC students and faculty. Regional campuses create an environment for incorporating innovation into the curriculum, leverage the faculty and resident teaching capacity already in place at the regional campuses and create the potential for drawing a much larger pool of students from the areas of the state surrounding the regional campuses. The full development of these campuses should continue as funding allows.

Key elements
- Once full funding is available, increase the Charlotte campus to 50 students per class and the Asheville campus to 20 students per class

- Invest in both capital and operating costs in Chapel Hill, Charlotte and Asheville as needed to fully expand to 230 students per class and fully develop the regional campuses
- Put in place a process to identify and evaluate potential for other regional campuses.

Initiative 2: Develop plans for a new educational building on the Chapel Hill campus to support planned class expansion and planned curricular innovations

Our current medical school campus includes several buildings that provide a solid infrastructure for the current class size of 170 in AY 2011-12 and the planned class size of 180 in AY 2012-13. The UNC Board of Governors has approved an increase in class size to 230. Implementation of this increase in class size will not occur without additional resources from the State, to include funding for the construction of a new medical education building. Given the anticipated future increase in class size and the planned curricular innovations outlined in this document, it is prudent to proceed with the development of plans for a new building, recognizing that funding may not be available for a number of years.

Key elements
- Proceed with the development of plans for a new medical education building
- Design the configuration consistent with the needs of all the major educational approaches that will be utilized within the curriculum, including lecture, labs, PBL and TBL.

Initiative 3: Promote and support the creation of teaching practices of excellence

A substantial component of our educational program takes place in community practices across the state, and it is essential to ensure that they can continue to provide high quality educational experiences. We will therefore develop a network of teaching practices of excellence in family medicine, pediatrics and internal medicine. We will provide additional resources and faculty development to offer the best possible education in community settings.

Key elements
- Select practices that have outstanding clinician teacher role models, incorporate the use of electronic health records and quality improvement techniques in the practice, and in other ways foster innovation in clinical care and the care of the population
- During the 2012-2014 timeframe, develop teaching practices to fulfill all third-year clerkship teaching obligations in family medicine, pediatrics (outpatient component) and outpatient internal medicine.

Initiative 4: Leverage North Carolina AHEC to improve clinical care and research across the entire state

Over the last 30 years, NC AHEC has been recognized an outstanding example of the development of distributed education systems. NC AHEC is a critical component of our educational programs. In recent years, in addition to its educational mission, NC AHEC has also focused on improving the quality of care in practices and in hospitals across North Carolina. The NC AHEC system consists of 9 campuses and 380 faculty members. All medical schools and hospital systems in North Carolina interface with NC AHEC.

Given its breadth and focus on both education and quality of health care, NC AHEC is an ideal partner for UNC, improving the health of the state by providing an existing infrastructure to improve quality of care, conduct clinical trials and spread best clinical practices across its many stakeholders. An important goal of this strategic plan is to communicate better the opportunities currently available in education, research and service in the AHECs to faculty and students. We also urge NC AHEC to complete a parallel strategic planning effort with the goal of identifying new and substantial opportunities to improve care and research across the state.

Key elements
- Better inform students of the educational, research and service opportunities in the AHECs, including residency opportunities
- Promote opportunities for translational research to occur in collaboration with full-time AHEC faculty in the community sites. Create more opportunities for interaction with faculty at AHECs to foster research collaboration (e.g., an annual research symposium focusing on community-based research and opportunities for greater collaboration)
- Create opportunities for faculty and students to be more engaged with AHEC research on quality, using the extensive network of practices now served by AHEC's Regional Extension Center and its quality improvement initiatives
- Provide support for an AHEC strategic planning effort that will be synergistic with the UNC SOM strategic plan.

Clinical Care

The practice of medicine is rapidly changing. While the shape of health care reform continues to evolve, it is clear that providers will be held increasingly accountable for the quality and cost of care, with new models of payment that establish incentives for achieving these desired ends. In order to thrive in this environment, we must ensure that we provide the highest quality, most efficient care possible, while at the same time addressing disparities of care and preserving our historic commitment to supporting access to care for the people of the state. A comprehensive quality program is essential. In addition, greater integration of ancillary services, clinical functions and support areas will improve both quality and cost-effectiveness, thus helping our overall goal of improving the health of the people of North Carolina. As part of a parallel strategic planning effort to position itself for the future, the UNC Health Care System has identified functional integration as a key strategic initiative,

and the School of Medicine's own efforts to consider opportunities for functional integration should be complementary to and integrated with the process being conducted within the health care system.

Moreover, if we do not embrace innovation in the rapidly changing economic environment in which medicine is practiced, we risk both actual and perceived obsolescence, which will inevitably negatively impact both financial and academic success. For us to achieve our aspiration to be the nation's leading public medical school, we need to serve as a model for ensuring that the highest quality care is provided to all patients as well as to innovate on a broader scale in health care delivery and financing. To do this successfully will require a sophisticated informatics system that is able to integrate data from the School of Medicine, from across the UNC system and from payers and other sources.

In sum, we need to change or be left behind in this new era, and if we are to live up to our aspiration to be the nation's leading public medical school, we should lead the change.

There are three strategic priorities within the clinical mission:
> SP1. Establish a UNC HCS-wide quality program, building on existing efforts, to ensure the greatest possible patient safety and highest quality care for all
> SP2. Establish a mechanism for innovation and entrepreneurship in clinical care delivery and financing
> SP3. Institute a cross SOM-HCS informatics strategy.

SP1. Establish a UNC HCS-wide quality program, building on existing efforts, to ensure the greatest possible patient safety and highest quality care for all

Initiative 1: Design a comprehensive, system-wide quality initiative

While there are many quality initiatives at UNC, they are not well coordinated and integrated into the institutional culture, and they tend to focus on patient safety and compliance with regulations. An important component to improving institutional culture in the areas of patient safety and quality of care will be the alignment of incentives for all those involved in health care at UNC, focused specifically on these goals. A new system-wide quality program will ensure the provision of the very highest quality care throughout the UNC Health Care System and establish us as a leader in this field. Such a program should leverage and encompass current UNC quality initiatives and draw on external best practices and national standards.

Key elements
- Charge a working group to conduct an internal audit, using external benchmarking, and to design an appropriate plan for UNC and to identify resource requirements for implementation (e.g., staffing, IT)
  - As part of its efforts, the working group should define quality at UNC and clarify scope to encompass the entire UNC Health Care System, including community physicians, Triangle Physician Network, etc.

Initiative 2: Ensure successful implementation of the quality initiative via necessary organizational change and investment

A successful program will require a new organization, infrastructure and governance to be able to integrate quality management and accountability down to the service line/division level. It will be critically important for the working group to declare, and for the Dean/CEO to formalize, a clear HCS governance model for oversight of all performance improvement activities. We conclude that the governance must include a single quality leader who occupies a central and high-level position and has broad responsibilities within the UNC HCS, for the following reasons: 1) the quality of health care delivery spans all sites where health care is delivered, from outpatient to inpatient settings to other locales where our patients make decisions that impact their own health, 2) improving quality in health care requires a concerted effort from all those who interface with patients, including not only health care providers but also nurses, trainees, etc. and 3) our success in improving quality will influence a generation of trainees and can have a broad and lasting impact on the way they practice medicine throughout their careers.

Key elements
- Designate a single quality leader to direct the program, and appoint quality champions across the HCS who can identify measures relevant to their specialty, educate their peers and staff and represent their colleagues on a quality council
- Eliminate redundant or ineffective efforts and positions, and add new positions based on unmet needs
- Establish infrastructure necessary to support the quality program, including a dashboard of metrics that can be used to monitor progress
- Put in place a legal and compliant incentive system that ties some portion of clinical compensation to within-specialty, within-entity and/or organizational quality metrics in addition to clinical productivity metrics (RVUs).

SP2. Establish a mechanism for innovation and entrepreneurship in clinical care delivery and financing

Initiative 1: Establish a Center for Health Care Innovation

The framework of health care delivery is shifting rapidly across the US. The systems that will thrive will focus on cost efficiency, quality of care, innovative health care delivery and alignment of incentives with payors and other participants in the health care equation. Attributes not normally associated with academic institutions — nimble and agile adaptation, collaborative approaches, and public-private partnerships — will be required if we are to outperform other systems. In order to foster these approaches to our health care practice, we must emphasize and promote our commitment to innovation in the design and implementation of high quality and affordable care. Success will be best achieved through the creation of a Center for Health Care Innovation.

Key elements
- Establish a Center with the mission to initiate, evaluate and support adoption of disruptive innovations in the delivery and financing of health care that are patient centered, improve health outcomes and lower costs
- Key functions:
  - Provide a locus for rapid assessment, coordinated facilitation, partnership development and funding of patient-centered innovations to achieve improved outcomes, patient satisfaction and decreased costs
  - Support and showcase existing innovations and promulgate the experience and skills already obtained
  - Demonstrate the commitment of HCS and SOM to branding around innovative quality
  - Disseminate successful innovations throughout the HCS
- Structure:
  - Small, nimble HCS-level governance team to build culture of innovation and manage portfolio of initiatives
  - Think tank comprised of external advisory board and experienced staff to generate, vet and prioritize innovative ideas
  - Implementation team to manage experiments
  - Education and consultative staff to support and promote innovation throughout the HCS and SOM.

SP3. Institute a cross SOM-HCS informatics strategy to enable highest quality care and innovation

Initiative 1: Identify the organizational structures, policies and practices that will be needed to facilitate and enable functional integration of clinical informatics

It is critically important that the clinical informatics goals of the SOM and Health Care System be aligned to reduce inefficiencies, improve data security and foster collaboration across the missions of clinical quality, research and education.

More broadly, information technology and the provision of information services are critical to our success in meeting all of our missions. An integrated approach to clinical informatics will be most likely to succeed in the context of a comprehensive SOM IT strategic plan that is integrated with and complementary to the IT strategic plans of the University and the Health Care System.

Key elements
- SOM-HCS working committee to develop a detailed proposal for the functional integration of clinical informatics. This committee will include representation from the health care system and will work closely with the UNC Health Care information services oversight committee that is currently being established. The work of the committee will be a component of the overall SOM IT strategic plan
- In parallel, initiate development of a comprehensive SOM IT strategic plan.

Initiative 2: Make necessary investments to realize the vision of the Carolina Data Warehouse

The CDW was designed to serve as the primary means of harnessing our clinical information for quality improvement, research and potentially education and training. To date, however, the CDW has not made a major impact in these areas due to several barriers, including under-investment, particularly in terms of number of research analyst positions funded; difficulty in retaining research analysts; and difficulty in turning clinical, administrative and financial data into a form that is usable for quality improvement and research. Investments will be made to address these specific barriers.

Key elements
- Develop and provide flexible toolsets for department-level customization of data forms and registries
- Establish a central platform and framework to support flexible, modular analytical applications (i.e., an app store)
- Establish a secure workspace platform for on-demand access by projects utilizing CDW-H and external data for analysis
- Create a single streamlined request process — under CDW-H governance — to evaluate best-fit, reusable solutions
- Identify resource requirements for implementation (e.g., staffing, IT)
  - Expand the informatics research analyst team, and provide additional infrastructure (e.g., hardware, software)
  - Staff dedicated data integration specialists
  - Staff dedicated team of programmers to continually enhance access to and presentation of data
- Leverage clinical ambassadors (described below) to define and prioritize data from clinical and administrative information systems for integration into the CDW-H

Initiative 3: Support proposal for a program in medical informatics

Developing a robust presence in clinical informatics to meet our goal of supporting metric-driven care, education and multidisciplinary research will be facilitated by the concurrent development of a robust presence in medical informatics research. Such research will help catalyze operational development of informatics and will help prepare the SOM and HCS for future areas of growth in informatics. Having a successful training program in informatics will also increase the pool of potential analysts for the SOM and HCS.

Key elements
- Recruit and retain faculty with expertise in medical informatics research
- Establish GRA opportunities for medical informatics students to work with CDW research analysts.

Initiative 4: Enable better communication between faculty and IT staff

Clinical end-users often identify areas for potential improvement in our online, web-based electronic medical record system, Web Clinical Information System (WebCIS), but do not have effective means of communicating these ideas or of knowing when such limitations will be addressed (including situations when a potential fix is already in progress); moreover, most faculty have only limited knowledge of our informatics strategy and may not know optimal means of using the current system. A proactive approach to two-way communication will be a necessary component of our informatics strategy.

Key elements
- Hire clinical ambassadors who will devote a portion of their time to serving as liaisons between ISD and the user community within SOM
- Hire a dedicated masters-level communications coordinator to tie together the work of the clinical ambassadors and to support ISD-SOM communication
- Program a feedback tab in WebCIS that would allow point of service feedback; assign communications coordinator to review feedback and organize it for consideration by the ambassadors and ISD staff
- Offer a small grant program for clinical entities that wish to improve the quality of data flowing into WebCIS.

Faculty

Achieving (and maintaining) our institutional aspiration to be the nation's leading public medical school depends on our continuing ability to recruit and maintain the highest caliber faculty. Our tradition of excellence and our collaborative culture hold great appeal for prospective and current faculty, and our faculty routinely and consistently report that they are happy to be here. That said, there are important opportunities to make UNC an even more supportive and stimulating workplace. Areas of crucial importance include expanding the diversity of the faculty and SOM leadership; maintaining competitive compensation (and achieving these levels of compensation where below market) for faculty; recognizing the tension that frequently exists between compensation and life balance; aligning goals, expectations and rewards for faculty in all tracks; and carefully considering how best to provide specific professional development opportunities and, in some cases, development of new roles and expectations for faculty who are responsible for critically important functions within the School of Medicine who do not fit into traditional faculty roles. We should offer all faculty members, across all roles, a meaningful career path, founded on transparent expectations, with opportunities and rewards commensurate with performance aligned with our goals.

There are three strategic priorities regarding faculty development:

> SP1: Enable data-driven management by defining and systematically tracking performance at both the institutional and individual levels
> SP2: Align faculty performance expectations, evaluation and reward systems

SP3: Establish programs and practices to promote and facilitate faculty success, both generally and for specific sub-groups.

SP1: Enable data-driven management by defining and systematically tracking performance at both the institutional and individual levels

Initiative 1: Define, track and disseminate institutional HR performance metrics

It is said that you manage what you measure. While a variety of data are currently collected, there is a need to enhance data collection to fully understand the nuances of faculty issues, including, for example, developing a deeper understanding of the qualitative reasons for attrition that are gleaned through exit interviews and competitive salary information. These data must be shared systematically with relevant leaders and used to design strategic responses to recruitment and retention challenges as they are identified.

Key elements
- Enhance data collection and HR processes to better understand recruitment and retention, including key drivers of attrition overall and within key subgroups
- Report data on a regular basis to SOM leadership, Department Chairs, Center Directors and the faculty at large
- Produce and disseminate an annual SOM diversity report.

Initiative 2: Define faculty performance metrics for clinical service, research and teaching

Clinical productivity is an important component of clinical departmental compensation plans. Establishing common measures of clinical FTE and benchmarks will provide a common platform for assessment of faculty clinical productivity. Given our aspiration to lead nationally on all three missions, there is a need to develop individual performance metrics for research and education to supplement the use of RVUs. In addition, establishing clearly defined metrics to support and measure faculty research performance would allow us to promote research productivity and strengthen our research mission in both the basic science and clinical departments. Appropriate education metrics should be established in concert with the rethinking and reformatting of the curriculum and new modes of delivery.

Key elements
- Define research productivity metrics for use in faculty performance evaluations, including post-tenure review
- Establish SOM guidelines regarding the use of performance metrics in determining the flexible component of faculty salary
- Establish teaching metrics relevant to the restructured curriculum
- Establish common measures of clinical performance and clinical FTE across the clinical departments
- Develop an SOM policy regarding cost-sharing of faculty salary support not covered by grants.

SP2: Align faculty performance expectations, evaluations and rewards systems

Initiative 1: Expand career tracks for faculty in non-traditional roles

The roles that exist within our faculty, particularly those in fixed-term positions, are varied and diverse, lending themselves to different types of professionals with different types of experiences and skillsets. It is anticipated that the need for very specific expertise will evolve with emerging research, educational and clinical endeavors within the SOM. Within this evolving landscape, precise definition of roles and expectations for fixed term faculty will be of increasing importance for recruitment and retention.

Key elements
- Revise the policy for instructor and lecturer appointments to allow a one-year initial appointment and no more than one reappointment year
- Develop expanded career paths and tracks that reflect the different roles that exist within school.

Initiative 2: Align faculty rewards with performance

Annual performance reviews with performance metrics for all faculty are mandated by our policy. With the ability to measure individual performance comes the opportunity to reward differentially based on performance. Clinical faculty currently report that significant attention is being paid to clinical productivity via RVU-based incentives. Metrics for research and teaching should likewise inform promotion decisions and reward structures that are transparent and equitable and should be consistent with our goals set out in this strategic plan (e.g., team science). Chair reviews should also directly link performance and rewards to SOM strategic goals.

Key elements
- Expand the use of rolling contracts for fixed term faculty upon promotion to Associate Professor
- Create SOM policies regarding expectations for research funding of individual faculty
- Have Chair reviews include the research productivity of departmental faculty as a key component of their individual and departmental evaluation
- Revise the SOM basic science and clinical science compensation plans to reward excellence in research and teaching, consistent with the goals articulated in this strategic plan.

SP3: Establish the conditions to help faculty succeed, both generally and for specific sub-groups

Initiative 1: Enhance faculty benefits that help attract and retain top performers and enable faculty to be most productive

Our faculty salaries relative to leading medical schools have frequently been identified as an issue of faculty concern. While raising salaries throughout the SOM is not likely to be a viable option in the current fiscal environment, the enhancement of non-salary benefits can be implemented in a cost-effective manner. These benefits aim to enhance faculty satisfaction with the SOM as a supportive environment, especially for junior and mid-level faculty facing a variety of pressures in a 21st century academic institution.

Key elements
- Explore the feasibility of expanding Victory Village (onsite childcare)
- Explore the feasibility of providing tuition reimbursement for dependents of faculty and staff
- Explore the feasibility of improving benefits for domestic partners.

Initiative 2: Foster an institutional climate in which a diverse faculty thrives through programs that recruit, retain and promote under-represented minorities

We have been very successful in diversifying our student body, but we have been less successful in enhancing faculty diversity. We currently have successful programs to support diversity recruitment, retention and development, including the Simmons Scholars program, but additional programs are needed that support our expectations for diversity that we have established. Faculty members need the opportunity to interact widely and meaningfully throughout the organization to maximize the benefits of diversity. Diversity in top leadership and middle management is critical.

Key elements
- Create two new pipeline programs, modeled after the MED program, to increase diversity recruitment — one to retain the best medical students, one to recruit the best post-graduate trainees
- Develop a Back to Carolina program to maintain ties with former URM trainees when they do leave the institution with the goal of bringing some back to UNC after they gain experience elsewhere
- Actively recruit under-represented faculty for leadership positions across the SOM
- Fully implement the Carolina Leadership Academy in Academic Medicine program for under-represented faculty members
- Explore opportunities to expand the Simmons Scholars program to enable desired breadth and depth of support
- Utilize AAMC survey assessment data to track markers of institutional climate and faculty satisfaction by markers of diversity.

Initiative 3: Provide opportunities to revitalize and give incentives for intellectual vibrancy among clinical faculty

Competing priorities of clinical productivity, providing care to a population of indigent patients, meeting increasing demands of compliance and institutional/government regulation and other day-to-day issues of sustaining a large health care system have led to challenges relating to the realization of the academic mission for the clinical faculty as a whole. Moreover, many of the incentives of academic medicine are lost due to the new realities of health care management and fewer opportunities for intellectual reassessment. Innovative strategies are needed to revitalize and incentivize intellectual vibrancy and academic productivity.

Key elements
- Establish competitive endowed clinical scholar awards that offer extended release time for selected junior faculty who have demonstrated strong research ability
- Institutionalize the nomination of faculty for external recognition and awards
- Increase discretionary funding for junior faculty to travel to meetings
- Establish an academic clinical faculty sabbatical program.

Initiative 4: Optimize involvement, responsibilities and evaluation of fixed term faculty (FTF) within the SOM

The vast majority of our faculty is fixed-term, and recent trends suggest that FTF will continue to grow and soon will represent 80% of SOM faculty. The importance of the FTF to the SOM cannot be overstated. It is critical that we provide additional opportunities for FTF engagement within the SOM and continually examine the scope of responsibilities and evaluation of FTF in new and evolving roles.

Key elements
- Establish a standing SOM FTF committee with the charge of periodically assessing FTF needs and communicating needs and other FTF issues to SOM administration
- Harmonize guidelines for notice of non-renewal for all faculty
- Develop and circulate SOM guidelines regarding FTF involvement with and engagement in departmental affairs.

