

# Hail to the Editor-in-Chief: An Appreciation of Victor J. Hruby, Outstanding Scientist-Mentor-Leader in Peptide Research

More than a year ago, celebration of the milestone 65th birthday of University of Arizona Regents' Professor Emeritus **Victor J. Hruby**, and Editor-in-Chief of this journal since 1988, marked the first stage in planning this special issue, together with the first Hruby Symposium on Chemical Biology (Tucson, October 30, 2004) and establishment of an endowment for future Hruby Symposia and a Fellowship Fund at Arizona. This trilogy of tributes credits Victor's esteemed and prestigious scientific career in peptide research.

It is with great pleasure that we co-edit this, the first of three issues in calendar year 2005 that highlight dedicated articles from but a small subset of Victor Hruby's many friends, current and past students, postdoctoral fellows, visiting scientists, and professional colleagues, collaborators, and editorial board members (these are not mutually exclusive categories!) – a group united in its admiration for an outstanding leader in the fields of peptide chemistry, biology, and drug design. Victor is a much beloved and honored scientist with a legendary work ethic, who, in the course of an illustrious and distinguished career that is still very much flourishing, has mentored and encouraged several new generations of peptide researchers. In two later issues, we will read representative works from quite a few more of these, and we are reserving a position of honor in the year-end issue, where Victor himself will provide a valedictory coincident with his formal retirement as Editor-in-Chief of the *Journal of Peptide Research*.

Victor Hruby stands as one of the most prolific scientists of all time, with over a thousand original refereed articles and reviews. In addition to his editorial services (boards of a dozen journals), Hruby's enthusiastic and tireless advocacy for the peptide field are exemplified by his roles as Chairman of the Eighth American Peptide Symposium in Tucson (1983), as the founding President of the American Peptide Society (1990), as a founder of Selectide Corporation (1989) and Chairman of its Scientific Advisory Board (1990–1995), and by his extensive participation in the NIH and NSF grant review processes. Much-deserved recognition of Professor Hruby's pioneering scientific achievements and myriad

professional contributions came with the pinnacle awards of two international societies, the Alan E. Pierce (now Merrifield) Award of the American Peptide Society (1993) and the Ralph F. Hirschmann Award of the American Chemical Society (2002).

Victor Hruby's modest beginnings came on Christmas Eve, 1938, in Valley City, a small community in eastern North Dakota. He received a B.S. degree *magna cum laude* from his home state University in 1960 with a double major in Mathematics and Chemistry. Victor has always been active in sports, and while a young college student, played on the varsity tennis team. Hruby continued on at North Dakota to obtain his M.S. degree in 1962 working on sulfur ylide chemistry with Professor A. William Johnson, and then moved to Cornell University where he earned his 1965 Ph.D. for studies on synthetic and theoretical small ring organic chemistry with Professor A.T. Blomquist. Next, Hruby's career trajectory went through a major transition, insofar as he accepted a postdoctoral fellowship to pursue studies in the area of peptide chemistry with 1955 Nobel laureate Professor Vincent du Vigneaud of the Cornell University Medical College in New York City. During his time at the medical college, Hruby was an Instructor in Biochemistry; upon moving with Professor du Vigneaud to Cornell University in Ithaca, he became a Research Associate.

Hruby's independent academic career was launched by his appointment in 1968 as an Assistant Professor in the Department of Chemistry at the University of Arizona, and he achieved the rank of full Professor in 1977. In 1989, he was named Regents' Professor, the highest honor the University can bestow on one of its faculty, in acknowledgement of his outstanding scholarly and research accomplishments. Other academic appointments at Arizona have been within the Department of Biochemistry and Molecular Biophysics, Program in Neuroscience, and the Arizona Research Laboratories. Hruby has held a Senior Research fellowship, Javits Neuroscience Investigator Award, and Merit Award, all from NIH, as well as Fulbright-Hays and Guggenheim Fellowships, and received a

*Doctor Honoris Causa* from the Free University of Brussels. In addition, Hruby is an elected Fellow of The American Association for the Advancement of Science, The New York Academy of Sciences, and the American Institute of Chemists. Despite his extensive travel schedule [Victor's infectious laugh is instantly recognizable at the farthest reaches of the globe !], Arizona has been Victor's "home base" except for highly productive sabbaticals at the National Institutes of Health (with Martin Roddell) in the 1975–1976 academic year, at Harvard University (with Martin Karplus) in the 1984–85 academic year, and at the California Institute of Technology (with Peter Dervan) in 1992; each of these helped Victor learn new tools and opened up new avenues of inquiry once he returned home.

Broadly stated, the signature themes of Victor Hruby's science work are an all-encompassing multidisciplinary interest in the design, synthesis, and analysis of biologically active peptides and peptidomimetics, with an emphasis on hormones and neuroactive compounds. Victor's relentless scientific curiosity and perseverance, characterized by both breadth and depth, have served him and his coworkers well in these journeys of scientific discovery. Back in the late 1960's, Hruby was one of the first to recognize and exploit the potential of high-field NMR spectroscopy for deriving structural and conformational information about peptide hormones, as exemplified by oxytocin, vasopressin, and analogues. Similarly, Hruby and students were in the first wave of those outside of the Merrifield laboratory who recognized the importance and utility of solid-phase peptide synthesis, and have always worked at the cutting edge of integrating computational methods to chemical synthesis, biophysical characterization, and biological testing. By the mid-1980's and early 1990's, the Arizona school had confidently established workable strategies to develop novel and highly receptor-specific peptide agonists and antagonists on the basis of sophisticated conformational and topographical (a term that Victor championed) considerations. These included classic breakthrough molecules in the melanotropin, oxytocin, vasopressin, enkephalin, glucagon, and cholecystokinin families – a body of work that has inspired many research groups in both academia and industry to focus on peptide analogues for diagnostic and therapeutic

applications. Particularly noteworthy in this regard were the melanotropin agonists dubbed MT-I and MT-II, which were created by former graduate students Tomi Sawyer and Fahad Al-Obeidi, respectively, and became clinical candidates, as well as the  $\delta$ -opioid agonist DPDPE, a powerful tool in CNS research, developed with former postdoctoral fellow Henry Mosberg. Yet another of Hruby's seminal contributions, achieved with Kit Lam and others, was the invention and development of the "one-bead, one-peptide" library technology that jump-started the field of combinatorial chemistry.

The hallmarks of Victor Hruby's extraordinarily creative, versatile, and high-impact approach are his passion for science and the human spirit. Everyone who knows Victor agrees that he is beyond a doubt 'one of a kind' – uniquely gifted, with boundless energy, and a treasure trove of insight, optimism, and vision in the field of peptide research. In quieter moments, Victor has always reserved a special place of love and pride for his wife, Patricia, a recently retired Physics Professor and Department Chair at Pima College, and their three special and talented sons, Timothy, Steven, and Patrick.

We choose to close this essay with Professor Hruby's own words, from a plenary panel discussion held in Minneapolis at the end of June, 1999:

*"I cannot imagine a more exciting time to be in peptide science. The challenges and opportunities are enormous, and will require a change in our behavior as scientists to maximize our creativity by cooperation and collaboration. We already have seen several examples of this new paradigm, especially from our industrial colleagues. We should move forward with tremendous enthusiasm and confidence in our field and the central role we can play in the science of the new millennium."*

Thank you, Victor, for all that you have done to advance peptide research.

*George Barany  
Robert S. Hodges  
Tomi K. Sawyer*

DOI 10.1111/j.1399-3011.2005.00260.x