

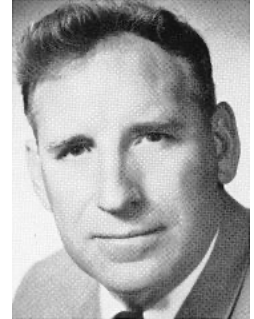
University of Arizona College of Medicine and the Department of Physiology (1964-1994)

[Recollections of Paul C. Johnson, Ph.D.]

In 1964, **Merlin K. DuVal, MD**, was recruited from the University of Oklahoma to be Dean of the University of Arizona Medical School. He surveyed the several biology departments and found, with the possible exception of microbiology, that none were interested in teaching basic sciences to medical students. At that point, he began to plan for teaching basic sciences in the College of Medicine and hired **Philip Krutzsch, Ph.D.**, from the University of Pittsburgh as coordinator for basic sciences.



Merlin K. DuVal



Philip Krutzsch

I received a call from Monte DuVal in early fall of 1966 and agreed to come out to look at the Headship of Physiology in the new Medical School. We had just returned to Indiana from a sabbatical leave at Cal Tech and were interested in possibly relocating to the Southwest. By the time this family picture was taken here in Indianapolis, Genny and I had visited Tucson and I was considering an offer of the Headship here. In comparison to other places I had visited, I felt that Arizona had a sound plan - I liked the building - though in retrospect we were naive in thinking that additional building space would be forthcoming in the near term.



Paul & Genny Johnson and family

We made the decision to come to Tucson around the first of the year in 1967 and then faced the reality of starting a new department in a new school. Fortunately, I had some exposure to this issue previously, as I had moved from Western Reserve to Indiana with Ewald Selkent in 1959 when he formed a new department in an existing medical school. However, I was hardly prepared for the realities. We were all rather naive about starting a new medical school, and that may have been our saving grace.

I began looking over resumes and CV's. Fortunately, among them was one from **Doug Stuart**, who was then at U.C. Davis. I met Doug here in Tucson one weekend. We spent 2 days discussing our philosophies. This was the time student unrest was beginning, and part of it had to do with their feeling that faculty were becoming distracted from their



Doug Stuart



Bill Dantzler

teaching duties by the large influx of dollars into research at universities. I had sympathy with the students and felt that a faculty member in a major university should be committed to excellence in both. Doug was of the same view, and it was also obvious that he had the kind of energy needed to build a new department. I was also very fortunate to attract **Bill Dantzler**, who was a student of Bodil Schmidt-Nielsen. Bill had both the M.D. & Ph.D. degrees and was interested in comparative and renal physiology. We were still negotiating with Bill, so when Monte DuVal held a meeting of the faculty in May 1967 to plan the curriculum, Doug Stuart and I represented physiology.

Remarkably, over a period of several days, the 20 or so faculty members designed a medical curriculum for classes beginning that September. Anatomy was taught mostly in the fall, along with Biochemistry and Physiology. The spring semester included Physiology and Neuroscience, designed jointly by Doug Stuart and Jay Angevine with help from Bill Sibley, Chief of Neurology. David Rifkind, the Head of Microbiology, had expected to teach in the second year but found himself committed to the first year and without any faculty other than himself.

I arrived with my family in Tucson in mid-June of 1967. So we quickly found that the desert Southwest was going to be a lot of hard work at home, as well as on the job.

By the time September 1967 came, the basic science building was mostly completed but we literally walked through the front door with the medical students when classes began. The lecture hall was complete and the multidiscipline labs were operational but on the upper floors, and things were just taking shape. In time, however, the research labs began to fill up with equipment brought with us from other institutions, and Dan Richardson, my graduate student from Indiana, resumed his research.

In December of 1967, **Bob Gore** arrived and the lab began to take on a normal level of activity.

In January 1968, we started to teach physiology to medical students with my introductory lectures, followed by Stuart on nerve, muscle, and synapse, and Dan Richardson and me on cardiovascular and respiration. Bill Dantzler arrived just in time to teach renal after doing so at Columbia. Bob Gore found himself teaching endocrinology - among other things.

We had a heavy laboratory schedule, and Bob Reinking, who arrived from UC Davis in October 1967 with Doug Stuart, was invaluable in this activity. In fact, all the labs went well despite our receiving the equipment just before it was to be used in a student experiment. Without intending it, we invented the "just in time" approach used so



Work at home



Bob Gore

successfully by the Japanese industry. During the spring, we recruited **Raffi Gruener** and **George Hedge** to cover peripheral nerve and endocrinology.

In the first year, our department had 3 secretaries who all left for different reasons, including one who went to Oregon for Christmas vacation and never returned! Fortunately, at the end of that year, **Mildred Long** moved here from Cleveland, and from 1968 to 1975, she did just about everything in the office and with great skill.



