Meet the Champions

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‘If It Isn’t Published, It Isn’t Research’

An Interview with Professor Daniel S. Longnecker

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Abstract

Daniel Longnecker is a worldwide-recognized pancreatologist for his contribution to the understanding of the pathogenesis of pancreatic diseases. He was a pioneer in the development of animal models for pancreatic disorders, in particular pancreatic cancer. In addition, he led the way in the characterization and classification of the lesions involved in pancreatic neoplasias. In this interview, Professor Longnecker comments on his experience in pancreatic research and provides advice to new investigators in this field.

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

D.S.L: I would like to say that I was born with an interest in the pancreas, but it was a chain of circumstances that led to this focus. While I was an intern in Cleveland in 1956, I became involved in a project studying iron absorption and storage. This led to a study of iron storage in cystic fibrosis patients, done shortly after I finished my pathology residency at the University of Iowa, and a publication resulting from that work [Arch Pathol 1965;80:148–152] just before I began a postdoctoral fellowship with Emmanuel Farber at the University of Pittsburgh. Because of this paper and prior work as a graduate student in biochemistry studying proteolytic enzymes, Dr. Farber suggested that I study the mechanism of ethionine-induced pancreatitis in rats. That project led to a study of another chemically induced animal model of pancreatitis and indirectly to work on chemical carcinogenesis in the pancreas. As the information base for pancreatic diseases increases and new methods become available for molecular and genetic studies, working in this field becomes even more intriguing.

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?

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D.S.L.: To understand disease at a basic, mechanistic level became a goal during medical school. To achieve some progress toward that goal in the context of pancreatic diseases has been gratifying. An example is the demonstration that the CCK-A receptor is overexpressed in the preneoplastic lesions and acinar cell carcinomas induced by azaserine [Cancer Res 1992;52:3295–3299]. Prior work had demonstrated that CCK-A serves as a growth factor for the exocrine pancreas in rats. The relevance to human disease is unknown as is often true in animal models. Of course much of what I have learned is from work done by other investigators in many labs in the United States and other countries. Contact with these investigators, many of whom have become colleagues and friends, ranks high on the reward scale.

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

D.S.L: I have a strong sense of what I have learned from the scientists with whom I have worked, and the ways that they fostered my development. One role of mentors is to provide an environment and facilities that will attract and support a cadre of investigators and trainees with shared interests and goals. This provides an optimal setting for training. In such a setting, each trainee may have several mentors, but there should be one individual who provides guidance to maintain focus and momentum.

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

D.S.L.: During my last year of medical school at the University of Iowa, the dean, Norman Nelson, learned of my interest in an academic-based career. He told me to find some topic (relevant to medicine) that was of interest to me and then to try to learn more about it than anyone else. In other words, 'focus'. It was good advice, but is a bit general.

A few years later, James Clifton, a gastroenterologist at Iowa, provided more practical advice when I was applying for a postdoctoral fellowship: 'Ask for two years rather than just one'. We can interpret that as 'get adequate training'. At the end of that fellowship, Dr. Farber advised me to write a NIH ROI application. We might generalize that to 'get support so you can continue to work'. So we can combine these bits of advice for a young investigator. Pick a disease or problem that is truly of interest to you, find the mentor and lab or clinical setting that can provide superior training in your chosen area, and then get into a position where you can continue to work. In a lighter vein, I also have high respect for the aphorism, 'If it isn't published, it isn't research'.

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

D.S.L.: I think the first question should be 'How do we prevent the major pancreatic diseases' (pancreatitis and ductal adenocarcinoma of the pancreas)? One example is to find ways to ablate PanIN lesions because they are considered to be the precursors of most pancreatic carcinomas in humans. Some of the newer transgenic animal models may be useful in evaluating approaches to this problem. Because prevention will never be completely successful, extending our understanding of diseases at the mechanistic level so that we can treat them rationally should continue to be a goal. For the endocrine pancreas, I think determining if embryonic stem cells can repopulate the islets with beta cells should receive high priority.

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

D.S.L.: The two major 'pancreas' journals have provided and should continue to provide a focused and user-friendly printed forum for discussion of pancreatic biology, physiology and disease. This forum should foster both education and research. I favor maintaining breadth in the types of papers that are included, extending from molecular and genetic studies to small series and individual case reports. The latter are important so that we can learn from patients with rare disorders, i.e. diseases so rare that it is difficult to assemble a sizable series. And remember, if it isn't published, it isn't research. The point is that information is of limited usefulness if it is not shared, and publication is the time-tested way of sharing.

M.F.-Z.: Would you add a section in *Pancreatology* to create a forum to discuss the controversies in the field?

D.S.L.: Platform sessions that are focused on current controversies in clinical practice or basic aspects of disease are both popular and stimulating at national and international meetings. I think this type of forum can be successful in print, and together with invited reviews, enables the editors to lead the field by the choice of topic and contributors. Reviews may be used to highlight an emerging area such as the genetic control of pancreatic development, or to consolidate information in a mature area such as the genetic basis of hereditary pancreatitis.

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