D r. Alan Buchman (Feinberg School of Medicine at Northwestern University): Dr. Klein, where do you see clinical research headed? As chair of your division, how much time do you see your faculty spending to think of research hypotheses, to prepare grant applications, and to apply for funding? How much time do they have? How much time do faculty need from the time they conceive an idea to when they obtain funding and even start their research?

Dr. Samuel Klein (Washington University School of Medicine): In the past, clinical income was easier for clinical researchers to obtain, and clinical income would often drive the academic mission of many medical centers. The reduction in clinical revenues means that for clinicians to spend less in research and more time doing clinical duties to cover their salaries. After completing their clinical duties, they do not have a lot of time to research unless they have bought this time by having grants, and as we know, obtaining grants takes time. This creates a difficult situation.

In addition, research centers may have training grants for young investigators, but these grants actually cost the institution because training grants do not fund all of the time that these young investigators spend in research. The institutions invest significant resources for clinicians to become investigators, but when the training grants and Career Development Awards from the National Institutes of Health end, investigators struggle because they may not be able to obtain more grants and they may not have the infrastructure support that more experienced investigators had when we were starting our research careers. Therefore, now, we are potentially training young investigators with nowhere to go once they finish their training.

Dr. Alan Buchman: Dr. Kirch, any comments on that?

Dr. Darrell Kirch (Association for American Medical Colleges): I worked with a young physician who was encouraged and hoped to have a research career but who left academic medicine and research. He explained poignantly, “I feel like it was a bait and switch, you know. I was so attracted by what I could do in research and then, when I found all these obstacles, I was forced to leave.”

Dr. Alan Buchman: Dr. McPhaul?

Dr. Michael McPhaul (University of Texas Southwestern Medical Center): Many of the points that you have raised in your collective discussions also dance around some of the changes that have taken place within the type of people who are training and the kind of exposures that they have to clinical research. For example, I suspect that both Drs. Klein and Kirch, when they were training, had a cadre of physician scientists (probably doctors of medicine [MDs]) training them and attracting medical students to conduct research. These students were probably encouraged to pursue that pathway: a pathway that, for all intents and purposes, is rare now. The National Institutes of Health has no interest in supporting that type of training. That focus and training has been centered in various specific-degree-bearing programs. Perhaps, the pathway of clinical investigator training has fallen by the way.

Dr. Darrell Kirch: I would agree that students have fewer role models, but we do see some encouraging signs of improvement. For example, consider the Clinical and Translational Science Awards: if we had more funding for environments such as the Clinical and Translational Science Awards, more physician researchers would serve as role models, and that pathway would look more viable again.

Dr. Samuel Klein: Because we are pressured to be financially productive in academic medicine, we do experience difficulties when we try to find time to mentor young investigators. So young people observe haggard senior investigators, whereas when I was in training, I liked to sit and talk with my mentor. I do not have that kind of luxury time with my trainees now. Our interaction is quick, sharp, and to the point: “Let’s get done and move on.” Senior investigators struggle because they do not have that relaxation time to spend training.

Dr. Alan Buchman: Actually, I have an example from Northwestern, which is not unlike most other US medical schools. Shortly, we will be expected from the clinical standpoint to produce the 75th percentile revenue of any clinicians across the country. I currently have four clinics and 2 sessions of endoscopy, which will be doubled. However, if I double that, I will not have enough days in the week to accomplish all of my faculty responsibilities. As a result, I do not have time to review manuscripts to determine if they are worthy of publication; I do not have time to generate hypotheses or to write a grant application. I do not even have time to read about contemporary issues to improve the care I give. Clearly, as academic medical centers have been forced to create a business model in a setting in which normal supply-and-demand economics do not apply (because health care is a scarce world resource), we have overcorrected the issue of little accountability. We clearly had to improve accountability, but we have overimproved that.

Dr. Timothy Lipman (Washington, DC, Veterans Affairs Medical Center/Georgetown University Medical Center): Once a year, as director of a gastrointestinal fellowship program, I interview perspective candidates. My program just interviewed 30 people for 2 slots. Every year, every candidate says he or she wants to do academic research with a clinical model, but they do not know what they are talking about. Most of our graduates go on into private practice. The 10% to 20% who go into academic medicine are academic educators: they are university associated or affiliated but are doing endoscopy in an academic institution and are therefore working in a private model.

