Obituary

Christopher J. Michejda

Christopher J. Michejda, member of the editorial board of the Molecular Cancer Therapeutics and an eminent biomedical chemist, died of a heart attack on January 9, 2007 while attending the annual retreat of intramural researchers at the National Cancer Institute (NCI) in Bethesda, MD.

Born in Poland in 1937, Chris grew up in Chicago, IL as his parents settled in the United States shortly after World War II. Chris attended the University of Illinois and then the University of Rochester where he received his Ph.D. degree in physical organic chemistry in 1963. Following a postdoctoral training at Harvard University with Professor Paul Bartlett, Dr. Michejda became an assistant professor at the University of Nebraska, progressing later to the rank of full professor. His tenure in Nebraska was marked by seminal contributions to the field of chemical carcinogenesis, including the elucidation of the mechanism of the metabolic activation of nitrosamines to alkylating agents and the demonstration of the fundamental roles of these reactive species in the processes of mutagenesis and carcinogenesis. From 1971 to 1972, Dr. Michejda spent a sabbatical year at the ETH in Zurich, Switzerland, which he recalled later as a turning point in his interests in chemical biology. Subsequently, he went to the National Science Foundation in Washington, DC for 2 years, serving as a Program Administrator and an ardent advocate for support of chemistry as a multidisciplinary component of biomedical research. In the late 1970s, Dr. Michejda joined the NCI, where he initially continued working in the field of carcinogenesis but soon expanded his research into the area of therapeutics. As a head of the Molecular Aspects of Drug Design section from 1978 until his death (operating first under the ABL-Basic Research Program and then the NCI Structural Biophysics Laboratory), Chris became wholly committed to the rational design of innovative anticancer, and later, antiviral agents as well. His early investigations at the NCI provided fundamental information on the metabolism and DNA reactivity of several important classes of anticancer agents. But it was the interdisciplinary integration of approaches that has become a “signature” of his creative efforts to discover new anticancer and anti-HIV strategies. Dr. Michejda’s research typically involved extensive biochemical/biophysical characterizations of potential targets that would drive computational/structural/synthetic chemistry studies on new drug candidate molecules and in-depth investigations of their interactions with intended targets, all combined with thorough evaluation of biological activities in vitro and in vivo.

In the quest for innovative “targeted therapeutics” to enhance selective toxicity for cancer cells, Dr. Michejda was a strong proponent of strategies based on cytotoxic small molecules, notably including advanced DNA binding agents. A firm believer that rationally designed cytotoxic agents have unexploited potential for selectivity, he successfully conducted various proof-of-principle studies showing the utility of such agents in unconventional strategies for attacking specific features of cancer cells or viral processes. Chris pioneered, for example, the targeted delivery of toxic small molecules to tumors through receptors overexpressed on the surface of cancer cells. He and his coworkers tested this strategy using conjugates of cytotoxic drugs with small peptides or peptide-mimicking molecules targeted at cancer-specific receptors. Other classes of small molecules discovered and developed by his research team took advantage of new targeting opportunities stemming from progress in DNA replication, DNA repair, and transcription. Examples of such drugs include the imidazoacridones, compounds with promising anticancer and anti-HIV activities that combine DNA intercalation with minor groove binding. Because this mode of binding features large interaction surfaces, Dr. Michejda
envisaged that such complexes would allow for the
distortion of specific protein-DNA interactions and for
interference with the functions of critical DNA-processing

Chris was a master at interfacing chemistry with other
disciplines. Being erudite and having an uncommonly
broad knowledge, he was equally at ease as “a medicinal
chemist among molecular biologists and translational
researchers” or, reciprocally, as a “biochemist and molec-
ular biologist among chemists.” This trait, along with his
unselfish personality, made him widely valued by his
NCI colleagues and by cancer researchers elsewhere as a
willing and creative collaborator and source of inspiration.

Dr. Michejda’s scientific accomplishments are reflected
by more than 150 publications in highly regarded scientific
journals and 15 patents (several of which were licensed
outside of the NIH) for innovative biologically active
molecules and new therapeutic strategies.

Dr. Michejda was always eager to share his expertise and
views but he was also an attentive listener, keen to hear
more about emerging scientific opportunities applicable to
drug development. Untiring as a participant and discussant
often raising unconventional yet pointed questions, with
his prominent posture and a smiling face, Chris became
a characteristic figure at gatherings attended by the anti-
cancer drug development community in the U.S. and
abroad. In addition to his tenure on the editorial board of
Molecular Cancer Therapeutics (since the inception of this
journal), Chris was an associate editor of Cancer Research
and a member of the editorial boards of several other
scientific publications. Serving the research community in a
multitude of ways, he was also a member of numerous
advisory panels, organizing committees for scientific meet-
ings and other working groups. He was a vitally important
force in organizing the Chemistry in Cancer Research
group of the AACR and in prompting efforts to elevate
chemical biology in the structure and priorities of the NCI.

Chris was a beloved mentor to many biomedical students
and postdoctoral fellows, who were not only inspired by
his scientific passion but also cherished the always positive,
encouraging outlook, and most importantly, care, that he
invariably showed to others. Chris’ warmth, benevolent
wit, and a magic ability to make everyone feel comfortable
were legendary.

Chris’ caring personality and broad interests transcended
science. He was a prominent member of various Polish-
American groups and was awarded Poland’s Cavalier
Cross of the Order of Merit for the assistance that he
extended on American soil to the Solidarity movement
prior to the fall of communism.

On January 9, straight from the NCI retreat in Bethesda,
Chris was supposed to fly to Grand Rapids, MI to attend a
workshop brainstorming new approaches to anticancer
therapies. Chris was physically and metaphorically at the
very heart of American biomedical research when his
biological heart stopped… Emblematic for Chris’ whole
life, his unselfish dedication to science, to his Polish roots,
and, first and foremost, to the elementary values of humanity,
his family has established the memorial Christopher
Michejda Fund at the Kosciuszko Foundation, which is
dedicated to sponsoring the training of young Polish
biomedical scientists in the U.S.

Jan M. Woynarowski
NIH, National Cancer Institute,
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willingly shared the essential facts of Dr. Michejda’s scientific life and
provided his photograph for this note. Many of Dr. Michejda’s friends and
colleagues posted comments in remembrance on a dedicated NCI-Frederick
reminiscences, collectively, sketch a picture of Chris not only as a scientist
but also as a most admirable, caring, and noble human being.