

A *Semblanza* for the RegPep26/2027 Named Prize Lectureship Professor Maurice Manning

From the bogs of Galway to the frontiers of peptide science

In the annals of regulatory peptide research, there are towering figures whose work defines the field, and then there are those rare individuals who not only shape the science but also nurture the community that sustains it. Professor Maurice Manning is preeminently both.

Born in Loughrea, County Galway, Ireland, the son of two national school teachers, Manning rose from humble Irish beginnings to become one of the most productive and influential peptide chemists of his generation. Over a career spanning more than six decades, from his first degrees at University College Galway (B.Sc. 1957, M.Sc. 1958, D.Sc. 1974) to his current position as Distinguished University Professor at the University of Toledo College of Medicine and Life Sciences, he has made foundational contributions to our understanding of oxytocin and vasopressin.

But for the International Regulatory Peptide Society (IRPS), Professor Manning is far more than a brilliant scientist. He has been an enduring pillar of the society itself - attending RegPep22 in Acapulco (2018) and RegPep25 in Washington, DC (2025) in person; serving as an IRPS Enduring Trustee and IRPS Councilor; and, most remarkably, becoming the single largest donor to the IRPS treasury to date. He has taken his councillorship with profound seriousness, always speaking his mind, always offering constructive opinions, always on time, and always putting the interests of the Society above his own.

As the IRPS gathers in Beijing in 2027, we propose a Named Prize Lectureship to honor Professor Maurice Manning - a scientist, a mentor, a donor, and a human being whose generosity of spirit is matched only by the brilliance of his science.

Foundational Statements

1. The scientist: a half-century of oxytocin and vasopressin discovery

The du Vigneaud and Merrifield lineage

Professor Manning's scientific lineage reads like a roll call of Nobel laureates. After completing his Ph.D. in organic chemistry at the University of London (1961) under Dr. I.L. Finar, he joined 1955 Nobel Laureate Dr. Vincent du Vigneaud at Cornell University Medical College as a research associate, learning classical methods of peptide synthesis. He then moved to Rockefeller University, where he worked with Dr. D.W. Woolley specifically to learn the revolutionary solid-phase method of peptide synthesis from Dr. Bruce Merrifield (1984 Nobel Laureate).

This dual training, in both classical solution synthesis and Merrifield solid-phase methods, gave Manning a unique toolkit. He became one of the earliest adopters of solid-phase peptide synthesis, and in 1968 he published a landmark paper in the *Journal of the American Chemical Society* describing the "Synthesis by the Merrifield Method of a Protected Nonapeptide Amide with the Amino Acid Sequence of Oxytocin" . This work established him as a leader in the field.

The design of receptor-specific agonists and antagonists

For more than 50 years, Professor Manning's research has focused on a singular, elegant goal: the design and synthesis of receptor-specific agonists and antagonists of oxytocin and vasopressin for use as research tools and potential therapeutic agents. The sheer scale of his output is staggering, over 250 peer-reviewed publications, multiple US patents, and countless contributions to the international peptide literature.

His laboratory at the Medical College of Ohio (now the University of Toledo) became a world center for vasopressin and oxytocin analog design. Working in close collaboration with the late Dr. Wilbur H. Sawyer (Columbia University) for pharmacology, Manning systematically explored the structure-activity relationships of these nonapeptides, producing:

- Highly potent and selective V₂ antagonists (antidiuretic antagonists)
- Selective V_{1a} antagonists (vasopressor antagonists)
- Selective oxytocin antagonists (some more potent and selective than atosiban)
- Novel vasopressin hypotensive peptides (a completely new class of vasodilating agonists)
- Radioiodinated and fluorescent ligands for receptor studies
- First selective agonists for the rat V_{1b} receptor (a 20-year search culminated in 2007)

His 2012 *Journal of Neuroendocrinology* review, titled "Oxytocin and Vasopressin Agonists and Antagonists as Research Tools and Potential Therapeutics", became the most highly cited publication in that journal in 2015 .

