

# 'To Be Successful in Research, You Must Ask Questions Which May Not Be Answered in Five, Ten or More Years'

An Interview with Dr. Paul D. Webster III, Emeritus Professor of Medicine,  
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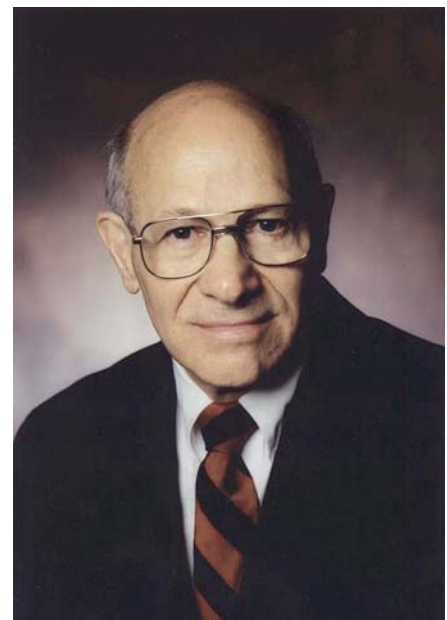
## Abstract

Dr. Paul Webster is a pioneer in the field of pancreatic secretion. His work has been instrumental for the cellular characterization of this pancreatic function under physiological or disease conditions. He is a co-founder of the American Pancreatic Association, a landmark action that will certainly benefit future generations in pancreatology. In this interview, Dr. Webster discusses the importance of mentorship and gives advice for young investigators entering pancreatic research.

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

**P.D.W.:** As a youngster I wanted to become a physician and do research. I remember reading books on the lives of Lister, Pasteur and other early investigators and thought it would be wonderful to do basic research. My mother was a nurse and I was exposed to physicians in the community and so I wanted to be like them. I was fortunate in that I had a high school chemistry teacher, Mrs L. McKinney, who allowed me to experiment in the high school laboratory – even after having to evacuate one of the classrooms because of a release of sulfur dioxide from an experiment gone awry. In college, I was allowed to work in the inorganic chemistry lab under the supervi-



Dr. Paul D. Webster III

sion of Professor William Trout and presented my first paper on titanium gels at the Virginia Chemical Society. After entering medical school, I worked in the biochemistry and neuropathology labs, publishing my first review on acute pancreatitis as a senior medical student. As a

resident in medicine at the University of Minnesota I was fortunate in having Dr. Les Ziever as a mentor and worked on developing an experimental model of acute pancreatitis in dogs. Under his tutelage, I published several papers, the most notable being a review on serum enzymes and the diagnosis of pancreatic disease, which appeared in the *New England Journal of Medicine*.

Beginning my fellowship in gastroenterology, I was fortunate in having Dr. Malcolm P. Tyor, who allowed me to initiate work on metabolic aspects or hormonal control of pancreatic enzyme synthesis. My first research paper appeared in the *American Journal of Physiology* in 1966. During the next 20 years, I worked on the effects of fasting, feeding, bethanechol and pancreozymin stimulation on secretion, protein, RNA, DNA synthesis and other metabolic aspects in the pancreas of pigeons and later rats. I probably was one of the first gastroenterologists to publish in the *Journal of Molecular Biology*. I selected the pancreas initially because little was known about the metabolic aspects of the organ, and it was associated with bad diseases such as acute pancreatitis and pancreatic cancer. I thought an opportunity existed for basic as well as clinical research. My research was directed at the cellular level with the hope that a better understanding of pancreatic cellular function would lead to a better understanding of changes in acute pancreatitis, chronic pancreatitis and pancreatic cancer.

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

**P.D.W.:** When I became interested in pancreatic research, the bulk of research effort was directed at studying pancreatic secretion in the intact animal. I was interested in pancreatic function at the cellular level. Today when I review articles in the pancreas literature, I am impressed with the basic level of approach, the cellular level.

**M.F.-Z.:** Based on your experience as a mentee and mentor, are you able to comment on the value of mentorship for the development of new investigators?

**P.D.W.:** Most young investigators have a limited view of research opportunities and that view is based on a particular medical school, residency or site of fellowship. Thus, they tend to acquire the interest that is expressed in that environment. I was interested in basic aspects of pancreatic cellular function at a time when there was very little interest in the clinical community in such basic function. It may be difficult to select a mentor. Heads of departments of medicine or clinical services should be alert to the young physician who desires a career or ex-

presses an interest in clinical or basic research. One of the functions of a clinical teacher is to stimulate inquiring minds. This is a function of the college, university or hospital – the educational environment. Thus the mentor should be alert to and respond to the interest of the young individual. Sometimes the mentees can mold that interest to their own interest, but sometimes not.

**M.F.-Z.:** What is the best advice you have to share?

**P.D.W.:** Once you decide you want to do research, there are many sacrifices and the reason for a large dropout is that many are unwilling to pay this price. To be successful in research, you must ask basic questions which may not be answered in 5, 10 or more years. So often research in clinical departments is directed at questions of the day and not of the future. You must focus and concentrate your efforts, but be aware that the answers to your questions may lie in other fields such as histology, pathology and other techniques.

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

**P.D.W.:** The questions that existed in the 1960s remain fertile areas for research today. That is, what are the cellular and molecular changes that occur in acute pancreatitis and how can these be identified and altered? What are the changes that predispose to or result in chronic pancreatitis and pancreatic dysfunction? And what are the causes of pancreatic cancer at the cellular level and how can these be identified and altered?

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

**P.D.W.:** During my early days of research, it was quite difficult to get the work published simply because there was little interest in the type of work that I was doing. Fortunately, there were journals that would accept the publication. And with time there was a greater expression of interest in pancreatic cellular function. Today this interest is impressive and has resulted in research groups worldwide. If there is no place to publish work, then work will not be done. It is a question of publishing or perishing, but if there is no place to publish, then perishing is likely. My personal satisfaction has been to observe the increases in research related to pancreatic cellular function, improved diagnostic techniques which have been reflected in increased rates of survival of acute pancreatitis, and a better understanding of pancreatic cancer. Pancreatic cancer still has poor survival, but it is far better than 50 years ago. The fact that I published my first paper on acute pancreatitis over 50 years ago gives me a long-term view of the impact of research on 'the silent organ of the abdomen'.