UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING

Memorial Tribute to

KEIGO IIZUKA

Professor Emeritus
The Edward S. Rogers Sr. Department of Electrical & Computer Engineering

October 24, 2024

Be it resolved –

> THAT the Council of the Faculty of Applied Science & Engineering record with deep regret the death on June 4, 2024 of Professor Keigo Iizuka.

Professor Keigo Iizuka was born in Kobe, Japan, on August 29, 1931, into modest means. He learned early on the importance of perseverance and diligence and dedicated himself to his studies.

Keigo completed his undergraduate studies at Kyoto University, where he held a prestigious scholarship before pursuing a PhD in Applied Physics at Harvard University on a Fulbright scholarship, graduating in 1961. Following his doctoral studies, he served as a Research Fellow and later as a Lecturer at Harvard. He joined the University of Toronto's then-named Department of Electrical Engineering in 1968, where he would make a significant name for himself.

Over his many years with ECE, Keigo explored a broad spectrum of areas, from antennas and microwave holography to optical measurement, sensor technology, fibre optics, and 3D displays. He authored a number of impactful publications including three significant books on photonics and engineering optics. Among his most notable achievements was the invention of the "Omni-focus Video Camera," which solved the fundamental challenge of achieving equal focus for elements in both the background and foreground of an image. This innovation integrated an array of colour video cameras with different focal distances and a unique distance mapping technique that allowed for perfect clarity across the entire field of view, a remarkable feat in the field of optics.

Keigo received the Fujio Frontier Award and the ATR Excellence Research Award for his research, and he was named a Fellow of the Optical Society of America. Keigo's dedication to teaching left an indelible mark on generations of students. Professor Li Qian, once his student and later his colleague, recalled her experience in his Optical Communication course as "exhilarating and eye-opening." She shared that while the course started with engaging videos and demonstrations, it soon transitioned into rigorous mathematical challenges, teaching students the balance between fascination and discipline that defined optics. "He lightened our hearts even as he lightened our

coursework," Li noted, reflecting on Keigo's ability to combine humour, creativity, and deep technical insight.

Beyond his impact in the classroom, Keigo was recognized for his resourcefulness and continued passion for research even after his retirement. Despite limited funding, he remained active, often developing ingenious experiments with simple materials, such as using a compact disc as a spectrometer. Professor Al Leon-Garcia described him as "always cheerful… and busy," recalling how the fourth floor of the Sandford Fleming Building was often a hub of activity around his experiments.

Professor Micah Stickel, a former student, remembered Keigo's "effortless enthusiasm" and the joy he brought to his teaching. He noted that his "Fundamentals of Optics" course was enriched with hand-drawn cartoons that helped students understand complex ideas. Professor George Eleftheriades described his *Engineering Optics* textbook as "full of insight and practical wisdom – a treasure to have."

Beyond academia, Keigo was a multi-talented individual with passions that extended to his family, dance, and creative writing. Professor Khoman Phang fondly recalled seeing him on Friday nights at the Ballroom Dance Club, a reminder of how much more there was to him than his academic achievements. Keigo even co-authored a children's book, "Kuro," with his daughters, a testament to his creativity and dedication to his family.

Professor Keigo Iizuka's legacy will undoubtedly live on through his research and teaching. However, Keigo taught us that the most significant impact you can have is how you treat others. His gentle mentorship of students, his kind friendship and collaboration with colleagues, and his inspiring way of seeing the world have positively impacted all who knew him. It is not lost on us, then, that Keigo's research involved bringing multiple things to focus!

Keigo is survived by his daughters Nozomi, Izumi, Megumi, and Ayumi, who lovingly cared for him throughout his life and in his final years.

Be it further resolved –

> THAT this tribute to Professor Keigo Iizuka be inscribed in the minutes of this Council meeting, and that copies be sent to his family as an expression of the respect and gratitude of the members of this Council.

Prepared by Professor and Chair Deepa Kundur and other members of the Electrical & Computer Engineering Department.