Most medical students and most residents do not know what clinical research is. They do not know what good study design and methodology are. We need to start earlier to teach these medical students what research is and how to conduct quality research. Does everybody else agree?

Dr. Alan Buchman: Dr. Kirch, do you want to comment on that?
Dr. Darrell Kirch: We could debate about when is the best time to immerse somebody in clinical research training. For me, I learned after residency in a fellowship. Whenever is best timing, our fundamental problem as a society is that we get what we reward. We can hope that future scientist will find a cure, say for Alzheimer disease, and to experiment with new treatments. However, if the rewards, such as the funding or encouragement, are stacked in other ways, we will not get what we want. For example, if your graduate fellows find the rewards in private practice, they will go into private practice rather than into research. In the end, as a society, we must decide the degree to which we are going to invest in clinical research and thus also invest in the career path and instructors of people who want to train in clinical research. We cannot invest in these potential researchers with decreasing public funds. An old saying says, “Folly is hoping for A while rewarding B.” We hope for clinical research in the United States, but we have not been rewarding clinical researchers.

Dr. Alan Buchman: Dr. Kirch, you addressed the many faculty physician positions that are unfilled in medical schools. We also fail to realize that industry recruits come from the same pool of people who are trained in both basic science and clinical investigation. If we do not train additional clinical investigators, the development of new diagnostics, therapeutics, and medications will also decline.

Dr. Alan Buchman: Dr. Klein, do you have any other comments?

Dr. Samuel Klein: I think Dr. Lipman’s fellowship applicants may be misrepresenting themselves. They know what you want to hear; they are smart people. They say “I want to be a clinical investigator in an academic setting” because we do not want to hire people who are going to private practice.

We are seeing a group of new physicians who are going into medicine for reasons other than the reason that we had: to help mankind, to do research, and to advance science. We realize that gastroenterology offers financial incentives. We do not get similar financial incentives in our geriatrics program; we do not see money in geriatrics. As a result, we get a purer group of people, but we still struggle to find those who are really interested in careers in clinical research.

Dr. Alan Buchman: We have eliminated the altruism from medicine by putting a money tag on everything that we do. Everybody wants education, which includes manuscript writing and reviewing, but no one wants to pay for those tasks.

Dr. Darrell Kirch: I must speak in defense of today’s medical students, as I have interviewed hundreds of them for admission and then have watched their career paths. The people who come into medicine today-half are men and half are women—are as idealistic and desiring to help people as I believe I was. However, these students are at a disadvantage today. Whether a student wants to be a clinical researcher or a primary care physician in rural America, the student soon learns that those positions are undersupported and underrewarded in our society, and these students are graduating with unprecedented levels of debt. What can we expect from these students if they want to have a life and a family? Therefore, rather than fault the students, we should fault ourselves as a society because of how we have aligned the incentives for these future physicians.

Dr. Alan Buchman: Dr. Davis?

Dr. Pamela Davis (Case Western Reserve University): I am a dean at a large medical school, and I would also like to speak in favor of the students. If we want these students to go into research, we need to (as the data show) expose them earlier because they will then be more likely to stay in research. We can actually begin to teach them about research when these students are undergraduates. I support undergraduate and summer research programs that many medical schools are supporting.

This year (2009) at my institution, we are graduating our first class in which every student was required to produce a thesis or earn an advanced degree. We at Lerner College of Medicine provide a track that includes an additional year that we devote to clinical research. In our university track, every student must produce a scholarly work. We informed them of this requirement 4 years ago when we enroll these students. When we created this requirement, I thought, “Gee, our applicants are going to drop off. No one is going to want to come to our school.” I was wrong. In fact, our applicant rate increased 49% in the same year that the national number of applicants increased 5%, and we experienced an increase in the quality of our applicants as well—at least quality measured by grade points and Medical College Admission Test scores. Therefore, I am not sure that students are discouraged or disinterested in research. We create barriers, and we ask them to overcome those barriers—barriers that in the past, we did not ask people to overcome. The students may not be the problem.

We have a large student population. Approximately one half of our students enter the MD curriculum—not the medical scientist training program or MD/doctor of philosophy curriculum—having already published a paper. These kids are excited about investigation. They want to explore and push back the ragged frontiers. We need to smooth the pathway beyond that for them.

