Laudatio Máximo E. Drets

To congratulate and thank Máximo for all his contributions to Uruguayan and Latin American Science, colleagues and former students have enthusiastically joined efforts and written original articles to dedicate this special volume of Cytogenetic and Genome Research to him on his 80th birthday.

Máximo Drets developed his very first steps in scientific research under the guidance of Prof. Francisco A. Sáez, a prominent South American cytogeneticist who was crucial for the progress of the field in the region. Initially, he investigated together with Sáez at the Instituto de Ciencias Biológicas in Montevideo. His work was pioneering in the field of orthopteran cytogenetics with paramount publications following.

In 1954 he travelled to Porto Alegre to learn *Drosophila* genetics with the prestigious researcher, Prof. Antonio R. Cordeiro. One of us, at that time, (FMS) was a young investigator at Prof. Cordeiro's lab and vividly remembers not only sharing the experimental work with Máximo but also the apprehension due to the political unrest Brazil was experiencing in those days.

Máximo very early showed his talents and deep interest in microscopy, optics, photography and scientific instrumentation, developing new methodological approaches in cytophotometry. At the same time, he continued his studies at the University of the Republic, becoming both medical doctor and biologist.

In the mid sixties, Máximo entered the field of human cytogenetics and firmly started investigations on this topic in Uruguay, after developing a stay with Jérôme

Lejeune in Paris. The Laboratory of Human Cytogenetics, which he initiated at the Instituto de Ciencias Biológicas, was not only the cradle of many substantial scientific contributions but also a creative environment where young Uruguayan and regional scientists were trained and inspired by Máximo.

In 1971 Máximo developed a research stay as Associate Professor at the M. D. Anderson Tumor Institute in Houston, with Prof. Margery Shaw, to study the human chromosome structure. As an outcome, the first complete description of human G-bands, which deeply con-

tributed to our understanding of metaphase chromosome organization and genome complexity, was published (Drets and Shaw, 1971). Stemming from his early investigations with Sáez, he also conducted outstanding investigations on the mechanisms involved in nonhomologous chromosome associations during meiosis in Orthoptera.

Máximo continued his research on the mechanisms of chromosome banding with David Comings in California and later on installed the first computerized microphotometric system in Montevideo. With this equipment he was able to develop new scanning software to quantitate chromosome bands, automatically count autoradiography grains in S-phase nuclei and map breakpoints in metaphase chromosomes. Afterwards, he described the presence of minute sister chromatid exchanges in the telomeric/subtelomeric regions of human and Chinese hamster chromosomes (*t*SCEs).

Additionally involved in questions concerning the worldwide problem of environmental pollutants, Máximo introduced several advanced techniques for mutagen detection, initiating genetic toxicology research in Uruguay in the late 70s. Since then, this area has joined a significant number of coworkers at the Instituto de Investigaciones Biológicas Clemente Estable (IIBCE) that presently are developing both basic and applied investigations in mutagenesis and genetic instability.

Furthermore, Máximo introduced the use of flow cytometry and cell sorting in basic research in Uruguay. Thanks to his efforts, the first cell sorter was installed at IIBCE at the end of the 90s. Nowadays this flow cytometry Core (SECIF) is recognized amid the most qualified research and training centers in the region.

After nearly 52 years of academic career, Máximo carried out research in all scientific positions at IIBCE. From an Honorary Assistant to a Director status, Máximo exhibited the same vocation, intellectual glow and workaholic attitude. He received many honors along his fruitful scientific life, such as the Calzada Prize, the Larocque Tinker Foundation Award, the First Award of the National Academy of Medicine (1985 and 1998), President of the Latin American Genetics Association (ALAG), Emeritus Prof. of IIBCE, and Counselor of the Latin American Academy of Sciences (ACAL). He published

more than 130 research articles which are commented in numerous books and thousands of citations. Never giving up in his endless support for the development of the Uruguayan scientific community, Máximo recently played a crucial role in the establishment of the National Academy of Sciences in Uruguay.

Together with his confessed passion for photography and Brazilian music, Máximo also cultivated longlasting, close relationships with colleagues from Brazil, especially from Porto Alegre. From 1967 to 1998, he paid several visits to the Federal University of Rio Grande do Sul, as a member of the examining boards, judging graduate students theses with skill and expertise. Reciprocally, one of us visited Montevideo frequently in terms of diverse academic endeavors and, during these short stays, had the opportunity to strengthen Máximo's friendship.

Scientific rigor, deep theoretical and technical knowledge, stamina and precision in experimental work, as well as fertile imagination, all distinguish Máximo as an outstanding researcher. Besides being a remarkable and captivating lecturer, he always cultivates a straightforward communication with colleagues and students and exhibits an unusual capacity to inspire and educate youngsters in the long and winding roads of science and life.

Máximo also enjoys a lovely family. His wife Gloria, biochemist and researcher, has shared all the lights and shades of scientific life with him. Following genetic laws, his son Gustavo inherited, in a dominant way, his gifts for informatics. Máximo is a devoted fan of his two grandchildren.

Probably, Máximo will truly be remembered by his peers through his seminal paper 'Specific banding patterns of human chromosomes', published in PNAS with Margery Shaw, describing the G-band technique of human chromosomes [Proc Natl Acad Sci USA 68:2073–2077 (1971)]. However, his role as a key person in Latin American and worldwide science transcends single achievements. His dedication to science, rigorous and meticulous approaches to experimental data, is an example that will be followed by students many years from now.

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