

ACC NEWS

President's Page: The Need for the In(ter)dependent Investigator

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In any field, research is a multidimensional endeavor that requires a continuum of intellectual processes and skill sets. Nowhere is this more true than in medical research. Whether at the bench or in clinical investigation, a project comes to fruition only if it reflects creativity, technical knowledge and application, analysis, patience and tenacity, and the ability to write and present findings.

On occasion, a single individual possesses these diverse talents and, with proper mentoring, may in fact become one of the great independent investigators whom our culture and our profession admire and reward. More often, however, we find one or more—but not all—of these skills in the young men and women who have chosen to pursue careers in basic and clinical investigation. When we bring together these talented individuals, a research team is born.

This has been the way of scientific investigation for decades, and it is a system that has worked well for many researchers in the past. Consider the process at work in most academic health centers:

1. Someone, often but not always the lab director or senior person in the group, suggests a question or a hypothesis and designs an experiment. (This is the creative aspect of research.)
2. With the senior mentor's guidance, the pre- or postdoctoral fellows, or sometimes a gifted technician or research nurse, on the research team then conduct the experiment or recruit patients to participate in the study. (Technical knowledge and application or people skills are required at this point.)
3. Members of the research team then compile the data, interpret and challenge the results, and revise the experiment or study, as needed, until conclusions can be drawn. (Here is where the analysis, patience, and tenacity are necessary.)
4. Finally, the study needs to be written in a manner that will make it acceptable for publication, whether as an abstract or a manuscript that meets the criteria for inclusion in a journal like this one. (These writing and presentation skills are vital because, if a study isn't published, it might as well not exist.)

The ideal at work in this process has always been that the people, often fellows, on the research team are learning, honing the skills they already have, acquiring the skills they lack, and are on their way to becoming independent investigators who will someday work on their own or head

up their own teams. The reality, however, is that many of the participants on these teams continue to excel in particular aspects of the research process but never truly develop the other talents. For example, a member of the team may be brilliant in conducting an experiment as well as collecting and analyzing the data but may never develop the creativity to devise a testable hypothesis or an experiment. Another fellow may never become a good writer, or be motivated to do so, capable of lucidly conveying the results of the study and its conclusions to other physicians. These talented people are the vital links in the research process who will, under the current system, forever be listed as the third, fourth, or next-to-last authors on articles in this and other journals. They may never achieve the coveted first, second, or last positions in the byline. But their contributions to the success of the team are just as important as the support of the blocking linemen for the quarterback, the OR nurses for the surgeon, or the executive team for the president.

The stress on independence and the rewards to the independent investigator have always been the tough reality in medical investigation, a reality that most of us have accepted because, after all, the people serving as links in the research machine did get recognition because they were listed *somewhere* in the byline. The problem confronting us now derives from the ever-tougher new realities that we medical investigators—either bench or bedside—are facing. Today, as academic health centers grapple with slashed budgets, tightened financial belts, and freedoms curtailed by the mandates of managed care, there is diminishing recognition for anyone but the *independent* scientist or clinical investigator—in essence, the leader of the team.

Yet, paradoxically, there is increasingly greater need for teamwork as the worlds of basic and clinical investigation converge, become more complex, and require more and more collaboration. Those of us in academia know that success lies in getting published, getting recognized, getting funded, and getting promoted. We also know that in today's health care environment the *interdependent* investigator—the researcher who excels at one task but not at others—rarely gets ahead in academia. Certainly, some academic health centers have acknowledged this conundrum and, to some degree, the importance of these researchers in advancing medical knowledge. Some have instituted non-tenure tracks composed of “assistant research scientists” and “clinical assistant professors of medicine,” but these half-hearted attempts at recognition fall far short of truly valuing the

contributions of these team players. And, as a result, all too often, these teams become decimated by the imperative these individuals feel to seek a more hospitable environment to pursue their independence. If left up to them, many or most would rather stay where they are, functioning as vital members of a team. All too often, they fail as independent investigators because they do not have all of the requisites noted above, much as a football lineman might fail at becoming a quarterback.

While the system's limitations have presented a problem for many individual researchers, I am afraid that a bigger problem is looming. The problem is that these talented researchers are abandoning the field of medical research for positions in industry and private practice, where they do receive rewards for their specialized talents, although the rewards are of a different nature. We are losing these interdependent researchers and, before long, we will feel the withering effects of their departure. So many of the extraordinary advances we have achieved in cardiovascular medicine have come from the efforts of teams of scientists, basic

and clinical. Without the contributions of today's interdependent investigators to those teams, we will certainly suffer setbacks in our battle against cardiovascular disease. And that spells trouble for our patients because it threatens the development of tomorrow's treatments.

What can we do? We must recognize the importance of the interdependent investigators by providing academic incentives in ways that recognize their contributions, as we do for the independent investigators. After all, many of these so-called independent investigators owe their "independence" to the work of the interdependent investigators. The quarterback cannot have pass protection without his linemen, nor can the surgeon operate without the OR nurse. The interdependent investigator should share in the bounty of the team's success and be rewarded for his or her contributions to it.

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