Appendix A: Strategic Priority Stewards

Appendix A

Strategic Priority Stewards

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UNC SOM Strategic Priority Stewards

Research	Terry Magnuson
SP1. Set translational and multidisciplinary team science as a vision for UNC research, and provide the tools needed to foster successful teams	John Buse
SP2. Stimulate team-based, translational research with targeted investments in key translational research areas	Tim Carey
SP3. Streamline the organization and management of the research infrastructure to ensure it is best positioned to meet the future needs of SOM investigators	Bob Duronio
Education	**Warren Newton**
SP1. Restructure the curriculum to prepare students to be leaders of 21st century medicine	Julie Byerley
SP2. Optimize student recruitment and admission practices and programs to provide physicians needed for the State of NC and the nation	Tom Bacon
SP3: Develop and support infrastructure that will ensure our continued ability to train physicians, both within Chapel Hill and across the state	Cam Enarson
Clinical Care	**Al Daugird, Brian Goldstein**
SP1. Establish a UNC HCS-wide quality program, building on existing efforts, to ensure the greatest possible patient safety and highest quality care for all	Bob Sandler
SP2. Establish a mechanism for innovation and entrepreneurship in clinical care delivery and financing	David Rubinow
SP3. Institute a cross SOM-HCS informatics strategy to enable highest quality care and innovation	Brent Lamm
Faculty	**Cam Enarson**
SP1: Enable data-driven management by defining and systematically tracking performance at both the institutional and individual level	Cam Enarson
SP2: Align faculty performance expectations, evaluations and rewards systems	Paul Godley
SP3: Establish the conditions to help faculty succeed, both generally and for specific sub-groups	Amelia Drake

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Appendix B: List of Strategic Priorities and Initiatives

Appendix B

Strategic Priorities and Initiatives

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Research

- **SP1. Set translational and multidisciplinary team science as a vision for UNC research, and provide the tools needed to foster successful teams**
  - Initiative 1: Establish team and translational science as an institutional priority and set goals for increasing team and translational science at UNC
  - Initiative 2: Facilitate the establishment of teams by providing top-down guidance as well as tools to facilitate bottom-up investigator-driven team formation

- **SP2. Stimulate team-based, translational research with targeted investments in key translational research areas**
  - Initiative 1: Leverage the success of the North Carolina Translational and Clinical Sciences Institute (NC TraCS) and the SOM's multidisciplinary research centers as primary homes for translational research at UNC
  - Initiative 2: Use Center for HC Innovation as a platform for translational research
  - Initiative 3: Expand efforts and invest additional resources in key areas identified for basic and translational research
  - Initiative 4: Ensure financial stability for the first year of the Biological and Biomedical Sciences Program (BBSP)

- **SP3. Streamline the organization and management of the research infrastructure to ensure it is best positioned to meet the future needs of SOM investigators**
  - Initiative 1: Develop an SOM-wide strategy for the organization/management of cores/platforms including the centralization of core/platform oversight and core consolidation, where appropriate
  - Initiative 2: Institute a systematic, metric-driven evaluation of existing research platforms to ensure investments efficiently and effectively provide faculty with vital, high-quality research resources
  - Initiative 3: Institutionalize process for evaluating new technologies, research areas and resource needs

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Education

- **SP1. Restructure the curriculum to prepare students to be leaders of 21st century medicine**
  - Initiative 1: Enhance student's learning of the basic sciences and provide enhanced clinical learning opportunities for students across the curriculum
  - Initiative 2: Promote and develop additional active learning opportunities
  - Initiative 3: Introduce mechanisms that allow students to focus their educational experience and meet personalized learning goals
  - Initiative 4: Add longitudinal elements in clinical curriculum that shift more of the training towards ambulatory care
  - Initiative 5: Establish Medical Education Innovation Fund to seed innovative education programs

- **SP2. Optimize student recruitment and admissions practices and programs to provide physicians needed for the state of NC and national leaders, in order to meet our goal of being the nation's leading public medical school**
  - Initiative 1: Establish specific, measurable, and achievable goals for training physicians to serve the needs of North Carolina, the U.S. and beyond
  - Initiative 2: Establish and support recruitment and admission practices and programs that support institutional goals

- **SP3. Develop and support infrastructure that will ensure our continued ability to train physicians, both within Chapel Hill and across the state**
  - Initiative 1: Proceed with full development of clinical campuses
  - Initiative 2: Develop plans for a new educational building on the Chapel Hill campus to support planned class expansion and planned curricular innovations
  - Initiative 3: Promote and support creation of teaching practices of excellence
  - Initiative 4: Leverage North Carolina AHEC to improve clinical care and research across the entire state

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Clinical care

- **SP1. Establish a UNC HCS-wide quality program, building on existing efforts, to ensure the greatest possible patient safety and highest quality care for all**
  - Initiative 1: Design a comprehensive, system-wide quality initiative
  - Initiative 2: Ensure successful implementation of the quality initiative via necessary organizational change and investment

- **SP2. Establish a mechanism for innovation and entrepreneurship in clinical care delivery and financing**
  - Initiative 1: Establish a Center for Health Care Innovation

- **SP3. Institute a cross SOM-HCS informatics strategy**
  - Initiative 1: Identify what organizational structures, policies and practices will be needed to facilitate and enable functional integration of clinical informatics
  - Initiative 2: Make necessary investments to realize the vision of the Carolina Data Warehouse
  - Initiative 3: Support proposal for Program in Medical Informatics
  - Initiative 4: Enable better communication between faculty and IT staff

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Faculty

- **SP1: Enable data-driven management by defining and systematically tracking performance at both the institutional and individual level**
  - Initiative 1: Define, track and disseminate institutional HR performance metrics
  - Initiative 2: Define faculty performance metrics for clinical service, research and teaching

- **SP2: Align faculty performance expectations, evaluation and reward systems**
  - Initiative 1: Expand career tracks for faculty in non-traditional roles
  - Initiative 2: Align faculty rewards with performance

- **SP3: Establish programs and practices to promote and facilitate faculty success, both generally and for specific sub-groups**
  - Initiative 1: Enhance faculty benefits that help attract and retain top performers and enable faculty to be most productive
  - Initiative 2: Foster an institutional climate in which a diverse faculty thrives through programs that recruit, retain, and promote under-represented minorities (URM)
  - Initiative 3: Provide opportunities to revitalize and incentivize intellectual vibrancy among clinical faculty
  - Initiative 4: Optimize involvement, responsibilities and evaluation of Fixed Term Faculty (FTF) within the SOM

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Appendix C: Summary of Phase 1 Findings

Appendix C

Phase 1 Overview

Contents

> - **Strategic planning process overview and summary**

- Current state of the SOM
    - Research
    - Education
    - Clinical care
    - Cross-cutting topics

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Approach to SOM strategic planning

Who are we today?

Gaps?

Who do we want to be?

- Interviews/survey
- Internal analysis
- Benchmarking
- Task Force discussions

"To be the nation's leading public school of medicine"

How do we get from here to there?

January-April: Assess current state

April-June: Articulate strategic priorities

July-December: Develop detailed plan

Focus of our work

	Research	Education	Patient care
Faculty			
Facilities			
Funding			
Organi-zation/ admin			

Analyses incorporated in this deck

- Over 70 interviews in addition to separate meetings with all members of Phase 1 Strategic Planning Task Force

- NIH productivity/benchmarking analysis

- UNC faculty survey, with separate survey targeting AHEC faculty

- CTSA benchmarking of Yale, University of Washington and Pittsburgh

- Education benchmarking analysis: interviewed Dean and/or Dean for Education at Harvard, Duke, UCSF, Mich, U of Wash, Northern Ontario

- Review of internal analyses: flow of funds, space and clinical productivity

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Interviews

TF members
Bill Roper
Marschall Runge
Kevin FitzGerald
Patsy Oliver
Bruce Wicks
Warren Newton
Paul Godley
Al Daugird
Amelia Drake
Terry Magnuson
Cam Enarson
Gary Park
John Lewis
Amy Bragg

UNC leadership
Thomas Ross
Bruce Carney
Holden Thorp
Robert Blouin
Barbara Rimer
Karen Gil
Michael Crimmins
Barbara Entwisle

SOM administration
Margaret Dardess
Karen McCall
David Parker
Harvey Lineberry
Dennis Schmidt
Bud Harper
David Anderson

UNCHCS leaders
Dick Krasno
Tony Lindsey
Cameron Patterson
Brian Goldstein

Education leaders
Tom Bacon
Jeff Heck
Robert Bashford
Patricia White
Paul Cunningham
Virginia Miller
Julie Byerley
Nick Shaheen
Alice Chuang
Kurt Gilliland
Susan Caryl Hadler
Paul Chelminski
Alan Cross
Phil Boysen
John Perry, III
Sam Cykert
Russ Harris
Gene Orringer
Lee Berkowitz

Basic/non-clinical chairs
Gary Johnson
Leslie Parise
Vytas Bankaitis
Carol Otey
William Goldman
Gail Henderson
Lee McLean
Nancy Allbritton

Center/TraCS leaders
Tim Carey
Shelley Earp
Mike Cohen
Bob Sandler
Rosemary Simpson
Jason Lieb
Bill Snider
Ric Boucher
John Buse
Michael Fried
Ronald Falk
Richard Goldberg
Larry Klein
Brent Lamm

Clinical Chairs
David Rubinow
Matt Mauro
Anthony Meyer
Luis Diaz
Daniel Clarke-Pearson
Alan Stiles
Charles Jennette
Matt Ewend
Williams Powers
Charles Cairns
Harold Pillsbury
Lawrence Marks
Douglas Dirschl
David Zvara
Michael Lee

Profile of survey respondents
416 responses (~30% of total faculty)

		Count	% of total
Position	An active tenure / tenure track Faculty Member	229	55%
	An active non-tenure track Faculty Member	177	43%
	An active Emeritus Faculty Member	7	2%
	A Visiting / Adjunct Faculty Member	2	0.5%
	Retired	1	0.2%
Fixed term type[1] **(for fixed term faculty only)**	Clinical	120	71%
	Research	49	29%
Rank	Professor	160	38%
	Associate Professor	108	26%
	Assistant Professor	129	31%
	Instructor	18	4%
	Other	1	0.2%
Department type	Basic department	85	20%
	Clinical department (including Pathology)	302	73%
	Other department (AHS, Biomed Eng, Social Medicine)	29	7%

(1) Of the 177 fixed term faculty, 8 did not specify fixed term type.
Source: UNC SOM Strategic Planning Faculty Survey

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Overall - tremendous pride in UNC SOM

- Outstanding research -- particularly in the basic science depts

- Tremendous pride in care and service provided to state

- Extremely selective -- medical students, residents

- Unusually collaborative culture

- …though sense that national reputation does not reflect reality

What does it mean to be "the nation's leading public medical school"?

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What does it mean to be the "nation's leading public school of medicine"?

- Some interviewees focused on "leading"
  - Some defined it purely by rankings -- for better or worse
  - Others felt it emphasized "leadership" and excellence

- Others focused on "public"
  - For those focused on rankings, concern about setting the bar low
  - Others stressed the special role/responsibility of public institutions

- Some emphasized "leading public"
  - The intended meaning: to lead the way and set the standard for what it means to be a public institution

In summary, broad consensus that current vision is fine -- even inspirational…

…but needs to be clarified -- with implications for mission and strategy

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Contents

- Strategic planning process overview and summary

- Current state of the SOM
  - Research
  - Education
  - Clinical care
  - Cross-cutting topics

What does it mean to be "leading" in research?

UNC should strive to be ____ in NIH funding

Legend:
- Strongly disagree (red)
- Somewhat disagree (salmon)
- Neither agree nor disagree (pale yellow)
- Somewhat agree (light green)
- Strongly agree (green)

Categories: Leading public med school | Among top 10 for all med schools
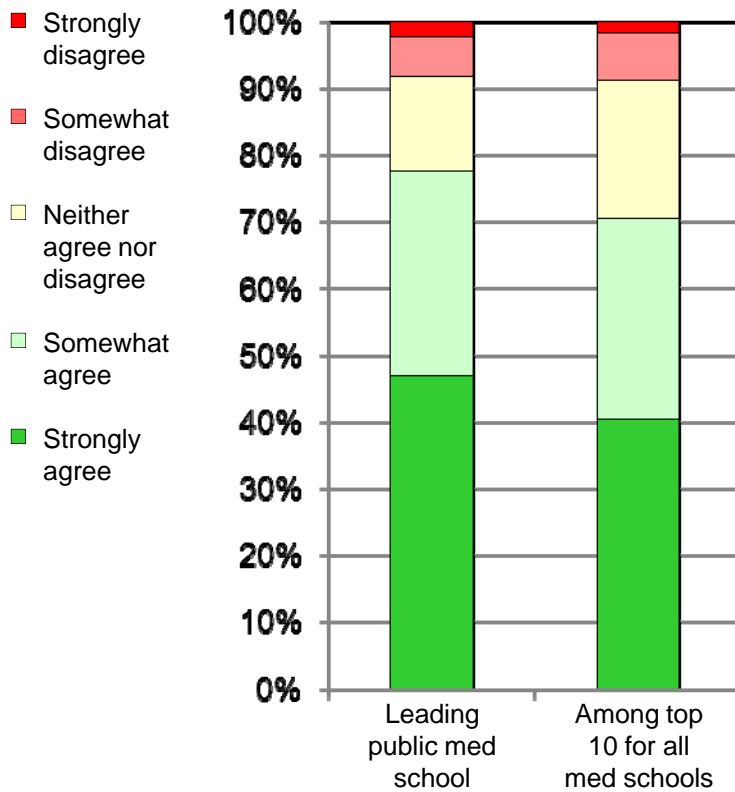
- Definition of "leading" includes NIH for most
  - *What [leading] means to me is we do have to have a significant research mission that's successful on a national and international stage that is funded by external agents -- that being NIH predominantly -- and that we continue to innovate and then disseminate new knowledge.* (Clinical chair)

- But it's not only NIH funding
  - Other research (e.g., clinical trials)
  - Publications/impact factor
  - Prominent faculty (national awards, NIH study sections)
  - Competitiveness for graduate students, post docs

Source: UNC SOM Strategic Planning Faculty Survey

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We compared UNC with a set of higher-ranking benchmark institutions

Total NIH funds FY10, $M

Institution	NIH rank	Total NIH funds FY10, $M
UCSF	2	$422
UMich	6	$333
Pitt	7	$326
Duke	8	$306
UCSD	9	$303
UWash	10	$300
UCLA	12	$296
Stanford	13	$292
UNC	14	$239
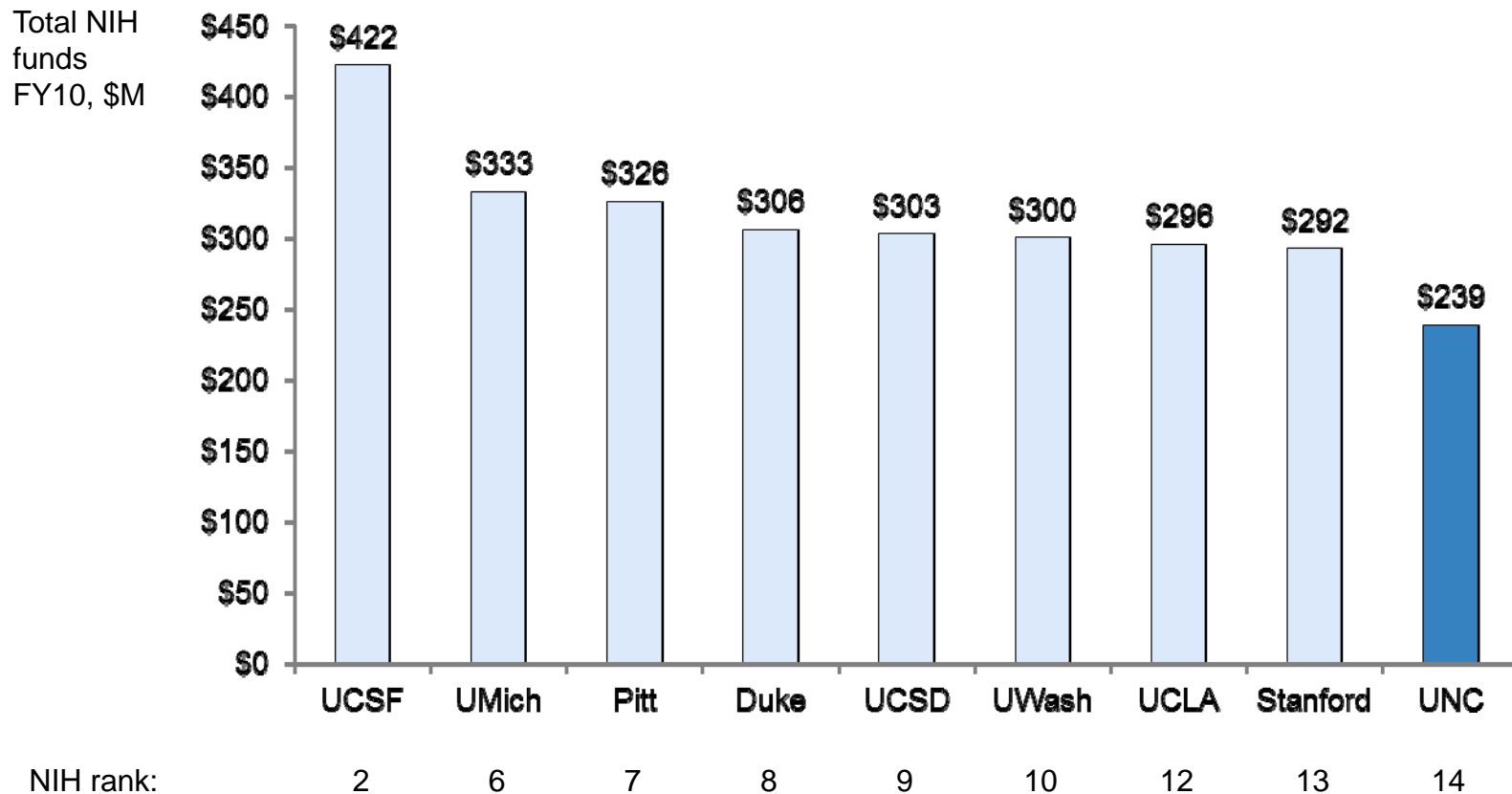
Note: Total NIH funds excludes projects funded by the Recovery Act
Source: NIH, FY10

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UNC's IDC rate is lower than benchmarks…
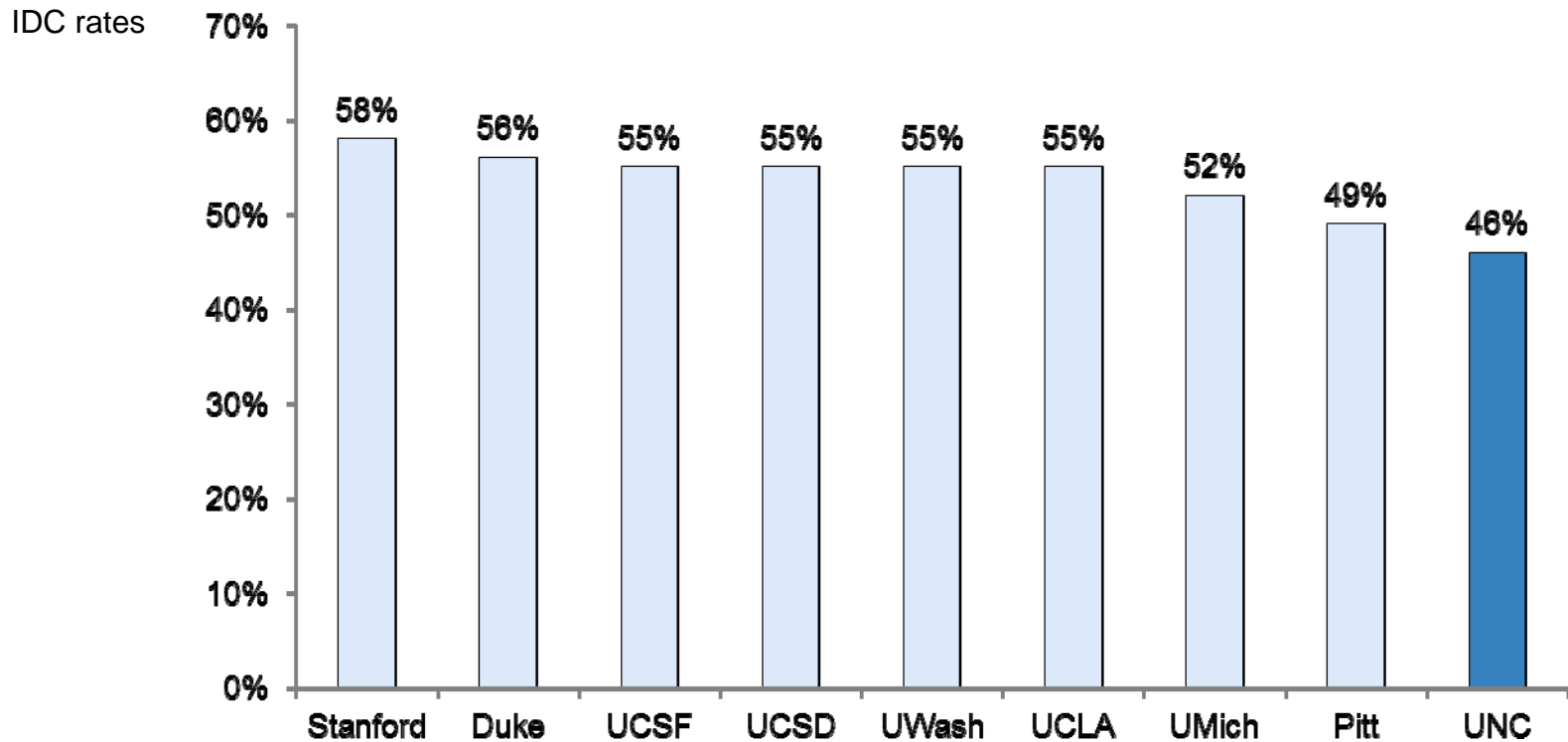
IDC rates

Note: IDC rates for UWash, Stanford from institution website. All others from ResearchCrossroads.
Source: NIH, FY10

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…but not enough to impact rank order

