At a meeting of the FACULTY OF ARTS AND SCIENCES on March 7, 2023, the following tribute to the life and service of the late Anthony Gervin Oettinger was spread upon the permanent records of the Faculty.

ANTHONY GERVIN OETTINGER

BORN: March 29, 1929
DIED: July 26, 2022

Anthony Oettinger was a computing pioneer and a deeply original thinker. More than once, uncomfortable within the walls of a discipline he helped create, he shifted to another when the self-interest of a movement had outpaced its promise. His academic work ranged across computational linguistics, artificial intelligence, educational technology, and information policy. Joining Harvard's faculty in 1955 as an instructor in applied mathematics, he became an early president of the Association for Computing Machinery (the professional society of computer scientists), and then left that field entirely, retiring from Harvard in 2007 as Gordon McKay Professor of Applied Mathematics and Professor of Information Resources Policy.

Tony was an institutionalist who defied disciplinary classification. His Harvard was not its departmental structures and leaders but his faculty colleagues and students. "Respect the young," he would say, "for they will win in the end." Amidst the troubles of 1969 he forged a consensus faculty motion that passed and helped keep the peace even though no majority could have agreed on their reasons for supporting it. Tony was also a patriotic American, so valued by the nation's intelligence services for his wisdom and skepticism that part of the National Intelligence University was renamed the Anthony G. Oettinger School of Science and Technology Intelligence.

Tony was born in 1929 in Nuremberg, Germany. One day in 1933, his father declared that he had not spent four years as a soldier in the trenches so that Nazis could splash antisemitic signs on his shop. The family left for Alsace the same day. There his father was imprisoned as a German and later freed, for the same reason, when the Vichy government was installed. The family left for the U.S. in 1941. Tony learned English, his third language, as a seventh grader in a New York public school and went on to the Bronx High School of Science. His first experiment in computing was an analog device for a Westinghouse science competition. He did not win, but he was admitted to the Harvard College Class of 1951.

Tony was elected First Marshal of Harvard's chapter of Phi Beta Kappa. When he discovered

that his duties included arranging the seats at faculty dinners, he placed himself next to the computing pioneer Howard Aiken, whom he knew by reputation. Aiken invited Tony to come to his office, where Aiken handed him a memorandum speculating that language translation was a symbol manipulation problem of the kind computers could do. "Here's a problem—solve it!" said Aiken, and so began 15 years of work—including a Harvard Ph.D. dissertation—on machine translation of Russian, which Tony had also learned.

Early machine translation work attacked problems considered necessary, though not sufficient, for machine translation. Any mechanical translation system would need a dictionary, but even building a look-up table was a nontrivial exercise in those days. Also needed was morphological analysis—inferring a root word from an inflected form. Progress was slow on these problems, and also on syntactic analysis, in reference to which Tony was among the first to identify the utility of pushdown stores for parsing self-embedded languages.

In time, Tony concluded that the semantic ambiguities of natural language would never yield to such methods alone. In the mid-1960s he was part of a national committee that assessed the progress of machine translation and recommended that the government should stop funding it. His doubts about artificial intelligence did not stop there; he provided refuge at Harvard for two MIT apostates writing influential critiques of the field—the philosopher Hubert Dreyfus (who had been his college roommate) and the computer scientist Joseph Weizenbaum.

Tony was given to pithy phrasings of deep truths and mobilized his gleeful and impish humor against pretense and arrogance. He distinguished "known unknowns" from "unknown unknowns" before Donald Rumsfeld popularized the terms. Repurposing the derogatory "slinging the bull," Tony averred that bull had its place. In fact, he said, knowledge was the child of bull (theorizing without evidence, such as Chomskian linguistics) and cow (data without interpretation). Knowledge required both cow and bull, both facts and meaning.

Tony became involved in information policy through his service as an advisor to NASA, a private sector consultant, and the founder and chair of the first Computer Science and Engineering Board of the National Academy of Sciences. He was sensitive to the distortions that result when stakeholders in an issue fund a study of that issue. Neither impartiality nor expertise is in short supply, he observed; the challenge is achieving both together. In 1973 he started the Program on Information Resources Policy, which he led for the rest of his career and which issued hundreds of trustworthy public reports on information technology. The program was funded through limited contributions from all stakeholders—the regulators, the regulated, and multiple competitors in the same market. That way, as he said, the program was self-evidently owned by no one because it was owned by everyone.

Tony embodied William James's description of Harvard as "a nursery for independent and

lonely thinkers." The Rockefeller University mathematical biologist Joel Cohen recalled how his career began when Tony spotted him, an undergraduate, in a state of obvious dejection, and asked what was wrong. Joel was trying to find connections between two similar graphs in his introductory biology and economics textbooks, one for bird populations and the other for corporation sizes. He could not excite interest in his subject from the biology department because it was too mathematical and failed also with the mathematicians because it was too numerical! The committee Tony assembled for Joel—multidisciplinary, as Tony would say, not interdisciplinary—was like others he would later shepherd as the chair of Special Concentrations. He valued expertise but had faith in Harvard students and faculty to pursue intellectual adventures—departmental boundaries and disciplinary parochialism be damned.

With Tony Oettinger's passing in 2022 at the age of 93, computer science lost one of its originals, Harvard lost one of its most devoted children, and many lost a formative influence.

Respectfully submitted,

Barbara Grosz
Leslie Valiant
Harry Lewis, Chair