Acceptance of the 2003 A.N. Richards Award

MARILYN FARQUHAR

It is a distinct privilege to be the recipient of the prestigious A.N. Richards Award from the ISN, and a special pleasure to be introduced by my long-term collaborator, Professor Dontscho Kerjaschki. I had hoped to be with you in Berlin to accept the award in person and had greatly anticipated being present on this occasion, but family illness prevented me from traveling so far away from home at this particular time.

Occasions such as this are a time for reminiscing about memorable events in one's career. My first reminiscence takes me back to the time in the 1980s when Dontscho Kerjashki was a tremendously successful guest investigator in the laboratory and discovered both megalin and podocalyxin—two molecules that we have now been studying for nearly 20 years. Many of their secrets still remain to be uncovered.

Then, there were also reminiscences of when I attended the First International Congress of Nephrology in Evian in 1960 when I was a post-doctoral fellow working on glomerular permeability at the Rockefeller University. This was a memorable occasion on many accounts in that it was my first trip to Europe, but it was particularly memorable because I was an invited speaker while still a "post-doc." I talked about our findings on the electron microscopy of renal biopsies. I also had the opportunity to spend time with many of the other invited speakers, including Walter Heymann. I had no idea at the time that eventually we would come to work on Heymann nephritis, the disease model he discovered. Others included John Merrill and Jean Hamburger. As you can imagine, I was very impressed and in awe of these great nephrologists, but rather intimidated in their presence, being a lowly "post-doc."

Continuing the reminiscences of my post-doctoral period, I remember the meeting of the New York Society of Pathologists, when I met Jean Oliver, who spent his entire life working on absorption droplets in the proximal tubule. Later, we began to work on protein absorption in the proximal tubule mediated by megalin. I also remember vividly the day we discovered tight junctions—not in the intestine as most of you will probably think, but in, of all places, nephrotic glomeruli. Imagine our excitement when we saw similar junctions in the kidney tubule and intestine and realized their functional significance.

I have also ruminated on how I first became interested very early in my career in working on the kidney. It happened when I was a graduate student in pathology at University of California in San Francisco. I was asked by my professor to help him stain kidney tissues from patients with various glomerular diseases with special stains. This represented my introduction to pathologic changes seen in patients with membranous nephritis, lupus, diabetes mellitus, and minimal-change disease.

But my imprinting and commitment to kidney research came as a post-doctoral at the University of Minnesota, where I had the opportunity, with Professors Robert Good and Robert Vernier, to look at the first renal biopsies through the electron microscope. The first specimens we looked at happened to be from a family of four children with familial nephrosis in various stages. When we looked at the first sections in the microscope, we got the first glimpse of the foot process flattening, which is the hallmark of this disease. At that time, I vowed to try to obtain an understanding of the cellular and molecular mechanisms underlying these changes in foot process organization and other morphologic changes that occur in kidney diseases. This has been a career-long pursuit and still occupies us to this day.

Looking back, I also thought of how fortunate I have been to have had a steady string of talented young investigators passing through the laboratory and leaving their mark on kidney research (Table 1). They include, from

Table 1. Collaborators in Kidney Research (1973–2003)

United States
John Caulfied (Roche)
Yash Kanwar (Northwestern U)
Dan Biemesderfer (Yale U)
Westley Reeves (U Florida)
Rob Orlando (U New Mexico)
Ralph-Peter Czekay (Scripps)
Xiaojing Lou (Phizer)
Austria
Dontscho Kerjaschki (U Vienna)
Gerhard Dekan (U Vienna)
Finland
Aaro Miettinen (U Helsinki)
Eero Lehtonen* (U Helsinki)
Sanna Lehtonen* (U Helsinki)
Japan
Hajime Sawada (Yokohama City U)
Hide Kurihara (Juntendo U)
Aki Saito (U Niigata)
Hajime Yamazaki (U Niigata)
Tetsuro Takeda (U Niigata)
Masa Nagai* (U Niigata)
Other Countries
Jennie Stow (U Brisbane, Australia), Eva Schnabel (U Heidelberg, Germany), Sandra Schmieder (Villefranche, France)

*Current laboratory members

the United States, John Caulfield, Yash Kanwar, Dan Biemesderfer, Westley Reeves, Rob Orlando, Ralf-Peter Czekay, and Xiaojing Lou; from Austria, Dontscho Kerjaschki and Gerhard Dekan; from Finland, Aaro Miettenen and Sanna and Eero Lehronen; from Japan, Hajime Sawara, Hide Kurihara, and a string of talented investigators from the University of Niigata, Aki Saito, Hajime Yamazaki, Tetsuro Takeda, and currently, Masa Nagai. Others include Eva Schnabel from Heidelberg, Jennie Stow, now at the University of Brisbane, and Sandra Schmeider, from France.

These scientists represent a mixture of graduate students, post-docturals, and visiting investigators who are either cell and molecular biologists, pathologists, or nephrologists. This list is a reminder of the truly international and multidisciplinary nature of research in nephrology.

It represents the talented group of people who did the work for which you honor me today, and I am pleased and honored to accept this award on their behalf.

Thank you.