Total NIH funds FY10, $M

Legend: □ DC + IDC   □ Direct costs only*

	UCSF	UMich	Pitt	Duke	UCSD	UWash	UCLA	Stanford	UNC
DC + IDC	$422	$333	$326	$306	$303	$300	$296	$292	$239
Direct costs only*	$272	$219	$219	$196	$195	$194	$191	$185	$163
IDC rates:	55%	52%	49%	56%	55%	55%	55%	58%	46%
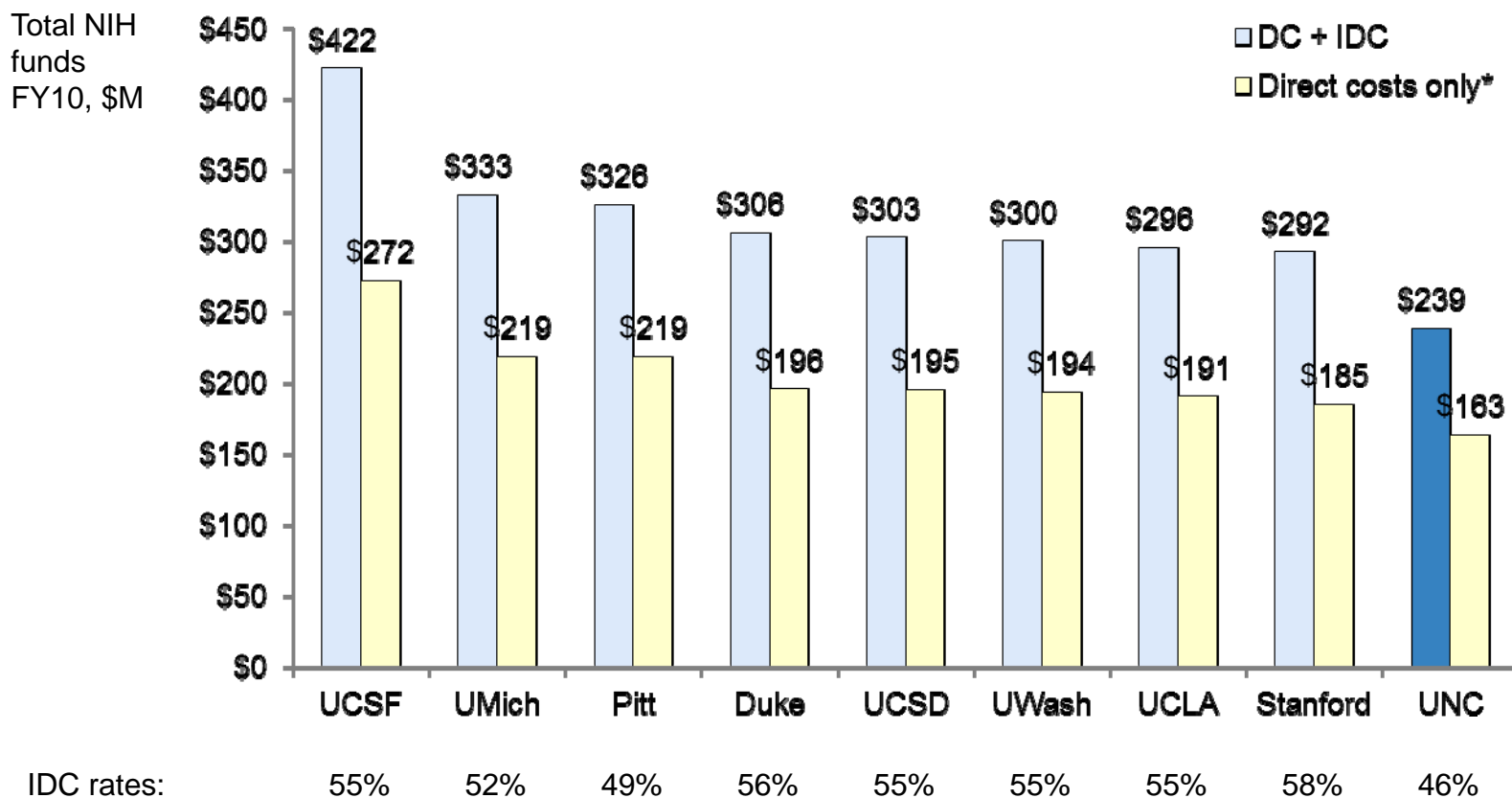
Note: *Direct costs calculated based on published IDC rates. Total NIH funds excludes projects funded by the Recovery Act. IDC rates for UWash, Stanford from institution website. All others from ResearchCrossroads.
Source: NIH, FY10

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UNC well above average research productivity
Though similarly-sized benchmark institutions fare even better
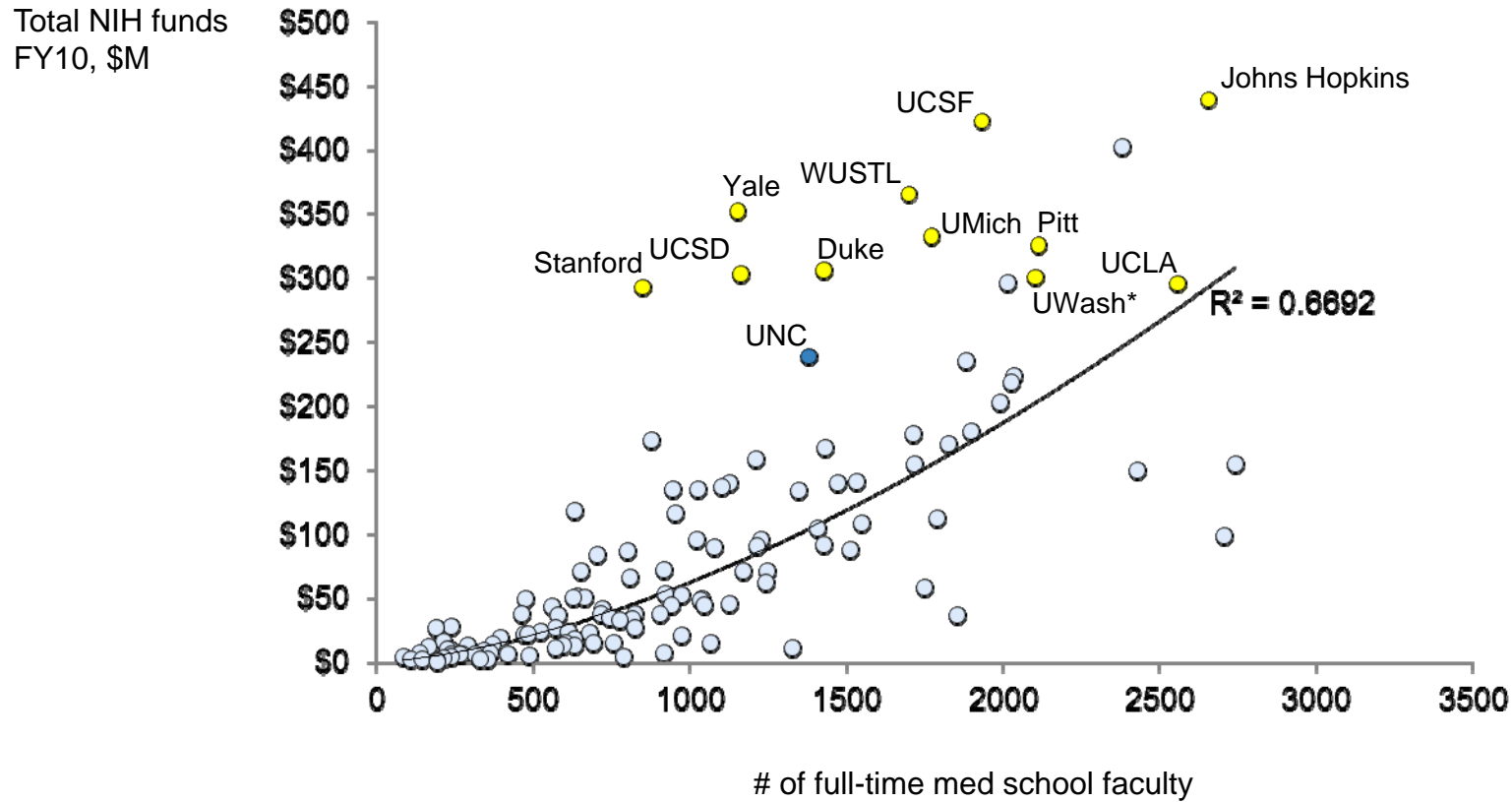
Total NIH funds FY10, $M

# of full-time med school faculty

Johns Hopkins
UCSF
Yale WUSTL
UMich Pitt
Stanford UCSD Duke
UCLA
UWash*
UNC
$R^2 = 0.6692$

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Basic science depts rank high in NIH funding

Total NIH funds attributed to department

Biochemistry	Cell biology	Genetics	Microbiology	Pharmaco	Physiology
1. Vand	1. WUSTL	1. WUSTL	1. Oregon	1. UPenn	1. Vand
2. Hopkins	2. Einstein	2. Baylor	2. Harvard	2. UCSD	2. UPenn
3. Harvard	3. Baylor	3. Stanford	3. UWash	3. Vand	3. Wisc
4. UCSF	4. Harvard	4. Chicago	4. UT Galv	4. Duke	4. Wake
5. UTSW	5. Vand	**5. UNC**	5. Emory	**5. UNC**	5. UMich
6. UNC	6. UPenn	6. Pitt	6. Yale	6. Mount Sinai	6. Oregon
7. Stanford	7. New Jersey	7. UMass	7. Virginia	7. UTSW	7. UWash
8. Einstein	8. UCSF	8. UWash	8. UCLA	8. UCSF	8. NW
9. Chicago	9. Virginia	9. Harvard	9. Ohio	9. Yale	9. Virginia
10. Yale	10. Duke	10. Duke	10. Dart	10. Nebras	10. Nevada
	.		.		.
	.		.		.
	19. UNC		**18. UNC**		**24. UNC**

Note: Total NIH funds attributed to department
Source: NIH, FY10

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In aggregate, departments ranked higher in '05

Total NIH funds attributed to department

Biochemistry	Cell biology	Genetics	Microbiology	Pharmaco	Physiology
1. Hopkins	1. Baylor	1. Baylor	1. Harvard	**1. UNC**	1. Vand
2. Vand	2. Einstein	2. WUSTL	2. UWash	2. UCSD	2. UPenn
3. Stanford	3. Harvard	3. Pitt	3. Tulane	3. UPenn	3. Wisc
4. Harvard	4. Virginia	4. Stanford	4. UCLA	4. Vand	4. Columb
5. UCSF	5. Vand	5. Yale	5. Emory	5. Duke	5. Wake
6. UT SW	6. UCSF	6. Duke	6. Chicago	6. UT SW	6. Oregon
7. UNC	7. NW	7. Harvard	7. Alabama	7. Pitt	7. UCSF
8. UWash	8. UT SA	8. Columb	8. Oregon	8. UCLA	8. Case
9. Yale	**9. UNC**	**9. UNC**	9. UCI	9. Illinois	9. Virginia
10. BU	10. UMass	10. UPenn	10. Baylor	10. Emory	10. NW
			11. UNC		.
					.
					26. UNC

Note: Total NIH funds attributed to department
Source: NIH, FY05

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UNC has higher proportion of NIH funding from basic science depts than most benchmarks

Total funds FY10

Legend:
- All other [1]
- Public health
- Clinical depts
- Basic depts

Avg % basic = 27%

Categories (x-axis): UNC, UCSF, UMich, Pitt, Duke, UCSD, UWash, UCLA, Stanford
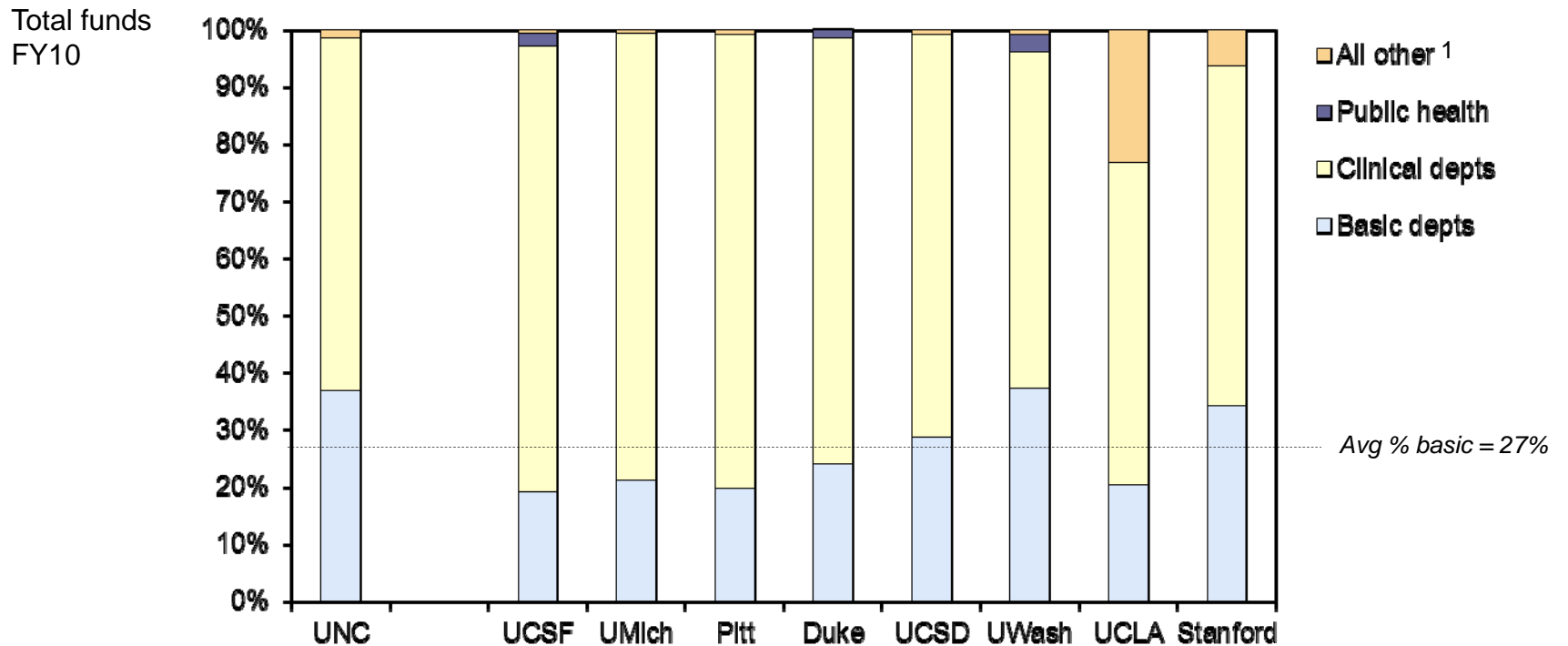
(1) "All other" includes funds not categorized within a department or funds for which no department designation is given.
Source: NIH, FY10

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…reflecting in part a higher proportion of faculty

% total faculty in
basic sci depts

	UNC	UCSF	UMich	Pitt	Duke	UWash	UCLA	Stanford
Basic dept faculty:	310	167	157	210	195	399	146	125
Clinical dept faculty:	1,069	1,765	1,616	1,902	1,232	1,903	2,410	725

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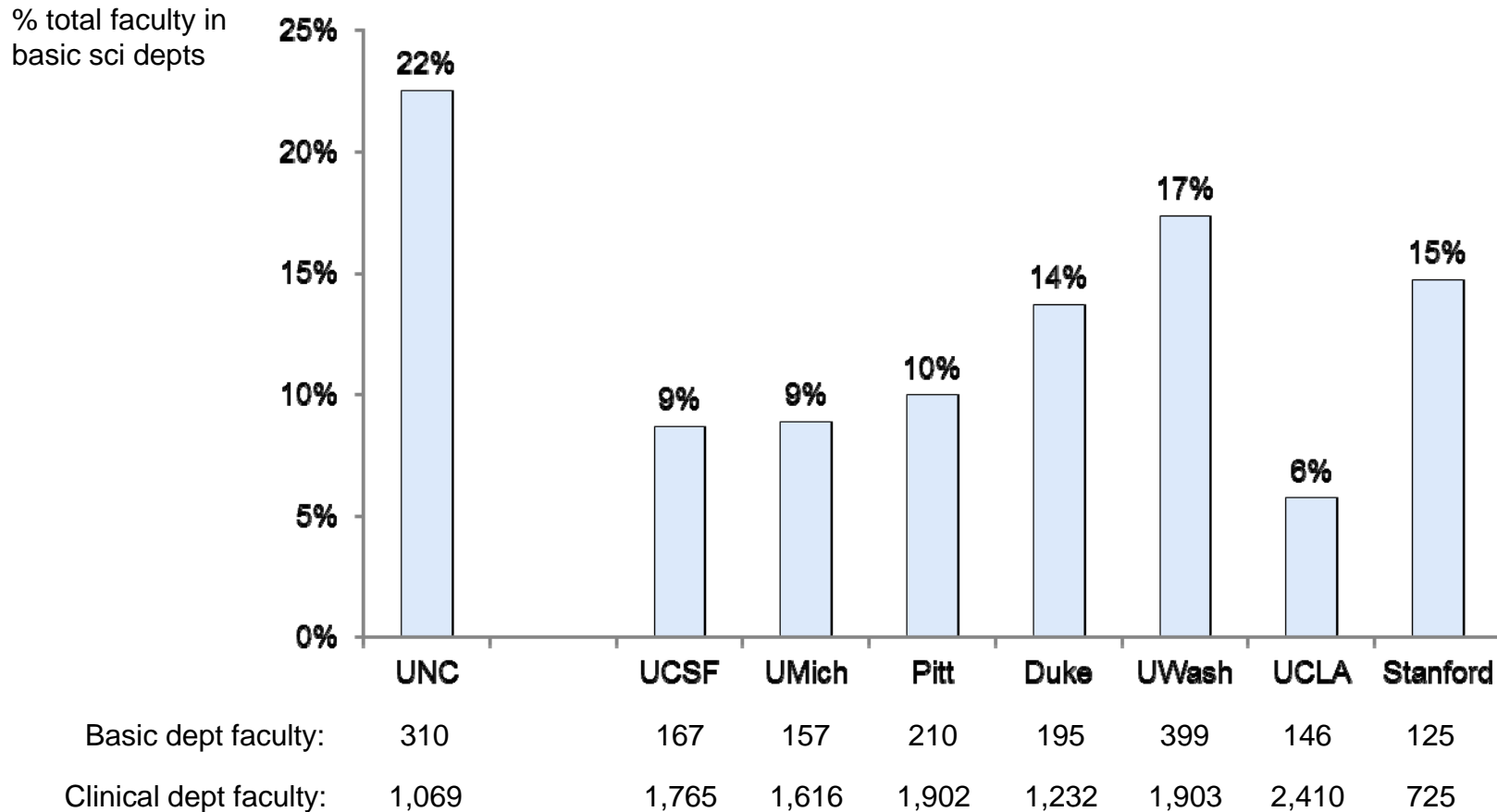
4% of faculty (12 faculty) account for 25% of total NIH R + P01 funding[1] in basic departments

All R + P01s in basic depts FY10, $M

12 faculty

NIH-funded PIs
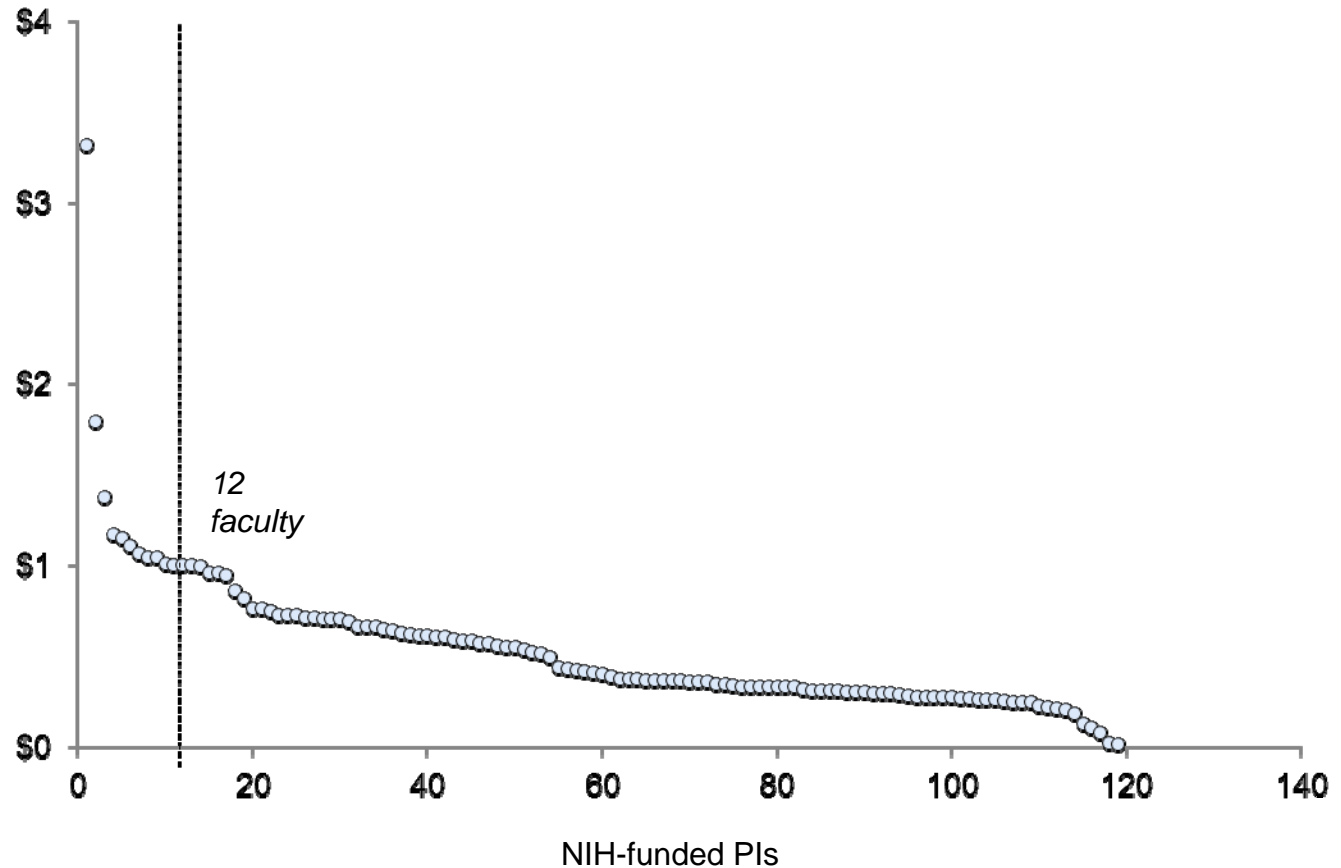
(1) Larger, institutional grants (e.g., U grants, training grants) not included on these and subsequent slides to focus more on individual investigator productivity
Source: NIH, FY10