The IUPHAR legacy

In 2019, Professor Manning co-authored the official **IUPHAR/BPS Guide to Pharmacology** entry on "Vasopressin and Oxytocin Receptors" (Version 2019.4), cementing his role as a global authority on these receptor systems. This work, with co-authors including Bichet, Bouvier, Chini, Gimpl, Guillon, Kimura, Knepper, Lolait, Mouillac, O'Carroll, Serradeil-Le Gal, Soloff, Verbalis, Wheatley, and Zingg, **serves as the definitive reference for the field** .

Research impact and continuous funding

Professor Manning's scientific contributions have been recognized by 33 years of continuous NIH funding, a testament to the sustained quality and importance of his work. He continues to receive private gifts to the University of Toledo Foundation for his research, totaling over \$100,000.

2. The mentor and collaborator: a global network of peptide science

Perhaps no single investigator has trained or collaborated with as many international peptide scientists as Professor Manning. His CV lists dozens of visiting scientists who spent time in his laboratory over the decades, coming from:

This extraordinary international network, built during the Cold War when such exchanges were far from trivial, reflects Manning's deep commitment to global scientific collaboration. His visiting scientists from behind the Iron Curtain brought diverse expertise and returned home to build peptide science in their own countries.

His mentorship extended to graduate students, postdoctoral fellows, and summer students at every stage of his career.

3. The research donor: over 3,000 samples to 800+ investigators

Perhaps the most remarkable testament to Professor Manning's generosity is the sheer scale of his research sample donations. According to his own records, his laboratory has donated over 3,000 samples of oxytocin and vasopressin analogs to more than 800 investigators in the United States and worldwide .

These samples were provided free of charge, often synthesized at significant cost and effort, to enable independent studies by researchers he might never meet. The resulting publications number over 2,000.

4. The human being: humility, humor, and the beautiful game

Behind the formidable CV, the D.Sc., the Distinguished University Professorship, the Alpha Omega Alpha faculty induction, the Meienhofer Award, the Lifetime Achievement Award from the World Congress on Neurohypophysial Hormones (2019), the soccer field on the UTM campus named "**Maurice Manning Field**" (2012), lies a man of genuine warmth, humor, and humility .

The Golden Apple

Professor Manning has been recognized for excellence in teaching by graduating medical student classes with the Golden Apple Award in an astonishing array of years: 1973, 1975, 1979, 1982, 1987, 1988, 1989, 2002, 2005, 2007, 2009, 2010, 2011, and 2025 . The last of these—a second Golden Apple Award—was presented by the Class of 1975 at their 50th reunion on July 19, 2025 . This

unprecedented recognition, spanning more than five decades of teaching, speaks to Manning's enduring connection with students.

The Soccer tradition

Manning's love of soccer is legendary. He served as faculty advisor for the UT Health Science Campus Soccer Club (2008-present) . At the 32nd European Peptide Symposium in Athens (2012), he presented a poster with L. Balaspiri titled "**Twenty-five Years in European Peptide Symposia Soccer Events**", a delightful reminder that science and play can coexist. The soccer field named in his honor on the UTMC campus is a fitting tribute to a man who believes in teamwork, endurance, and joy.

The Torch Club

Manning has been an active member of the **Toledo Torch Club**, serving as President (1993-1994) and presenting multiple talks, including "Highlights on a Six Decade Trail of Oxytocin and Vasopressin Research" (2013) and "The Confluence of Science and Journalism: The Pivotal Role of Paul Block Jr. in the Founding of MCO" (2020) .

The Family Man

Married to Carmel Walsh (R.N., B.Ed.), with three children (Shane, Deirdre, and Brian) and six siblings, Manning's Irish roots remain central to his identity. His parents, John and Annie Manning, were national school teachers who instilled in him the value of education and service, values he has embodied throughout his life.

Professor Maurice Manning's life and career embody the highest ideals of science: curiosity, rigor, collaboration, mentorship, generosity, and service. The RegPep26/2027 **Professor Maurice Manning Named Prize Lectureship** will ensure that his legacy continues to inspire regulatory peptide scientists for generations to come.