

## Focus Is Key to Becoming an Expert in Any Field of Research

An interview with Prof. Howard A. Reber, Chief of Gastrointestinal Surgery, and Director of the Ronald S. Hirshberg Pancreatic Cancer Research Laboratory, University of California Los Angeles (UCLA), Los Angeles, Calif., USA

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### Abstract

Dr. Howard Reber is a world-renowned pancreatologist in the area of basic pancreatic physiology and the management of pancreatic diseases. He was leader in the development of the current recommendation for the treatment of pancreatic cancer. In this interview for *Pancreatology*, Dr. Reber shares his life experiences as a scientist in pancreatic research.

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**M.E.F.-Z.:** What initiated you to work in pancreas research in the first place?

**H.A.R.:** As a 3rd year medical student, I became fascinated with both the physiology and function of the pancreas, as well as its diseases. I had wanted to be a surgeon as long as I could remember, but also had an interest in the medical aspects of disease. I found pancreatic diseases from both their medical and surgical perspectives quite interesting. Finally, so little was known about pancreatic physiology, pancreatic diseases and their causes and treatments that it seemed like a fertile area to pursue. During my surgical training at the University of Pennsylvania, I had the good fortune to be the recipient of a National Institutes of Health Training Grant administered by the National Institute of General Medical Sciences. Its purpose was to train individuals in various medical fields



Prof. Howard A. Reber

in basic research, with the hope that they would pursue an academic career. It provided me with 4 years of research laboratory support and salary. So I had an incredible opportunity to spend some significant time pursuing a research topic; the question was what would be a worthwhile problem to study.

Dr. Frank Brooks, who was then Chief of Gastroenterology at the University of Pennsylvania, arranged for me to meet Dr. Henry Janowitz, a gastroenterologist who had done pioneering work in the pancreas at Mt. Sinai Hospital in New York, late in the summer of 1966. Over dinner he gave me his thoughts about 2 or 3 possible research topics I might pursue during that time. One idea I found most intriguing was to investigate the role of the pancreatic ducts in the secretion of water and electrolytes by the gland, which he and his surgical colleague, Dr. David Dreiling, had themselves studied. Dr. Janowitz suggested applying the techniques of renal micropuncture to collect fluid from the very small pancreatic ducts, and to determine its composition during various degrees of secretory stimulation. I went to the Peter Bent Brigham Hospital in Boston, where I learned the techniques from Dr. Donald Oken in their Renal Physiology Laboratory, and then came back to the University of Pennsylvania and did the work. Dr. Brooks was my mentor during that period. When the initial work was done, Dr. Brooks suggested that I write it up and submit it to the *American Journal of Physiology*, which promptly accepted the paper. The single reviewer was Dr. Morton Grossman and his comments were quite complimentary. I remember thinking naively how easy this all was, and I suppose the experience helped to reinforce the idea that this would be a wonderful way to spend my career: basic laboratory research and the clinical practice of pancreatic surgery. Of course, getting my work published subsequently has been a bit more difficult, and the reviewers have been more critical. But learning more about the pancreas over the years has continued to be rewarding and enjoyable in so many ways.

**M.E.F.-Z.:** You have pioneered pancreas research in so many directions. At the end of the day what has given you the most personal satisfaction?

**H.A.R.:** I think that there are several ways to answer that question. Over the years, I have devoted my research efforts to 4 different problem areas. The first related to studies of basic physiology and the processes of secretion, as exemplified by the micropuncture work that I just described. I think of that work as the pursuit of knowledge largely for knowledge's sake, without any obvious clinical relevance. And I really enjoyed it. Those studies were followed by work on acute and chronic pancreatitis, and finally the current work on pancreatic cancer. These studies were/are much more clinically relevant and translational in character. I don't mean that any of it has resulted in a significant treatment advance for patients with these diseases. But I do find a greater satisfaction

when the studies I design and pursue help us to understand clinical problems better. Of course the goal is to make things better for the patients we treat.

Another satisfaction of the research comes from the opportunity to meet colleagues with similar interests from around the world, and often to develop close personal relationships with them and their families.

Mostly I have enjoyed and learned from the constant interaction with fellows and residents who often are having their first research experience in my laboratory. It is gratifying to see many of them develop into gifted clinicians/scientists who are making significant contributions of their own.

**M.E.F.-Z.:** Based on your experience as mentee and mentor, can you comment on the value of mentorship in the development of a new investigator?

**H.A.R.:** The value of one or more mentors as a new investigator develops cannot be overemphasized. In my own case I was fortunate enough to have a number of individuals who advised me in various aspects of my career, and I would stress that often it is best to seek guidance from several different people. The common feature of all should be that each be a recognized expert in the area in which they are providing advice. In many cases, they may not be at your own institution, in some cases even in a different part of the world. But most people are extraordinarily willing to provide guidance and advice, and especially in today's environment, distance is not an obstacle. Young people should not be put off from asking the advice of the so-called experts in the field, wherever they may be. Examples of areas in which mentoring may be sought include choosing important questions to study in the field that you select, experimental design, data interpretation, grant writing, and advice about the availability of funding mechanisms. If you are a clinician/scientist, it is most often advantageous to focus your clinical practice in the same general area as your research activities. Advice about career advancement should also come from someone at your own institution who understands the local requirements for academic promotion.

**M.E.F.-Z.:** What is the best advice you have received during your career? What is your advice to the young investigators who are starting in the field of pancreas research?

**H.A.R.:** The best advice is reflected in many ways in my answer to the previous question. However, as a Resident in Surgery at the University of Pennsylvania, I was given career advice at an even earlier stage by the then Chairman of the Department. The man was Isidore S. Ravdin, MD, who was a renowned surgeon and an ex-

pert in gastrointestinal and biliary diseases. He advised me to pick a clinical area of interest and to learn as much about it as I could, in effect to focus in a specific area and to try to become an expert. He also advised me to pursue research in the same area as my clinical interests. I think it was my father who gave me the idea that if I were to pursue research in any field, I should try to answer an *important* question. Finally, for clinicians who are finishing training and negotiating for their first job, it is important to arrange for protected time in the laboratory for the first several years. Otherwise even those with outstanding research training can be overwhelmed by the pressures related to the need to generate clinical income.

**M.E.F.-Z.:** What do you think are the big questions that need to be answered in pancreatology?

**H.A.R.:** With my current interest in pancreatic cancer, advances that would decrease the mortality rate in this disease are uppermost in my mind. Earlier diagnosis,

more effective drugs, and tailored drug therapy are some areas that are being actively pursued and that I think have a reasonable chance of making a real impact in the next 10 years. In the area of acute pancreatitis, we still need specific drugs to treat the severe form of the disease. I suspect that these will be developed in concert with the efforts to treat more effectively the systemic inflammatory response syndrome and the pulmonary failure that are the usual reasons for death.

**M.E.F.-Z.:** What do you think is the major need that a journal like *Pancreatology* should fill?

**H.A.R.:** *Pancreatology* has made a major impact in the field, and it continues to do so. In addition to providing a forum for the publication of scientific articles, it serves as an invaluable forum for the publication of clinical material. In addition to peer-reviewed clinical articles, the expert summaries of symposia and guidelines for the management of difficult problems in clinical pancreatology are extremely useful. Keep up the good work!