Similar picture for <u>all</u> research grants / contracts
Suggests that over half of the 310 basic faculty have no research funding

Distribution of research grants and contracts based on home department of original PI

FY10, $M

14 faculty account for 37% of total extramural funding

∘ Basic dept faculty
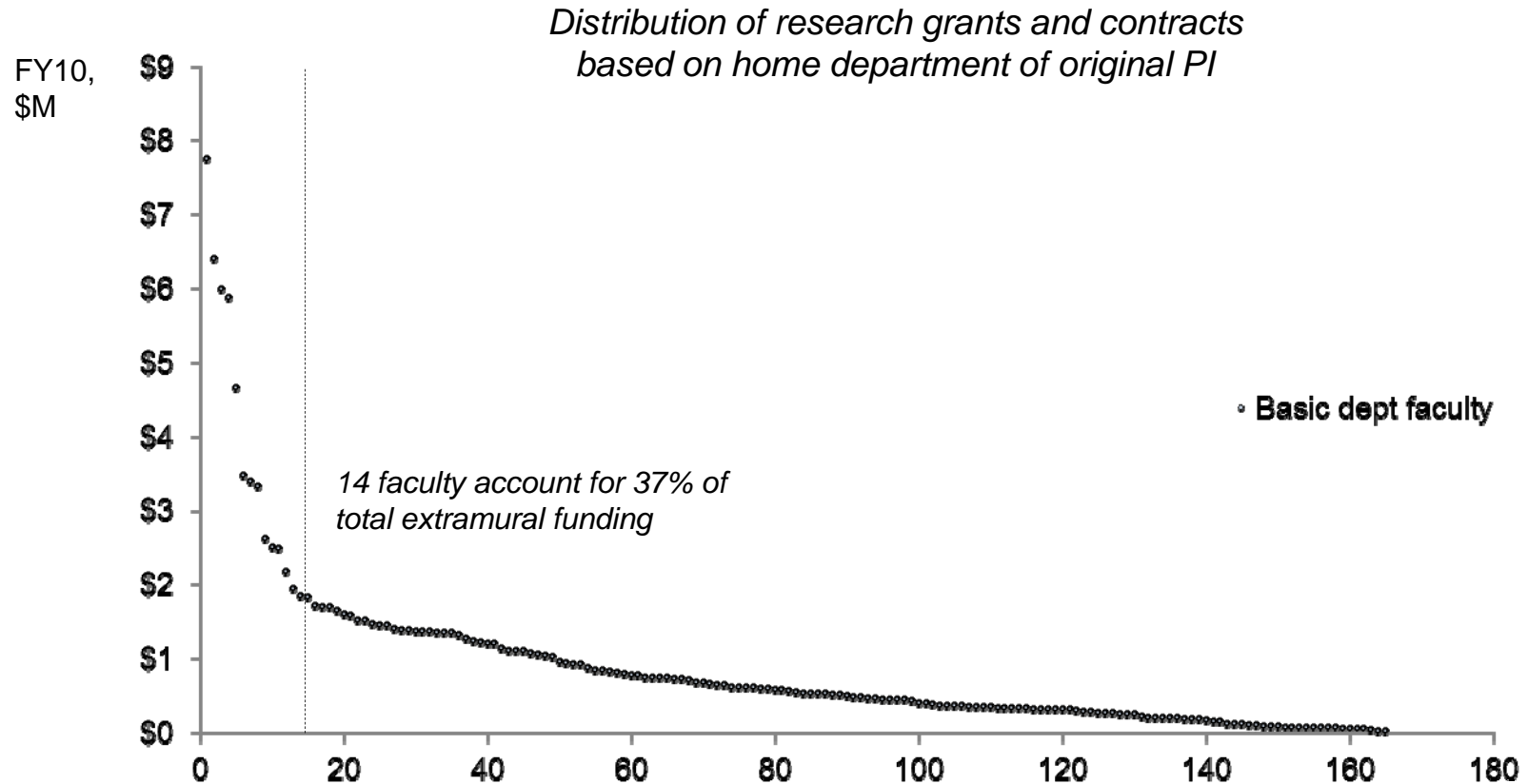
Note: Includes only Research (CHESS 20) grants and contracts. Two items with zero of negative dollar amounts excluded.
Source: RAMSES, FY10

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Clinical departments even more concentrated
2% of faculty (18) account for 50% of NIH R + P01 funding

NIH R + P01 awards
in clinical depts
FY10, $M

*18 faculty account for 50% of
total R + P01 grants*

NIH-funded PIs

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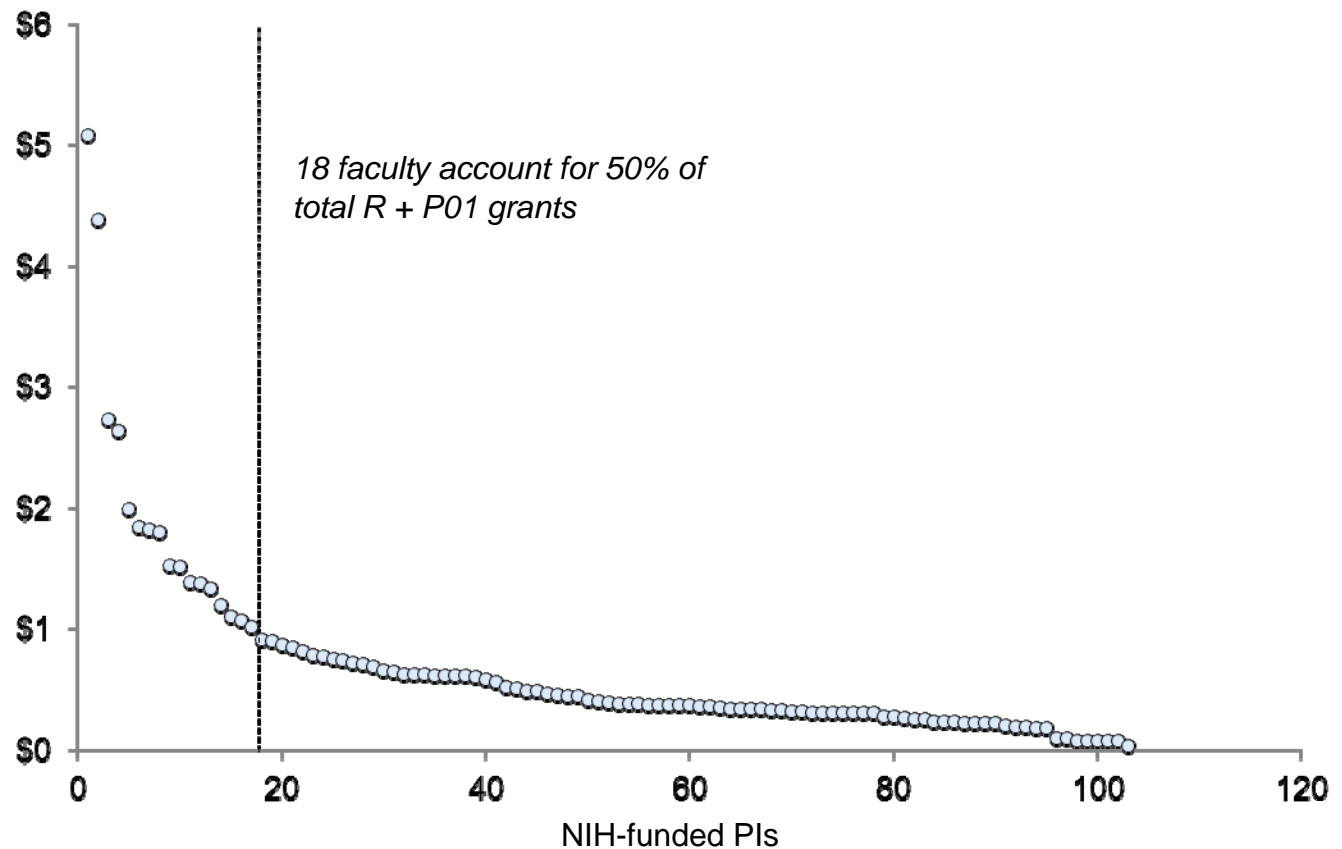
Lack of time, not interest, cited as top obstacle for increasing research in clinical depts

Please identify the most significant internal obstacles to increasing extramural grant support for your research

Obstacle	% respondents
Insufficient time	62%
Insufficient departmental support	34%
Insufficient research infrastructure	28%
Insufficient hospital support	19%
Lack of mentors/role models	18%
Insufficient number of trainees	9%
Lack of potential collaborators	9%
Not currently interested in a research program	8%
Inadequate training w/ regard to research	7%
Other	9%
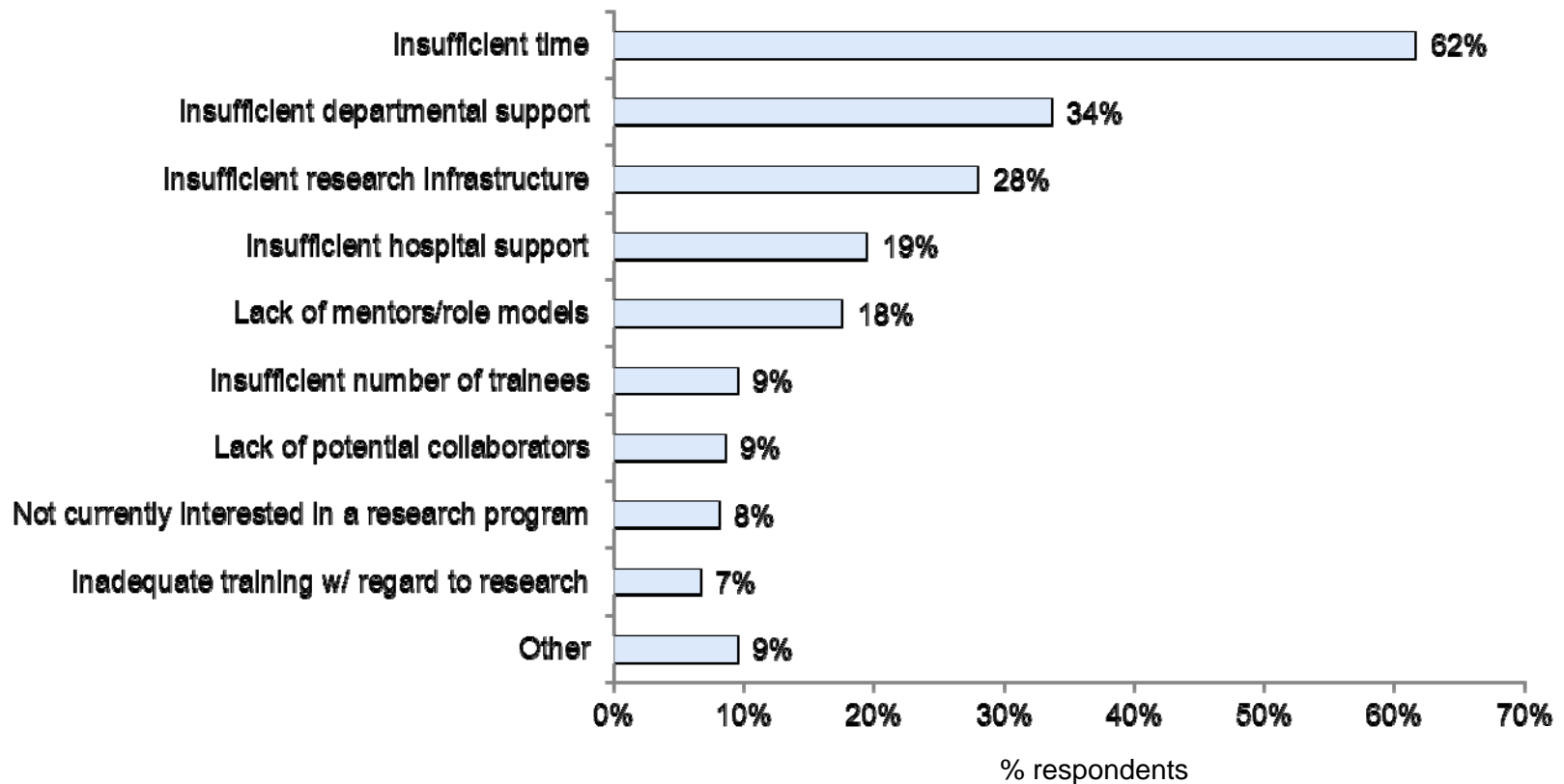
% respondents

Note: Percentages based on number of respondents answering question (n=211)
Source: UNC SOM Strategic Planning Faculty Survey

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Why is there not more research in clinical depts?

Summary of interview feedback

- Incentives said to underlie limited time for research in clinical departments
  - Incentive structure values clinical work over research
  - Some point to fixed-term faculty growth as shifting balance to more clinical

- Some suggest a broader cultural issue, need for a clear message from the top

- Smaller departments have added challenge of overcoming activation energy
  - Without ongoing research program/infrastructure, a difficult ROI case
  - Smaller depts have less wiggle room in their budgets to invest in research

- Hospital said not to be actively supportive of research -- though many feel a clear link between clinical research and clinical reputation

- Some see a need to hire more researchers into the clinical departments
  - Differing perspectives on dedicated PhDs vs. clinician-scientists

Among benchmarks, UNC has lower proportion of funding from smaller clinical departments
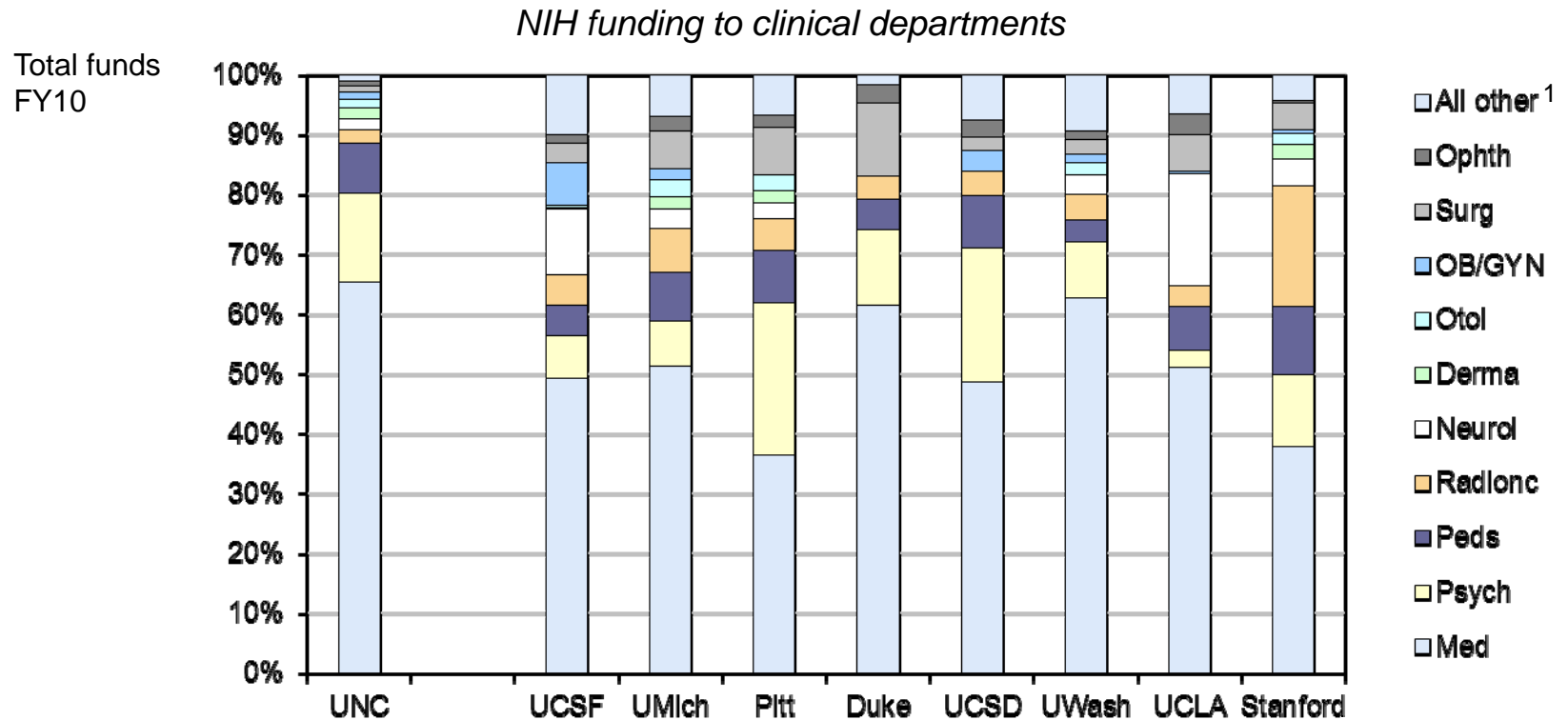
NIH funding to clinical departments

Total funds FY10

Legend: All other[1], Ophth, Surg, OB/GYN, Otol, Derma, Neurol, Radlonc, Peds, Psych, Med

X-axis: UNC, UCSF, UMich, Pitt, Duke, UCSD, UWash, UCLA, Stanford

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Clinical dept faculty report lower quality / quantity of research resources than basic sci dept faculty

How would you rate the quality and quantity of resources UNC provides you to conduct your research?

% ranking "Good" or "Very good"
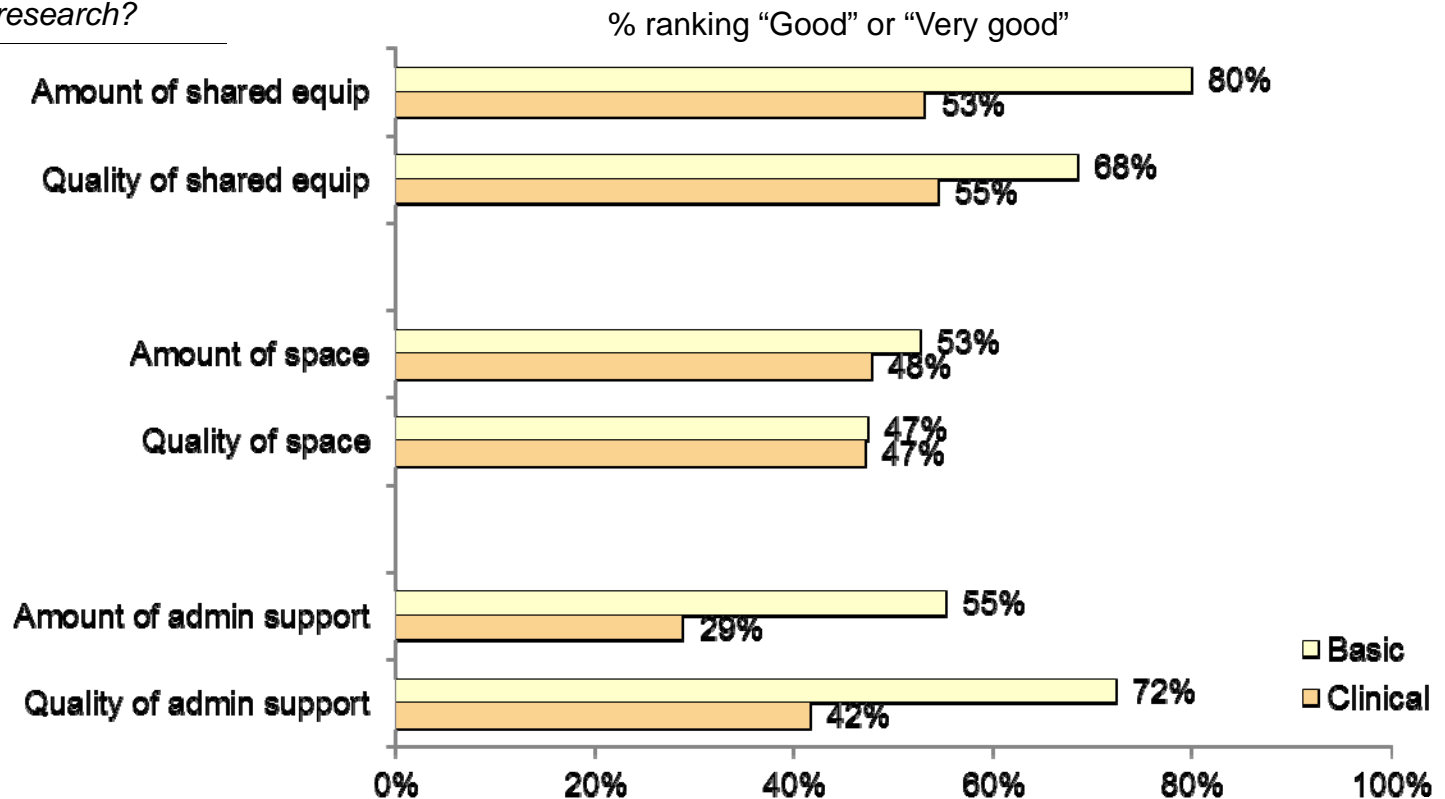
Note: Percentages based on number of respondents answering question (average n=75 basic, n=226 clinical)
Source: UNC SOM Strategic Planning Faculty Survey

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Center-affiliated clinical dept faculty are happier with research resources than those who aren't affiliated

How would you rate the quality and quantity of resources UNC provides you to conduct your research?

% ranking "Good" or "Very good"

Legend:
- Has center affiliation
- No center affiliation

Category	Has center affiliation	No center affiliation
Amount of shared equip	64%	42%
Quality of shared equip	59%	50%
Amount of space	53%	42%
Quality of space	49%	45%
Amount of admin support	34%	23%
Quality of admin support	50%	32%

Note: Percentages based on number of respondents answering question (average n=117 for center affiliates, n=108 for non-affiliates)
Source: UNC SOM Strategic Planning Faculty Survey

TraCS awareness high for both basic and clinical depts with greater use by clinical faculty

Have you heard of UNC's CTSA, the Translational and Clinical Sciences Institute (TraCS)?