Paul Johnson and Mildred Long

By 1975 when this picture was taken the department had grown, several have left subsequently, George Hedge is now at W.VA., H.D. Kim is at Missouri.



Physiology Faculty - 1975

Front row: H.D. Kim, George Hedge, Paul Johnson, Raffi Gruener
Back row: Bob Gore, Doug Stuart, Andy Goldner, Eldon Braun, Bill Dantzler.

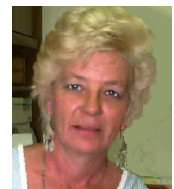
Lela Aldrich organized office operations as the department grew, becoming Business Manager, and **Lura Hanekamp** and **Joan Lavoie** took over office operations as Administrative Assistants.



Lela Aldrich



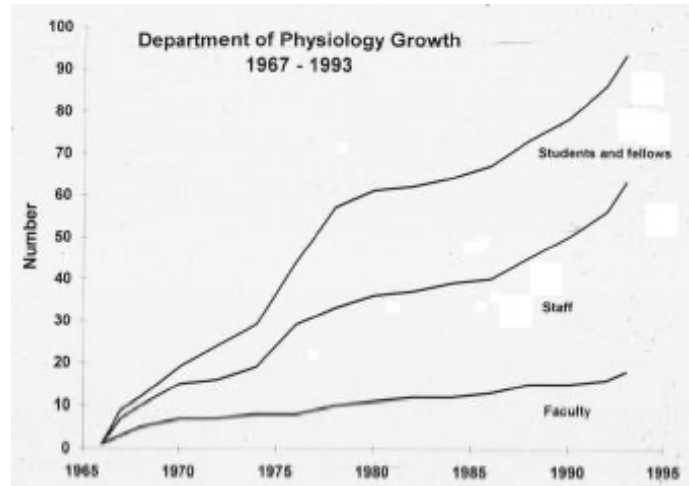
Lura Hanekamp.



Joan Lavoie

The department's overall growth from 1967 to 1993 can be seen in this **graph**. There has been steady growth of faculty (bottom line), staff (middle line), and doctoral students and postdocs (top line). This is a cumulative graph showing total numbers for the department.

In the first year, the state budget for the department was \$75,000 total. Research income was probably a little more than that. Now (in 1993), the state budget is \$1.1 million, and research income is \$3.6 million.



Department of Physiology Growth 1967-1993

We obtained our first training grant in 1969 and our first program project grant in 1974. Since Physiology had not been developed extensively elsewhere on campus at that time, I built the department in several key areas, rather than focusing on my own interests. This has been referred to as the "Noah's Ark principle", since we had two of everything in order that people would have someone to talk to.

Our Program Project Grant on microcirculation has operated on a consortium basis with ties to UC San Diego and **Marcos Intaglietta**, with whom I will work after retiring this summer.



Marcos Intaglietta.

Paul Johnson

Students and staff make our research productive and get us to interesting restaurants.
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Jeanne Mayhall and **Freda Powles** keep our accounts in balance, **Pat Goggans** manages our growing teaching program, and somehow **Terry Hanley** keeps the paper flowing in this building.



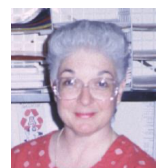
Jeanne Mayhall



Freda Powles



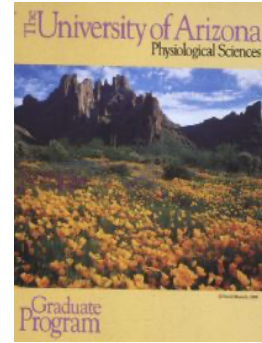
Pat Goggans



Terry Hanley

While I have focused on the Department of Physiology, there has been a parallel growth of physiology in other departments and colleges. There are now over 40 courses at all levels, from freshman to graduate to professional. The Physiological Sciences Graduate Program provides the framework for graduate training that mobilized all these resources for that aspect of our teaching.

University of Arizona Physiological Sciences Graduate Program ->



Some of the physiology people in the other departments are:



Dave Kreulen



Gene Morkin



Charles Tipton



Rick Levine



David Hartshorne

Finally, after 27 years, I am not about to go back and try it again, even if it were possible. To see how far we have come, one only has to compare the picture of the University of Arizona faculty back in 1900 with the most recent picture of our department faculty taken today (1994). Not only have we grown enormously, but we have learned to enjoy it and not take ourselves too seriously.



Physiology has taken root in Arizona and prospered even while it has struggled elsewhere. Physiologists at Arizona play important roles nationally and internationally. Our own Dr. Dantzler has just finished his term as President of APS. Fortunately, we have been able to attract talented, hard-working people who, even today, are endowed with the same persevering spirit that those first faculty possessed. While the challenges are different today, they are equally demanding. Preparing this talk has given me fresh insight into the accomplishments of physiologists and physiology on this campus and much optimism for its bright future!! Thank you very much.