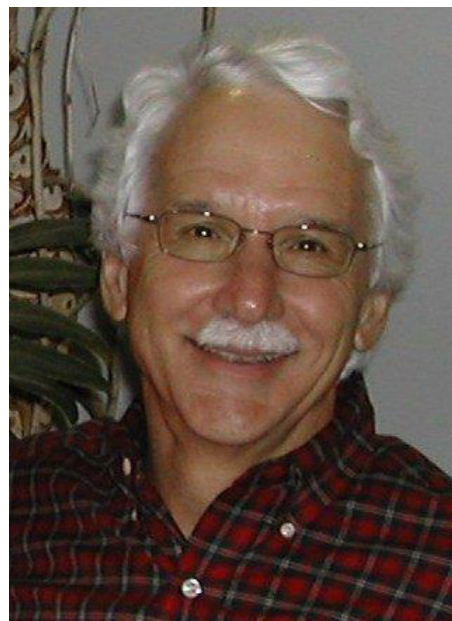


Raymond Chollet

How did you spend your career?

After completing my PhD in botany (plant physiology) at the University of Illinois at Urbana-Champaign in September 1971 under the expert guidance of Bill Ogren and Dom Paolillo, Jr., I remained in the Ogren laboratory for another 12 months as a postdoctoral research associate. I worked on biochemical aspects of C4 photosynthesis occurring in the Kranz bundle-sheath cells of maize. In September 1972, I joined the research staff of DuPont's Central Research Department, where my basic research program was focused on various aspects of photorespiration, including the bifunctional, carboxylase/oxygenase enzyme Rubisco. After five years at DuPont doing full-time, hands-on research, I joined the Laboratory of Agricultural Biochemistry (now the Department of Biochemistry) at the University of Nebraska-Lincoln (UNL) as an associate professor. During the next 30 years, I progressed through the tenured academic ranks while teaching an upper-level course in plant biochemistry and orchestrating a federally funded research program, eventually earning the campus-wide title of W. W. Marshall Family University Professor in 1998. In the fall of 2007, I retired from UNL after serving my last full year on campus as the interim head of biochemistry and assumed my current university professor emeritus status.

My federally funded (NSF, USDA, and/or DOE) research program at UNL progressed from continued studies on Rubisco to the biochemis-



try of photosynthesis in C3-C4 intermediate species, eventually focusing exclusively on the emerging field of plant metabolic biochemistry related to the regulatory phosphorylation of specific target enzymes. These latter biochemical and molecular studies in my laboratory continued from the early 1980s until my retirement and were directed at the following metabolic enzymes: pyruvate, Pi dikinase (PPDK) and its most unusual, bifunctional ADP-dependent kinase/Pi-dependent phosphotransferase regulatory protein (PDRP); PEP carboxylase (PEPC) and its low-abundance, dedicated Ser/Thr-kinase (Ppck); and sucrose synthase (SuSy).

What do you consider to be your most important contributions to plant science?

Looking back on my 35 years in full-time basic research at DuPont and UNL, clearly our major contributions relate to the metabolite-effector regulation of the carboxylase and

oxygenase activities of the Rubisco enzyme; the biochemistry and unusual photosynthetic physiology of C3-C4 *Morandia*, *Flaveria*, and *Panicum* species; and, most especially, the regulatory phosphorylation of PPDK, PEPC, and SuSy. At the time of our early entrance into this latter exciting field, only a few laboratories in the United States and abroad were engaged in such plant biochemical research, including those of Doug Randall, Hal Hatch, Jean Vidal, Hugh Nimmo, and eventually Steve Huber and Katsura Izui. Perhaps our most exciting discoveries in this regard were pinpointing the singular target Thr- and Ser-residues phosphorylated in the PPDK and PEPC primary structures, respectively; the eventual detailed biochemical/molecular analyses of PDRP and Ppck; and the latter's striking transcriptional regulation in CAM leaves and legume root nodules. Much of our research in regulatory protein phosphorylation was truly collaborative in nature, including our rewarding and long-standing interactions with Chris Chastain (United States) on PPDK-ThrP and PDRP and with Jean Vidal (France), Carlos Andreo (Argentina), and John Cushman (United States) on PEPC-SerP and Ppck. These international collaborations were truly among the most important parts of my research career in plant biology and my own professional development!

When did you become a member of ASPP/ASPB?

I became a member of ASPP during my first year in graduate school at Illinois in 1968-1969. My decision to

continued on next page



ASPB Legacy Society Founding Member

join the Society was largely guided by my knowing many prominent members of the plant physiology faculty who were longtime ASPP members, including the likes of Bill Ogren, John Boyer, Len Beevers, Jack Hanson, and Dick Hageman. Shortly thereafter, I started participating in the stimulating annual meetings and presenting my graduate research on greening in a virescent mutant (*v 18*) of maize in the hectic, 15-minute oral sessions. I distinctly remember my very first oral presentation not only because it was very stressful, but also because all my slides were individually summarized on index cards; I even had a penlight in my pocket in case the podium lamp burned out!

How did the Society impact your career, and what motivated you to become a Founding Member of the Legacy Society?

ASPP/ASPB impacted my research and professional career in numerous ways. First and foremost, the Society's journal *Plant Physiology* provided a high-impact outlet for

those aspects of our research that were not strictly biochemical/enzymological in nature. In addition, the dynamic annual meetings were a definite plus, both professionally and personally, as were the opportunities the Society afforded for professional service. I felt most fortunate to be invited by Marty Gibbs to join the editorial board of *Plant Physiology* in 1984, eventually becoming one of its handful of associate editors in 1991. When Maarten Chrispeels assumed the editor-in-chief position in 1992, I was again invited to continue serving the journal as one of its new monitoring editors for the next six years. These eight years of actual decision editing for the journal were some of the most rewarding and insightful ones of my research career in plant biology. Finally, I felt especially honored by the Society when I received a Fellow of ASPB Award in 2013. All of the above and much, much more made my decision to become a Founding Member of the fledging Legacy Society a no-brainer for me!

What important advice would you give to individuals at the start of their career in plant science?

Pick an area of research that truly excites you and your worldwide colleagues, because you will be totally engrossed in it with your hands and/or mind for many years. Also, realize up front that there will likely be many frustrations and disappointments throughout your career in research, but the occasional highs are truly fantastic, both personally and in advancing the knowledge base in your chosen field. Finally, as your career in plant biology develops, expand your network of research collaborators in a truly international dimension. You will profit from these global interactions in many ways, both personally and professionally, and get to work and live in amazing places in this interconnected world of ours!

Academic Family Tree

<https://academictree.org/plantbio/tree.php?pid=806284>