% aware of TraCS
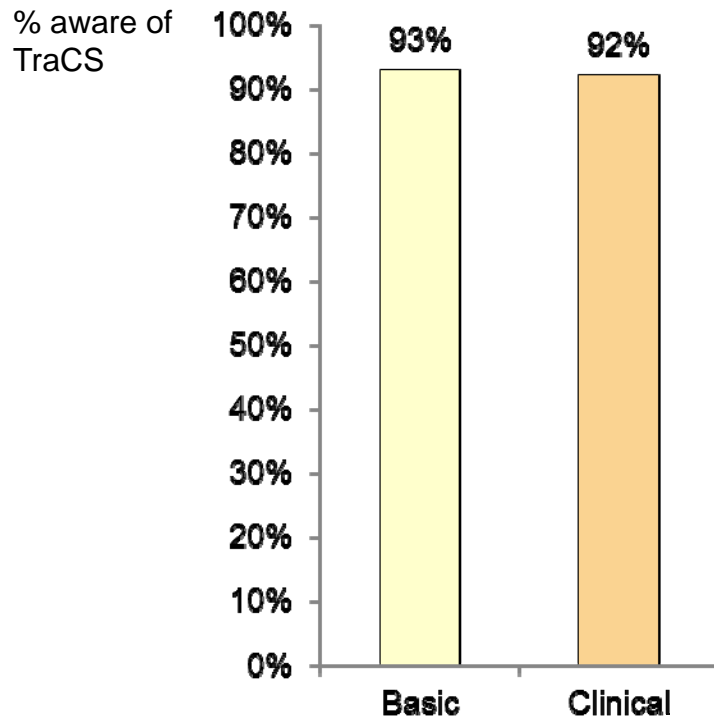
To what extent do you / have you interacted with TraCS?

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Lack of research relevance, awareness cited as top reasons for not interacting with TraCS

Since you indicated little to no interaction with TraCS, why?

% of respondents who indicated seldom or no interaction
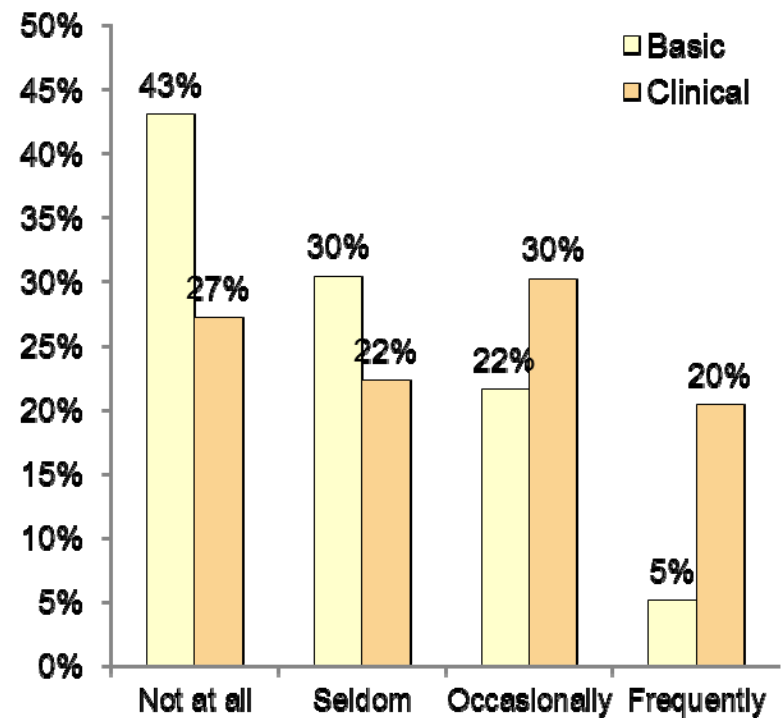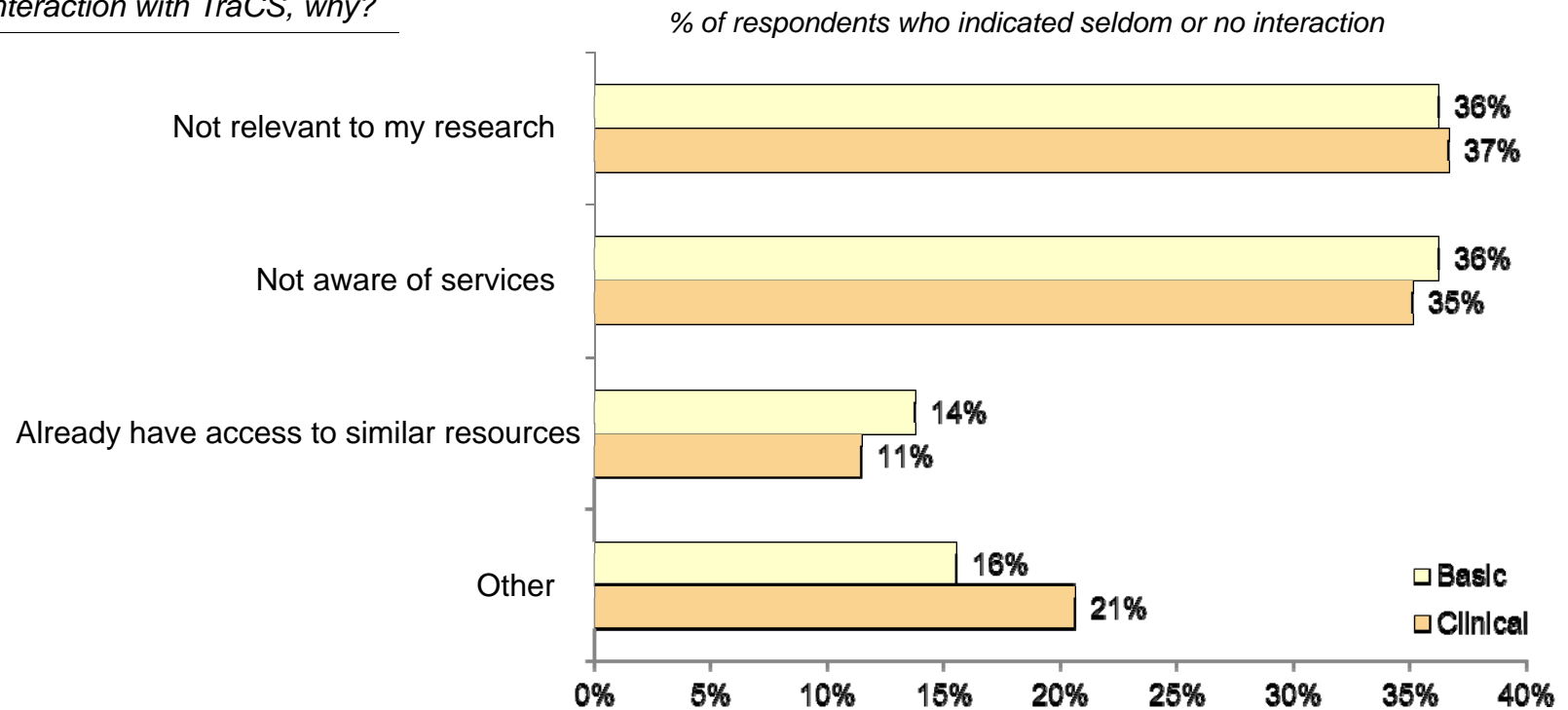
Note: Percentage based on number of respondents indicating little to no TraCS interaction
Source: UNC SOM Strategic Planning Faculty Survey

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Animal models, proteomics, imaging cited as most needed platforms among basic depts

Which of the following potential research platforms
would be most helpful in moving your research forward?

% basic dept respondents

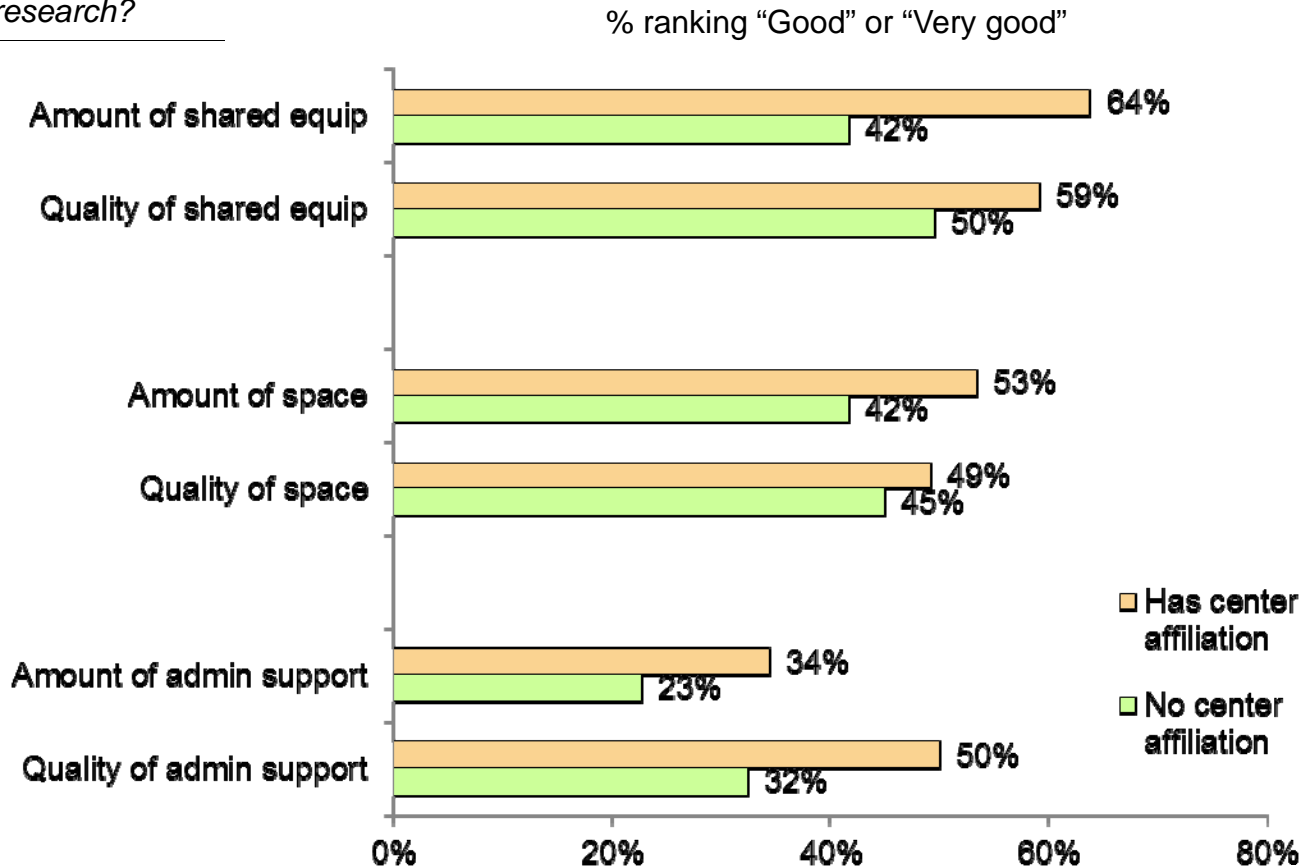| Platform	%
Animal models research	41%
Proteomics (advanced methods)	35%
Imaging (cellular to whole animal)	34%
Bioinformatics	27%
Genome / large scale sequencing	26%
Biostatistics / data analysis	20%
Genetic analysis (expression & variation)	16%
Biological samples (storage & processing)	15%
Metabolite profiling (normal & pathological)	14%
Chemical biology (small molecular probes & therapeutics)	11%
RNAi (tools for genetic screening)	8%
Clinical research coordinators	7%
Practice-based networks with clinical trials infrastructure	1%
Clinical informatics	1%
Healthcare claims data	1%
Utilization, satisfaction and cost data from UNCHCS	1%
EMR data outside of UNCHCS	0%
Pharmacy support for clinical trials	0%
Other	8%

Note: Percentages based on number of respondents answering question (n=74)
Source: UNC SOM Strategic Planning Faculty Survey

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While clinical dept respondents highlight need for biostatistics, clinical research coordinators

Which of the following potential research platforms
would be most helpful in moving your research forward?

% clinical dept respondents

Research platform	%
Biostatistics / data analysis	48%
Clinical research coordinators	40%
Practice-based networks with clinical trials infrastructure	21%
Clinical informatics	20%
Animal models research	20%
Biological samples (storage & processing)	16%
Bioinformatics	16%
Imaging (cellular to whole animal)	14%
EMR data outside of UNCHCS	10%
Healthcare claims data	9%
Genetic analysis (expression & variation)	7%
Pharmacy support for clinical trials	7%
Chemical biology (small molecular probes & therapeutics)	6%
Genome / large scale sequencing	6%
Utilization, satisfaction and cost data from UNCHCS	6%
Proteomics (advanced methods)	5%
Metabolite profiling (normal & pathological)	4%
RNAi (tools for genetic screening)	4%
Other	15%

Note: Percentages based on number of respondents answering question (n=225)
Source: UNC SOM Strategic Planning Faculty Survey

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Cancer seen as strongest area of clinical research strength, most potential for research impact
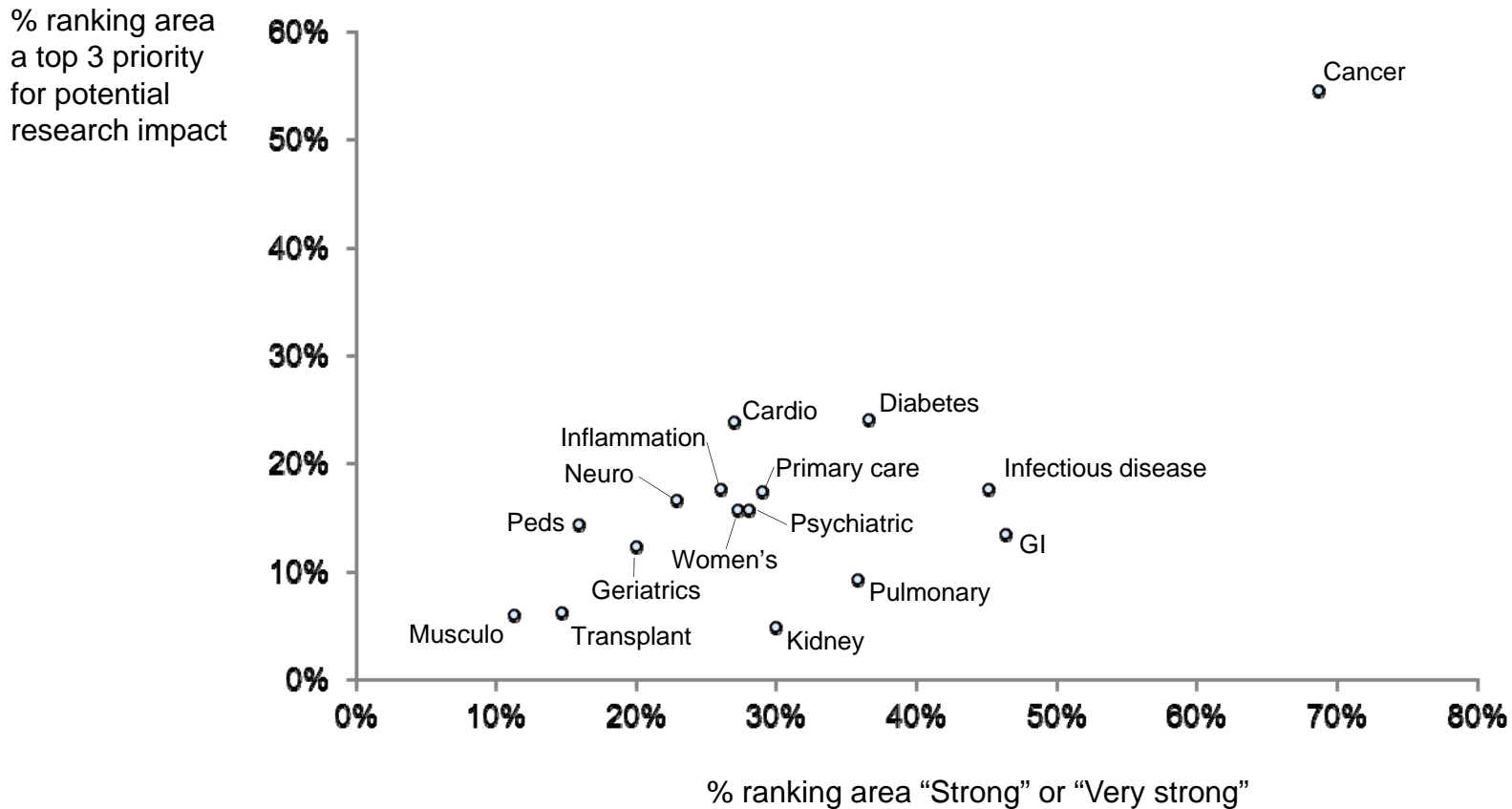
% ranking area a top 3 priority for potential research impact

% ranking area "Strong" or "Very strong"

Note: Percentages based on total number answering question, including "Don't know" responses on the x-axis
Source: UNC SOM Strategic Planning Faculty Survey

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Interviewees mentioned a number of disease areas for potential investment

- Cancer was highlighted by many as a tremendous research strength
  - May be opportunity to focus even more (e.g., pancreatic cancer)
  - Others expressed concern of "too many eggs in one basket"

- Other areas raised by multiple interviewees as pockets of excellence
  - Gastrointestinal disease/IBS
  - Kidney disease
  - Women's health
  - Cystic fibrosis
  - Infectious disease/HIV
  - ENT
  - Sheps Center

- Two disease areas seen as having potential for big impact
  - Diabetes -- some strength, but important for NC
  - Cardiovascular -- mixed feedback

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Basic dept faculty see genetics, cell signaling as strengths; genetics as top area for growth

Infection, pathogenesis also highlighted as top areas for growth at UNC

% ranking area a top 3 priority for potential research impact

Chart data points:
- Genetics (~75%, 40%)
- Infection / immunity (~48%, 33%)
- Pathogenesis (~49%, 30%)
- Cell signaling (~74%, 21%)
- Systems bio (~16-17%, 20%)
- Drug disc / devt (~25%, 18.5%)
- Comp bio (~26%, 18.5%)
- Structural / chem bio (~37%, 17%)
- Brain function (~34%, 15.5%)
- Proteomics (~27%, 13%)
- Devt bio (~41%, 13%)
- Clinical trials (~18%, 11.5%)
- Stem cells
- Preventive (~11%, 7%)
- Outcomes/ Comp effectiveness (~13%, 4%)

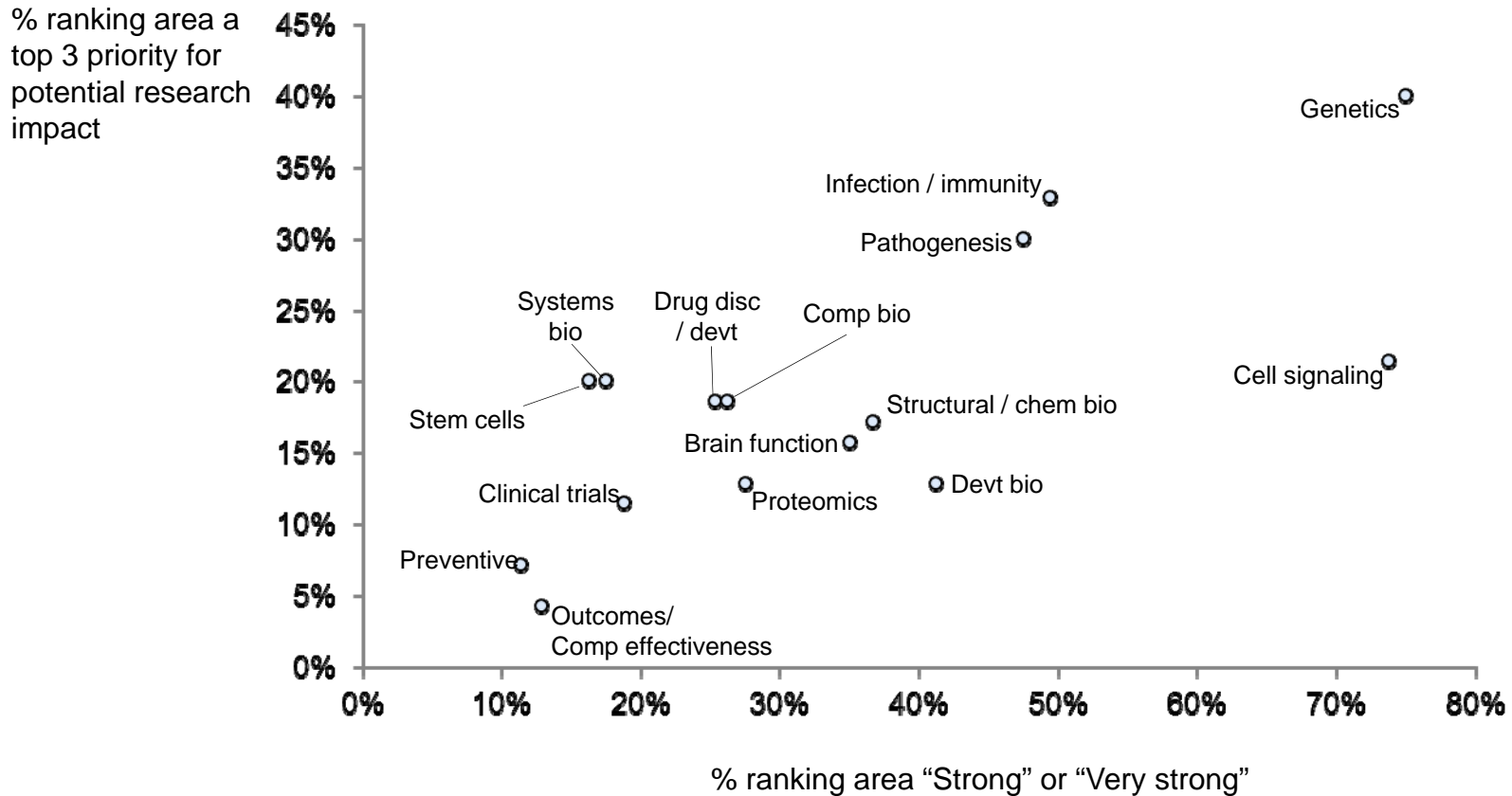% ranking area "Strong" or "Very strong"