Some of our students do know what clinical research is. They may have a healthy concept of fiscal reality. We do have good raw material to work with, and we need to work with the federal government, industry, and the insurance industry to recruit young investigators who can push back the ragged frontiers of research.

Dr. Darrell Kirch: I would like to clarify my previous comments. I agree with Dr. Davis. What I was trying to say is that those physicians, not the students, but who are entering lucrative subspecialties may be other motivations to enter those fields, and they may say what they need to say to obtain those difficult and competitive positions.

Dr. Samuel Klein: From the Washington policy perspective, Dr. Davis and her colleagues at Case Western are doing a wonderful job. However, 10 years from now, if none of those graduates are pursuing careers as research scientists, we as a nation will suffer; we may be too late to change circumstances and will have lost an entire generation of researchers.

Dr. Alan Buchman: Obviously, we need to cultivate these students, but we also must be able to provide mentors for these individuals. If the mentors are seeing patients all day and have no time to mentor, we cannot capture this interest and properly train students, or the students will be on their own.

Dr. Abdulla K. Salahudeen (University of Texas MD Anderson Cancer Center): We all recognize that we are experiencing crisis in clinical research, and the American Federation for Medical Research provides us with a platform because the foundation is a multispecialty organization.

As clinical and basic scientists, we believe that we sit in the dark corners of the laboratories or deal with patients in the most confidential way, and we do not project ourselves. We do not report what we lack: we just hypothesize, we test our hypothesis, we write a grant application, and when we do not receive funding, we tuck our tails and run. I think those days are over, and the consumers are here. As Fran said, “I’m a health consumer. I have voice. I have issues.”

Therefore, we at the American Federation for Medical Research need to maintain this platform where people come
together. As Fran said, “I have an inner voice. I have demands. I have concerns.” She mentioned that corporate America is unlikely to do research that will not readily benefit their shareholders. Therefore, we need to focus on public health, as others have mentioned. We need to educate the politicians and workers in the government.

My last point is that we are pulling a cart in different directions. To some extent, we are conceited. We each have our own ideas and our own bias in how to research. At the same time, our other interests are pulling us in another direction. We need to put aside our differences, focus on the common goal, come together with the people, the consumers, and make a concerted assault (that word comes to my mind) on the system.

Our time is running out; as Dr. Kirch illustrated in the graph of the students, the number of interested young people is decreasing. The crisis is already established, and the farther we let it run, the more difficulty we will experience in trying to solve the crisis.

We have great institutions and great meetings, two thirds of which are filled by nurses presenting their data. However, American researchers experience more difficulties than do clinical researchers in Europe or other regions. As a clinical researcher, I run from investigations sometimes because working with the bureaucracy is so difficult. Unfortunately, our regulatory agencies in the United States are stifling. However, we do have an option: we are clinicians, and we could care for patients, make money, and experience these frustrations related to this crisis. We need to recognize that we have an option, acknowledge these frustrations, and unify. We need to gather again, perhaps next year, and continue to work to see results.

Dr. Alan Buchman: One last comment. . .

Unidentified speaker: As a haggard clinical investigator, I would like to comment and share what I have perceived over the years. We address that industry is reaping the benefits but not having much input into the health care system. I would argue that in addition, industry insurance has complicated the system. Industry insurances require preauthorizations for care, and other steps that they require have increased the cost of medicine because of the bureaucracy.

We spend a lot of time now changing formularies for patients, and approximately one half of my time for patient care is spent completing additional paperwork. The cost of medicine has increased, the time we must commit has increased, and that translates into students and residents not seeing us enjoy medicine and not having time to talk because we are spending long hours and are at the office late at night so we can complete paperwork for the insurance companies.

Dr. Darrell Kirch: Mrs Miller, I was moved by your story, and I was impressed by the amount of research you did. We would suffer in a world in which patients were doing their own research, but we, as a nation, fail to produce the clinical physicians and researchers to meet your interest and your passion. I appreciated your perspective on the value of research.

Mrs Sabine Miller: Thank you.

Dr. Alan Buchman: One of the problems that we face is that we have an insurance lobby, a hospital lobby, and an industry lobby in Washington. We need to involve the American people and the patients to promote what we need from our government and our industry. Otherwise, for generations to come, our life expectancy or quality of life will decrease, and our morbidity and mortality will perhaps increase.