Note: Percentages based on total number answering question, including "Don't know" responses on the x-axis
Source: UNC SOM Strategic Planning Faculty Survey

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Clinical depts rate health outcomes/ comp effectiveness highest on both dimensions
Genetics gets high ratings as well
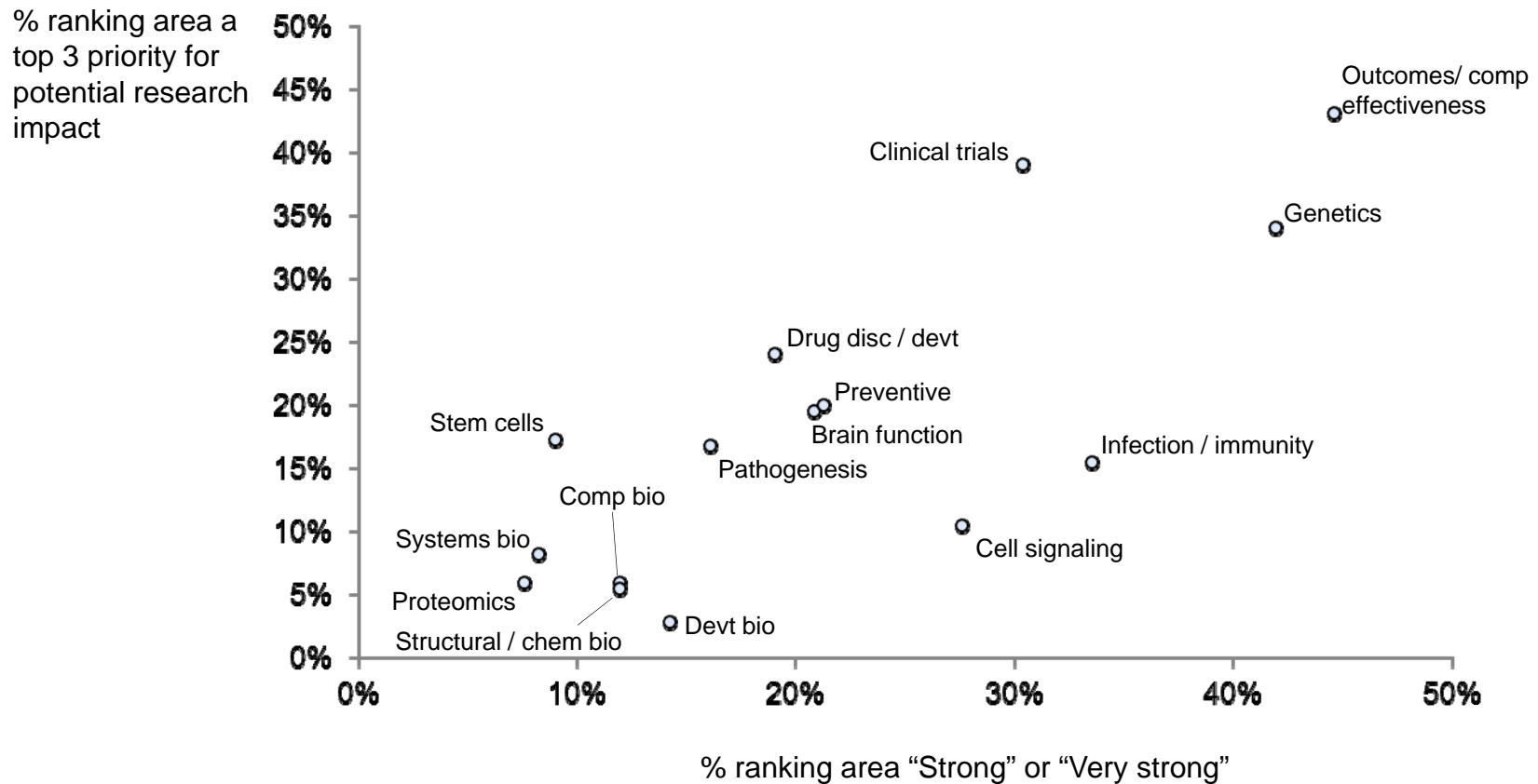
% ranking area a top 3 priority for potential research impact

% ranking area "Strong" or "Very strong"

Outcomes/ comp effectiveness
Clinical trials
Genetics
Drug disc / devt
Preventive
Brain function
Stem cells
Pathogenesis
Infection / immunity
Comp bio
Cell signaling
Systems bio
Proteomics
Structural / chem bio
Devt bio

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Among support offices, IRB gets best marks, Office of Clinical Trials the lowest

How would you rate your level of satisfaction with the following research support offices at UNC?
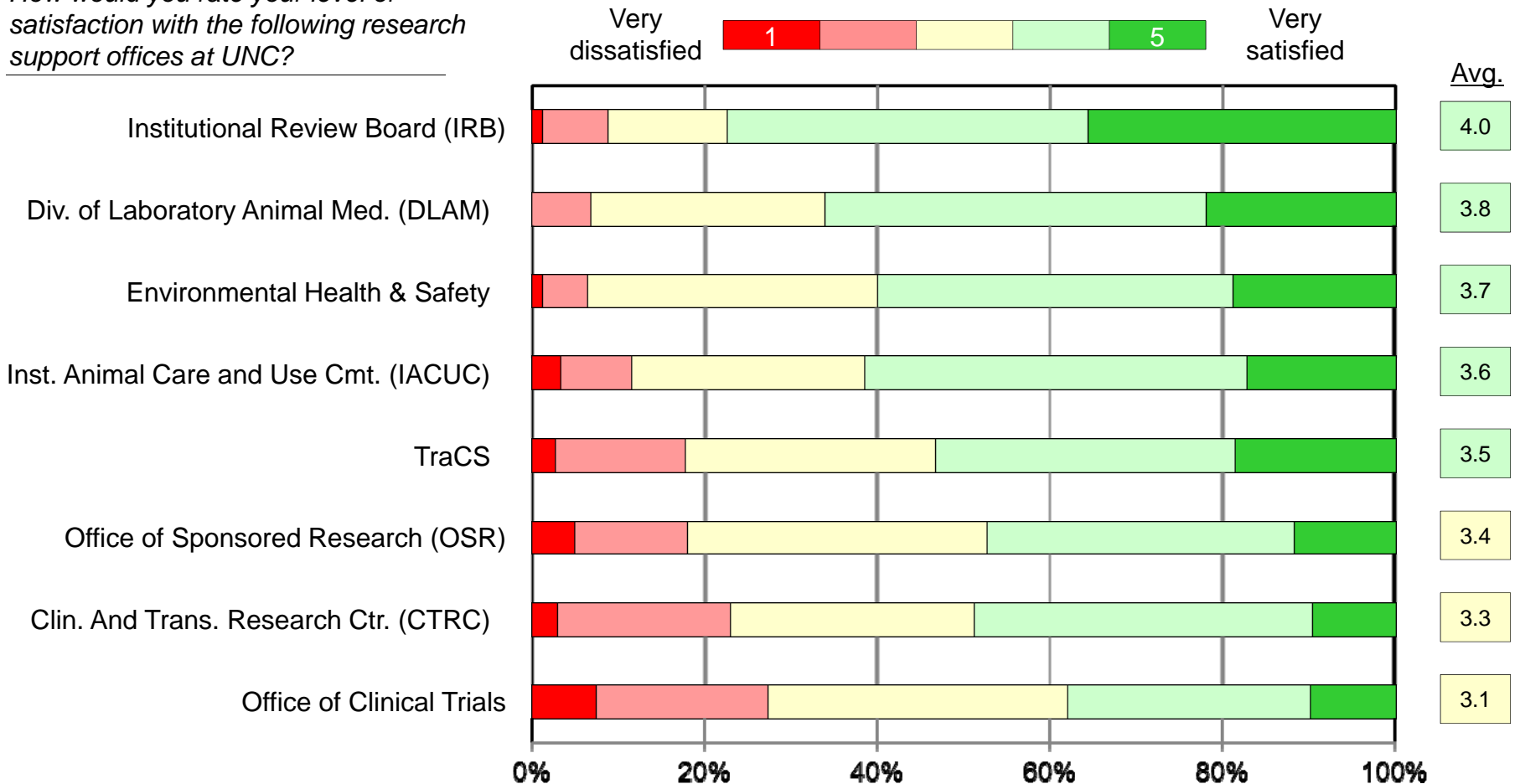
Contents

- Strategic planning process overview and summary

- Current state of the SOM
  - Research
  - Education
  - Clinical care
  - Cross-cutting topics

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UNC attracts a very competitive applicant pool

Applicant pool up 16% over last 5 years (though in-state applicants down 4%)

Very competitive matriculating class
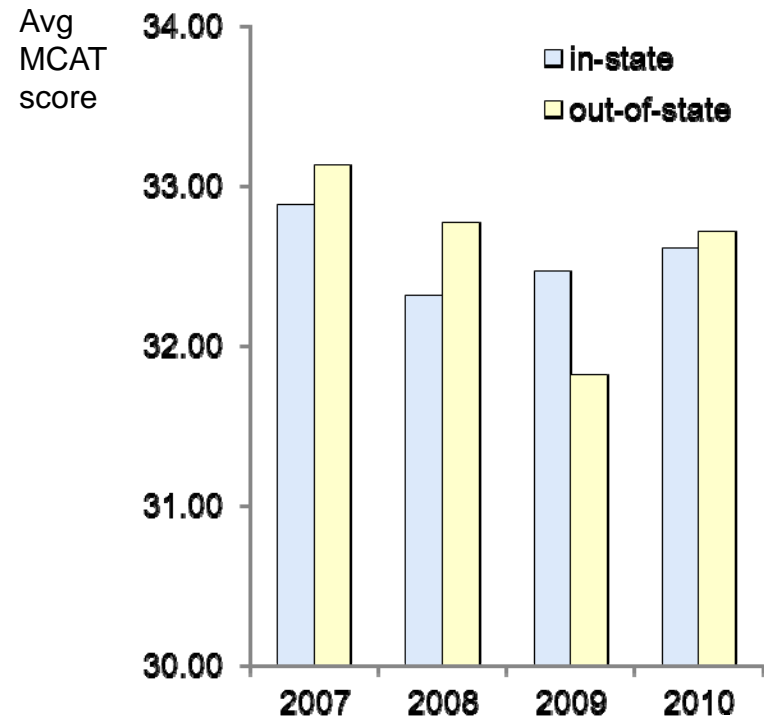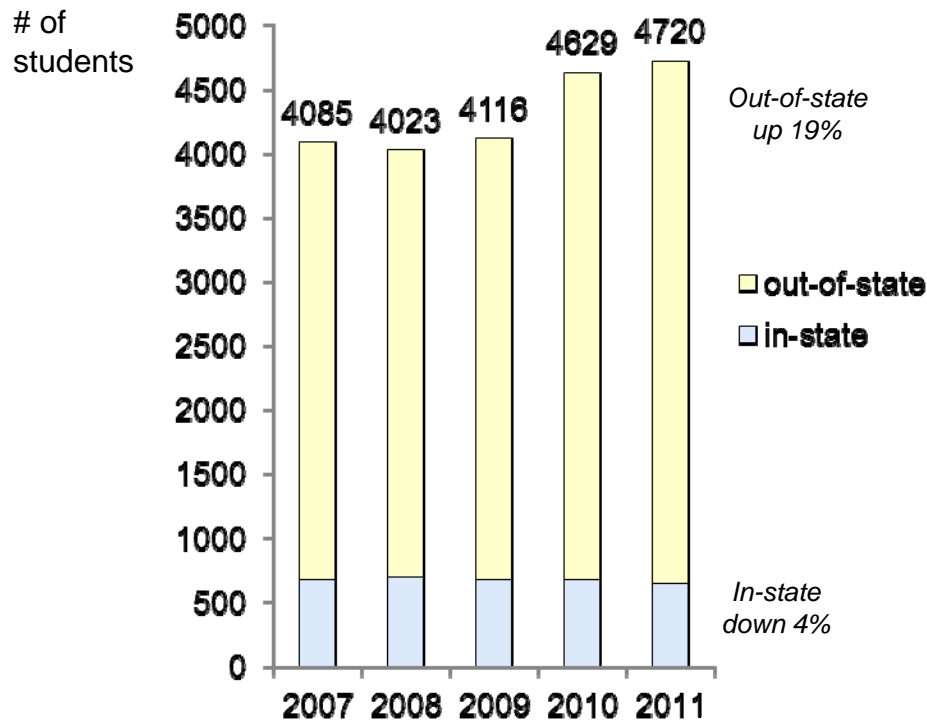
"We could admit almost any of the ~500 students we interview and be happy with the quality"

Source: UNC SOM Admissions department, quote from interviews

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Yield very high, but still losing number of students to Duke and other "prestige" schools

School attendance for those who declined admission – 2006-2010

School attendance for those who declined admission – 2006-2010

All students

students

NC residents
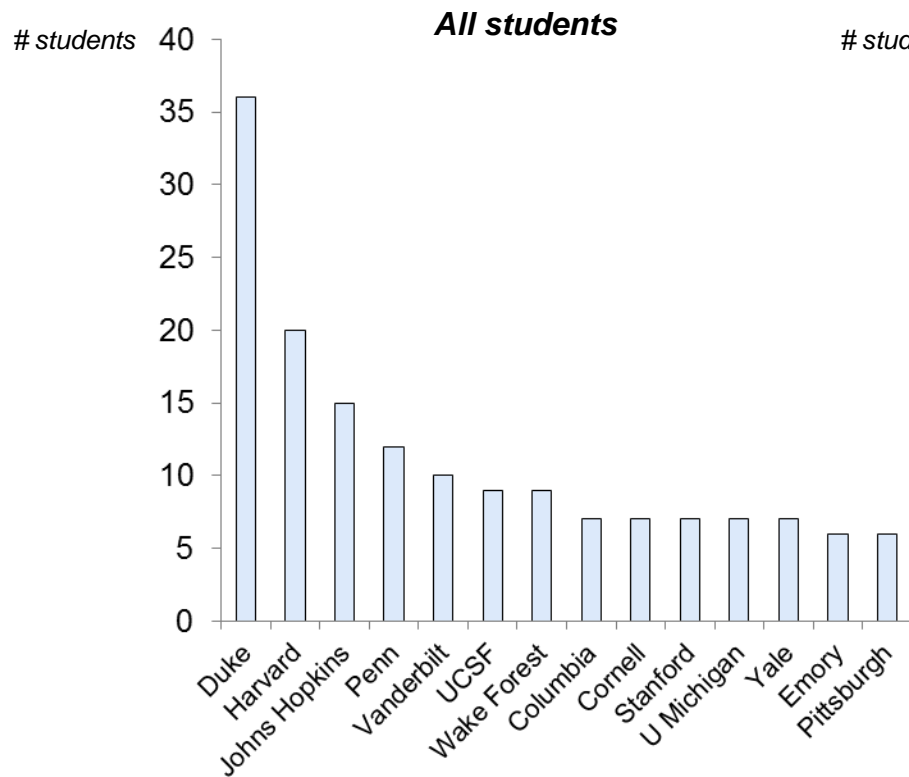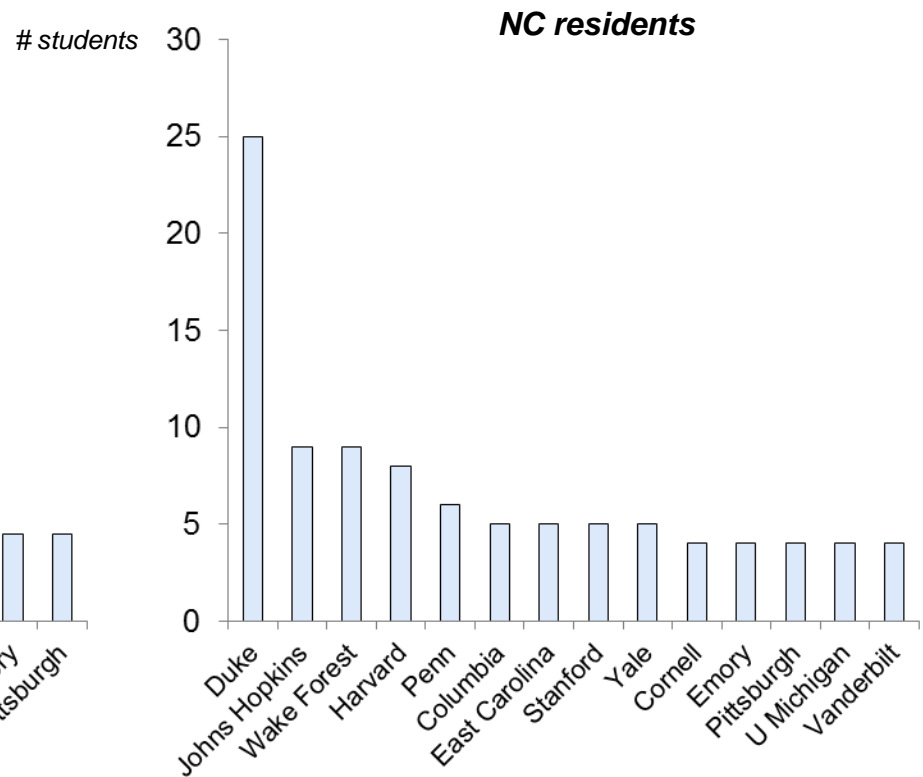
students

Should we be concerned in particular about the loss of students to Duke and Wake Forest?

Source: UNC SOM Admissions

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What does it mean to be "leading" in education?
For some it's about producing leaders, for others it's about state service

Please indicate the extent to which you agree /
disagree with the following statements:

Strongly disagree [1 | | | 5] Strongly agree

Statement	Avg.
One of the major goals is to train the future leaders of medicine, in whatever field they will work	4.4
UNC's combined degree programs draw highly-competitive applicants to the School	4.0
UNC has a responsibility to train physicians who will ultimately practice in North Carolina	4.0
UNC has a responsibility to train physicians who will become primary care doctors in North Carolina	3.8
UNC has a responsibility to train physicians who will ultimately serve underserved populations within NC	3.7
One of the major goals of our medical school is to train the subspecialists of the future	3.6
The current MD admissions process attracts students who will pursue both national and state priorities	3.5
Our faculty actively encourages primary care for our MD students	3.1

0% 20% 40% 60% 80% 100%

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AHEC faculty survey

AHEC faculty place much higher importance on serving needs of state

Please indicate the extent to which you agree / disagree with the following statements:

Strongly disagree — 1 ... 5 — Strongly agree

Avg.

Statement	Avg.
UNC has a responsibility to train physicians who will become primary care doctors in North Carolina	4.3
UNC has a responsibility to train physicians who will ultimately practice in North Carolina	4.1
One of the major goals is to train the future leaders of medicine, in whatever field they will work	4.1
UNC has a responsibility to train physicians who will ultimately serve underserved populations within NC	4.0
The current MD admissions process attracts students who will pursue both national and state priorities	3.1
One of the major goals of our medical school is to train the subspecialists of the future	2.9
Our faculty actively encourages primary care for our MD students	2.7

Source: UNC SOM Strategic Planning AHEC Faculty Survey, n=48

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40

Where do our seniors go after graduation? How much can we influence their choices?

Half pursue primary care residencies (though primary care residents tend to sub-specialize eventually)

About a third place in North Carolina

% of graduates

- Specialized Care
- Primary Care

- Out-of-state (Top states for graduates: CA, MA, NY, PA)
- In NC
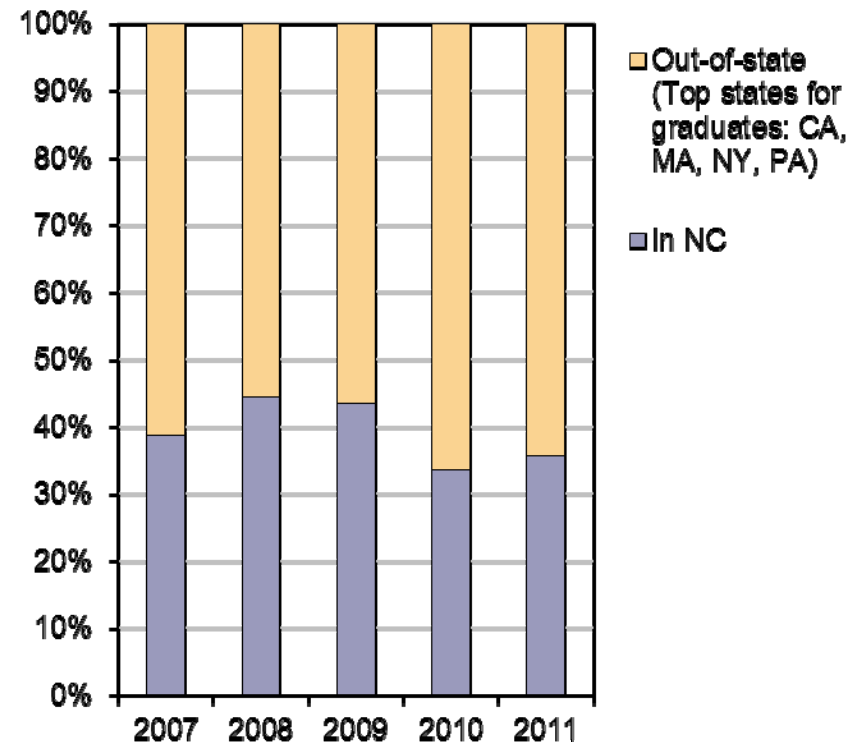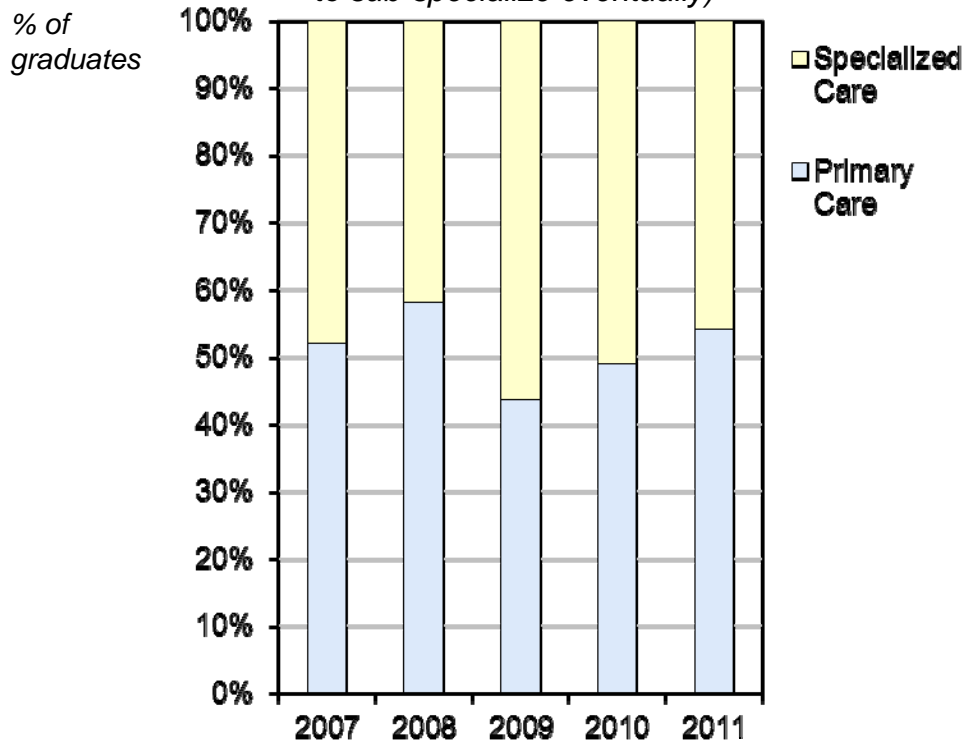
Some believe we should tailor admissions process to state service, while others feel it is impossible to influence students' practice/location choice

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Widely-held view that education is not actively promoted by UNC leadership

- Perceived to be least important of three missions -- "lowest on the totem poll" -- not seen as actively promoted by senior SOM leadership

- Underfunded -- depts do not feel that state funds cover education effort
  - Clinical departments said to prioritize clinical revenues
  - In non-clinical departments, tension between research and teaching – research is what brings money to department

- Some report not enough top-down strategic direction -- vs "catering to student whims"

The state of undergraduate medical education

Please indicate the extent to which you agree/disagree with the following statements:

Strongly disagree | 1 | | | | 5 | Strongly agree

Statement	Avg.
I would feel comfortable teaching in formats other than lecture (e.g., small group, case-based)	4.2
Education of medical students is a priority of the SOM	3.9
It is important that the UNC medical student curriculum be recognized nationally for innovation	3.7
The use of small group teaching and team-based learning should be increased in the basic science years	3.7
Students are highly engaged in the current clinical learning environment	3.5
The core competencies of the medical student education program provide a good framework for curricular change	3.4
The current curriculum is adequate for training physicians for the 21st century	3.2
Students today are highly engaged in the current basic science learning environment	2.9

0%   20%   40%   60%   80%   100%

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State of teaching at SOM

- Widespread view that teaching not valued…
  - Faculty want to teach, but don't feel they are being paid to do so
  - Some who are dedicated to teaching feel like second class citizens
  - Tension of "serving two [or more] masters"

- …though some said there's been improvement
  - Compensation for teaching leaders (i.e., course directors, curriculum committees)
  - Examples of dedicated teaching staff
  - Establishment of Academy of Educators
  - Encouragement of teaching by SOM leadership

- Some argue for dedicated basic science teachers
  - May be organization and education benefit from having dedicated teachers
  - But need to still inspire students to do research, teach MD/PhDs
  - Shouldn't just use "failed researchers" but outstanding, dedicated educators

- Facilities viewed to have negative impact on recruiting, morale and ability to innovate in curriculum (e.g., room for small groups, technology)

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Many opportunities cited to improve curriculum

Overall medical curriculum

- Faster to clinical rotations, more clinically relevant from day one

- More integration of curriculum across four years

- More individualized approach to medical school

- Improved softer skills, professionalism

- Need to add topics: quality, economics, technology

Basic science

- Need to increase difficulty of basic science classes in order to improve Step 1 scores

- Mixed feelings on shortening basic science – currently too much or too little?
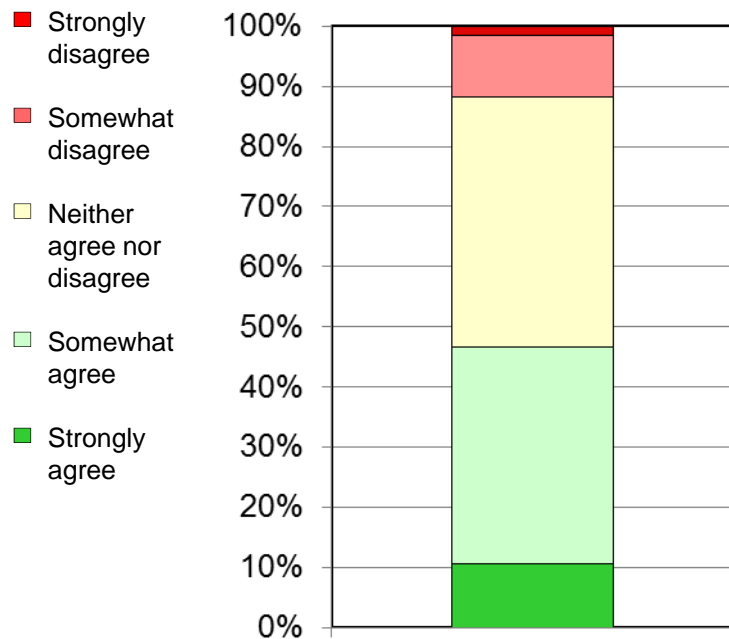
Clinical

- More integration across clerkships, may afford opportunity to add more to curriculum

- Ensuring student access to patients given new technology

- Improvement on human element of medicine

- Making fourth year more impactful

Some feel a complete curriculum overhaul is necessary -- will require top-down leadership to overcome inertia

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Jury still out on core competencies

The core competencies of the medical student education program provide a good framework for curricular change

Legend:
- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

- Some believe core competencies moving curriculum in right direction … very comprehensive

- …while many others still skeptical
  - Relevance outside of LCME
  - Ability to translate to actual curriculum content
  - Lack of broad awareness / understanding in SOM

Most benchmarked schools implemented competency based curriculums in the 2000s

Note: Based on 330 respondents to this question. 71 respondents skipped this question.
Source: UNC SOM Strategic Planning Faculty Survey

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Lack of engagement by students in basic science, but no consensus in interviews on best alternative

Student engagement in basic science

Legend:
- ■ Strongly disagree (red)
- ■ Somewhat disagree (pink)
- □ Neither agree nor disagree (yellow)
- □ Somewhat agree (light green)
- ■ Strongly agree (green)

Students today are highly engaged in the current basic science learning environment

Alternative teaching formats

Categories: Would feel comfortable with; Should increase (e.g. small group)

**All benchmarked schools highlighted lack of student engagement / lecture attendance as an issue
All exploring increased technology use and team based learning as an alternative**

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# AHEC: core asset that ought to be improved
Summary of interview feedback

- AHEC should be a competitive strength, but quite often a deterrent
  - Lack of understanding by students of AHEC, scares then off
  - … though current students express very positive experiences given more hands-on learning

- Wide variation in experiences across AHEC rotations
  - Many preceptors burned out, provide negative primary care experience
  - Differences in perceptions of AHEC rotations cause students to shy away from some (e.g., more stringent grading in Charlotte)

- Limited financial payment a concern for recruiting and retaining preceptors
  - Hard to recruit
  - Limited leverage for directing preceptors when payment so low

- Interviewees cited need to develop faculty and preceptors more and assimilate into SOM community to aid retention and to ensure quality of experiences
  - More screening of potential preceptors
  - More inclusion in SOM
  - More development to ensure consistent experiences

"Need to recruit practices that deliver medicine how we want to teach students (e.g., innovative, technology based, population health)"

AHEC faculty perspective -- from AHEC survey

- AHEC faculty place much higher importance on serving needs of state than non-AHEC faculty
  - Believe UNC should embrace uniqueness of being a state medical school
  - See developing MDs to serve NC as key -- and feel this should influence who is accepted
  - Believe that SOM students are not only not encouraged, but are often actively discouraged from pursuing PC careers

- AHEC faculty see a need for greater student clinical readiness, cite opportunities for curriculum
  - Need for more hands-on student engagement in clinical care
  - Desire for improved coordination between AHEC and broader curriculum
  - Opportunity to use AHEC system for innovation purposes

- AHEC program overall: clear on expectations, need help in execution (training, resources, comp)
  - Compensation of AHEC faculty and preceptors cited as biggest issue: ability to recruit preceptors, insufficient to cover lost productivity, lower than ECU and other schools
  - Additional issues cited in AHEC system: desire for additional support from Chapel Hill, more uniformity across AHEC sites, more appreciation for AHEC faculty

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Over half of faculty unaware of Academy of Educators
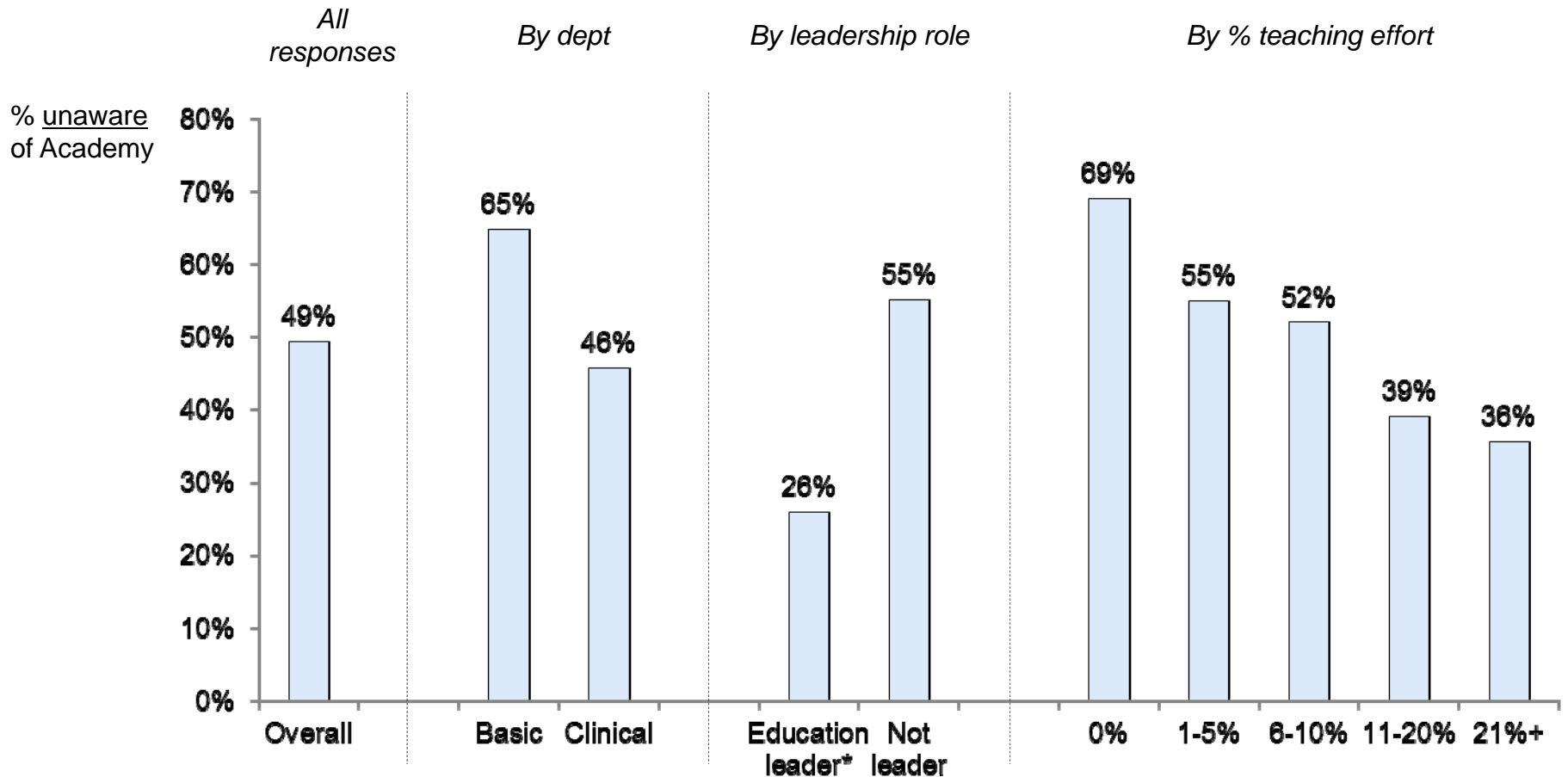
Problem of awareness seen across departments and within those most heavily involved in teaching

*"Education leader" includes those who are a course / block director, member of a curriculum committee and / or a resident director or associate director
Note: Percentages based on number of respondents answering question
Source: UNC SOM Strategic Planning Faculty Survey

Joint degree programs seen as competitive strengths; need to be nurtured

MD/PhD program very successful, need to maintain commitment	MD/MPH program viewed as key program differentiator – need to maintain/strengthen
• Tremendous growth of program – from 10 students in 1995 to 73 today • Very high caliber students – winning honors and awards • Core to research mission – faculty fight for them in their labs, don't want to lose them • Graduates become academic leaders -- many are inclined to stay at UNC • Key issue is maintaining funding for research years, focus on students getting their own grants	• MPH program ranked #2 in the country by US News • MD/MPH program attracts top students • Training it provides seen as particularly relevant and necessary for medicine of future • … but program at risk giving lack of funding and endorsement

Residency programs reported to be quite strong; issues are salary expense and work hours

- Most department chairs report that their programs are highly competitive…

- …and describe interdepartment cross-pollinization

- Some departments report a significant expense in paying for resident salaries above Medicare cap
  - Claim that hospital pays for extra resident salary cost at other hospitals

- Work hour restrictions a concern -- though a national, not UNC-specific, problem
  - Less faculty / hospitalist time for teaching residents
  - Opportunity for UNC to find a viable solution?

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Graduate programs strong, but concern about financial viability

- Graduate education seen as quite strong, with a big boost from BBSP
  - Attracting higher quality candidates with BBSP

- Broadly-held concern is about financial sustainability of the program
  - Large reliance on NIH funding, seen to be at risk
  - Need for independent pool of money to cover costs prior to student affiliating with a department
  - Desire for more firm commitment for program from Dean's office

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Education benchmarking focused on specific institutions and topics of interest

UW Medicine SCHOOL OF MEDICINE
- Larry Robinson, M.D., Vice Dean of Clinical Affairs and Graduate Medical Education
- Marj Wenrich, MPH, Chief of Staff
- Jan Carline, PhD, Director, Health Sciences Center
- Eric Tobiason, Administrative Director, Academic Affairs

UCSF SCHOOL OF MEDICINE
- David Irby, M.D., Vice Dean for Education

University of Michigan Medical School
- James Woolliscroft, M.D., Dean of Medical School
- James Bell, Chief Administrative Officer

Duke University School of Medicine
- Ed Buckley, M.D., Vice Dean for Medical Education
- Colleen Grochowski, PhD, Associate Dean for Curricular Affairs

HARVARD MEDICAL SCHOOL
- Jules Dienstag, M.D., Dean for Medical Education

Northern Ontario School of Medicine
- Dan Hunt, M.D., LCME, former Vice Dean
- Joel Lanphear, M.D., former Associate Dean for Medical Education
- Lisa Graves, M.D., Associate Dean for Undergraduate Medical Education

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Key learnings: mission (I)

- Missions differ (state versus national goals), but all very clear and best schools tailor admissions process and curriculum to mission

- Of public schools of medicine…
  - UCSF and Michigan focused on national priorities
    - Believe other state schools exist to fulfill broader missions
  - Washington more state-focused given WWAMI system

- Some schools trying to better serve state
  - UCSF, as part of broader CA state program, initiated program for those interested in urban underserved populations, same admissions criteria

- NOSM most focused on state mission
  - Admissions / curriculum specifically tailored to serving needs of N. Ontario
  - "For the north, by the north"

Key learnings: curriculum

- Medical education curriculums in constant state of evolution; best schools use strong leadership from the top to drive change
  - All have recently changed curriculum, but still considering or planning for additional changes
  - Lengthy endeavor: Harvard believes in need to significantly alter curriculum once every decade, "5 years to design, 5 years to implement"
  - Mandate for change (often controversial) from top, with faculty members then executing
    - e.g., UCSF faculty told to cut basic science curriculum by 3 mos; Duke's move to 1 year of basic science in the 1960s led to numerous firings for resistant faculty

- Many schools went to competency-based curriculum in the 2000s (Mich: 2003, UCSF: 2009)

- All schools cited desire to get clinical experiences earlier; many schools have already shortened basic science, also adding clinical exposure in first year
  - Basic science length: Duke 12 months, UCSF start clerkships spring of year 2, and Harvard start clerkships May of year 2
  - But still want earlier clinical experiences, preferably from day one
    - Michigan's Family Centered Experience sends students in groups of two out in first week of school to see patient, follow for two years

Key learnings: curriculum (II)

- Experimentation with longitudinal clerkships, but jury still out, programs small in size
  - NOSM 100% longitudinal, all in community setting
  - UCSF has 40% of students on longitudinal clerkships, in academic medical centers
  - Harvard has 12 students in Cambridge curriculum, remainder have clerkships in one hospital with some longitudinal elements (e.g., multi-disciplinary case in afternoon)
  - Limited outcome data to support growth of programs, need for evaluation to maintain
  - … but sense that there is benefit – provides choice for students, UCSF: "obviously something going on, just can't put our finger on it yet"

- Some leaders considering radical curriculum innovation, though hesitant to make major changes while in LCME cycle
  - UCSF: considering attenuating basic science curriculum over 3 years with 3rd year clerkships intermixed, increased use of technology and team based learning, state-of-the art facilities
  - Michigan: considering technology-enabled modularization of curriculum to allow students to proceed at own pace; true competency based curriculum with synthesis of knowledge and skills applied to clinical situation

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Key learnings: technology / team-based learning

- Most schools exploring increased use of team based learning and technology – for improved efficiency and effectiveness

- All schools cited students not engaged, not coming to lectures – "different generation of learners"

- Some schools have already capped lectures (e.g., UCSF at 50%), while others are aiming to (e.g., Duke wants to cut number of lecture hours in half)

- Team based learning furthest ahead at NOSM (basic science classes include virtual simulations set in rural communities) and at Duke Singapore program (entire curriculum)

- Rationales cited for increased technology use and team based learning include….
  - Increased effectiveness - citing disengagement of students and research proving positive impact of blended learning
  - Cost pressures – use of online modules, materials and simulations for substitution of some class time; less faculty time required
  - Difficulty in engaging faculty in teaching mission today – belief in ability to use smaller, core set of faculty to facilitate team based learning, with much of work moved online

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Key learnings: medical education organization and research

- University of Washington one of few schools with medical education department
  - Department status (Medical Education and Biomedical Informatics)
  - 7.5 FTE, all PhDs
  - $657K (faculty and staff), 16% sponsored; 4 others 70% sponsored by other programs so not counted

- University of Michigan with distinct medical education group
  - Separate group with following responsibilities: CME (but moving out), service exams, run simulation center, teach PhDs
  - 12 faculty members, but some have joint appointments
  - Budget: "supplement to hundreds of thousands with rest externally funded"

- UCSF, medical education part of broader Dean's office
  - Part of Dean's office
  - Combined UME, CME and GME plus director of medical education and service functions
  - $2.8M annual budget for faculty development, educational research and admin support

Contents

- Strategic planning process overview and summary

- Current state of the SOM
  - Research
  - Education
  - Clinical care
  - Other cross-cutting topics

Overall, clinical care said to be quite strong

- Despite economic challenges, pride in ability to serve North Carolina

- Quality of care seen as generally high, some opportunities to improve
  - Pockets of excellence -- though without the national reputation
  - Some areas with opportunity to improve

- Opportunity to improve service to patients and referring doctors

Quality of care and quality of service

Quality of care seen as generally high…

… with opportunity to improve service to patients and referring doctors
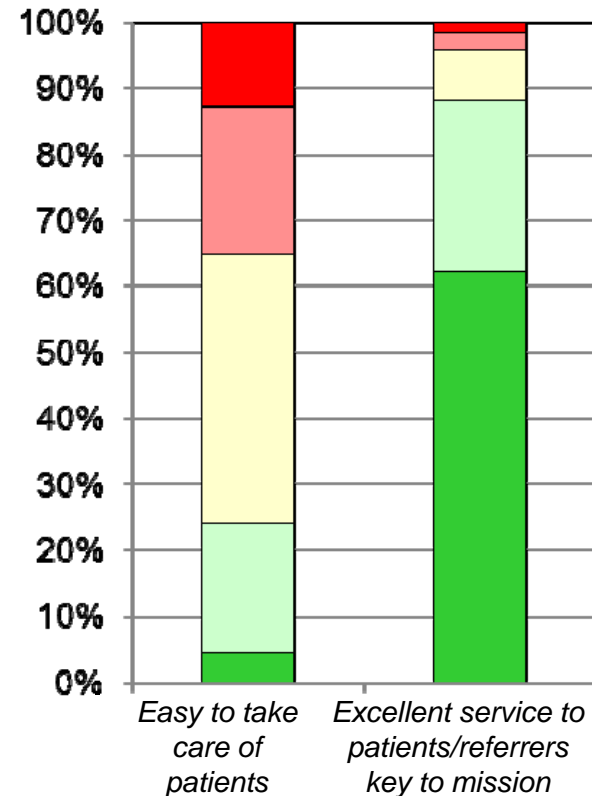
Legend:
- ■ Strongly disagree
- ■ Somewhat disagree
- □ Neither agree nor disagree
- □ Somewhat agree
- ■ Strongly agree

The quality of care UNC delivers is consistently high

Easy to take care of patients

Excellent service to patients/referrers key to mission
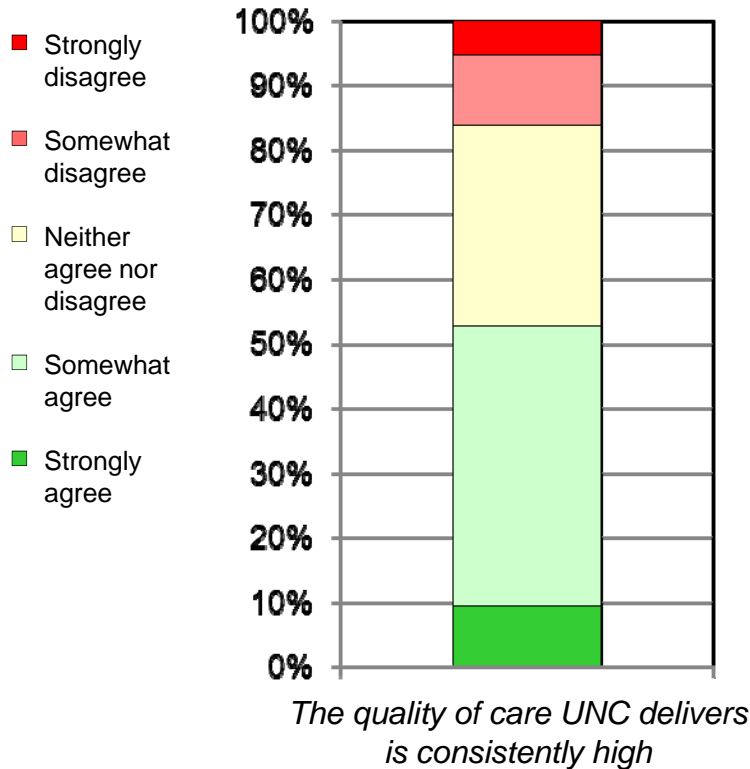
"We never go outside to ask the referring physicians or patients what they need from us. We need to take a look at who our customers are and what they want."

Investment in IT seen as key to improving service and quality

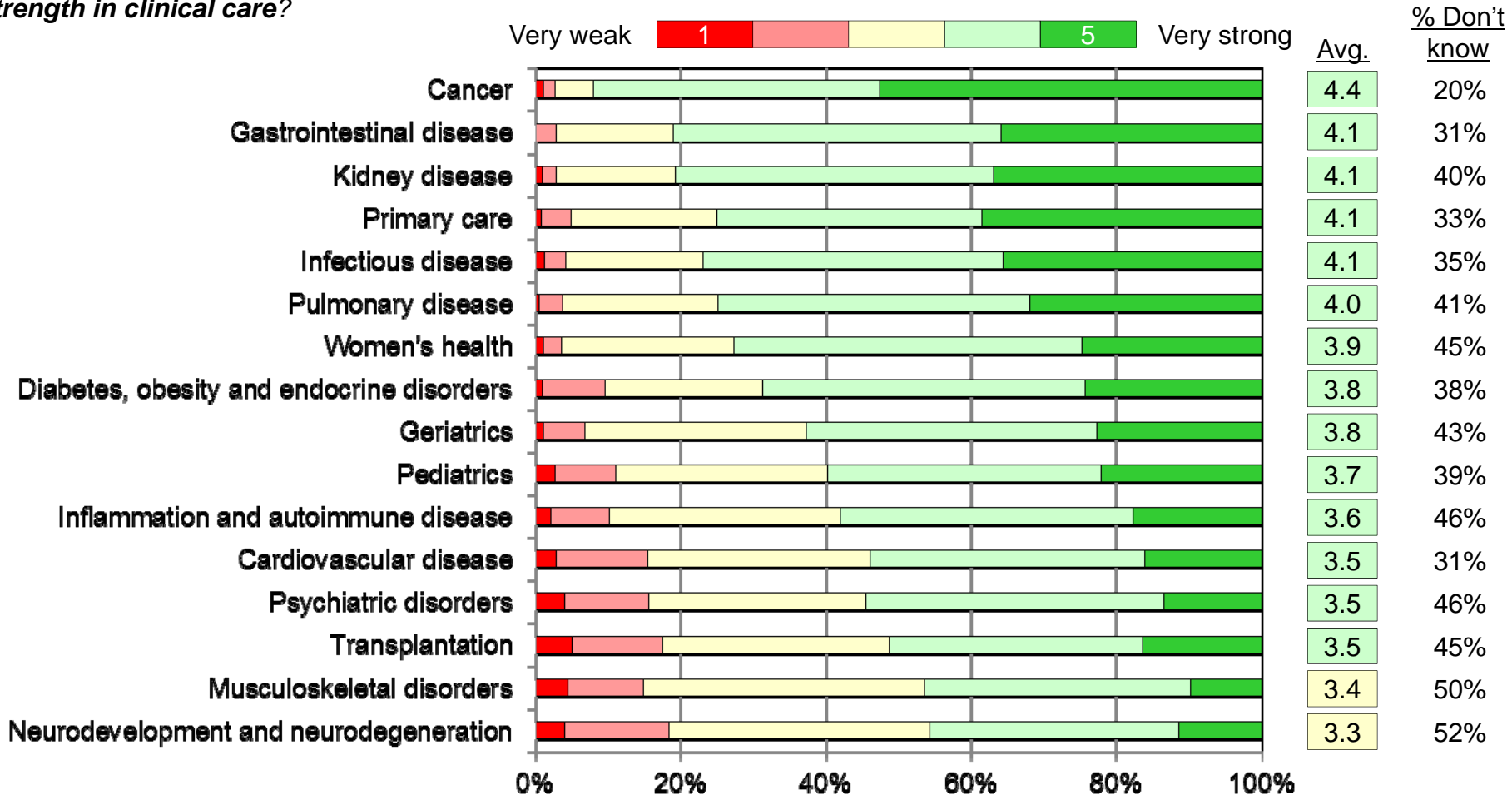| Faculty feel IT systems contribute to quality and service challenges	More focused push in informatics seen as key for achieving quality improvement goals

• *WebCIS is slow, clunky, difficult to use. Communicating with referring MD's is difficult because there are no electronic forms to capture and store information on referring physicians...*
 	
• *Computer infrastructure is clunky. CPOE hard to navigate, Webcis requires too may key strokes, webX on call data challenging to figure out who on call, Medicine services not all listed so can't find right doctor…*
 	
• *Handling of outside records within WebCIS is poorly designed so that effectively documents are irretrievable once entered into WebCIS…*
 	
• *There are many inefficiencies in the system, particularly in the electronic medical record and computer physician order entry system.*
	• Clin informatics seen as key to quality efforts…
	
	• UNC said to lag, despite investment to date
	  – Carolina Data Warehouse not what it should be -- data quality concerns
	  – Clinical data still housed in different systems that don't talk to each other
	  – Ultimately, need to integrate biological and clinical data for cutting-edge research
	
	• As with IT services, informatics resources said to be spread thin across SOM
	  – Many small informatics initiatives across SOM campus
	  – CTSA not sufficiently resourced to drive cross-campus strategic initiatives
	  – Heavy demands on hospital IT to meet meaningful use, other regulatory needs

We're not doing as much as we could or should be doing [to build] the electronic systems… to deliver quality care. In order to [lead in quality] you need computer applications …if you invest money on the front end it will pay out forever.

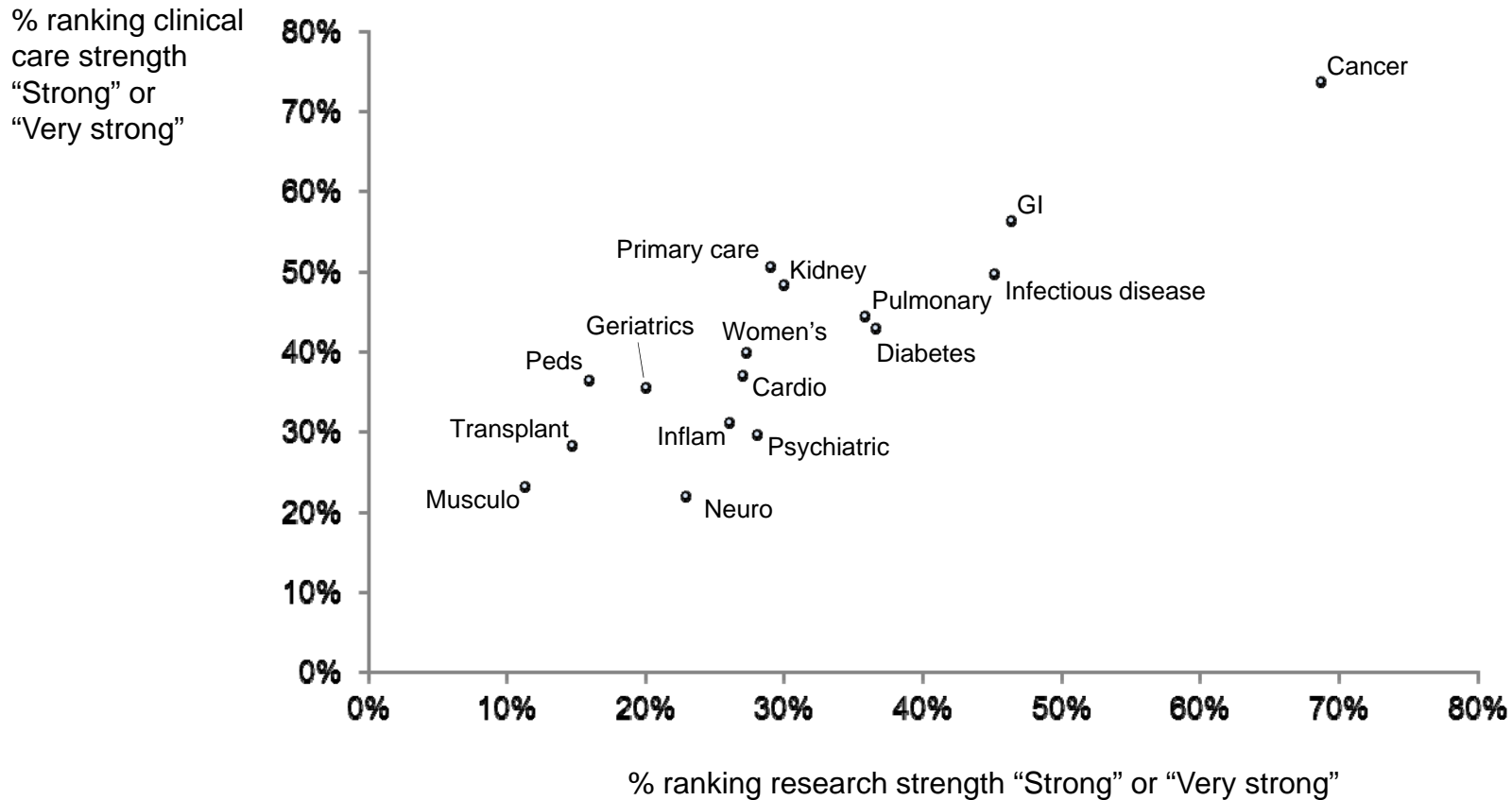# Cancer cited as top strength for clinical care
Yet many areas seen as strong

*How would you rate UNC's **overall strength in clinical care**?*

Very weak | 1 | | | | 5 | Very strong

	Avg.	% Don't know
Cancer	4.4	20%
Gastrointestinal disease	4.1	31%
Kidney disease	4.1	40%
Primary care	4.1	33%
Infectious disease	4.1	35%
Pulmonary disease	4.0	41%
Women's health	3.9	45%
Diabetes, obesity and endocrine disorders	3.8	38%
Geriatrics	3.8	43%
Pediatrics	3.7	39%
Inflammation and autoimmune disease	3.6	46%
Cardiovascular disease	3.5	31%
Psychiatric disorders	3.5	46%
Transplantation	3.5	45%
Musculoskeletal disorders	3.4	50%
Neurodevelopment and neurodegeneration	3.3	52%

Note: Percent "Don't know" based on number of respondents answering question
Source: UNC SOM Strategic Planning Faculty Survey

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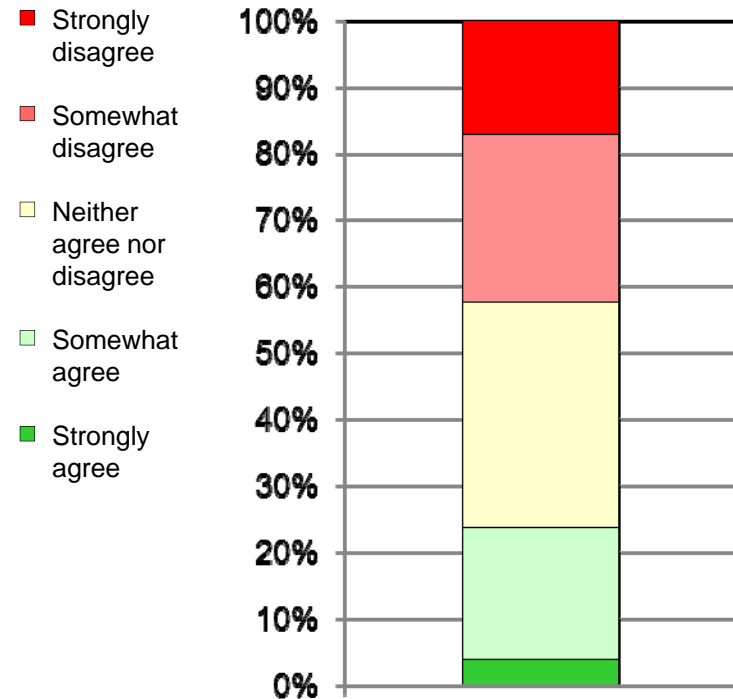# Among faculty, perceived strength in research correlates strongly with perceptions of clinical care

% ranking clinical care strength "Strong" or "Very strong"

% ranking research strength "Strong" or "Very strong"

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Relationship between SOM and HC system stronger, but not as aligned as should be

- HC system's financial health seen as critical to SOM

- Relationship between HC system and SOM said to be improved

- But concern about alignment of goals
  - Belief that hospital does not value SOM's academic mission

- Mixed views on hospital/system strategy…
  - Many see benefits of strategy
  - Some question choice of focus areas
  - Overall, support for network strategy

- …and feel the two entities need to be aligned, but SOM strategy can be broader

The hospital and SOM are well-aligned in terms of mission and strategy

■ Strongly disagree
■ Somewhat disagree
□ Neither agree nor disagree
□ Somewhat agree
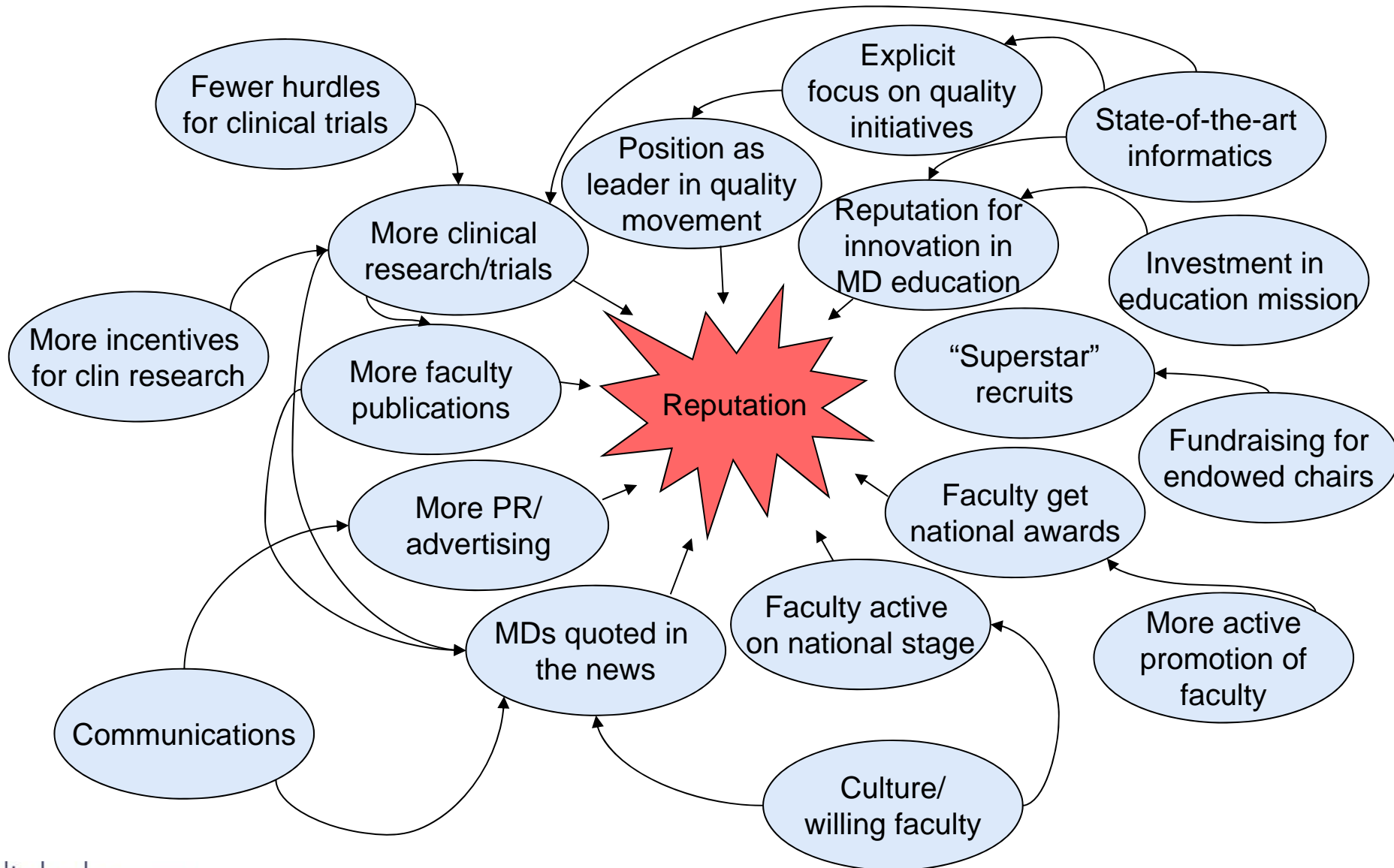■ Strongly agree

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What could a broader clinical strategy entail?
Common themes from interviews

- Identify and invest in clinical areas on the verge of national/international leadership to drive reputation

- Improve quality of service to patients (access) and referring physicians

- Increase the amount of clinical research and clinical trials

- Strive for national leadership in quality/metric-driven care, comparative effectiveness research

- Leverage health care system expansion/systems strategy for clinical research and health care system innovation

- Invest in infrastructure -- in particular IT -- to enable all of the above

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Many opportunities cited to improve reputation

Fewer hurdles for clinical trials

Explicit focus on quality initiatives

State-of-the-art informatics

Position as leader in quality movement

Reputation for innovation in MD education

Investment in education mission

More clinical research/trials

More incentives for clin research

More faculty publications

Reputation

"Superstar" recruits

Fundraising for endowed chairs

More PR/ advertising

Faculty get national awards

MDs quoted in the news

Faculty active on national stage

More active promotion of faculty

Communications

Culture/ willing faculty

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Contents

- Strategic planning process overview and summary

- Current state of the SOM
    - Research
    - Education
    - Clinical care
    - Other cross-cutting topics

Cross-cutting topics

- Faculty issues

- Leadership/administration

- IT/infrastructure

- Allied Health

- Funding

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Faculty issues

- Interviewees and survey respondents highlighted disconnect between current salaries/incentives with UNC aspirations
  - Low salary levels not in line with "leading med school"; pose retention risk
  - Some concern about salary disparities -- particular with new practices
  - RVU-based clinician incentives appear to devalue academic mission

- Role/status of fixed term faculty needs to be addressed
  - Interviewees highlighted fixed term faculty growth as a concern
  - Survey comments reinforced these faculty's sense of second-class status

- Opportunity to increase diversity of faculty
  - Diversity in student base not reflected in makeup of faculty
  - Some successful initiatives, but need a coordinated program spanning career track

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Leadership/administration

- High regard for SOM leadership, but concern that key leaders are too stretched

- Numerous interviewees suggested the SOM organization is too complex with overlapping responsibilities

- Concern expressed in interviews and survey about next tier of leaders
  - In particular, concern about succession planning for key center leaders
  - Existing leadership development program may not be well known

Allied Health Sciences

- AHS an asset whose value may not be sufficiently leveraged…
  - AHS faculty do not practice at hospital -- hospital hires own therapists
  - AHS faculty not involved in education of medical students
  - No collaboration currently in research with rest of SOM

- …and may be at risk
  - Because of small size and dissimilar mission, gets lost within SOM (e.g., budgeting)
  - Challenge anticipated in finding successor to current chair given AHS's dept status (other institutions said to have independent schools of allied health)

- However, independent school status for AHS not viable at present
  - Current budget environment precludes creating new structures
  - Could not set precedent for other units desiring independence
  - Breaking off seen as "anti-collaborative" -- vs. finding ways to integrate more with SOM

- Are there ways to address AHS concerns short of creating a new school?
  - Opportunities to better integrate / leverage AHS within SOM?
  - Address chair recruiting challenge with creative nomenclature?

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Funding

- With state and NIH funding trends, an imperative to find new sources of funding

- Work to date has highlighted potential ways to free up existing funding
  - Reduce % of faculty with research expectations who are unfunded, enabling departmental resources to be redeployed
  - Seek to sunset unproductive research activities (e.g., centers)
  - Consolidate resources/activities where appropriate (e.g., IT)

- Interviewees suggested opportunities to diversify funding sources
  - Technology transfer/commercialization
  - Clinical trials
  - Philanthropy

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